NOUS - Software Manual

Version 1.15

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1 Document Revision History

Date	Revision	Author	Comments
13/01/2020	V1.00	Semitron S.A.	First version of this document
27/01/2020	V1.01	Semitron S.A.	Change of the numbering on SB-Board terminals
24/03/2020	V1.02	Semitron S.A.	Added chapters about 'Generic supervision inputs', 'Runtime test assistant', 'Peak up/down operation', 'interlocked doors' and 'H300 Hydronic signal mapping'
14/05/2020	V1.03	Semitron S.A.	Updated chapters about 'Call enabling', 'Brake Testing', 'Team operation' and 'Rescue/Evacuation'. Added chapter about 'BACnet'
17/06/2020	V1.04	Semitron S.A.	Added chapters about 'Safety circuit bridge' and 'Random calls/trips'.
2/10/2020	V1.05	Semitron S.A.	Added chapters about 'Platform Lifts', 'Call Options', 'Telescopic Toe Guards' and 'Intermediate Stopover Operations'.
20/11/2020	V1.06	Semitron S.A.	Updated appendix and chapter 'Extra Door Lock Supervision'. Added chapter 'BACnet'.
3/12/2020	V1.07	Semitron S.A.	Added 'Self Learning Parking' feature.
30/12/2020	V1.08	Semitron S.A.	Added 'Simple Building Zones' chapter
09/02/2021	V1.09	Semitron S.A.	Added new drive options and helicopter function.
12/03/2021	V1.10	Semitron S.A.	Updated the Brake Testing Operation. Added 'Quantity of Faults' chapter.
24/03/2021	V1.11	Semitron S.A.	Added 'Rope Gripper' chapter and 'Inspection Pit Reset' via landing call.
16/04/2021	V1.12	Semitron S.A.	Added 'Customizable buzzer output' chapter.

17/05/2021	V1.13	Semitron S.A.	Updated chapter about terminal driven inverters & note about the wheel chair door open button.
1/07/2021	V1.14	Semitron S.A.	Added new object to the BACnet and MODbus.
23/07/2021	V1.15	Semitron S.A.	Updated classic drive terminal mapping.

2 Info

Conformed with quality management systems standards

Conformed with the requirements of the applicable EC directives

Conformed with directive 2002/96/EC on waste electrical and electronic equipment (WEEE).

CANopen profile for Lift

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3 Copyright

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5 About this Manual

The NOUS Software Manual is the official guide to parameter and use NOUS LiftApp software, powering the NOUS hardware. This volume contains general information, information about assembling, parameterizing, testing, maintenance and helpful hints for trouble shooting.

6 About the Examples

Except as noted, all examples refer to the NOUS reference hardware featuring standard parameters. Real lift installations may be different and require more and specific handling.

7 Error Reports

In a complex technical manual, errors are often found after publication. When errors in this manual are found, they will be corrected in a subsequent version.

8 Abstract

The NOUS lift controllers are exciting high-performance microcomputers with superb user interface and multitasking capabilities. Their technologically advanced hardware is designed around a modern Embedded Linux® system and sophisticated custom hardware design. NOUS unique system software provides technicians with unparalleled power, flexibility and convenience in designing state-of-the-art lift applications.

This manual is the defined source of information on the functions and parameters in NOUS lift application (LiftApp).

Written by the technical experts of Semitron S.A, this manual is an essential reference tool for all lift engineers and technicians that want to take full advantage of NOUS impressive capabilities.

9 Abbreviations, signs & symbols

This icon is used to highlight information and notes.

This icon is used to accentuate warnings.

This icon is used to emphasis restrictions, limitations or faults.

This icon is used to highlight risks or threats.

This icon is used to highlight helpful hints.

These icons are used to point-out that an operation requires higher password/security privileges. The yellow key indicates 'Service' password privilege and the red key 'Setup' password privilege.

This icon is used to highlight information about safety requirements given.

- In this manual the term 'lift' is used rather than 'elevator'.
- The term 'LiftApp' is used to refer to the lift controller application software.
- The term 'OS' is used to refer to the Embedded Linux® operating system.

10 Purpose and Intended Use

The NOUS lift controller is specially made for lift/elevator applications only. To ensure safe operation, the device shall only be operated in accordance with the instructions given.

11 Safety Information

Before commissioning, assembling and/or maintaining this unit, read the safety instructions carefully and pay extra attention to any warning label attached to the cabinet or units itself.

- Make sure that the warning labels are not hidden or damaged.
- Replace any missing or damaged warning label.

This device may only be installed and operated in conjunction with this documentation. Commissioning, installing and operation of the unit shall only be done by qualified employees, having an electrical engineering qualification.

12 The User Interface

12.1 Audio Feedback

It is recommend to use a little loudspeaker, connected to the speaker plug, in order to take advantage of audio touch feedback, which makes the touch more usable.

Figure 1: Speaker for UI-feedback.

The speaker shall have 8 Ohm, 2...3 W.

12.2 Operation Indicator

Close to the Ethernet connector you will find a red LED, that is turned on shortly after the system has been powered and indicates the start of the system. It will start to 'breathe' when the lift application has been started, indicating that the system is 'alive' and the user interface should be operational.

Figure 2: Operation Indicator - 'Breathing LED'

12.3 Desktop

The desktop is the main interface between the user and the machine. It is the first visible part of the UI after opening the cabinet. Usually the light sensor on board will detect that the cabinet has been opened and turn on the background light automatically. If not, just touch the display.

The unit may be operated in landscape or portrait mode. You can easily switch between both orientations. To change the orientation select 'Favorites' and go to 'System Menu' → 'System' → 'More' → 'Display orientation'.

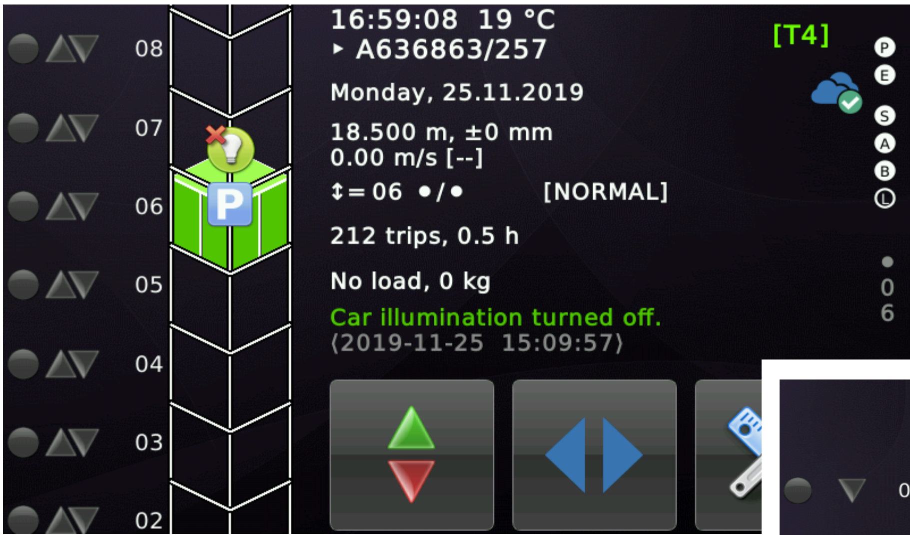


Figure 3: Desktop in landscape mode

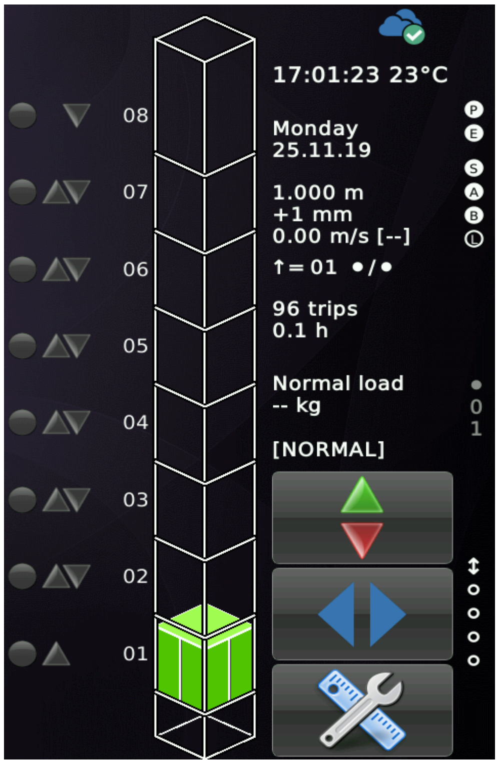


Figure 4: Desktop in portrait mode

12.4 Desktop Elements

The desktop is divided in these main parts:

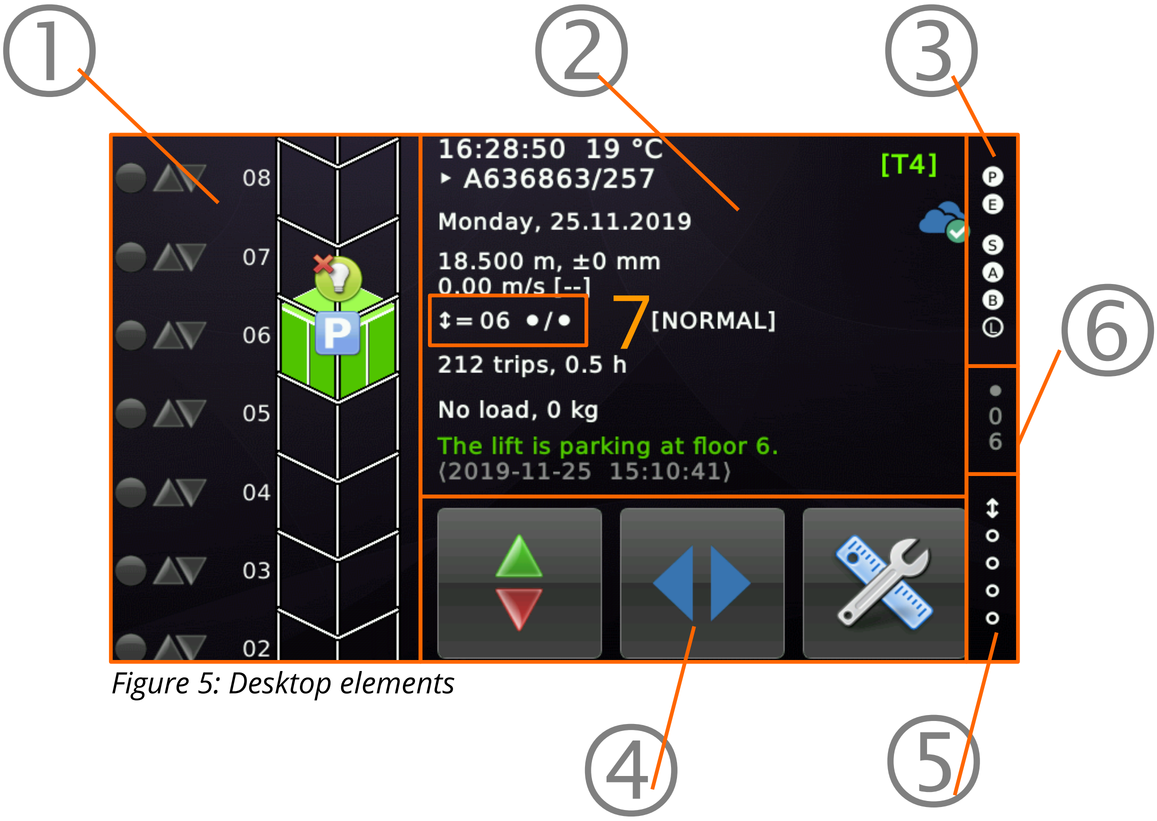


Figure 5: Desktop elements

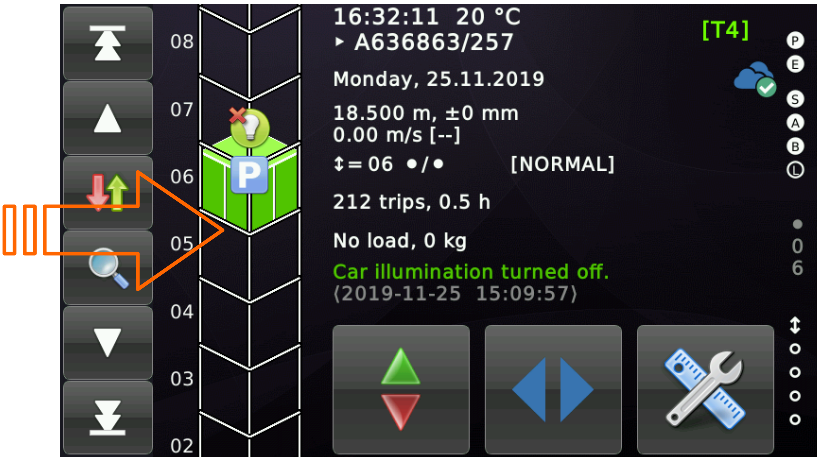
1. The hoistway view including pending car, landing & priority calls.
2. The process data view, providing the lift's position, load situation, direction, pending notifications, warnings or faults.
3. The safety chain view, showing the current state of the safety chain inputs.
4. The maintenance buttons for turning the landing control off, keeping doors closed and activating maintenance operation.
5. The contactor view, presenting the state of the pilot relays K11...14 and the resulting direction.
6. Permanent floor and (encoder) door zone indicator.
7. Direction, Level, Floor, ●-External Zone / ●-Internal Zone / ○-Door Bridging

12.5 Swiping and Gestures

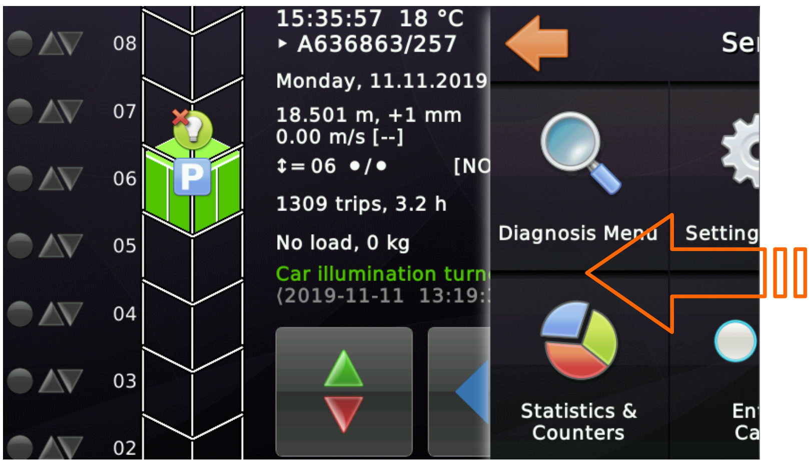
The touch based user interface supports gestures, like 'Swiping' or 'Hold & Move'.

Here is a summary of the most common gestures that can be used at the desktop:

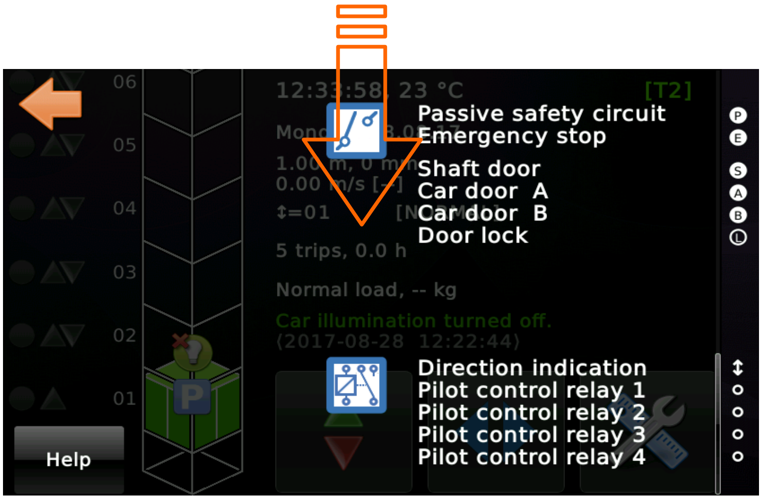
1. Swiping from the left edge of the display to the right results in opening the 'Call Panel', containing buttons for quickly entering a call to the next floor above or below and as well as a call to the bottom or top floor. Using the button in the middle, will open the 'Call Dialogue' with further options.



2. Swiping from the right edge of the display to the left results in opening the 'Favorites' view, presenting icons for the most often used menus and dialogues.



3. Swiping from the top edge of the display downwards result in shifting the I/O-view above the desktop. The I/O-view being translucent allows you to 'see through' being able to watch what the lift is actually doing but keeping an eye on the state of the inputs and outputs.



The IO-view has in fact three pages. By swiping again from top edge of the display downwards will open the next and over next page.

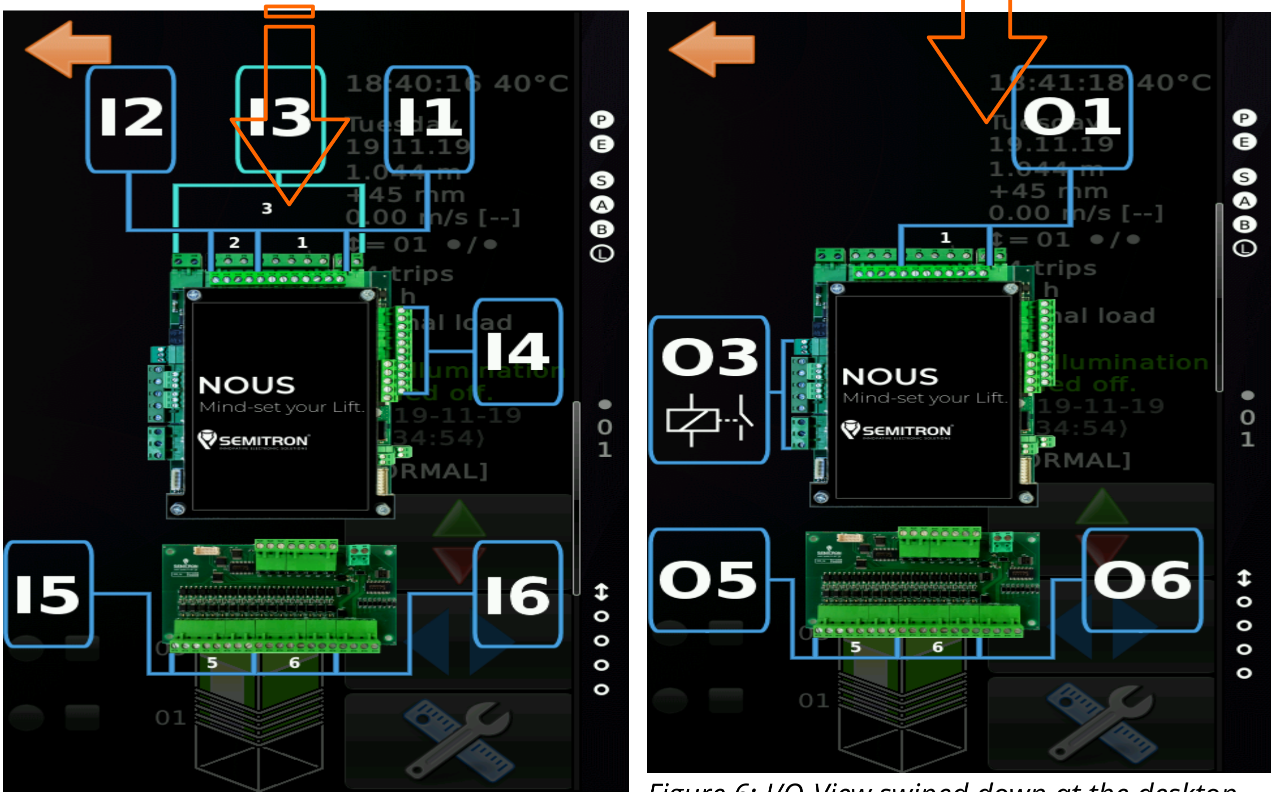


Figure 6: I/O-View swiped down at the desktop

The IO-view has in fact another layer. By touching the labels of the input/output ports, you can open another translucent view that shows the current state of the signals at that very port.

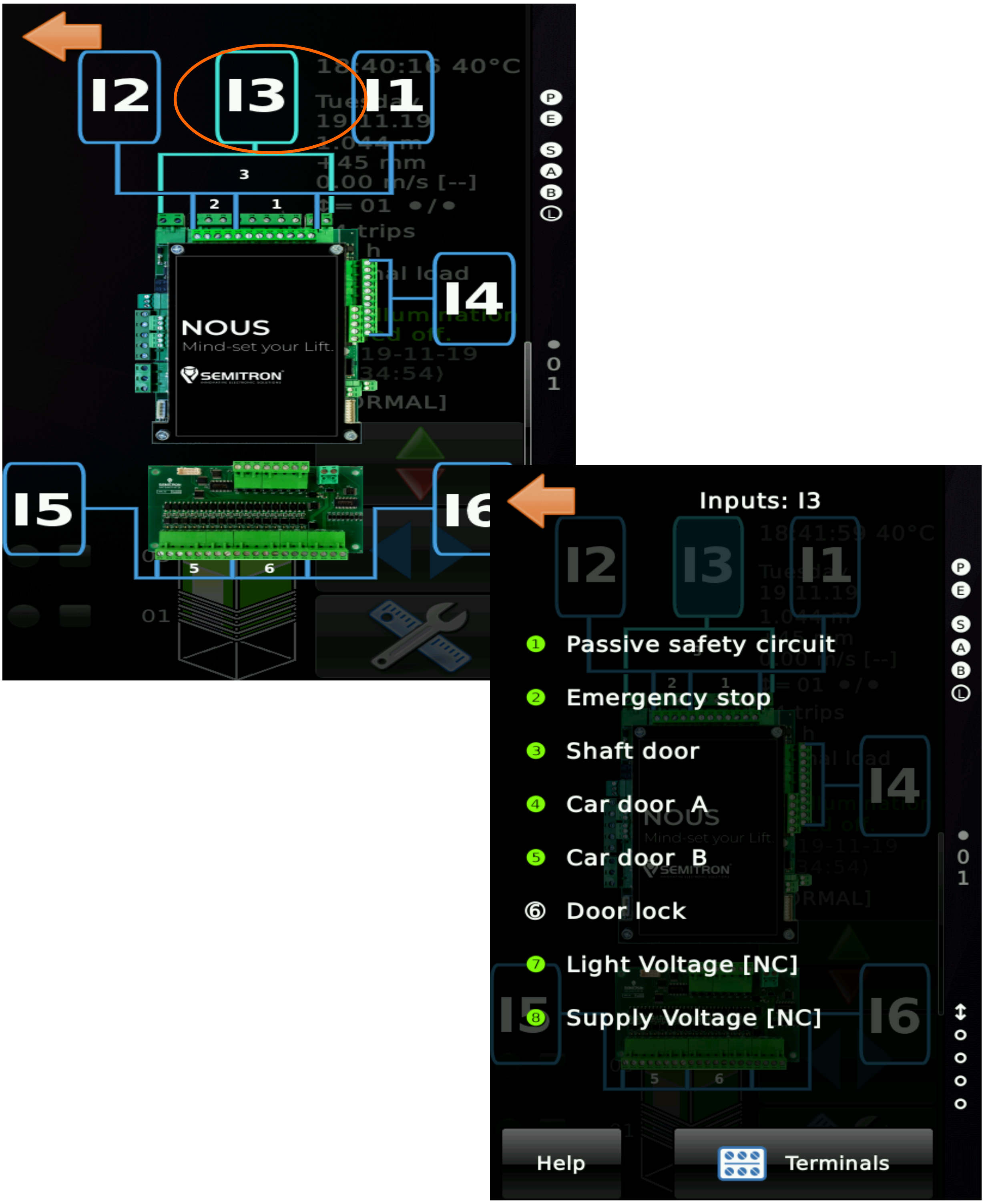
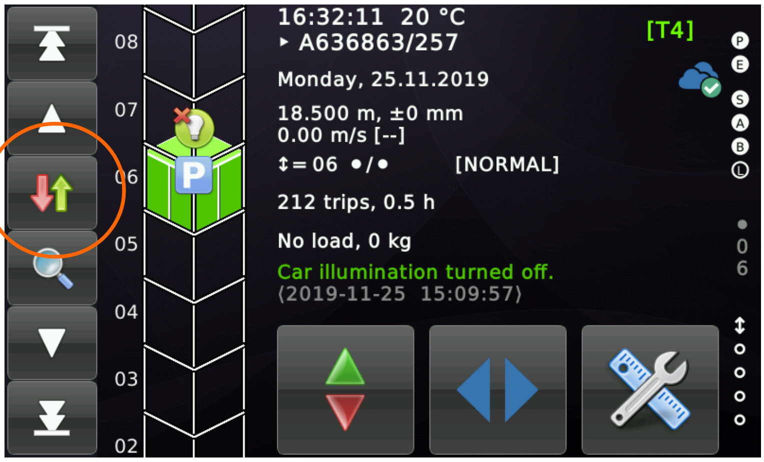


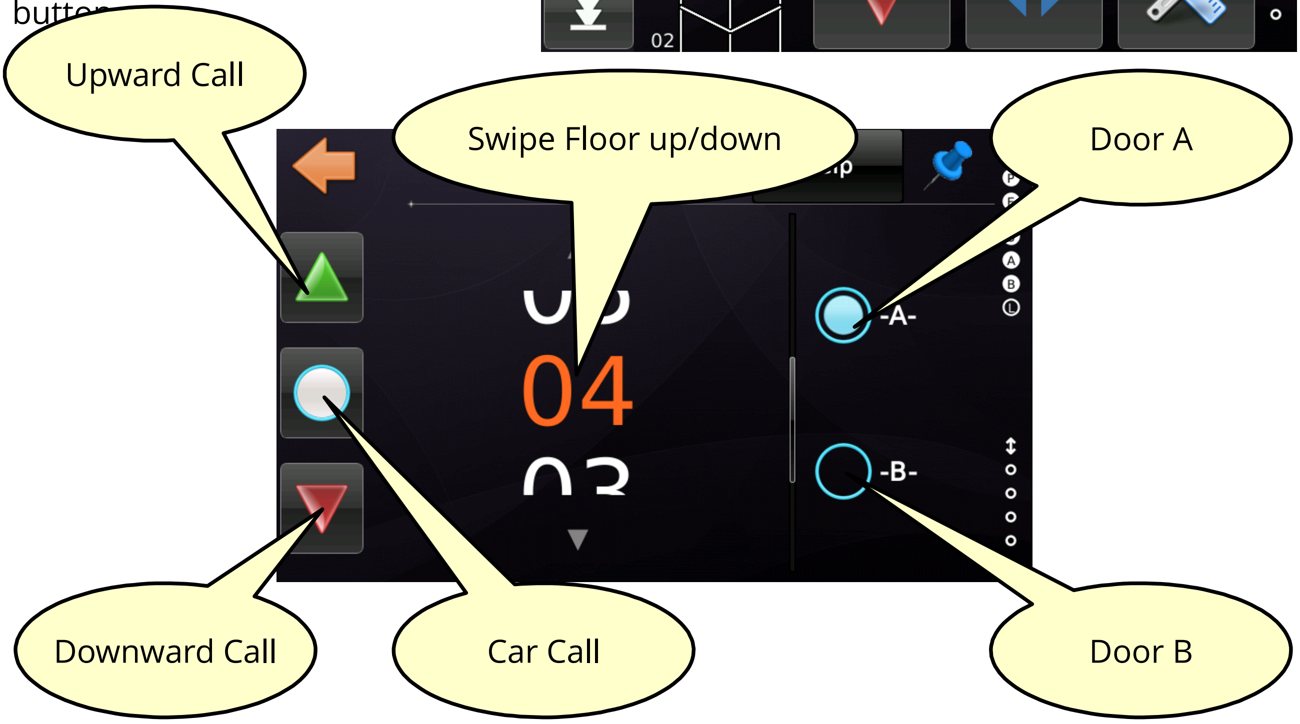
Figure 7: Signal state of an input port

All dialogues have usually a 'Help' button that give you a short introduction to the function of the current view.

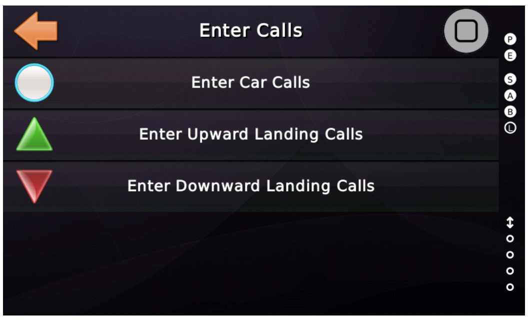
12.6 Entering Calls

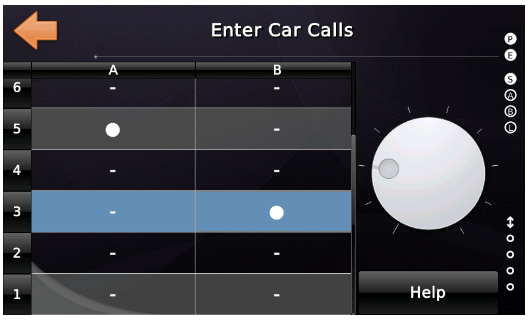
Beside the 'Call Panel' containing buttons for quickly entering a call to the next floor above or below and as well as a call to the bottom or top floor, the user may open the 'Call Dialogue' with further options, by touching the middle button





Beside this method, the user may enter a classic call table that can be found by selecting 'Service & Assembly' and then go to 'Enter Calls'.



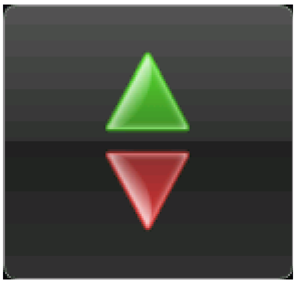
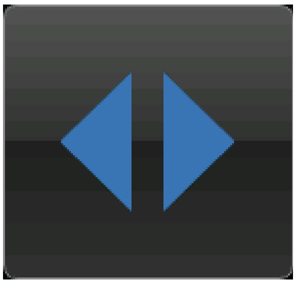


To enter a call via the table just Tap'n'Hold a cell. The rows represent the floors and the columns the available doors.

12.7 The Maintenance Buttons

You have surely recognized the three big buttons at the desktop surface.

These buttons are required regarding to the EN81 to give quick access to:

	Turning the landing control off and on.
	If activated keeps the doors closed, usually in combination with some kind of maintenance work, being in progress.
	Used to activate or deactivate the maintenance mode. If the maintenance mode has been turned on, no faults will be recorded or forwarded to any kind of data gateway. Automatic parking is deactivated as well.

‣ In order to ensure that the user does not accidentally turn off the landing control or keep the doors closed, an 'Are you sure?' message box has to be answered to proceed the function.

12.8 Inspection Pit Activation Reset

One of the EN81-20 requirements is that the lift shall not enter normal operation automatically, if the inspection panel in the pit had been used.

Regarding to the regulation it needs to be reset by an input from an electrical reset device outside the well or pit.

12.8.1 Standard Inspection Pit Reset via an Input Function

For the NOUS unit this can be done via the input function '*Inspection in the pit reset signal*', e. g. using a key switch outside the well near the door leading to the pit.

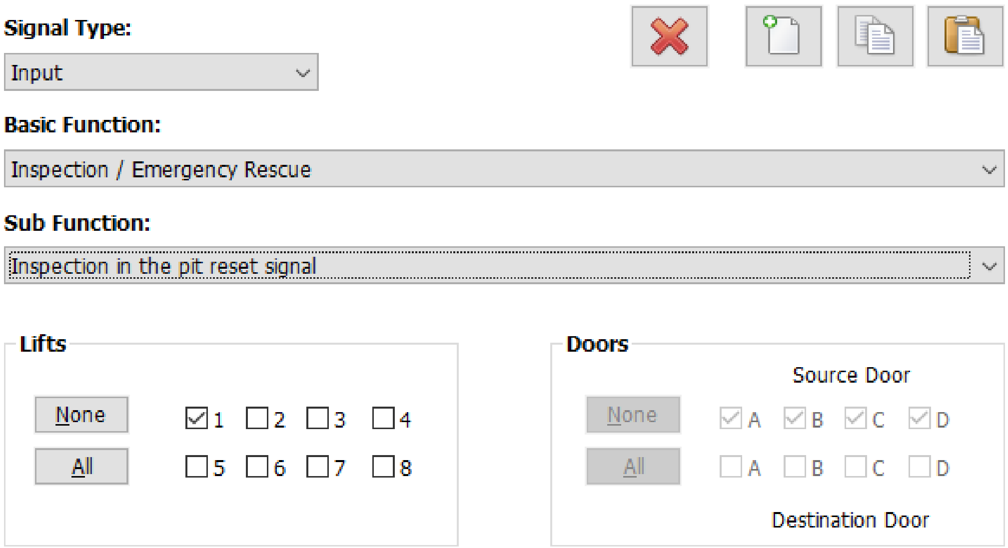


Figure 8: Inspection pin panel reset signal

If you install and run a lift team (group) and connect the input signal via **CAN2**, keep in mind to select the proper lift for the signal.

If you lift controller is in a closed and locked cabinet near the door leading to the well pit, you may activate the option to unlock the inspection pit operation via the lift controller's display. Depending on your local rules and different interpretations of the regulation this may be allowed or not allowed.

If you require an output signal that will be turned on, when the Inspection Control panel in the pit has been activated and will be dropped again, when the inspection operation mode in the pit has been reset, you may use this function:

'*Lift status indication → Inspection pit activated indication, lift 1, all floors, all doors*'.

12.8.2 Optional Inspection Pit Reset via the Display

If allowed by local rules and the lift controller cabinet being in a locked and closed cabinet near the door, leading to the pit, you may activate the option to finalize the inspection pit operation via the display.

You will find the corresponding option by selecting 'Home' and then 'Settings Menu' and then go to 'More' → 'Basics' → 'More' -> 'Inspection control panel in the pit, policy'.

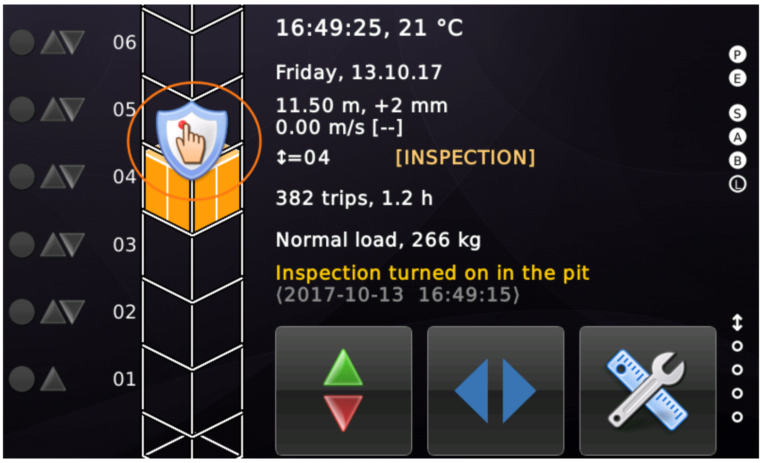


Figure 9: Lift waiting for inspection pit reset

Figure 10: Confirm to reset the pit inspection operation

After having confirmed to reset the inspection pit operation, the lift will leave the operation mode, if the **safety chain is completely closed**, to fulfil EN regulations. Otherwise the operation will fail with an error notification. To archive this, the lift will turn on the door lock magnet, if the lift is equipped with some.

This feature is only allowed, if the lift controller is in a closed/locked cabinet near the door leading to the shaft/hoistway pit. <u>You may ask your local notified body about it.</u>

12.8.3 Optional Inspection Pit Reset via the lowest Landing Call

Optionally, the inspection control in the pit can be reset using the landing call button in the lowest landing, if there are no local rules and different interpretations of the standard to prevent it.
You will find the corresponding option by pressing first 'Home' and then the hardware button 'Settings Menu' and then go to 'More' → 'Basics'→'More' → 'Inspection control panel in the pit, policy'.
The following sequence is required for the controller to reset the inspection in the pit:

- First the technician switches the inspection in the pit control panel off.
- Then the landing door is opened and re-closed – for at least two seconds. This shall ensure, that the technician has left the pit.

If using automatic power driven doors, the door lock contact (L) is checked. If using classical swing doors, the swing door contact (S) is checked.

- The Landing call button at the lowest landing shall be pressed 3 times in a row – one second per press.
- The lift controller will respond by blinking the landing call lamp three (3) times.

- The Landing call button at the lowest landing shall now be pressed 2 times in a row – one second per press.
- The lift controller will again respond by blinking the landing call lamp two (2) times.

- The controller now tries to establish a closed safety circuit and then resets the pit control. To do this, automatic power driven doors are closed and an existing door/cam-lock magnet will be engaged.

12.9 Unblocking the Lift Controller

If the lift controller has entered 'Blocking' operation mode, because of a supervision function that not allow to let the lift go back to normal operation automatically, like some safety circuit or UCM faults, you can manually unblock the lift by touching the unblocking icon right on the cabin or the icon view.

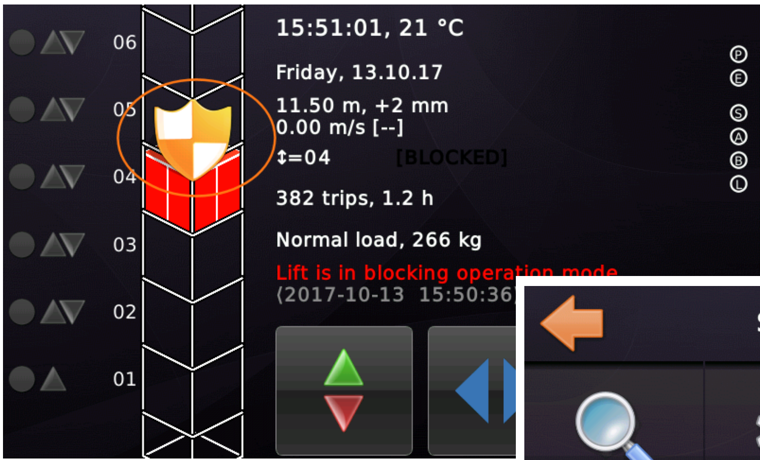


Figure 11: Blocked Operation Mode

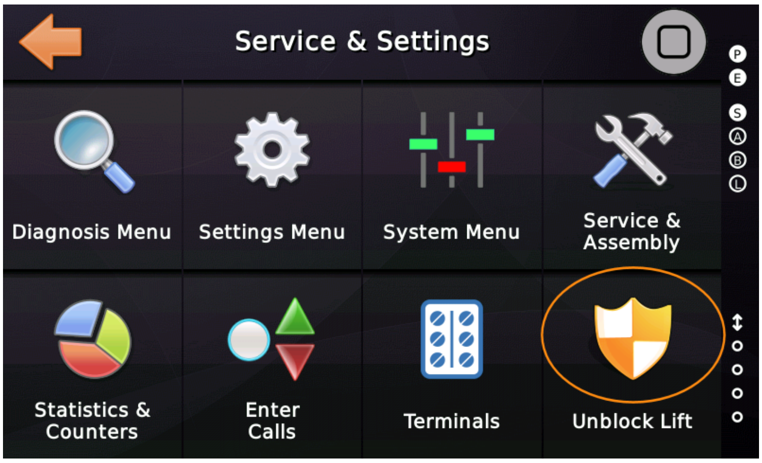


Figure 12: Unblocking via Icon View

If having confirmed to unblock the lift, the system will try to go back to normal operation. This may fail, if still some fault is pending that requires staying in the blocking operation mode.

In the given screen shots above, the passive safety chain input is missing, so unblocking the lift would fail.

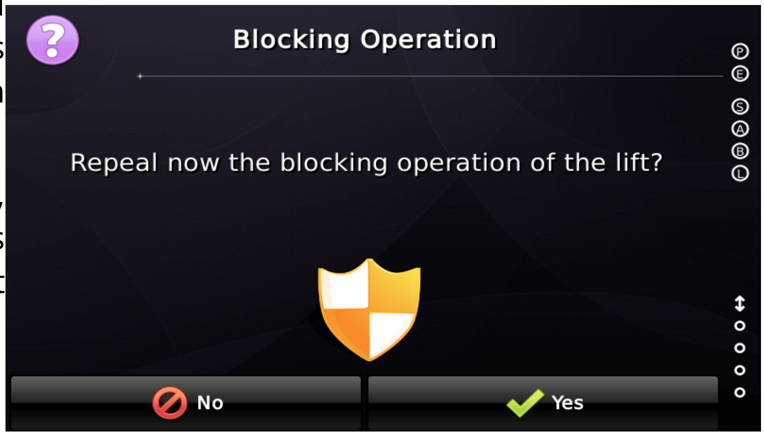


Figure 13: Confirm unblocking the lift

12.10 The Main Menu Structure

The root structure of the menu looks basically like this:

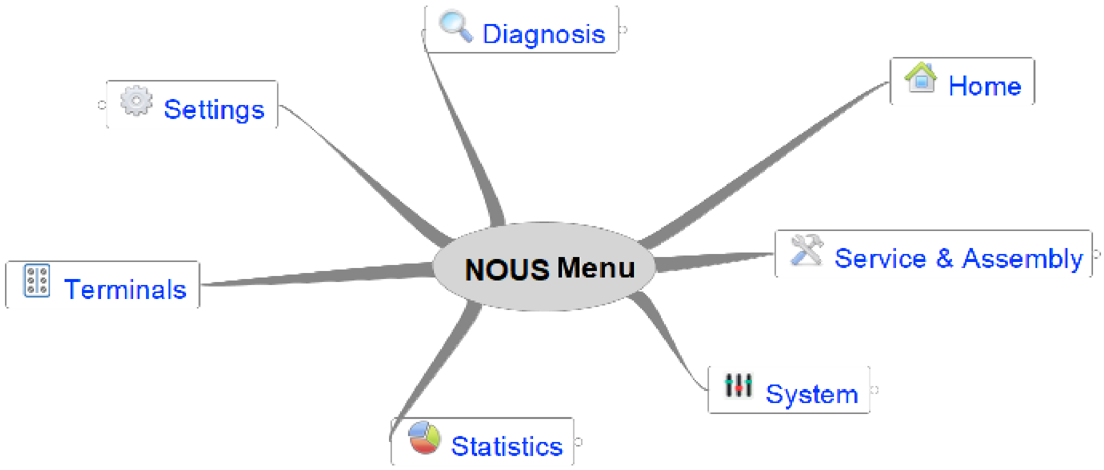


Figure 14: NOUS Menu Root Structure

The corresponding icons can be found in the icon favorites view. Touching them will surely bring you to the selected branch of the menu.

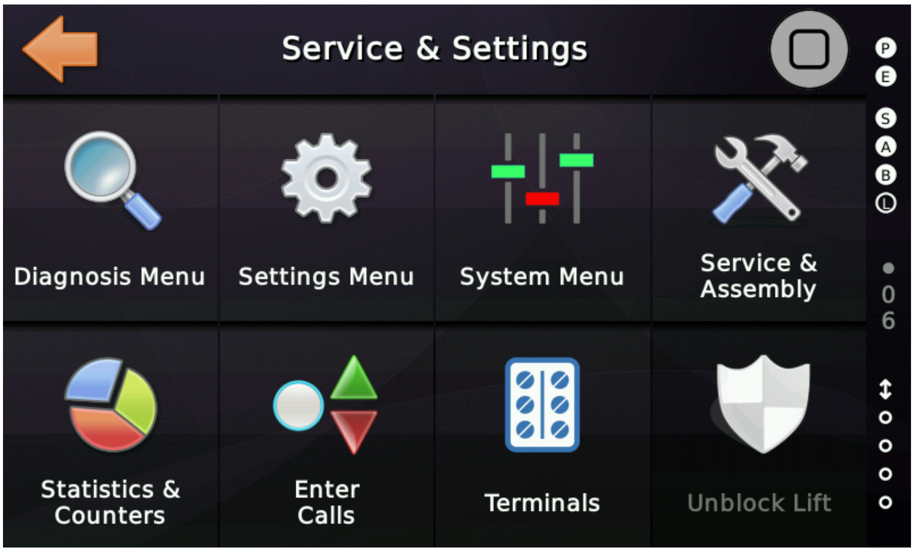


Figure 15: Favorites icon view

Selecting 'Home' will reset all menus, so that you start at the beginning of each menu.

12.11 Menu Navigation

The menu navigation is simple. Touching a menu button will enter the item and the back-arrow button will simply bring you back on menu level. A touchable menu item, might be a:

- A branch into a sub-menu, usually labeled with a arrow on the right border.
- A parameter item that allows you to change the given parameter.
- A dialog or assistant, like the one used for Learning Trip or the Limit Switch test.

The next figure shows a typical menu level. The first two menu items are parameter and the three others are branches into sub-menus, easily recognizable by the little arrow on the right border of the item.

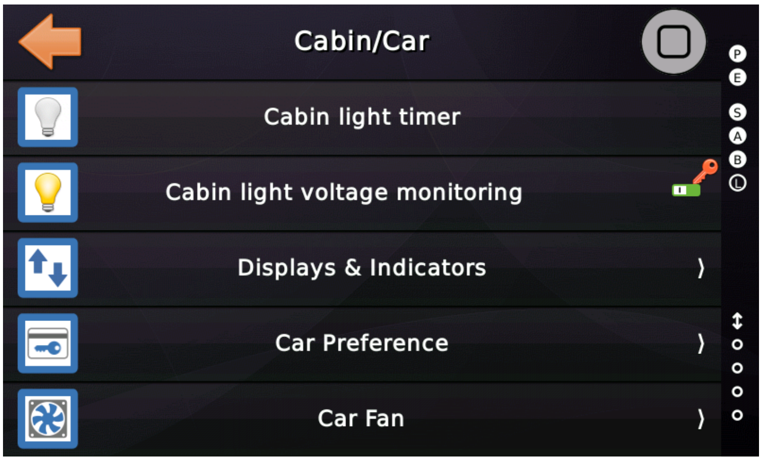


Figure 16: Typical menu level

If you want to stay in a menu position, already being in some sub-sub...menu, but on the other hand wanting to return to the desktop, do not select the home option. Instead just swipe the menu from down to up out of the way.

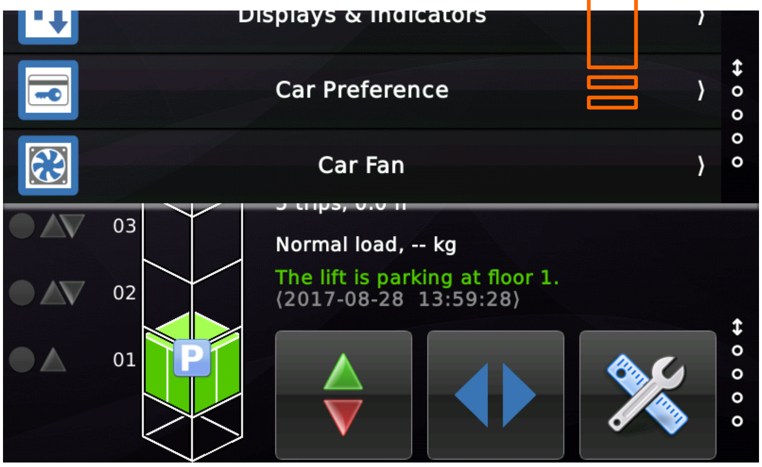


Figure 17: Swiping the menu out of view, without leaving.

12.12 Password Privileges

If browsing through the menus you might find a yellow or red overlay icon on some menu items. These indicate that you will have to enter a 'Service' (yellow) or 'Setup' (red) password in order to alter their value/setting.

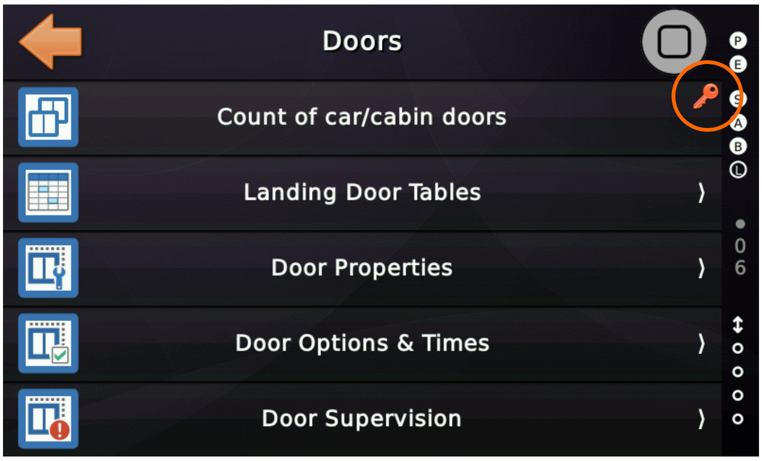
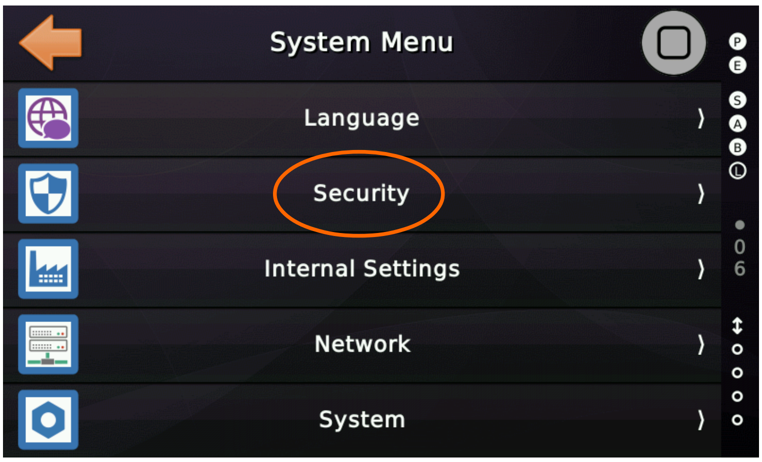


Figure 18: Menu item requiring setup password privilege


Menu item requiring 'Service' password privilege.


Menu item requiring 'Setup' password privilege.

To setup/alter the 'Service' and/or 'Setup' password, select 'Favorites' and go to 'System Menu' → 'Security'.



13 Backup Battery Indication

The NOUS unit contains a backup battery used to keep the on-board real-time clock going, if the unit has been powered down. You can find the battery under the SD card connector.

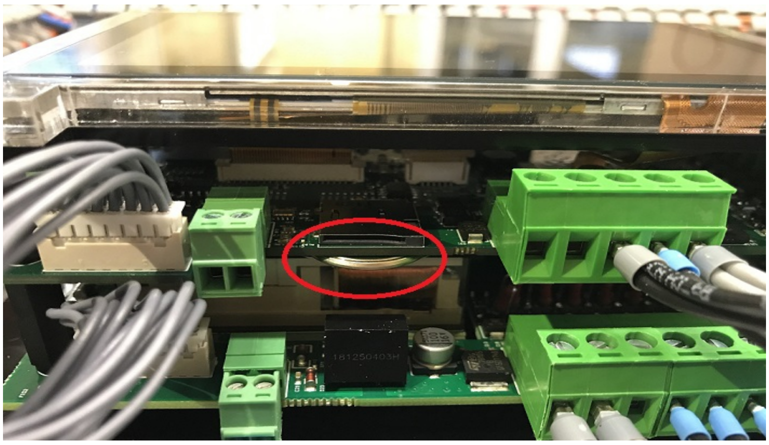
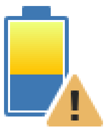


Figure 19: Backup battery for time/date

If the battery runs low on energy, you will be notified with an icon in the right top corner of the desktop.

If the battery is flat, the system will lose the time/date settings if being powered down and all time-stamps for <u>new items</u> in the logbook will be in the past then.

	The battery has reached down under 2.5 V. It shall be replaced on the very next maintenance.
	The battery is flat and has to be replaced immediately. If this symbol appears, the clock will lose its current time/date settings, if the unit is powered down. As a side effect, all time-stamps in the log-book for new items will be back to a date in 2017.

Always power the unit down in order to replace the battery!
Be careful when pulling out and pushing in the battery. You may use a <u>small</u> pliers for pulling it out.

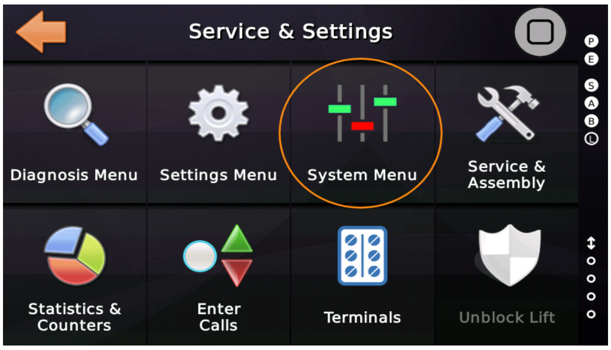
Once you have replaced the battery you have to setup the system time/date new. You will find the time & date settings in the 'System Menu' → 'System' → 'Date & Time'.

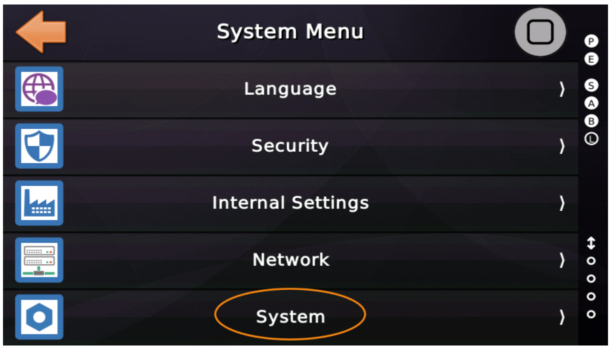
14 Time & Date Settings

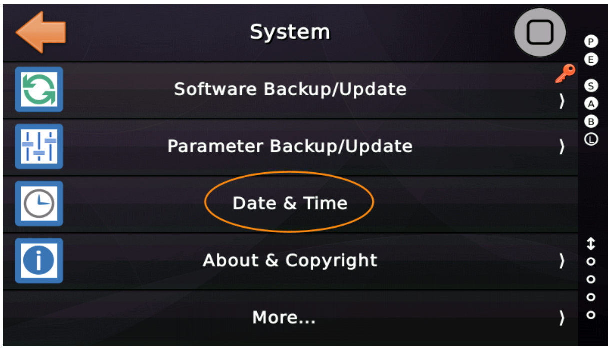
The internal real-time clock ensures that the time & date of the system is always up-to-date. In order to keep the date & time settings, the system has an on-board backup battery. You may have a look at the chapter 'Backup Battery Indication' for more details.

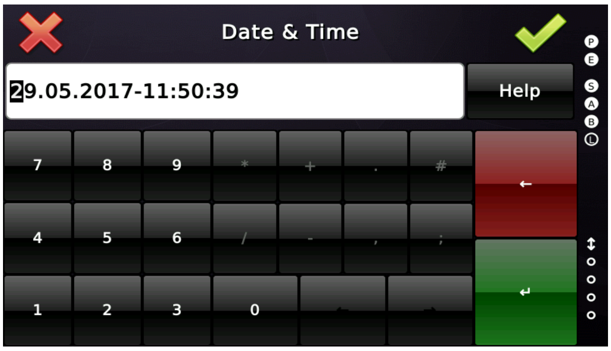
Once the system has been installed and every time the backup battery has been replaced, the system date and time settings have to be setup.

To open the 'Time & Date' settings select 'Favorites' and then go to 'System Menu' → 'System' → 'Date & Time'.









- ▸ The date has to be entered in *day-month-year* style dd.mm.yyyy, e. g. **18.05.2017**.
- ▸ The time has to be entered in *hour-minute-second 24h* style, e. g. **15:42:36**.

After having the date and time settings changed, you will find the new time and date at top of the desktop.

15 Language Settings

Speaking the language of the customers is quite important.

The NOUS lift application allows you to setup not just one of several available languages, but in fact two language at the very same time.

- The primary language is the language that has been chosen to be the active language when the system starts.
- The alternative language is the language that can be switched to, by using the gesture called 'Tap'n'Long Hold'.
- The optional third language is the language, that can be switched to, by using the gesture called 'Tap'n'Long Hold' again a second time. As for most of the regions, two languages are good enough, the third one is optional.

This allows you to switch to your secondary tongue 'on the fly' without leaving the menu or dialogue in which you currently are.

This feature is not only useful for countries having more than one main language, like Belgium or Switzerland, but can also help working with English speaking support teams.

To try it out setup two different languages. Select 'Favorites' and go to 'System Menu' → 'Language'.

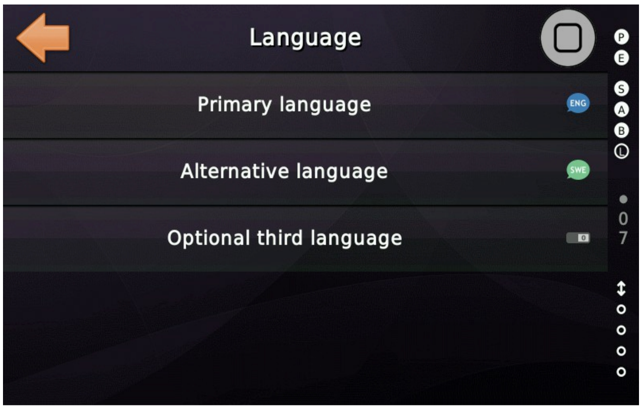


Figure 20: Selecting primary and alternative language

In the given example we can see right on the menu buttons that we have selected 'English' as primary language and 'Swedish' as secondary language.

If you now 'Tap'n'Long Hold' the finger for a while on the screen, a pop-up dialogue will appear telling you (already now in Swedish) that the language has been switch over to the alternative language.

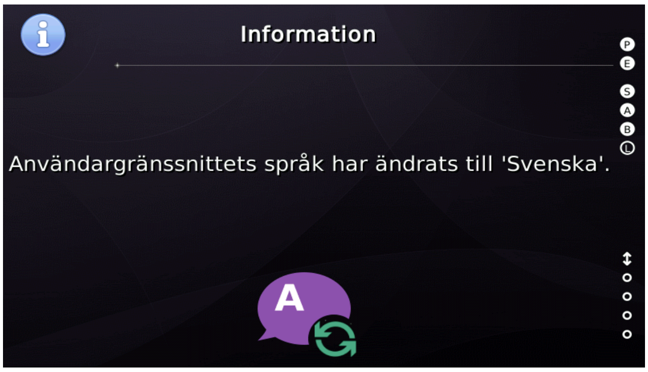


Figure 21: Switch to alternative language

Don't mind if you do not speak Swedish yet. Just redo it again to switch the language back. At the next system startup at the latest, the selected primary language will be active again.

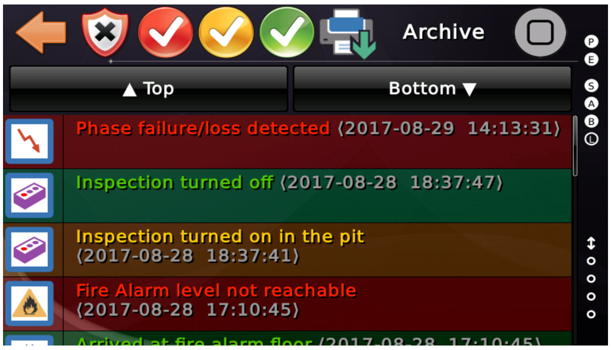
► To switch back to the selected primary language, just 'Tap'n'Long Hold' again.

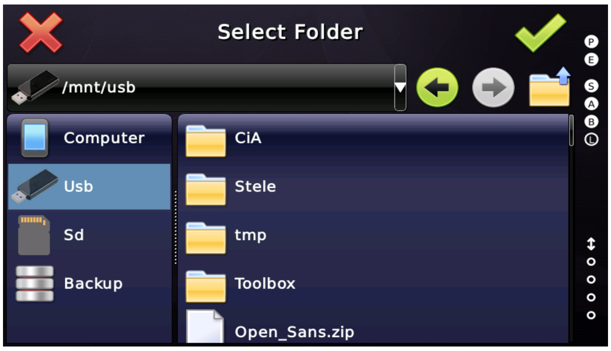
16 USB Mass Storage Support

Using a smart USB mass storage in order to store the content of the Log book (Event Log) or the parameter set as a XML file or as a printout in readable form, is quite a useful function. Making a backup of the running software or doing an update of the running lift application is possible as well.

Currently the USB-mass storage has to be FAT16/32 as exFAT is still being under patent protection by Microsoft®. So in order to use the USB mass storage support you will need a USB stick not larger than 128 GB. If the stick does not work, check the file system on a laptop and format the stick using FAT32 then.

16.1 Storing the 'Logbook' content to USB mass storage





Open the Logbook and simply touch the 'Printer' Icon and edit the file name.

Touching the green check mark symbol will now store the printout to the USB mass storage. You will find the events, the help texts and the counter values included in the printout. The text file is UTF8 (Unicode) encoded and shall therefore be fine for usage on any up-to-date system.

16.2 Storing the parameter set to USB mass storage

You can store the parameter set as machine readable XML file or human readable text printout to a USB mass storage. The XML parameter file can also be used to restore a unit or for copying the parameters to another lift controller.

► Select 'Favorites' and then go to 'System Menu' → 'System' → 'Parameter Backup/Update'.

17 The Logbook & Pending Events

When operating a lift application a lot of events may happen that are worth to be recorded. There are basically three categories:

- Notifications and messages, like '*Car Preference has been activated*'.
- Warnings like '*Keep doors closed operation activated*'.
- Serious fault & errors like '*Safety Chain bridge/bypass detected*'.

► The lift application presents two active lists of events. The '**Pending**' list just shows the currently pending events, while the '**Logbook**' is a kind of history containing recorded events of the past.

The lift application records those events together with a bunch of additional information called the 'Fingerprint'. It contains at least this information:

- Date & Time
- Floor and door mask
- Position, distance to next floor level and the velocity in that moment
- Payload status and optionally in [kg] or [%], if having a CANopen load measuring unit.
- Trip counter and operating hours
- Direction change counter
- Lift operating mode
- The 'Maintenance' mode & 'Keep doors closed' mode
- Landing calls enabled/disabled
- Assembly/Installation Operation Mode
- State of the door safety chain bridging via the SZ-board.
- Safety chain signal state, signaling if the doors have been closed/locked
- Drive/pilot contactor state

The safety chain signals, drive contactor signals and the velocity of the car/cabin are recorded for the last two seconds, making it possible to look back two seconds before the event/fault has actually happened.

17.1 Filtering the Logbook

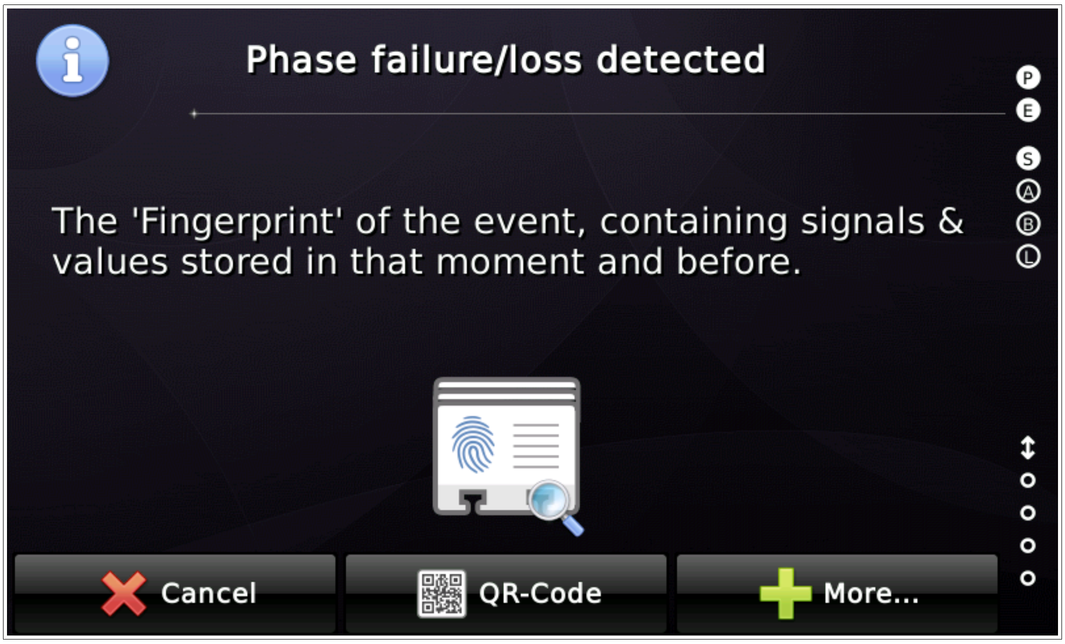
To make it easier to find what you are looking for, you may cross out one or more categories by using the filter on top of the dialogue.

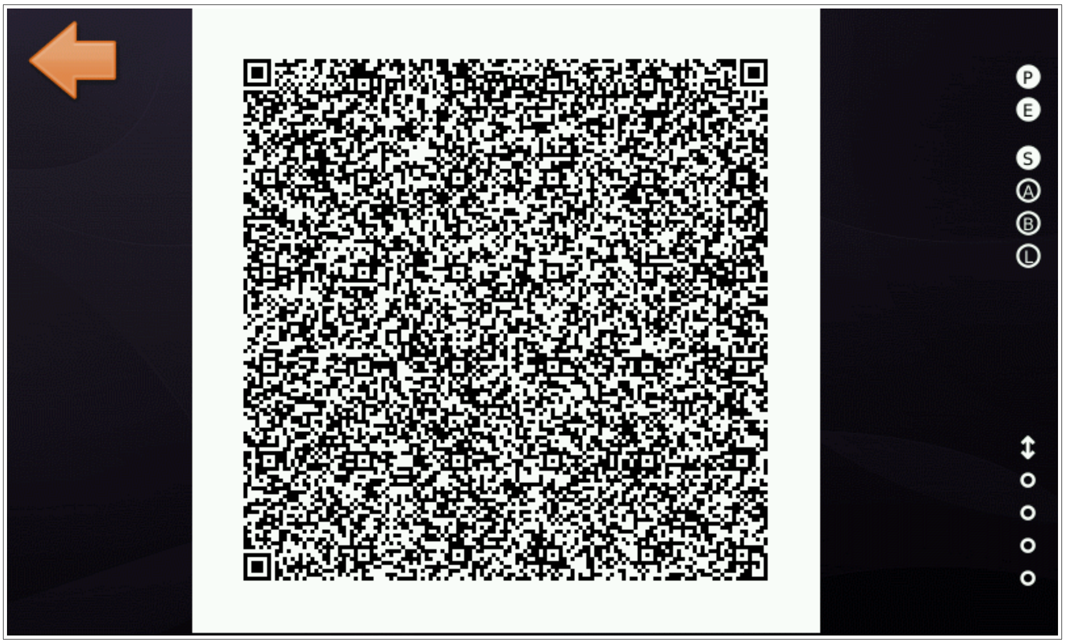
To open the log-book press 'Favorites' and then go to 'Diagnosis Menu' → 'Logbook'.

17.2 QR-Code representing the log book item

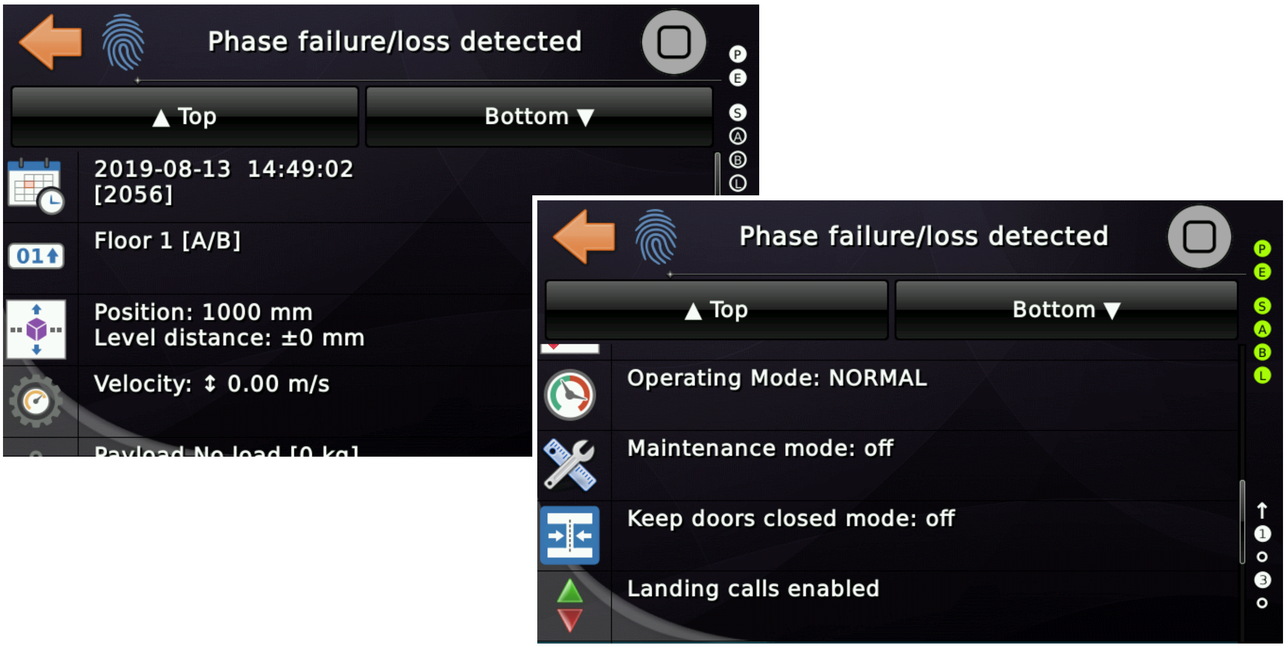
Each log-book item can be shown as a QR-Code including the finger-print stored together with the event itself.

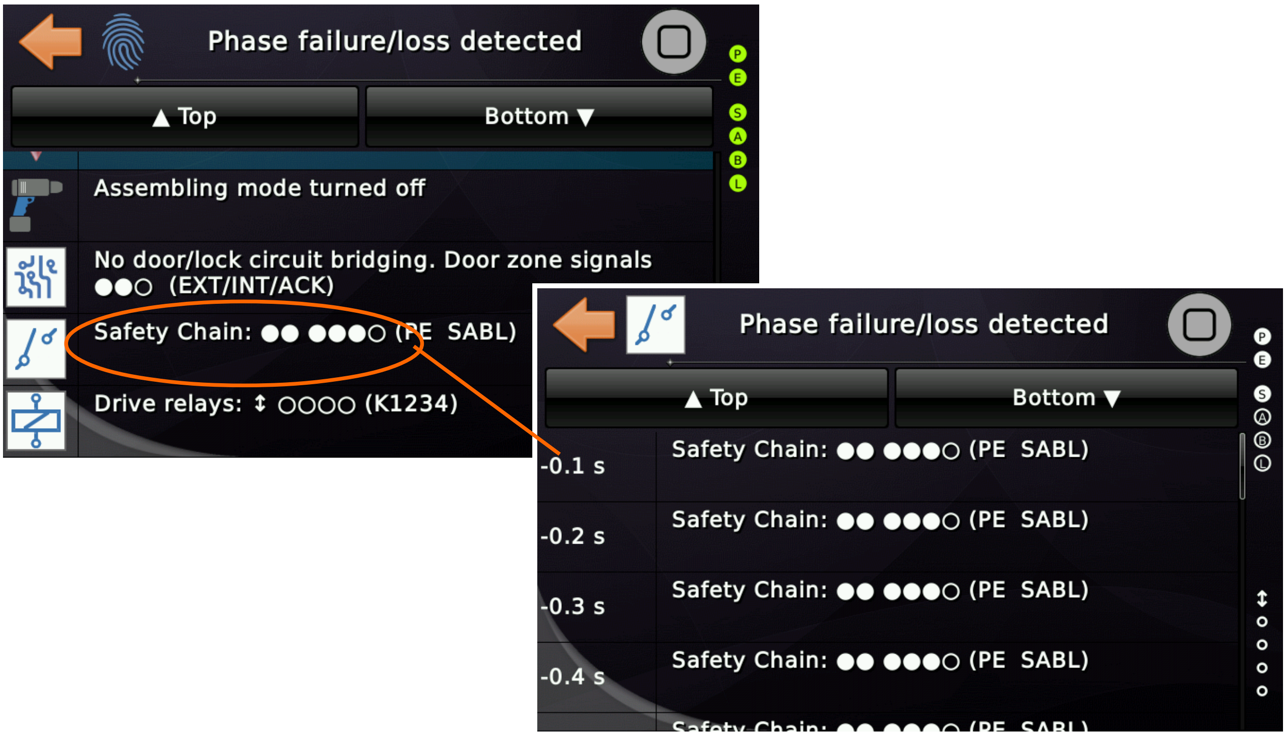
Use a QR-Code App on your smartphone to scan the code and forward the text stored in the QR-code as e-mail to some service technician at your office or headquarter.





17.3 Fingerprint of the the log-book item





17.4 Quantity List of Faults

It can often be useful to see which faults have occurred most frequently. The pie chart shown below shows just that.
You will find it by pressing first 'Home' and then the hardware button 'Favorites' and then go to 'Diagnosis Menu' → 'More...' → 'Quantity List of Faults'.

Figure 22: Pie chart showing the top 5 faults

The pages can be changed by swiping to the right and left so that the top 1..20 events are displayed.

You will have noticed, that some faults can be seen on several pages. This is because they have happened on different floors.

18 Lift Parameter Change Log

The parameter change log is a logging file system, storing all changes that had been made to the lift's parameters over time. It stores the last 200 parameter changes locally on the controller board.

The graphical visualization can be found following 'System Menu' → 'Security' → 'Lift Parameter Change Log'.

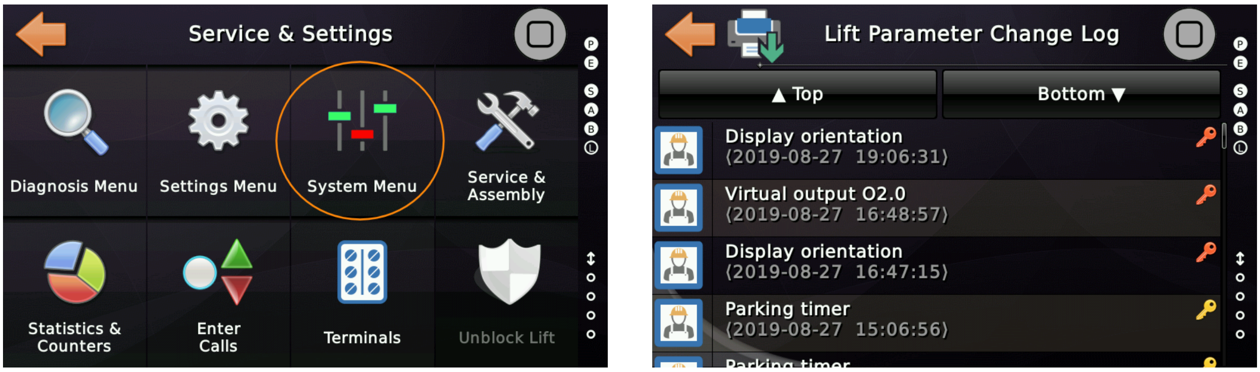


Figure 23: Lift Parameter Change Log found under System Menu → Security

The log file stores:

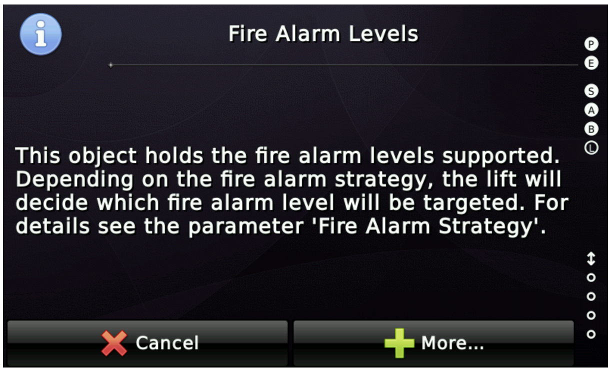
- What parameter had been changed (name/help text).
- At which date/time the parameter had been changed.
- How the parameter had been changed.
  - locally via the user interface
  - via the bus system
  - remotely (if possible) via the cloud solution
- What kind of privilege had been required to change the parameter (setup/service/no) privilege.
- The old and the new value(s) of the parameter, to put the parameter change in a context.

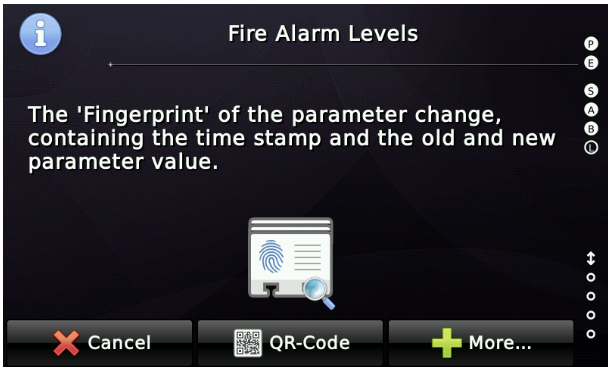
The complete log file can be stored to a mass storage (USB-stick). Single entries can be transferred via QR®-code as well.

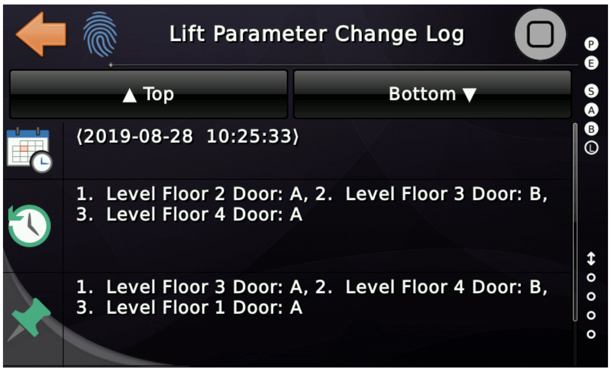
18.1 Examples

In the first given example the fire alarm levels had been changed to a new set of values. The parameter change log will record which levels had been changed. The second example shows the changes being made to the parking timer. The old and new value had been recorded, including the physical unit.

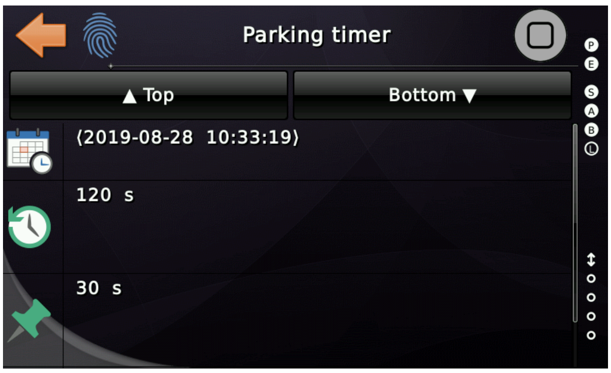
18.1.1 Example 'Fire Alarm Levels'







18.1.2 Example 'Parking Timer'



19 The CANopen Node List

19.1 Abstract

The CANopen node list can be used to change input and output terminals on any node on the bus, that actually supports this methods. You may change the node-id of existing nodes as well. Keep in mind that '*factory new nodes*' often feature the node-id 125 and will not send any input states or react on output messages as long as the node-id has not been setup.

The lift controller maintains two node lists, one for each physical CAN interface (CAN1 & CAN2).

You find the node list under 'Diagnosis Menu' → 'CANopen Node-List'. Then select CAN1 or CAN2.

The first interface connects all local peripheral units, like...

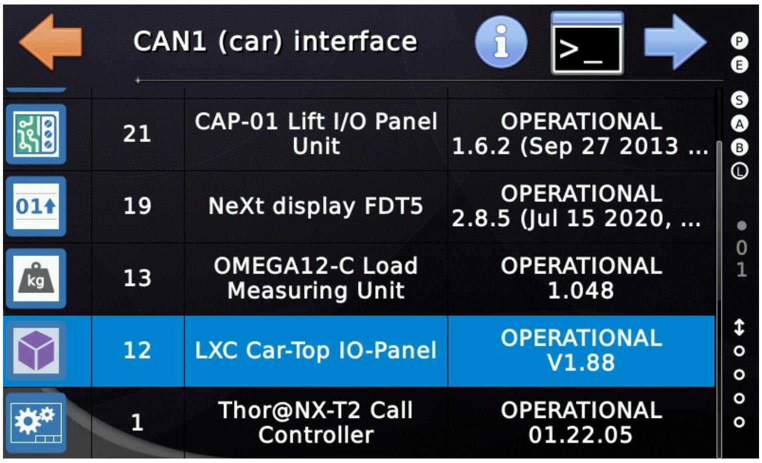
- Door units
- Drive unit
- Position unit / position supervisor unit (SIL3)
- Car-top electronics
- Lift phone (if it is a CANopen unit)
- Car load measuring unit
- Displays and voice announcers

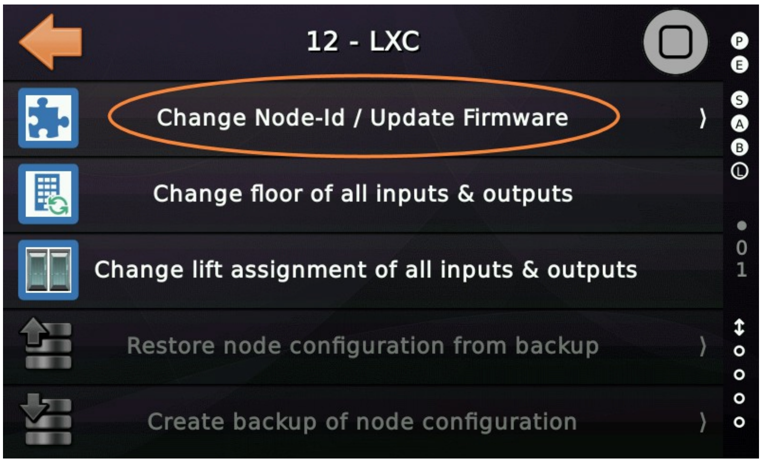
The second interface is connecting all input/output panel units and displays for the landings as well as the other lift controllers, if running in a lift team/group.

Swipe the list up and down and if you found the node you want to change, simply Tap'n'Hold it for a few seconds. Alternatively you may just tap it and then touch the '*Arrow Right*' symbol in the top-right corner. Then, you find a menu providing the functions that can be used on this node. The menu item for changing the node-id can usually be found under 'More...'. Some of the nodes may provide a kind of '*text-based-user-interface*'. You may try to use the '*Console*' icon as well. Typically inverter units or door machines feature that text console function but other units may do as well.

19.2 Changing the Node-id of a LXC (Car Top Electronics)

In order to change the node-id of a LXC, Tap'n'Hold the item in the table. Alternatively, you can just tap the item and use the 'Arrow-Right' icon. In the new menu that will open, select 'More...' and then go to 'Change Node-Id'.





20 Lift Team Operation

If several NOUS lift units have been interconnected via the CAN2 interface to work as a team, landing calls will be processed by the team together. A smart algorithm inside the NOUS units dispatches the pending landing calls dynamically.

To make this work each unit must be configured to be a 'Team Member 1..8'.

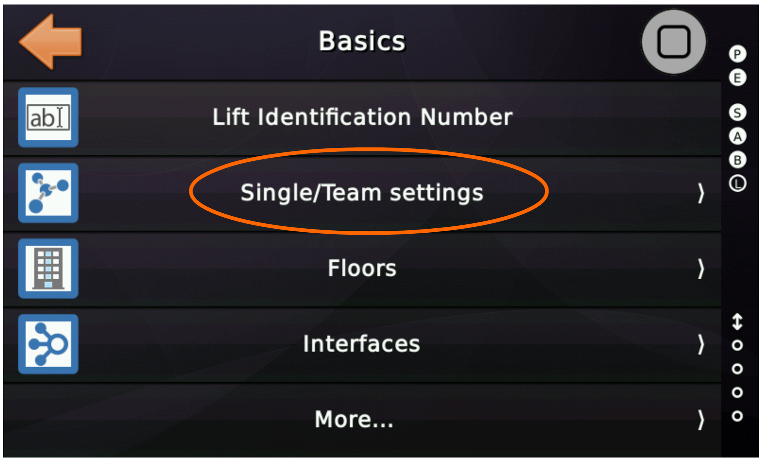


Figure 24: Single/Team Lift Parameter

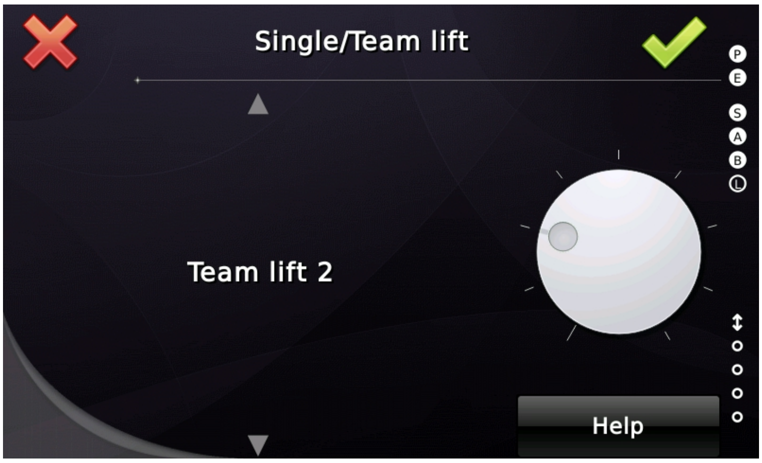


Figure 25: Selecting the Team Member Number

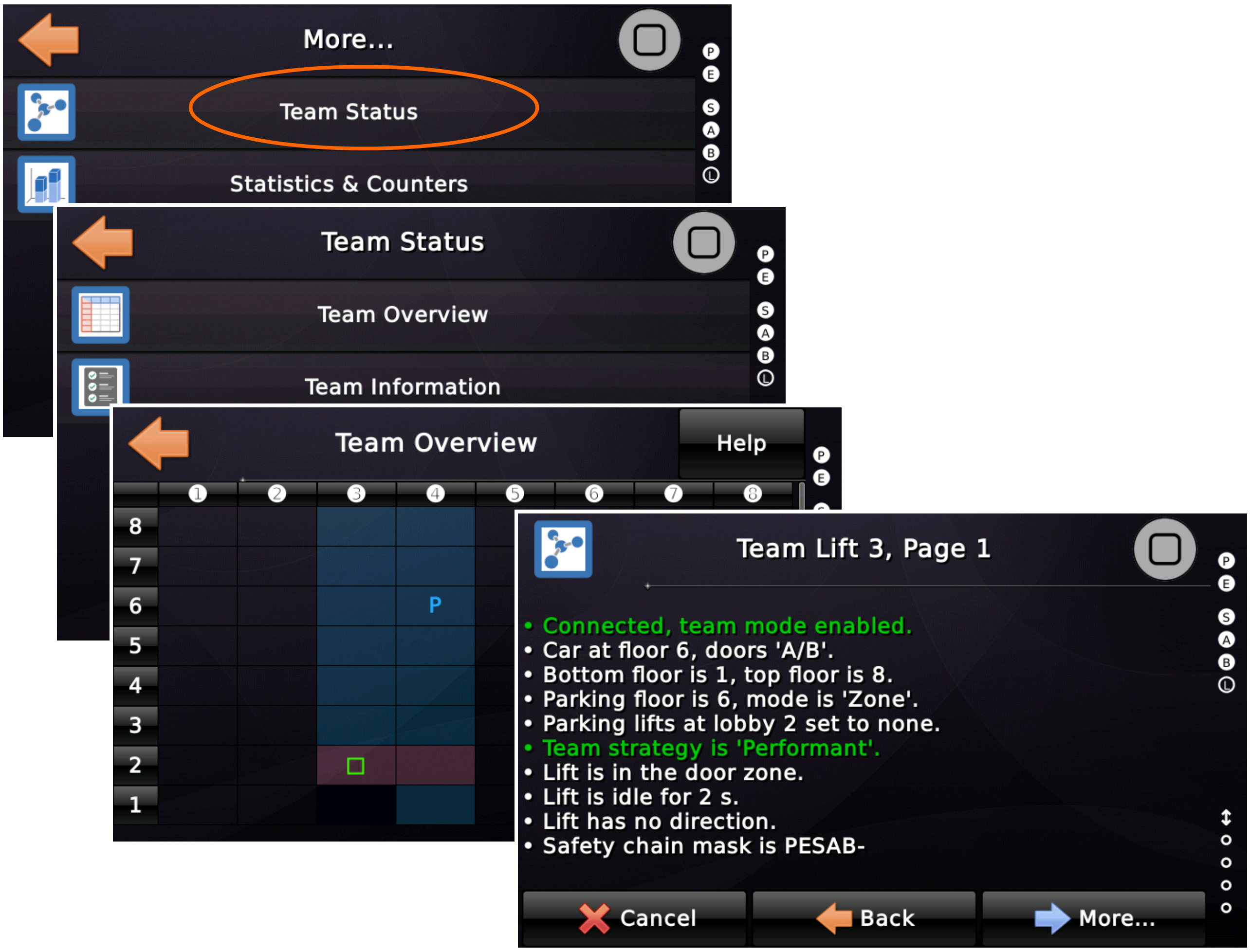
You will find the corresponding parameter by selecting first 'Home' and then the 'Settings Menu' and then go to 'More' → 'Basics' → 'Single/Team lift'.

If several team lifts feature the very same 'Team Number' a node-id conflict on the CAN2 bus will occur, shown as a fault in the 'Logbook' and under 'Pending'.

CAN2: Lifts using the same team-id.

20.1 Team Status

To check the '*Team Status*' press 'Favorites' and then go to 'Diagnosis Menu' → 'More' → 'Team Status'. You will find a graphical overview dialog called '*Team Overview*' and a second dialog, called '*Team Information*', presenting two pages of process data, for each team lift member, about its state, position, velocity, destination and door status.



You may use the buttons '*Back*' and '*More*' or simply swipe the pages horizontally.

On the desktop of each team member, you will have a little symbol on right-top, like [T2] for the second or [T3] for the third team member. The color of this symbol is a hint, indicating if the team operation is working well or if the team member has left the team for any reason, like being on Car Preference or Fire Alarm or simply Out of Order.

20.2 Team Options

You can find the corresponding parameter by selecting 'Home' and then 'Settings Menu' and then go to 'More' → 'Basics' → 'Single/Team lift'.

20.2.1 Lift team operation strategy

This option defines, if the landing call processing in the team, shall put the main focus on energy consumption or performance. It basically defines, the factors used to decide if another lift shall rush into catching calls, like...

- The factor used for the distance (in floors) between the lift and the destination.
- The factor used to define if a lift actually has to start in order to serve the call. This is one of the 'energy efficiency' factors that you want to eliminate, if 'performant' had been chosen.
- The factor used to keep a lift in energy saving level. A lift still awake is normally seen as the 'better choice'. This is one of the 'energy efficiency' factors that you want to eliminate, if 'performant' had been chosen.
- The factor used to keep a lift parking, especially in the lobby. A lift still not parking is normally seen as the 'better choice'.
- The factor factor to make a lift being in the lobby less attractive than a lift else were. This will prevent a lift 'stolen away' from the lobby just because it is some floor nearer than another lift.
- The factor for a lift moving 'away' from the desired destination. For a lift driving away the next possible 'turn-over' point is calculated and voted, using extra voting points for the stopover.
- The factor used for every 'stop-over' that the lift will do estimated do, before reaching the desired destination. The pending call calls are one of the indicator used with this criteria factor.

20.2.2 Time-span to leave the group, when the swing door has been left open

This option define the time span the swing/manual door has to be left open by a passenger, before the lift will leave the group/team. This will ensure that this lift will not block processing of landing calls.

21 Assembly/Installation Operation Mode

Installing a lift is always a responsible task, done by well-trained technicians.

Because not all of the lift's sensor and actuators can be assembled at the very same time, it is necessary for the lift controller to be turned to 'Assembly/Installation Operation'. In that mode the lift will behave differently from it's normal operation:

- Automatic detection of Safety Bridges is turned off.
- The lift can be driven in inspection/emergency rescue operation without the position encoder system being installed.
- As long as there are no 'Assembly/Installation Pre-Limit' switches installed, the lift will limit the maximum velocity to creeping speed.
- The 'Car Movement-Sense' and 'Rotation-Sense' Monitoring are deactivated.

If the lift limits the speed to creeping velocity under 'Assembly/Installation Operation Mode', the 'Assembly/Installation Pre-Limit Switches' have not been installed but are turned on, which is the default setting. You find the related parameters here under 'Service & Assembling' → 'Assembling & Repair'.

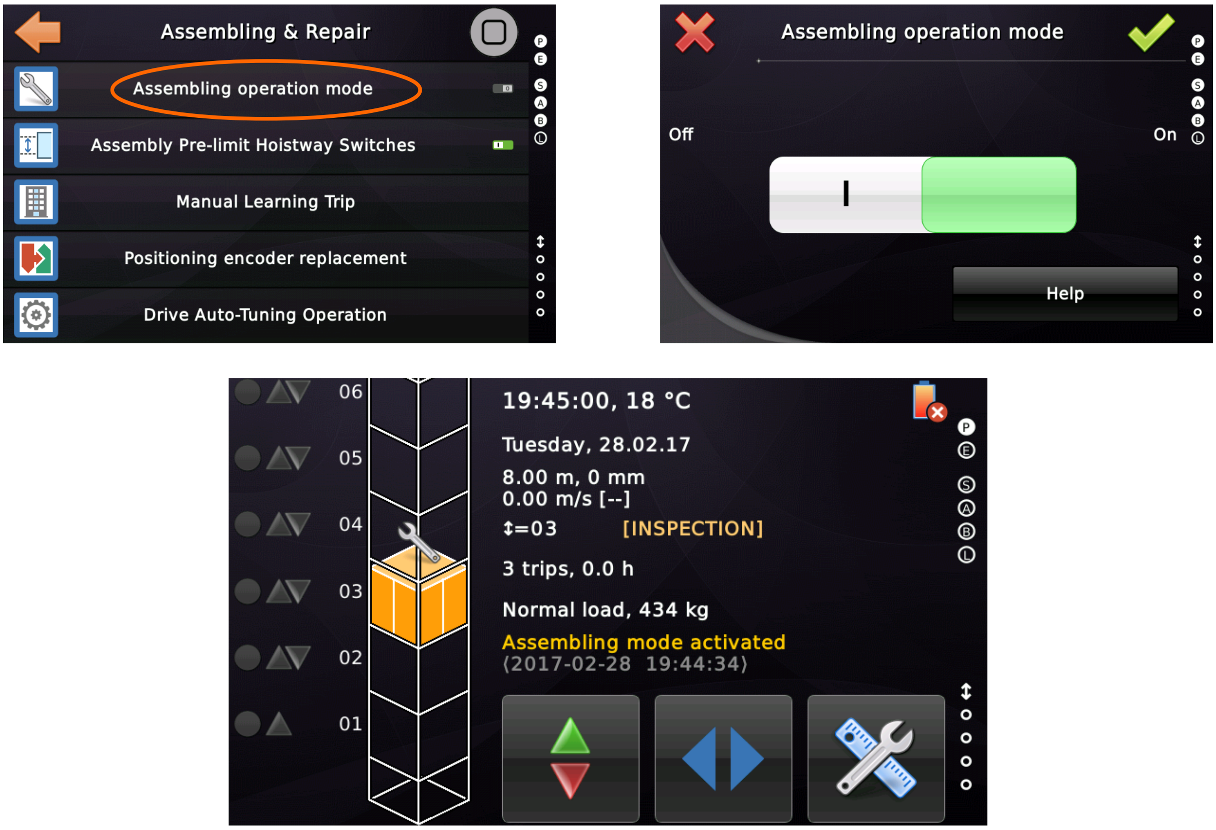


Figure 26: The lift with activated 'Assembling/Installation Operation Mode'

21.1 Preparation

Preparation for the 'Assembling/Installation Mode' depends partly on the kind of lift installation and used materials. Here a some generic points:

- If running a CANopen drive, check that the drive system is communicating to the CAN1 bus interface. Simply check if the drive CAN status/error LED is green. It should stop blinking green and start being continuously green, when the lift controller has initialized the drive. If the status LED is still red or red blinking, check cabling and bus termination.

- If everything is OK, the drive should show up in the CANopen node list. You find the CANopen node list under 'Diagnosis Menu' → 'CANopen Node-List'.

- Ensure that your Emergency Stop button at your Inspection/Assembly Control Panel does really work! Check that the direction buttons does interrupt the safety chain as well, if being released. Double check it! <u>Your security may depend on this</u>.

- Install 'Pre-Limit Switches' for the time of installation as long as the position encoder system has not been installed, to limit the driveway up/down.

- As long as you have only a platform rather than a car/cabin to drive, ensure that the counter-weight is not to heavy and will not pull the platform upwards, because of the cables slipping over the traction sheave.

► The drive system shall be 'operational' in order to proceed with the 'Assembly/Installation Operation Mode' operation.

► Because of the encoder and car-top electronics not being installed in 'Assembly/Installation Operation Mode', you may terminate the CAN1 communication bus with a 120 Ohm resistor on the CAN-High and CAN-Low terminals in the cabinet where normally the travel cable would be connected.

21.2 Trouble Shooting

21.2.1 The drive does not start

If the lift controller does not mention any communication issue with the drive, check the drive's own display for more details. If you have a CANopen drive, you may have a look at the drive's display indirectly via the 'CANopen Console' from the lift controller's display. You find that under 'Diagnosis Menu' → 'Drive Unit Display'.

► Depending on the drive system you use, there may be more steps to do, if you want to run the drive without motor-encoder. Refer to the drive's manual for that purpose.

21.2.2 The car or platform does only move with creeping velocity

If the lift limits the speed to creeping velocity [V0] under 'Assembly/Installation Operation Mode', the 'Assembly/Installation Pre-Limit Switches' have not been installed and wired but are turned on, which is the default setting. You find the related parameters here 'Service & Assembly' → 'Assembly & Repair'.

22 Learning Trip via a simple/normal Position Encoder

One of the most vital parts of a lift installation is the positioning encoder system, which provide directly or indirectly:

- Car/cabin position in raw increments rather than millimeters. [directly]
- Car/cabin position in millimeters. [indirectly]
- Velocity of the car/cabin moving. [indirectly]
- Acceleration of the car/cabin moving. [indirectly]

Because the position in millimeters is calculated from the encoder value in raw increments, it is important that the lift controller works with the right conversion values. For rotary encoder systems, the pulley circumference is the key parameter.

After the positioning encoder system has been installed and now operates properly, the learning trip operation may be started. The car/cabin needs to be ready assembled, including a proper working door machine and a correct installed door sill. Then you may proceed with the next step.

In order to prepare the lift for normal passenger operation, the correct floor level positions have to be taught. These values are vital because all other distances, like...

- Door zone
- Re-leveling zone
- Braking distances (Deceleration)
- Minimum travel distances for velocity selection

... are depending on the correct level positions. So make sure that the floor level position values are really 'spot-on'.

It is a common mistake to modify the floor level positions directly, if the lift does not approach flush on level. It is better to check first whether the lift is overrunning or stopping too early, because the deceleration distances do not fit. Only when the lift actually stops at the taught position, the floor positions shall be adjusted, so that they match the door sill.

22.1 Preparation

Check that the CANopen position encoder system is communicating to the CAN1 bus interface. Simply check if the encoder status/error LED is green. It should stop blinking green and start being continuously green, when the lift controller has initialized the encoder. If the status LED is still red or red blinking, check cabling and bus termination.

If the encoder's LED is not green, then...

- Check that CAN-High (white) and CAN-Low (blue) are not distorted.
- Turn off the controller cabinet and measure the resistance of the CAN-bus between the CAN-High (white) and CAN-Low (blue) lines. The bus should be terminated on both ends with 120 Ohms, the resulting resistance shall be about 60 Ohms. Bare in mind that often the position encoders are already terminated, assuming that they are on the one end of the bus line.

If everything is mint, the encoder should show up in the CANopen node list, like in this example. You find the node list under 'Diagnosis Menu' → 'CANopen Node-List'.

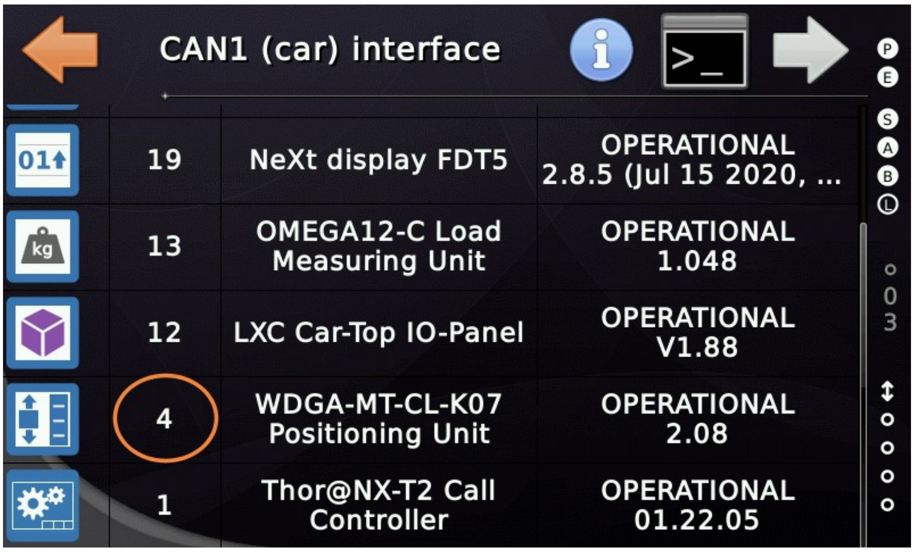
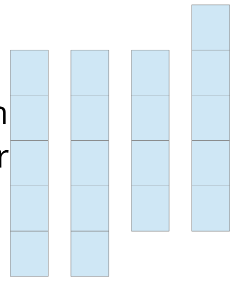


Figure 27: Example of a node-list @ CAN1

The encoder system shall be 'operational' in order to proceed with the learning trip operation.

22.2 Bottom/Top Floor Parameter



Just to ensure that these parameter have been setup properly when the cabinet was produced/manufactured, have a quick look under 'Settings' → 'More...' → 'Basics' → 'Floors'.

Check the values for the bottom and top floor. The value for 'Bottom Floor' is quite often just one, but in a lift team, it may vary if the team lifts have different floors they (or their hoistway) start from.

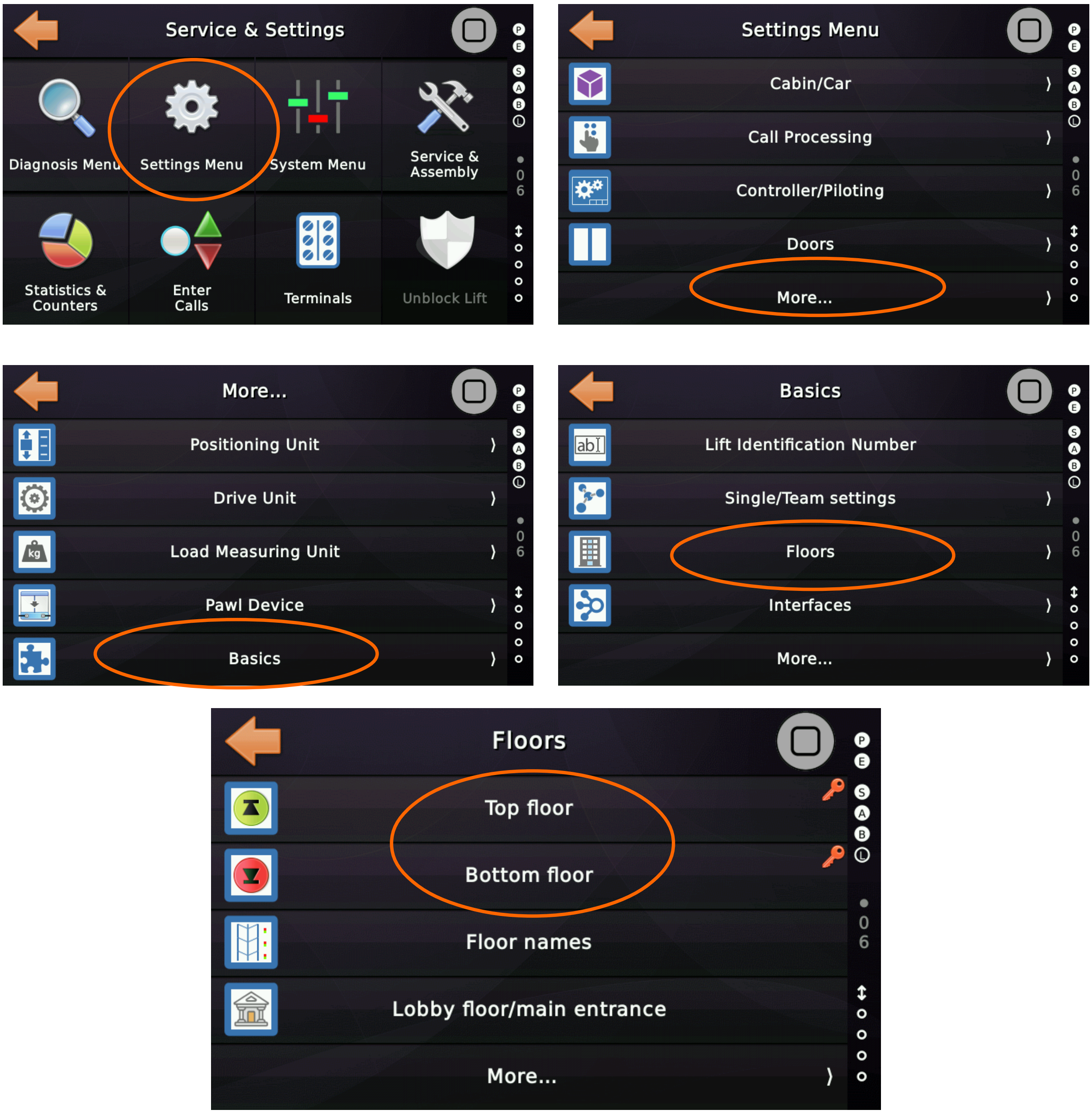


Figure 28: Top/Bottom Floor Level Settings

22.3 Teaching the Floor Levels manually

The '*Manual Learning Trip Operation*' can only be activated, if the lift has been turned to Inspection/Emergency Rescue operation first.

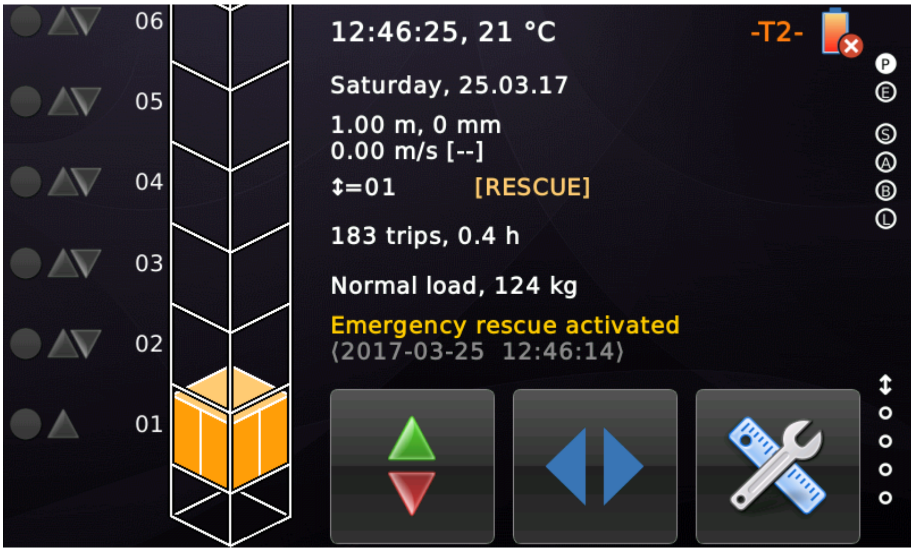


Figure 29: Lift being on inspection/emergency rescue operation.

The manual learning trip assistant can be found under 'Assembly & Service' → 'Assembly & Repair' → 'Learning Trip' → 'Manual Learning Trip'.

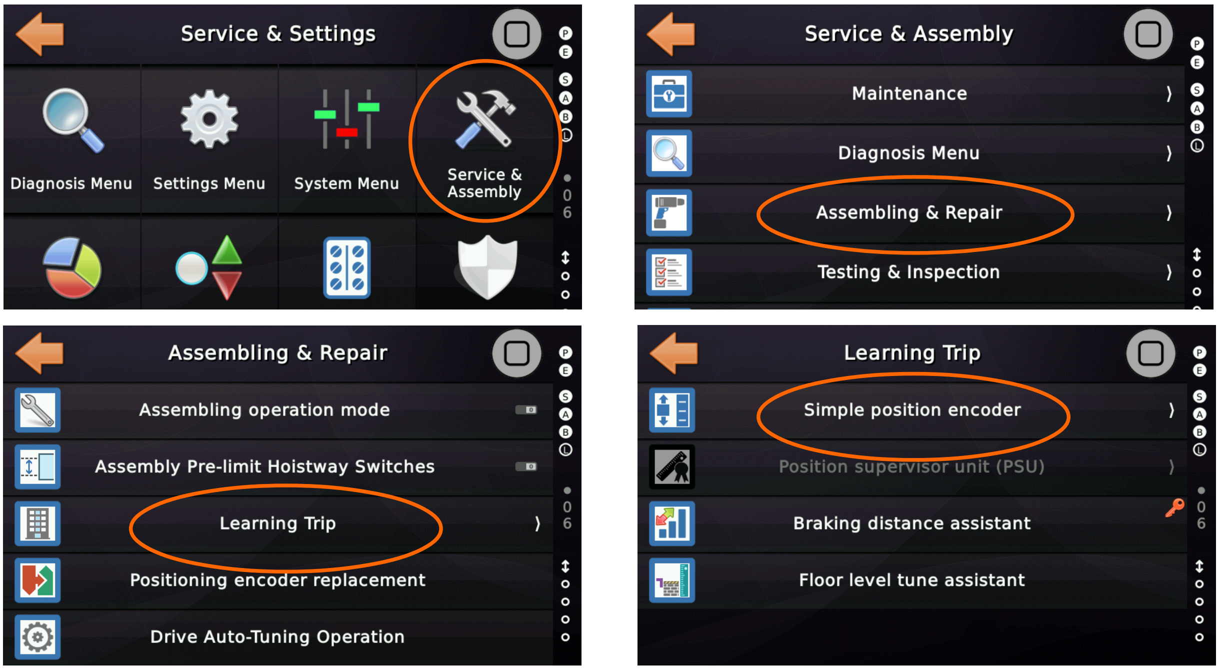


Figure 30: Manual Learning Trip Assistant

► Activating the Learning Trip operation will overwrite the existing floor level positions.

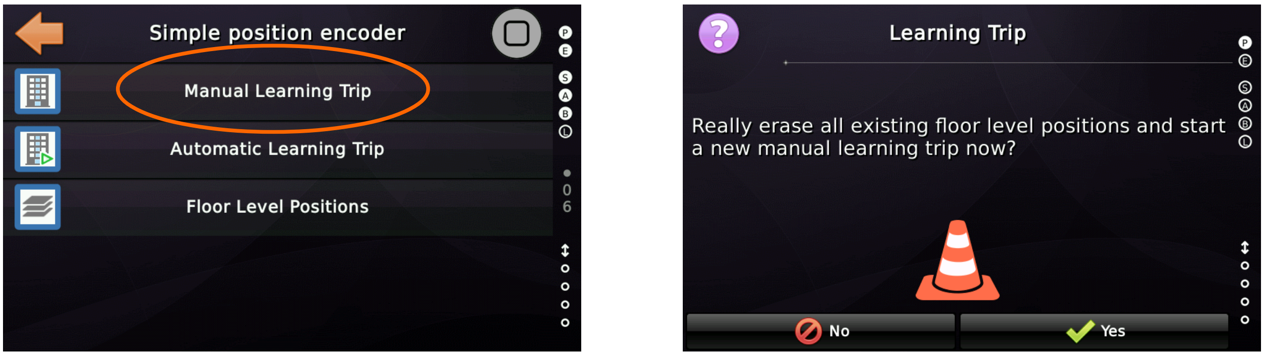
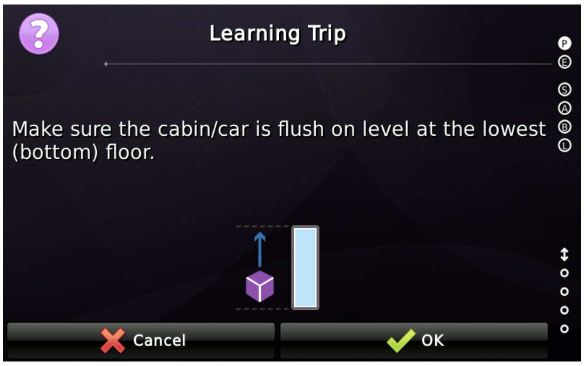
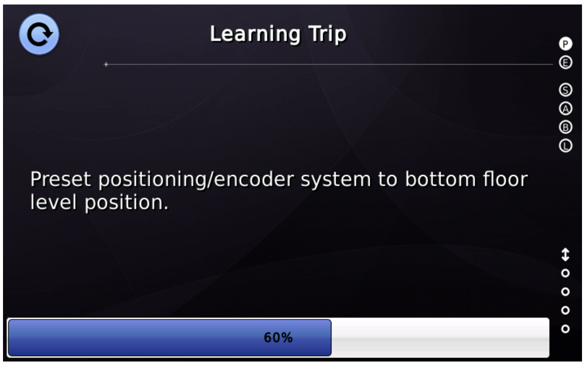


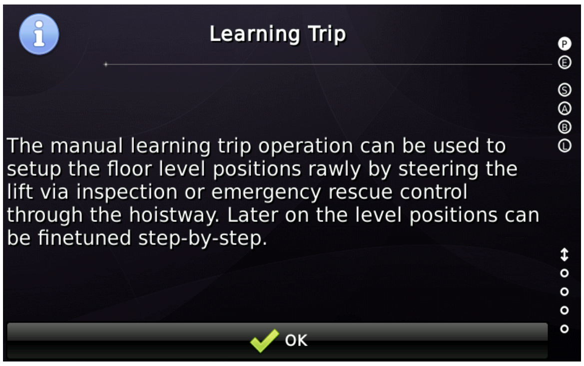
Figure 31: Erasing all existing floor levels

► To make it as easy as possible, level the cabin flush on the very first floor, before starting. If proceeding, the assistant will 'preset' the encoder to 1000 mm (1 m) as the first floor level, which is then the base position for every other floor on top of it.





► If 'Presetting of the Encoder' has worked well, the positioning encoder should signal that the car is now flush on '1.000 m'. If this is correct, go ahead by tapping on the 'Save' button.



Move the car now by operating the lift via the Inspection/Emergency Rescue control panel up and down to the next floor level. If you have a second person to support you, it might be easier. Otherwise you can monitor the state of the door zone magnet switch.

► It is not important that the floor level values are exact in that stage, because they can be easily adjusted after the 'Learning Trip' has been finished. You will find the taught values in the floor level table, that can be found under 'Settings' → 'More...' → 'Positioning Unit' → 'Floor Level Positions'.

► So later on - after the floor levels have been taught - a test drive and a simple ruler to measure the level distance, is all you need to make the cabin going flush to level. But before you actually change the values, just check if the lift really stops at the taught positions, even if they are not correct, to ensure that the deceleration distances are sufficient to stop the car correctly.

If you have reached the next floor level, store (teach) the position by either tapping the 'Save' button on the lift controller's display or (as an alternative) pressing the corresponding 'Car call button' in the car/cabin of the lift. The car call lamps of floors that have already been taught are kept turned on.

Using the car call buttons to store the floor levels means, that you may use a temporary inspection/control panel long enough to be with you in the car, to do your learning trip. If you have saved a floor level position, the floor number will automatically be adjusted.

► If you have (for any reason) to undo an already taught position, just tap the 'Undo' button or simply swipe the floor number back.

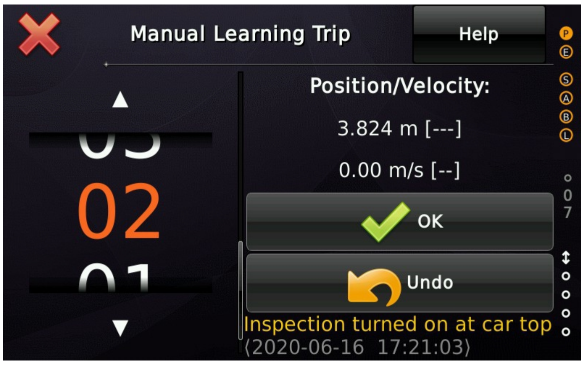


Figure 32: Learning Trip Assistant Main Screen

► Proceed with every floor until you have finished the top-floor of your lift.

22.4 Teaching the Floor Levels automatically

In addition to the manual learning trip operation, the lift controller offers an automatic learning trip as well, in which the carefully installed zone magnets are used to determine the floor level position. The floor level positions taught in this way can then be adjusted using the Floor Level Tune Assistant or directly via the position table.

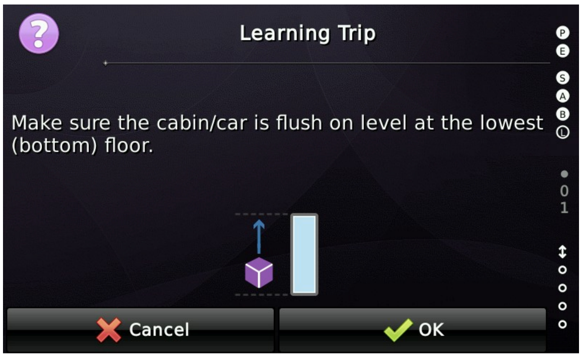
The '*Automatic Learning Trip Operation*' can only be activated, if the Inspection and Emergency Rescue operation has been turned off.

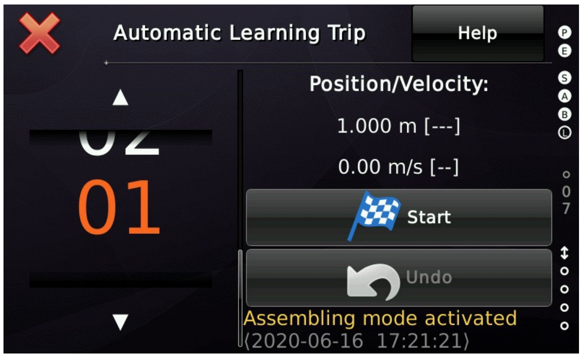
The learning trip assistant can be found under '*Assembly & Service*' → '*Assembly & Repair*' → '*Learning Trip*' → '*Simple position encoder*' → '*Automatic Learning Trip*'.

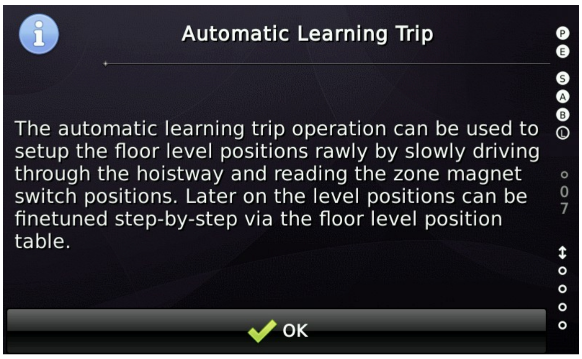
► Activating the Learning Trip operation will overwrite the existing floor level positions. To make it as easy as possible, level the car flush on the bottom floor, before starting.

Check the door zone solenoid switch to be turned on (closed), before proceeding. You can easily measure this on the NOUS lift controller units itself on terminal X29.1.

If proceeding, the assistant will 'preset' the encoder to 1000 mm (1 m) as the first floor level, which is then the base position for every other floor on top of it.







22.5 Assembling/Installation Mode automatically off

The 'Learning Trip Operation' will automatically turn off the 'Assembling/Installation Operation Mode', if it has been finished successfully.

That means that all deactivated supervision and monitoring functions will be activated then. This includes the 'Safety Chain Bridge' detection.

A common result of this is, that after the learning trip, the lift will getting blocked, because of some Safety Chain bridges being still connected. This is not a fault but a safety feature, ensuring that the lift will not operate normally, if still having some 'forgotten' Safety Chain Bridges' connected.

23 Learning Trip using a Position Supervisor Unit (SIL3)

The PSU is a safe encoder system and monitors the movement of the lift cabin. This enables the PSU to replace physical limit switches and the speed-governor, their functionality is now provided virtually by the PSU.

Being a safety-related unit, each PSU manufacturer implements its own certified setup procedure. This results in a variety of learning trip procedures.

Before starting with the PSU learning trip, make sure to pass the steps described in the chapters 22.1 and 22.2 .

Check under 'Settings' → 'More...' → 'Positioning Unit' → 'Type of Positioning Unit' → 'Encoder Type' if the chosen option is matching the used PSU.

23.1 Preparation

To switch from the usage of a regular encoder to a PSU, perform the following steps.

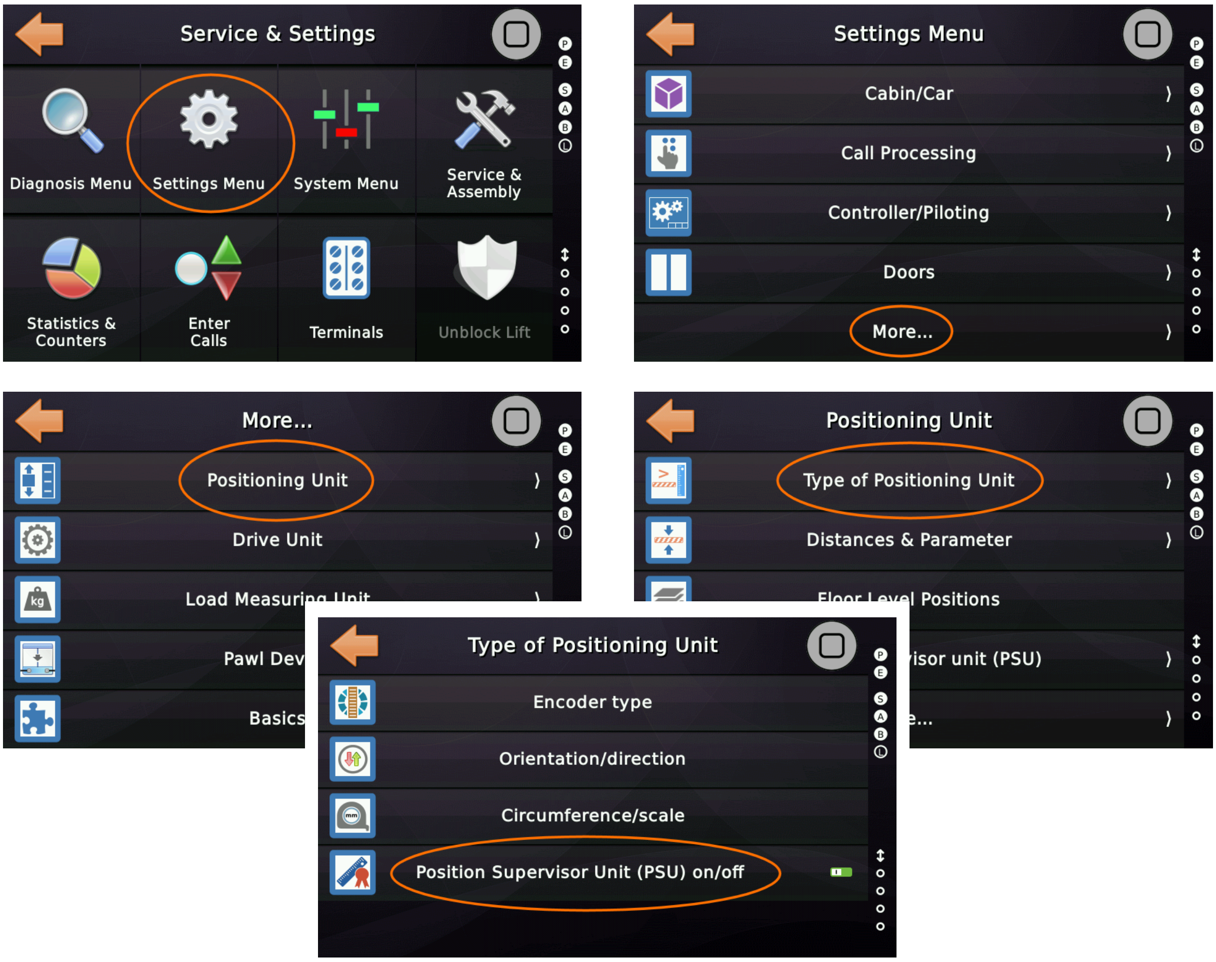


Figure 33: Turning PSU usage On/Off

The following step depends on whether you have the PSU in charge of bridging the doors, commonly used for advanced door opening or re-leveling. If the PSU shall be featured for these functions, turn the following option on. If you are using NOUS on-board SMZ, this option shall be turned off instead.

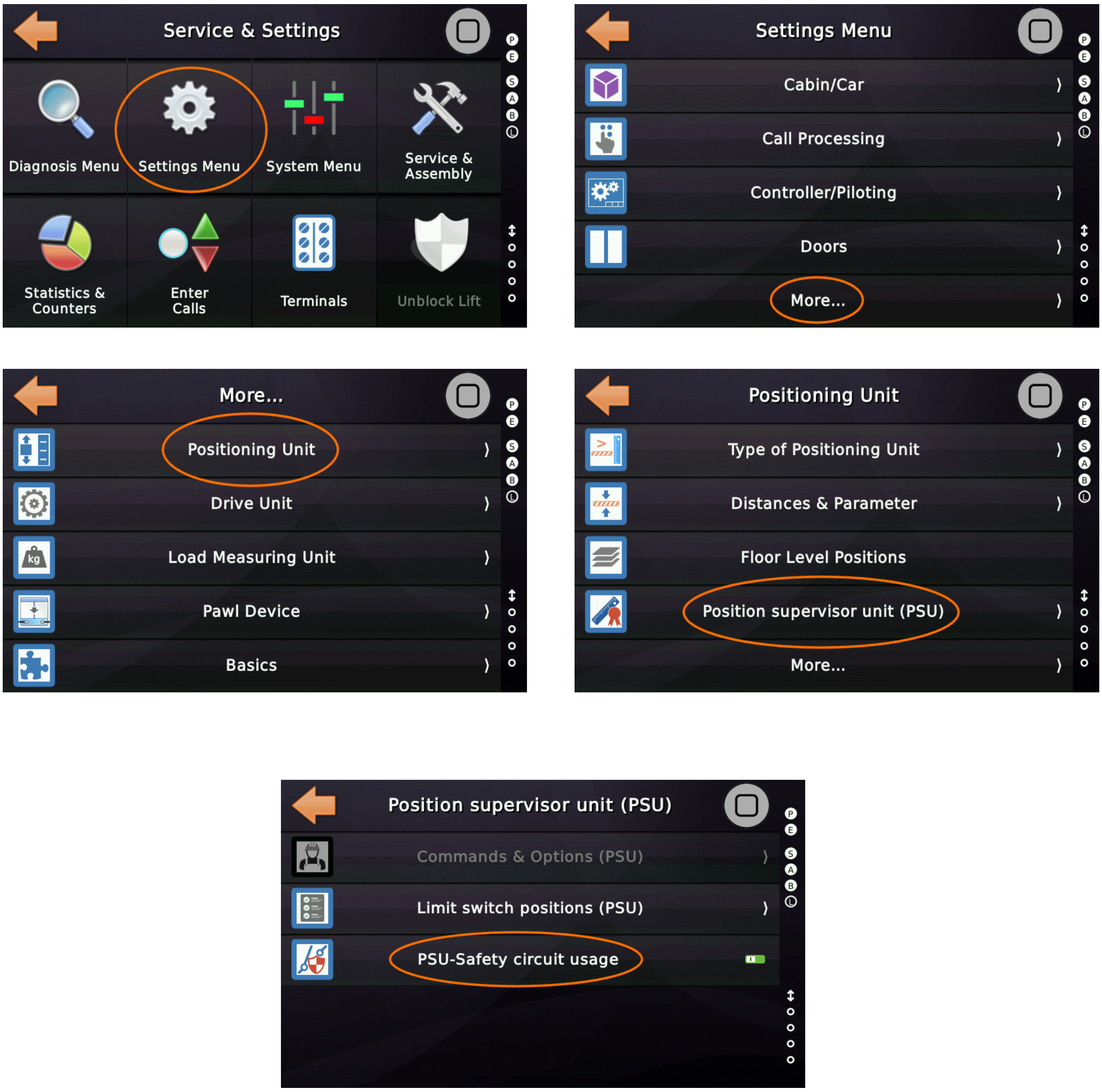


Figure 34: Turning PSU Safety circuit usage On/Off

Before starting any learning trip, make sure to turn the 'Assembly/Installation Mode' on. This option can be found under 'Service & Assembly' → 'Assembling & Repair' → 'Assembling/Installation Operation Mode'.

23.2 Learning Trip using a SAFE ANTS Encoder (SIL3/PSU)

The commands required for setting up the ANTS-PSU can be found in the following menu branch.

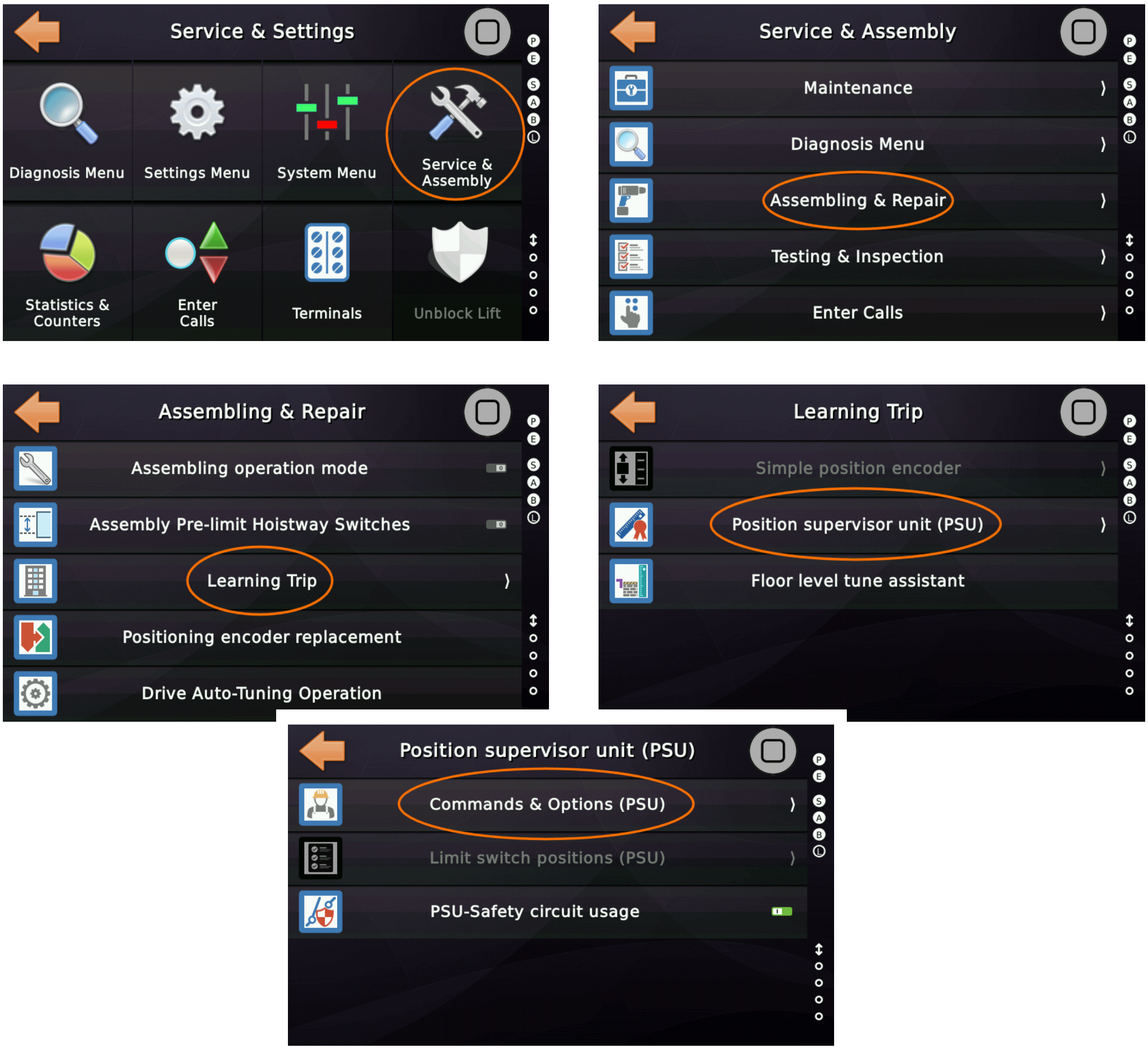
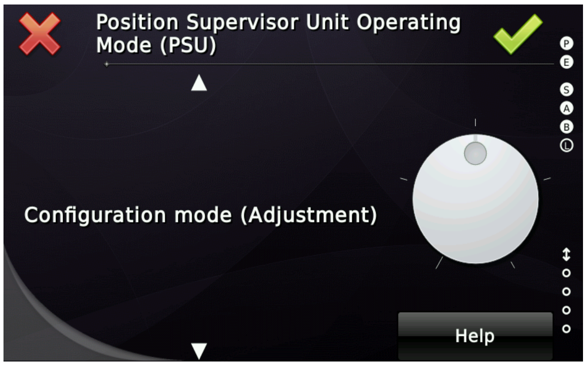


Figure 35: PSU Commands and Options

To start the Learning Trip with the ANTS-PSU, the PSU has to be switched into the 'Configuration Mode' via the user interface.

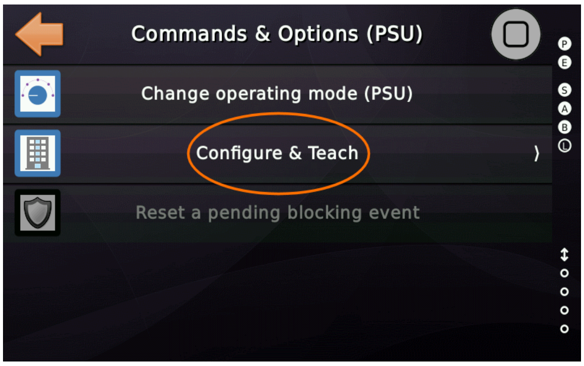
If you want to reset all position data in the ANTS-PSU, for example if the unit has been in use before, put the unit into 'Pre-Commissioning Mode' instead. After clearing all stored data, the unit enters 'Configuration Mode' automatically.

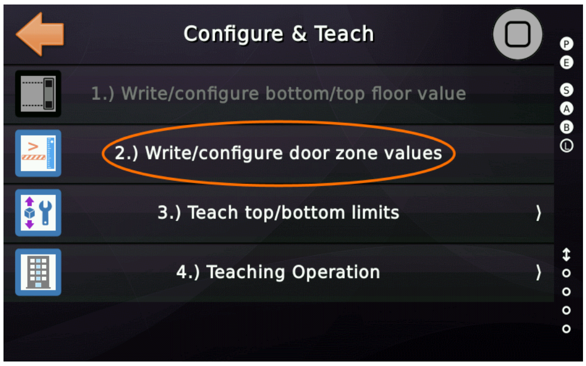


Now that the unit has entered 'Configuration Mode', the PSU can be set up by entering the 'Configure & Teach' menu.

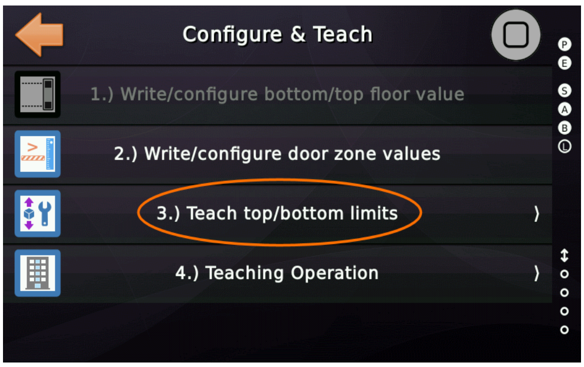
The first menu point is grayed since the Variotech/Kübler ANTS-PSU does not rely on setting up top/bottom floor. Thus the ANTS-PSU configuration starts with the second item. The door zone values that have been set up in the NOUS are written to the unit.

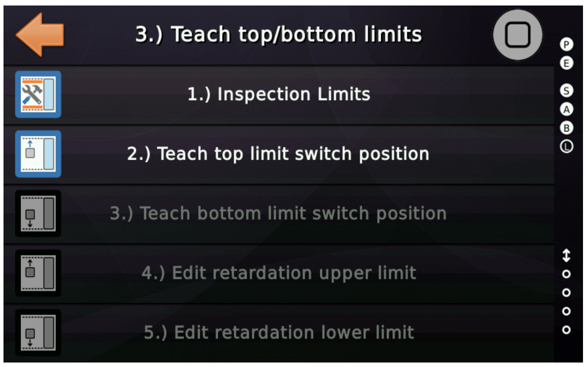
The door zone values are found in 'Settings' → 'More...' → 'Positioning Unit' → 'Distances & Parameter' → 'More...' → 'Door zone below' / 'Door zone above'.





Following up, the limit switches will be taught in. When selecting menu item 3, the branch with the limit switch teaching process is opened. The sequence is fixed, so that only currently valid menu items can be selected, all others are grayed.





The ANTS-PSU uses fixed inspection limit offsets of 1200mm relative to the limit switch position. You can select which inspection limits actually do exist:

- No inspection limits
- Only inspection limit top
- Only inspection limit bottom
- Inspection limits top and bottom
- No inspection limits, but inspection is connected to ANTS-PSU unit.

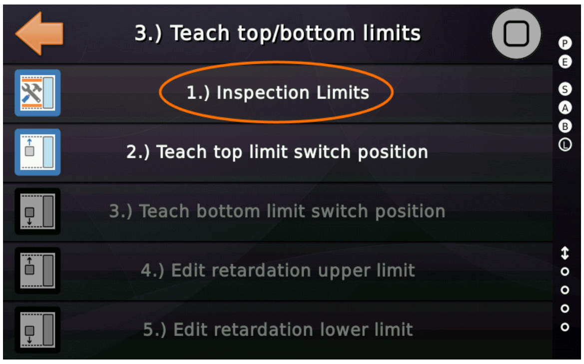


Figure 36: Teaching the inspection limits

By default, no inspection limits are set. If this is the case, the parameter does not have to be changed additionally, instead you can continue directly with the learning of the upper limit switch.

In the next step of the limit switch teaching process, the current position is stored as the upper limit switch position. Before you select the corresponding menu item, make sure that you have moved the car to the position of the upper limit switch with the emergency rescue control. After pressing the button, the upper limit switch position is stored non-volatile.

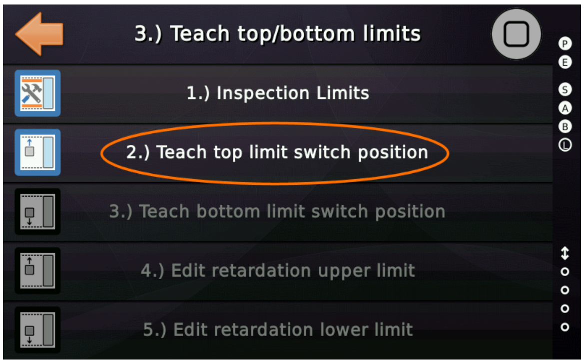


Figure 37: Teaching the top limit

The upper limit switch is followed by teaching of the lower limit switch. For this, the lift is moved to the position of the lower limit switch, using the emergency rescue control again. By pressing the button, the current position is stored as the lower limit switch.

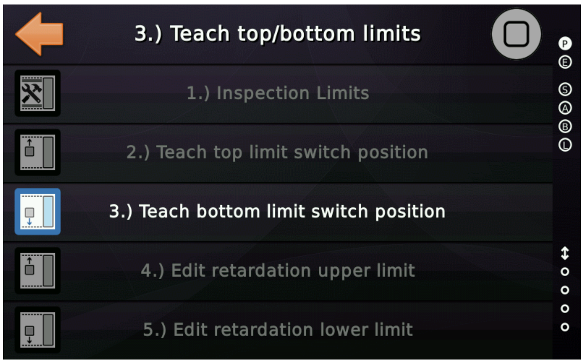
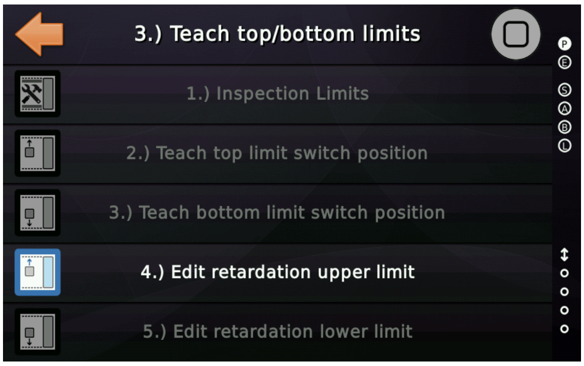
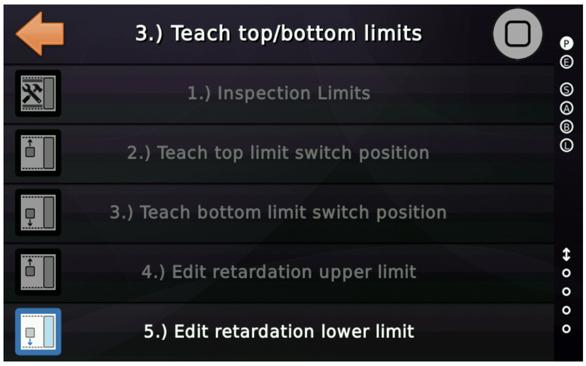


Figure 38: Teaching the bottom limit

After having defined the upper and lower limit switches, the retardation switches are defined. These are defined as an offset to the previously defined limit switches. The entered value indicates the distance of a retardation switch from the respective limit switch in the direction of the hoistway center.





As soon as the limit switches and retardation positions have been taught, the learning trip can be started. To do so, change to the corresponding menu and select the learning trip. The current floor level positions are deleted. Before starting the learning trip, the car must be moved flush to the lowest floor using the emergency rescue/inspection control. This is the starting point for the learning trip. Afterwards, the assistant is opened for the manual learning trip operation.

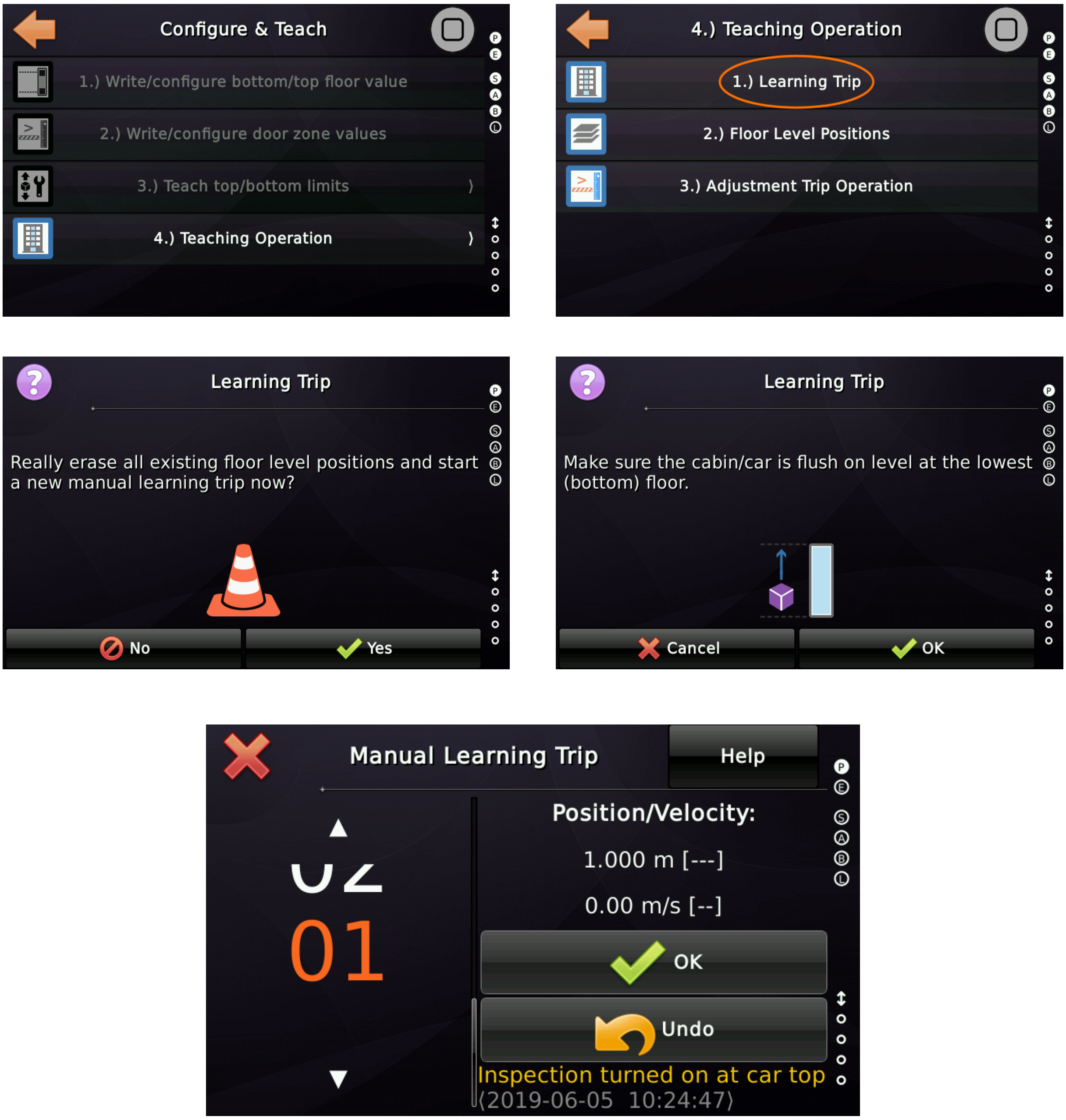
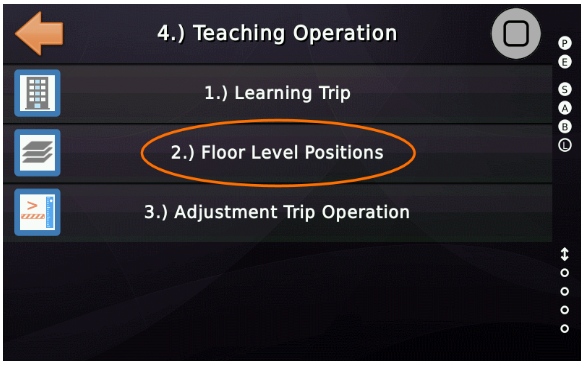


Figure 39: Manual Learning Trip Assistant

Using the emergency rescue/inspection control, all floors, starting with the lowest one, can now be taught using the 'Save' button.

As soon as all floors have been taught, the assistant closes and you return to the learning/adjustment trip menu. If not all floor level positions could be reached accurately, they can be adjusted under item 2.



After the learning trip has been finished, it is now possible to drive the lift using nominal velocity. Before continuing with the 'Adjustment Trip' in the next step, the floor level positions, braking distances, drive parameters, etc. can be optimized until the lift stops flush on every floor.

The reason for this is that the position encoder ANTS-PSU only stores the floor level positions during the 'Adjustment Trip'. During the 'Learning Trip', the floor level positions are stored in the lift controller only. Once the floor positions have been stored in the position encoder, they can not be changed again. For this reason, the 'Adjustment Trip' shall only be performed, when the lift is running perfectly.

As soon as the lift system has been adjusted optimally, the adjustment trip can be started, used to teach the floor levels to the PSU unit. Each floor has to be approached twice. To put it into a nutshell, the adjustment trip is divided into two rounds – it's done two times.

In the first round the floors are indicated to PSU. In the second round they are approached again and re-viewed after every stop. This is used by the PSU to verify the floor level positions once again.

Teaching the floor levels to the PSU encoder unit can be done in two different ways:

- automatically, which is the preferred way
- manually, if for any reason the automatic process would fail

23.2.1 Automatically teaching the floor levels to the PSU

The automatic assistant safes you the trouble to manually visit every single floor twice and engage the teach button.

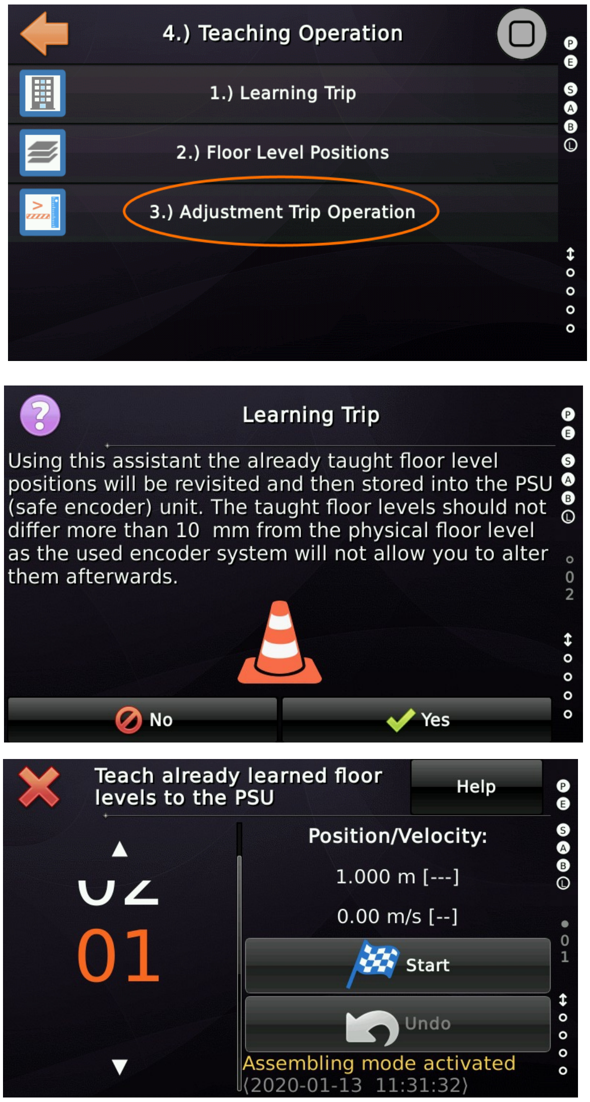


Figure 40: Automatic Learning Trip Assistant

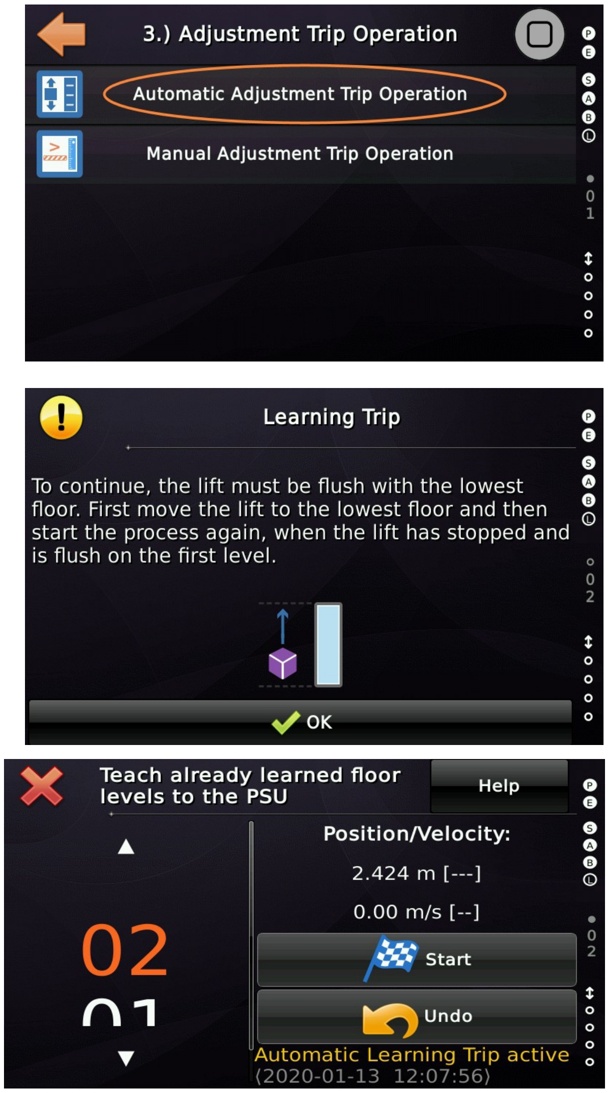


Figure 41: Automatic Adjustment Trip Assistant

Pressing the 'Start' button starts the automatic learning trip. The car automatically moves from the lowest floor to each floor and stores the position in the PSU.

As soon as all floors have been reached once, the learning trip assistant will redo the process and re-visit all floors again, from bottom to top. This is required by the PSU unit to be sure, that all floors have been visited.

Once the automatic adjustment trip has been finished, the PSU is successfully set up and should turn to normal operation mode automatically. If not, the operation mode can be set manually using '*Commands & Options (PSU) → Change Operation Mode (PSU)*'.

23.2.2 Manually teaching the floor levels to the PSU

You may want to use the automatic variant of this operation. But if for any reason that fails, you can use the manual variant as described below.

The procedure for both rounds is the same. The currently selected floor can be reached using the call signal on the left-hand side. As soon as the floor is reached, the floor value can be taught in the PSU by pressing the 'Teach' button, in the second round it is confirmed by pressing the 'Teach' button as well. If a floor has not yet been reached, it will be displayed in orange when selected. If a floor is approached in round 1, the color changes to blue. After all floors in round 1 have been approached, round 2 starts. As soon as the same floor in round 2 is approached again, the selection is highlighted in green. This shows which floors have already been visited twice.

Each floor must be visited again in round 2, **including the one where the car was located at the begin of the second round**.
Once the automatic adjustment trip has been finished, the PSU is successfully set up and should turn to normal operation mode automatically. If not, the operation mode can be set manually using '*Commands & Options (PSU) → Change Operation Mode (PSU)*'.

23.3 Automatic Teaching operation using a SAFE ANTS Encoder (SIL3/PSU)

As a safe encoder does not feature a door zone magnet, it is not possible to do an automatic learning trip operation. But if the lift has already taught floor levels or was delivered with such, it is possible to teach those floor positions to the safe encoder.

The commands required for setting up the ANTS-PSU can be found in the following menu branch.

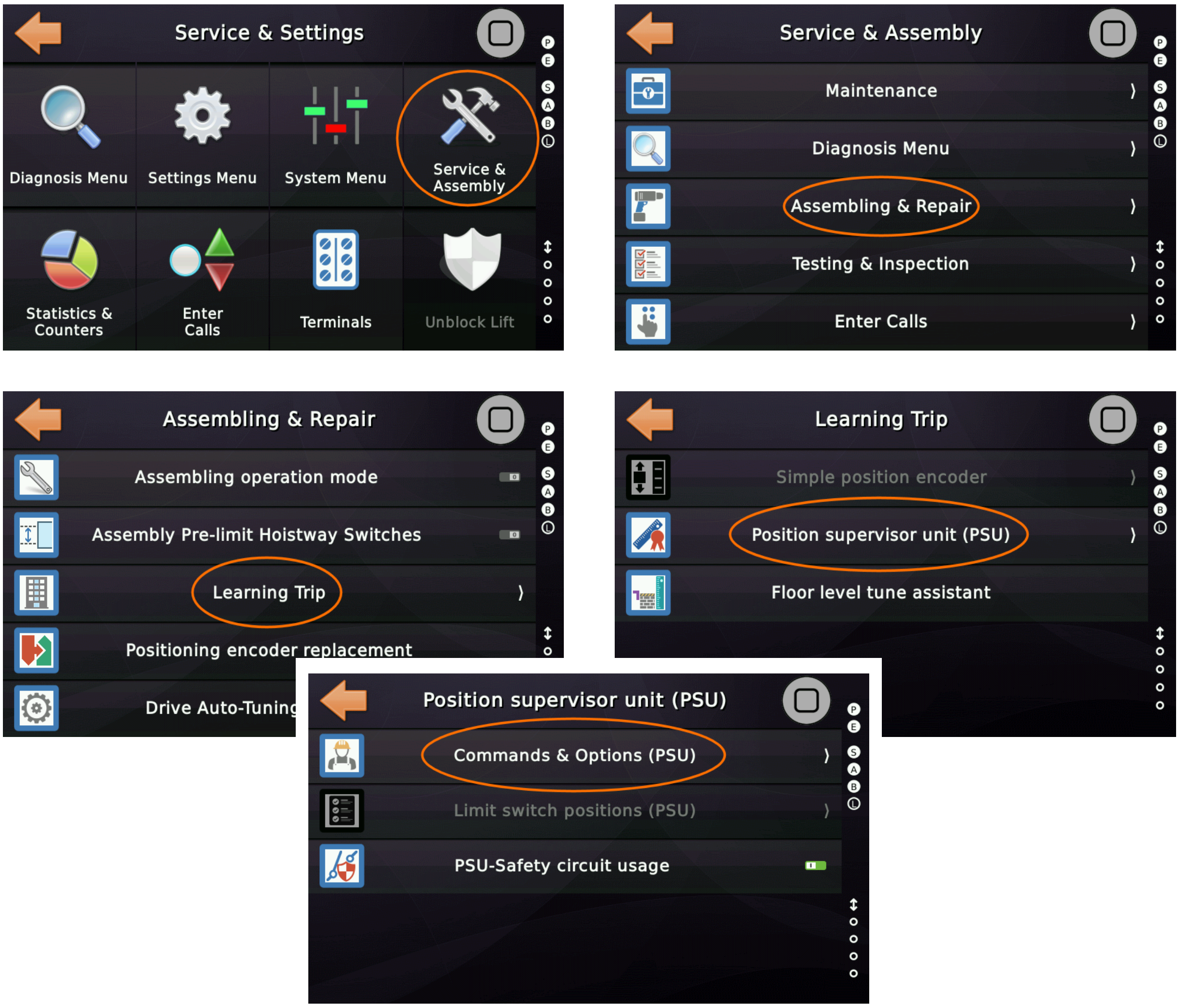
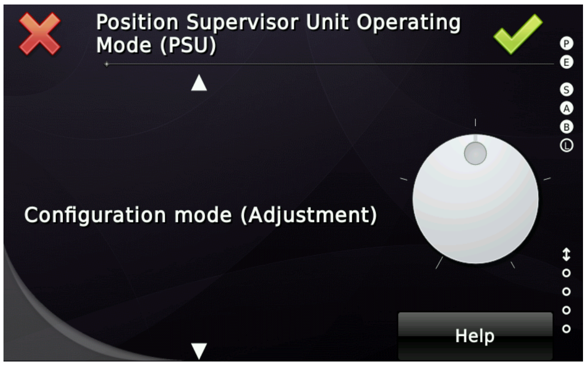


Figure 42: PSU Commands and Options

To start the Learning Trip with the ANTS-PSU, the PSU has to be switched into the 'Configuration Mode' via the user interface.

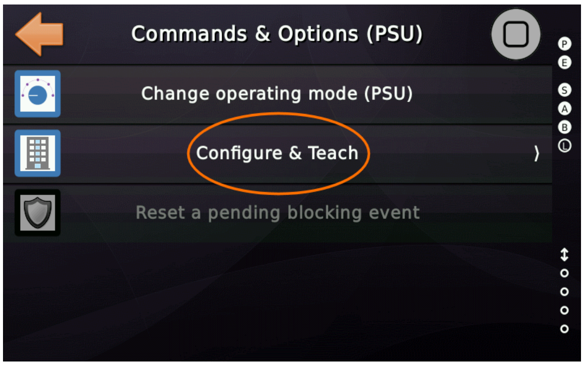
If you want to reset all position data in the ANTS-PSU, for example if the unit has been in use before, put the unit into 'Pre-Commissioning Mode' instead. After clearing all stored data, the unit enters 'Configuration Mode' automatically.

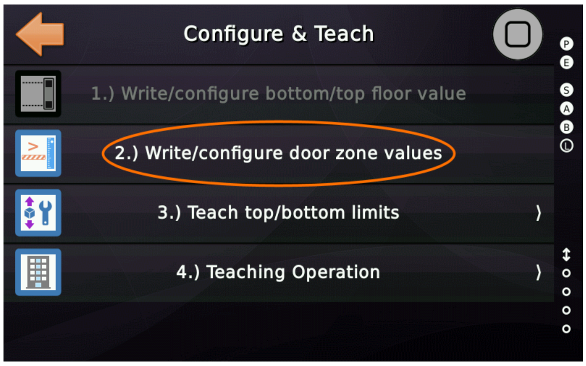


Now that the unit has entered 'Configuration Mode', the PSU can be set up by entering the 'Configure & Teach' menu.

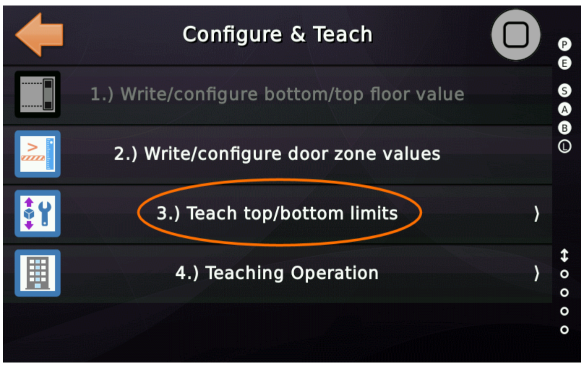
The first menu point is grayed since the Variotech/Kübler ANTS-PSU does not rely on setting up top/bottom floor. Thus the ANTS-PSU configuration starts with the second item. The door zone values that have been set up in the NOUS are written to the unit.

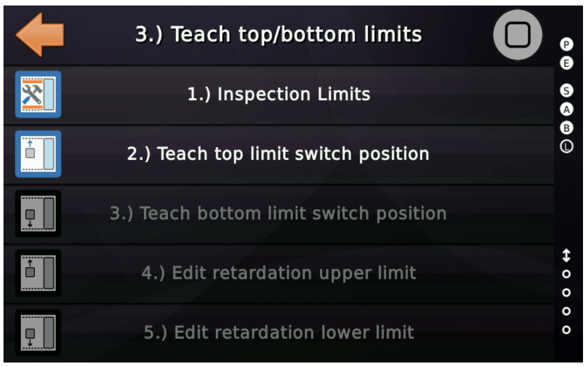
The door zone values are found in 'Settings' → 'More...' → 'Positioning Unit' → 'Distances & Parameter' → 'More...' → 'Door zone below' / 'Door zone above'.





Following up, the limit switches will be taught in. When selecting menu item 3, the branch with the limit switch teaching process is opened. The sequence is fixed, so that only currently valid menu items can be selected, all others are grayed.





The ANTS-PSU uses fixed inspection limit offsets of 1200mm relative to the limit switch position. You can select which inspection limits actually do exist:

- No inspection limits
- Only inspection limit top
- Only inspection limit bottom
- Inspection limits top and bottom
- No inspection limits, but inspection is connected to ANTS-PSU unit.

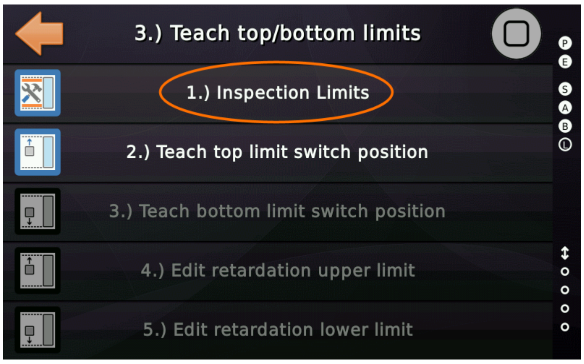


Figure 43: Teaching the inspection limits

By default, no inspection limits are set. If this is the case, the parameter does not have to be changed additionally, instead you can continue directly with the learning of the upper limit switch.

In the next step of the limit switch teaching process, the current position is stored as the upper limit switch position. Before you select the corresponding menu item, make sure that you have moved the car to the position of the upper limit switch with the emergency rescue control. After pressing the button, the upper limit switch position is stored non-volatile.

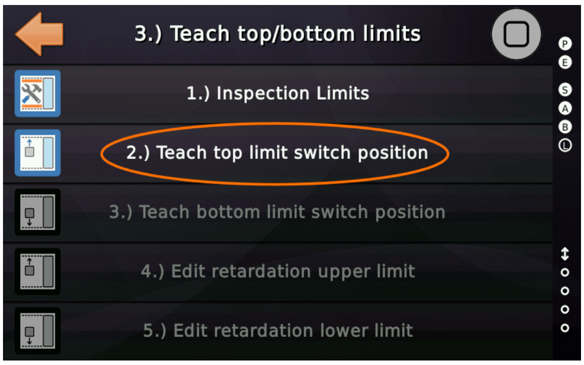


Figure 44: Teaching the top limit

The upper limit switch is followed by teaching of the lower limit switch. For this, the lift is moved to the position of the lower limit switch, using the emergency rescue control again. By pressing the button, the current position is stored as the lower limit switch.

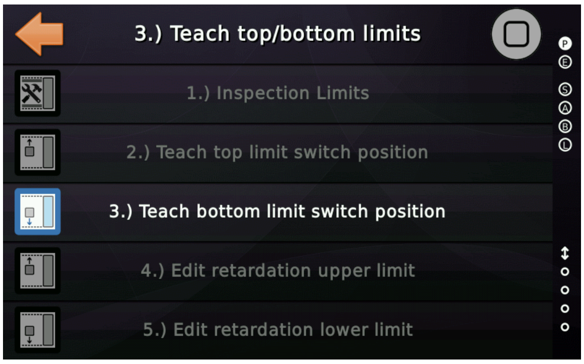
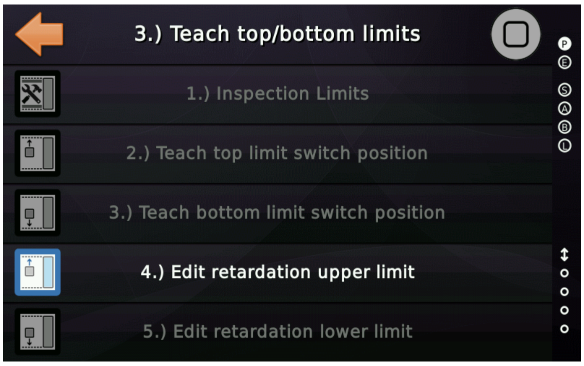
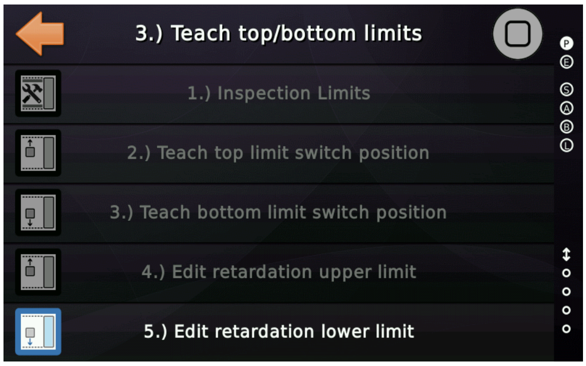


Figure 45: Teaching the bottom limit

After having defined the upper and lower limit switches, the retardation switches are defined. These are defined as an offset to the previously defined limit switches. The entered value indicates the distance of a retardation switch from the respective limit switch in the direction of the hoistway center.





As soon as the limit switches and retardation positions have been taught, the learning trip can be started. To do so, change to the corresponding menu and select the learning trip. The current floor level positions are deleted.

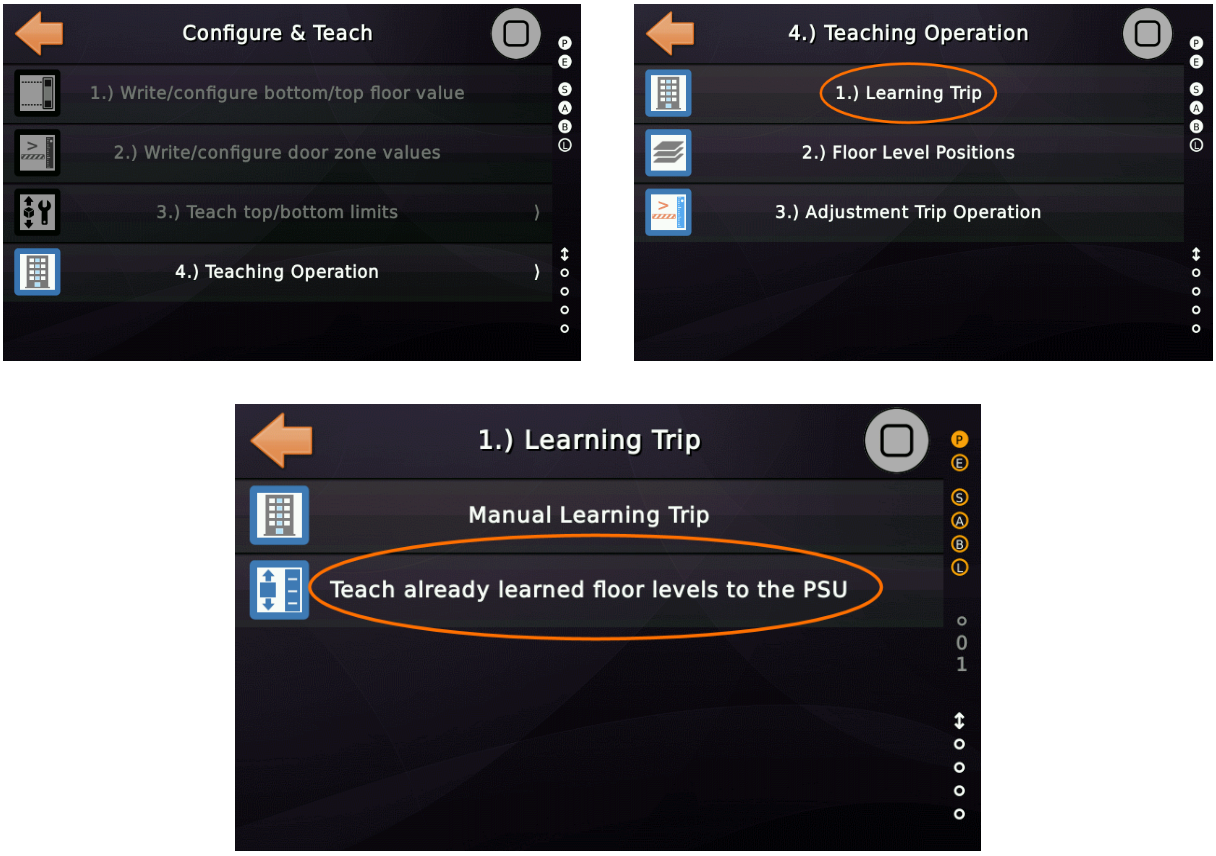


Figure 46: Automatic Learning Trip

The following assistant guides through the teaching process.

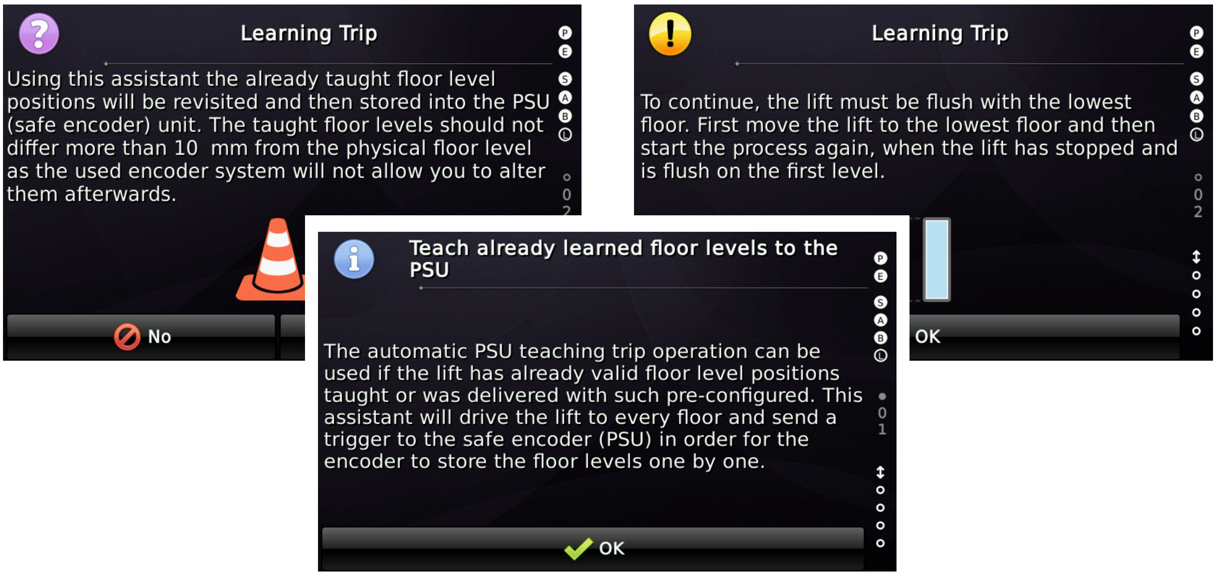


Figure 47: Automatic Learning Trip Setup

Pressing the 'Start' button starts the automatic learning trip. The car automatically moves from the lowest floor to each floor and stores the position in the PSU.

Figure 48: Automatic Learning Trip Assistant

As soon as all floors have been reached once, the learning trip assistant will redo the process and re-visit all floors again, from bottom to top. This is required by the PSU unit to be sure, that all floors have been visited.

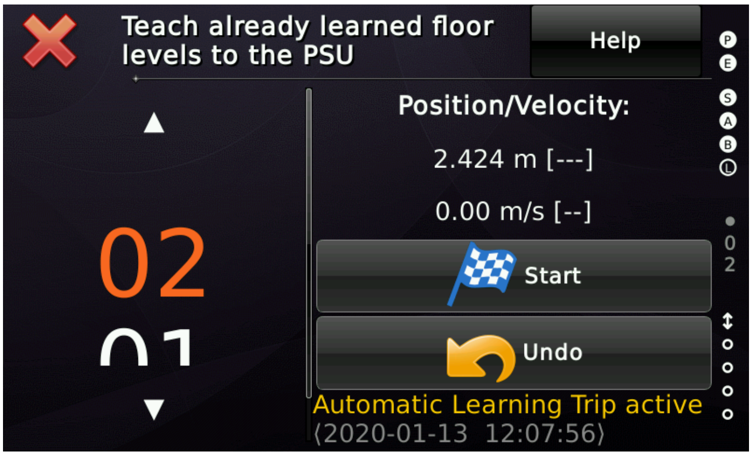


Figure 49: Automatic Adjustment Trip Assistant

Once the automatic adjustment trip has been finished, the PSU is successfully set up and can be turned back to normal operation using the PSU assistant.

23.4 Learning Trip using an ELGO LIMAX33CP (SIL3/PSU)

The commands required for setting up the Limax33CP can be found in the following menu branch.

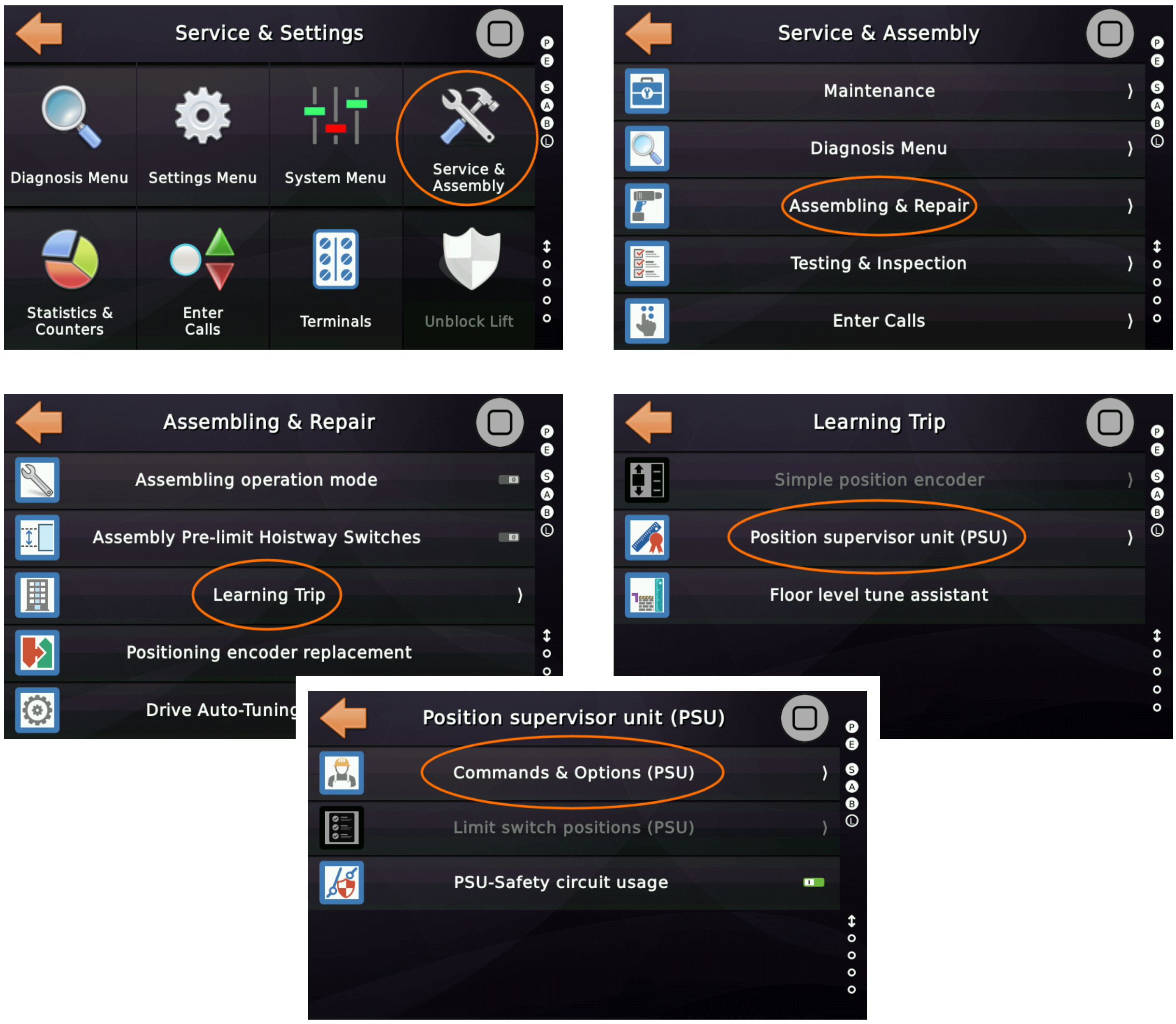
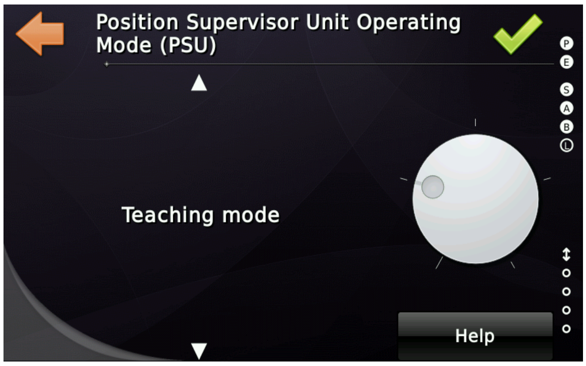


Figure 50: PSU Commands and Options

To start the Learning Trip operation using the Limax33CP, the PSU has to be switched into the '*Teaching Mode*' via the user interface first.

If you want to reset all position data already stored in the Limax33CP, e. g. if the device was already in use, set the device to '*Pre-Commissioning Mode*' instead. All stored data will be erased. In order to start the teach-in run then, you have to switch manually to the '*Teaching Mode*' again.

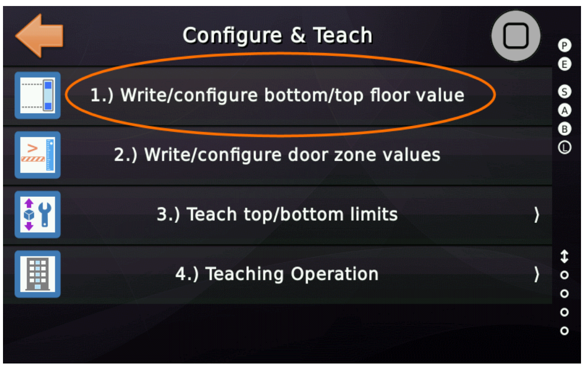


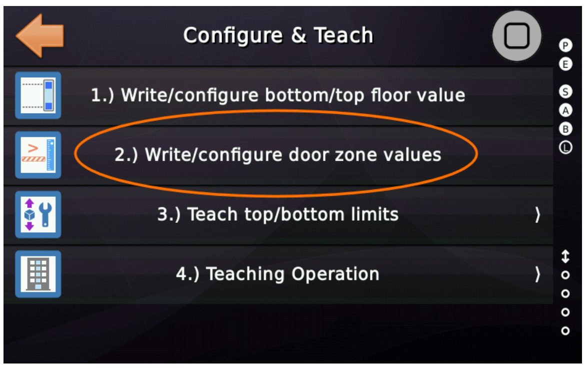
If the unit has entered '*Teaching Mode*', the PSU can be setup by entering the '*Configure & Teach*' menu.

The Limax33CP configuration procedure starts with writing the top/bottom floor values and the door zone value to the PSU.

The parameters for the top/bottom floor can be found following 'Settings' → 'More...'. → 'Basics' → 'Floors' → 'Top floor' / 'Bottom floor'.
The door zone values can be found following 'Settings' → 'More...' → 'Positioning Unit' → 'Distances & Parameter' → 'More...' → 'Door zone below' / 'Door zone above'.

Figure 51: PSU Configure and Teach





If turning the PSU unit to '*Teaching*' operation has been failed, a corresponding message will be shown, indicating that the PSU is not in teaching mode.

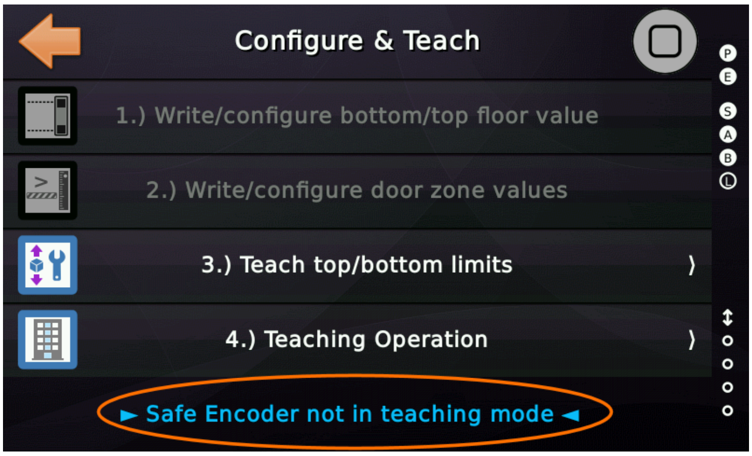
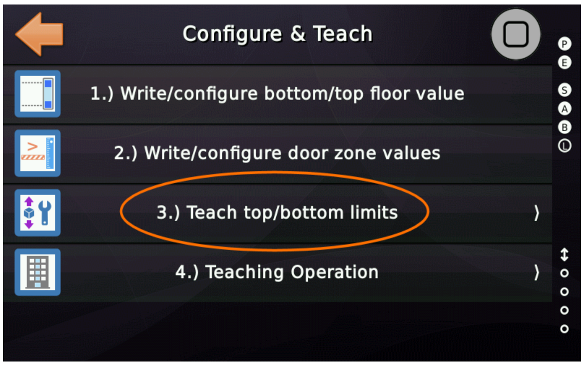
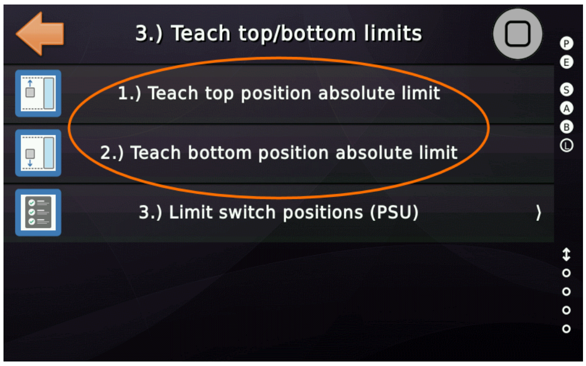


Figure 52: Hint PSU not being in Teaching Mode

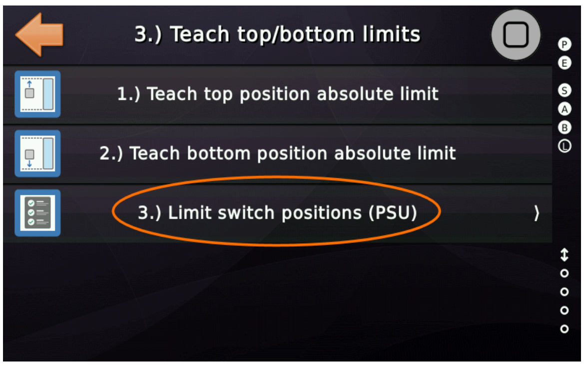
In step (3) the positions for the various limit switches will be set. To do this, the reference positions will be defined first. The reference positions indicate the point where the car/counterweight touches the buffers.

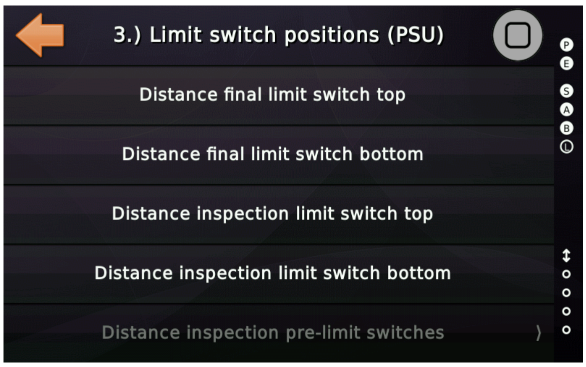




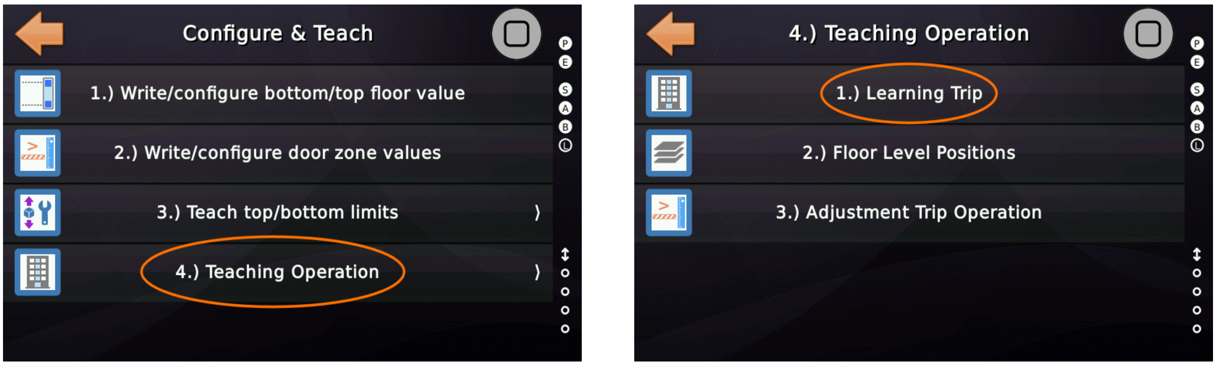
After defining the reference points, the final and inspection limit switches will be defined. These are defined as offsets to the reference points, set before.

The procedure for determining the offset values can be found in the Limax33CP product manual.





After the reference points have been taught, the teaching trip operation can be started by using the corresponding menu and selecting '*Learning Trip*'. The current floor level positions are erased. Before starting the learning trip, the car must be moved flush to the lowest floor level, using the emergency rescue/inspection control.



Using the emergency rescue/inspection control panel, all floors can now be approached and taught-in, using the 'OK' button at the display or the corresponding car call buttons in the car/cabin, starting with the lowest floor.

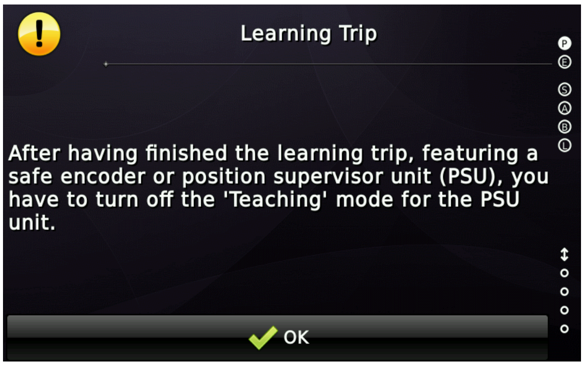
Figure 53: Manual Learning Trip Assistant

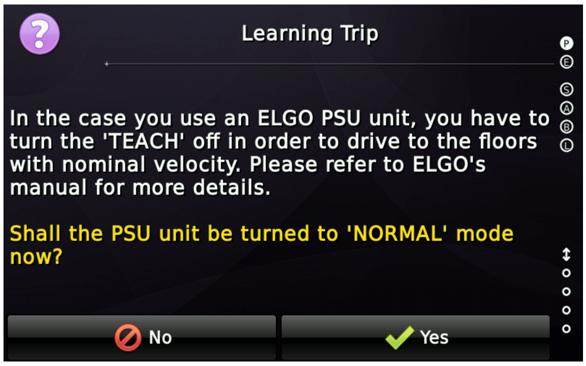
Since the controller presets the PSU to the lowest floor in the first step, the learning trip must start at the lowest floor.

Figure 54: Adjusting the floor level positions

As soon as all floors have been taught, the assistant is closed and the floor level position menu is opened. If not all floor level positions could be reached exactly, they can now be adjusted within a range that is **limited by the ELGO 33CP to ±50 mm**.

After the adjustment of the floor level positions, two messages will be shown to support the manual status change from learning mode to normal operation.





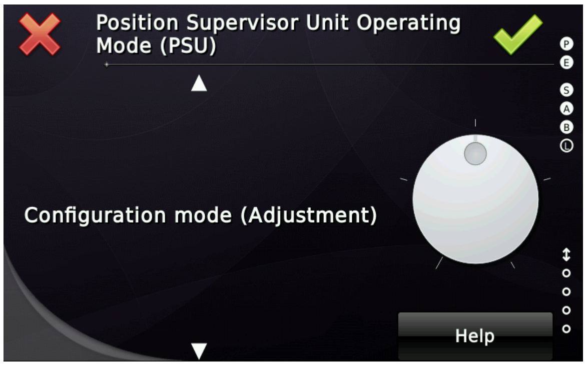
The PSU (Safe SLI3 encoder) shall now enter normal operation.

Before continuing with the adjustment trip, the floor level positions, braking distances and drive parameters should be optimized until the lift stops flush at every landing. The Limax33CP offers a value range of ±50 mm for the correction of the previously taught-in floor positions. This value cannot be exceeded. If the learning trip was carried out with too large tolerances, the whole learning procedure has to be repeated all over again.

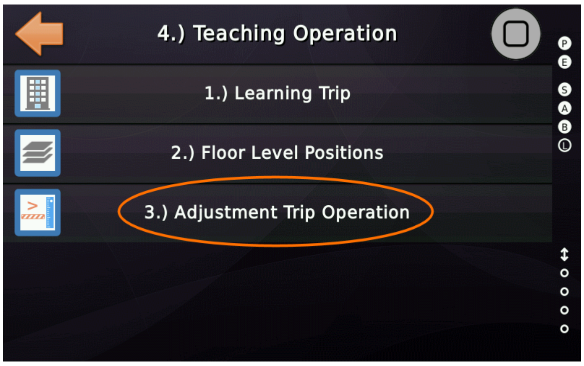
The floor level tune assistant (see chapter 25.1) can also be used to adjust the floor level positions from within the car.

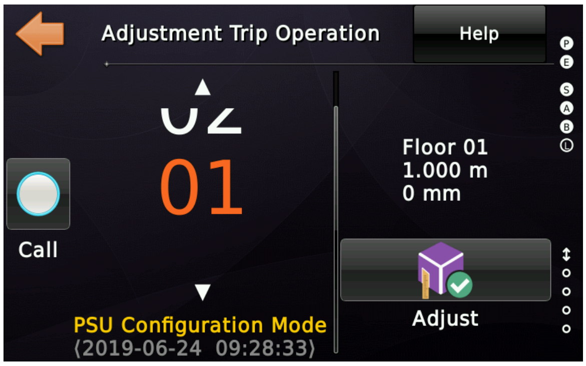
Once the lift system has been finally adjusted, the adjustment trip can be carried out. This may be repeated with the Limax33CP as often as desired.

To be able to perform an adjustment trip, you must switch the safe encoder (PSU) to the '*Configuration mode (Adjustment)*' <u>manually</u> via the user interface.



Having entered the configuration mode, the adjustment trip can now be started.





Using the call button on the left, the lift will start to drive to the selected floor. As soon as the lift arrives at the floor, the position can be transmitted to the PSU via the '*Adjust*' button.

If you leave the adjustment trip assistant, a dialog is opened which can be used to switch back to normal operation.

After the adjustment trip has been successfully completed, the PSU and controller are taught-in and the system is in normal operation.

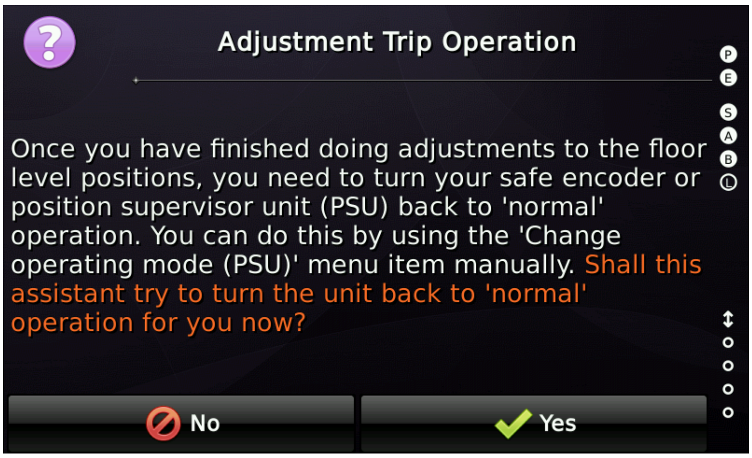


Figure 55: Turning the PSU to normal operation mode

23.5 Automatic Teaching operation using an ELGO LIMAX33CP (SIL3/PSU)

As a safe encoder does not feature a door zone magnet, it is not possible to do an automatic learning trip operation. But if the lift has already taught floor levels or was delivered with such, it is possible to teach those floor positions to the safe encoder.

The commands required for setting up the Limax33CP can be found in the following menu branch.

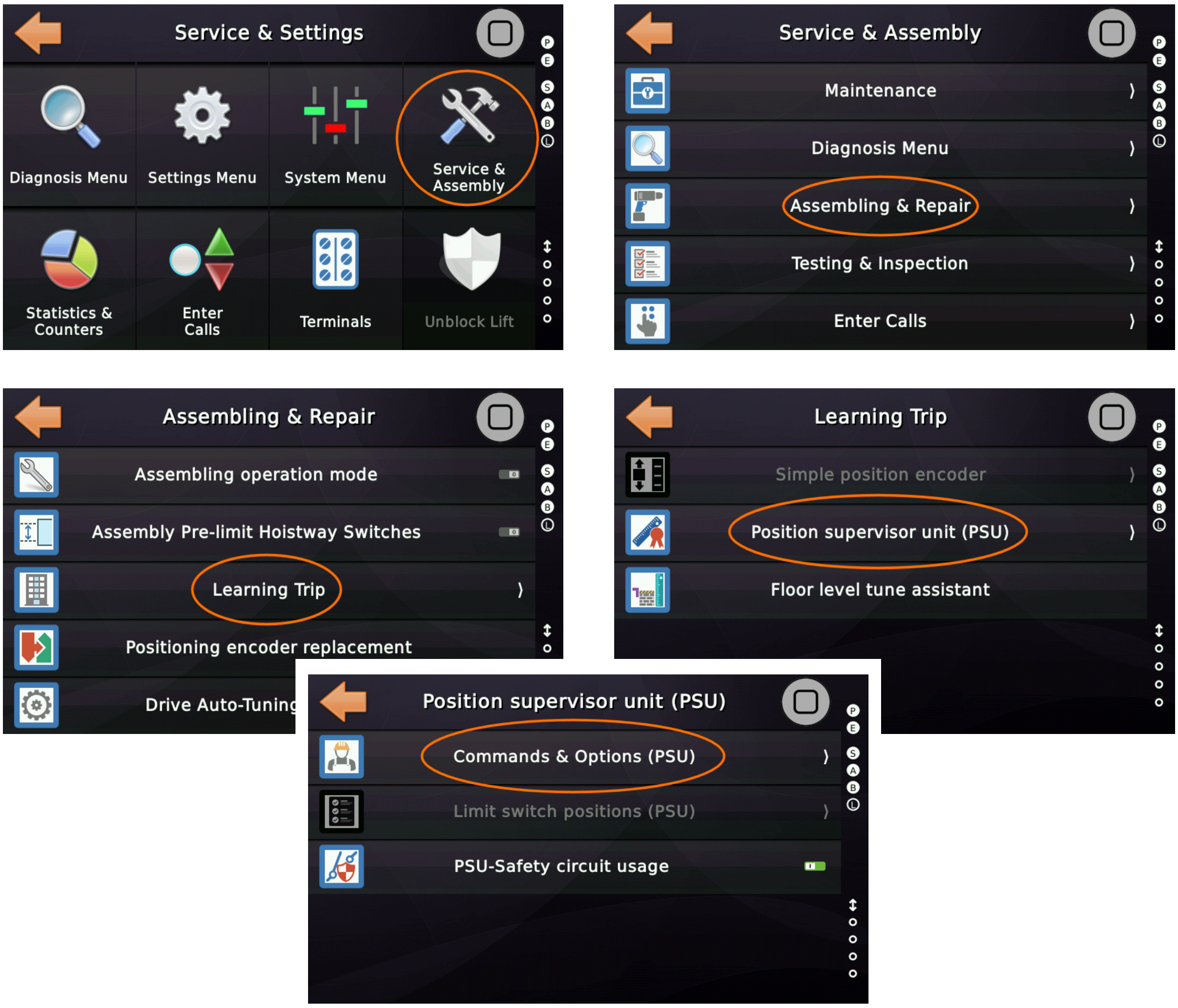
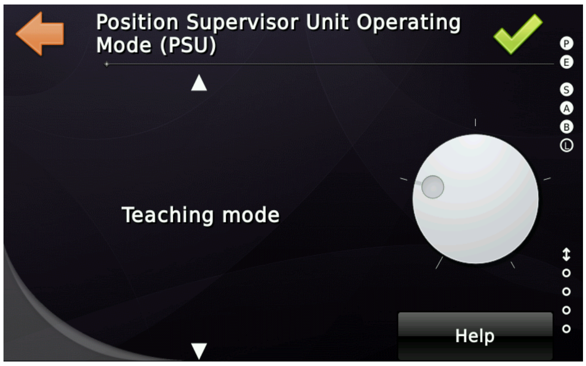


Figure 56: PSU Commands and Options

To start the Learning Trip operation using the Limax33CP, the PSU has to be switched into the '*Teaching Mode*' via the user interface first.

If you want to reset all position data already stored in the Limax33CP, e. g. if the device was already in use, set the device to '*Pre-Commissioning Mode*' instead. All stored data will be erased. In order to start the teach-in run then, you have to switch manually to the '*Teaching Mode*' again.

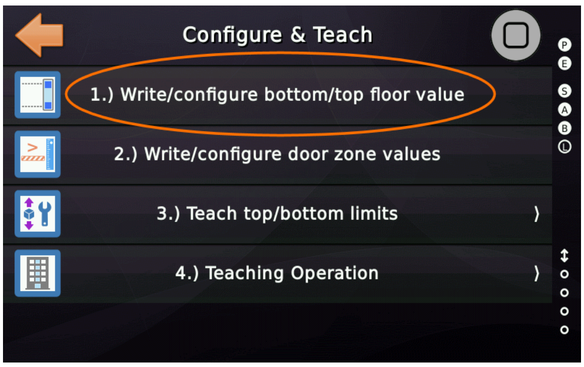


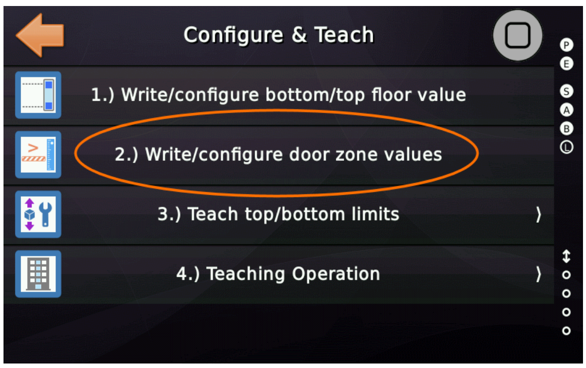
If the unit has entered '*Teaching Mode*', the PSU can be setup by entering the '*Configure & Teach*' menu.

The Limax33CP configuration procedure starts with writing the top/bottom floor values and the door zone value to the PSU.

The parameters for the top/bottom floor can be found following 'Settings' → 'More...'. → 'Basics' → 'Floors' → 'Top floor' / 'Bottom floor'.
The door zone values can be found following 'Settings' → 'More...' → 'Positioning Unit' → 'Distances & Parameter' → 'More...' → 'Door zone below' / 'Door zone above'.

Figure 57: PSU Configure and Teach





If turning the PSU unit to '*Teaching*' operation has been failed, a corresponding message will be shown, indicating that the PSU is not in teaching mode.

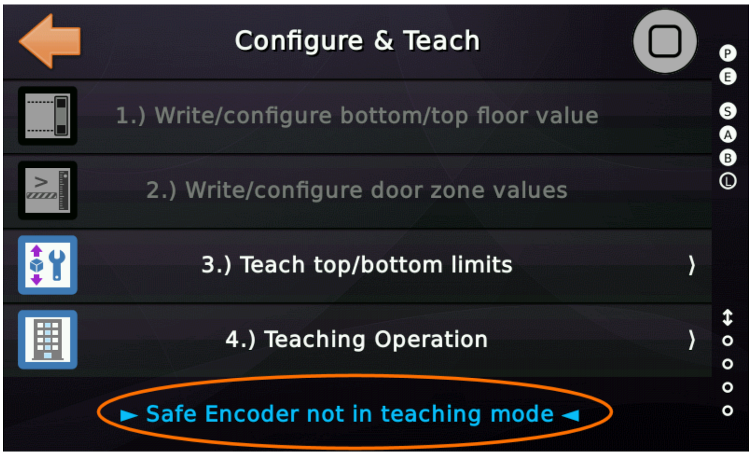
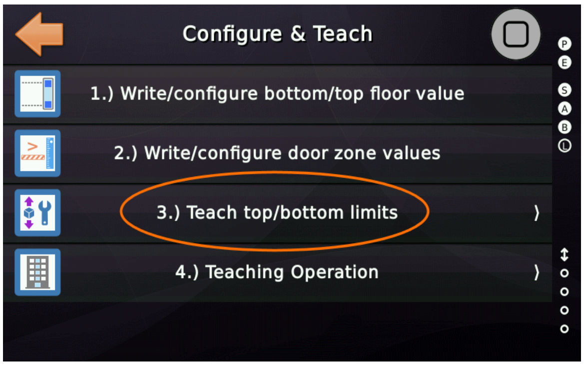
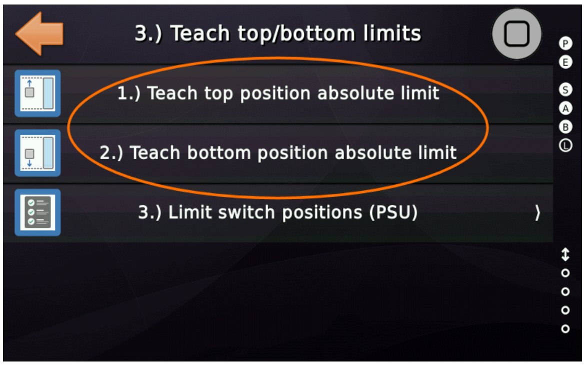


Figure 58: Hint PSU not being in Teaching Mode

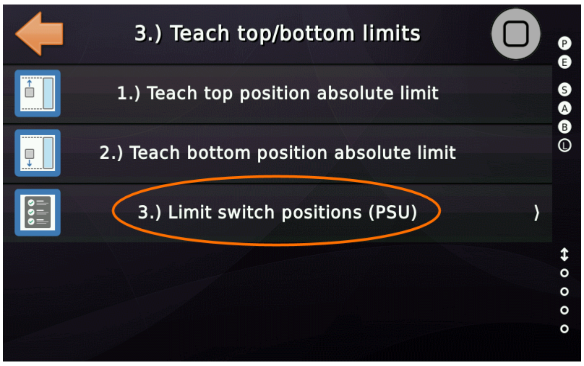
In step 3.) the positions for the various limit switches will be set. To do this, the reference positions will be defined first. The reference positions indicate the point where the car/counterweight touches the buffers.

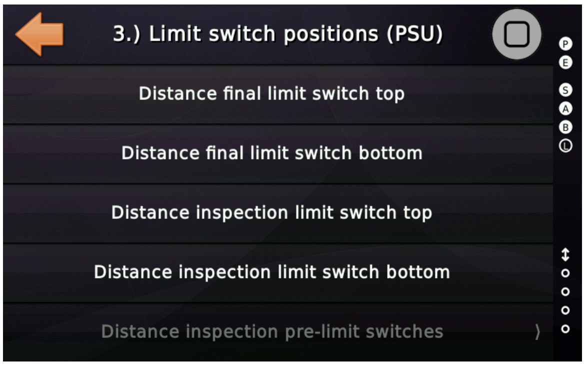




After defining the reference points, the final and inspection limit switches will be defined. These are defined as offsets to the reference points, set before.

The procedure for determining the offset values can be found in the Limax33CP product manual.





After the reference points have been taught, the teaching trip operation can be started by using the corresponding menu and selecting '*Learning Trip*'. The current floor level positions are erased. Before starting the learning trip, the car must be moved flush to the lowest floor level, using the emergency rescue/inspection control.

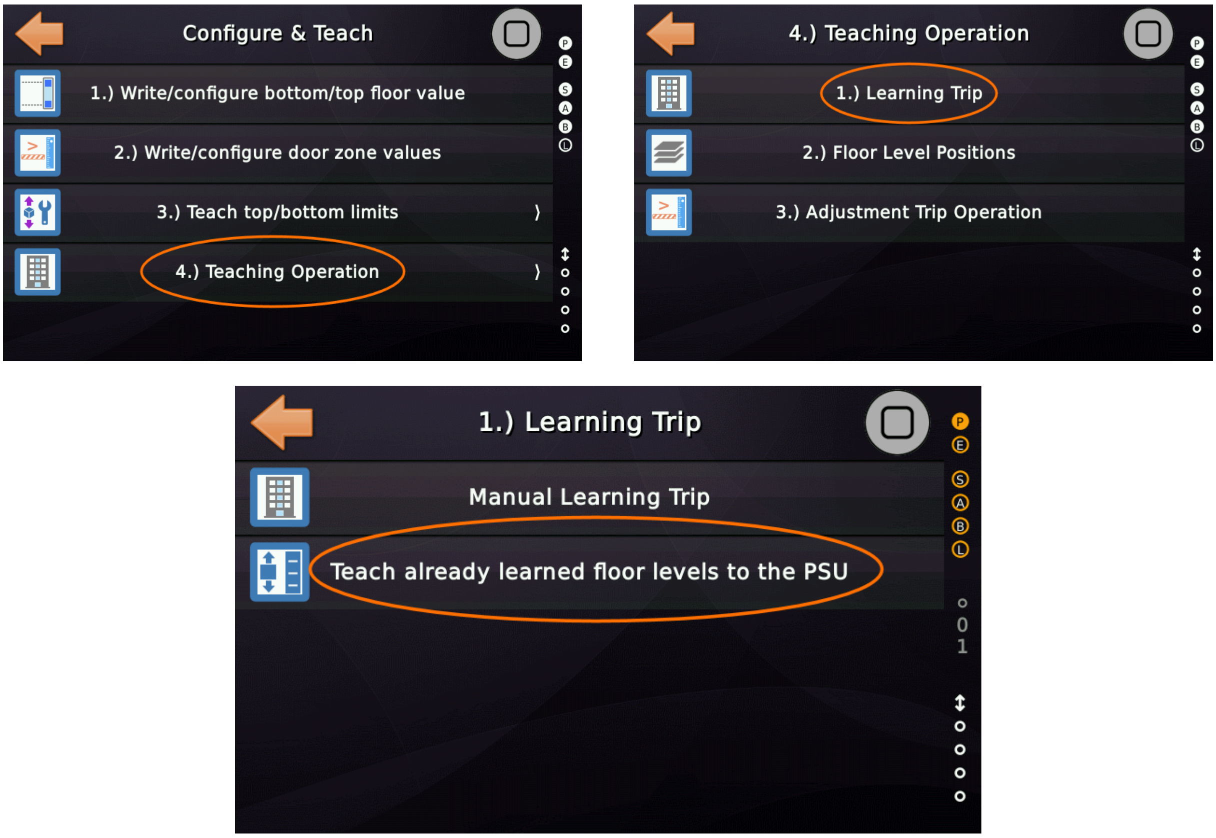


Figure 59: Automatic Learning Trip

The following assistant will then show up to guide through the teaching process.

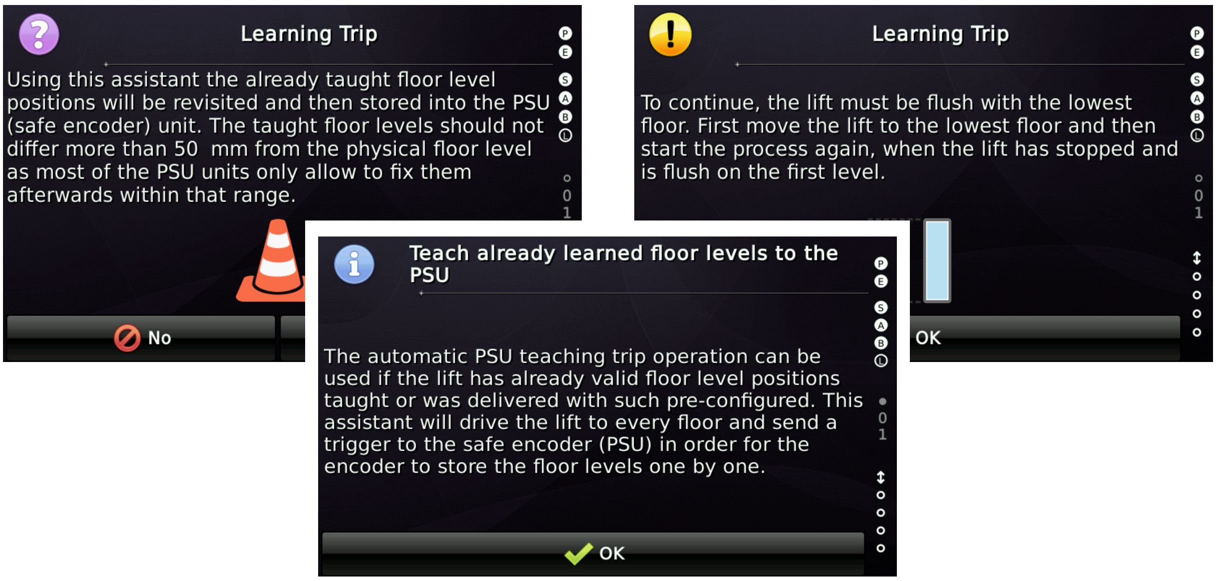


Figure 60: Automatic Learning Trip Setup

Pressing the 'Start' button will initiate the automatic learning trip. The car automatically moves from the lowest floor to each floor and stores the position in the PSU.

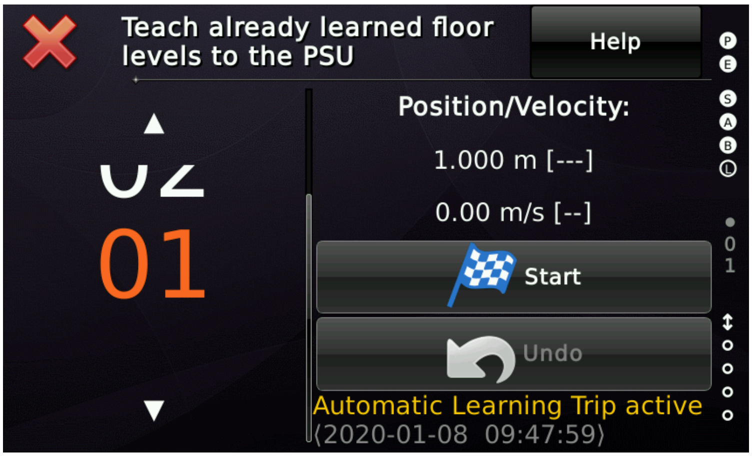


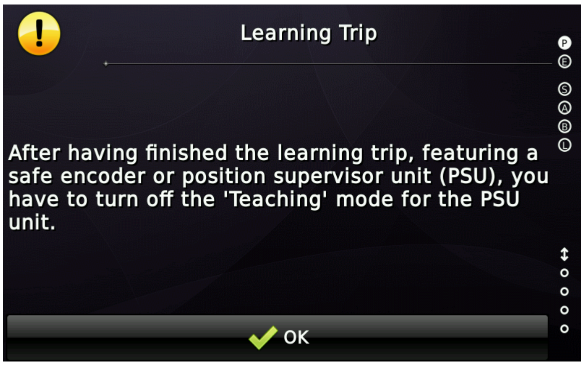
Figure 61: Automatic Learning Trip Assistant

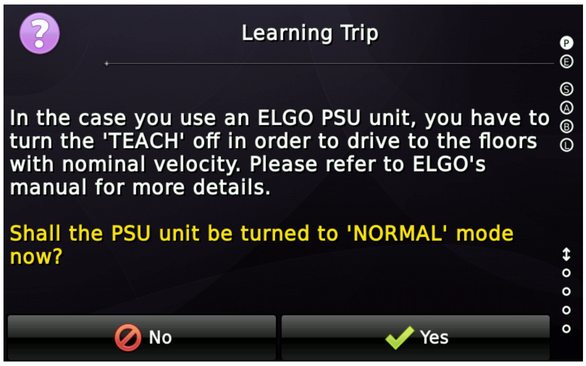
Since the controller presets the PSU to the lowest floor in the first step, the learning trip must start at the lowest floor.

Figure 62: Adjusting the floor level positions

As soon as all floors have been taught, the assistant is closed and the floor level position menu is opened. If not all floor level positions could be reached exactly, they can now be adjusted within a range that is **limited by the ELGO 33CP to ±50 mm**.

After the adjustment of the floor level positions, two messages will be shown to support the manual status change from learning mode to normal operation.





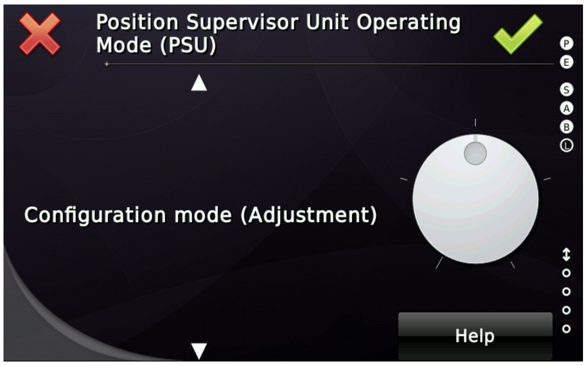
The PSU (Safe SLI3 encoder) shall now enter normal operation.

Before continuing with the adjustment trip, the floor level positions, braking distances and drive parameters should be optimized until the lift stops flush at every landing. The Limax33CP offers a value range of ±50 mm for the correction of the previously taught-in floor positions. This value cannot be exceeded. If the learning trip was carried out with too large tolerances, the whole learning procedure has to be repeated all over again.

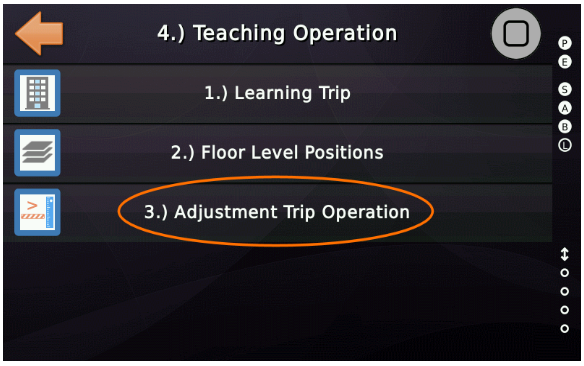
The floor level tune assistant (see chapter 25.1) can also be used to adjust the floor level positions from within the car.

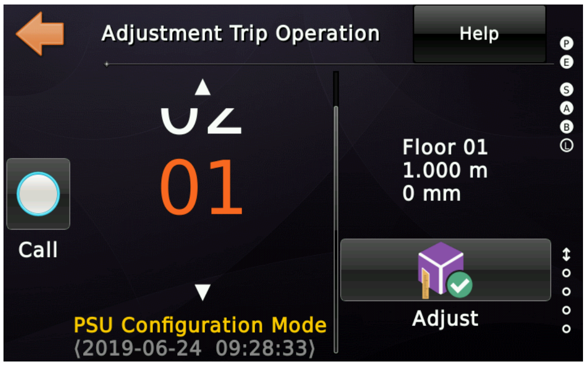
Once the lift system has been finally adjusted, the adjustment trip can be carried out. This may be repeated with the Limax33CP as often as desired.

To be able to perform an adjustment trip, you must switch the safe encoder (PSU) to the '*Configuration mode (Adjustment)*' manually via the user interface.



Having entered the configuration mode, the adjustment trip can now be started.





Using the call button on the left, the lift will start to drive to the selected floor. As soon as the lift arrives at the floor, the position can be transmitted to the PSU via the '*Adjust*' button.

If you leave the adjustment trip assistant, a dialog is opened which can be used to switch back to normal operation.

After the adjustment trip has been successfully completed, the PSU and controller are taught-in and the system is in normal operation.

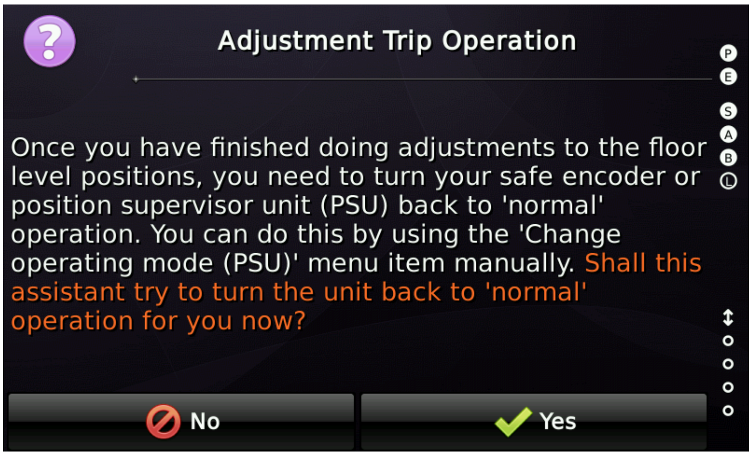


Figure 63: Turning the PSU to normal operation mode

24 Teaching the deceleration distances automatically

This assistant can be used for automatically teach-in the deceleration distances, if using a **classical drive unit**, that operates in **velocity profile**, like **hydraulic lifts** do.

The braking distance assistant is only required if the controller must calculate/specify the deceleration points.

If the drive is featuring 'position' profile, the travel curve is calculated by the drive itself internally, like the modern Ziehl Abegg ZetaDyn inverter units.

The assistant for teaching-in the deceleration distances can be found under *'Assembly & Service'* → *'Assembly & Repair'* → '*Learning Trip*' → '*Brake distance assistant*'.

24.1 Theory of Operation

The braking distance assistant will first drive the lift to its start position and then start driving with every velocity in every direction and recording the distance it takes to decelerate the car back to creeping velocity 'Vx → V0' again and finally to stop it 'V0 → Standstill'.

Once the teach-in of the deceleration distances has been finished, check the deceleration distances by driving the lift in between the floors. If necessary, you may have to adjust and/or optimize the stopping distance, which is the deceleration distance of the creeping velocity (V0) manually.

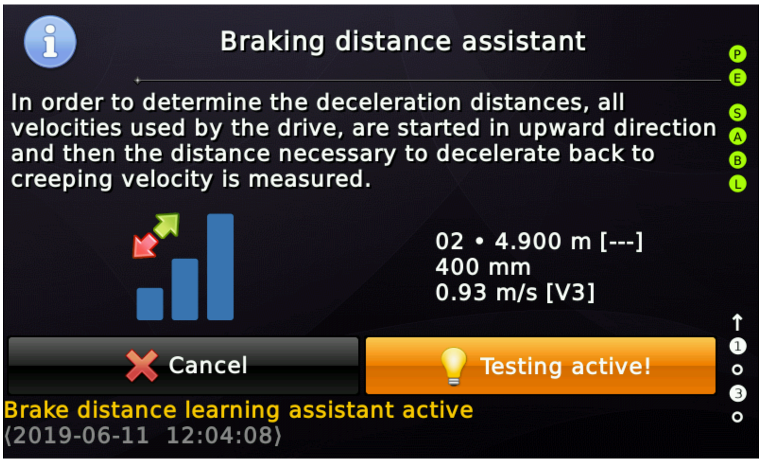
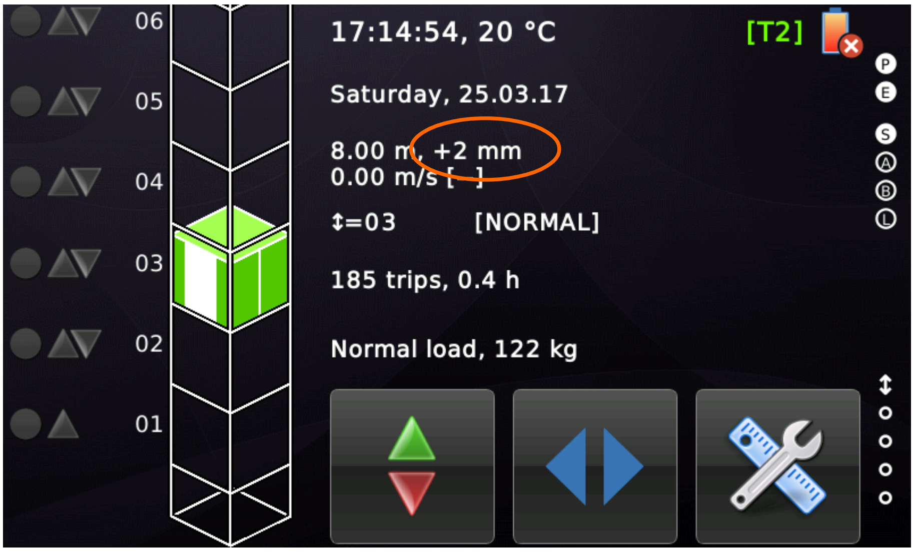


Figure 64: Brake distance assistant

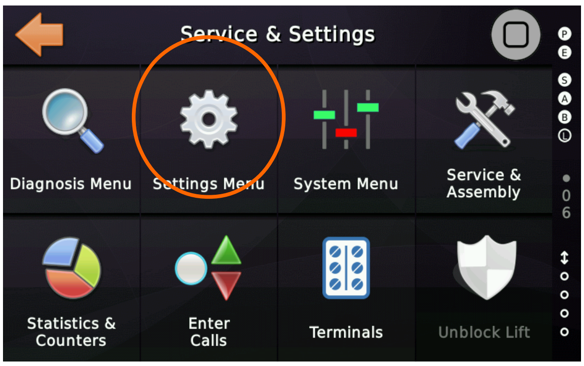
25 Adjusting/Tuning the Level Positions

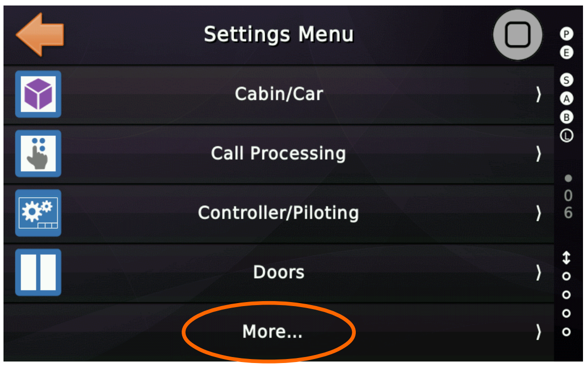
After the floor levels have been taught, a test drive and a simple ruler to measure the level distance, is all you need to make the cabin going flush to level.

Before altering any of the taught floor level positions, ensure that the lift is really stopping without a distance of more than ±3 mm at the taught positions, even if the taught positions may be not 100% correct - the lift has to stop at them mint. If it does not do this, first find the issue <u>before changing</u> the floor levels. Have a look at the Trouble Shoot chapter of this document.



To open the 'Floor Level Table' go to 'Settings' → 'More...' → 'Positioning Unit' → 'Floor Level Positions' menu path.





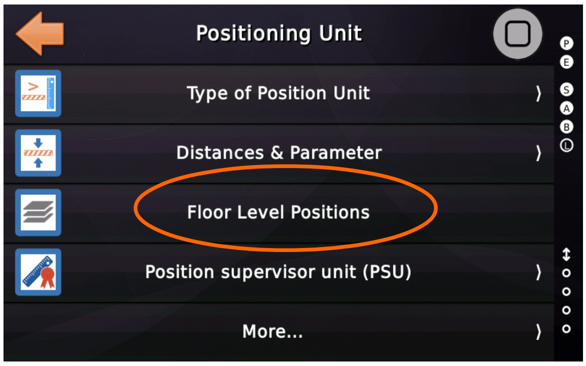


Figure 65: Floor Level Table

► In order to alter a floor level position value Tap'n'Hold a table row. A new dialog used to alter the numerical value will be opened then.

► Swipe the digits up and down to change the floor level position.

To store the changed value, tap on the green check mark button. If you have finished altering the floor level values in the 'Floor Level Position Table' tap the same button in the table too. Only then the values will be stored to non-volatile memory all in once.

25.1 Floor level tune assistant

In order to simplify fine tuning of the floor level positions, an assistant has been implemented, that allows to level the car and confirming the adjusted level position, using nothing more than the existing car call buttons.

You find the assistant by pressing first 'Home' and then the 'Service & Assembly' and then go to 'Assembly & Repair' → 'Learning Trip' → 'Floor Level Tune Assistant'.

In order to drive to a floor, press the designated car call normally. When having reached that floor, press & keep pressed a car call above to level upwards. At the top floor use the current floor's car call button instead.

To level downwards press & keep pressed a car call below. At the lowest floor use the current floor's car call button instead.

If having leveled the cabin, press the car call on the current floor normally, to store the new position. The lift controller will respond by letting the car call lamp flashing three times.

Alternately you can control the process via the controller's display.

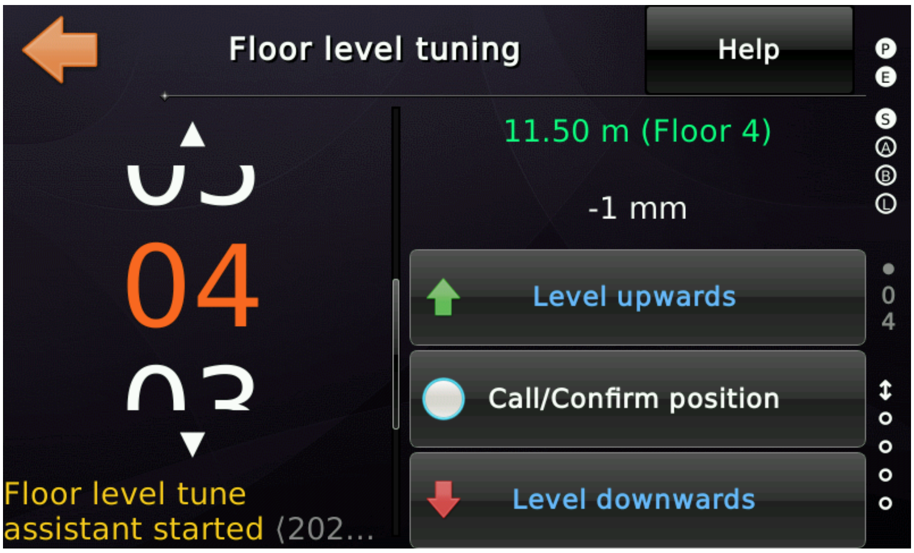


Figure 66: Floor level tune assistant

25.2 Trouble Shooting

25.2.1 Floor level positions are not plausible or in the wrong direction

Check if the pulley orientation (*clock wise/counter clock wise*) and the pulley circumference do match the settings in the lift controller under 'Settings' → 'More...' → 'Positioning Unit'.

Wrong pulley orientation and circumference are a common reason, if the position values are not plausible. Check also the conversion factors found under 'Settings' → 'More...' → 'Positioning Unit'. It is vital for positioning profile mode, that the drive and the lift controller have the 'same *idea of what a millimeter is*', because driving and stopping is done by exchanging position data between drive & controller to avoid any creeping on stopping.

25.2.2 The lift does not stop flush on level.

25.2.2.1 If the lift is featuring velocity profile mode, like classic hydraulic lifts or older traction lifts...

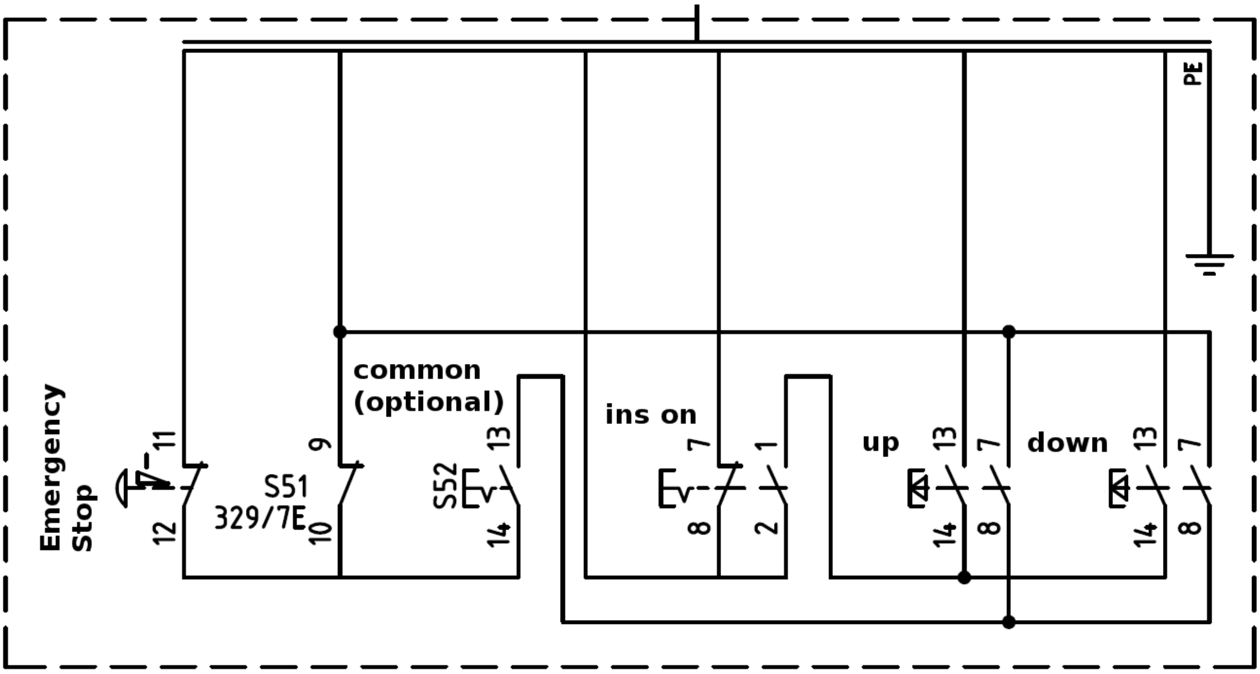
Check if the lift actually changes from nominal velocity V1..4 to creeping velocity V0 and that it has enough creeping distance. If it does not creep at all, make the braking distance of the nominal and intermediate velocity longer. Just look at the desktop which velocity the lift is using [for example V4] and increase the braking distance in 20 mm steps. If the lift is now creeping and still overruns the floor level, increase the braking distance of the creeping velocity V0 in 5 mm steps. If the lift now stops to early, simple decrease the braking distance of the creeping velocity V0 in 5 mm steps.

25.2.2.2 If the lift is featuring modern position profile mode, like traction lifts with motor encoder and an absolute positioning system for the car...

A drive running in position profile mode, does normally only need manual adjustment of the braking and minimum driving distances for the inspection velocity. If stopping flush on level in normal operation fails, check if the velocity shown at the desktop of the lift controller is the very same as the velocity shown in the display of the inverter. If they are quite different, proceed with the solution '*The floor level positions stored are not plausible or in the wrong direction*' and check the encoder pulley circumference and position conversion factors, that can be found at 'Settings' → 'More...' → 'Positioning Unit'. In that case it is likely that the inverter and the lift controller use different conversions to calculate millimeters from the encoder data.

26 Inspection-/Emergency electrical operation

The inspection/emergency rescue switches shall have the emergency stop (E) chain wire in-line, so that the activation switch will open the safety chain and the direction buttons re-close the chain again. The switches shall be forcibly guided.



26.1 Input signals

For operating the lift in inspection mode, three groups of input signals are available.

Car top inspection

- Car top inspection enable [NC]
- Car top inspection upward
- Car top inspection downward
- Car top inspection fast button

▸ The Car top inspection inputs can only be used on-board or on an I/O-unit at CAN1.

Shaft pit inspection

- Shaft pit inspection enable [NC]

- Shaft pit inspection upward
- Shaft pit inspection downward
- Shaft pit inspection fast button

Emergency electrical operation (Emergency rescue)

- Emergency rescue enable [NC]
- Emergency rescue upward
- Emergency rescue downward
- Emergency rescue fast button

▸ The Emergency electrical operation (Emergency rescue) inputs can only be used on-board or on an I/O-unit at CAN1.

Additionally the reset signal for shaft pit inspection operation:

- Inspection in the pit reset signal

26.2 Parameter & Options

Press 'Favorites' and then go to 'Settings Menu' → 'More...' → 'Basics' → 'More...' → 'Inspection / Emergency Rescue' to open the parameters and options, related to the inspection operation.

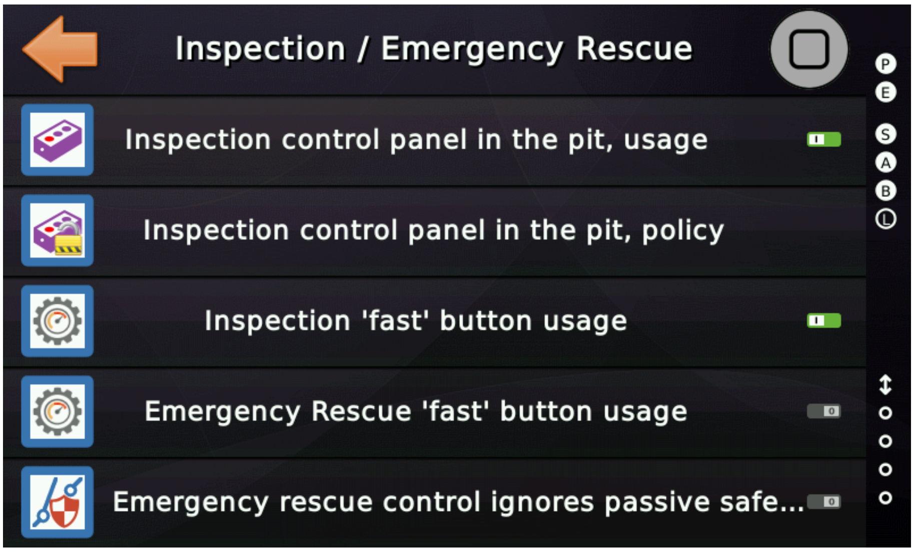


Figure 67: Inspection operation options

26.2.1 Inspection control panel in the pit, usage

This parameter defines if an inspection control panel in the hoistway pit (EN81-20) is used or if the lift is installed without such an inspection control panel. If such a panel is used and has been turned on once, keep in mind that after having it turned off again, the operation has to be reset via a separate input or the user interface as well.

26.2.2 Inspection control panel in the pit, policy

This parameter defines if unlocking the inspection pit operation shall be possible via the user interface (display) after the inspection pit switch has been turned off again. Otherwise it will only be possible via the electrical input function '*Inspection in the pit reset signal*'.

26.2.3 Inspection 'fast' button usage

This parameter defines if for inspection operation a 'fast' button is featured to drive with inspection velocity. If a 'fast' is used but not pressed, creeping velocity would be used instead.

26.2.4 Emergency Rescue 'fast' button usage

This object defines if for emergency rescue operation a 'fast' button is featured to drive with emergency rescue velocity. If a 'fast' is used but not pressed, creeping velocity would be used instead.

26.2.5 Emergency rescue control ignores passive safety chain

This parameter defines if the emergency rescue operation shall ignore the state of the safety board input for the passive safety chain. This can be useful for retrieving the lift back after some testing operations, if the emergency rescue (*Emergency electrical operation*) supplies power again to the emergency stop input in the safety chain, but the input of the passive safety chain on the SB board remains dropped, due to two open contacts in the chain.

26.3 Maintenance options related to inspection operation

26.3.1 Drive beyond top/bottom floor

Press the 'Service & Assembly' and then go to 'Maintenance' to use the parameter '*Drive beyond top/bottom floor*'.

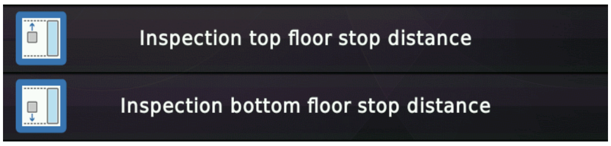
This parameter defines if the car is allowed to drive beyond the top or bottom floor level position, being on Emergency rescue (*Emergency electrical operation*). If being activated, this option will automatically be turned off, after the lift being in normal operation for a while.

This option can be useful to return the cabin/car after having done a '*Limit Switch Test Operation*'.

26.4 Inspection top/bottom floor stop distance

These parameter define the distance to stop before the top or bottom floor level position, if driving using inspection operation.

Press the 'Settings Menu' and then go to 'More...' → 'Positioning Unit' → 'More...' to alter the parameters for stopping before top/bottom floor level.



27 Power Failure Supervision

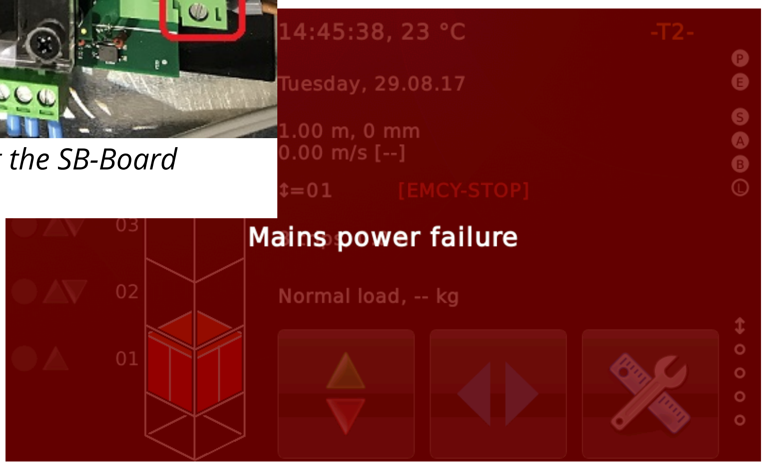
The power failure supervision is implemented by connecting the 230VAC line, which powers the 24VDC power supply for the lift controller, directly to the corresponding input on the NOUS-SB-board.

This prevents writing to the EEPROM or FLASH or any other non-volatile memory, when the power will shut down.

27.1 Theory of Operation

The supervision function will only detect a peak-down of the 230 V AC monitoring input. So it will stop operating the lift controller when the net-power has peaked down, but before the 24 VDC actually shuts down.

Figure 68: Power Failure Supervision at the SB-Board (Reference Hardware)



27.2 Warning

Connecting the power failure supervision is vital for the correct operation of the lift controller. Ensure that it monitors the right 230V AC net power line, that powers the 24V DC supply feeding the lift controller.

27.3 Graphic

Connect the 230V/N lines that feed your 24V power supply, used to power up the NOUS unit, back to the dedicated supervision input.

28 Phase Failure Supervision

This parameter defines if an external unit is used to implement the phase failure detection, featuring the corresponding lift controller input '*Phase Failure Supervision*'. Generally spoken, the supervision function will detect a 'fallen peak' and then set the lift 'Out Of Order'.

You will find the parameter by pressing first 'Home' and then the 'Settings Menu' and go to 'Controller/Piloting' → 'More' → 'Phase Failure Supervision'.

28.1 Input

This input function shall be used to implement the 'Phase Failure Supervision'.

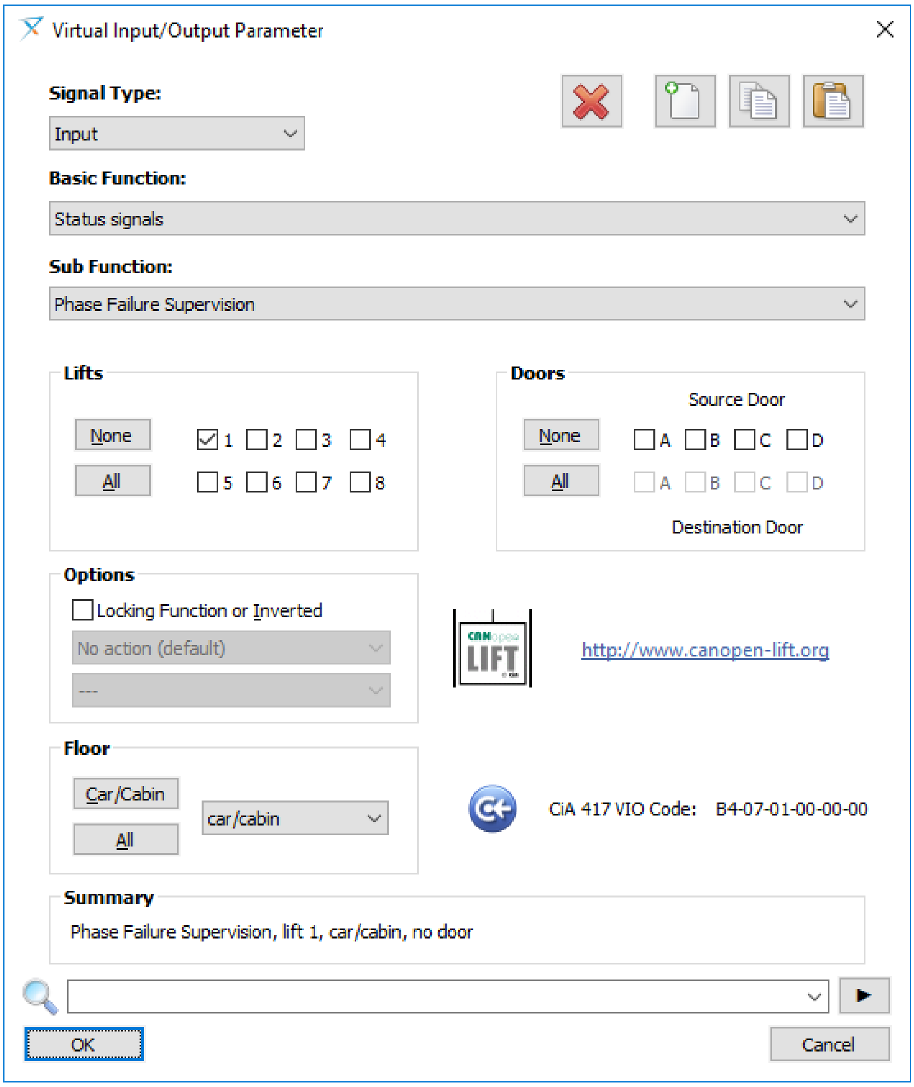


Figure 69: Phase Failure Supervision Input [Toolbox View]

29 Cabin light voltage monitoring

The car/cabin light voltage monitoring is using a 230VAC input on the safety board (NOUS-SB) to detect a failure of the power, feeding the cabin light. The input is extra debounced for stability reasons.

You will find the corresponding parameter by pressing first 'Home' and then the 'Settings Menu' and then go to 'Cabin/Car' → 'Cabin light voltage monitoring'.

This supervision function will put the lift out of order, if the power for the car light has peaked down. If the lift is running, it will stop at the next possible floor and let the passenger deboard.

If having turned off the cabin light with purpose, by using the 'Car light off timer', the state of the supervision input 'Cabin light voltage monitoring' is ignored so long.

This function is always ignored, if running the lift controller in 'Training Board' mode .

29.1 Output

This output can be used as an acknowledge signal for the cabin light voltage monitoring.

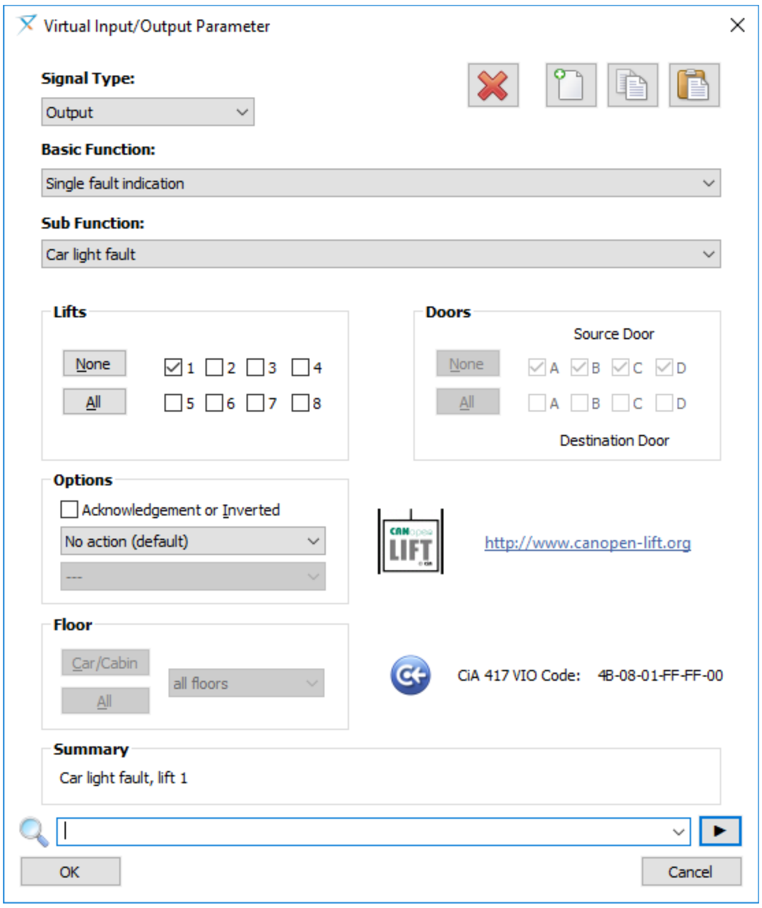


Figure 70: Car light voltage supervision acknowledge [Toolbox View]

30 Type of Call Processing

This parameter defines the type/mode of the lift controller's call processing, like PB, APB or Collective.

You will find the corresponding parameter by pressing first 'Home' and then the 'Settings Menu' and then go to 'Call Processing' → 'Type of Call Processing'.

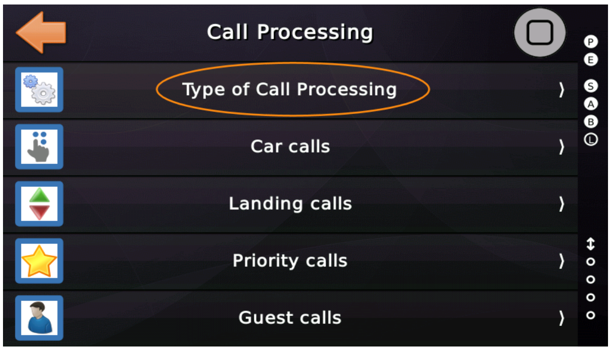


Figure 71: Parameter for Type of Call Processing

30.1 Collective Call Operation

This is the most common way of processing calls. The calls are collected in the call memory and will be processed by keeping the driving direction.

While 'car calls' are direction independent and will be processed in both directions, landing calls might be declared as '*upward-calls*' or as '*downward-calls*'. But the NOUS lift application also supports direction independent landing calls, even if being operated as a 'collective' call controller. They are used rarely but would make the lift stop in both direction.

	Car call
	Direction independent landing call (PB/APB)
	Upward landing call / Extra Upward landing call
	Downward landing call / Extra Downward landing call
	Low priority landing call (direction independent)
	High priority landing call (direction independent)

The CANopen CiA 417 defines a 'second layer' of landing calls called 'Extra Calls'. Imagine having a team of four lifts and just one or two reach the parking slots. Using those extra calls enables you to create a landing call just operated by those two lifts, without interfering the 'normal' landing calls.

30.1.1 Car call related options

30.1.1.1 Car call cancelling

Enable car call cancelling by pressing the already acknowledge car call again. This needs 4-wire technology or a I/O component that supports pulsing the output to be able to read the input (button) even if the lamp has been lit up.

30.1.1.2 Maximum car calls on 'no-load' indication

This parameter defines how many car calls can be registered, if the load measuring unit of the car/cabin indicates, that the car is empty.

30.1.1.3 Cancel car calls on no-load indication policy

This parameter defines if pending car calls shall be cancelled, when the doors are closing, if more car calls had been registered as stated by the '*Max. car calls on no-load*' car call policy and the load measuring unit of the car/cabin indicates, that the car is actually empty.

30.1.1.4 Car call disabling

This parameter holds a table containing car calls being disabled. These locked car calls may be enabled via an input terminal or a time planner function.

30.1.1.5 Car call code table

This object holds the table containing the floors and their doors, together with the numerical code required to enable the call. The code has to be entered via the car call panel, using the car call buttons as a number pad. You may use the output 'Status/controller signals Enter code indicator' to signal that ▸ a code has to be entered, featuring a indicator in the car call panel.

30.1.1.6 Car call code time

This option defines the time span granted to the user in order to enter the numerical code.

30.1.2 Landing call related options

30.1.2.1 Landing call disabling table

This parameter holds a table containing landing calls being disabled. These locked landing calls may be enabled via an input terminal or a time planner function.

30.1.2.2 Landing call 'enabling' afterrun time

This parameter defines an 'after-run' time that has to expire after the landing call enabling signal peaks down again, before the landing call is actually disabled again.

30.1.2.3 Landing call acknowledge policy

This parameter defines when the landing call acknowledge (lamp) shall be cancelled. Usually the landing call acknowledge is turned off, when the lift has arrived to the designated floor. For swing doors, that are mechanically unlocked via the car door being fully opened, it might be useful, that the landing call lamp is not turned off, before the car door has been fully opened.

30.1.2.4 Latched landing call lamps blink while driving

This is an option that can't be used in team operation mode. This option makes all the pending (latched) landing call acknowledges (lamps) do blink/flash, when the lift is driving. If the lift is standstill the acknowledges (lamps) will be constantly turned on.

30.1.2.5 Inhibit time between up & down call

This parameter defines if an inhibit time shall prevent the passenger from pressing both landing call buttons at about the same time. This shall prevent the bad habit of some passengers pressing both landing call buttons (up/down), thinking that the lift would arrive faster and then later on moan about the lift, driving in the wrong direction.

30.2 PB and APB Operation

On PB operation the next landing call can not be entered before the lift is idle again, having no pending calls anymore. Optionally the car load measuring unit can be used to ensure that the car is really empty. If the lift is not idle, the output signal 'Occupied' is turned on.

The difference between PB and APB operation is, that on APB operation, landing calls will be collected as long as the lift is still 'occupied'. These landing calls will be processed in the order they have been given rather than the direction. Depending on the region ABP operation might also be called 'Taxi' operation mode.

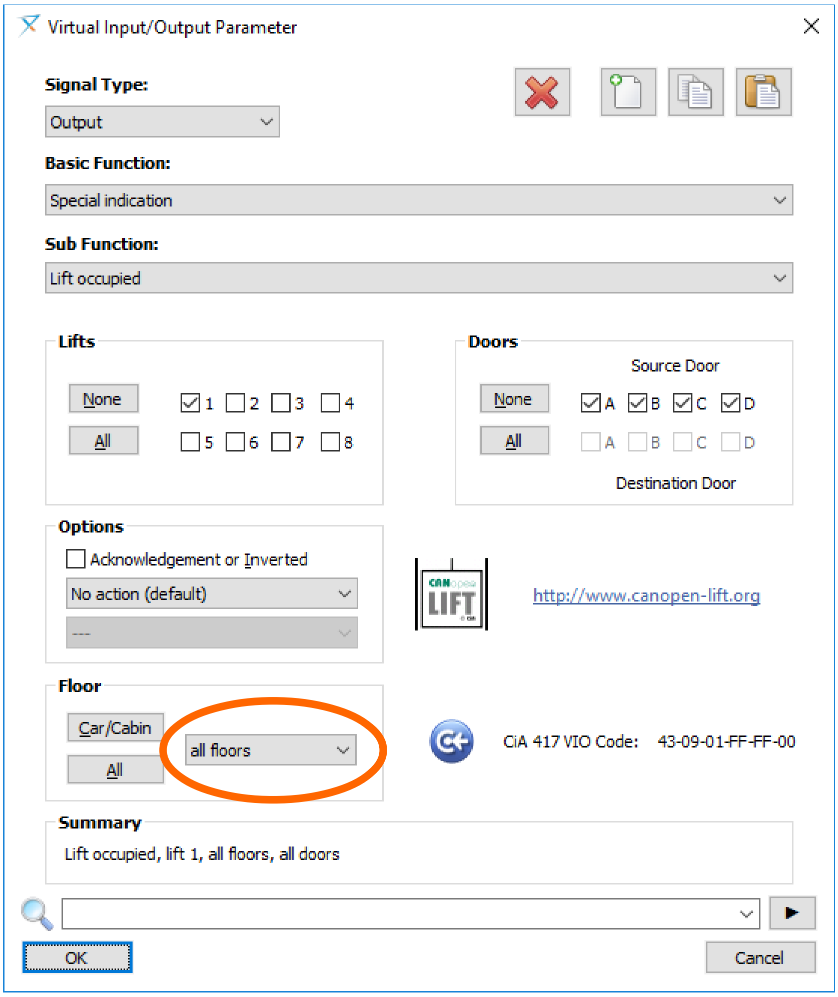


Figure 72: Special Indication 'Lift Occupied' used by PB/APB operation [Toolbox View]

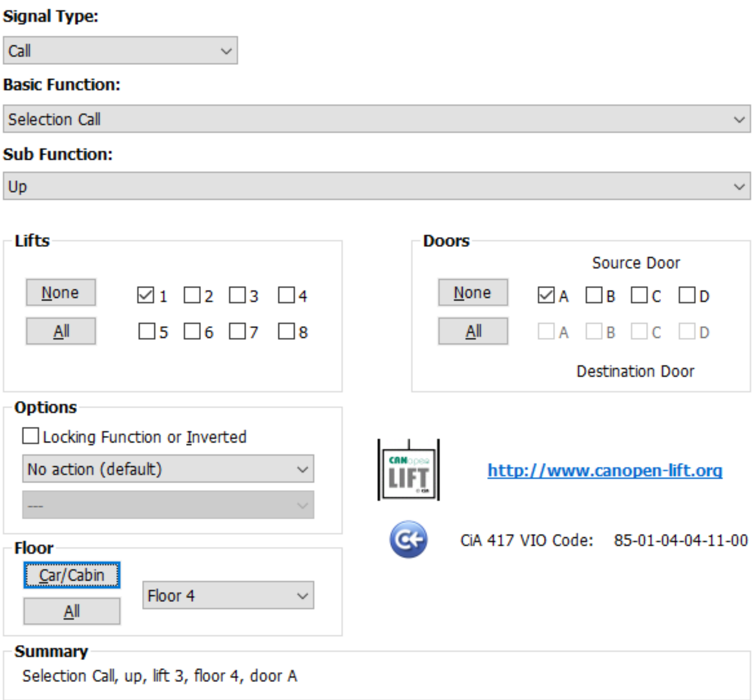
Because the 'Occupied' signal is usually used at the landings, do not forget to set 'floors' to '**all floors**' instead of 'cabin'.

30.3 Special 'Selection Landing Calls'

In some installations, it might be required that there is an easy way for the passengers to enter a landing call and addressing only one or some of the lifts in the group/team, for example the lifts with a larger cabin/car. To archive this without the need of extra buttons or key switches, the 'Selection Landing Calls' can be used.

Basically this is a manufacturer specific feature implemented in the I/O unit/panel itself. So it is not part of the CiA-417 yet and therefore can not be implied to be available, when purchasing any standard CANopen CiA-417 unit.

Normally when the waiting passenger enters a landing call, the IO unit/panel will transmit the 'press' and the 'release' event immediately. If having parameterized a 'Selection Call' the input unit will determine how long the button has been pressed and send either a 'Standard Landing Call' to all lifts in the team/group or if having detected a '*long press event*', an 'Extra Landing Call' with the lifts, that have been parameterized for that call. The time-span can be parameterized in the I/O-unit itself.



If monitoring the bus traffic, we can see that the unit transmits a 'Standard Landing Call' to all lifts on a regularly button press event and a 'Extra Landing Call' on a long-button-press event having just the lift 1 selected as parameterized.

```
27.03.2018/11:46:45.947[RX56717], Node    2, Lift 1-8, Hall call, up, floor 4, door A, on <02-01-FF-04-11-01>
27.03.2018/11:46:45.947[RX56718], Node    2, Lift 1-8, Hall call, up, floor 4, door A, off <02-01-FF-04-11-00>
```

```
27.03.2018/11:47:55.537[RX26306], Node    2, Lift   1, Hall call, Up [extra], floor 4, door A, on <02-04-01-04-11-01>
27.03.2018/11:47:55.537[RX26306], Node    2, Lift   1, Hall call, Up [extra], floor 4, door A, off <02-04-01-04-11-00>
```

30.4 Priority Call Operation

Priority calls are always used if a group of passengers shall be transported in a 'preferred' way. Bed transportation in hospitals is an example for this.

The NOUS lift application has two levels of priority calls, low and high priority calls. Priority calls are usually landing calls that are not assigned to a direction. That means the lift will stop in both directions, let the priority passenger in and allow him/her to enter now a car call that will be processed immediately.

Because there are literally dozen of applications that might be implemented using priority calls, there are quite a few options for priority call operation. All options exists twice. Once for low and once for high priority calls.

You will find the corresponding parameter by pressing first 'Home' and then the 'Settings Menu' and then go to 'Call Processing'.

30.5 Options

All the following options exists twice, for low and high priority calls separately.

30.5.1 Collect priority landing calls

Use this parameter to allow collecting priority call calls. The calls will be executed in the order they have been given. So image our example from the introduction - the first bed would be served first then.

30.5.2 Unlock car calls on priority via car preference

Use this parameter to define if the car calls on a priority call operation, shall only be enabled, if the car preference switch has been activated. This option might prevent passenger still being in the cabin to use the car calls, when the lift has arrived by use of a priority call.

30.5.3 Rule for pending car calls

This parameter defines what happens to pending car calls, if a priority landing call is received. Usually pending car calls will be canceled.

30.5.4 Pickup passenger with no-load

This parameter defines whether passengers are to be picked up on a priority call operation, when the cabin is emptied. This requires a reliable load measuring device.

30.5.5 Enter/Collect car calls on priority operation

This parameter defines if the passenger on a priority call operation is allowed to enter several car calls or just one, which is alterable. Alterable means that if having pressed the wrong car call, pressing another car call will cancel the already pending call.

30.5.6 Cancel/disable landing calls

This parameter defines if pending landing calls shall be canceled, if a priority call has been entered or if they shall be collected.

30.5.7 Re-enable disabled car calls

Using this option, it is possible to re-enable car calls, that had been disabled via the dedicated '*Car call disabling*' table before, when the lift has arrived at the priority call landing and is waiting for the passenger to step in and enter a destination.

30.5.8 Cancellation of a running load time

If a '*Load Time*' operation had been started, usually via a key-switch in the car, this option defines if this operation shall be aborted or canceled immediately, if a priority call has been registered.

As all the other options, this can be defined independently for low and high priority landing calls.

30.6 Misboarder Detection

If being turned on, the detection of misboarders - passengers that had pressed the wrong landing call direction and then step into the car giving a car call in the opposite direction. The lift controller will check which door had been opened and on which door, using the light curtain, passengers had stepped in. If the given car call is then entered in the wrong direction, the remaining landing call in the other direction will then be cancelled on that door side.

You will find the corresponding parameter by pressing first 'Home' and then the 'Settings Menu' and then go to 'Call Processing → Landing Calls → Misboarder detection'.

30.7 Transition from Low Priority Call to High Priority Call

If a low priority call is currently processed - *for example for bed transportation* - and a high priority call will be entered - *for example used by the medical emergency team* - it will cancel the pending low priority call to process the high priority call instead. If the option for collection low priority calls has been activated the call is not lost, but put back to call memory instead.

So if we stick to the hospital example, a typically option setup would look like this:

Low Priority Calls:

Collect priority landing calls	On (Yes)
Unlock car calls on priority via car preference	On (Yes)
Rule for pending car calls	Cancel pending car calls
Pickup passenger with no-load	No, ignore car load
Collect car calls on priority operation	One alterable call
Cancel/disable landing calls	Collect landing calls

High Priority Calls:

Collect priority landing calls	On (Yes)
Unlock car calls on priority via car preference	Off (No)
Rule for pending car calls	Cancel pending car calls
Pickup passenger with no-load	No, ignore car load
Collect car calls on priority operation	One alterable call
Cancel/disable landing calls	Collect landing calls

30.8 Guest Calls

Typical applications for guest calls are medical practices, law firms or apartments into which a lift enters directly. Guest calls are used when a passenger wishes to travel from a freely accessible pick-up floor to an usually blocked destination floor and the trip is to be initiated by the host, e. g. the tenant, not by the passenger himself. It is not uncommon for guest call operations to be combined with a voice or video link, as in the case of trips directly into an apartment.

The process is triggered by pressing the guest call button on the host's destination floor.

You will find the corresponding parameters by pressing first 'Home' and then the 'Settings Menu' and then go to 'Call Processing' → 'Guest calls'.

Car calls to the destination floor can be locked using the car call disabling table (see chapter 36.10). The wiring of the car calls to the destination floor is carried out either in:

- 3-wire technology, if the CANopen device is able to detect a peak-up of the input signal, having the output activated (e. g. the IO8 or LXC)
- 4-wire technology, if the CANopen device does not meet the above criteria. In that case the input and output have to be wired separately.

30.8.1 Theory of Operation

The guest call operation is divided into 4 phases:

- Phase 1 – Waiting
- Phase 2 – Picking Up
- Phase 3 – Allocation
- Phase 4 – Delivering

Phase 1 is activated when the guest call operation has been triggered by a guest call but picking up the passenger has to be delayed. Possible reasons for a delay are:

- Special operations are pending, such as car preference being active.
- Pending car calls or priority calls that have to be processed first.
- The current operation/trip has to be finished first.

As soon as the lift is idle, the guest operation will turn to phase 2, driving to the source (pickup) floor. Once the lift has arrived at the source floor, the lift opens its doors and lets the guest enter the car/cabin. The lift then remains in phase 3 for a definable dwell time, until one of the following events occurs:

- The defined dwell time has been expired.
- The doors of the lift have been closed.
- An enable signal has been activated by the passenger in the car (see chapter 30.8.4).

The transition to phase 4 can either be initiated by the first two conditions (*dwell time or doors closed*) or by some of the options, discussed later. During phase 4, the guest is delivered to the destination floor.

No new car calls can be given during phases 2 to 4. Landing calls are usually collected (see chapter 30.8.4).

The dwell time used in phase 3 can be changed by navigating to the 'Settings Menu' → 'Doors' → 'Door Options & Times' → 'Door Timers' → 'Dwell time values' → 'Priority & guest call dwell times' → 'Guest call dwell times'.

30.8.2 Guest call signal

You find the CiA 417 standard call signals for this operation in the '*guest call*' group.

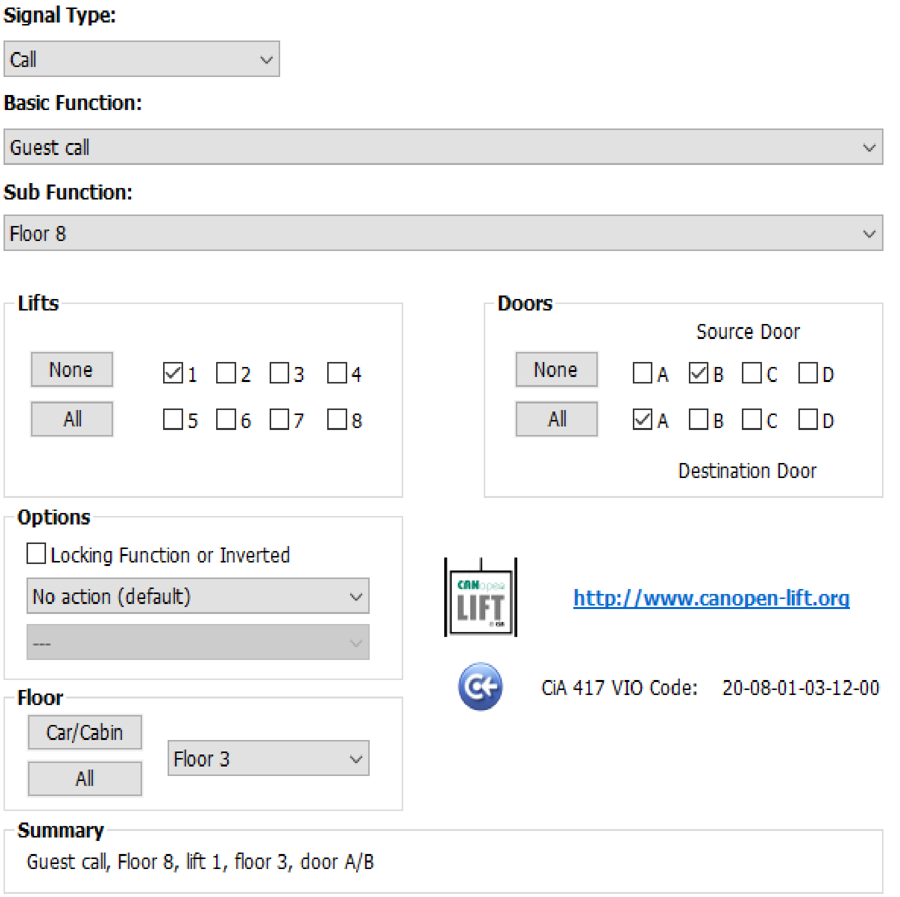


Figure 73: Call Signal 'Guest Call' [Toolbox View]

This example shows the parameter of the guest call from source (pickup) floor 3, door B, to the destination floor 8, door A.

30.8.3 Guest call output signals

- Special function acknowledgment → Special service acknowledge, lift 1, all floors, all doors

  This output signal is turned on when the guest call operation is in phase 1 for more than 5 seconds. The signal is turned off when leaving phase 1.

- Special indication → Guest call indication, lift 1, all floors, all doors

  This signal is turned on for the duration of phases 2 to 4.

The output of the active guest call button is flashing/blinking during phase 1 (delay). It is permanently switched on in phases 2 to 4. If there are other 'waiting' guest calls, while a guest call is already being processed, these calls are flashing/blinking as well.

30.8.4 Guest call parameters & options

A spot-on working CANopen load measuring unit is required for the option *'Guest pick-up with empty car* and *guest delivery by weight change'* to work reliable.

30.8.4.1 Allow car call reentering

After enabling this option newly entered car calls will be processed while the guest transfer is delayed in phase 1. This can be useful if new passengers cannot be prevented from boarding when the lift does stop on some floor.
default value: Off

30.8.4.2 Collect landing calls

This option enables the collection of landing calls during an ongoing guest call operation in the phases 2 to 4, default value: On

30.8.4.3 Guest pick-up with empty car

Activating this option allows the transition from phase 1 to 2 only if the load measuring device detects the car as empty, default value: Off

30.8.4.4 Guest delivery by car call

This option enables the start of the guest delivery by pressing the car call button, Default Value: On

30.8.4.5 Guest delivery by weight change

This option enables the start of the guest delivery by noticing a weight change, default value: Off

30.8.5 Guest call notification (Logbook)

The logbook gives a record of a guest call operation procedure.

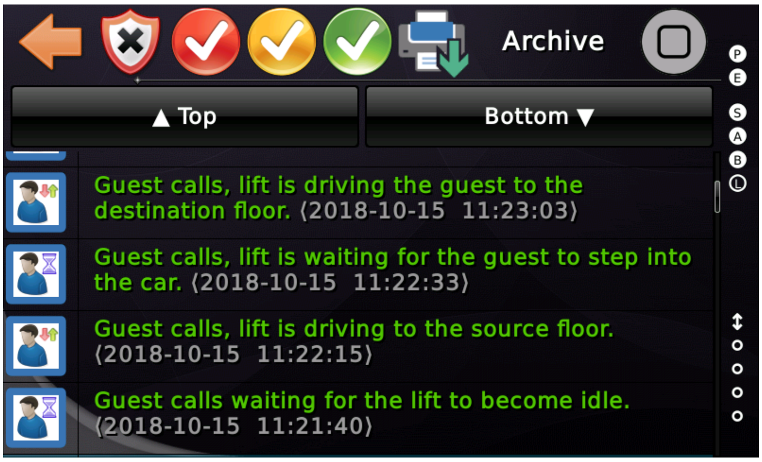


Figure 74: Logbook items created by the guest call operation

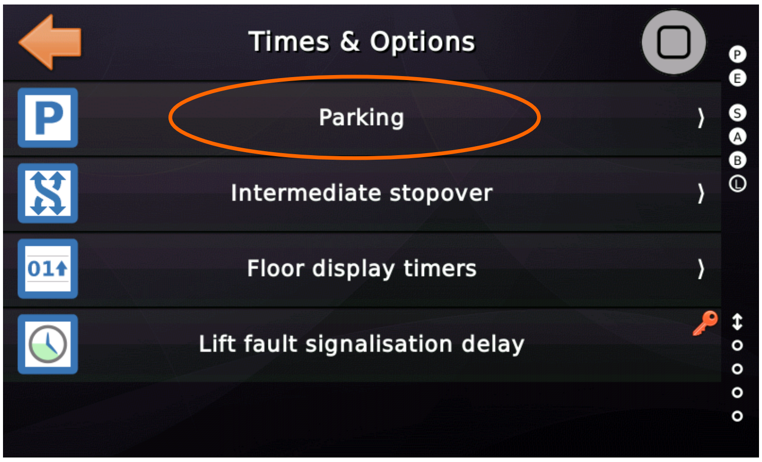
31 Parking

Parking operation will usually home the lift to either a specific floor or within a range of floors, known as a 'zone'.

You will find the parameter related to Parking Operation by pressing first 'Home' and then 'Settings Menu' and then go to 'Controller/Piloting' → 'Times & Options' → 'Parking'.

If the lift is already parked, you can also tap on the 'Park'-symbol above the car to quickly reach the parameters.

In the simplest way a timer and a floor can be setup to make the lift park after being idle for the given time-span.



The lift is defined to be 'idle', if no calls or functions like 'Car Preference' are pending and the doors have been closed. For lifts having manual/swing doors that usually means that the landing doors are closed but the car doors are kept open.

If you setup only a timer and the floor to 'off', the lift will still park after being idle for the given time, but on any floor then.

31.1 Parking Parameters & Options

31.1.1 Parking strategy

This parameter defines if the lift shall feature a simple parking floor or a more enhanced mode, like 'zone parking' in a group/team environment. If running in 'zone parking' mode, the program would split the hoistway into parts and ensures that every part is covered by a team lift. You may also consider the self learning feature.

31.1.2 Simple parking mode

The lift is simply driven to the given parking floor, if being idle and the parking timer has expired.

31.1.3 Zone parking mode (team only)

The lift team will break down the hoistway into zones and ensure that every zone is covered by one team lift, standing 'in the middle' of each zone. Be aware that the option 'Cars at lobby' floor is in charge and may reduce the count of cars that actually can cover the zones.

31.1.4 Self learning parking mode

The lift controller will record statistical data to detect, on which floor the lift is required to be at which time in the week.
You can have a peak at the recorded values by entering *Diagnosis Menu → More… → Even more… → Further more… ->Parking statistics / Self learning parking*.

31.1.5 Parking timer

This parameter defines the time to park the lift when no calls are present. The parking floor is determined by the parking strategy/mode and other options.

31.1.6 Parking floor

This parameter defines the parking floor, used for parking the lift, if being idle and using the 'simple' parking mode.

31.1.7 Cars at lobby floor

This parameter defines how many cars shall be kept at the lobby floor, if featuring the 'zone parking' strategy.

31.1.8 Parking in-between floors

This parameter defines the distance used to park in-between floors, relative to the floor level position of the parking floor used. This option is only available if the parking strategy has been set to '*simple parking mode*'.

31.2 State & Signals preventing parking operation

The lift might not enter parking operation, if...

- Car Preference has been turned on.
- Maintenance has been activated.
- Guest calls are pending.
- Priority calls are pending.
- Any kind of loading/allocation time holds the lift in place.

31.3 Outputs

The acknowledge signal is sent twice via the bus system. Once for the car and once for the hoistway, containing the current parking floor.

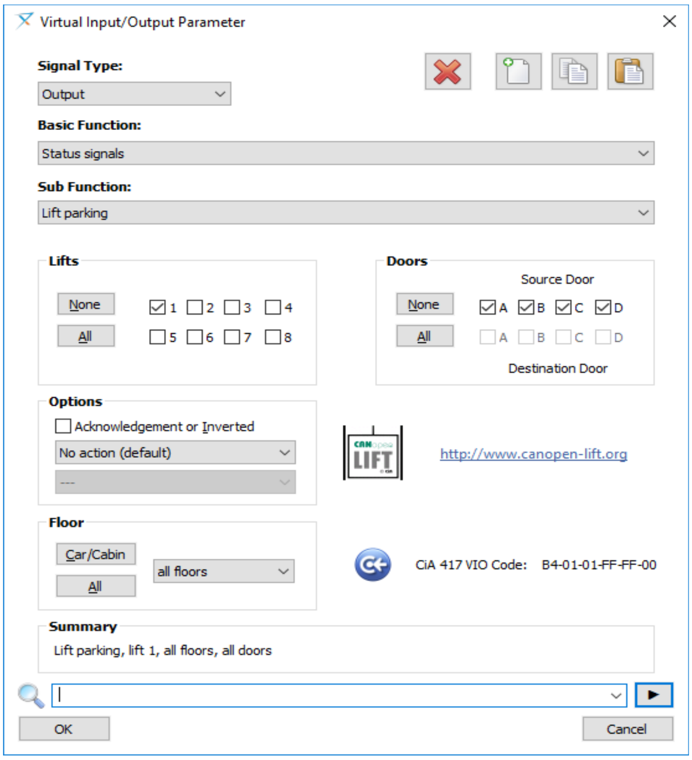


Figure 75: Parking Acknowledge signal [Toolbox View]

32 Cabin/Car Illumination (light) off timer

In order to turn off the light in the car after the lift has closed the doors and is idle for the given time-span, you can setup a timer.

You will find the corresponding parameter by pressing first 'Home' and then the 'Settings Menu' and then go to 'Cabin/Car' → 'Cabin light timer''. If the lift has already turned off the light, you can also tap on the 'Light' symbol above the car to quickly reach the parameters.

Figure 76: Car Light Off Timer

If you operate automatic doors, they have to be closed to turn the light off. If using manual/swing doors the landing doors need to be closed. The car doors will stay open usually. In that case it is recommended not to turn off the light completely but reduce it by just turning some of the lights off.

If turning the lift to 'Standby' operation, the cabin/car lights will always be turned off immediately within 3 seconds.

32.1 State & Signals that prevent turning off the cabin light

The lift might not turn off the cabin/car lights, if...

- Car Preference has been turned on.
- Guest calls are pending.
- Priority calls are pending.
- The lift is on any special operation, like 'Fire Alarm'.

32.2 Output for turning the car lights off

There are two signals broadcast via the bus system that might be used to turn off the cabin illumination. One is vendor specific and one is standardized.

- Status signals → Car illumination off, lift 1, car/cabin
- Lift lights → Main light off acknowledge, lift 1, car/cabin

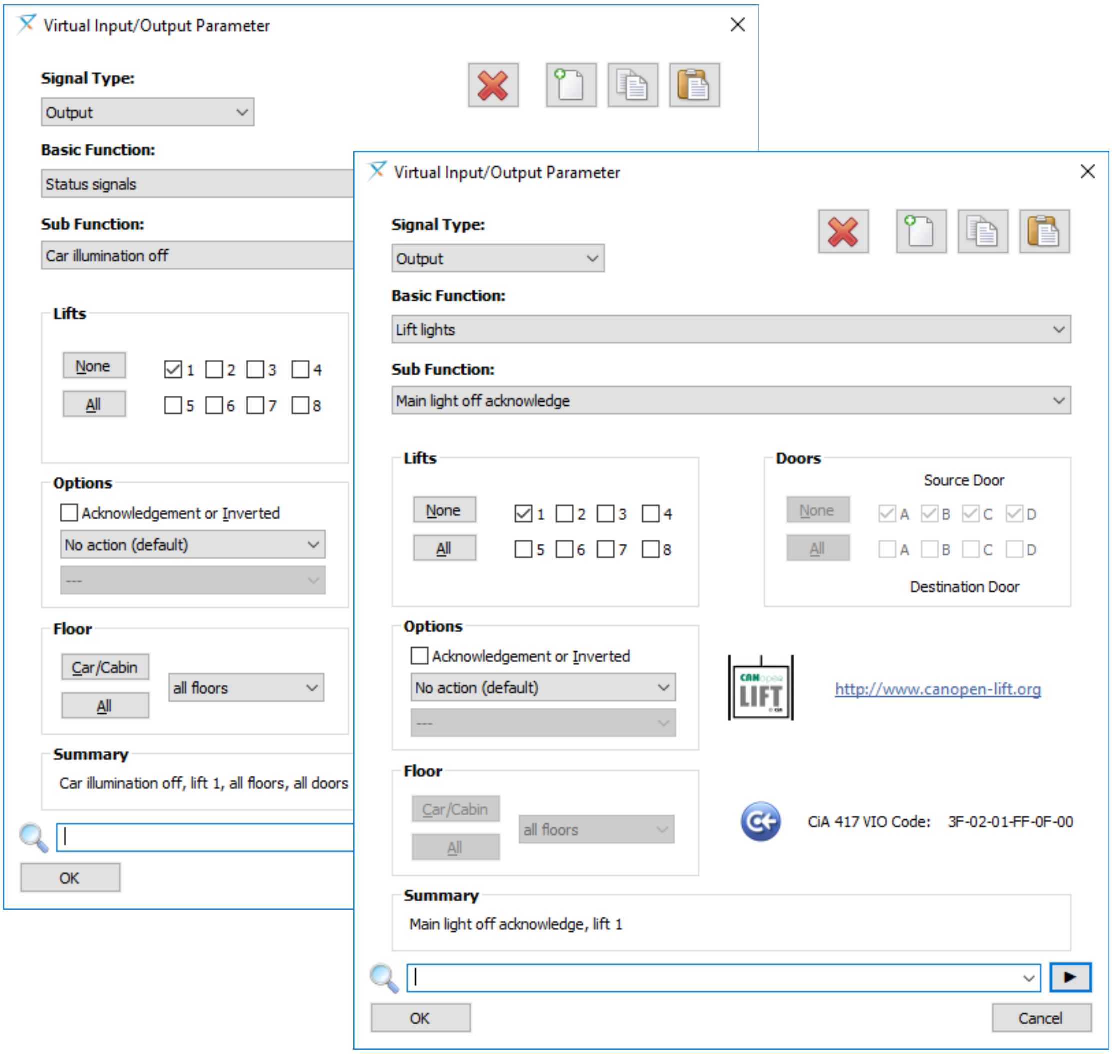


Figure 77: Output for turning the cabin lights off [Toolbox View]

It is recommend always to use a signal that actively turns off the light, if being activated. If using a signal the other way around, so that it has to be activated in order to turn the lights on, you risk to turn off the car light by mistake, if the bus communication between the control cabinet and the car has been interrupted. So you risk to catch the passengers first and then leave them in darkness.

33 Floor Displays/Indicators off timer

In order to reduce the brightness and/or turn off the displays and indicators, after the lift has closed the doors and is idle for the given time-span, you can setup timers.

You will find the corresponding parameter (timers) by pressing first 'Home' and then the 'Settings Menu' and then go to 'Controller/Piloting' → 'Times & Options' → 'Floor Display Timers'.

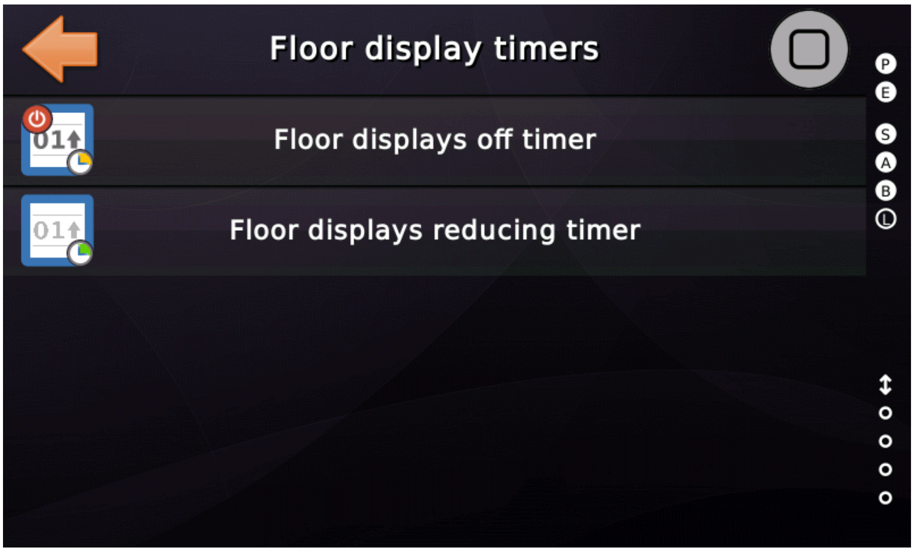


Figure 78: Timers for reducing and turning off the floor displays

If both timers have been setup, the 'Display Reducing' timer will expire first and then the 'Display Off' timer will start to expire.

If turning the lift to 'Standby' operation, the displays will always be turned off immediately within 3 seconds.

33.1 State & Signals preventing reducing/turning off the displays

The display will be kept on, if...

- Car Preference has been turned on.
- Guest calls are pending.
- Priority calls are pending.
- The lift is on any special operation, like 'Fire Alarm'.

33.2 Signals used to reduce/turn off the floor displays

33.2.1 Hall Lanterns

The hall lanterns are simply turned off by using the regularly signals for the arrows and turn them to off state.

33.2.2 Direction Indicators

The direction indicators are simply turned off by using the regularly signals used for the arrows anyhow.

33.2.3 Floor Indicators

The floor indicator are reduced in brightness or turned off in two different ways. First off all the current floor value is set to 'zero', which might lead some of the existing displays on the market to show 'Out of Order', which often can be parameterized in the display unit.

The second way of reducing the brightness and/or turning off the floor displays is to use the more modern and sophisticated '*Energy consumption (power saving)*' messages as defined by CiA 417. So if you have installed one or more modern CANopen displays that process those messages, they will reduce the background light and finally turn off themselves without any need of extra cabling.

33.3 Arrival Indication

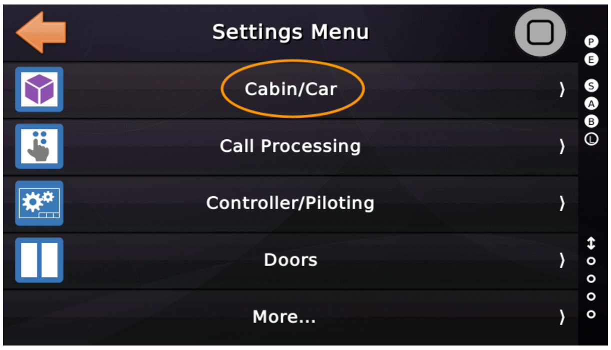
In principle, the arrival signal (gong) can be parameterized on any CANopen CiA 417 compatible I/O module, like an LXC on the cabin or an IO2, IO4 or IO8 in the landing panels.

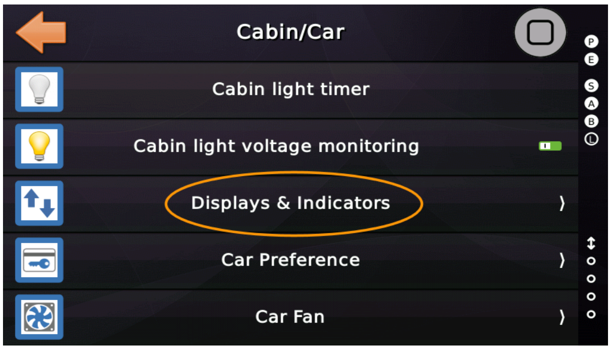
For a car/cabin arrival Indication set up correctly, the output signals typically used for up and down, look like this:

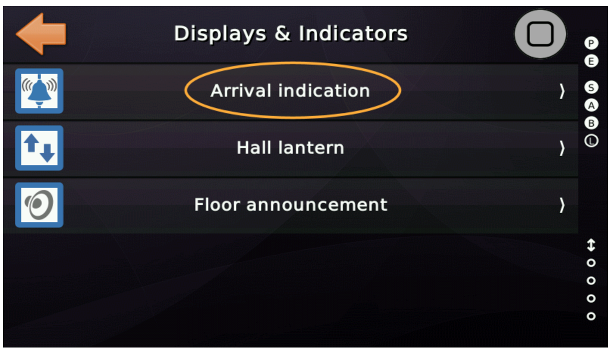
- Arrival indication, up, lift 1, all floors, all doors
- Arrival indication, down, lift 1, all floors, all doors

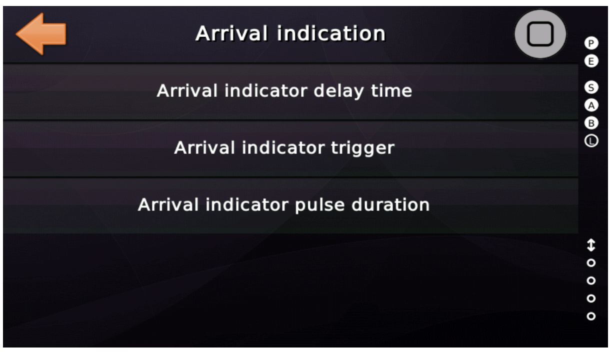
If the arrival Indication is used in a landing door panel, then instead of the setting 'all floors' the correct floor (1..n) must be setup.

The user interface (menu) allows you to specify the type of calls that trigger the arrival indicator when arriving in the floor (typically landing calls), the delay used for triggering the indicator as well as the duration of the pulse. The duration time is nowadays uninteresting for modern digital arrival indicator units.









33.3.1 Arrival Indicator options

33.3.1.1 Arrival indicator delay time

This parameter defines the arrival indicator delay time, starting after having passed the counting pulse.

33.3.1.2 Arrival indicator trigger

This parameter defines which call types will trigger the arrival indicator - typically landing calls do.

33.3.1.3 Arrival indicator pulse duration

This parameter defines how long the pulse is that triggers the arrival (gong) module. The gong pulse length was originally made for mechanical bells with a magnet to push a rod to the bell house.

34 Energy Saving Timers

In order to reduce the energy consumption of the lift installation, when the lift is being idle, two timers have been implemented.

You will find them under 'Settings Menu' → Controller/Piloting' → More' → 'Even more...' → 'Even more...' → 'Energy Saving Operation'.

34.1 Energy Saving Timer

If the lift is idle for the given time span, the lift will activate the dedicated output and transmits 'Energy Saving Level S4' via the CANopen bus. Usually the CANopen displays and drive units will react on this automatically, entering an energy saving operation mode. Be aware that this actually means, that processing the first landing call might take a bit longer as the systems have to enter normal operation first.

34.2 Standby Timer

If the lift is idle for the given time span, the lift will activate the dedicated output and transmits 'Energy Saving Level S6' via the CANopen bus. Usually the CANopen displays, doors and drive units will react on this automatically, entering standby operation mode. Be aware that this actually means, that processing the first landing call might take quite a bit longer as the systems have to enter normal operation first and the drive unit needs to power up its DC-bus again.

34.3 Wake up-Timers

34.3.1 Energy Saving Wake-up Time

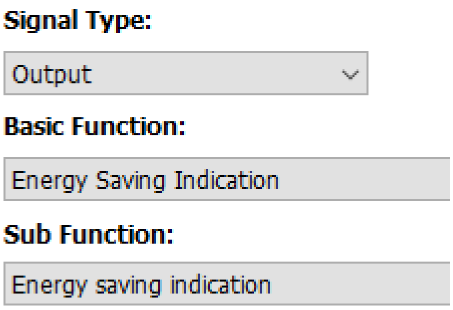
This time defines how long it takes to wake up all components from energy saving operation (S4). Usually the units will indicate some kind of status for being back to normal operation. Anyhow, if using just a dedicated output for turning them to energy saving mode, you may need to have a 'wake up' timer setup.

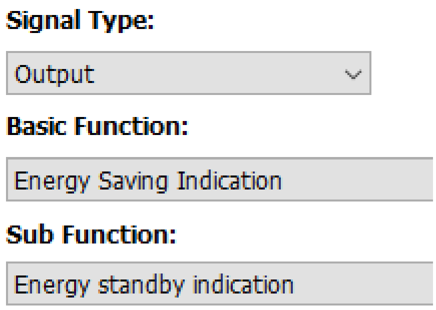
34.3.2 Energy Standby Wake-up Time

This time defines how long it takes to wake up all components from energy standby operation (S6). Usually the units will indicate some kind of status for being back to normal operation. Anyhow, if using just a dedicated output for turning them to energy standby mode, you may need to have a 'wake up' timer setup.

34.3.3 Outputs

There are two dedicated output functions available for indicating 'Energy Saving' or 'Energy Standby' operation mode.

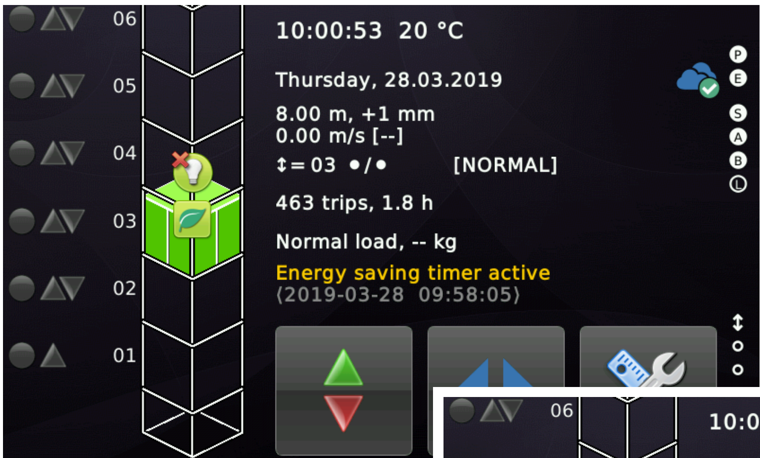




These output functions can be used on any kind of CANopen I/O module as often as required.

34.4 Visualization

The corresponding icons are used to indicate at the desktop, if the lift is in any kind of energy saving operation. If a wake-up time is still pending/running, the dedicated warning is shown at the screen as well.



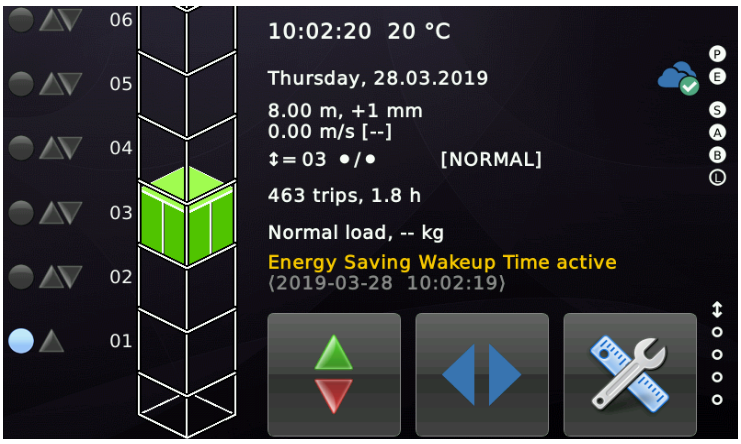


Figure 79: Energy saving timer

35 Circulating operation

This operating mode can be used, if the lift shall drive automatically to a set of floors, stopover on each defined floor, do a door cycle and then drive to the next given floor again from the table. Once the table has been completed, the lift will start over again.

You can define how many complete cycles the lift shall do, before automatically pausing this operation mode for an adjustable time span.

You will find the feature under 'Settings Menu' → Controller/Piloting' → More' → 'Even more...' → 'Even more...' → 'Circulating operation'.

35.1 Options

35.1.1 Circulating operation usage

This parameter defines if the lift can be turned to circulating mode, typically via an input function – see page 134.

35.1.2 Floor table/plan for circulating operation

This object defines the floor table/plan used, if running on circulating operation, to define to which floors the lift shall drive in which order.

The floor plan has to be filled starting from the bottom of the table. The main floor were the cycle will start and finally end, is the lowest entry, highlighted in color.

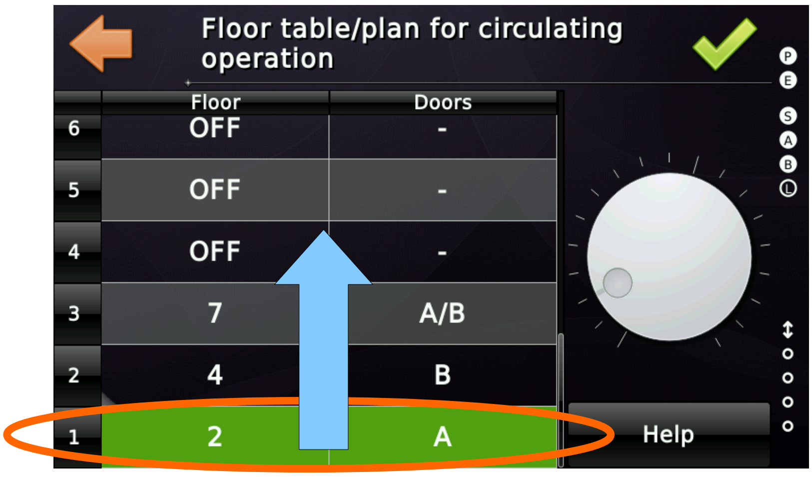


Figure 80: Floor plan used for the circulating operation

35.1.3 Cycle counts on circulating operation

This object defines how many cycles the lift controller shall perform, before doing a pause and operating normally.

35.1.4 Pausing time in-between cycles on circulating operation

This object defines the pause time in-between cycles, if having performed the given count of cycles.

35.1.5 Inhibit time for regularly passenger calls

This object defines the inhibit time used, if a regularly passenger call has been processed, before the next could interrupt the circulating operation again.

35.1.6 Circulating operation, light barrier power off function & time

This object defines the time the light barrier will be powered off after arrival, if the lift is running on circulating operation mode.

To make this feature work, you will need to power the light barrier units using a specific output function – see page 134.

Another specific output can be used to indicate in the car/cabin, that the light barrier had been powered down. For automatic doors the indication output will start blinking, when the last ten seconds do expire.

35.2 Inputs/Outputs

Usually the function is activated using a key switch, often in the lowest landing. Use this input function to activate the circulating operation mode.

35.2.1 Input for activation

Status/controller signals → Circulating operation, lift 1, all floors, all doors

35.2.2 Output as an acknowledge signal

Status/controller signals → Circulating operation acknowledge, lift 1, all floors, all doors

35.2.3 Output to power off the door light curtains

Door controlling signals → Light curtain power supply off, lift 1, car/cabin, all door

35.2.4 Output indicating, that the light curtains have been powered off

Door controlling signals → Light curtain power supply off car indication, lift 1, car/cabin, all doors

35.3 Log Book Items

Activating the circulating operation mode and finally turning it off again is logged in the log book.

Figure 81: Circulating mode turned on and off again

35.4 Additionally information shown at the desktop

At the desktop, you can spot the calls generated by the circulating operation easily. They are red tinted while the normal passenger calls are light-blue tinted. If a passenger call has interrupted the circulating operation, then usually an inhibit time is started which is indicated via a message. While this time is running, passenger calls will be collected but not executed.

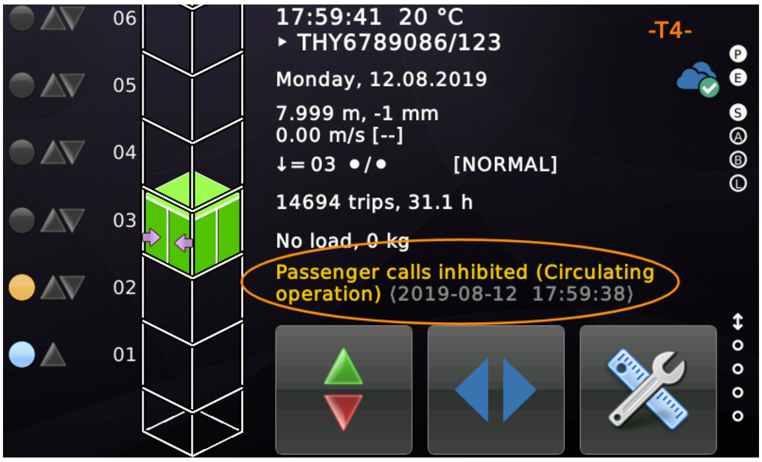


Figure 82: Passenger calls inhibit time

36 Car Preference

Usually every lift controller has the option to run the lift temporarily on car calls only while collecting pending landing calls meanwhile. There are a lot of different applications for such a function and so a bunch of options have been added over time.

You will find the corresponding parameters by pressing first 'Home' and then the 'Settings Menu' and then go to 'Cabin/Car' → 'Car Preference'.

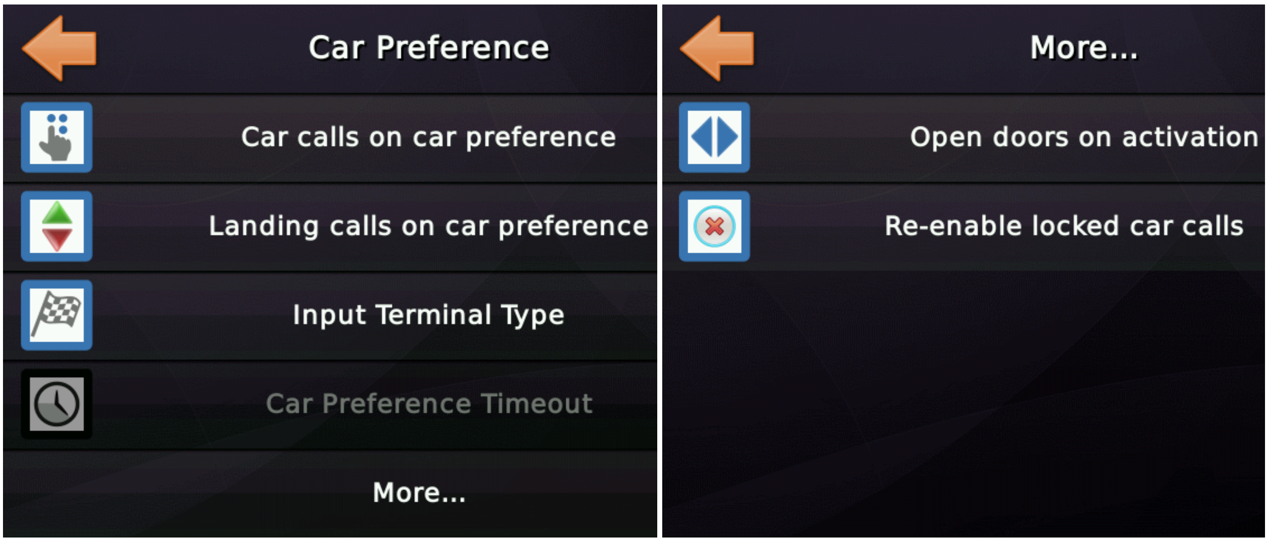


Figure 83: The Car Preference Options

36.1 Car calls on Car Preference

Defines if one or more car calls can be entered on car preference operation. By default you can only enter one car call that is alterable. That simply means if you pressed the wrong car call, just press another one.

Alternatively you can set this option to '*Collect car calls*'. In that case the car calls are collected as on normal lift operation.

36.2 Landing calls on Car Preference

By default landing calls are collected while the lift operates Car Preference. But if the Car Preference feature is used for long-term operations, it might be useful to cancel pending landing calls and prevent the passengers from entering new ones.

36.3 Open doors on activation (Car Preference)

If the doors have already been closed and a passenger operates the car preference switch (often by using a key), the doors usually should stay closed, not inviting someone else to enter the cabin. But in some cases, depending for what the Car Preference feature actually might be used for, the doors shall re-open. This option allows to change the door behavior.

36.4 Re-enable car calls on car preference operation

This option defines if car calls, being disabled via the internal table, shall be re-enabled, if the lift enters car preference operation.

36.5 Input Terminal Type (Car Preference)

In most cases the Car Preference (Independent Mode) is operated by by means of a key switch. So, it is usually a switch with two positions, simply '*On*' and '*Off*'. In some cases the signal is generated by a card reader, that just generates an 'impulse'. If the signal is driven by a card reader via a simple impulse, there are two possible operating modes:

1. The Car Preference function will be activated via an impulse from the card reader and automatically turned off again, after the lift has reached the destination floor and all pending car calls have been finished or after 10 minutes without any car call pending and the lift not being driven.
2. The Car Preference function is turned on with the rising edge from the first impulse of the card reader and is turned off again with the fallen edge of another following up impulse from the card reader, later on.

This option is used to define the way the input signal for the Car Preference is actually indicated to the lift controller.

36.6 Car Preference Timeout

This parameter defines the timeout for the car preference function, if featuring a card reader/button instead of a key switch having two permanent positions. This option is only available, if you have set the input type to one of the following variants:

- *Activation via impulse and finish after last car call*
- *Input toggles function (on/off) with every impulse*

The value is given in minutes.

36.7 Lift Team Operation (Car Preference)

If the Car Preference function has been turned on, the lift will temporarily leave the lift team, leaving the pending landing calls for the remaining lifts.

36.8 Manual door operation on car preference

This parameter defines if the doors shall be operated in manual operation mode, using constant pressure on the door open/close buttons, if car preference (VIP or independent mode) has been activated. This is the default for US-ASME-A17.1 mode

36.9 Acknowledge Output (Car Preference)

If implementing some kind of display showing 'CAR PREFERENCE', you may use this display signal. You find it under 'Special Indication' → 'VIP transport'.

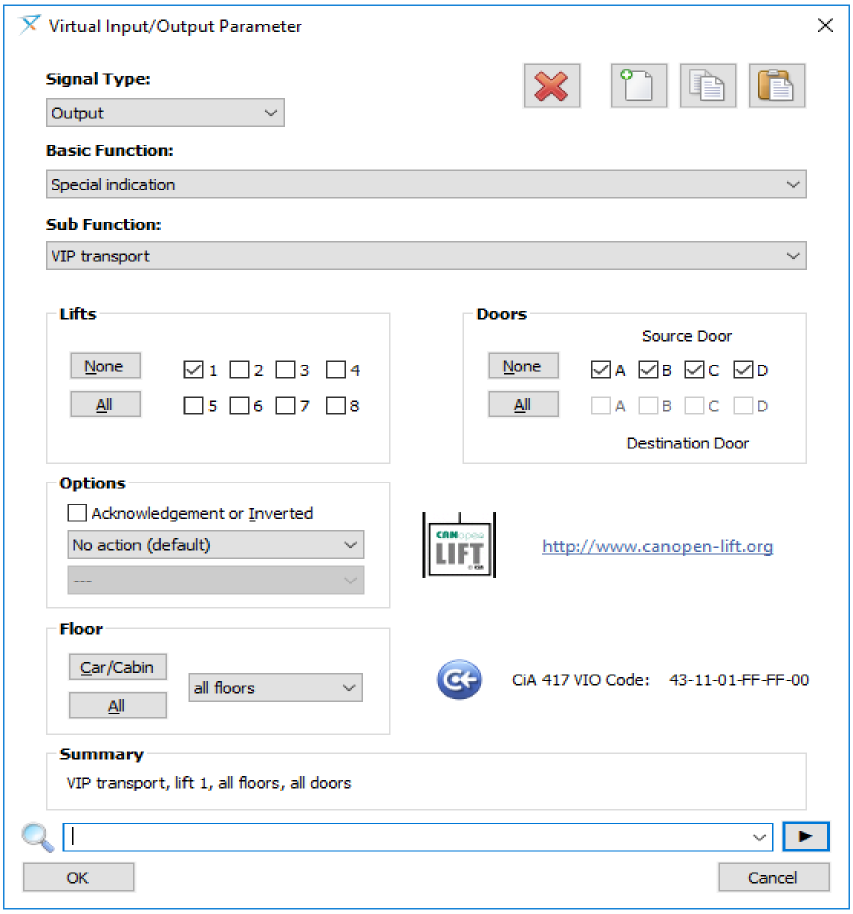


Figure 84: Acknowledge signal used by Car Preference [Toolbox View]

36.10 Call Disabling/Enabling

In order to allow only specific passengers to use landing (or more likely) car calls, several '*Call Disabling Tables*' do exists.

36.10.1 Disabling Calls via Tables

You will find the corresponding parameters for disabling calls by pressing first 'Home' and then the 'Settings Menu' and then go to 'Call Processing' → 'Car Calls' or 'Landing Calls', depending of what kind of calls you want to disable.

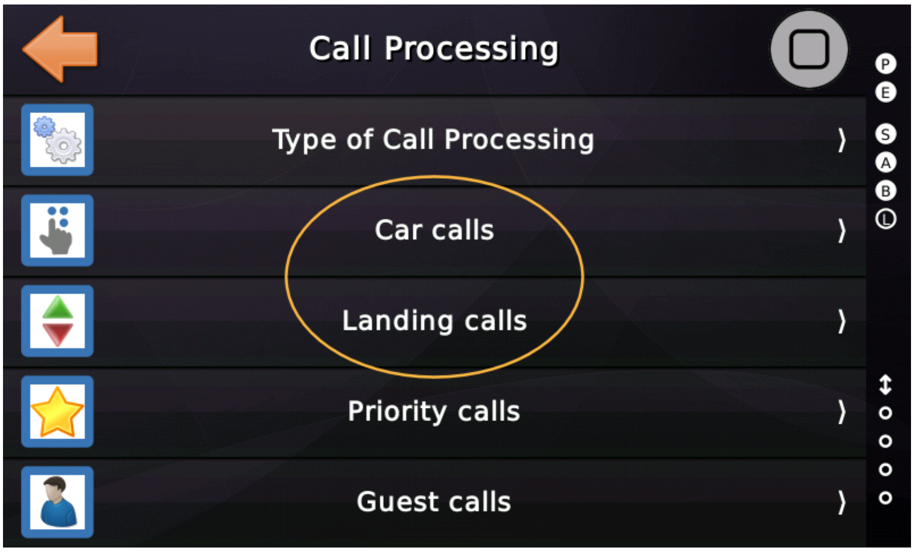


Figure 85: Car Call & Landing Call Options

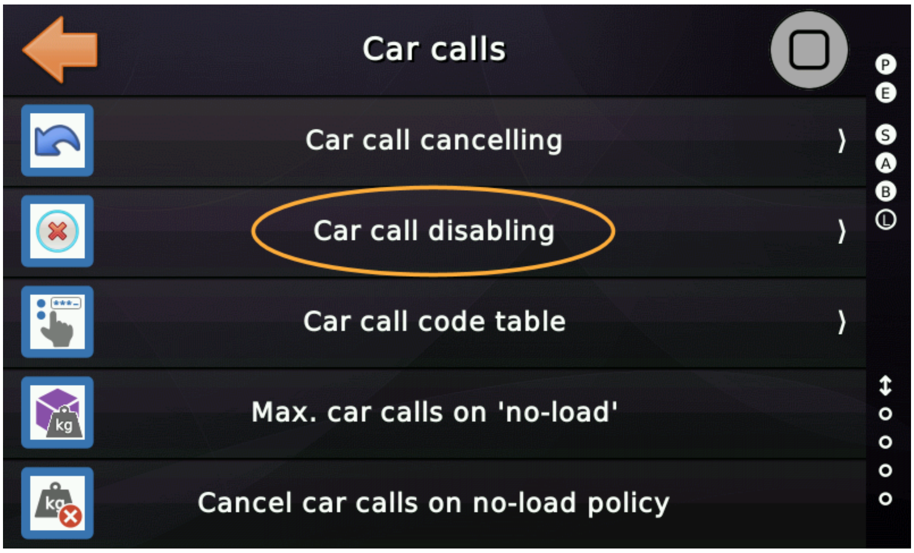


Figure 86: Car Call Disabling Parameter

The tables for disabling calls work inverse to the door tables. Select the floors or doors that shall be disabled, depending in which table you are, for the car or the landings.

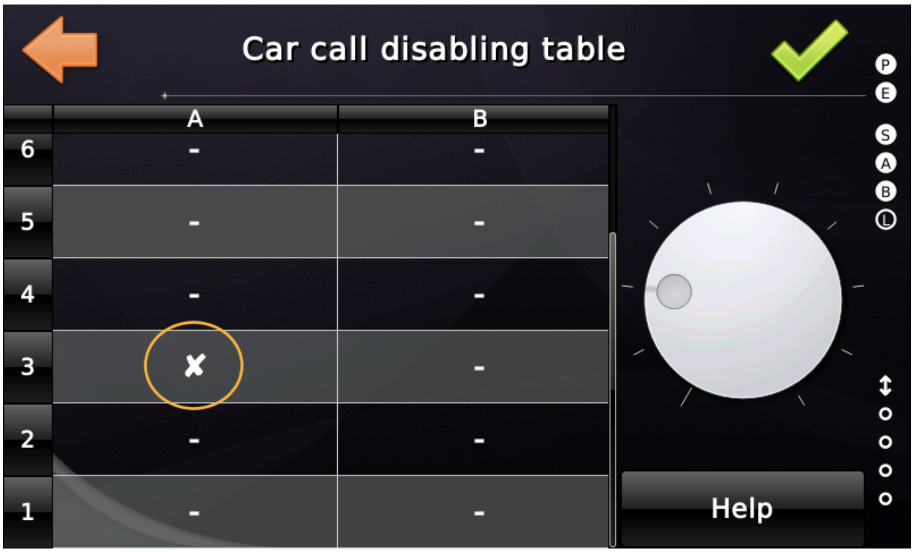
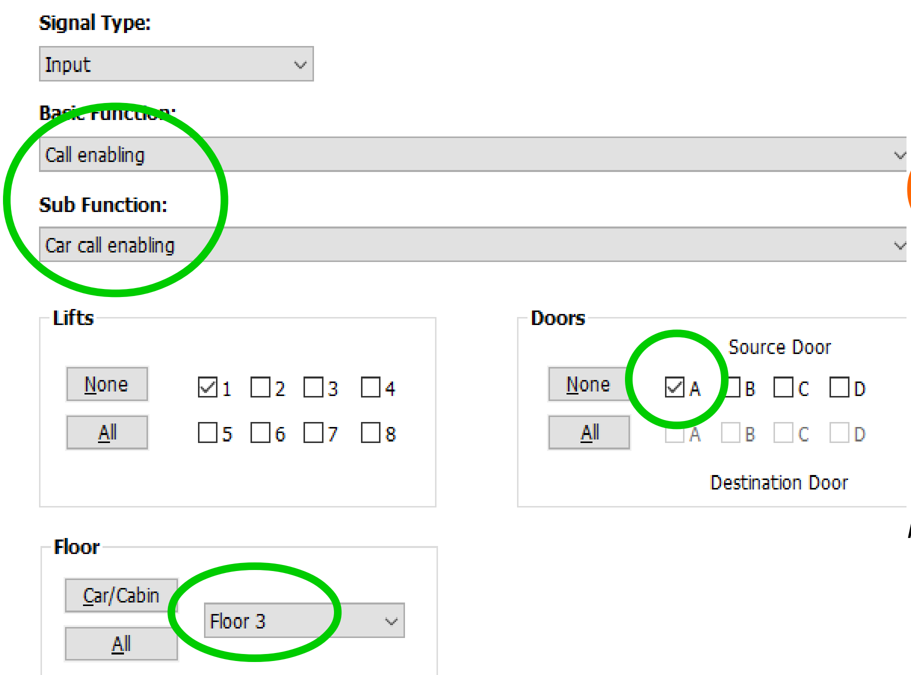


Figure 87: Car call disabling table

36.10.2 Re-Enabling Calls via Inputs or Codes

To select an entry in the table, simply do a Tap'n'Hold on the requested table cell. Disabled calls will have a '*red cross*' overlay icon in the desktop of the lift application.

In order to enable a call for input again, that has been disabled via the corresponding table, an electrical input can be used.



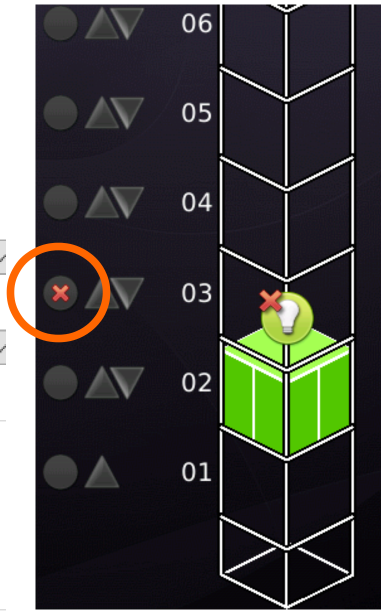


Figure 88: Disabled car call

If all disabled car or landing calls shall be enabled with just one input, use the input as shown in the figure before, but set floors to '*all floors*' and select all doors (A/B/C/D).

Depending on the system that controls the inputs for enabling calls, it might be useful to define an '*after run time*', especially if the input is just '*impulsed*' by a card reader.

The corresponding parameter for defining a '*call enabling afterrun time*' exists twice, for car calls and landing calls separately.

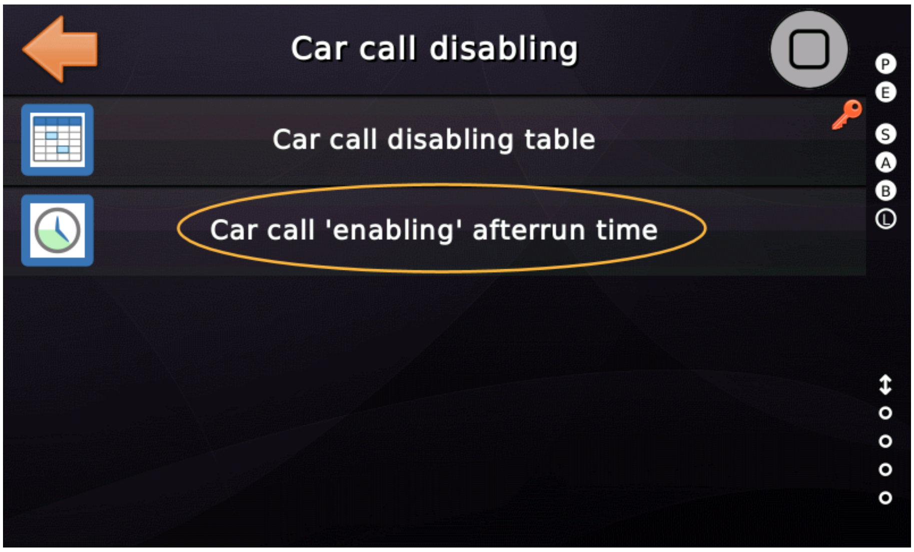


Figure 89: Car call enabling after run time

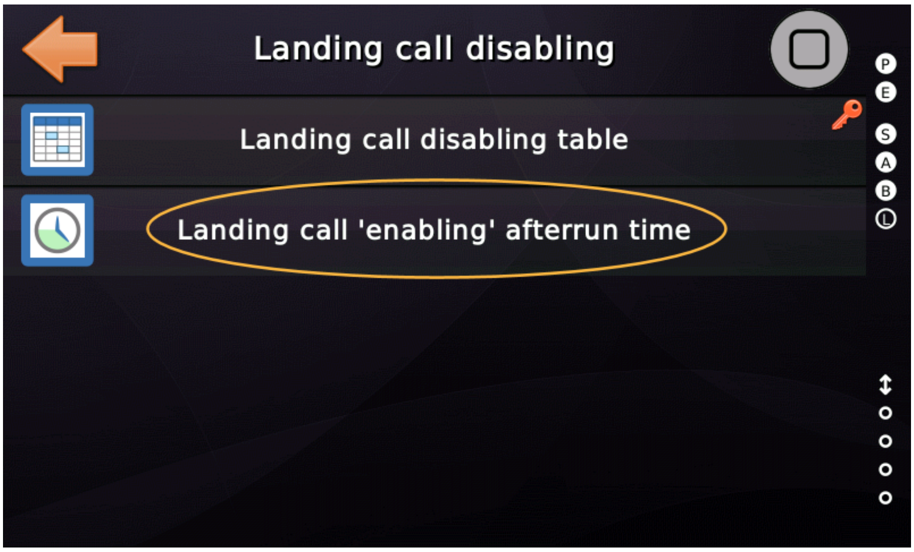
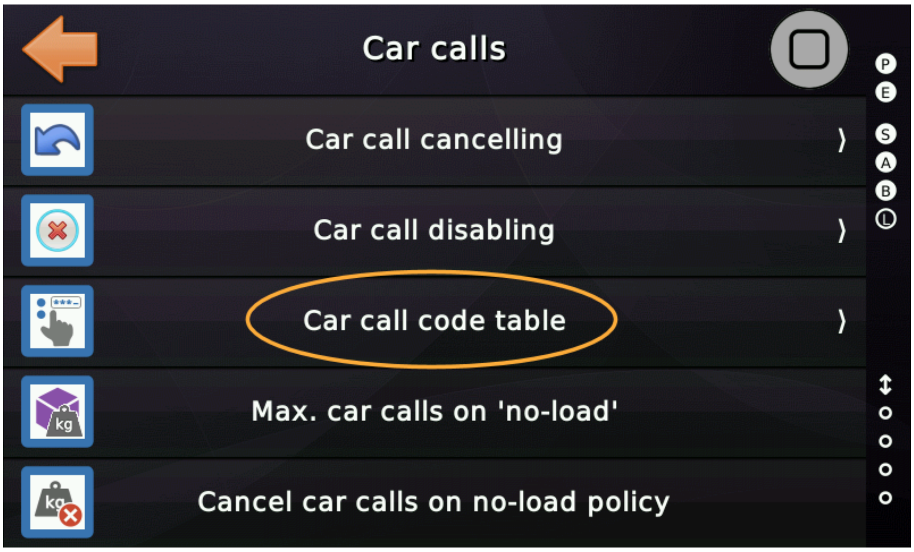
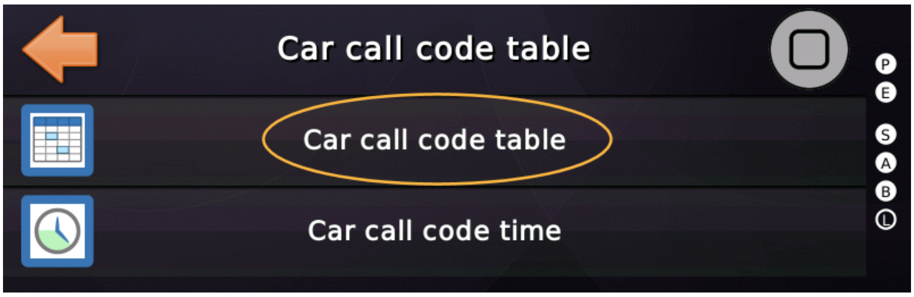


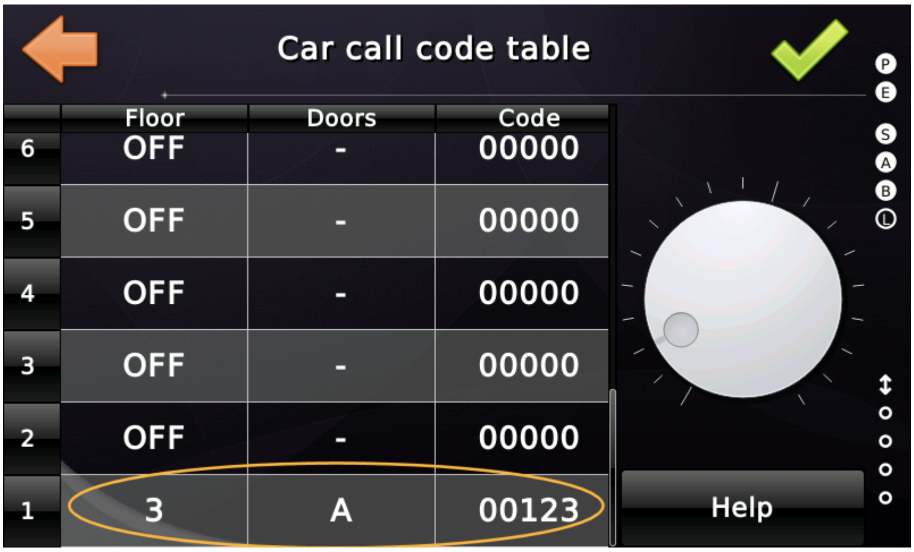
Figure 90: Landing call enabling after run time

Another way of enabling disabled car calls – and car calls only – is to feature the car call input panel (car call buttons) in the cabin/car, for entering a numerical code.

For that special feature a separate menu path does exist, right where the car calls disabling options had been found before.

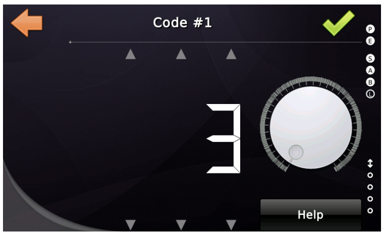


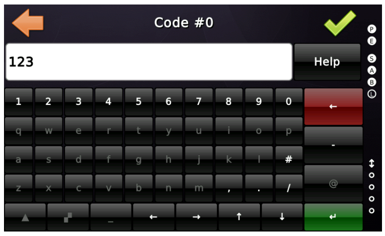




In order to change a property of the car call enabling code, Tap'n'Hold on the requested table cell.

A car call enabling code consists of the floor, the requested door(s) and the numerical code to enter. Keep in mind only to feature numbers that the car call input panel actually has. All car call buttons can be featured for entering the code, even if they refer to disabled car calls – that does not matter, if they are used for entering a numerical code. Zeros are ignored, if the code is entered.





The numerical code can be up to five digits long. Zeros are ignored and only used to align the code in the table.

If a '*Code Entering Operation*' is pending, a little icon on the car view at the desktop, notifies the technician.

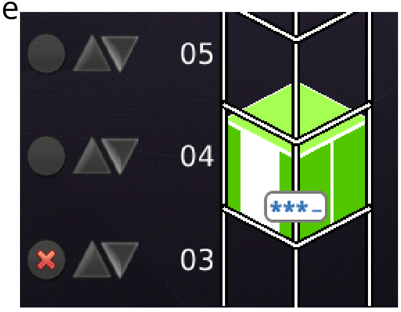


Figure 91: Code input icon

In order to notify the passenger, that a code input is required, a separate output does exist.
This output might be used for a signal lamp, a buzzer or to trigger a smart CANopen display.

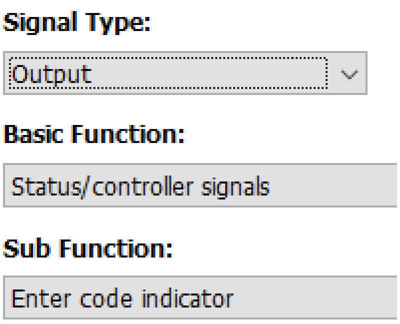


Figure 92: Cabin signal for code entering

36.10.3 Re-enable calls via the Time Planner

The build-in Time Planner provides a time based way, of enabling calls, being disabled via the dedicated call disabling table. In this example the car calls at floor 2 door A and floor 3 door B will be re-enabled between 8AM and 5PM in the evening, for working weekdays only.

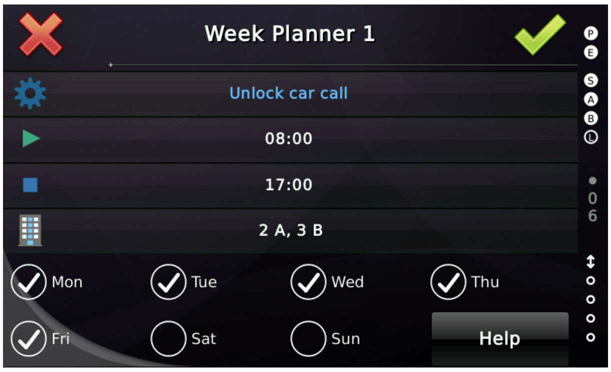


Figure 93: Week Planner used to re-enable locked car calls

36.10.4 Exceptions for Priority Calls

To exclude low or high priority landing calls when locking landing calls via the dedicated table, two more options are available.

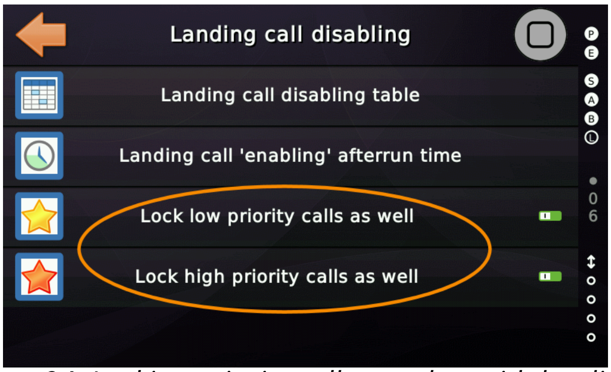


Figure 94: Locking priority calls together with landing calls

36.11 Passenger groups

This feature is based on door tables containing a door mask entry per floor, defining a first, secondary or third passenger user group. The idea is that those passengers will only be able to enter car calls on the given floors/doors, when they have entered the lift from one of those landings, typically via a landing call. In order to make this work, those car calls have to be disabled for normal passengers via the car call disabling table in the first place.

If using '*Car Call Enabling Inputs*' via a card reader and that reader may enable one car call within a user group, then the whole user group will become automatically activated. This comes handy when several user groups share one common floor, like the car park floor or the main entry or lobby floor. When the passenger has entered the car and used the card reader, the lift is aware to which group the person belongs.

37 Simple Building Zones

In order to be able to use this function, it must first be switched on.
You can find this function under 'Settings Menu' →'Controller/Piloting' → More...' → 'Even more...' → 'Much more...' → 'Further...' → 'Special functions...' → 'Building Zones'.
With this feature, the shaft can be divided into different building zones or sections. Other functions such as Fire Alarm, can feature that information and apply rules and policies, depending on which zone the car is currently in or where it is going.

Lifts that use the building zone feature are normally operated in APB operation mode, having the option to include the no-load signal in the generation of the occupy signal activated, so that the lift only serves landing calls, if being empty and does not collect passengers.

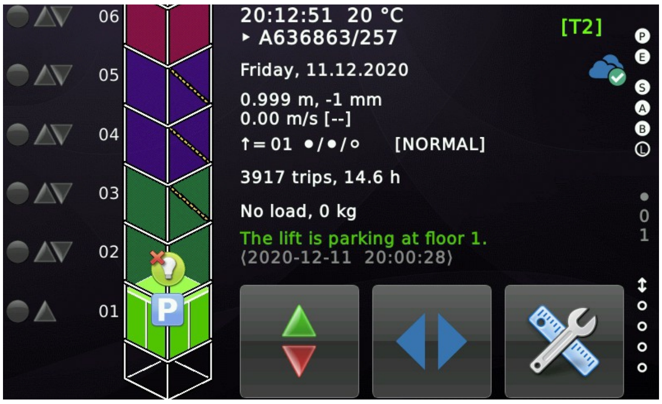


Figure 95: Hoistway divided into zones

37.1 Zone Table

These tables basically work like floor tables, in which a bit (dot) is set for each floor, that belongs to the given zone.

37.2 Building zones car call rule

This parameter defines how car calls (car) are to be handled within a building zone. Usually only car calls within the same zone are allowed to prevent passengers from driving from one zone to another. This rule excludes high-priority car calls that are normally protected with a key switch anyway.

37.3 Building Zones Fire Alarm Policy

This object defines if the index of the current building zone (1...n) shall be used to pick the fire alarm floor from the fire alarm level table. To use that feature you have to set the fire alarm strategy to '*simple*' in the first place.

38 Car Fan Options

Usually every cabin/car has a fan used to circulate the air in the car and ensure that passenger, that got stuck in the cabin, have enough air to breathe.

A typical behavior is that the fan is turned on when the lifts starts driving and is turned off using a short after-run time when the lift has stopped. But you might want to adjust or change this behavior for your lift installation.

You will find the corresponding parameter by pressing first 'Home' and then the 'Settings Menu' and then go to 'Cabin/Car' → 'Car Fan'.

38.1 Operating Mode

38.2 Combined Mode (manual & automatic)

The default operation mode is '*Combined Mode (manual & automatic)*'. That simply means the fan is turned on automatically if the lifts starts, can be turned off manually while driving, but will automatically be turned off, after the configured after run time has been expired, when the lift has stopped. If the lift is not driving, the passenger may turn on or off the fan manually. If it has been turned on manually, it will not be turned off automatically after stop (and after the after-run time has expired) but will be turned off after the configured maximum timeout for manual fan operation has been expired. So it will not be turned on 'forever' even if being manually operated.

38.3 Automatic only

That means there is no way to control the fan manually. It will be turned on when the lifts starts and turned off (with the configured after-run time), if the lift has stopped.

38.4 Manually only

That means the passenger have to control the fan manually and turn it on, if the air in the lifts is bad. Use the maximum run time parameter to define a timeout.

38.5 Car Fan Off

If turning the fan operation off, it is vital to be sure that the cabin/car use a different ventilation system, so that there will always be enough fresh air. So always replace broken car fans! Never just turn them off, if they start to become noisy or have failed!

38.6 Fan operation and trapped Passengers

The car fan is automatically turned on or simply kept going, if the lift has stopped in-between floors outside the door zone, to support trapped passengers with fresh air. So always replace broken car fans! Never cut them off, if they start to become noisy!

If the car fan had been manually turned off by the passengers, but the lift is stuck in between the floors, the fan will be automatically reactivated within a minute.

38.7 Car Fan Engine Output

The car fan function provides two different output signals, that shall not be mixed up. One signal is for the cabin fan (engine) or the relay that actually powers the fan and the other just for the acknowledge lamp of the button.

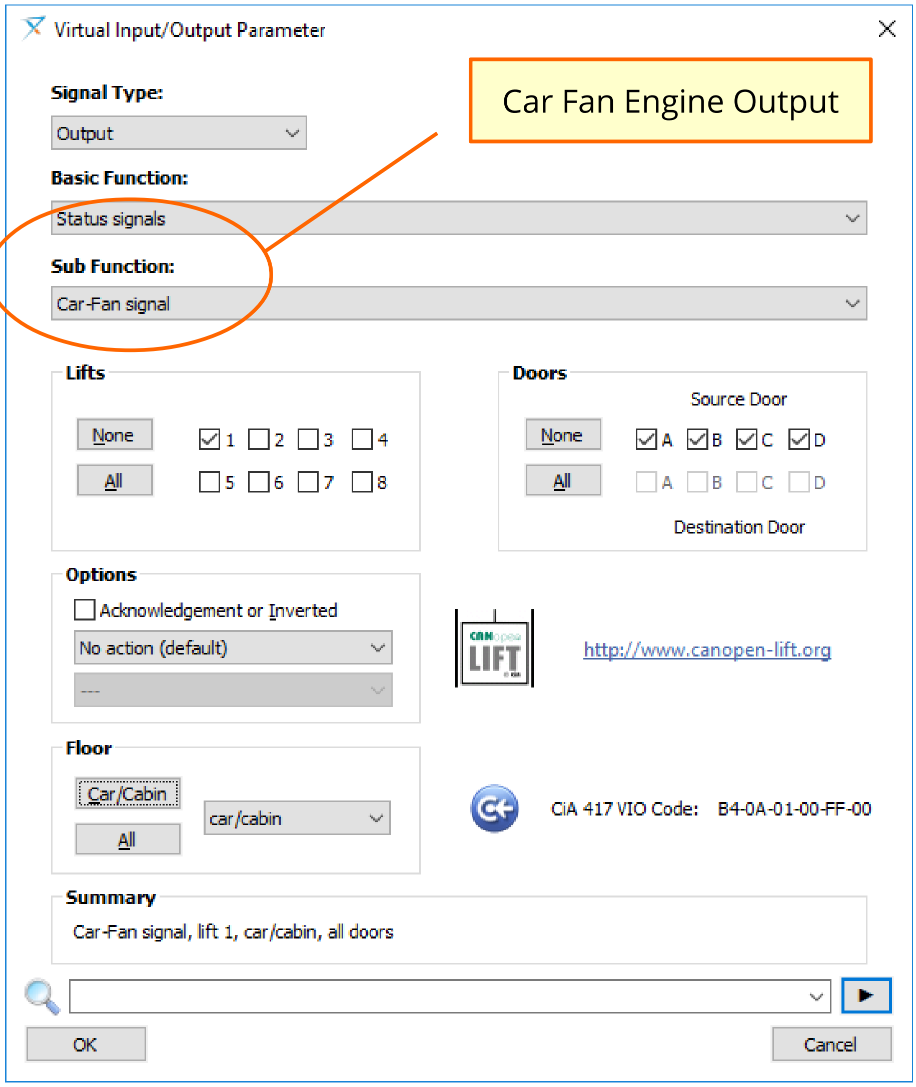


Figure 96: Car Fan (engine) signal

38.8 Acknowledge lamp for the Car Fan button

If the lift installation provides a button in the car to turn on/off the car fan, it might be useful to add an acknowledge signal to that button. Do not use the car fan engine signal for that – and not vise-versa. For the acknowledge lamp there is a special made signal, that will not be turned on, if the fan has been turned on automatically. Otherwise the acknowledge lamp would be turned on/off while the lift is starting/stopping – which would be quite confusing.

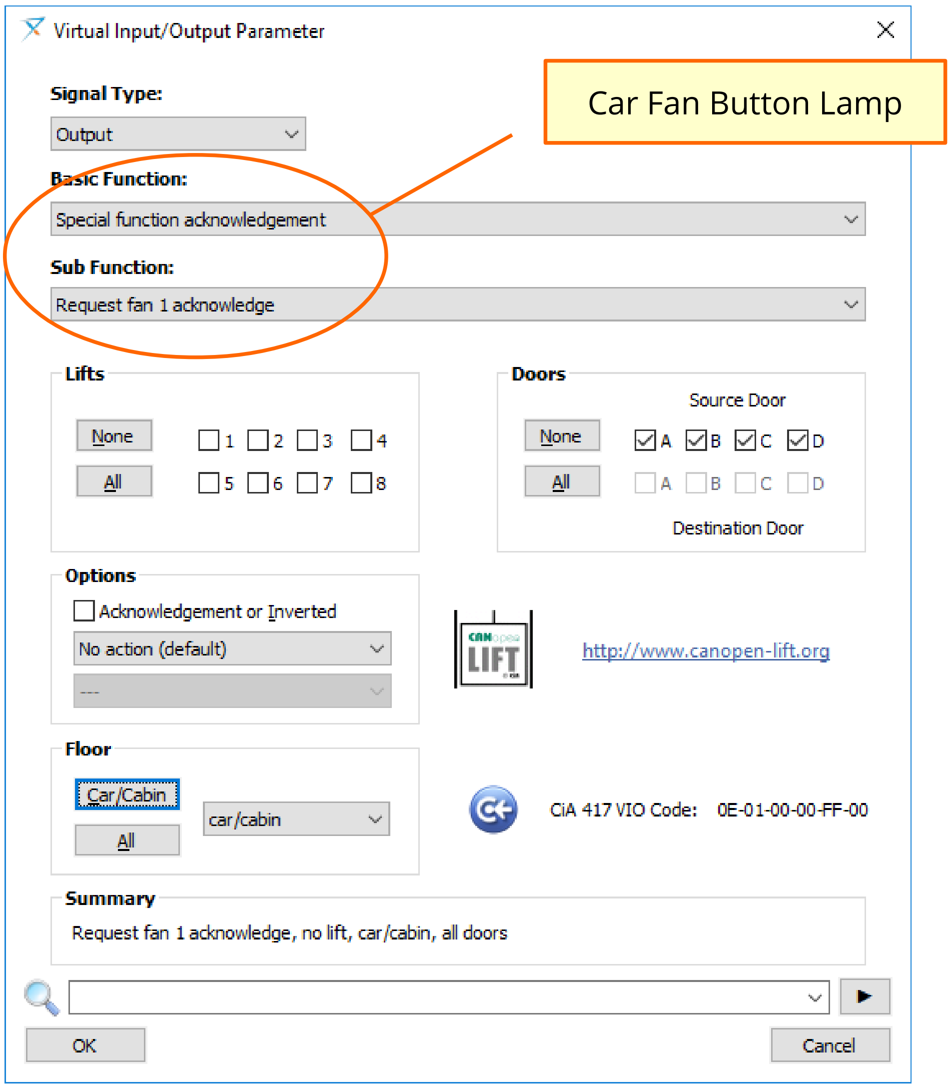


Figure 97: Car Fan Button acknowledge signal

38.9 Car Fan Button Input

For implementing a manual Car Fan on/off function, use this input function on your car top I/O panel unit.

Ensure that you use '*Request fan 1*', as CiA 417 defines two independent fan function and NOUS is currently featuring '*Fan 1*' for the cabin ventilation.

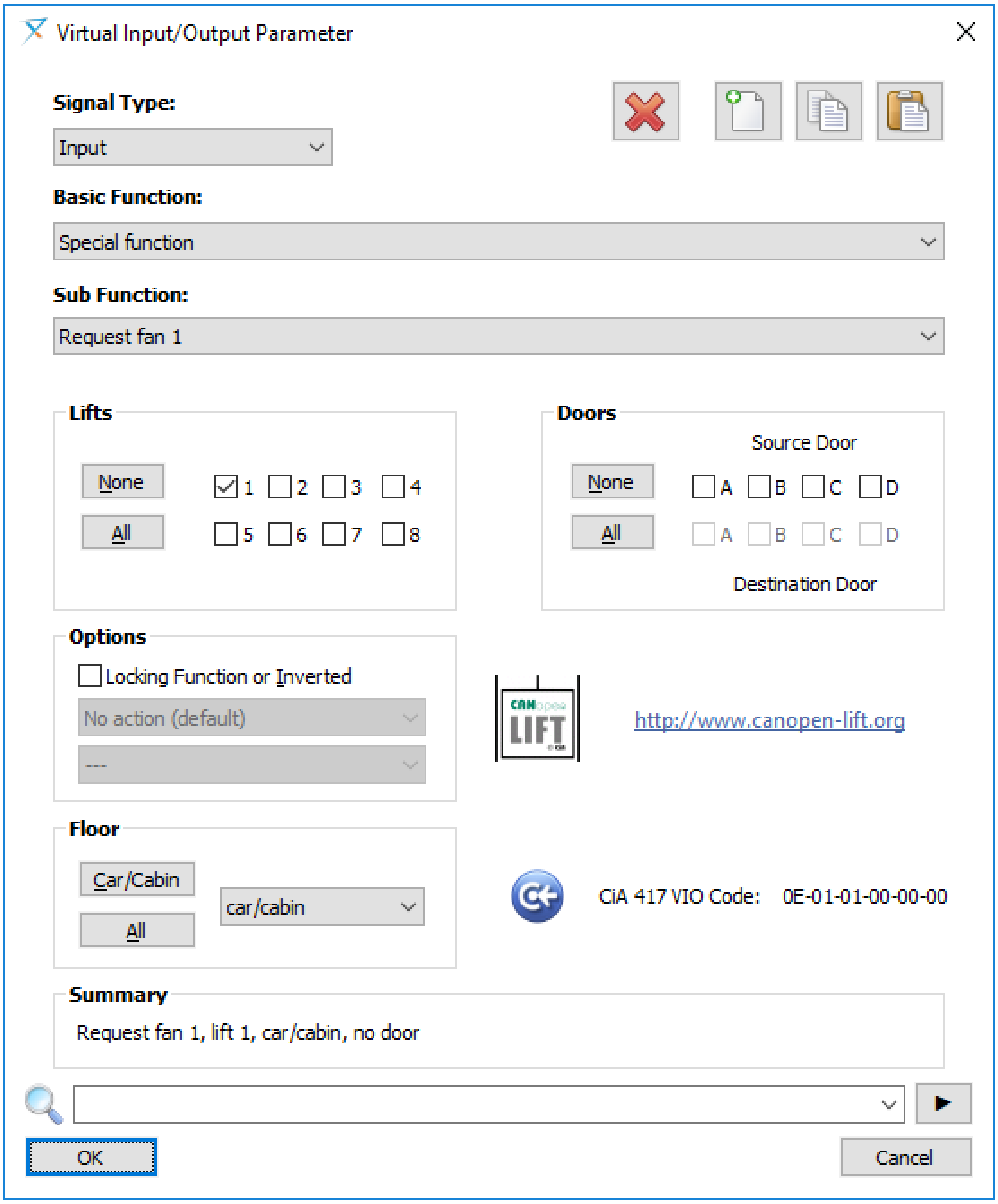
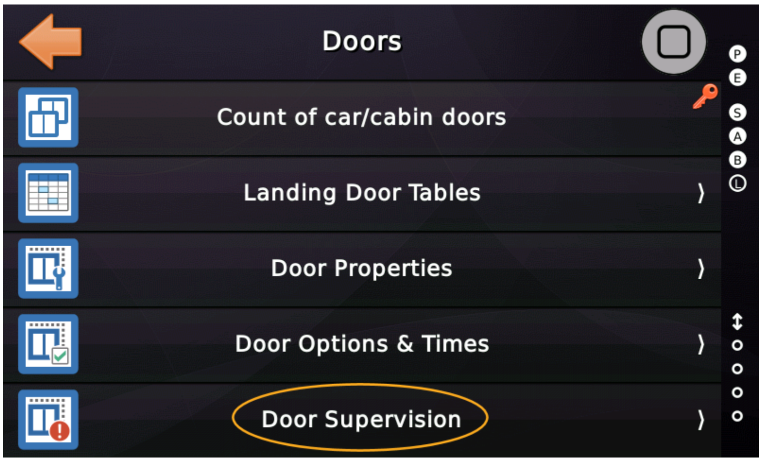
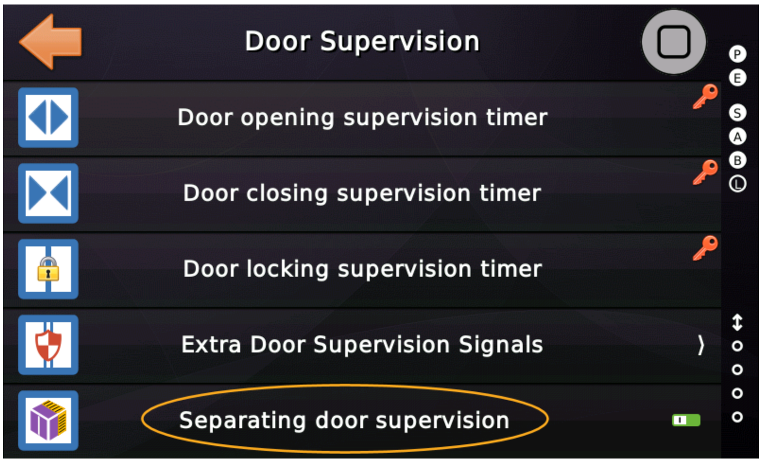


Figure 98: Car Fan Button Input [Toolbox View]

39 Separating door supervision

This function is used if the car/cabin has a separating door used for goods transportation. If yes, this door is only allowed to be open, if the '*Special Function → VIP service (Car preference)*' signal has been activated. In normal operation the separating door has to be always closed. Otherwise it would allow more passengers to step into the car as allowed.





The supervision signal shall be active as long as the separating door is closed. The input signal used for the separating door contact is '*Status/controller signals → Separating door supervision, lift 1, cabin/car, all doors*'.

If the supervision has been triggered, at first only a warning appears. The lift continues to accept calls but does not start. After one minute, the warning changes to a fault and the lift signals '*Out of order*'.

40 Hoistway Limit Switch Testing

The 'Limit-Switch-Testing'-assistant shall provide an easy way to perform testing of the driveway limit-switches that are an essential security element. These limit-switches are used to stop the lift's drive in case it will overrun the top or bottom floor.

For the test this scenario is reproduced by driving the lift to one of the floors before the very end of the driveway and then start driving into the limit switch.

In order to let the lift 'overrun', the actual floor level positions are shifted by the assistant using the values that the user can adjust, if required. By default a deviation of 100 mm is used to let the lift hit the limit switch. This test is usually done automatically but using the inspection velocity (V_I) to ensure that the test will not harm any mechanical components.

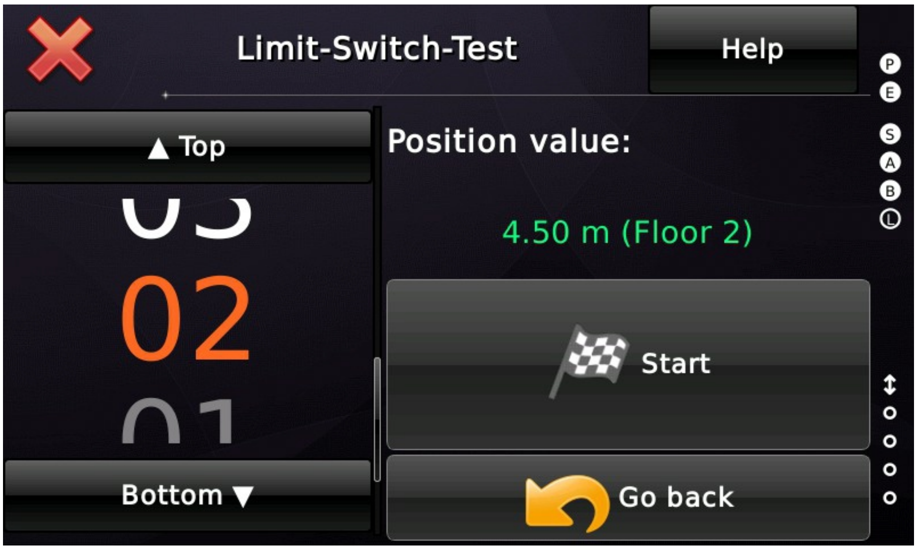
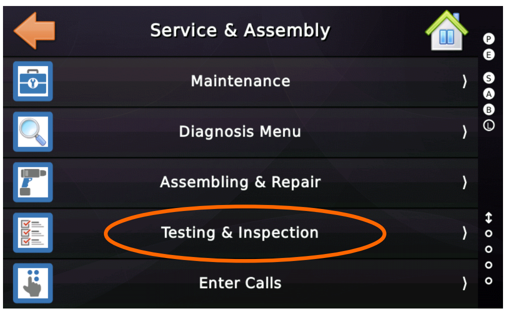
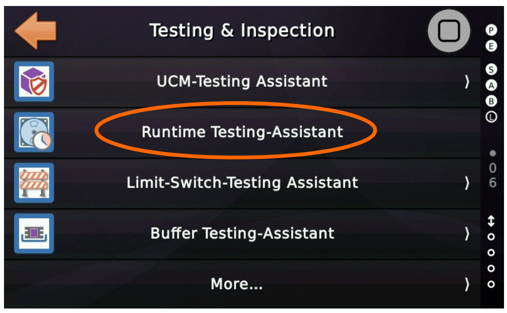


Figure 99: Limit-Switch-Assistant Main Dialogue

The test can be found under 'Service & Assembly' → 'Testing & Inspection':





40.1 Options

Before starting the assistant, the user may adjust the driveway distances used to shift the top/bottom floor in order to let the lift drive into the limit switches.

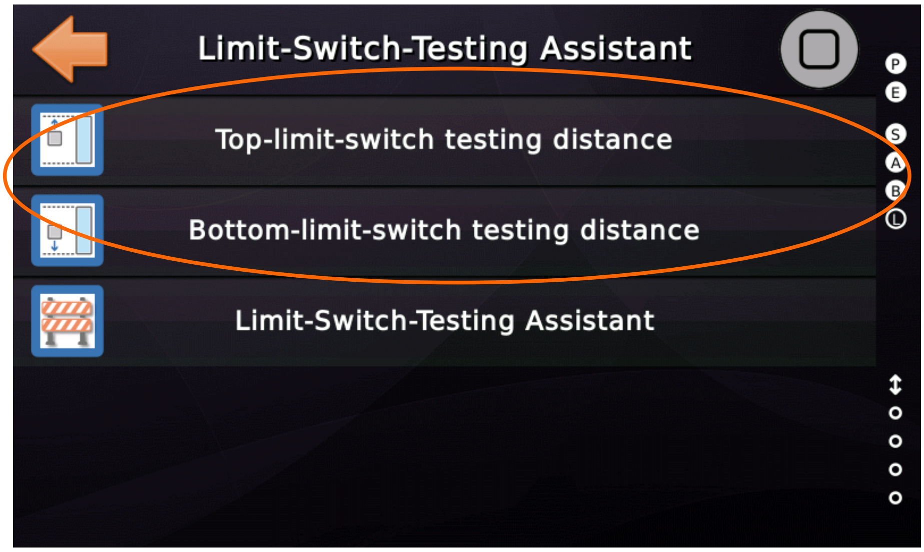


Figure 100: Options regarding the limit-switch-testing operation.

You may adjust the distance used to 'shift' the real floor position in order to make the lift running into the lift switch.

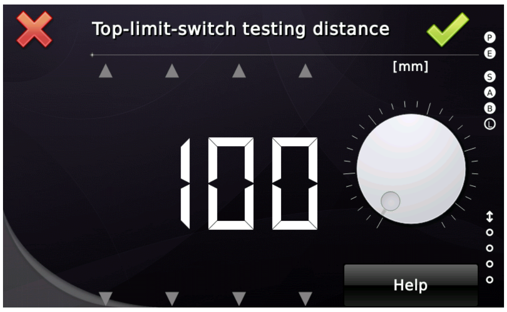


Figure 101: Top floor limit switch distance

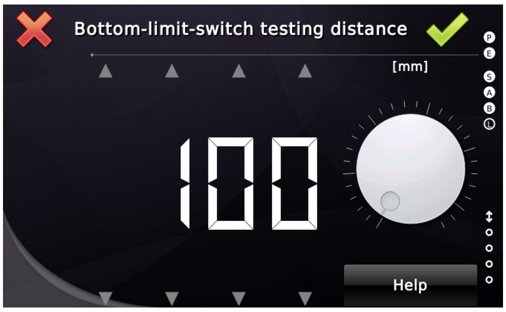


Figure 102: Bottom floor limit switch distance

40.2 Event Items (Logbook)

- Starting the testing assistant.
- Executing the test procedure.
- Finishing the testing assistant.

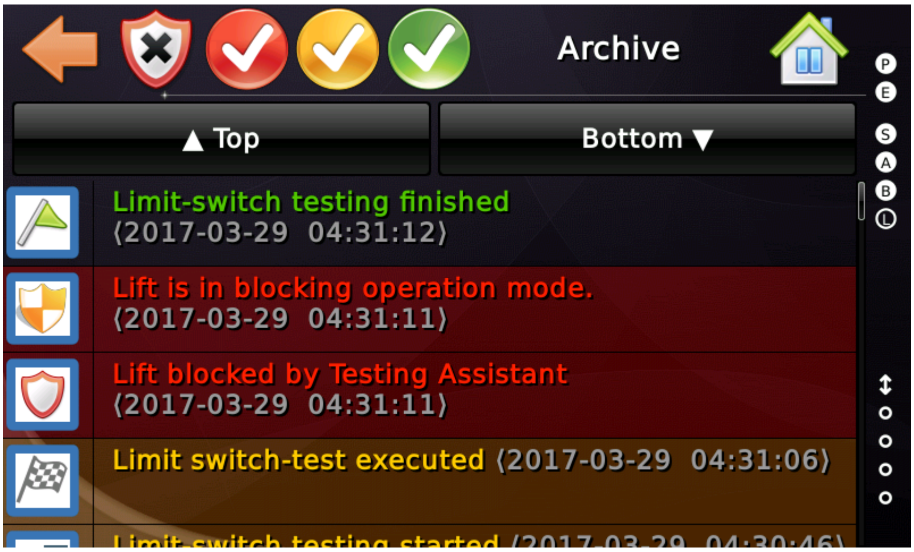


Figure 103: Events stored in the logbook.

After having left the testing assistant, the system will enter blocked operation mode. This gives the technician a 'second chance' to check that everything is spot-on, before finally let the lift enter normal operation mode again.

40.3 Test Procedure

To perform the test, first select a floor before an end-stop by sliding the wheel up and down on the left side.

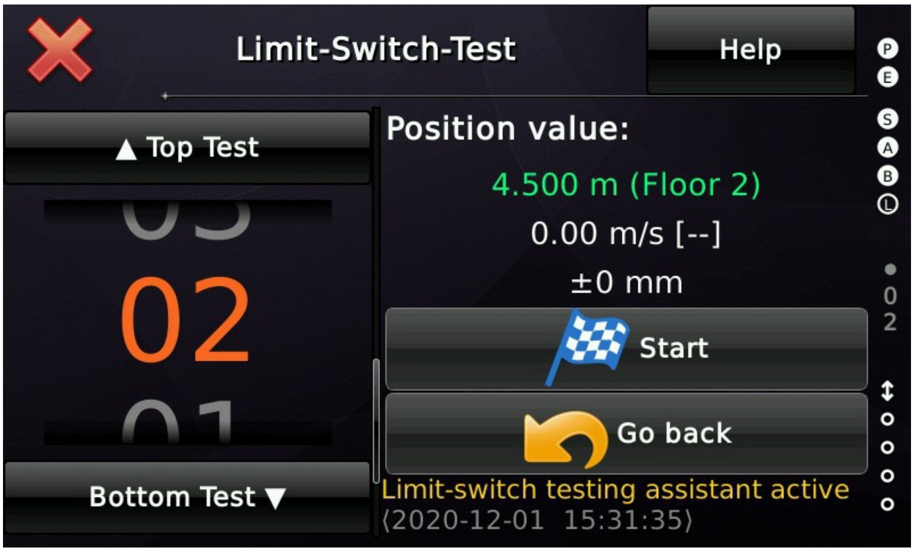


Figure 104: Driving to a floor before an end stop.

Then you can touch the 'Start' button. When the lift has arrived, select the limit switch test by selecting the 'Racing Flag' symbol. Then you can touch the 'Start' button again.

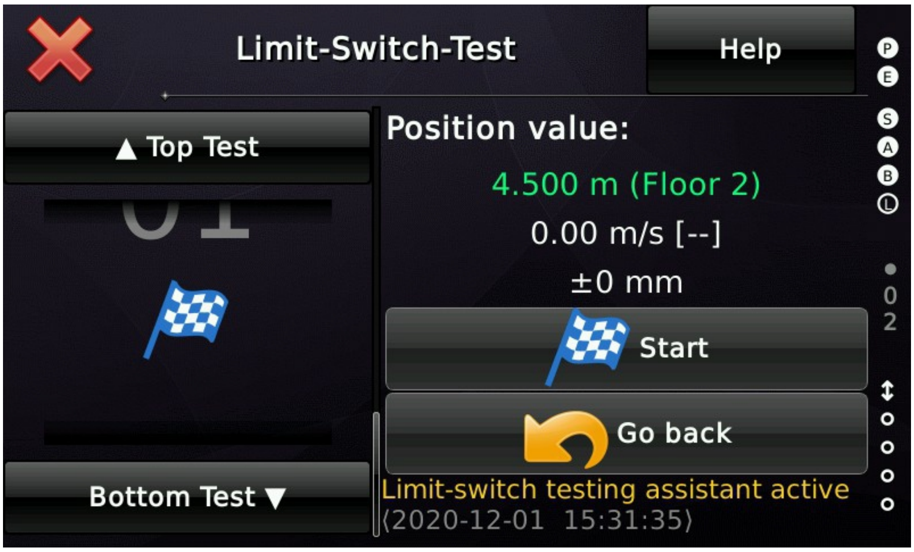


Figure 105: Starting the test to drive into the limit switch.

The result of a 'Limit-Switch-Test' operation, including the reached velocity and the distance to the end floor level.

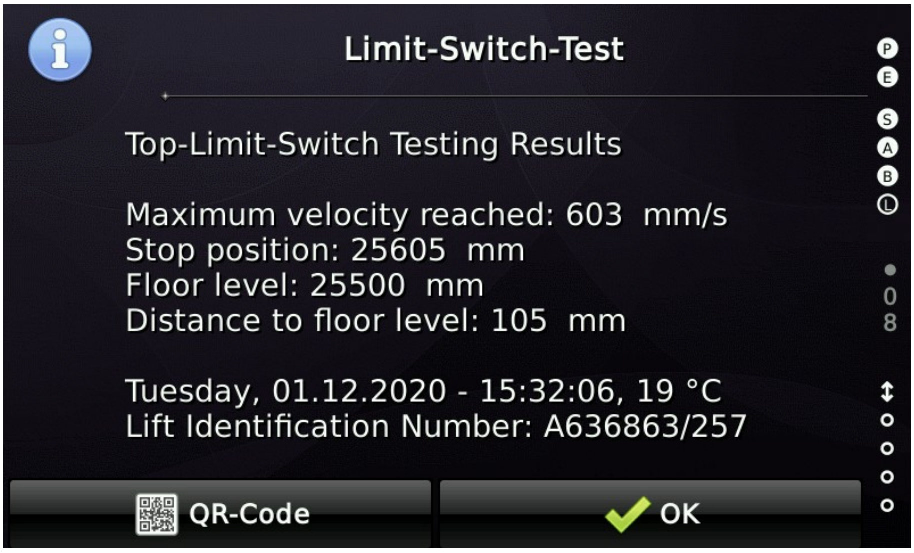


Figure 106: Test result, shown if the test was executed.

To move the lift out of the limit-switch, turn to Emergency Rescue Control and move the car up or down, away from the actuated limit switch.

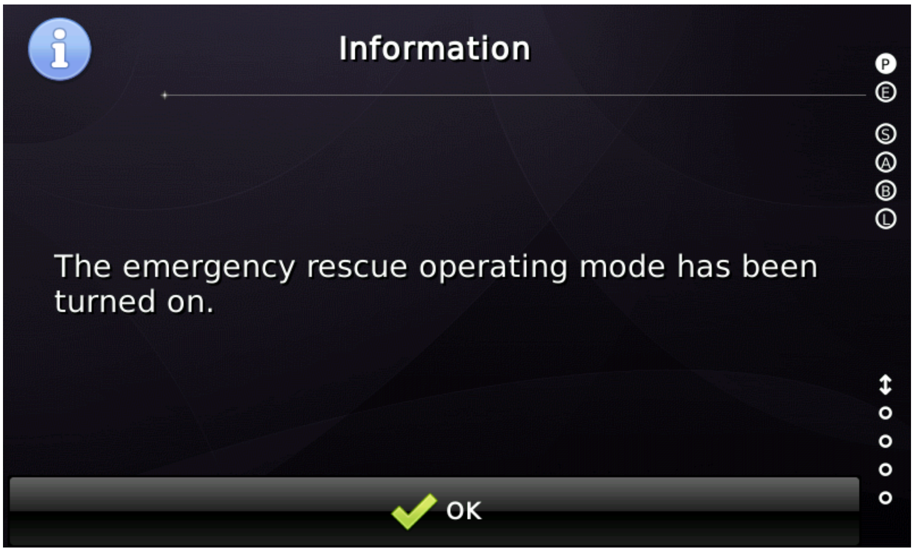


Figure 107: Lift turned to Emergency Rescue Operation in order to move the car/cabin out of the limit switch

If later opening the log-book item '*Limit switch-test executed*', the velocity and position stored for the test can be recovered.

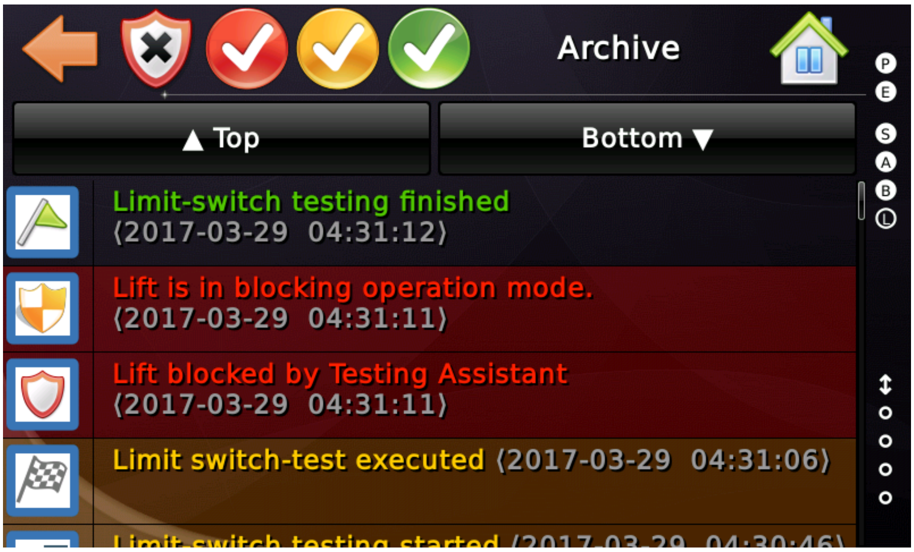


Figure 108: The log-book entry for a limit switch test

Figure 109: The entry of a limit switch test contains position and speed

40.4 Note

The feature '*Advance door opening*' will be turned off as long as the '*Limit-Switch-Testing-Assistant*' is active.

Please double-check that the car is really empty, before using this test assistant.

41 Speed Governor Testing Operation

The speed governor test can only be used, if the lift is equipped with an electrical engaged bolt, that can trip the speed governor (SG), while driving. The output function '*Status/controller signals → Speed governor tripping output*' can be used for that. If the lift is quipped with a Drop Protection system at the SG, this will be used instead.

You find the assistant by pressing first 'Home' and then the 'Service & Assembly' and then go to 'Testing & Inspection' → 'Speed Governor Test Assistant'.

First use the buttons on the left to drive the lift to the start position. This would be typically a floor above the middle of the hoistway. Then activate the test by using the button '*Activate Test*'.

The speed governor test has now been then activated. Use now a car call to drive to the desired floor, usually below the middle of the hoistway, were the controller shall engage the speed governor.

Figure 110: Speed Governor (SG) Test-Assistant

You should avoid doing this test in the top or bottom floor. Keep in mind that you need clearance in order to lift the car out of the safety brake, once the speed governor has been tripped.

The lift will now drive towards the desired floor and will engage the speed governor, before reaching the floor level of the desired floor. The controller will try to stop the lift in a way, that it will be (more or less) on floor level, in order to make it easier unloading the weights.

Once the governor had been tripped, the lift will enter 'Blocked Operation Mode' and will show the testing results, containing the maximum velocity reached and the distance that it had taken from engaging the bolt to stopping the car.

Figure 111: Speed Governor Test activated

Please double-check that the car is really empty, before using this test assistant.

After having left the testing assistant, the system will enter blocked operation mode. This gives the technician a 'second chance' to check that everything is spot-on, before finally let the lift enter normal operation mode again.

41.1 Event Items (Logbook)

While using the speed governor testing assistant, these item will be created in the log book (history).

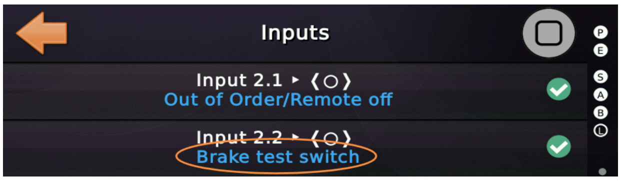
- Starting the testing assistant.
- Lift entering blocked operation mode.
- Finishing the testing assistant.

42 Brake Testing Operation

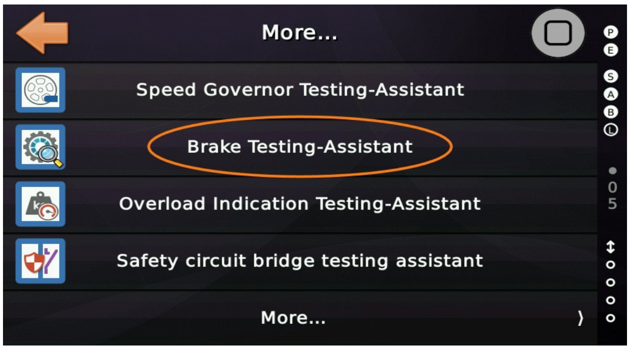
The brake test assistant can only be used, if the lift is equipped with an external electrical brake testing circuit, that can trip each brake block separately. Use the output function '*Status/controller signals → Brake test acknowledge*' for activating that external circuit, if the lift controller has started this assistant.

42.1 Theory of Operation

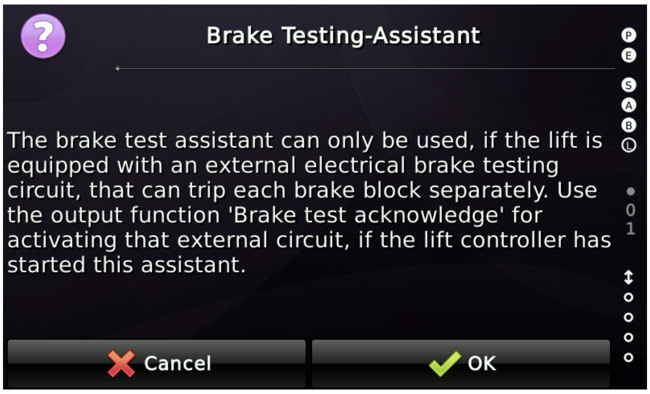
The test assistant can be activated directly via the user interface or an input function, usually connected to a key switch.



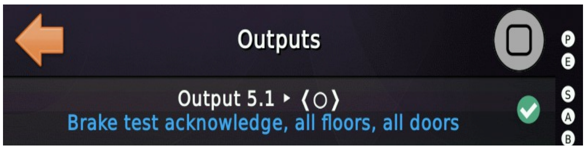
You can find the assistant by selecting Home and then the Service & Assembly and finally follow *Testing & Inspection → More... → Brake Test-Assistant.*



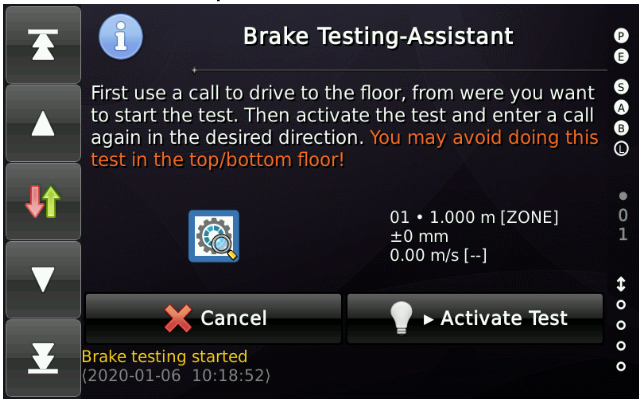
The output function '*Status/controller signals → Brake test acknowledge*' is turned on, when the assistant had been started. This output can be used as a '*second chance*' in



your external brake testing circuit, to be sure to block one brake side only, if the lift controller has actually turned into the brake test operation mode.

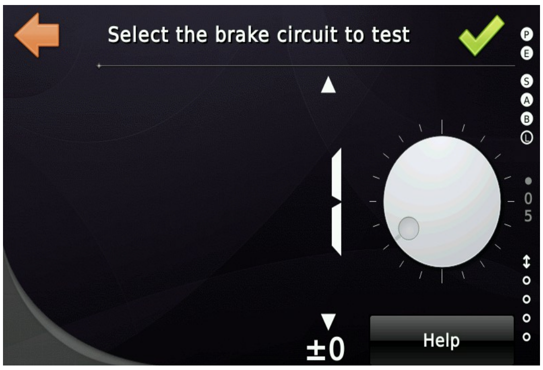


The test assistant instruct the technician to use the call buttons on the left side of the dialogue to drive the lift to the start position.



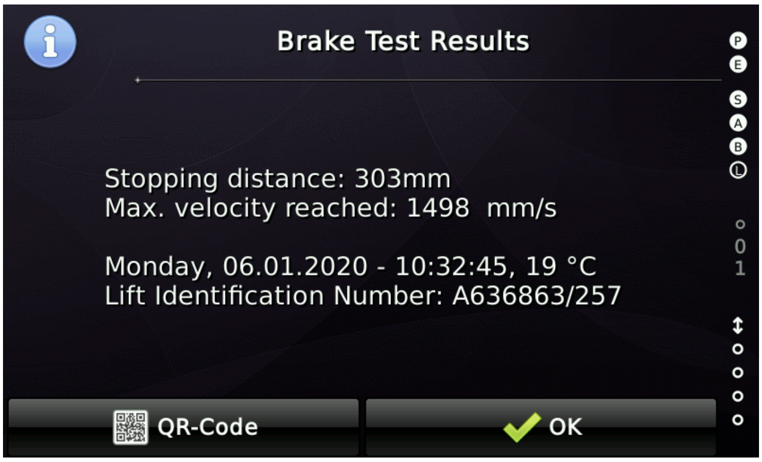
Then the technician may active the test via the the '*Activate Test*' button. If several brake circuits had been parameterized, the software will now ask for the brake circuit, that shall be tested. If just one brake circuit had been parameterized, entering the brake number is not necessary.

You find the settings for the count of in-depended brake test circuits by following *Settings → More... → Drive Unit → More... → Even more... → Further more... → Count of discrete brake test circuits*.



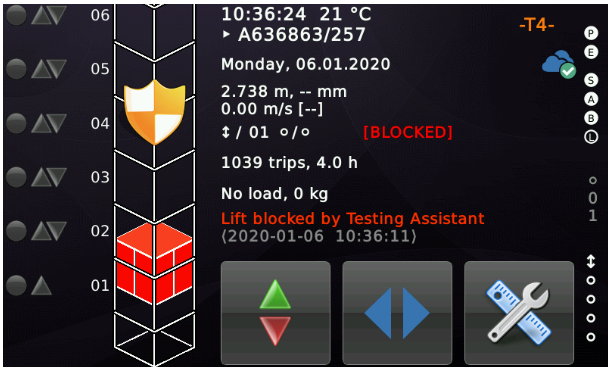
Now the technician enters a call in the requested direction, using again the call bar on the left side of the dialogue. The lift will start driving and when having reached nominal velocity, does a quick stop by engaging the brake automatically. NOUS will then measure the stopping distance and show the test result, containing the reached velocity and the braking distances, that had been required to stop the lift again.

To keep the brakes open, that shall not be tested, the dedicated output functions *Drive unit signals → Test brake* x [y] can be used. When the test has been executed and the lift has finally stopped, all brakes will be engaged, with a short time delay, to make sure the lift car is secured again.



The technician can now use the call buttons on the left side to drive to the next start position. So the technician can activate the test again in order to test the other brake. This procedure can be repeated as often as required.

When leaving the assistant via the UI or by dropping the key switch, the lift will be blocked to prevent it entering normal operation mode automatically. By doing so, the technician has a second chance to rethink, if everything is spot on, before leaving the lift to normal operation again.



42.2 Event Items (Logbook)

While using the braking testing assistant, these item will be created in the log book.

- Starting the testing assistant.
- Brake Testing results
- Finishing the testing assistant.
- Lift entering blocked operation mode.
  The assistant blocks the lift when being finished, to ensure the lift does not automatically enter normal operation mode unattended.

42.3 Brake test circuit supervision

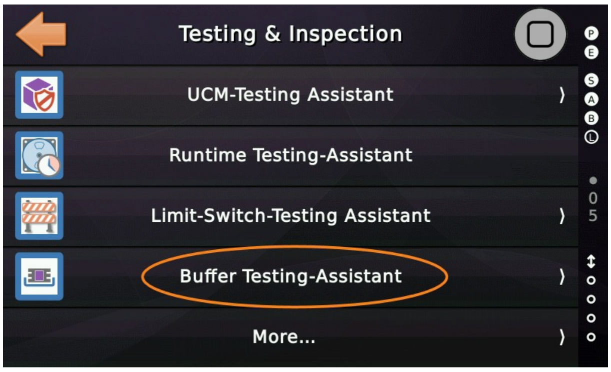
The input function '*Brake test circuit monitoring*' must be at 24V in normal operation and may only drop to 0V when the brake test is activated. This ensures that the lift cannot change to normal operation if one of the contactors, used to hold the brakes open, has got stuck.

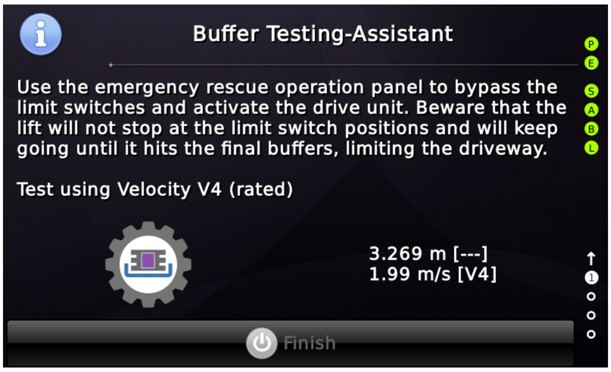
The dedicated supervision function has to be activated for that. You find the required parameter here at Settings Menu → More... → Drive Unit → More... → Even more... → Brake Test Circuit Supervision.

43 Buffer Testing Operation

In order to drive the car/cabin with a given velocity (*typically rated/nominal velocity*) onto the safety buffers for testing purposes, this assistant can be used.

You find the assistant by pressing first 'Home' and then the 'Service & Assembly' and then go to 'Testing & Inspection' → 'Buffer Test Assistant'.



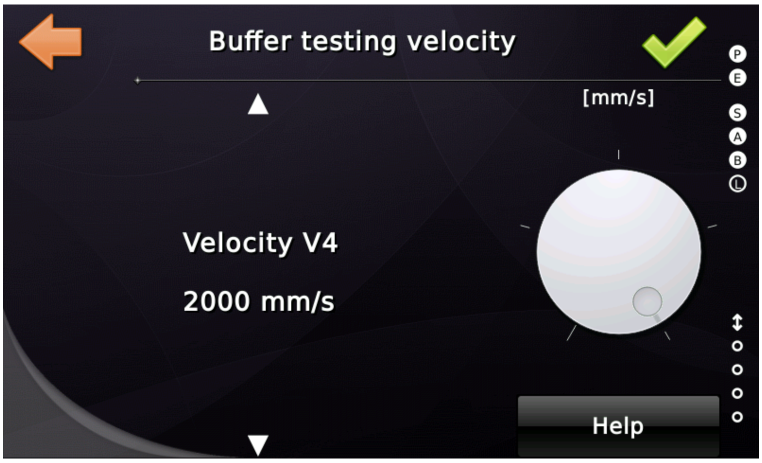


Use the emergency rescue operation panel to bypass the limit switches and activate the drive unit. Beware that the lift will not stop at the limit switch positions and will keep going until it hits the final buffers, limiting the driveway.

43.1 Parameter & Options

43.1.1 Buffer testing velocity

This parameter defines the velocity used for the buffer testing operation. It defines which velocity shall be featured when driving the car onto the driveway buffers.



44 UCM-Testing Operation

The UCM-behavior of a real lift installation can be tested at side by using the 'UCM-Testing-Assistant', provided by the lift controller software.

This assistant can only be used if the lift controller features a SZ-Board able to bridge the door safety chain.

44.1 Scenario

The worst scenario is that the lift would accelerate by driving upward, while the counter weight is going downward, having the landing/car doors opened. If in that situation the NOUS-SZ board has been activated, usually on an advance door opening situation, the safety relays will drop on the edge of the door zone. The zone-channel, that is driven via the absolute position encoder may be a bit faster than the channel driven by the mechanical magnetic/solenoid switch.

44.2 Testing

To test this situation, the lift controller software will start the drive in the given direction having the safety chain open for the doors but bridging the safety chain end via the safety circuit, so that the drive will start. The technician/inspector on side can decide if the lift controller shall open the doors physically for that test. In that case the car/cabin doors have to be guided to ensure no passengers may try to enter in that testing scenario. If the doors shall be kept close, the technician may for testing purposes 'open' the safety chain manually by removing the signal at X17.5 and X17.6.

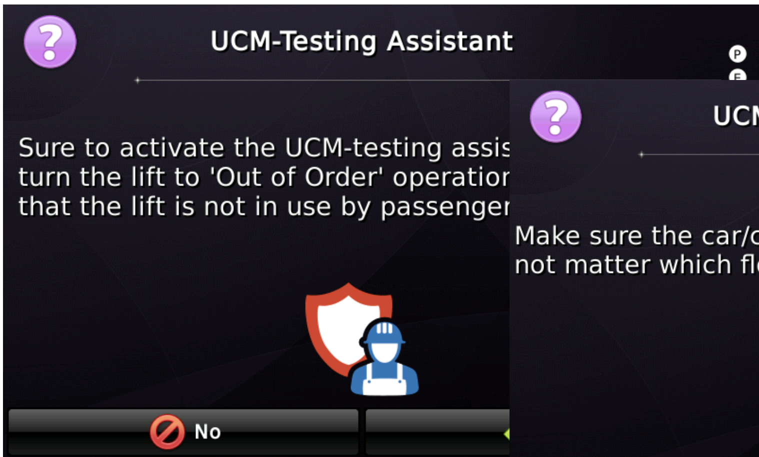


Figure 112: Security query to ensure the assistant is activated with purpose.

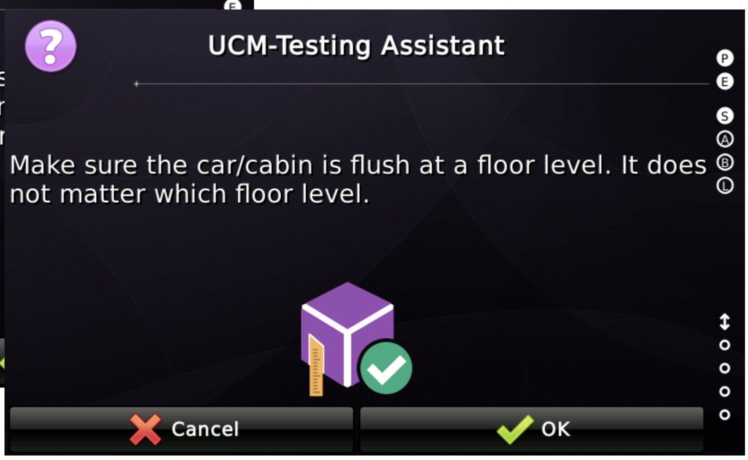


Figure 113: Note that the car shall be flush on level in the door zone.

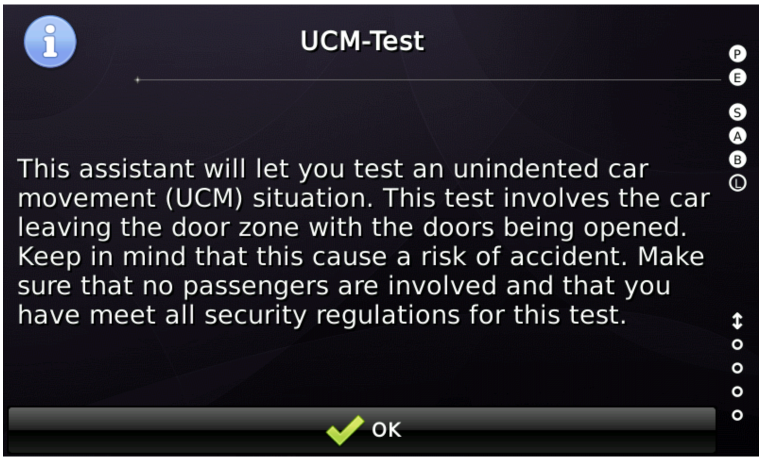


Figure 114: Short introduction to the testing assistant.

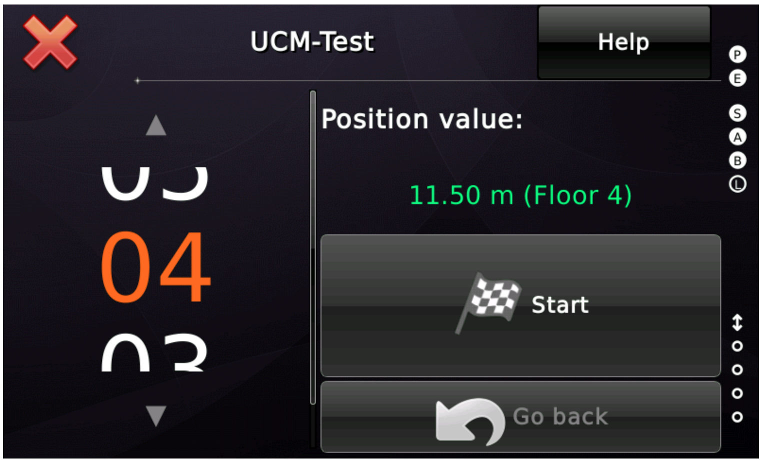


Figure 115: The main screen of the testing assistant, showing the current floor and letting the user select the direction by swiping the floor value on the left.

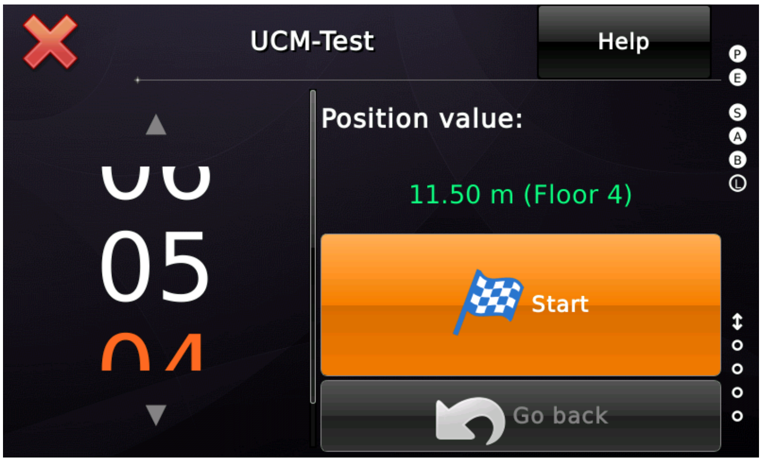


Figure 116: After having selected the next floor up by swiping the digits, select "Start" to start the testing-sequence.

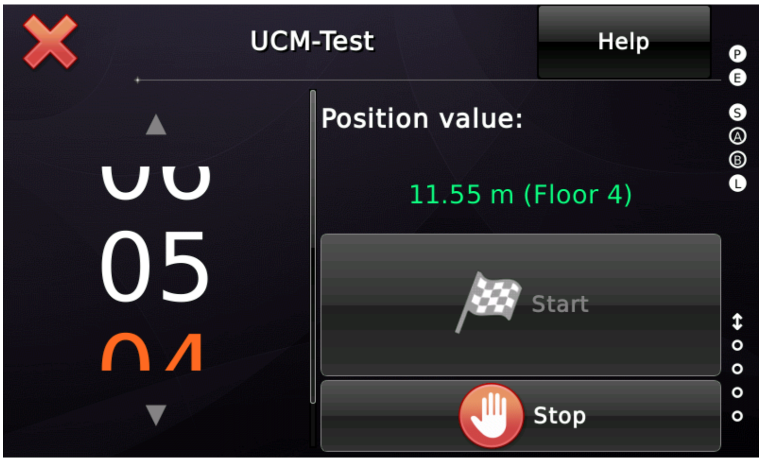


Figure 117: The test has been started going upward with the safety chain bridged by the NOUS-SZ board. The stop-button may be used to cancel the process.

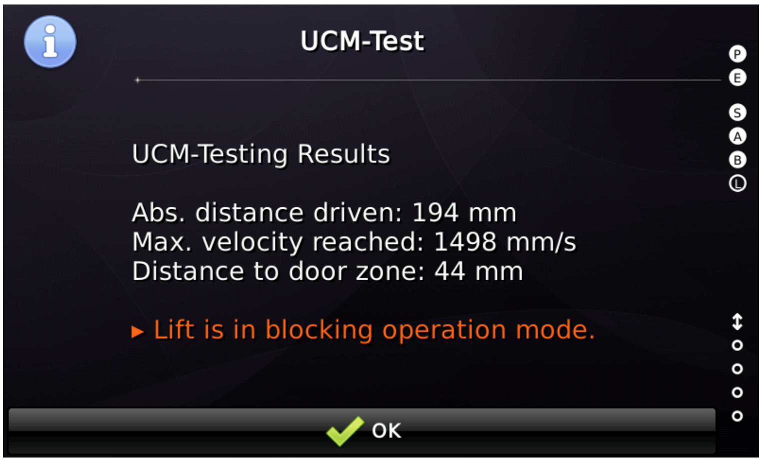


Figure 118: The testing results and a note that the lift is now in blocking operation mode. The background light starts to blink until being touched by the user again.

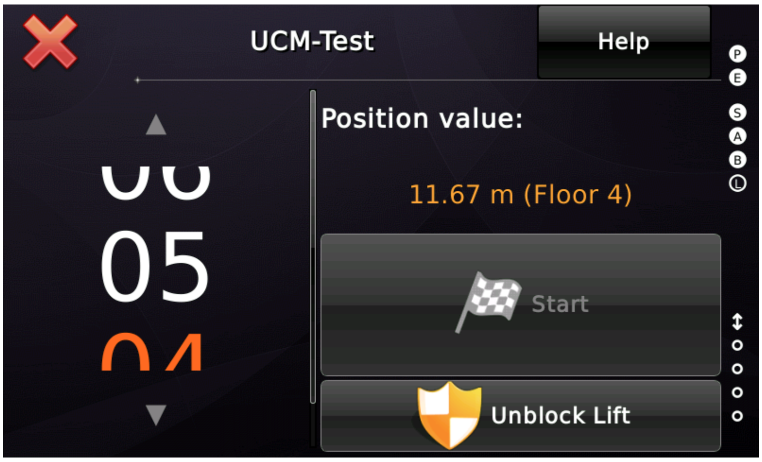


Figure 119: Unblocking the lift before going back to the floor level.

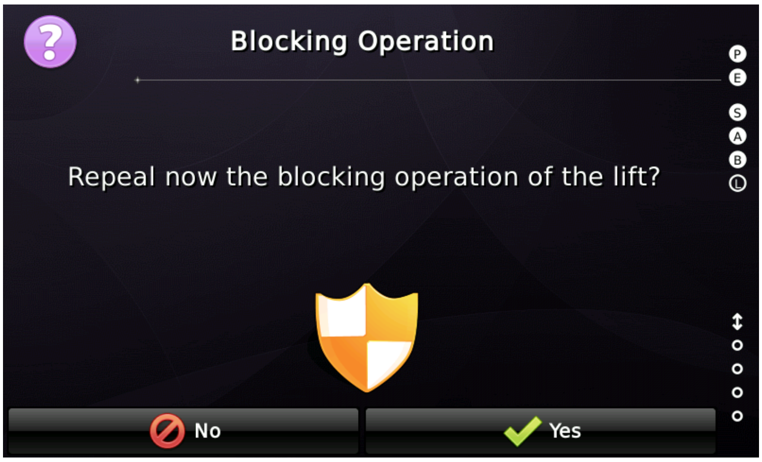


Figure 120: Safety request for unblocking the lift.

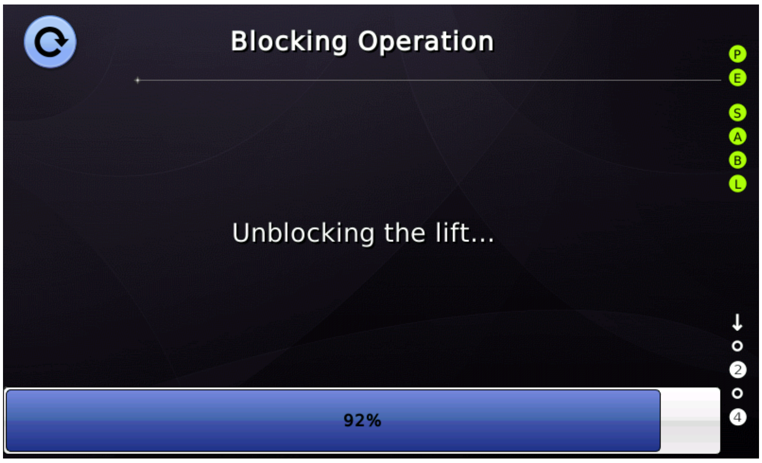


Figure 121: Unblocking of the lift is in progress.

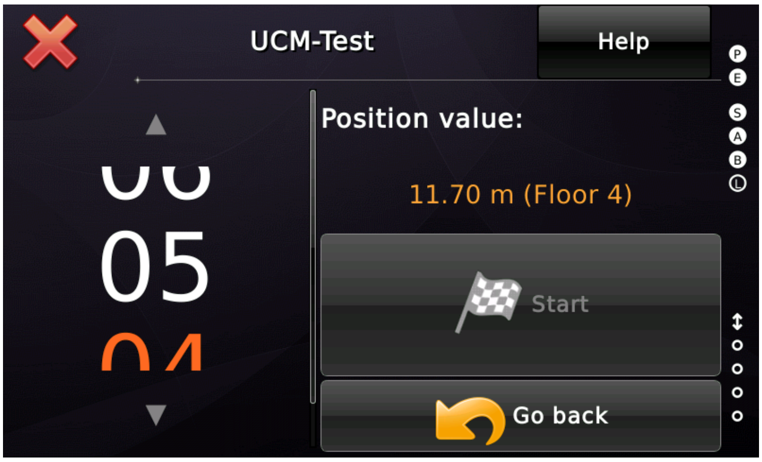


Figure 122: Touch the 'Go back' button to start driving back to the floor.

After having the lift unblocked and the car/cabin being back at floor level, the test may be repeated by driving in the opposite direction, by swiping the floor indicator on the left side of the screen down under the current floor level. Then the 'Start' button may be touched again.

If finally the assistant is closed by the technician via the user interface by touching the cross symbol, the lift will automatically enter the blocked operation mode again to ensure not to be automatically back in normal operation. So the technician has a second chance to check if all manipulations have been undone, that may have been needed in the real lift installation for testing purposes.

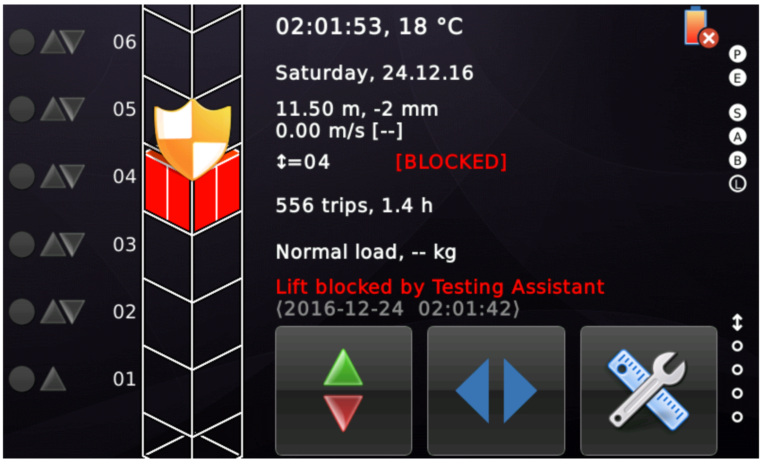


Figure 123: Lift blocked by the testing assistant, after having closed the assistant.

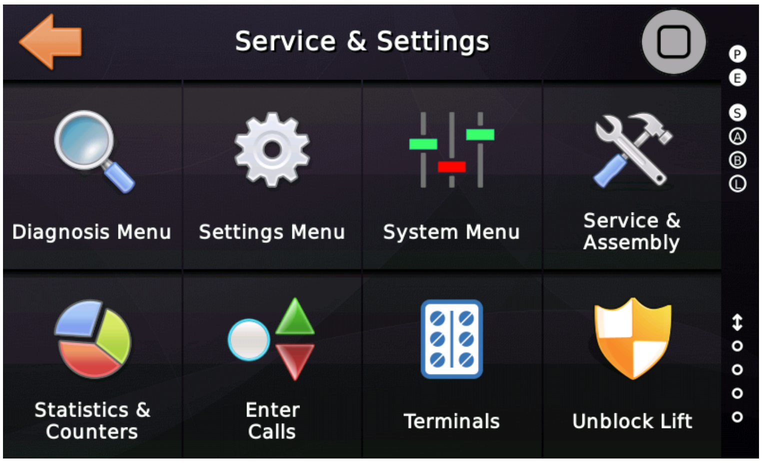
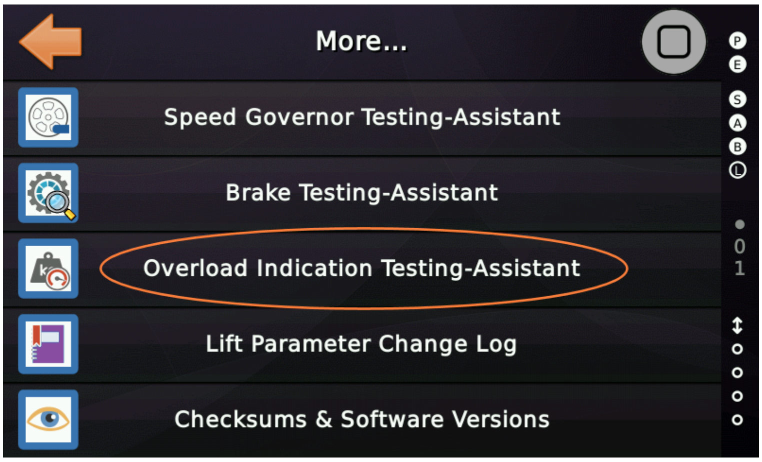


Figure 124: Finally unblocking the lift to enter normal operation mode.

45 Overload Indication Testing-Assistant

This assistant will simply set a threshold to the current car load +50kg, when being activated. The technician can then step into the car and shall trip the overload indication, making it easy to check the display and the buzzer and the generic behavior of the lift.

What you do **not test** with this, is if the sensor or the car weighing device actually would work, when the lift for real would be confronted with 'Overload'.



46 Safety circuit bridge testing assistant

This assistant can be used to 'trigger' the safety bridge supervision function. This will block the lift, when the safety bridging test will be executed, once the doors have been fully opened. This emulates the safety chain being bridged by a wire. To start the testing procedure, enter a call via the assistant's user interface.

You find the assistant by pressing first 'Home' and then 'Service & Assebly' and then go to 'Testing & Inspection' → 'More...' → 'Safety circuit bridge testing assistant'.

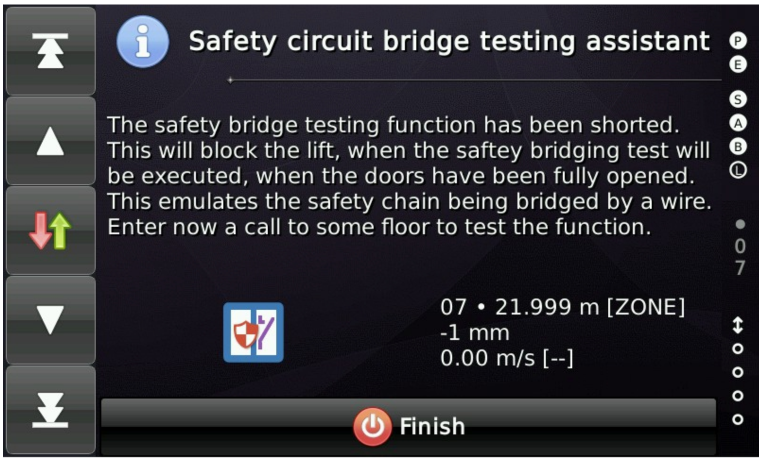
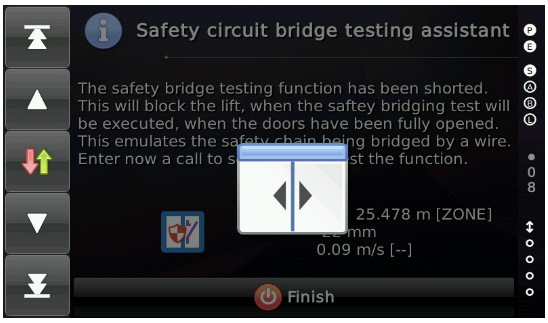
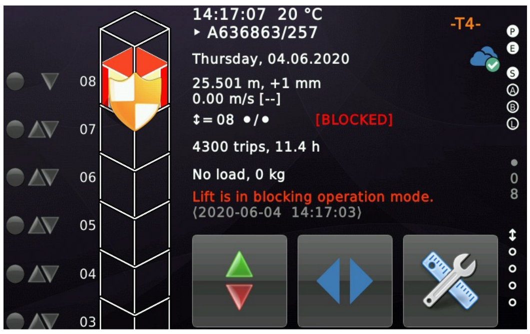


Figure 125: Safety circuit bridging testing ssistant.

Use the call-buttons on the left screen edge in order to start the lift driving to a floor. When the lift arrives, it will open the doors and trigger a detected safety chain bridging event.





47 Runtime Supervision Testing

This test assistant can be used to provide an easy way to test the runtime supervision without manipulating the associated parameter, which would require the input of the setup password.

You find the assistant by pressing first 'Home' and then the 'Service & Assembly' and then go to 'Testing & Inspection' → 'Runtime Testing-Assistant'.

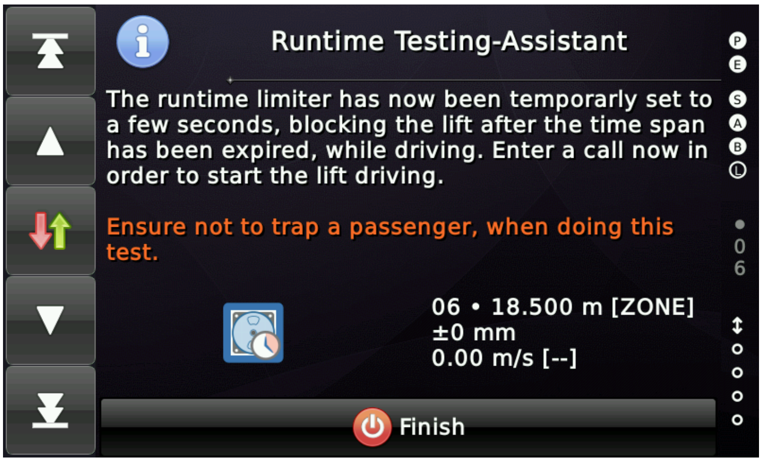


Figure 126: Runtime Testing-Assistant

Use the call-buttons on the left screen edge in order to start the lift driving to a floor.

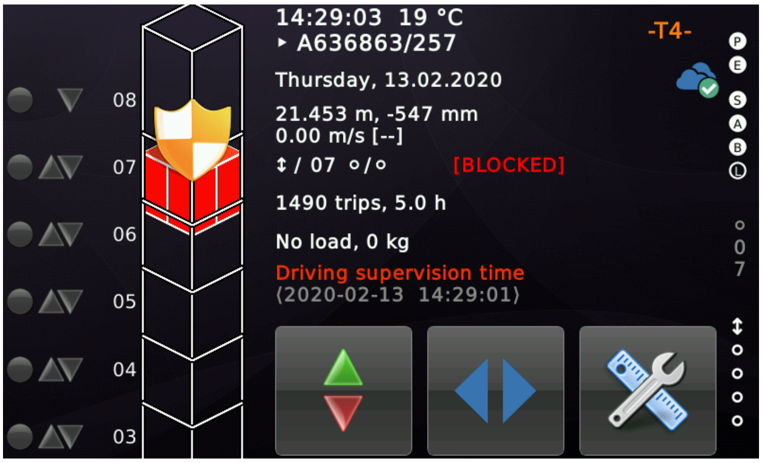


Figure 127: Lift being blocked by the runtime supervision

48 Service Trip/Position Operation

To enter the car roof or the shaft pit easily, this automated operation will first drive the car to the floor where the technician is waiting, giving him/her a chance to peak into the car, ensuring that it is empty. Finally the car will be driven to the service position by the distance given for entering the car roof or the shaft pit.

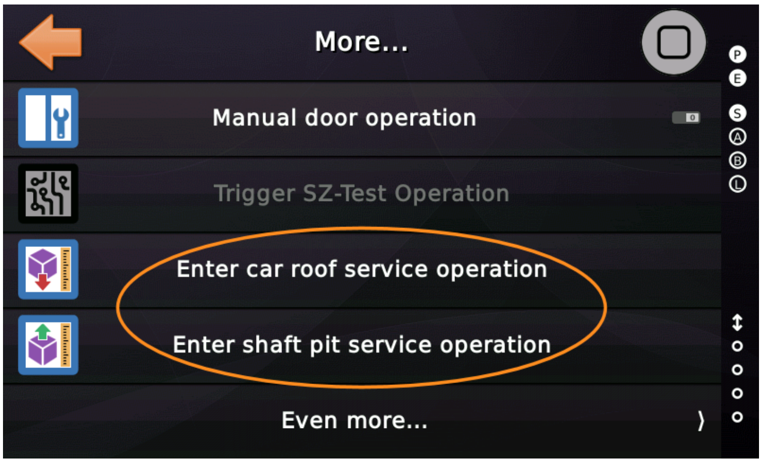
You find those distances under 'Settings Menu' → 'More' → 'Position Unit' → 'Distances & Parameter' → 'More' → 'Even more'.

► These functions can be activated either with input signals or via the user interface.

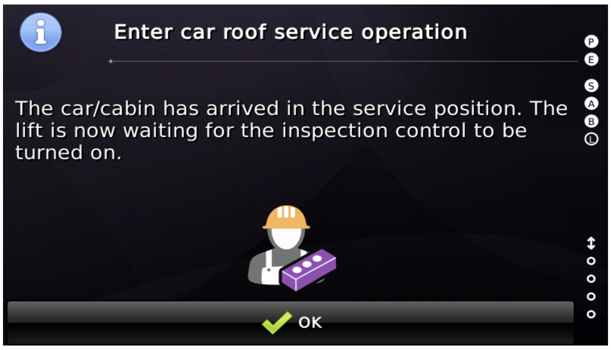
48.1 Interactive Service Trip Operation via the User Interfaces

Alternatively to activating the operation via input signals as described in the next chapter, they can be used via the user interface. That makes sense, if the lift controller is located directly next to one of the landing doors.

You find the assistant under 'Service & Assembly' → 'Maintenance' → 'More'.



To activate the operation, swipe in the floor were you are waiting next to the landing door. Then touch the blue 'Flag' button. The lift will now drive to the floor and let you peak inside. If you reply the message with 'Yes' it will drive to the service position.



48.2 Using the Service Trip operation via input signals

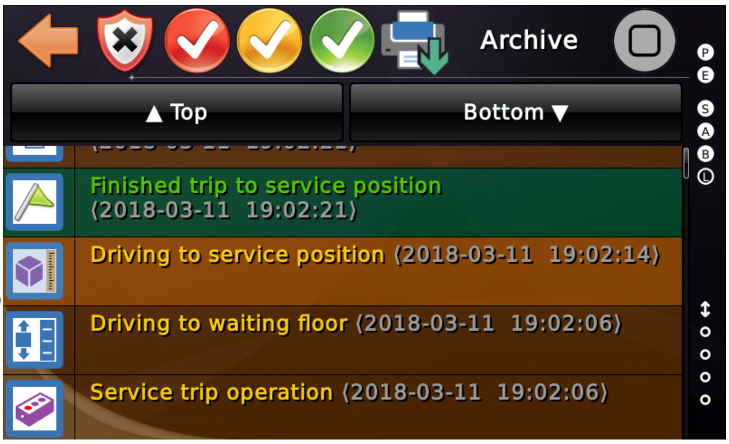
These functions can be activated with an impulse to either the input signal '*Enter car roof inspection operation*' or input signal '*Enter shaft pit inspection operation*' that has to be at least 250 ms long. This might be actuated with a hidden magnet switch or a proper key switch. When having activated the operation, you will have the '*Service operation acknowledge*' output turned on as long as the operation is pending. The acknowledge signal is transmitted twice via the bus system, once for the car and once for the landing corresponding with the input signal.

Additionally these two signals are indicated:

- Drive to service position, floor x - used for a yellow lamp.
- Arrived at service position, floor x - used for a green lamp.

These signals may be used for a kind of LED indicator, telling the technician, when to open the landing door.

As shown in the log-book below (starting from bottom [*oldest entry*] to top [*newest entry*]), we can see that all stages of the process are logged. First the lift starts to the floor & door that was indicated by the CANopen input signal, which had triggered the function. When the lift arrives it opens & closes the door, so that the technician can have a sneak peak into the car. The operation can be canceled at any time with another



impulse of at least 250 ms to the same signal. To ensure proper operation, there is an inhibit time of 2 seconds after the signal has been operated once, before the next impulse is accepted. This input signal is usually operated at CAN2, so ensure having selected the right lift, when parameterize the signal.

48.3 Input Signals

- Status/controller signals → Enter car roof service operation, floor x, door y
- Status/controller signals → Enter shaft pit service operation, floor x, door y

48.4 Output Signals

- Status/controller signals → Service operation acknowledge, cabin/car, all doors
- Status/controller signals → Service operation acknowledge, floor x, doors y

- Status/controller signals → Drive to service position, cabin/car, all doors
- Status/controller signals → Drive to service position, floor x, doors y

- Status/controller signals → Arrived at service position, cabin/car, all doors
- Status/controller signals → Arrived at service position, floor x, doors y

48.5 Logbook Items

- Service trip operation
  The function has been activated via the input signal.

- Driving to waiting floor
  The lift is driving to the floor were the technician is waiting, so that he/she can check the car to be empty.

- Driving to service position
  The lift is driving to the service position. Downwards to enter the car roof or upward to enter the shaft pit.

- Finished trip to service position
  The lift has arrived at the service position.

- Waiting for inspection panel to be turned on
  The lift is now waiting for the technician to turn on the inspection operation.

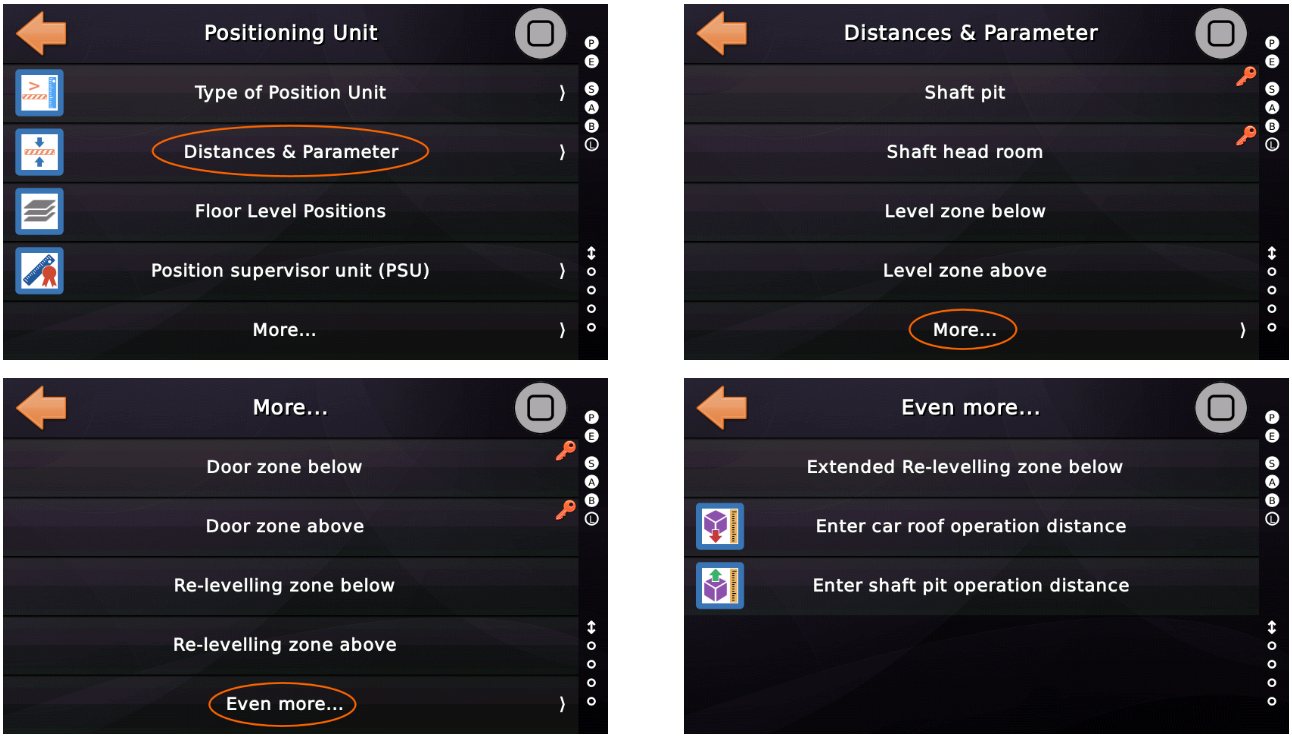
- Service operation timed out
  The service operation has timeout, waiting for the technician to turn on the inspection operation.

If using the special variant of the the service operation to enter the car roof in order to test the smoke detector in the shaft head (see next chapter), you will have one more item in the log book.

- Smoke detector has been tested
  In order to test the smoke detector in the shaft head, an automated procedure had be used to enter the car roof. Driving to the shaft head is done via the inspection control. The smoke detector can now be tested with a spray. A buzzer is activated when the smoke detector has been tripped.

48.6 Distance Parameters

The distances parameter for this operation can be found by pressing first 'Home' and then the 'Settings Menu' and then go to 'More' → 'Position Unit' → 'Distances & Parameter' → 'More' → 'Even more'.



48.7 Special Variant for Smoke Detector Testing

There is a special variant of the service trip operation for entering the car roof, that is adapted to test the smoke detector in the shaft head.

First the lift moves the car to the floor where the technician is waiting, so that he/she has a chance to look into the car first. Then, the car is lowered by the specified distance to enter the roof in the service position. If the technician is now on the car roof, he/she switches on the inspection control and then drives manually to the shaft head. The smoke detector can now be tested with a spray. A buzzer is activated when the smoke detector is tripped. There are two output functions activated for a second in order to reflect the smoke detector being tested.

- Status/controller signals → Fire alarm/service inspection buzzer
- Lift status indication → Inspection pit activated indication

You find this variant under 'Service & Assembly' → 'Maintenance' → More...' → 'Even more...' → 'Test smoke detector service operation'.

49 Support of Drop Protection Systems

A drop protection unit can mechanically be implemented using a bolt (actuated via a coil) blocking the speed governor's pulley, when the lift has stopped. If the lift would move while the bolt is released the safety gear would stop the lift.

To control those units basically an output to activate the coil (actuating the bolt) and an input from the feedback contact is required. The feedback input signals that the bolt is '*out of the way*' if the coil had been activated making it safe to start driving the lift.

If the feedback contact does not reflect the requested bolt position, the lift will cancel all pending calls, being not able to drive the lift. Before this happens the lift controller has at least tried three times to operate the bolt. If operating the bolt fails the first or second time before driving, only a warning will be added to the Logbook. After the third time, all pending calls will finally be canceled.

Figure 128: Menu path to the Drop Protection options

49.1 Options

Currently the drop protection handling can only be turned always off [default] or always on. Additionally the timeout may be altered, used when the bolt is to be moved to the actuated or unactuated position.

Figure 129: Option for defining the supervision time for operating the bolt

In addition, a delay time can be specified, which is used when the bolt is to return to the blocking position after a stop.

Figure 130: Option for defining a delay for operating the bolt after the lift has stopped

50 Event Items (Logbook)

Event logs regarding the drop protection handling are basically about faults that may happen while operating the bolt.

- Drop protection activation delayed

  If operating the bolt in order to drive the lift fails the first or second time, only a warning will be added to the Logbook. The controller will retry moving the bolt.

- Drop protection activation fault

  The drop protection could not be activated properly. That means that the feedback contact of the bolt, blocking the speed governor, did not signal that the bolt is free and therefore enabling the speed governor pulley to spin.

- Drop protection release fault

  The drop protection could not be released properly. That means that the feedback contact of the bolt did not signal, that the bolt is back in its position, blocking the speed governor pulley.

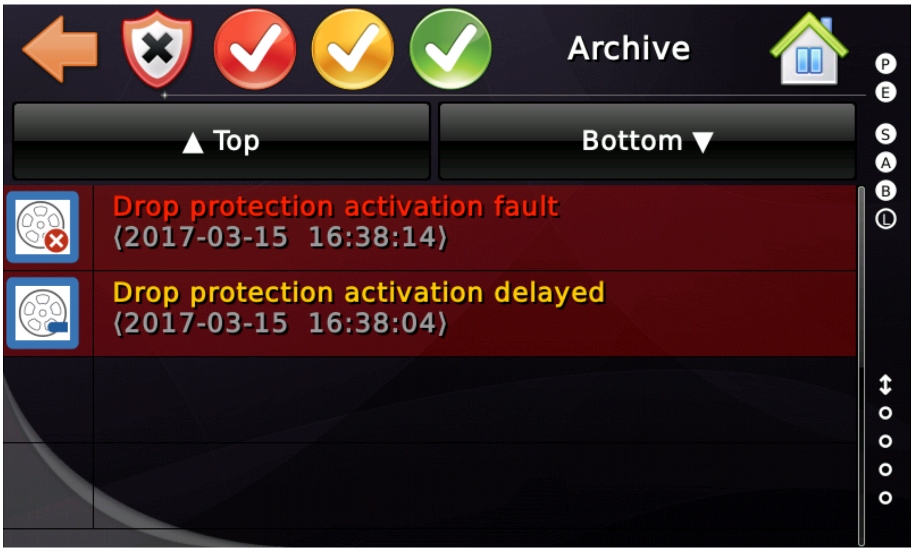


Figure 131: Events stored in the log-book.

50.1 Inputs

The feedback signal usually fired by a switch operated by the bolt itself.

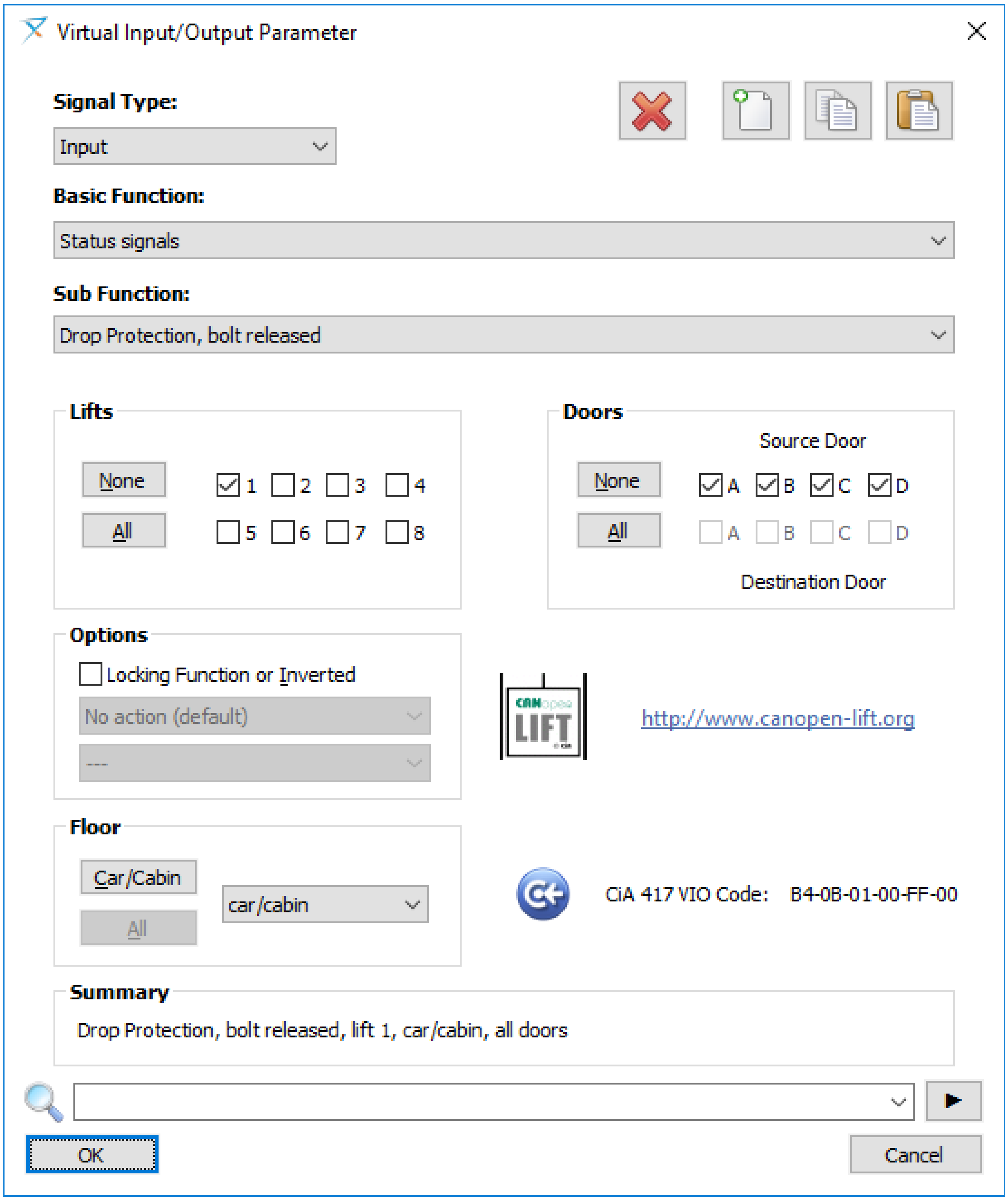


Figure 132: Input Function feedback signal from the drop protection [Toolbox View]

50.2 Outputs

Output to feed the coil actuating the bolt.

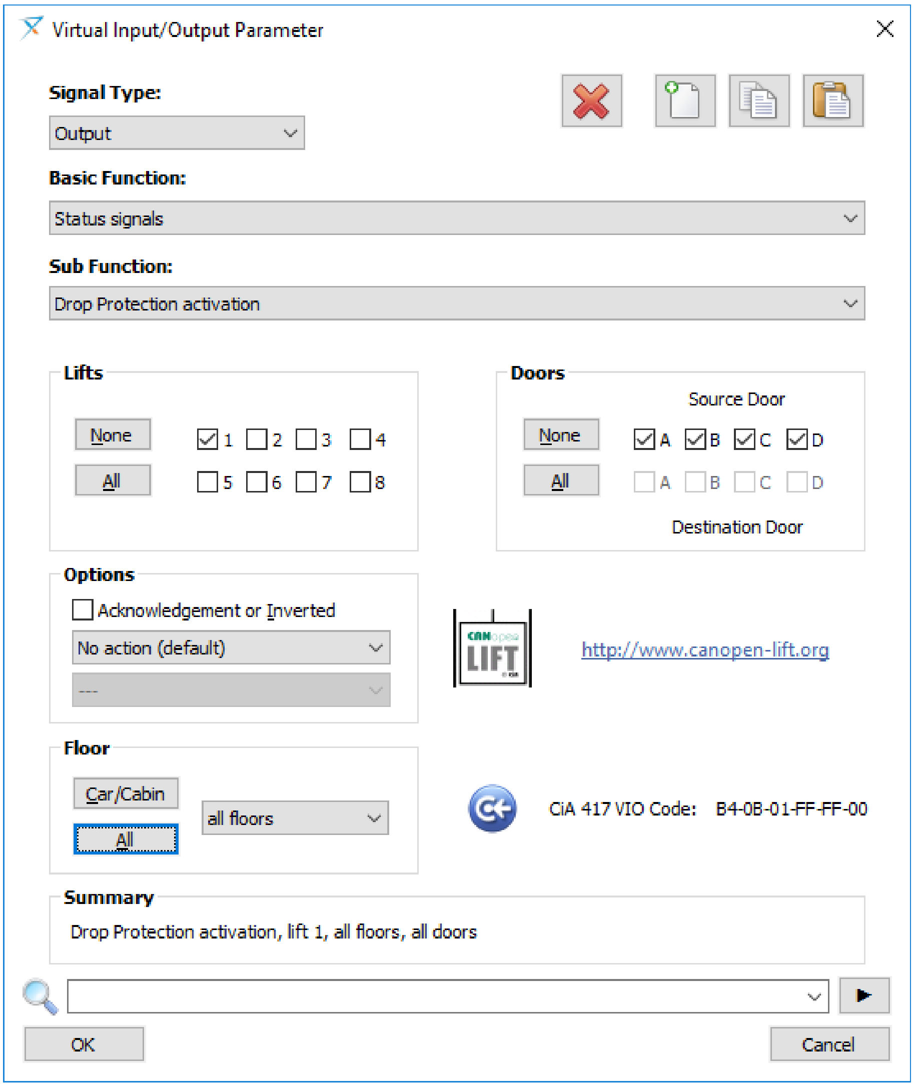


Figure 133: Output function to actuate the bolt of the drop protection [Toolbox View]

50.3 Notes

The reason why the lift controller tries to release the bolt several times before throwing a fault is, that for mechanically reasons the bolt may stuck for a second, because of the passengers making the car/cabin swing.

51 Standby Operation

The 'Standby' operation, also known as 'Remote-Off' operation, shall provide an easy way to send the lift to a standby floor for turning it software driven 'soft-off' or 'standby'. The function can be triggered via an input on the controller board as well as any CANopen CiA 417 based input panel.

The function also provide a way to let a person look/peak into the cabin to ensure it is empty, before finally drive to the standby floor. This is fairly known in hotel or hospital environments.

The function also include turning the cabin light off (even if no cabin light off timer has been activated) and sending 'Power Saving Level S4' via the CANopen bus.

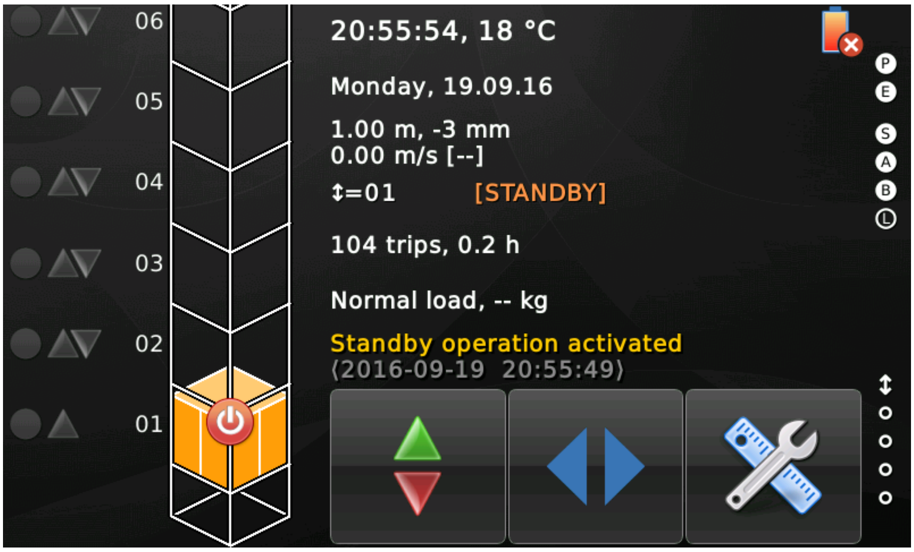


Figure 134: Lift in Standby/Remote-Off operation.

51.1 Options

The options for standby operation can be found be pressing first 'Home' and then the 'Settings Menu' and then go to 'Controller/Piloting' → 'Remote-Off/Standby'.

- A 'remote off/standby' floor to which the lift drives before turning light/displays and all components that react on the corresponding CANopen bus message, off.
- Optional 'check/stop-over' floor where the lifts stops in order to open/close the selected doors and then drive to the standby floor. Usually used in hotel/lobby environments to let the person triggering the command having a look to ensure the car is really empty.
- Optional 'check/stop-over' door mask. This is used to define which door or doors shall open if doing the stop-over at the check/control floor used to heave a peak inside the cabin, ensuring that the cabin is really empty.

- Typically, the doors should remain closed after reaching the standby/remote-off floor. However, it is possible to specify that a door should remain open for special applications.
- Option to enable the landing call button at the 'remote off/standby' floor for opening the door to have a look inside at any time.
- Option to define if the floor displays shall be turned off or turned to "Out of Order" if being remote-off/standby.

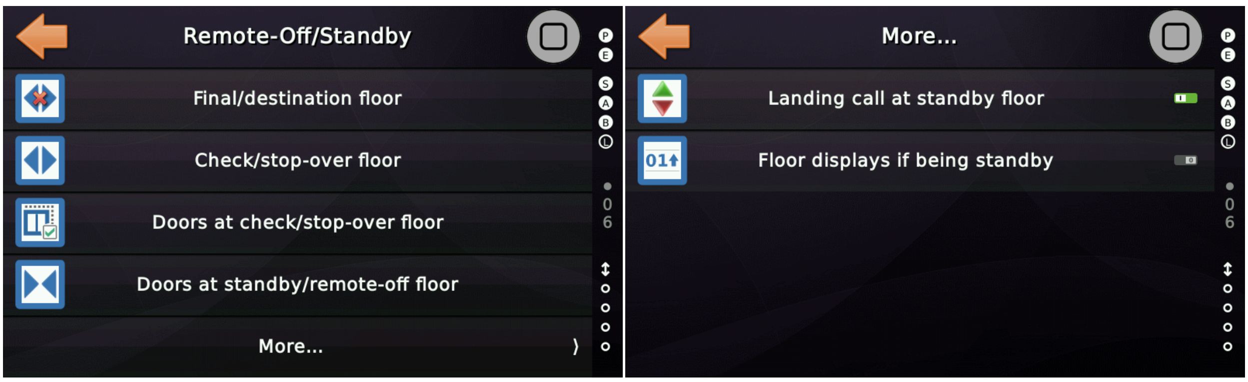


Figure 135: Options regarding Remote-Off/Standby operation.

51.2 Event Items (Logbook)

The following log-book items may be created for a Standby operation.

- Driving to the check/stop-over floor
- Arrived at the check/stop-over floor
- Driving to the standby floor
- Arrived at the standby floor
- Remote-Off/Standby operation turned on
- Remote-Off/Standby operation turned off

Figure 136: Events stored in the log-book.

51.3 Inputs

- Remote-Off/Standby activation using the CANopen CiA 417 input function 'Special Function' → 'Out of order'.

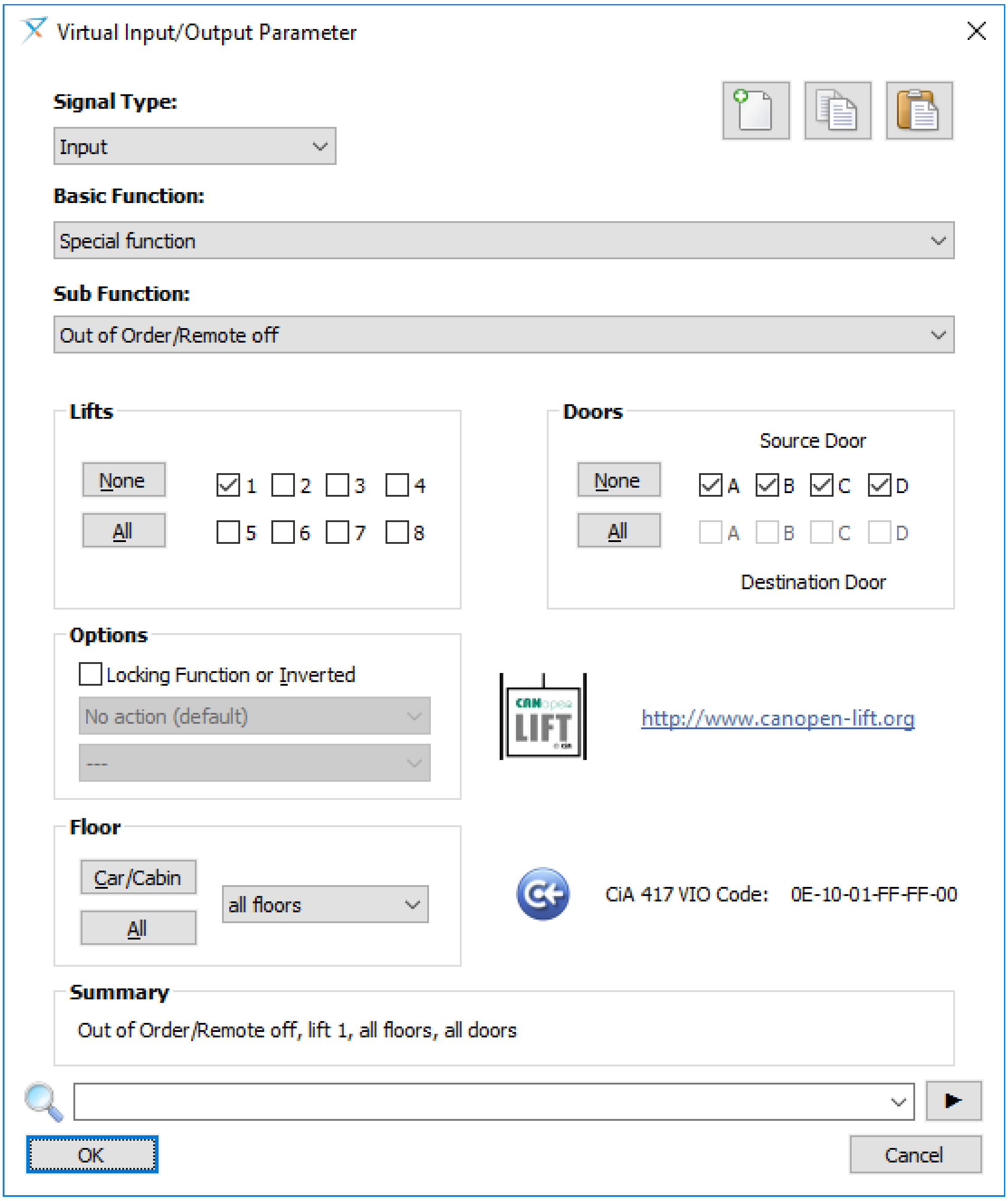


Figure 137: Input Function for activating remote-off/standby [Toolbox View]

51.4 Outputs

- Remote-Off/Standby operation using the CANopen output function 'Special Function Acknowledge' → 'Out of order'.
- Driving to the check/stop-over floor acknowledge output
- Arrived at the check/stop-over floor acknowledge output
- Driving to the standby floor acknowledge output
- Arrived at the standby floor acknowledge output

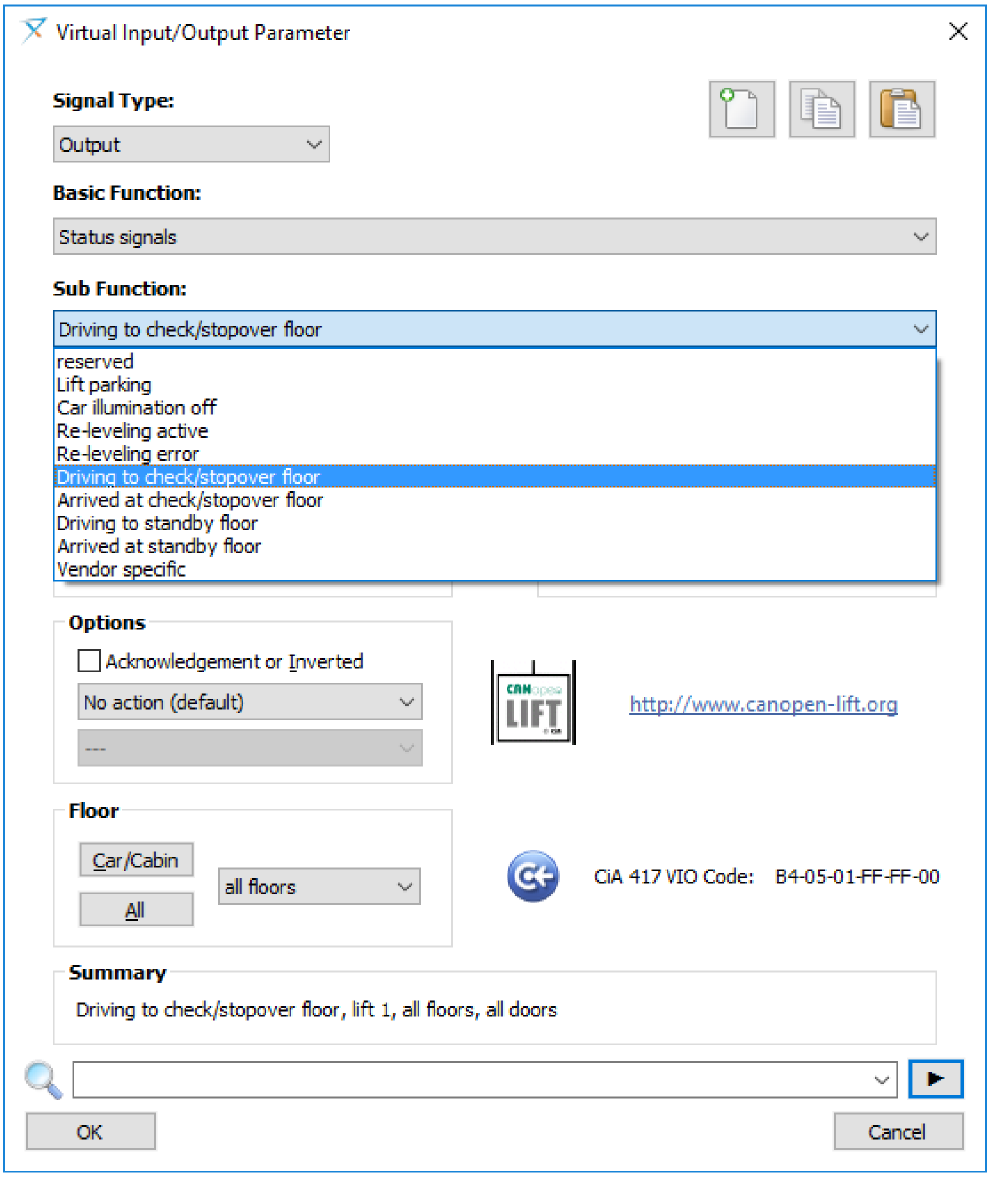


Figure 138: Output functions reflecting the process [Toolbox View]

51.5 Notes

1. The option to turn off the displays, normally used for showing the lift floor and direction, might not work, if the displays show some kind of 'Out of Order' indication, if a zero floor value is transmitted to them.
2. You may setup a door-mask that shall open when doing a stop-over, typically in the lobby floor, for checking that the car/cabin is empty, before leaving to the destination floor and turning the lift to remote-off/standby.
3. Consider, if the landing call button shall open the door at the remote-off/standby floor, if being in standby operation. You find an option for that.

52 Intermediate Stopover Operation

The options for the intermediate stopover operation can be found be pressing the 'Settings Menu' and then enter the menu and go further to 'Controller/Piloting' → 'Time & Options' → 'Intermediate Stopover'.

The 'Intermediate Stopover' operation, shall provide an easy way for doing an intermediate stop-over on a defined floor, using a preselected door mask in the parameterized direction.

This feature is used in warehouses and hotels, where the customer wants the lift always to stop on a certain floor, opening a certain door, if driving in a specific direction. Like a hotel lift that comes from the hotel rooms down to the lobby.

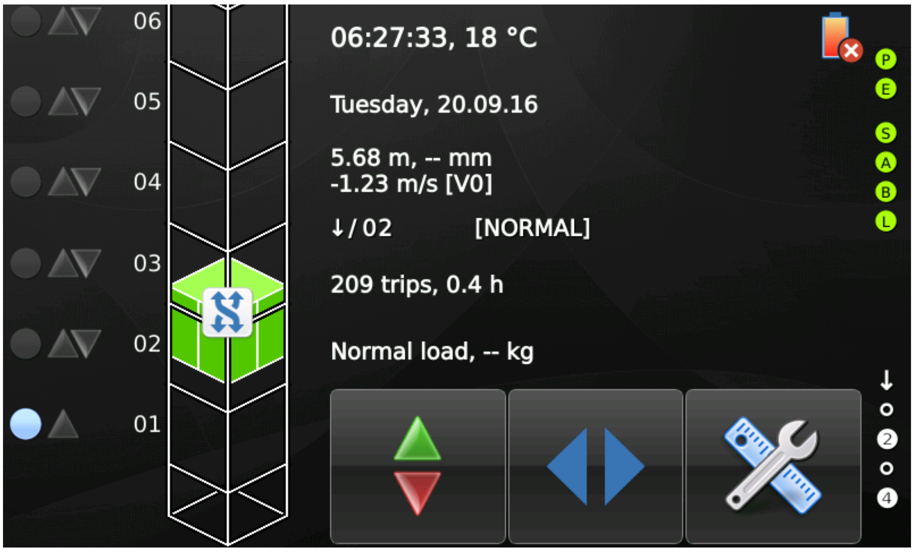


Figure 139: Lift in Intermediate-Stopover operation.

Additionally, the user may select the option, that the lift shall only do a stopover, if the car is not empty, using a car load measuring unit in that case. This requires a reliable cabin load measuring device.

52.1 Options

- A floor where the lifts automatically stops in order to open/close the selected doors and then drive further to the passengers destination.
- The direction in which the lift shall do a stopover. In hotel applications, this is often the downward direction, if the lift is coming from the rooms to the lobby floor.
- Option to define if stopover shall only be done, if the car-load-measuring unit is not signaling zero-load, indicating that the car is not empty.
- Door mask. This is used to define which door or doors shall open if doing the stop-over. If also a passenger call is pending on that floor, the door masks are merged.

Figure 140: Options regarding Intermediate-Stopover operation.

52.2 Wait for security signal at the intermediate stopover floor

Another seldom used parameter defines, if the lift shall wait, having arrived at the intermediate stopover floor, for the security run signal being indicated, before continuing driving to its dedicated destination.

The signal in question would be 'Special Function Security Run'. ▸ The signal has to peak up once, in order for the lift to continue driving to the registered call.

53 Fire Alarm Operation

The 'Fire Alarm' operation, also known as 'Case Of Fire' operation, shall provide an easy way to send the lift to a fire alarm floor for evacuation.

The function can be triggered via inputs on the controller board as well as any CANopen CiA 417 based input panel.

The function also takes care about the proper door handling, ignoring the light curtains and notify the door drive to turn to 'nudging' operation, using reduced force/torque when closing the doors, regarding to the EN81-73 and EN81-20/50.

Figure 141: Lift in Fire-Alarm-Operation mode.

53.1 Details & Options

There are three fire alarm strategies to choose from:

- **Off** - No fire alarm strategy at all. The lift will not react on the fire alarm input.
- **Simple Fire-Alarm mode**, targeting just one fire-alarm floor.
- **Fire Alarm Center mode**, using inputs to define the target floor. So the Alarm Center controls the lift.
- **Dynamic Fire Alarm mode**, using fire/smoke detectors inputs to let the lift decide to which floor to drive.
- **Smoke detector only mode,** using fire/smoke detectors inputs to indicate which floors/doors are smoked. The lift will stay operational, but will not allow to drive to those floors nor will the lift be parking at those floors.

53.1.1 Common

In all Fire Alarm modes the doors are turned to 'Fire Alarm Operating Mode', so that the light curtains are ignored and the door machine is told to use reduced force when closing. This is done via an output or the CANopen control word. If the lift does a stopover, the doors are kept closed but the door-open button remains active.

Be aware that if the region where the lift is operated has the requirement that you have a 'Fire Alarm Set' and a 'Fire Alarm Reset' signal, like in some regions of Switzerland, the lift controller will store the 'Fire Alarm' state non-volatile, so that once you have activated Fire Alarm, a power-loss will not deactivate Fire Alarm until the 'Fire Alarm Reset' signal has been triggered.

53.1.2 Simple Fire-Alarm mode *(very often used)*

Using the 'Simple Fire-Alarm Mode' the lift just targets one single floor and stays there with the doors open or open/close, as being parameterized.

53.1.3 Fire Alarm Center mode *(quite often used)*

Using the 'Fire Alarm Center Mode', the lift is informed via the Fire Detector inputs to which of the fire alarm levels to go. We have 16 fire alarm levels in the system. For each level you can assign a floor and a door. Fire detector input #1 one corresponds to fire alarm level #1 and so on...

53.1.4 Dynamic Fire Alarm mode *(used not so often anymore)*

The third fire alarm mode is the most complicated.

The lift controller basically does what normal the Fire Alarm Center in a building would do. This is used for retrofitting, if a lift controller is upgraded and the building does not have a Fire Alarm Center.

In that case some smoke detectors on the relevant floors will be added and the lift has to do the decision, which fire alarm level to use. If doing so the '*Policy for passing smoked/burning floors*' is in charge.

By default this option is set to '*Passing of smoked or burning floors is forbidden*', because only a few lifts have doors that fulfill the specification required to let a lift with passengers pass a smoked/burning floor.

53.1.5 Smoke Detector Only Mode (very rarely used)

This is not really a fire alarm operation mode. This is just a way, to keep the lift operational but prevent the arrival or usage of the lift at floors/doors, were smoke had been detected.
The first fire alarm level corresponds to the first fire detector input, the second level to the second fire detector input, and so on. Each fire alarm level has to be defined with the floor and door.
Here is an example. In this table the Fire Detector 1 would block floor 3 door A & B.

53.2 Fire Alarm Levels

Each Fire Alarm Level is a pair of a floor number and a set of doors to open on that particular floor.

Figure 142: Fire Alarm Levels

If using '*Dynamic Fire Alarm mode*' and setting the policy for passing smoked floors to 'No', you might face the situation, that the lift is not able to go anywhere, without passing a smoked floor. So double check the evacuation plan for Fire Alarm.

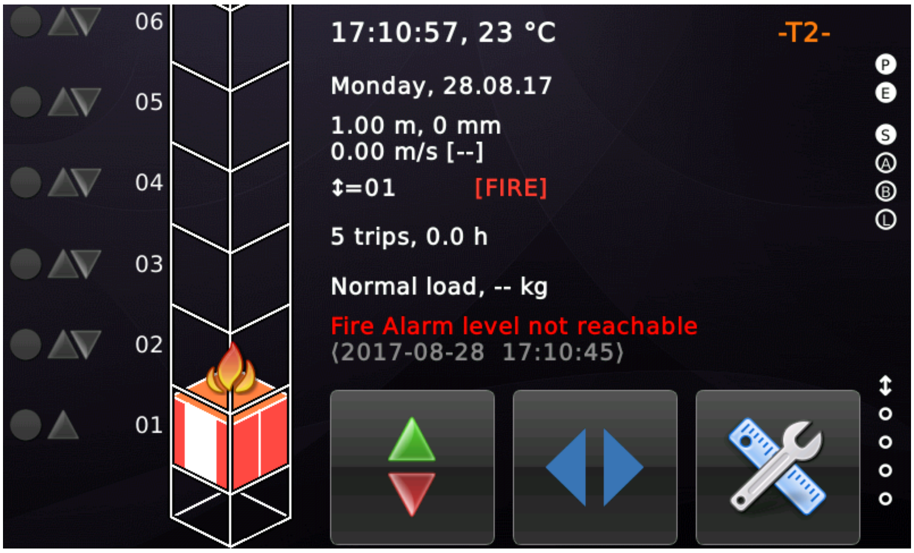


Figure 143: Fire Alarm level not reachable

53.3 Event Items (Logbook)

These are the typical four log-book items a fire alarm operation will generate, if everything went well.

Figure 144: Fire Alarm logbook items.

53.4 Fire Alarm Options

53.4.1 Doors in fire alarm floor

This parameter defines if the doors shall close after a while after having reached the fire alarm floor.

53.4.2 Doors at fire alarm floor closing time

This parameter defines an optional time span, if the doors shall close (delayed) after a while, having reached the fire alarm floor.

53.4.3 Policy for driving to the fire alarm floor

This parameter holds the policy for driving to the fire alarm floor. Depending on the rules of the local fire department, the lift shall always drive to the fire alarm floor or only, if the fire alarm was activated while the lift was driving but not if it was standstill.

53.4.4 Policy for passing smoked/burning floors

This parameter is only valid if the fire alarm strategy '*Dynamic Fire Alarm mode*' is used It defines the policy for passing smoked/burning floors, when evacuating the lift and its passengers to the fire alarm (evacuation) floor. If passing smoked/burning floors is allowed or not, depends heavily on the used doors in the lift installation.

53.5 Inputs

The 'Special Function' → 'Fire Alarm' input activates the fire alarm operation. This input is often used 'inverted' to make it failsafe.

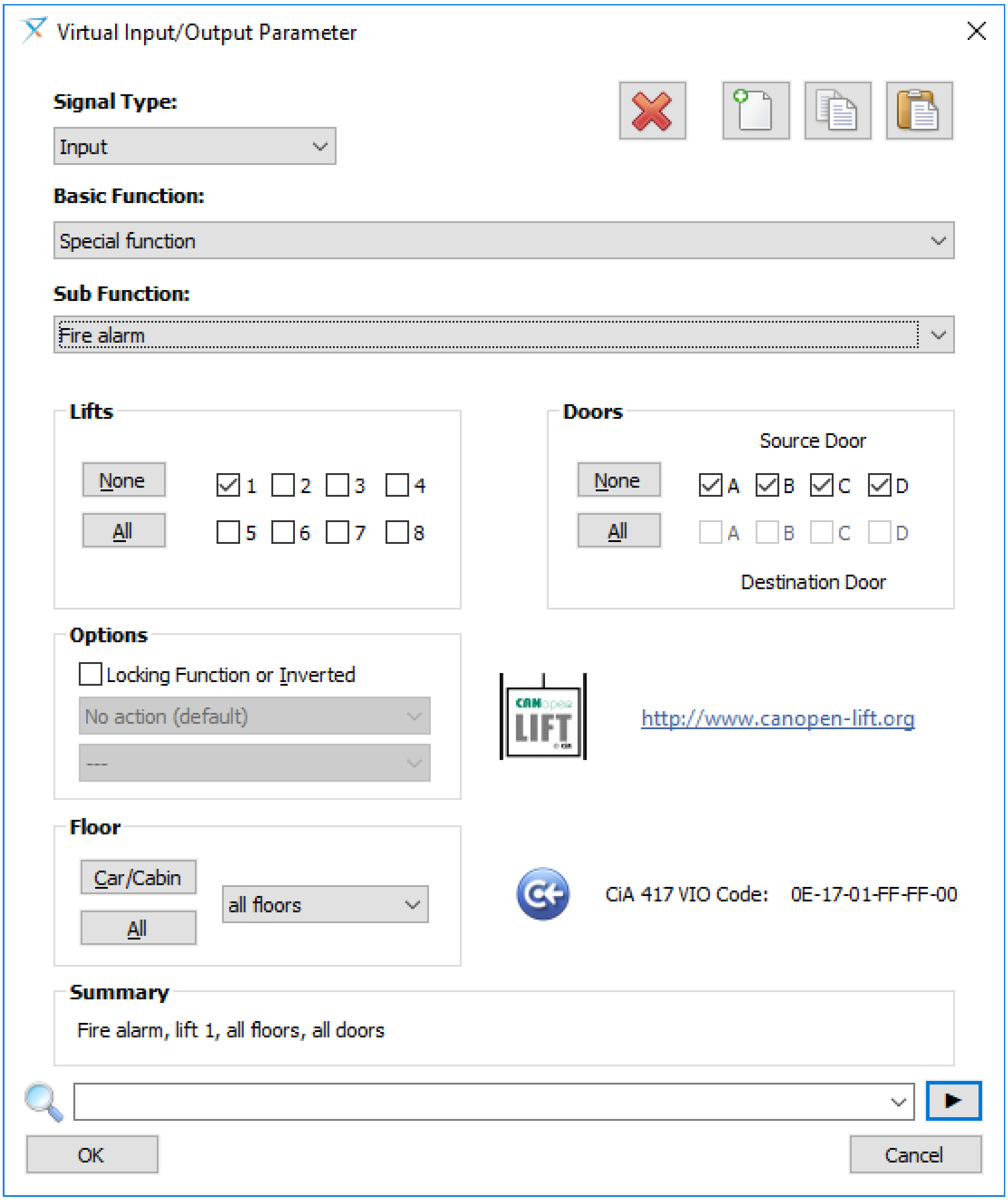


Figure 145: Input functions used to activate Fire Alarm [Toolbox View]

The Fire Detector Inputs (1..x) can be found here. Check the polarity with your actual schematics. They may be used 'inverted' as well to make them fail-safe.

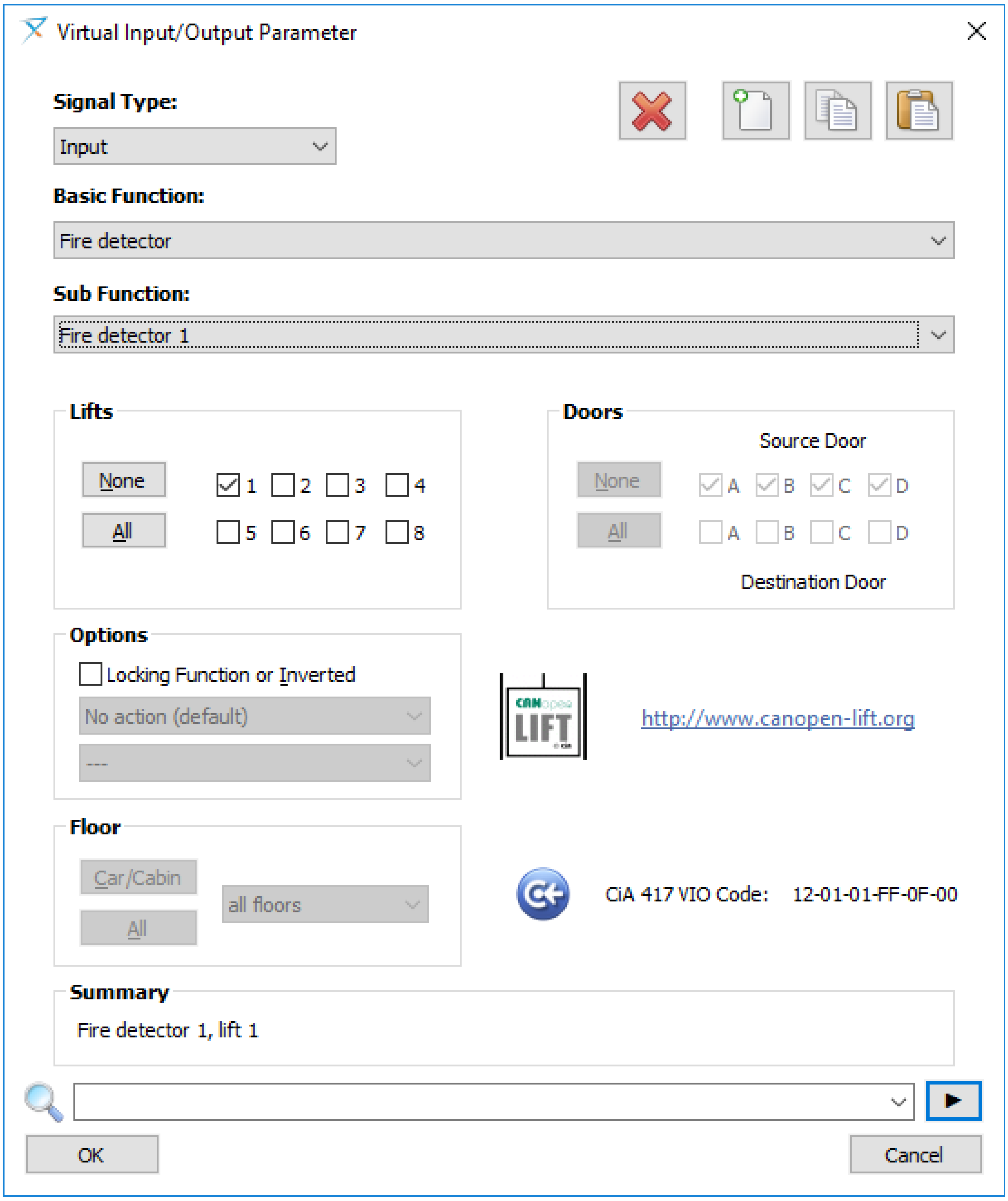


Figure 146: Input functions used for the Fire/Smoke Detectors [Toolbox View]

53.6 Outputs

- **Special Indication → Fire alarm** is turned on immediately when Fire Alarm is activated.
- **Special Indication → Travel to fire alarm floor** is turned on when the lift is driving to the fire alarm floor.
- **Special <u>Function</u> → Fire alarm acknowledge** is turned on when the lift has arrived the fire alarm floor.

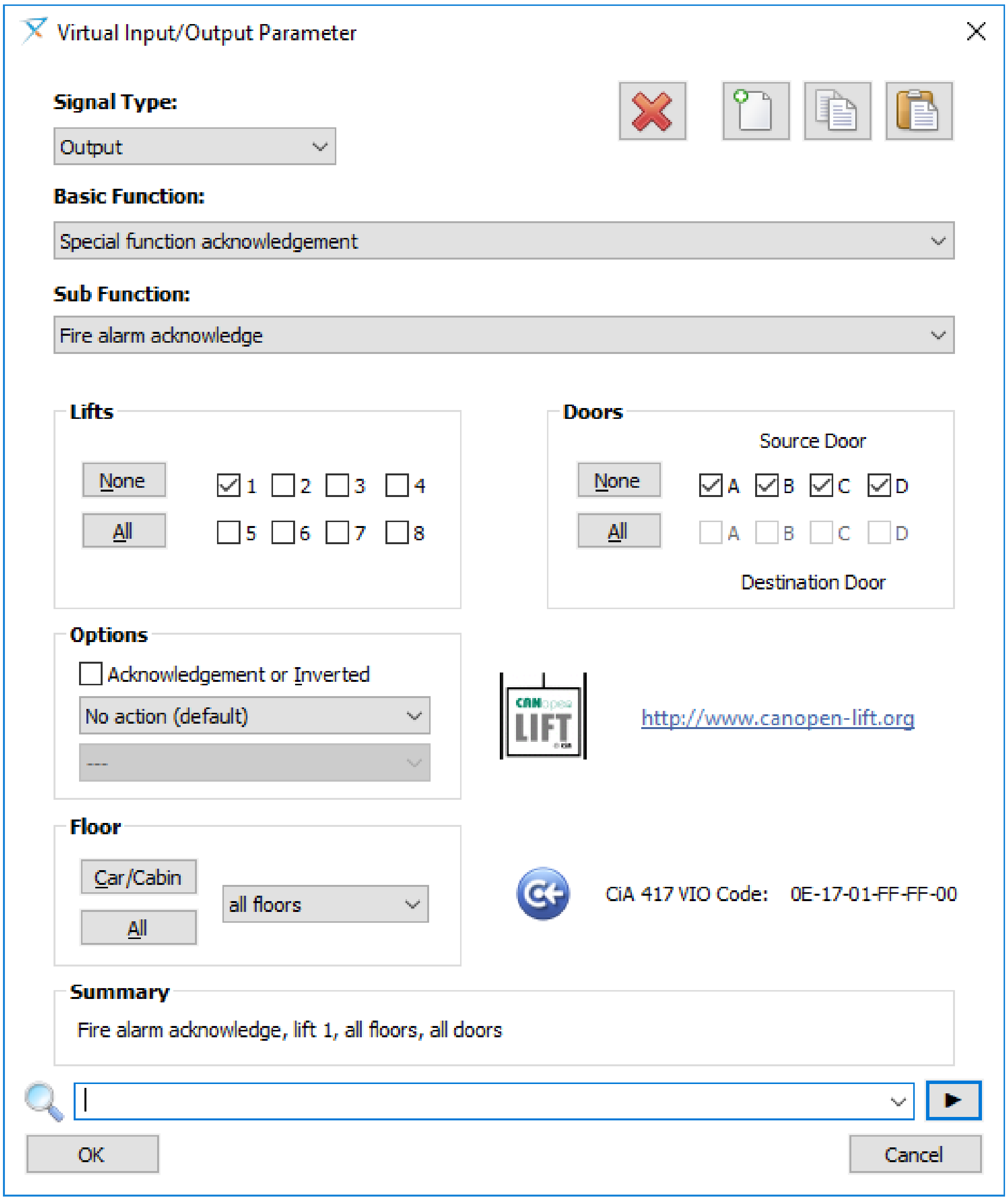


Figure 147: Output functions for the Fire Alarm acknowledgment [Toolbox View]

54 Rescue/Salvage/Evacuation Operation

This operation mode is usually used to evacuate disabled or elderly people, often in a wheelchair, out of the building. A simplified variant (rescue lift) and an extended variant (evacuation lift) are available.

The options for the Rescue/Salvage/Evacuation operation can be found by pressing 'Settings Menu' and then go further to 'Controller/Piloting' → 'More...' → 'Even more...' → 'Even more...' → 'Rescue/Salvage operation'.

54.1 Simplified Rescue Operation

The simplified rescue operation feature has to be enabled in the lift controller first. That operation mode is usually activated via an input terminal and will behave like a simple fire alarm operation but provides the possibility to control the car via car calls, once the lift has arrived at the rescue floor and a key-switch in the car has been activated. Doors are on constant pressure operation mode and have to be operated via the door-open and door-close buttons. The light curtains will be ignored to ensure they are not effected by smoke.

54.1.1 Options

54.1.1.1 Rescue operation floor

This parameter is used to select the floor to which the car is driven, when the lift has been turned to rescue operation mode.

54.1.1.2 Rescue operation floor doors

This parameter is used to select the doors that shall open at the floor, to which the car has been driven driven, when the lift has been turned to rescue operation mode.

The doors typically stay open, once the lift has arrived at the rescue floor.

54.1.1.3 Evacuation service door table

This parameter holds the cross-out table of all landing doors that can not be operated in evacuation service operation. After arrival of the lift, the output signal 'Special Indication ▸ Door open request acknowledge, lift 1, car/cabin, door X' can be used to lit up the 'Door open button' on that floor and door side, that actually can be opened by the evacuation assistant.

54.1.2 Inputs

- **Status/controller signals → Rescue/Salvage operation** shall be activated in order to initiate the rescue/salvage operation and drive the car to the given rescue floor.
- **Status/controller signals → Rescue operation car calls enable** shall be activated (*usually by means of a key switch*) in order to control the lift via car calls, once the car has arrived the rescue floor.

54.1.3 Outputs

- **Status/controller signals → Rescue/Salvage acknowledgment** will be activated when the rescue/salvage operation has been activated and the lift has turned to this operation mode.
- **Status/controller signals → Travel to rescue operation floor** will be activated as long as the lift is driving to the given rescue floor. This output signal may be used for a dedicated voice announcement as well.
- **Status/controller signals → Arrived at rescue operation floor** will be activated when the lift has arrived the given rescue floor.
- **Special Indication → Rescue/Salvage operation** will be activated when the car calls have been enabled via the dedicated input functions, usually via a key switch in the car and the lift is now able to rescue waiting passengers.
- **Door controlling signals → Door closing buzzer signal fire/evacuation** will be activated while the doors are closing. This can be used for a voice announcement or a simple buzzer signal.

54.1.4 Logbook

In the logbook the phases of the rescue/salvage operation will be recorded like this:

Figure 148: Rescue/Salvage operation mode recorded by the logbook

54.2 Advanced Evacuation Lift

The advanced evacuation lift offers more options to adapt the lift installation to the requirements of the building, if elderly people or passengers in wheelchairs have to be evacuated out of the building. There are two variants available, that can be selected using the dedicated input signal:

- Driver assisted evacuation/rescue service operation
- Automatic evacuation/rescue service operation

54.2.1 Phase 1

Both variants have the phase 1 in common, that will be activated via a local key switch at the landings or via an input, driven by the building management system.

When activating the phase 1 all pending landing and/or car calls will be cancelled. The call buttons in the car and at the landings are rendered non-operational.

In this phase the door light curtains stay operational but will be rendered non-operational, if the doors are kept open for more than 20 seconds. The idea is to keep them operational in order to not crash into a passenger but at the same time ensure that smoke will not block the doors from closing.

54.2.1.1 Inputs

- **Status/controller signals → Rescue/Salvage operation** shall be activated in order to initiate the evacuation operation and drive the car to the given rescue floor. This is usually done by a key switch at the landings.

- **Status/controller signals → Rescue/Salvage operation via Building Management (BMS)** shall be activated in order to initiate the evacuation operation and drive the car to the given rescue floor. This is usually done via the building management system, remotely.

- **Status/controller signals → Evacuation/Rescue operation suspend signal** shall be activated by the building management system to interrupt the evacuation operation, if smoke, fire or heat make it unsafe to proceed evacuating passengers. If the evacuation operation has been suspended by the building management system, the lift will be recalled to the evacuation floor.

54.2.1.2 Outputs

- **Status/controller signals → Rescue/Salvage acknowledgment** will be activated when the evacuation operation has been activated and the lift has turned to this operation mode.
- **Door controlling signals → Door closing buzzer signal fire/evacuation** will be activated while the doors are closing. This can be used for a voice announcement or a simple buzzer signal.
- **Vocal messages → Announce lift is in emergency operation** will be peaked up, when the lift starts to drive to the evacuation floor.
- **Vocal messages → Announcement 'Please leave the lift'** will be peaked up, when the lift has arrived at the evacuation floor and opens the doors.

If the lift has reached the evacuation floor in phase 1, the doors will close again after 20 s at the latest. The doors can be re-opened by a landing call at the recall floor.

54.2.2 Phase 2 - I/O signals

54.2.2.1 Inputs

- **Status/controller signals → Driver assisted evacuation/rescue service operation** shall be activated in order to initiate the driver assisted operation mode. This input signal has precedence over the input used to activate the automatic evacuation mode.
- **Status/controller signals → Automatic evacuation/rescue service operation** shall be activated in order to initiate the automated operation mode. This input signal will be overruled by the input used to activate the manual driver assisted evacuation mode.

54.2.2.2 Outputs

- **Vocal messages → Announcement 'Wait for the rescue service'** will be peaked up, when the lift has arrived at some landing and the doors have been fully opened, to let the passengers step in. There is no need for the passengers to enter a call. All they have to do is to wait for the doors to close again.
- **Vocal messages → Announcement 'Please leave the lift'** will be peaked up, when the lift has returned to the recall floor and the doors have been opened.
- **Special Indication → Rescue/Salvage operation** will be activated in phase 2.

54.2.3 Phase 2 - Driver assisted evacuation/rescue service operation

The driver assisted evacuation operation is activated via a key-switch in the car. The assistant will drive the car using the car call panels. The doors will open automatically at the floors to pickup the wheelchairs. Closing of the doors has to be initiated by constant pressure on the next car call or the door close button. If the call button or the door close button are released before the doors have been fully closed, the doors will be re-opened. The next car call will not be registered, before the doors have been fully closed.

All door light curtains will be rendered non-operational at any time. The doors operate in nudging operation mode.

Passengers at the landings will press the landing call buttons to indicate that they are waiting to be rescued.

The driver of the lift will be notified about the waiting passengers, by blinking car call acknowledges (lamps).

To make this work the car calls have to be connected to an I/O panel unit that can detect the car call button press, even if the car call lamp has been turned on. So use a 4-wire solution or a smart I/O panel, that supports pulsing of the outputs in order to sense the inputs.

If the doors have been fully closed again, after having picked up a waiting passenger, but no further car call has been registered within 15 seconds, the lift will automatically return to the evacuation floor.

54.2.4 Phase 2 - Automatic evacuation/rescue service operation

Like for the driver assisted operation mode, the passengers will use the landing call buttons to indicate that they are waiting. The lift will automatically drive to the landing call that is farthest away from the evacuation floor and rescue that person first. If a landing call is registered, that is even further away, while the lift is already approa-ching to a landing, it will go straight back to the evacuation floor, before rescuing that passenger in the next cycle. So, the lift will never take a passenger further away from the evacuation floor.

If the lift is not indicating '*Full Load*' and the option '*Rescue operation stopovers*' has been activated, the lift may stopover to pick-up for passengers on the way back to the evacuation floor. The doors will be operated automatically. The light curtains will rendered operational for a maximum time of 20 seconds. Then they will be ignored in order to prevent the doors from being kept/blocked open by smoke.

When the lift arrives at a floor in order to rescue a waiting passenger, the voice announcement signal '*Wait for the rescue service*' will be indicated. The passengers do not need to enter a call. The doors will close automatically and the lifts starts back to the evacuation floor. Pressing the landing call again will not re-open the doors in this situation.

When the lift finally is back to the evacuation floor, the voice announcement '*Please leave the lift*' will be triggered to ask the passenger to leave the car.

54.2.5 Suspending the evacuation operation

The evacuation operation will be usually interrupted, if smoke, fire or heat make it unsafe to proceed evacuating passengers. If the evacuation operation has been suspended by the building management system, the lift will be recalled to the evacuation floor.

The evacuation operation can be suspended by the building management system via the input function '*Status/controller signals → Evacuation/Rescue operation suspend signal* '.

If the lift is back at the evacuation floor, the voice announcement signal *'Please leave the lift'* will be triggered.

This event will be recorded in the log book and will ensure that the lift is driven back to the evacuation floor. The suspending signal has a higher priority that the input signal, used to turn the lift to driver assisted or automatic evacuation operation.

Figure 149: Evacuation operation suspended via an input signal

55 Fire Recall/Service (Fire Brigade) Operation

In order to use the lift to transport the fire brigade across the building, the lift controller is equipped with this operation mode.

All related parameters can be found by pressing first 'Home' and then the 'Settings Menu' and then further to 'Controller/Piloting' → 'More' → 'Fire brigade/service'.

The implementation had been done in accordance to the EN81-72:2018. Please note that there are some differences between the somewhat older EN81-72:2003 and EN81-72:2018, especially for the '*Five seconds*' rule, which is required by lifts that have only one fire recall switch at the landing. This is the case in the Netherlands for example.

55.1 Theory of Operation

The Fire brigade/service operation is divided into two phases:

- Phase 1 – Fire Recall Operation (Priority recall for the fire fighter's lift)
- Phase 2 – Fire Service Operation (Lift under fire fighter control)

Being in Phase 1 the lift will drive immediately to the fire recall floor. If the lift (in that moment) is moving away from the fire recall floor, it will stopover in the very next floor level (keeping the doors closed) and start driving to the fire recall floor. The door open button remains active in this phase. When the lift has arrived at the fire recall floor, it stops and keeps the doors open.

Switching to phase 2 is done either by means of a key-operated switch in the car/cabin or automatically after arrival and door opening, depending on the setting of the parameter '*Fire brigade/service on/off*' (mode):

- Fire service operation with landing & car key
  → Turning to phase 2 using the key-switch in the car/cabin.
- Fire service operation with landing key only (Benelux)
  → Automatically turning to phase 2 after door opening.

If the lift was turned to phase 2, it can be moved by using car calls, with the next car call always cancelling the previous one.

The doors do not automatically open when the lift has arrived at a floor level, being on fire service operation.

To open the door, the '*Door-Open*' button has to be constantly pressed. Which door can be opened is indicated by using the signal '*Special Function Acknowledgment → Door open request acknowledge, lift 1, car/cabin, door X*'. See the chapter about the '*Fire service door Table*' for details.

Normally, when the '*Door-Open*' button is released, the door close immediately (automatically) when the door is not in the '*fully opened*' state. However, this behavior can be adjusted due to local fire brigade regulations, so that the doors stop rather than automatically close again. By using the parameter '*Fire service door operation mode*' the behavior can be defined:

- Automatically close, if door is not at the 'opened' position [standard]
- Stop/hold door, if door is not at the 'opened' position
  This setting requires a door drive unit mechanically capable of doing so.

If the '*Fire service*' key switch in the car is turned off (*if the car has a fire service key*) while operating in phase 2, the lift remains in phase 2 but can not be driven by new car calls.

55.1.1 Returning to normal operation

To return the lift to normal operation, the lift has to be returned to the fire recall floor and the '*Fire service*' key-switch in the car (if existing) and the '*Fire recall*' key-switch at the landing, have to be turned back to the '*off*' position.

55.1.2 '*Five second rule*' using the key-switch '*Fire recall*' at the landing

The lift can be recalled back to the fire recall floor, using the key switch '*Fire recall*' at the landing. For that, the key-switch has to be turned off for more than five seconds and then turned back to the 'on' position again. If the lift is equipped with a '*Fire service*' key-switch in the car and the door is opened, the lift will not return.

Please note that there is a noticeable difference between the older EN81-72: 2003 and EN81-72: 2018 in exactly this '*five second rule*' function!

55.2 Fire brigade/service on/off (Mode)

This parameter defines if the lift features fire brigade/service (fire fighter) operation. This parameter also defines the actual variant of the fire service operation, as there are some local/national differences. So please refer to your local regulations.

55.3 Fire brigade recall floor

This parameter defines the floor to which the lift drives, if the fire brigade (fighter) operation has been activated, using the key switch at one of the landings.

55.4 Fire brigade recall floor doors

This parameter is used to define the doors to operate when the lift has arrived at the fire recall (fire brigade) floor.

55.5 Fire service door operation mode

Use this parameter to define how the doors shall behave in fire service operation mode (phase 2).

Typically the doors are opened manually via the 'door-open' button and shall automatically close, if the door has not been moved into the (fully) 'opened' position.

If the door has once moved into the (fully) 'opened' position, it can only be closed by constant pressing the 'door-close' button or constant pressing a 'car call' button. If the button is released before the door is fully closed, it will automatically re-open again.

Anyhow, depending on local regulations, the doors might have just to stop in the position they are, instead of auto closing. This parameter can be used to archive this.

55.6 Fire service door table

This parameter holds the cross-out table of all landing doors that <u>shall not be operated</u> in fire service operation, as requested by the EN81-72 regulations, especially regarding to chapter 5.8.9 of the EN81-72 regulation.

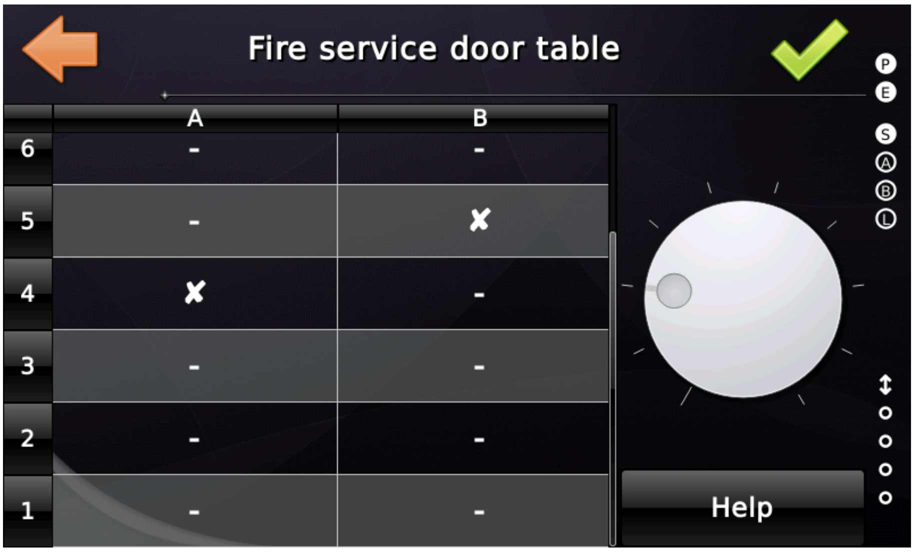


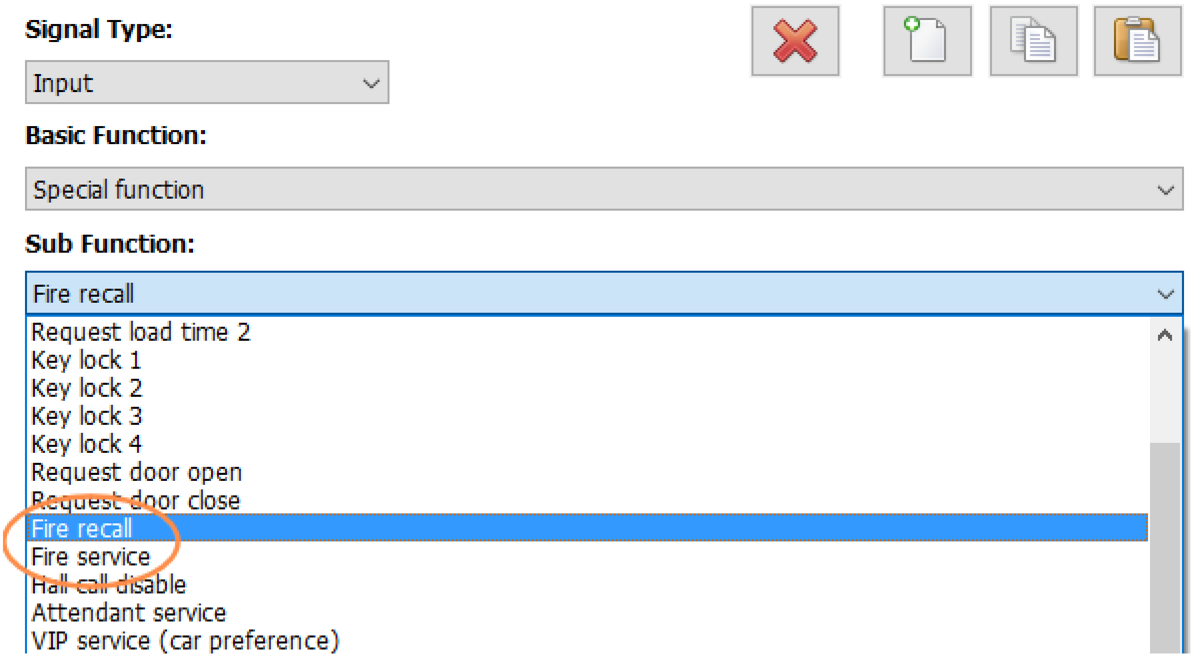
Figure 150: Fire service cross-out door table

After arrival of the lift, the output signal '*Special Function Acknowledgment → Door open request acknowledge, lift 1, car/cabin, door X*' can be used to lit up the '*Door open button*' on that floor and door side, that actually can be opened by the fire fighter.

55.7 Fire recall/service Input signals

55.7.1 Key-Switch Inputs

You find the CANopen CiA 417 standard input signals for the '*Fire recall key switch*' and the '*Fire service key switch*' in the '*Special Function*' group.



Here is an example:

- Special Function → Fire recall, lift 1, all floors, all doors *[at the landings]*
- Special Function → Fire service, lift 1, car/cabin, all doors *[in the cabin]*

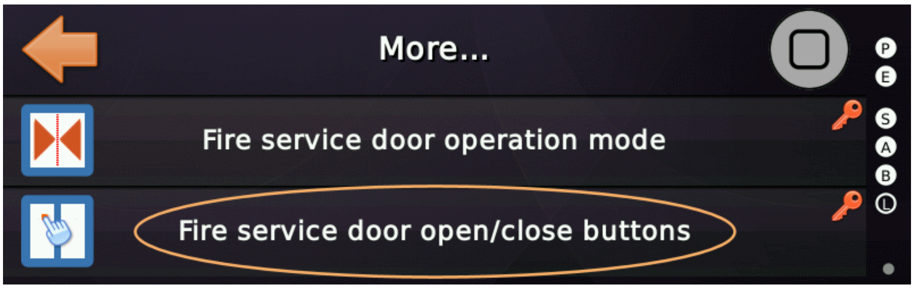
55.7.2 Request Door Open/Close Inputs

55.7.2.1 Variant 1 – Using the <u>regular</u> door open/close buttons

If you feature the regularly door open/close buttons, use the '*Special Function → Request door open/close, lift 1, car/cabin, door X*' for that purpose. For the signal lamps, indicating that the fire fighter can operate the open/close buttons, use the '*Special Function Acknowledgment → Request door open/close acknowledge, lift 1, car/cabin, door X*'.

55.7.2.2 Variant 2 – Using special door open/close buttons

To use special door open/close buttons for the Fire Fighter panel, you have to activate this option first.



If you feature special door open/close buttons, just for a Fire Fighter panel, use the '*Door Controlling Signals → Fire service door open/close button, lift 1, car/cabin, door X*' for that purpose. For the signal lamps, indicating that the fire fighter can operate the open/close buttons, use the '*Door Controlling Signals → Fire service door open/close button acknowledge, lift 1, car/cabin, door X*'.

55.7.3 Specifying the Car Call Panel to feature for Fire Service Operation

The parameter '*Fire service car call panel A/B/C/D usage*' let you define which car call panel (door A/B/C/D) shall be featured for the fire service operation. This panel might include calls for a door X even if there is no door X at a specific floor. In fire service operation, the lift will just check the floor indicated by the call buttons of that panel and will drive there.

55.7.4 Note about Car Call Canceling in Phase 2

Usually entering the very next (new) car call will cancel any pending car call, if the lift is operated in fire service mode (phase 2). Anyhow some older Fire Fighter lifts might have an extra input called '*Call Cancel Fire Brigade*'. If so, this button can be connected to the input signal '*Special Function → Call cancel fire brigade, lift 1, car/cabin, all doors*'.

55.8 Fire recall/service Output signals

55.8.1 Fire recall (phase 1)

- Special function acknowledgment → Fire recall acknowledge, lift 1, all floors

  This acknowledge signal is turned on when fire recall operation (phase 1) has been activated and is kept on even if the lift has turned to fire service operation (phase 2). If the fire recall/service operation is finally turned off, then this signal is dropped.

- Special indication → Travel to fire recall floor, lift 1, all floors, all doors

  This signal is indicated while the lift is driving to the fire recall floor.

- Status/controller signals → Lift at fire recall floor, lift 1, all floors, all doors

  When the lift has arrived at the fire recall floor, typically the floor that has the fire recall switch at the landing, this signal is turned on.

- Status/controller signals → Fire service inspection buzzer, lift 1, all floors, all doors

  This signal is turned on, if the lift is in inspection/emergency rescue operation and fire recall operation is requested. This signal is usually used for turning a buzzer on.

55.8.2 Fire service (phase 2)

- Special function acknowledgment → Fire service acknowledge, lift 1, all floors, all doors

  While the lift is operated in phase 2 by the fire brigade from within the car.

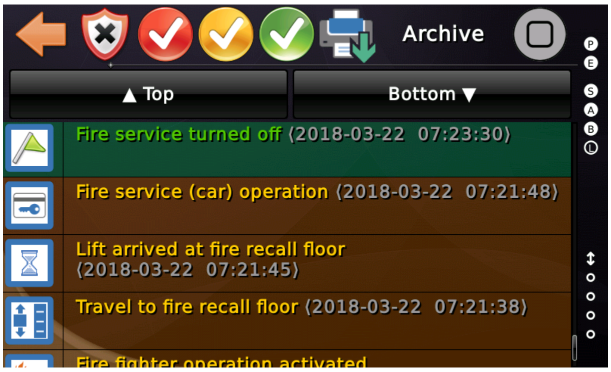
- Special Indication → Door open request acknowledge, lift 1, car/cabin, door X

  This signal can be used to lit up the 'Door open button' on that floor and door side, that actually can be opened by the fire fighter.

55.9 Fire recall/service Events (Logbook)

The logbook items give a record of a fire recall/service operation procedure. Starting with the lift being turned to fire brigade/fighter operation by the '*Fire recall*' key switch at the landing.

Driving to the fire recall floor and turning to '*Fire Service*' operation by either using the key-switch in the car or (depending on local regulations) automatically after arrival and door opening in the fire recall floor.



And finally returning to the fire recall floor and turning fire service off again.

56 Emergency Power Net Operation

Some buildings (like hospitals) provide an '*Emergency Power*' indication for their lift installations, making it for the lift possible to handle those situations safely.

Usually the lift shall stop flush at the next floor, if the signal function '*Emergency Power activation*' has been signaled. Optionally the lift can perform an emergency stop, if required. If then the input function '*Emergency Power enable evacuation*' is signaled as well, the lift will start driving to the '*Emergency Power Floor*', that has been setup in the '*Emergency Power Settings*'. If having reached the '*Emergency Power Floor*', the output function '*Lift arrived at Emergency Power floor*' is indicated that can be used as an input for the next lift's input function '*Emergency Power enable evacuation*', if running several lifts in a team/group, making them evacuate one by one.

If (*after the Diesel generator has been fired up*) some lifts shall stay operational, probably with reduced velocity, the input '*Emergency Power lift stays operational*' can be signaled to these lift installations.

Open the parameters by pressing first 'Home' and then 'Settings Menu' and then further to 'Controller/Piloting' → 'More' → 'Emergency power'.

Figure 151: Emergency Power Settings

Inputs:

- Status/controller signals → Emergency Power activation
- Status/controller signals → Emergency Power enable evacuation
- Status/controller signals → Emergency Power lift stays operational
- Status/controller signals → Emergency Power Battery Rescue
- Status/controller signals → Emergency Power Battery Rescue Direction

Outputs:

- Status/controller signals → Travel to Emergency Power floor
- Status/controller signals → Lift arrived at Emergency Power floor
- Status/controller signals → Reached Emergency Power floor, doors fully opened

56.1 Emergency Power Operation Options

56.1.1 Emergency Power Operation usage

Defines if the lift installation features the Emergency Power operation mode.

56.1.2 Emergency Power floor

Defines the floor to which the lift drives, in a case of an emergency power operation.

If no 'Emergency Power' floor has been setup and the lift stops in between the floors (outside the door zone), it will drive to the next floor upward for traction lifts or the next floor downwards for hydraulic lifts.

56.1.3 Emergency Power floor doors

Use this parameter to define the doors to operate when the lift has arrived at the emergency power floor.

56.1.4 Doors at Emergency Power floor

This parameter defines if the doors shall close after a while after having reached the emergency power floor.

56.1.5 Emergency Power evacuation sequence timeout

Use this parameter to define the timeout used when evacuating the lifts in a sequence to ensure that the next lift can evacuate even if the predecessor lift does not react as intended or simply does not reach the 'Emergency Power Floor'. You can create a sequence by connecting the output 'Lift arrived at Emergency Power floor' to the input 'Emergency Power enable evacuation' of the next lift.

56.1.6 Emergency Power nominal velocity

Use this parameter to define the velocity (V1..V9) that the drive shall feature if running on 'Emergency Power', regarding limitations of the emergency power supply.

56.1.7 Emergency Power sequence via CANopen bus

Use this parameter to define that the output signal '*Lift arrived at Emergency Power floor*' from the predecessor lift is monitored directly on the CANopen bus, in order to start the 'Emergency Power' evacuation trip for the very next lift in the sequence.

56.1.8 Emergency Power evacuation delay

Use this parameter to define a time span that has to expire, before the lift drives to the emergency power floor.

56.1.9 Emergency Stop on Emergency Power activation

This parameter defines if the lift shall do a quick stop (Emergency Stop), if the Emergency Power function has been activated. Otherwise the lift will try to finish the current driving operation to reach the next floor in the current direction.

56.2 Emergency Power Battery Operation

If the lift is equipped with a battery pack that feed the inverter directly via DC bus or by one single AC phase only, it might be useful to let the lift drive just to the very next floor level and let the drive decide the direction of the lowest resistance, depending on the car/cabin load.

To activate this feature the usage of 'Emergency Power Operation' has to be enabled in the lift controllers parameter and two signals have to be indicated at run time:

- Status/controller signals → Emergency Power activation
- Status/controller signals → Emergency Power Battery Rescue
- Status/controller signals → Emergency Power Battery Rescue Direction

The drive unit has to be informed about this special operating mode. This is usually done via an input on the drive unit itself, signaling that it is now fed directly via DC bus or by one single AC phase only.

The lift controller will deactivate its '*Rotation-Sense Monitoring*' to let the drive choose the direction for entering the very next floor. Via the special input '*Emergency Power Battery Rescue Direction*' the drive might inform the lift controller in which direction it will start evacuating the cabin. If the signal is electrically on, the evacuating direction is downward, it is upward otherwise.

56.3 Emergency Power Items in the Archive (Logbook)

Emergency power operation is documented in its individual steps in the history. From the start of activation, via the trip to the emergency power floor, to the deactivation of the emergency power operation.

Figure 152: Logbook items for Emergency Power Operation

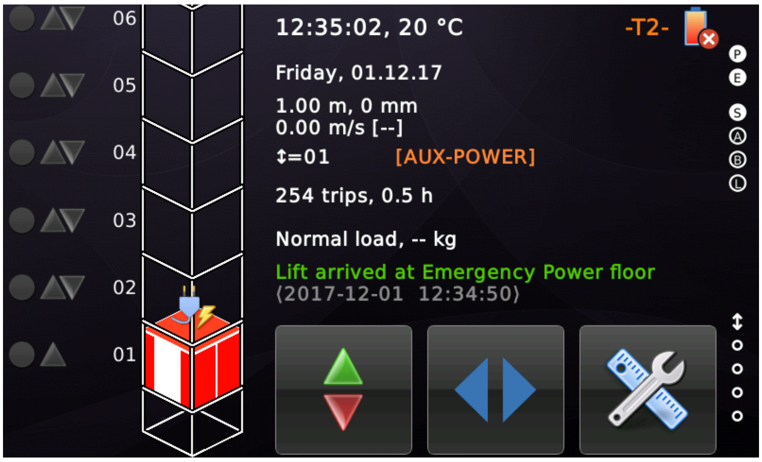


Figure 153: Desktop on Emergency Power Operation

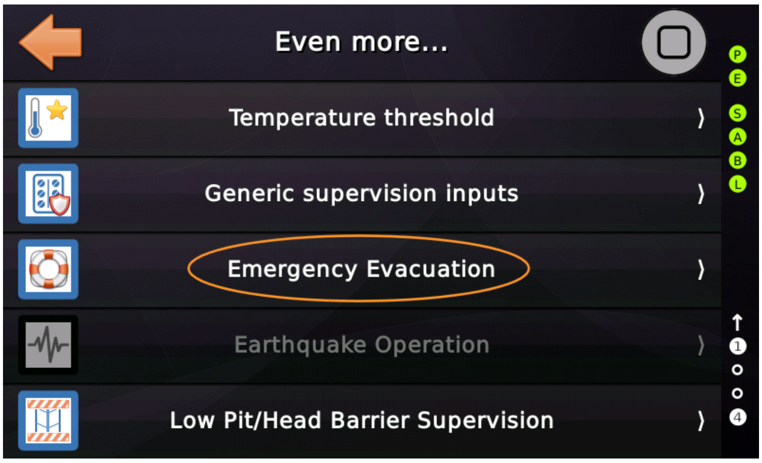
57 Emergency Evacuation Operation

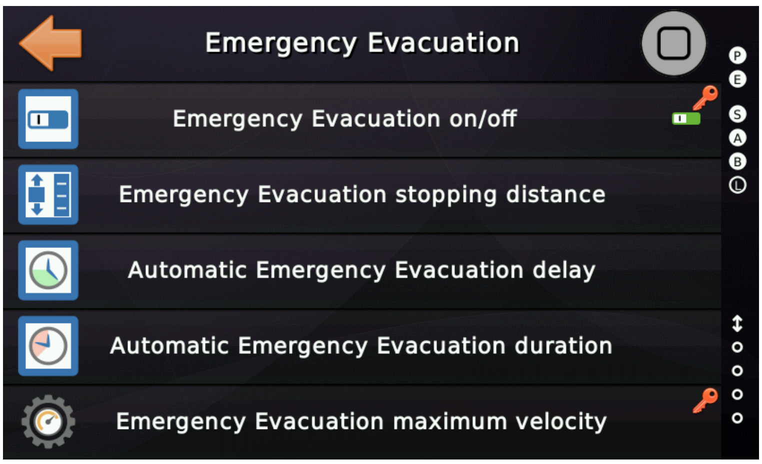
(Manual & Automatic)

This operating mode is used to move the car to the very next floor by opening the brake and limiting the velocity to 0.3 m/s maximum. Typically the position encoder, the lift controller and the brake system are powered via a backup battery. The drive system (inverter) is usually not powered up.

In order to use the feature it has to be enabled in the lift controller first.

You find the related parameters by pressing first 'Home' and then the 'Settings Menu' and then further to '*Controller/Piloting*' → '*More...*' → '*Even more...*' → '*Emergency Evacuation*'.





57.1 Theory of Operation

57.1.1 Manual Emergency Evacuation Operation

The Manual Emergency Evacuation is operated by a technician or a sufficiently skilled person from the lift controller cabinet. First the backup battery power is activated via a switch, that will power up the lift controller, the position encoder and the brake system. This switch will also cut the system from the mains. The input function '*Status/controller signals → Emergency Evacuation, lift x, all floors, all doors*' is activated, when the switch has been put to the '*Manual Emergency Evacuation*' position.

If the lift controller has turned to '*Emergency Evacuation*' operating mode, the output function '*Status/controller signals → Emergency Evacuation Acknowledge, lift x, all floors, all doors*' is turned on to reflect the status.

In the very same moment the '*Drive unit signals → Manual Emergency Evacuation brake enable, lift x, all floors, all doors*' will be peaked up. This enable signal is usually used to feed a push-button that is pressed by the technician in order to release the brake, to move the car. The enable signal is dropped, if the lift's car/cabin exceeds the parameterized velocity, typically but not necessarily 0.3 m/s. If the lift enters the floor level area of the next floor this signal will be dropped as well for three seconds and the doors will automatically open, if possible.

57.1.2 Automatic Emergency Evacuation Operation

The Automatic Emergency Evacuation is operated by the lift controller autonomous. First the backup battery power has to be activated automatically on a main power loss. This battery backup power will power up the lift controller, the position encoder and the brake system. The input function '*Status/controller signals → Emergency Evacuation, lift x, all floors, all doors*' is activated by the battery backup system, when it has been started up and is ready for operation.

In order to use the '*automatic*' variant of this feature, you have to setup the parameter '*Automatic Emergency Evacuation **duration***' to a useful value, like 60 seconds. The second parameter '*Automatic Emergency Evacuation **delay***' defines the short delay between activating the Emergency Evacuation and opening the brake, in order to move the car.

The output function '*Drive unit signals → Automatic Emergency Evacuation brake release*', that will be used by the lift controller to automatically release the brake, in order to move the car into the next floor level, should be put in series with a contactor, that indicates that the door's safety chain is surely completely closed.

The output will be automatically turned off, if the evacuation timeout has been expired or the lift has reached the floor door zone or (temporarily) if the velocity has exceeded the parameterized velocity, typically but not necessarily 0.3 m/s. In that case the output will be turned on again, when the lift is under the parameterized velocity threshold, using a 0.1 m/s hysteresis.

When the lift has arrived roughly the floor level, it will drop the signal and open the doors automatically in order to release the passengers. To do so, the lift has to be in the door zone and the floor has to have at least one door in the door table, that can be opened.

57.2 Input Functions

- Status/controller signals → Manual Emergency Evacuation, lift x

  This signal activates the 'Manual Emergency Evacuation'.

- Status/controller signals → Automatic Emergency Evacuation, lift x

  This signal activates the 'Automatic Emergency Evacuation'.

▸ Are both input signals active, then '*Manual Emergency Evacuation*' has priority.

57.3 Output Functions

- Status/controller signals → Emergency Evacuation acknowledge, lift x, all floors, all doors

  This signal is turned on when the operating mode has been activated and is dropped when the operating mode has been deactivated.

- Drive unit signals → Manual Emergency Evacuation brake enable, lift x

  This 'enable' signal is usually used to feed a push-button that is pressed by the technician in order to release the brake. The enable signal is dropped, if the lift's car/cabin exceeds the 0.3 m/s. If the lift enters the floor level area of the next floor this signal will be dropped as well.

- Drive unit signals → Automatic Emergency Evacuation brake release, lift x

This signal is usually used to release the brake and is automatically turned on, after the delay time has been exceeded. The signal is dropped, if the lift's car/cabin exceeds the parameterized maximum velocity, typically 0.3 m/s. Be aware that this velocity threshold can be parameterized to a different value. If the lift enters the floor level area of the next floor this signal will be dropped as well. As this is an automatically generated signal, it will finally be dropped, if the parameterized timeout has been exceeded.

- Vocal messages → Announce lift is in emergency operation, lift x

  This signal is generated once as an impulse, when the emergency evacuation operation is activated and is used to trigger a voice/speech announcement module in the car/cabin.

57.4 Emergency Evacuation maximum velocity

This parameter is used to define the velocity threshold used to engage the brake, typically but not necessarily 0.3 m/s. Basically it shall limit the possible velocity, when using the emergency evacuation function. Be careful with this value as it will surely influence the '*Emergency Evacuation Stopping Distance*' as well.

57.5 Emergency Evacuation Stopping Distance

If the operating mode '*Manual/Automatic Emergency Evacuation*' is used to move the car to the very next floor by opening the brake and limiting the velocity to the parameterized value, typically but not necessarily 0.3 m/s, this parameter defines the stopping distance, used to fine-tune the stop position in order to reduce the 'step' between the car and the floor level.

57.6 Manual Emergency Evacuation Safety Chain Check

For the manual variant of the emergency evacuation feature, there is a dedicated option that defines, if he safety chain is taken in account as a prerequisite to open the brake.

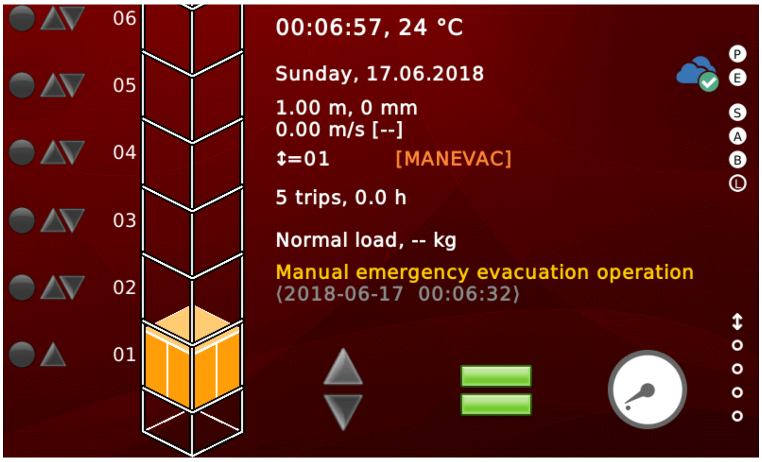
In the case there is no power on the safety chain, the technician has manually to check that all doors have been closed properly, before releasing the brake. This is the same as he/she would manually release the brake mechanically. We always suggest to keep the safety chain alive for this operation mode, but it is not always possible. So use that feature with care.

57.7 Automatic Emergency Evacuation Activation Time

This parameter defines a delay time used to accept the input for turning the lift into '*Automatic Evacuation Operation*'. This might be useful, if the output that triggers this input, may be peaked up for a short time, without the lift being in need to react on it.

57.8 User Interface

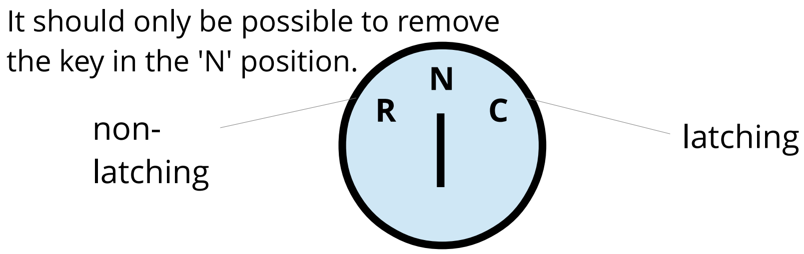
The desktop of the controller will change when the '*Emergency Evacuation Operation*' has been turned on. The background is tinted red and the big buttons at the bottom of the screen have been replaced with three symbols.



	Indicates if the car is moving up, down or is standstill.
	Indicates if the lift is in the door zone or not.
	Indicates if the lift is standstill, moving with a velocity lower or equal the parameterized velocity, typically but not necessarily 0.3 m/s or if the velocity exceeds the given value.

58 Chemical/Hazard Goods Operation

If the lift shall be featured to transport chemicals or other hazard goods without a person being inside the cabin/car, this operation mode is an option. In this operation mode a technician can call the lift to a specific floor via the key-switch being in the '***C**hemical Operation*' position and then load the car and finally close the doors, by dropping the same key switch again. Then using the same key on another floor, he/she can call the lift again to unload the cabin. When finished, the key-switch can be operated to the '***R**eset*' position in order to enter the normal operation mode again.



You find the related parameters 'Home' and then 'Settings Menu' and then further to 'Controller/Piloting' → 'More...' → 'Even more...' → 'Even more...' → 'Further more...' → 'Chemical operation parameter'.

58.1 Inputs

- Status/controller signals → Chemical transport

  This input signal is used to activate the chemical operation and shall be parameterized using the door and floor, were the key-switch is mechanically mounted. This key-switch position shall be latching. As long as the key is in this position the lift will keep the doors opened to be loaded or unloaded.

- Status/controller signals → Chemical transport reset

  This input signal is meant to be used in order to finally reset the chemical operation and shall be parameterized using the door and floor, were the key-switch is mechanically mounted. This key switch position shall be non-latching.

58.2 Outputs

- Special indication → Chemical transport

  This signal will be turned on for the car and for all floors as long as the lift is in this operation mode.

- Status/controller signals → Chemical transport acknowledge

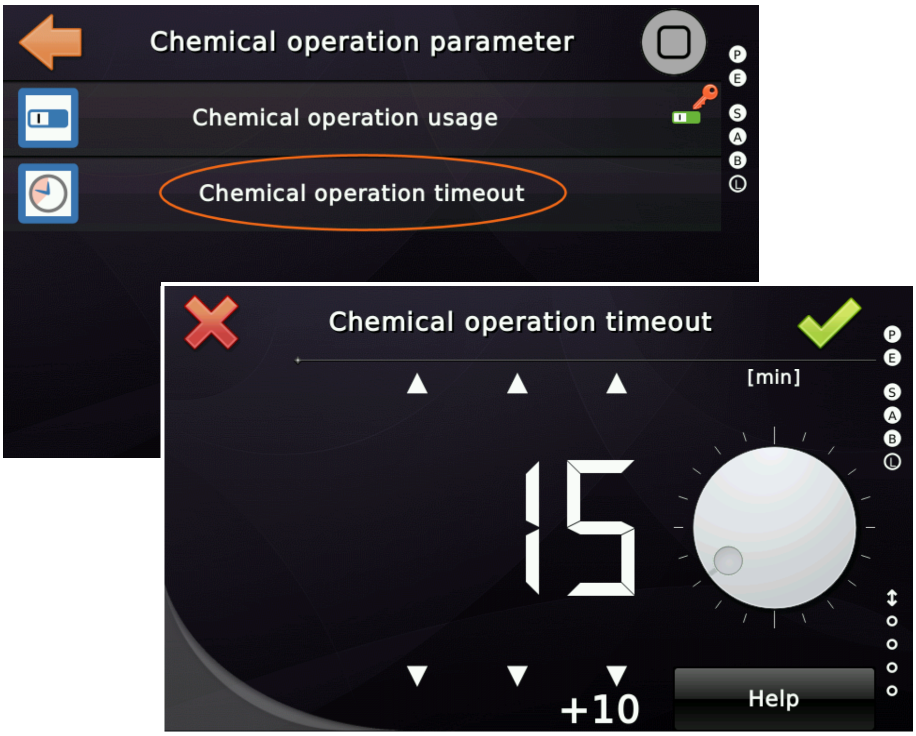
  This signal will be turned on for the car/cabin and for the floor, were the key-switch had been actually activated.

- Status/controller signals → Drive to chemical/hazardous goods operation floor

  This signal will be turned on for the car/cabin and for all floors, when the lift actually starts driving to the <u>first</u> chemical operation floor.

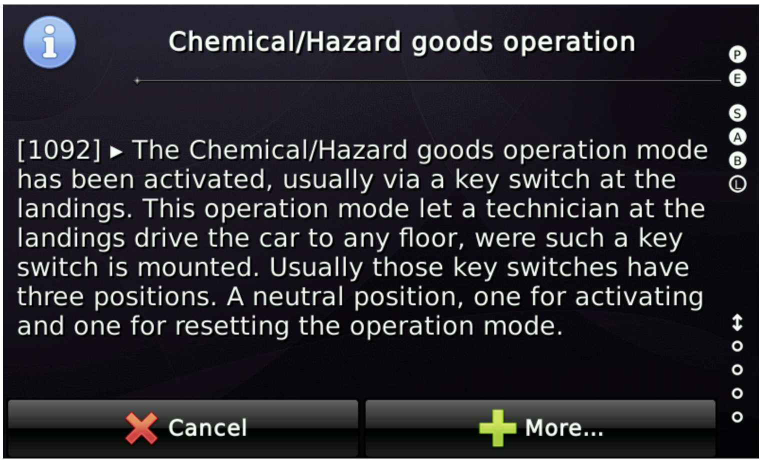
58.3 Timeout

In order to set back the lift to normal operation when the technician has simply forgotten to use the 'Reset' position of the key switch an timeout can be defined.



58.4 Logbook

The activation and resetting of the chemical run are recorded, either regularly by using the key switch in the '*Reset*' position or by the end of the control time (timeout).



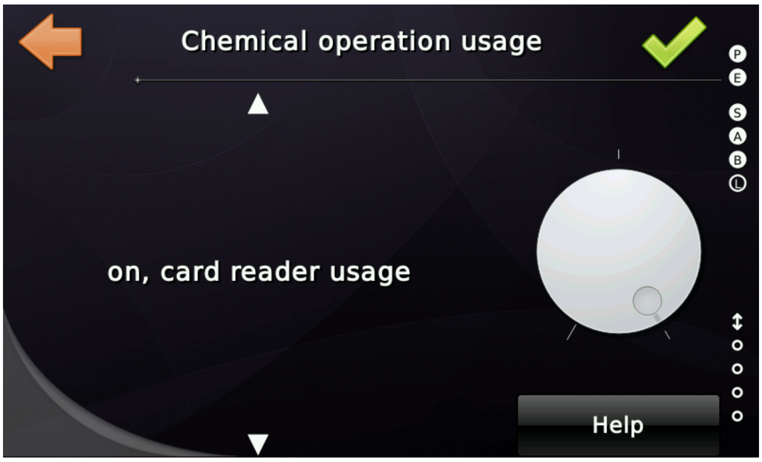
58.5 Variant featuring a Card Reader

A simplified variant of the chemical operation can be implemented with just a single card reader contact per landing. This contact will '*tick*' a state machine from step to step, that will emulate the usage of the 3-state key switch, like so:

1. When using the card the first time, the lift will drive to the given floor and opens the doors and keep them opened.
2. When using the card again on the same floor, the lift will close the doors again and keep them closed.
3. If using the same card reader at the same landing again the doors will re-open.
4. Using the card at another landing will drive the lift to this floor, opens the doors and keep them opened.

5. Using the card reader on that landing again will finally reset the operation.

In order to use that variant of the chemical operation, the parameter used to activate the feature, has to be set to the second possible option, like so:



The input function '*Status/controller signals → Chemical transport*' indicating the floor and door side where the card reader is located is used for this variant. The input function '*Status/controller signals → Chemical transport reset*' remains available and could also be used in this variant if required or desired.

58.6 Notes

The car preference will remain non-operational as long as the chemical operation has been activated. The chemical operation can't be activated as long as the car preference has been turned on.

The priority calls will remain non-operational as long as the chemical operation has been activated. The chemical operation can't be activated as long as priority calls are still pending.

59 Shuttle Service (Snow Cleaning Operation)

This feature can be used if the lift has to travel once in a while to one end of the hoistway and then the next time to the other end. This might be used for snow cleaning, if the lift in question is an inclining lift or there is the risk of the car freezing to the rails. This function is usually activated via an input terminal.

You will find the feature under 'Settings Menu' → Controller/Piloting' → 'Times & Options' → 'More...' → 'Shuttle Service (snow cleaning)'.

59.1 Options/Parameter

The parameter '*Repeat timer shuttle service*', given in minutes, define how often such a travel is automatically triggered, if the lift is idle and now calls are pending.

59.2 Inputs

- Status/controller signals → Shuttle Service (snow cleaning)

59.3 Outputs

- None.

59.4 Logbook

- Shuttle Service (snow cleaning) activated
  Indicating that the input is enabled, the lift is in the right operating mode and the timer is running.

- Shuttle Service (snow cleaning) turned off
  Indicating that the function has been turned off, due to the current operating state or the input having dropped.

- Driving to Shuttle Service/Snow cleaning floor

The message '*Shuttle Service (snow cleaning) active*' indicating that a shuttle service or snow cleaning operation has been engaged is only written to the list of pending events but not into the logbook, in order to not 'spam' the logbook with those items.

60 Peak-up/down Operation

The 'peak-up/down' operation is used, if a large group of passengers is in need of transportation to the lower or upper floors, for example when employees enter an office building in the morning or later leave the building in the evening again.

60.1 Activating the feature via the Time Planner

In the given example the 'peak-up' operation will be activated for working days from 7AM to 8AM. The peak floor is floor 2, the lobby or main entrance floor of the office building, in this example.

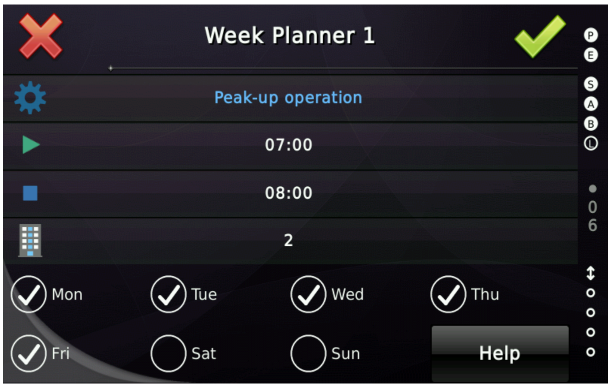
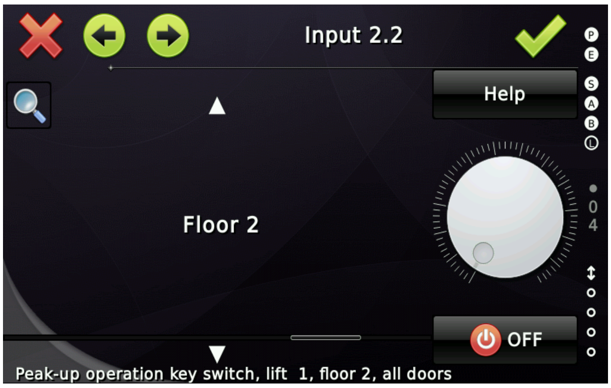


Figure 154: Week planner activating the peak-up operation

60.2 Activating the feature via input terminal function

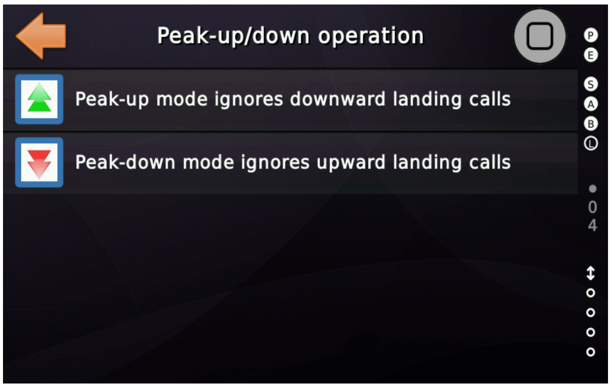
When setting up an input function to activate the 'Peak-up/down' operation mode, which is typically triggered by a key switch at the landing, take care to specify a floor, like in this example:



► The inputs indicating peak-up or peak-down operation have precedence over the time planner functions.

60.3 Options

Additionally two more options have been introduced to define if being on peak-up operation, downward landing calls shall be ignored, when the lift travels back to the peak-up floor. The very same for the lift being on peak-down operation, just that in that case, upward landing calls would be optionally ignored.



You can find the related parameters by pressing first 'Home' and then the 'Settings Menu' and then further to '*Controller/Piloting*' → '*More...*' → '*Even more...*'→ '*Much more...*'→ '*Further more...*' → '*Peak-up/down operation*'.

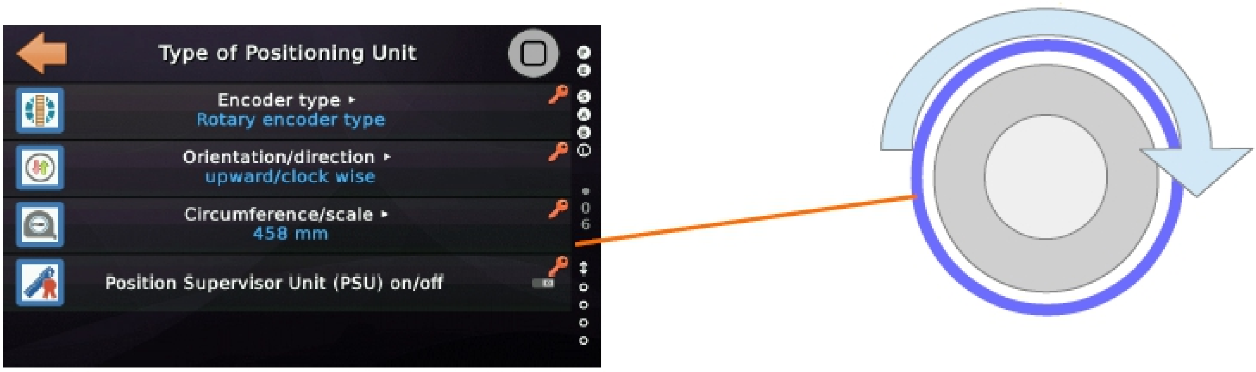
61 Position Encoder

The NOUS lift application supports CiA 417 CANopen encoders that are connected to the CAN1 interface, that interconnects the encoder, drive, car load measuring and the cabin/car I/O-panel unit.

Basically there are two encoder types:

- Linearly Encoders (Class 1)
- Rotary Encoders (Class 2)

For rotary encoders, keep in mind to double check the pulley circumference. The default value is 458 mm. The value does not describe the diameter, it describes the perimeter or length=d*π, the value of the blue line in the picture below, given in [*mm*].



The orientation parameter for rotary encoders simply define, if they spin clockwise or counter clockwise in upward direction.

If the encoder seems to operate the wrong way around after being installed, you may check this parameter and change the orientation.

The resolution, typically 1024 increments for a rotary encoder, or 1 or 2 increments for a linearly encoder, is automatically parameterized by NOUS via the bus system.

You find the related parameters on 'Home' and then 'Settings Menu' and then further to 'More' → 'Positioning Unit' → 'Type of Position Unit'.

61.1 Note about Class 1 & 2 encoders

For the technician on side the difference may not be important in real life.

The basic difference between class 1 and class 2 encoders is that class 2 encoder can be internally preset to a specific position, like the lowest floor, while class 2 encoders can not. In that case the lift controller does the offset handling.

61.2 Check the encoder after installation

After having the encoder installed, check if the lift controller can 'see' the unit by checking the CANopen node list. To open the CANopen node list, press the 'Favorites' and go to 'Diagnosis Menu' → 'CANopen Node-List' → 'CAN1 (car)'.

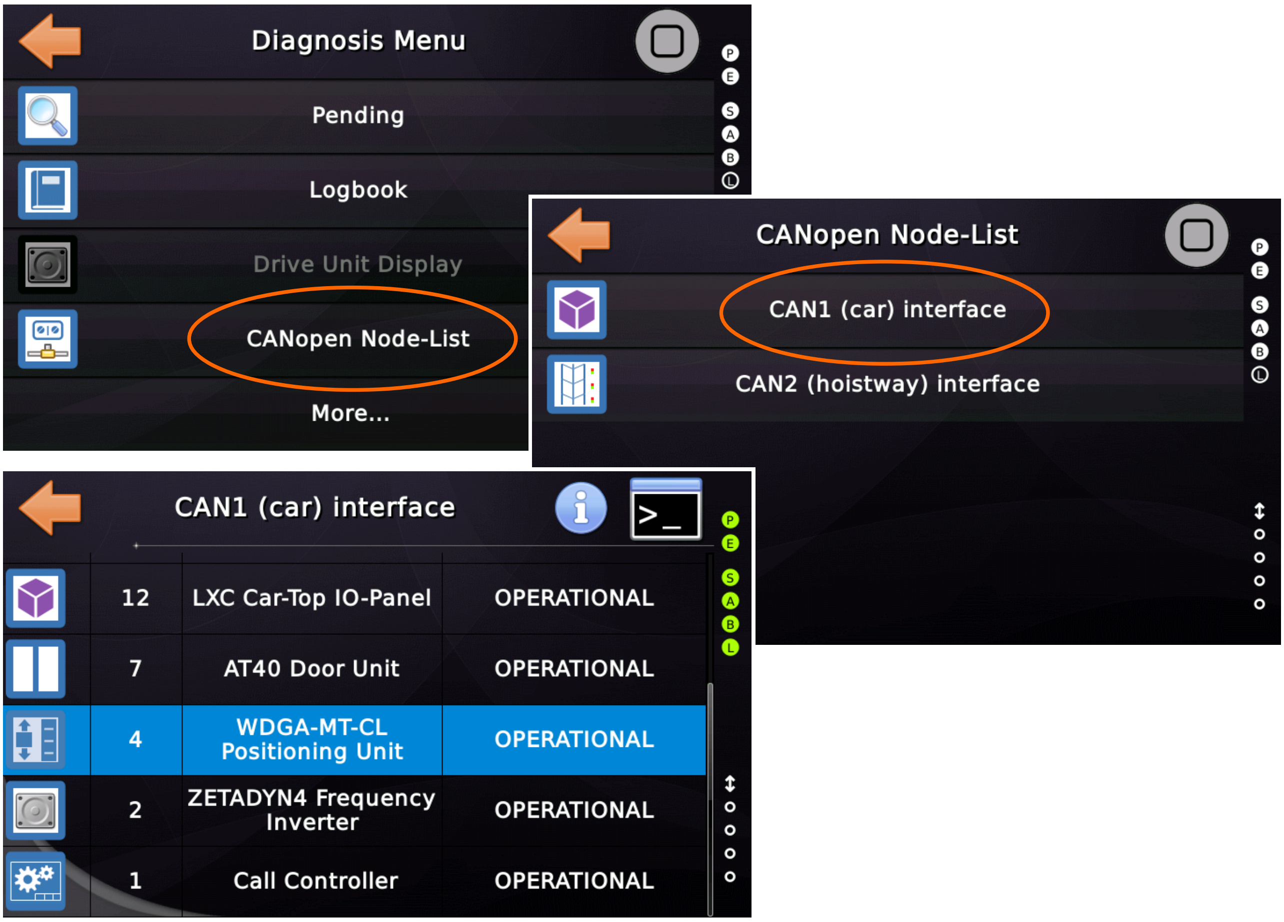


Figure 155: CANopen Node List, showing the encoder

Check that the encoder is 'operational' and therefore should send a position value, even if it is out of range. That will be fixed, if you do a 'Learning Trip' or an 'Encoder replacement' operation.

The encoder usually has node-id 4. The node-id values are not part of the CiA 417 specification but there is a list made by the 'Special Interest Group (SIG) Lifts' that is highly recommended to avoid conflicts.

You find a list of node-id's on the CANopen Lift website here:
http://en.canopen-lift.org/wiki/Node-IDs

61.3 Optional Position-correction (Preset) Signals

Mainly used for inclining lifts, this feature provides two tables (up-/downward) containing the positions to which the special correction (preset) switches trip. This method is typically used if the absolute encoder is mechanically connected to a pulley and has to deal with micro-slip.

You find the related parameters on 'Home' and then 'Settings Menu' and then further to '*More...*' → '*Positioning Unit*' → '*More...*' → '*Position-correction (Preset)*'.

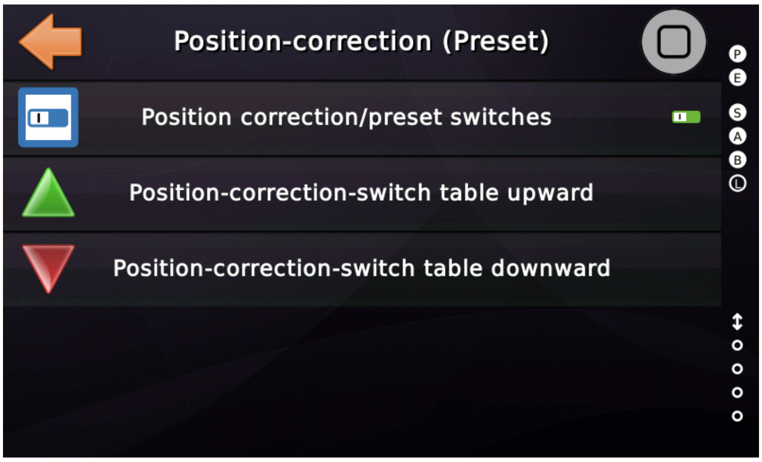


Figure 156: Position-correction (Preset) parameter

There are two separate tables for the series of correction (preset) switches in upward and downward direction.

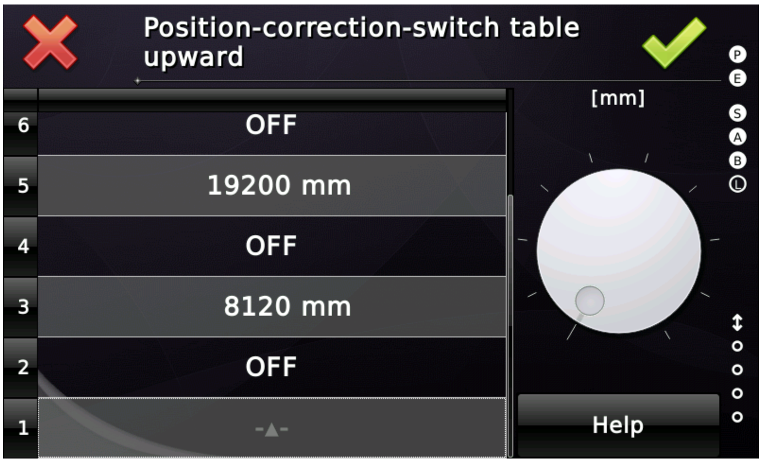
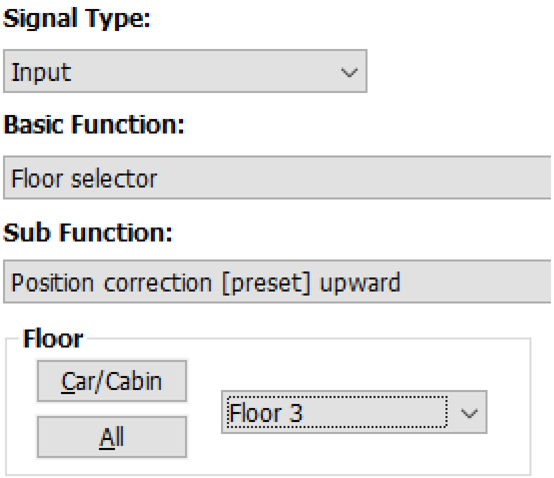
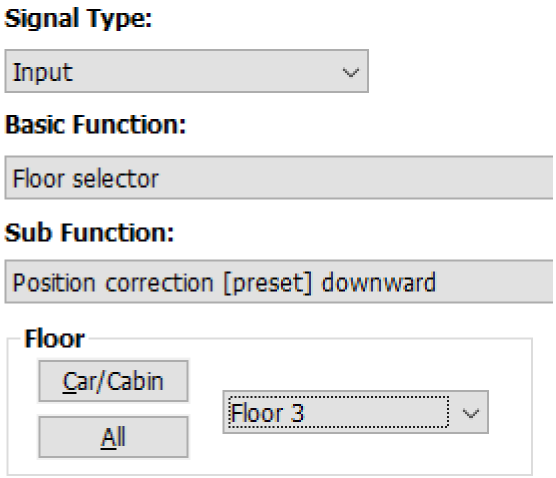


Figure 157: Position correction (Preset) value table [upward]

► Floors that do not have position correction (preset) switches are left 'OFF' in the table setup.

61.3.1 Input Signals





The position correction signals preset to the corresponding values in the table, if tripped, with the signal peak-up.

61.3.2 Notes & Hints

When using rotary encoders (Class 2), make sure that the device type used supports a position preset while driving (in motion). Not all of the devices we tested were able to do this. Some transmit no position value after a preset for 100...200 ms, which inevitably leads to an emergency stop of the system.

62 Drives

The NOUS lift application supports traction drives and hydraulic drives. The factory default setting is suitable for a CANopen CiA 417 based inverter featuring a motor encoder and powering a traction lift, using an absolute positioning unit for the car.

The following table shows the currently supported drive types and the featured profile mode. The classic or legacy type of drive profile mode is the velocity profile. In that profile the lift controller selects the velocity the drive shall operate and handles braking and minimum driving distances internally. The modern way of controlling drives is called position profile mode. In that operating mode the drive does all the acceleration, driving and deceleration parameter calculation and will usually stop flush-on level, without any creeping independent from the car load.

Another big advantage of the position profile mode is that the technician on side does not have to deal with parameterizing braking or creeping distances nor has to define which velocity to use for which minimum driving distance.

Traction Drive Type	Profile Mode
Two-speed drive	Velocity Profile
Frequency drive (inverter) controlled via terminals	Velocity Profile
DCP drive (inverter) unit	Velocity Profile / Position Profile
CANopen frequency drive (inverter) via CiA 417	Velocity Profile / **Position Profile**
Emulated drive unit *1)	Velocity Profile

*1) Only for Training Boards, running '*on a desk*' rather than a real lift installation.

Hydraulic Drive Type	Profile Mode
Unregulated hydraulic drive unit	Velocity Profile
LRV made by Bucher Hydraulics	Velocity Profile
LRV/iValve made by Bucher Hydraulics	Velocity Profile
NGV made by GMV/Oildinamic	Velocity Profile
NGV A3 made by GMV/Oildinamic	Velocity Profile
SEV made by Blain Hydraulics	Velocity Profile
AZRS/FR/MR made by ALGI Hydraulik-Systeme	Velocity Profile
GMV3010 made by GMV/Oildinamic	Velocity Profile
CANopen CiA417 Hydraulic Drive	Velocity Profile

You find the related parameters on 'Home' and then 'Settings Menu' and then further to 'More' → 'Drive Unit'.

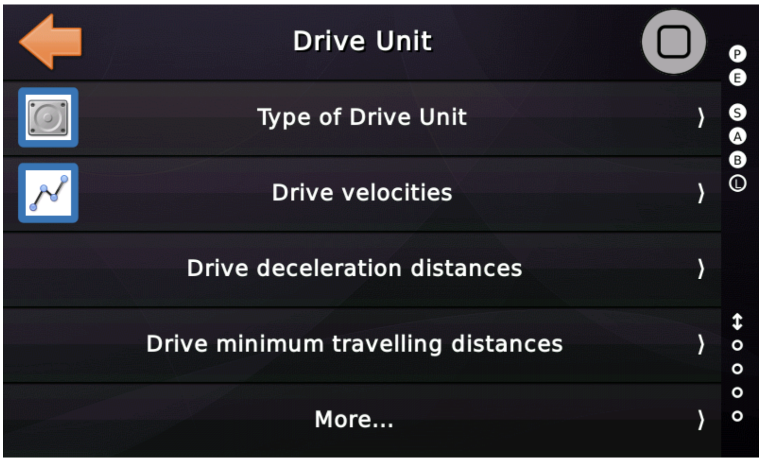


Figure 158: Drive unit settings

Figure 159: Type of Drive Unit Parameter

62.1 Lift Drive System

This object defines the basic drive system, like hydraulic lift or traction/cable lift.

62.2 Drive Type

This object defines the type of the drive unit used to operate the traction or hydraulic lift. See the table 'Traction Drive Type' and 'Hydraulic Drive Type' on the page before for possible settings.

62.3 Drive options

These are parameters that define the used profile, signal mapping and supervision.

Figure 160: Drive Options

62.4 Drive unit control enable signal (rarely used)

This parameter defines if an external signal (*an input seen from the NOUS controller*) is used in order to enable the drive unit control output signals, used to select direction and velocity. If the drive features such an output signal, it is usually powered on by the drive shortly after the lift controller has fired up the main contactors.

62.5 Terminal Mapping

If having selected a classic terminal driven drive type, the mapping of the terminals might be modified to suit the given brand.

62.6 Drive Mode

If having selected a drive type that can run on velocity profile or modern position profile mode, the preferred mode can be setup here. Usually for CANopen and DCP4+ drives, '*Position Profile Mode*' is chosen.

62.7 Drive Afterrun Time

This parameter defines a short delay, that the drive and brake will be kept going, after the direction and velocity signals have been dropped. That makes it possible for the drive unit to do the last bit of stopping electrically. For a classical terminal (parallel) driven inverter, using the default output functions for K11...14, the direction K11/12 will be dropped together with the velocity signals, while drive/brake K13/14 is kept on.

62.8 Brake drop/close delay time

This parameter defines the time used to delay the moment, when the brake is dropped/closed after stop. Setting up this time might be useful, if the '*zero speed*' or '*target reached*' indication from the drive comes a bit early. This will prevent the brake from closing, when the mechanical drive system has not quite stopped yet.

62.9 Contactor Supervision

Because of more and more inverter units being 'contactorless' units, this parameter is more in the focus than it was in the past. This parameter defines how the main contactors are monitored. If the drive unit in question is a contactorless model or controls the main contactors internally, the contactor supervision can be done in the drive unit. In that case the lift controller may not or just monitor turning off the contactors. On classic drive units, the lift controller directly turns the main contactors on and off and therefore has to monitor the proper working of them.

These are the possible values for this setting:

- Contactor stuck supervision [**default**]

  The classic way of monitoring the contactors working properly. After the lift has stopped, the supervision input has to indicate, that the contactors have turned off and do not hung or are stuck in any way.

- Full contactor supervision (on/off)

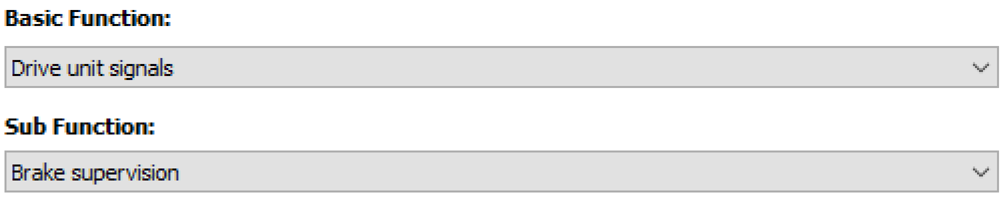
  Beside checking that the contactors are turned of after stop, the lift controller also checks via the supervision input that the main contactors have been turned on when the drive starts. This might not always be possible, if extra safety elements have been added beyond the 'visible safety chain' or if the supervision input does not directly come from the contactors, but from a drive unit having the contactors 'inside the drive's box'.

- No contactor supervision

  Be careful if turning the contactor supervision off. You might do that if the drive unit or inverter is a contactorless unit and simply does not have classic main contactors anymore.

62.10 Brake supervision (Drive brake)

This parameter defines if the lift features supervision of the brake contactors or contacts. Select the count of supervision signals and use the input function(s) proposed below…



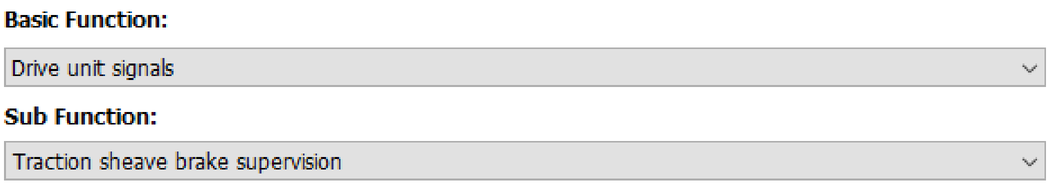
Use '*Drive unit signals → Brake supervision*' for the first and '***Second*** *brake supervision*' for the second and '***Third*** *brake supervision*' for the third monitoring contact and so on.

These supervision input signals are meant to be used for the drive brake supervision. In order to supervise a traction sheave brake, a designated input function is available.

If having selected more than one supervision signal, all of them must be in the right state within a plausible time-span to allow normal operation.

62.11 Traction Sheave Brake Supervision

If the lift features a separate traction sheave brake, a designated input may be used to supervise that unit by the lift controller.



► The input shall be 24V if the brake is blocking the shave and the lift is not driving. As this input is a supervision input, there is **no** need for inverting the input in logic.

62.11.1 Traction sheave brake supervision time

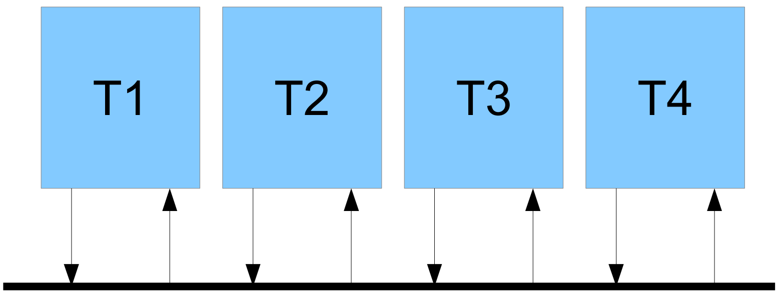
This parameter defines the supervision time for monitoring a separate traction sheave brake, that is checked via an input by the lift controller. When the lift has stopped this supervision input shall peak up again, when the brake has been released.

62.11.2 Traction sheave brake inspection policy

This parameter defines, if the lift can be driven with inspection or emergency rescue operation, if the sheave brake supervision has been tripped before.

62.12 Lift/Drive start interlocking

This feature is used to interlock the start of several lifts at the very same time by connecting one output and one input signal from every lift to the very same line. The lift will only start when the line is low. For the output signal a timeout can be defined. When the lift stops again before the timeout has been expired, the output is dropped as well.



- The input function used would be:

  Drive unit signals → Lift start interlock

- The input function used would be:

  Drive unit signals → Lift start interlock indication

You will find the options on 'Favorites' and then go to 'Settings' → 'More...' → 'Drive Unit' → 'More...' → 'Even more...' → 'Lift/Drive start interlocking'.

62.12.1 Drive/Motor Fan

The drive or motor fan can be controlled using the output function '*Drive unit signals → Motor fan*'. You may want to parameterize an afterrun time for the signal, so that it is not immediately dropped with the drive having stopped. You find that timer following '*Settings Menu → More... → Drive Unit → Type of Drive Unit & Properties → Drive options →More... → Motor fan afterrun time*'.

62.13 Rope Brake (Rope Gripper)

If an external circuit is used to trigger a rope brake (rope gripper) in an UCM situation, this supervision function is used to supervise the functionality of that circuit.
You find the options for turning the *Rope Brake External Circuit* feature 'on/off' in the menu under 'Settings Menu' → 'More' → 'Drive Unit' → 'More'→ 'Even more' → 'Further more' → 'Rope Brake external circuit usage'.

62.13.1 Schematics

The external Rope Gripper circuit will trip the rope brake, if the car leaves the door zone with the safety chain (doors) not being closed, by detecting the door zone signal peaking down. The door zone signal is created from two independent door zone channels. One channel is coming directly from a solenoid or fork light barrier. The other channel is an output from the lift controller, indicating being in the door zone via the data from the absolute position encoder.

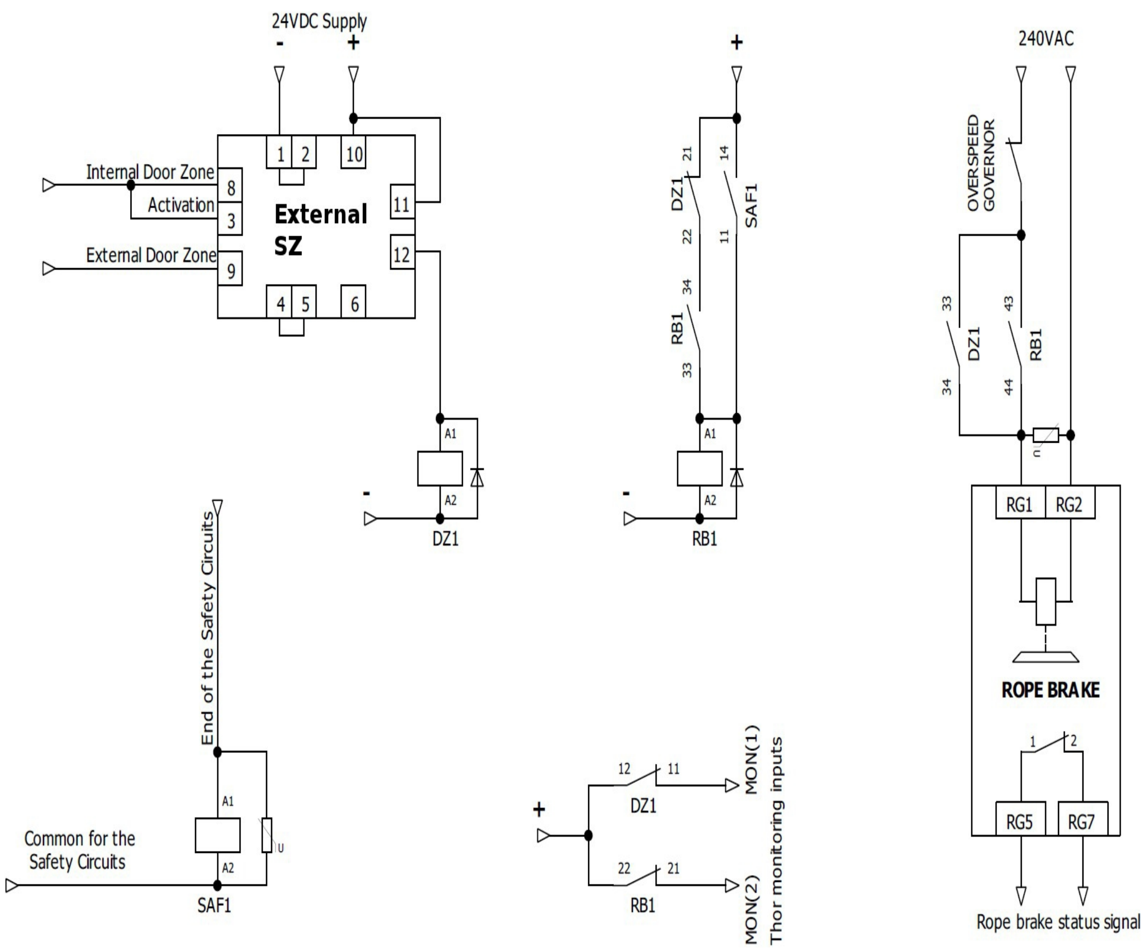


Figure 161: Rope Gripper Schematics

62.13.2 Input functions

There are three supervision input signals in the schematics above, used for monitoring the correct operation of the Rope Gripper tripping circuit.

- Rope Brake, door-zone contactor supervision - *MON(1)*

  This is the supervision signal for the contactors, that reflect the status of the two door zone channels. This supervision signal is normally peaked high, if the car has left the door zone and will be dropped again, when the lift arrives at the door zone. This signal shall be a logical 'AND' of both door zone channels. It might be the result of a safety circuit, testing that none of the channel is 'hung' as well. If the lift controller detects that the door-zone contactors do hung, it will block the lift with the fault 'Rope Brake door zone contactor supervision [2229]'.

- Rope Brake safety chain contactor supervision – *MON(2)*

  This is the supervision signal for the contactor that reflect the status of the end of the safety chain. This supervision signal is normally peaked high, if the safety chain has been opened within the door zone. The signal will be peaked low, if the end of the safety chain is closed or has been opened but with the car being already out of the door zone. If the lift controller detect that this contactor is hung, it will block the lift with the fault 'Rope Brake safety chain contactor supervision'[2230].

- Rope Brake status indication – *RG5/RG7*

  This status signal shall be peaked high as long as the rope gripper has not being tripped. If the lift controller detects the rope brake having tripped, it will throw the fault 'Rope brake (gripper) has tripped [2228]' into the log book and block the lift non-volatile.

62.13.3 Output functions

- Lift status indication → Car in door zone indication

  This output signal is one channel for the safety circuit, representing the door zone channel, derived from the absolute position encoder data.

63 Drive Curve, Distances & Deceleration

If using a modern position profile driven system, the technician has usually not to deal with minimum driving distances or deceleration distances. But if using a classic velocity driven system, these values have to be setup.

To provide help with this task, NOUS has two dialogues. On 'Favorites', go to 'Diagnosis Menu' → 'More...' → 'Even more...' to find them.

63.1 Distances & Deceleration

This dialog provides an easy way to drive the lift to different floors and look a the recorded values for the minimum driving distance and deceleration distance.

Figure 162: Distances & Deceleration dialogue

63.1.1 Classic Velocity Profile

In this profile the lift controller defines the velocity to drive and the deceleration and stop points to use.

The minimum driving distance is the distance the drive requires to use a given velocity. This includes the distance used to accelerate and a short distance of constant driving. The lift controller will add the '*minimum driving distance*' and the '*deceleration distance*' and compare the result against the distance to drive, in order to reach the given floor. By doing this comparison the controller makes the decision, which velocity [V0...V4] to actually use to drive to the given floor.

63.1.2 Modern Position Profile

If featuring position profile mode, the drive system calculates the travel curve. The controller always specifies the permissible nominal speed in the respective operating mode used for traveling. Drive and controller handshake the target in order to start. The drive provides the '*control effort*' continuously (*the distance required to stop again)* used by the controller to determine the next floor a call could still be caught.

63.2 Drive Curve View

The drive curve view provides the recorded velocity data, sensed via the absolute positioning system, over the time as a diagram.

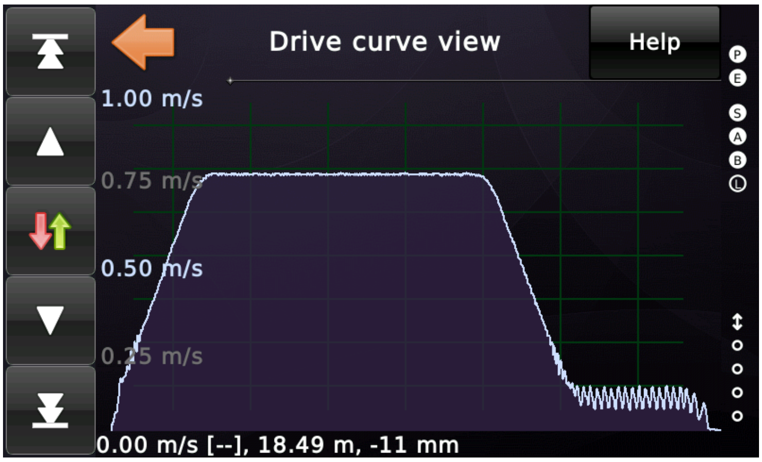


Figure 163: Drive curve using velocity profile with creeping

Select 'Favorites' and then go to 'Diagnosis Menu' → 'More...' → 'Even more...' → 'Drive curve view' to open the dialog.

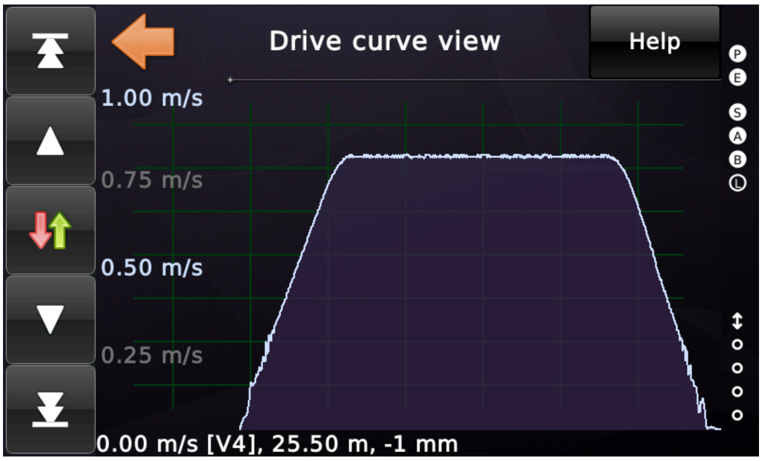


Figure 164: Drive curve using position profile without creeping

64 Quick-Start Operation

The Quick-Start feature is used to reduce the time-span the drive needs, after having the doors closed and locked, to actually start the lift going.

To implement this, the safety circuit (SZ) is used to bridge the doors, while they are still closing, in the same way as a re-levelling procedure would do it.

For traction lifts, this procedure includes opening the brake and keeping the cabin in balance with velocity 0 mm/s.

On hydraulic lifts the Quick-Start feature may be used as well in order to create hydraulic oil pressure, while the doors are still closing.

To ensure the doors are fully closed and locked and therefore the safety chain is completely closed, an extra Quick-Start relay cuts the line between the SZ output (*safety circuit, used for powering up the end of the safety chain*) and the landing door-lock input. If the lift controller can be sure about a fully closed/locked door, then it can drop the relay and afterwards the SZ, without dropping the main contactors or STO.

You can enter the related Quick-Start parameters on 'Home' and then 'Settings Menu' and then go to 'More' → 'Drive Unit' → 'More' → 'Quickstart'.

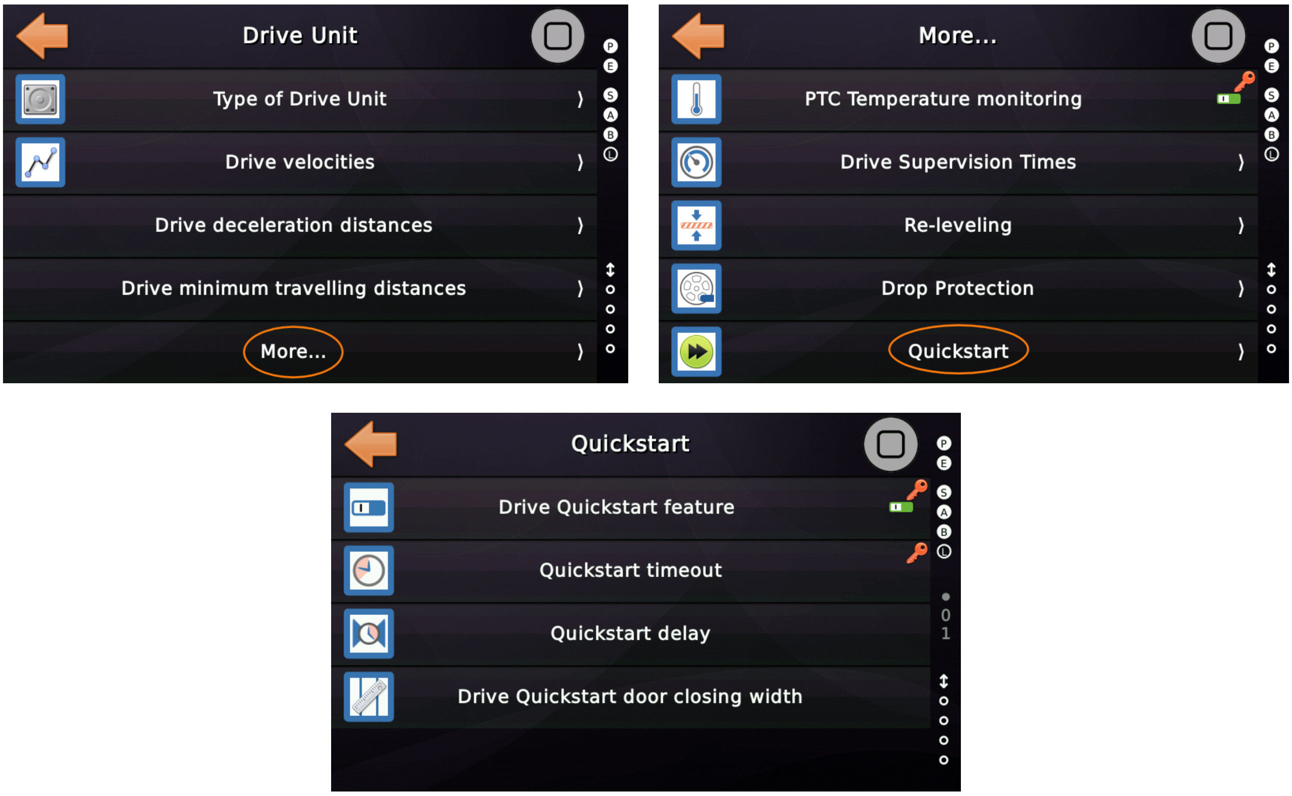


Figure 165: Quick start parameter

The lift controller will do a normal start, if the Quick-Start has been interrupted by door-reopening or light-curtain interruption too often.

The timeout for Quick-Start operations can be configured. The default value is 10 s.

You find the options for turning the Quick-Start Feature 'on/off' and setting the timeout for being continuously on Quick-Start operation, in the menu under 'Settings Menu' → 'More' → 'Drive Unit' → 'More' → 'Quickstart'.

Figure 166: Parameter for the Quick-Start Timeout

Figure 167: Default Quick-Start timeout

64.1 More Quickstart Parameters

64.1.1 Quickstart delay

Figure 168: Parameter for delaying the Begin of the Quick-Start

This parameter defines a delay time, starting with the doors closing, before the quick start sequence will be engaged and the drive is powered up, while the doors are still closing.

64.1.2 Drive Quickstart door closing width

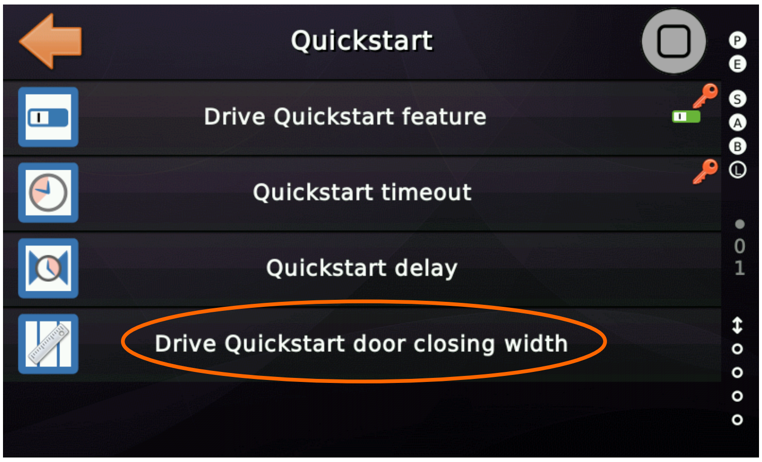


Figure 169: Door close width required for engaging the Quick-Start

This parameter defines how wide the doors have to be closed, before the quick start sequence will be engaged and the drive is powered up, while the doors are still closing. To use this feature a CANopen door machine is required that is capable of transmitting the door opening width via the bus system.

64.2 Block Diagram

This basic diagram shows how the safety circuit (SZ), the Quick-Start-Relay and the Safety Chain Inputs do work together.

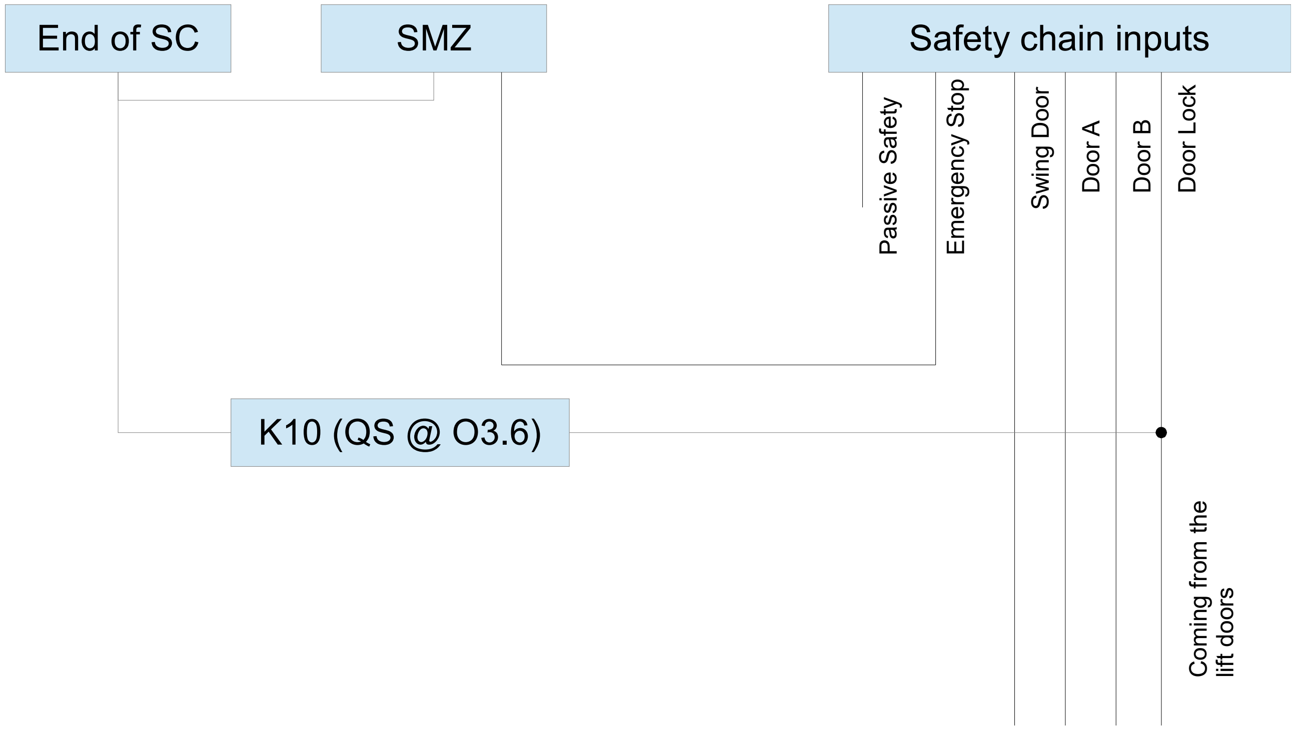


Figure 170: Quick-Start Block Diagram

In order to use the Quick-Start feature, you have to include the K10 (QS) relay in between the end of the safety circuit and the door lock safety chain input.

If adding the required wiring, turn the controller off. The safety chain operates usually with 230V AC.

64.2.1 Theory of Operation

If operating a quick-start the lift controller will activate the safety circuit (SZ) in the very same way as for re-levelling. The relay K10 will drop while doing a quick-start, so the door lock input will not be fed with 230VAC (backwards), when the SZ is activated. That means that the drive can start but the lift controller still can '*watch*' the doors being closed and locked.

If the doors are spot on (closed & locked), the lift controller will activate K10 again (*close the line between the end of the safety chain and the door lock input*) and then drop the SZ, while keeping the main contactors active. The lift can now start driving.

64.3 Quick-Start Relay at the SB-Board

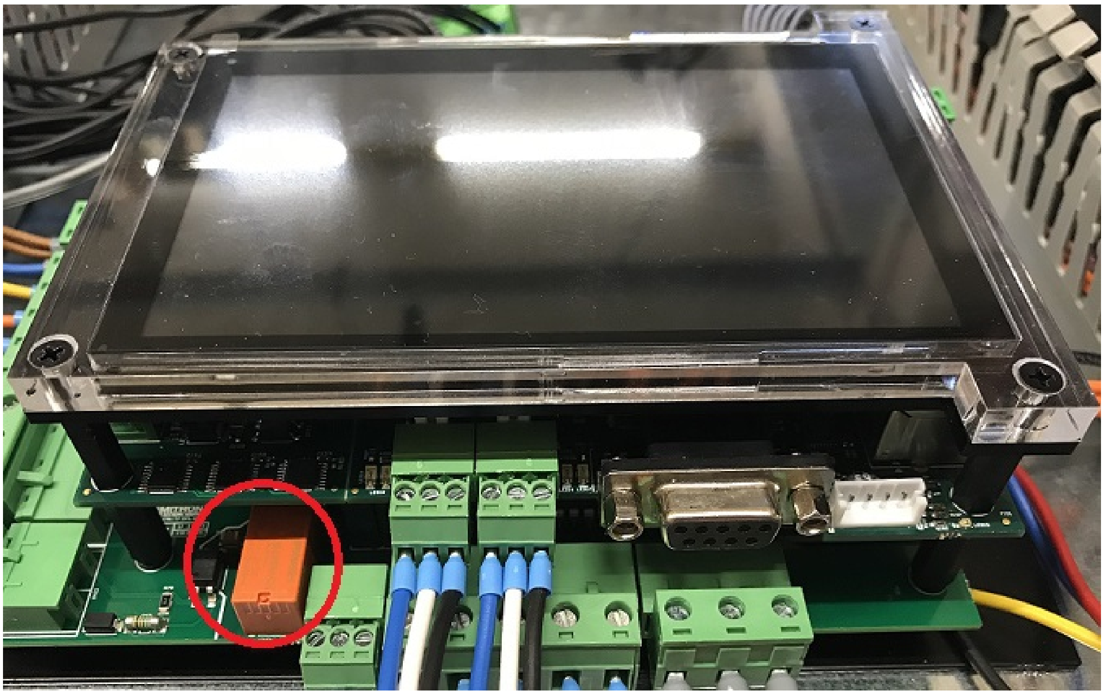


Figure 171: Quick-Start relay contacts

Be aware that these signals do operate with 230V AC, when adding the required extra wiring for the 'Quick Start' feature.

64.4 Outputs

- Output to be used for the O3.6 (K10) on board of the NOUS unit.

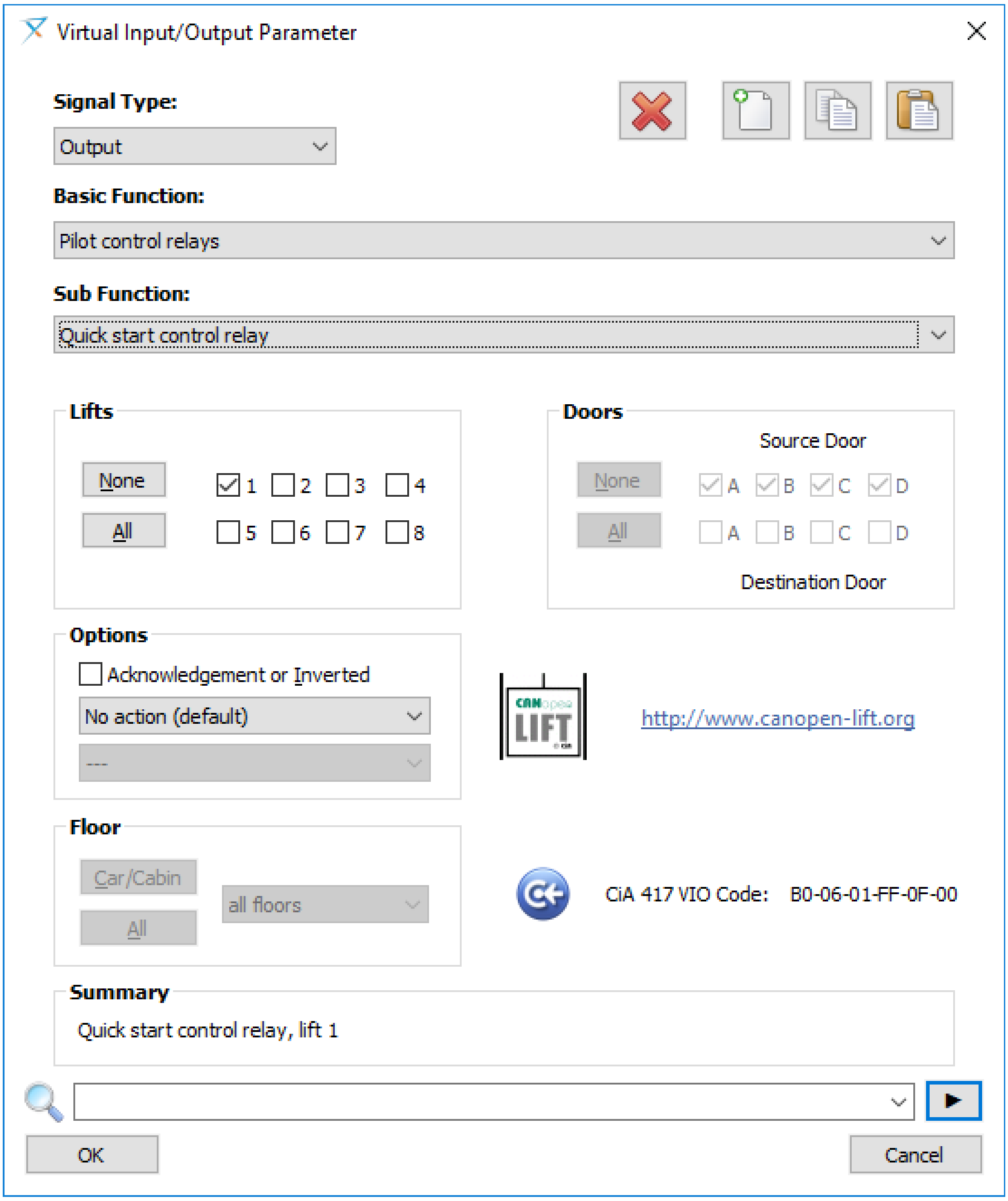


Figure 172: Output function to actuate the Quick-Start relay [Toolbox View]

64.5 Notes

Consult your drive's manual, if it supports Quick-Start operation and if there are special requirements or prerequisites.

This feature may increase the overall Energy consumption of your lift installation - but if used carefully, can decrease the transportation time for the passengers and may eliminate that disturbing second after the doors have closed/locked and the lift is starting.

65 Drop Protection/Anti Slip

The 'Drop Protection' or 'Anti Slip' device is often implemented via a solenoid unit operating a pinning rod that, once engaged, locks the over-speed governor and so activates the safety gear, preventing any further movement of the car/cabin in both directions, see chapter 49 'Support of Drop Protection Systems'.

65.1 Theory of Operation

A typical operation is that the solenoid is energized before the lift starts and turned off with a little delay after the lift has stopped.

To monitor the actual state of the solenoid the lift controller requires a feedback contact that reflects the mechanical position of the solenoid. A supervision time can be adjusted to define when the system will throw an error, if the solenoid does mechanically not follow the output signal used to control its position.

You find the options for turning the Drop Protection Feature 'on/off' and setting the supervision and delay times in the menu under 'Settings Menu' → 'More' → 'Drive Unit' → 'More' → 'Drop Protection'.

65.2 Inputs/Outputs

The output to operate the solenoid and the feedback input signal can be found under the 'Status signals' basic function.

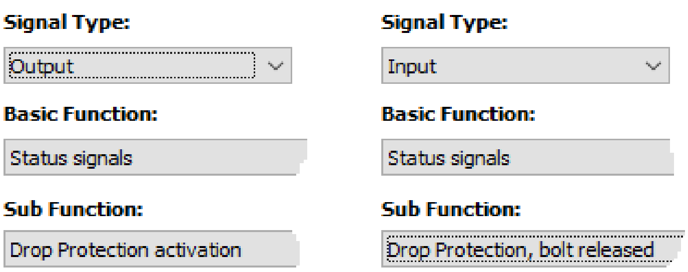


Figure 173: Drop Protection/Anti Slip signals

66 Re-leveling

Re-leveling is usually an operation that is automatically initiated by the lift after the car/cabin has stopped to keep the car in the level zone. When boarding/loading or deboarding/unloading the car, the actual position of the cabin might change a bit up/down and create a step large enough to let a passenger stumble. In order to keep the car flush on level, the lift may re-level the car automatically. This is vital especially on hydraulic lifts because of the oil in the cylinder slowly floating back to the oil-tank.

66.1 Basic of Operation

Usually the re-leveling operation can be done while the doors are open. So the safety circuit module (SZ) is in charge to bridge the door safety chain for powering up the drive in order to re-level the cabin. Anyhow the lift controller provides an option to do re-leveling with closed doors only, without featuring the SZ, if required.

The drive will feature the VN velocity to re-level. The velocity for re-leveling shall not exceed 0.3 m/s. A typical value is 0.1 m/s. If the drive unit does not support VN, the creeping velocity V0 would be used instead.

To define the gap that would require re-leveling, a re-leveling zone above and below the actual floor position can be setup in millimeters.

You find the values for the re-leveling zone - as well as the level zone - in the menu, under 'Settings Menu' → 'More' → 'Positioning Unit' → 'Distances & Parameter' → 'More' → 'Re-leveling zone below/above'.

Additionally and especially for hydraulic lifts you may want to activate an 'Extended re-leveling zone below' allowing the cabin to sink even further down, when the doors are closed. This might be used to reduce the attempts to re-level per hour.

Do not mix up the parameter for the 're-leveling' zone with the parameter defining the 'level zone'. The 'level zone' defines the maximum allowed tolerance when the lift stops at a floor level. This zone is usually smaller than the re-leveling zone, defining the gap when the lift shall start to re-level. You may have a look at the figure at Error: Reference source not found.

66.2 Re-leveling options and parameter

You find all options and parameter regarding re-leveling in the menu under 'Settings Menu' → 'More' → 'Drive Unit' → 'More' → 'Re-leveling'.

66.2.1 Option 'Re-leveling on/off'

Simply allows to turn on/off re-leveling in an easy way.

66.2.2 Option 'Featuring a separate drive unit'

Especially on some older hydraulic systems, you may have a separate re-leveling unit for doing the fine-tuning of the car's position, using separate outputs. Very unusual today, but kept for backward compatibility. You can define if the unit shall be featured for both directions or only for up or down. The required output signals will be '*Drive unit signals → Re-leveling upward / downward*'. If using a separate hydraulic pump for doing the re-levelling, ensure to put the contactor of that pump within the contactor monitoring chain, to ensure that the lift controller can sense a hung contactor.

66.2.3 Parameter 'Re-leveling attempts per hour'

To limit the re-leveling operations and prevent an 'endless' loop, if the system fails to re-level or shifts the cabin too much, so that it is then again out of the re-leveling zone, a '*maximum attempts per hour*' value can and shall be setup.

66.2.4 Option 'Re-leveling with closed doors only'

In order to operate re-leveling without a SZ-module for bridging the door safety chain, this option is useful. It let the lift only re-level if the doors have been already closed.

66.2.5 Parameter 'Re-leveling Timeout'

In order to limit, for safety reasons, the time the lift attempts to re-level and ensure that the operation will be canceled, if re-leveling fails to operate, a generic timeout shall be defined. Typically 15 s is a value that covers even long re-leveling operations.

66.2.6 Parameter 'Re-leveling operation delay'

This delay defines the time-span between the lift detecting the cabin being out of the re-leveling zone and the moment it actually starts to re-level. This is useful to prevent the lift from doing re-leveling just because the cabin/car swings a bit, while passengers are boarding or deboarding the cabin.

66.2.7 Option 'Extended re-leveling zone below on/off'

In order to feature a wider re-leveling zone below the actual floor position, assuming the lift has closed the doors already, you can activate this option.

You find the value for the 'Extended re-leveling zone below' in the menu under

'Settings Menu' → 'More' → 'Positioning Unit' → 'Distances & Parameter' → 'More' → 'Extended re-leveling zone below'.

66.2.8 The distances around the floor level in a nutshell

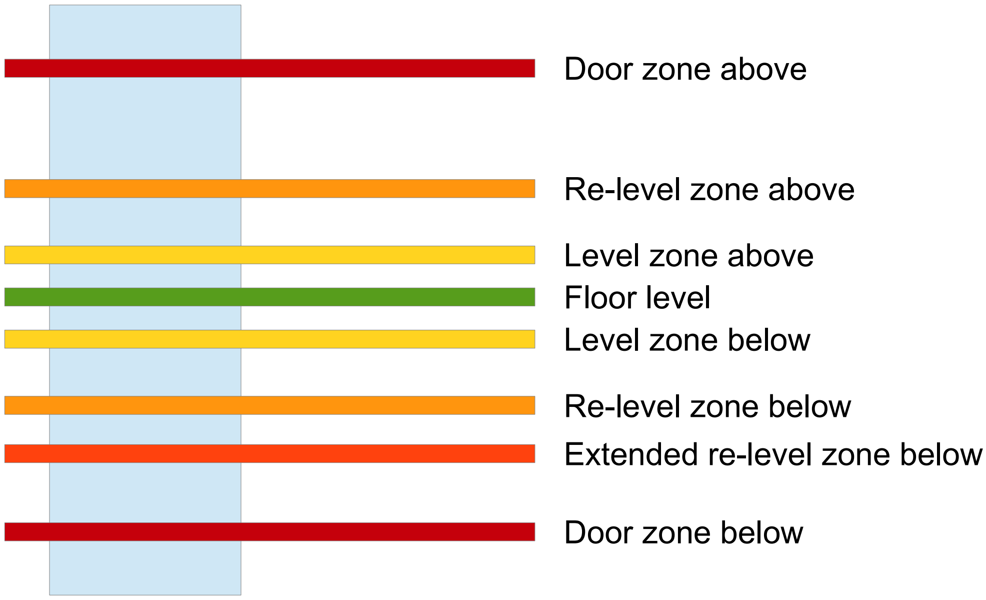


Figure 174: Distances & zones around the floor level

The figure above shows the distances & zones around the floor level. Here are some example values that shall give an idea:

- Door zone above/below 150 mm
- Re-leveling zone above/below 50 mm
- Extended re-leveling zone below only (usually for hydraulic lifts) 70 mm
- Level zone above/below 10 mm (regarding to the EN81-20)

The actual distance values might be different for a real lift installation.

67 Doors

The doors are the most vital part of a lift installation and usually the components that generates the most faults and troubles.

The mechanically and electrically implementation of doors are very different. We will have a look at the most common door types and how to setup NOUS to deal with them.

Basically these door combination have been implemented in the lift application:

- **Automatic landing doors and automatic car doors**

This is the typical setup for modern lifts. The door drive is at the car and moves the shaft door using a door coupler. Locking of the shaft doors is usually done using a hook lock. These doors have no need for a lock magnet. But the NOUS lift controller does provide the magnet signal anyway. So if required, it can be used. Some older automatic lift door brands may feature a lock magnet.

Automatic landing & car doors can very easily be connected using a CANopen CiA 417 capable door controller unit. That means that the technician on side does not have to deal with door limit switch logic or the door engine signals.

We recommend that you always connect the light barrier signal directly to the lift controller or the car-top-IO-panel unit, that is connected to the lift controller (via the bus system). It is not recommended to connect the light barrier signal to the door machine. The reason is, that on Fire Alarm operation, the lift controller has to decide either to make use of the light barrier signal or to ignore it, because of smoke emission, regarding to EN81 regulation.

Automatic car doors can have either no limit switches, limit-switches for the 'opened' state or 'closed' state or both. Because of that, the NOUS lift application give you the possibility to setup for every door those properties separately. Beside the limit switches, that define the door to be fully opened or closed, a time-span for the door opening/closing can be defined. If that time has expired and the door has no limit switches, it will define the door to be opened or closed. If having limit switches and they had been not operated within the given time, then a fault item will be added to the log-book. But the lift will usually stay operational.

Being on inspection/emergency rescue operation, the door machine will stop the doors without torque, making it possible to move them by hand as long as the lift does not start/drive. If it starts driving or is driving, the doors will be kept closed with torque. Emergency stop will stop the door operation as well.

- **Manual shaft doors and automatic car doors.**
  Even if manual doors become rare these days, there are regions where still plenty of them exist. Often lifts having swing doors, have been or will be retrofit with an automatic car door, making this variant quite common. Very typical for this door variant is, that the car doors will stay open, if the lift does park.

  Car light handling for swing doors...
  The car light is often not turned off completely, if the lift has swing doors, but reduced, so that a potential passenger can still see that the car is on the floor, through the little window, that those landing doors usually have. Anyhow you can select a time for closing the car doors automatically, even for that door type, on customers demand.

  Locking of Swing Doors...
  Normally if the lift will start, it waits for the manual/swing landing door being closed. Then it locks the landing door via the lock magnet and finally close the car doors. That means that a passenger at the landing can not re-open the door, once it is locked. Sometimes the customer demands that a passenger rushing to the landing door shall be able to re-open it. In that case the '*Door Lock Activation Prerequisite*' may be set from '*Automatic*' to '*Car door A*' or '*Car door B*' safety chain input. The lock magnet will then be turned on, not before the car door has closed, making the car door re-open, when the landing doors are re-opened.

- **Manual shaft doors and manual car doors (gates)**
  This door combination is quite rare these days but still exist in some industrial or historical environment. The lift controller rely on both doors being closed by the passengers. Locking of the landing door is usually done by closing the car door (gate) mechanically. Interesting for these doors is that you may want setup the 'door bell' on a different safety chain contacts, depending of the lift installation. This variant is also available with the use of the safety circuit, so that the passenger can open the manual cabin door (gate) when entering the zone.

67.1 Door Parameter

To open the 'Parameters & Options' of the doors, select 'Favorites' and then enter the 'Settings Menu' → 'Doors'.

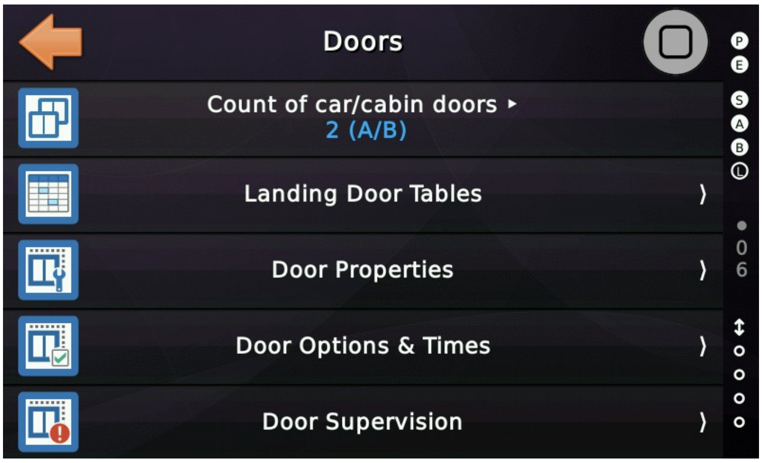


Figure 175: Door parameter

67.2 Count of car/cabin doors

This parameter describes how many doors the cabin/car has. The majority of lifts has just one door, some two and having three doors is very rare.

67.3 Landing Door Tables

The door table defines for each floor, which doors actually do exist. The set of doors on a floor is also called the '*door mask*' in the NOUS lift application.

There are five tables available. Door table 1 is the default table, the lift is normally operating with. The door tables 2 … 4 are optional door tables, to which the lift can switch via input signals, on demand. The last door table, called 'Swing Door Table' is a bit of a special thing. Imagine you have all automated doors, but on just one floor ending up in a yard, you have a big swing door. If being on that particular floor the car door has to react differently. It has to stay open, if being idle and the car light timer has to operate accordingly. For that case, you can select those exceptions using this special table.

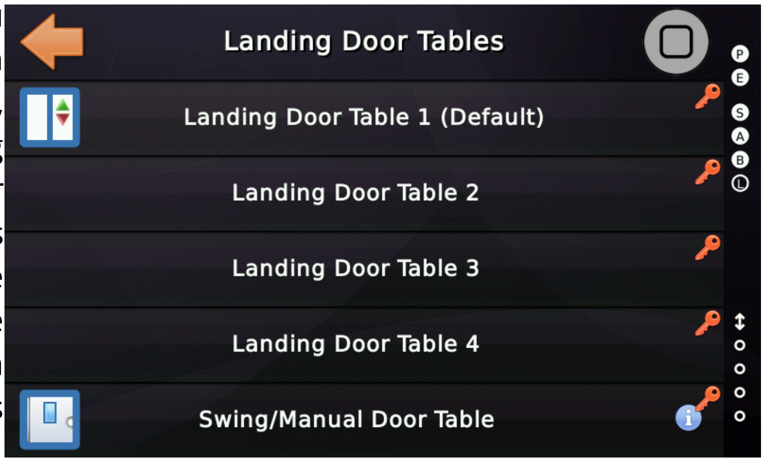


Figure 176: Door Tables

67.4 Door Properties

Door properties can usually be setup for each door (A/B/C/D) individually. They define settings & options that are depending on the actual door machine used, like having door limit switches or not.

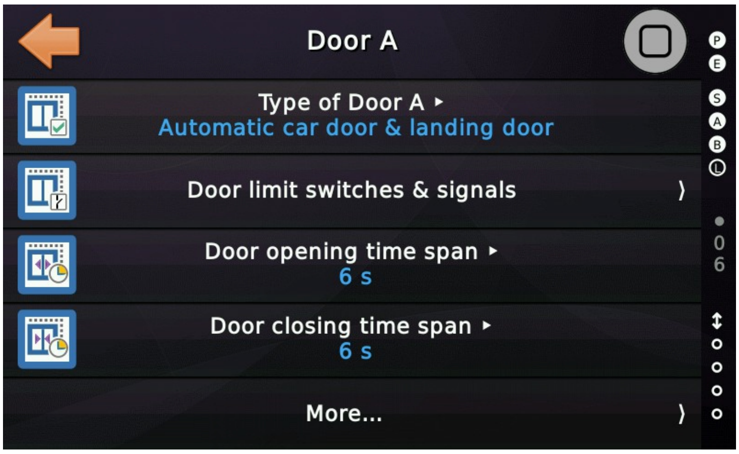


Figure 177: Door Properties

67.4.1 Type of Door X

This setting defines, if the door is an...

- Automatic car door & landing door
- Automatic car door & manual landing door
- Manual car door & manual landing door
- Manual landing door only
- Simulated automatic car door & landing door

The last possible selection '*Simulated automatic...*' is usually used, if the NOUS lift application runs in training board mode on a desk, rather than a real lift installation.

67.4.2 Door limit switches

This is actually a menu branch to a sub-menu for the selected door, used to define, if the door has limit switches for the 'opened' and/or 'closed' state. Here you can also define, if the door drive (engine) shall be turned off, if having actuated the limit-switch or if it shall kept going in order to 'hold' the door closed or opened. Many door units require that the opening and closing signals remain switched on at the limit switch.

Figure 178: Door limit switch options

67.5 Door Options & Times

These door options and timer parameter are shared by all car/cabin doors. Here you can setup, if the lift features '*Advance Door Opening*' among other settings.

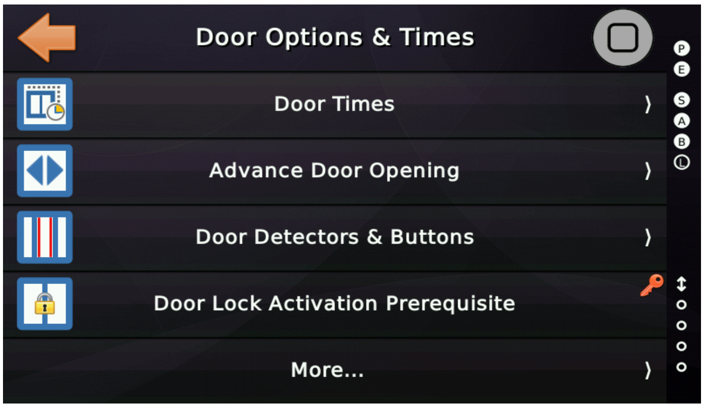


Figure 179: Door Options & Times

67.5.1 Door Timers

If the door shall throw a 'nudging' signal, if being blocked and trying to close in order to start driving, the time-span that defines when the lift starts 'nudging' can be setup here as well as a time-span for a warning signal, activated before the door actually starts nudging or simply starts closing. The term 'nudging' means that the door will close with reduced speed & force, having the light barrier disabled, pushing gently away what is in the way.

If using '*Nudging Operation*' double check that the door machine uses a lower force/torque for that operation, in order to prevent injuries of the passengers.

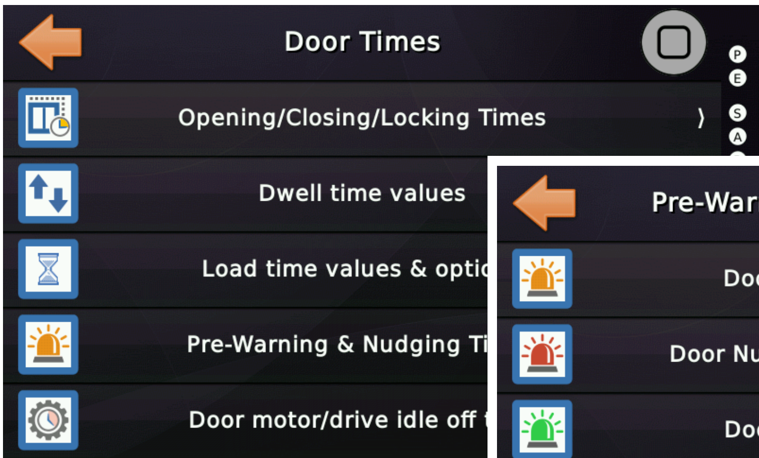


Figure 180: Door Timers

Figure 181: More Door Timers

► You can also define a 'pre-opening' warning signal/time, which is rarely used.

► If you have no limit switches or have defined that the door drive (engine) shall be kept going, if having reached the limit switch, you may want to setup an idle-time-span to turn off the door drive finally, in order to prevent over-heating or to save energy.

67.5.2 Door Detectors & Buttons

Using the parameter in that sub-menu let you select, when the door-close button shall be activated and how the motion detector shall behave.

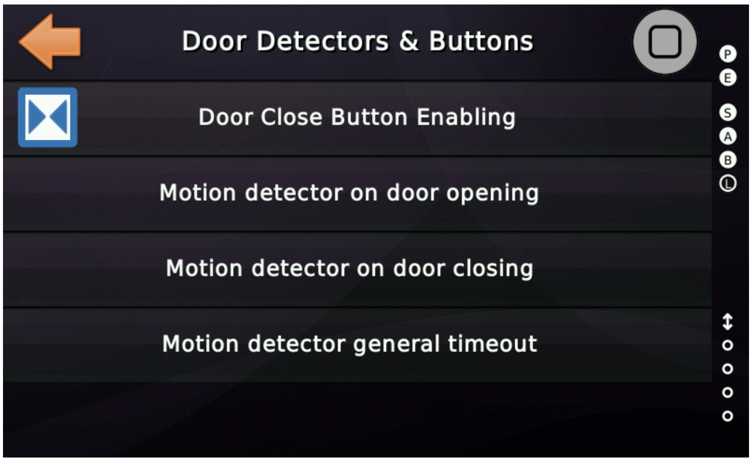


Figure 182: Door Detectors & Buttons

67.5.2.1 Door Close Button Enabling

Use this parameter to define the 'Door Close Button' being enabled after the door has fully opened or already when the door is opening.

67.5.2.2 Motion detector (enabling) on door opening

This parameter defines the delay for enabling the motion detector when the door is opening.

67.5.2.3 Motion detector (disabling) on door closing

This parameter defines the delay for disabling the motion detector when the door is closing.

67.5.2.4 Motion detector general timeout

This parameter defines the timeout used if the door detector is triggered again and again and blocks the lift on that floor.

67.6 Retiring Cam Magnet (Door Lock) Times

Often featured by manual/swing doors, cam lock magnets are necessary to unlock the doors on approaching and to lock them again before starting the lift. Depending on size and sluggishness, the time required can vary greatly from model and lift to lift.

Since some lifts have different doors installed on A, B and C sides and these require different locking/unlocking times, our control system is designed so that these times can be setup separately for each door.

You will find the door cam lock settings by pressing 'Settings' and then go to 'Doors' → 'Door Times & Options' → 'Door Times' → 'Door A/B/C/D'.

67.6.1 Door locking time span

This parameter defines the time span [ms] the door/cam lock needs to lock the landing door mechanically.

67.6.2 Door unlocking time span

This parameter defines the time span [ms] the door/cam lock needs to unlock the landing door mechanically. If the door on opening hits the cam lock, you may increase this time in 250 ms steps.

67.7 Output signals

The output signal to control the retiring cam is usually configured onto a LXC or CLK (cabin I/O) unit. To activate the door's retiring cam lock, these function has to be used:

- 'Door controlling signals' → '**Retiring cam**', lift 1, **car/cabin**, all doors

  Do not confuse this signal 'Retiring cam' with 'Cabin/car door lock unit'. The latter signal is used for a separate locking system on the car/cabin door.

If selective signals are required for the locking magnets of door A and B or C, for example in conjunction with mutually interlocked doors, the same signal can be used, but only the one discrete door in the door mask is set, instead of all doors.

Figure 183: Retiring cam door mask

67.8 Door Lock Activation Prerequisite

Use this parameter to select the safety chain input signal, that must be closed, in order to activate the door lock signal - even if the door does not have a door lock magnet. If this value is set to 'automatic', the program will select the appropriate signal depending on the door type.

Remember the example from the beginning of this chapter. You may have a swing door and the customer wants that a passenger rushing to the lift may re-open the landing door, while the car door is already closing, making the car door re-open then. Normally if having a swing door & automatic car door combination, once the landing door is closed, it will be locked and then the car door will start closing. If changing the door lock activation prerequisite parameter to 'Car Door A/B', the landing door will not be locked, before the car door has been closed.

67.9 Maximum door re-openings via landing calls

This parameter defines the maximum count of door re-openings, caused by a landing call on the very same floor and door side.

Especially if the lift is very busy, the passengers in the cabin/car face the situation, that another passenger at the landing re-opens the doors by pressing a landing call. If the car would have 'full load' it would simply store the landing call but not re-open the doors. If having not reached 'full load' the door would re-open. By using this parameter, you can limit how often a re-opening will occur this way.

67.10 Doors being not automatically closed

For very special lift installation, you may want to keep the doors open at a specific floor. If this is a requirement, the table 'Doors being not automatically closed' comes handy.

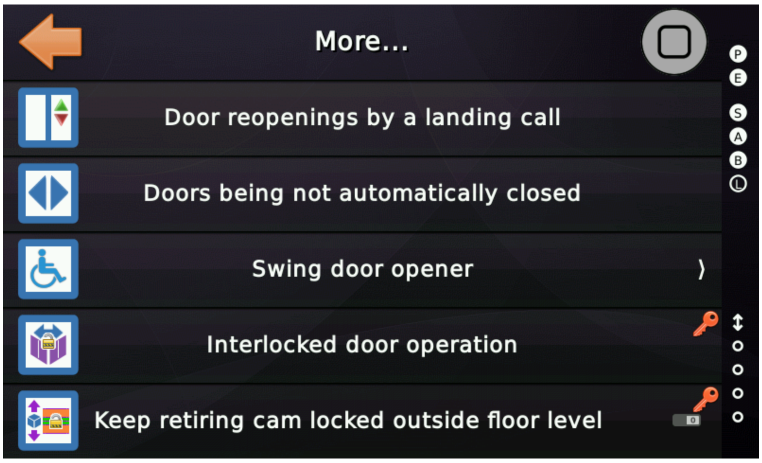


Figure 184: More Door Options

67.11 More door options

67.11.1 Keep retiring cam locked outside floor level

This option defines if the door's retiring cam shall be kept in the locked position if the lift has stopped not at the floor level but in the door zone. This might only be useful for some old manual door types (swing doors/gates).

67.11.2 Unlock the landing door after the car door has been fully opened

This option defines if the landing door lock magnet shall be engaged not before the car/cabin door has been fully opened. Usually the door lock would be engaged before the car doors do open.

67.11.3 Automatic car doors on swing door opening

This option defines if the automatic car/cabin doors shall open/re-open, if the manual landing door or swing door is opened by hand. As the lift controller has only one single landing door contact, all of the car doors may open then. As the car doors usually stay open after arrival, if having manual landing doors, this will usually not be an issue. But for some lift installations the customer may requests that the car doors being automatically closed, even that the landing doors are manually operated, especially when the car doors are mechanically locking the manual/swing doors.

67.11.4 Extra landing door light curtain & force limiter

Extra landing door light curtain and extra landing door force limit detector inputs are supported and might be used for goods lifts or automotive platform lift solutions.
These might be used if the lift is equipped with independent power driven landing doors, that have their very own extra light curtains and extra force detector sensors.
An example would be setting up an input...
Door controlling signals Extra landing door light curtain, lift → 1, floor 2, door A
...if your power driven vertical landing door at floor 2 on door-A side would have its own light curtain indication.

67.11.5 Do not open doors automatically after arrival

This parameter defines if the doors shall stay shut closed, when the lift arrives at some floor. The doors are then in need to be opened manually, using the door open/close buttons in the car and at the landings.

67.11.6 Disable door open button, if all car calls are blocked

This parameter defines if the door open button shall be blocked anyway, if all the car calls on that very floor are disabled, even if that means that the passenger could not leave the car via any door. This option might be useful, if the lift is driving directly to apartments.

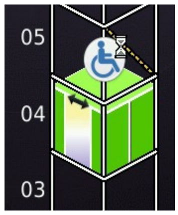
67.11.7 Keep retiring cam locked outside floor level

This parameter defines if the door's retiring cam shall be kept in the locked position if the lift has stopped not at the floor level but in the door zone. This might only be useful for some old manual door types (swing doors/gates).

67.11.8 Wheel chair door open button

To provide a longer dwell time for passengers, being in need of a wheel chair, a special input function '*Door controlling signals → Wheel chair door open button, lift 1, door X, car/cabin*' is provided by the lift controller. You can setup that longer dwell time under 'Settings Menu → Doors → Doors Options & Times → Door Times → Dwell time values → More... → Even more... → Wheel chair door open button dwell time'.

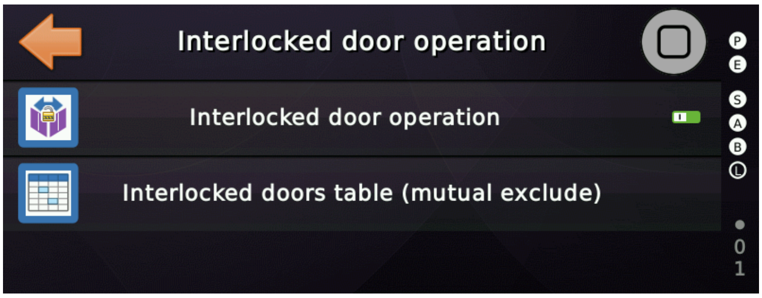
When the longer dwell time is in charge an output function is peaked high, that can be used to lit up a ring around that special door open button. The output function in question is '*Door controlling signals → Wheel chair door open button acknowledge*'. At the main screen of the lift controller you will have a little icon, indicating that the longer dwell time is in charge.



67.12 Interlocked Door Operation

This feature can be used, if the doors shall operate mutual exclude. That means that even the lift has several car/cabin doors, only one door shall be unlocked/opened at the very same time. Keep in mind that this requires the cam lock magnet to have 100% duty cycle, if the (swing) door has one. If using modern sliding doors, you usually have none. In that case, the doors are simply kept closed.

You will find the settings for interlocked door operation by pressing 'Settings' and then go to 'Doors' → 'Door Times & Options' → 'More...' → 'Interlocked door operation'.



67.12.1 Interlocked doors table

This table holds the floors were the doors shall operate in interlocked (mutual exclude) operation mode. By default all floors in this table are set. Unset the floors, were the doors shall operate normally.

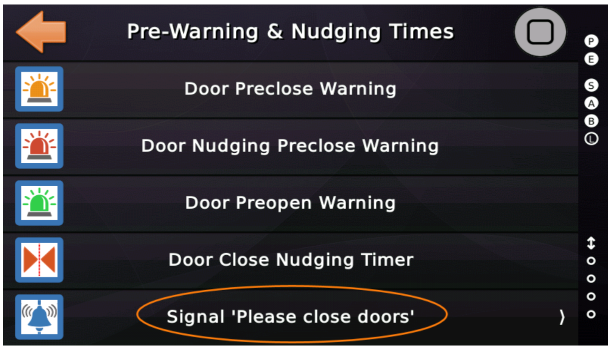
Figure 185: Table with floors, having interlocked doors.

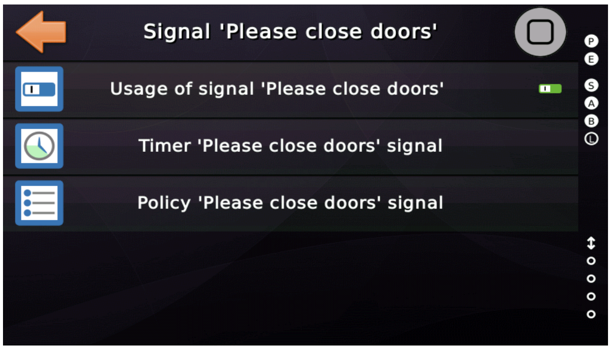
If an '*Open door*' button is used on a door that cannot be opened at the moment, the other doors are closed and then the desired door is opened. The '*Door Open*' request is stored temporarily.

68 Signal 'Please Close Doors' for manual doors

If the lift features manual swing doors that do not automatically close or it features manual car doors (gates) that have to be closed by hand, a visual or acoustical signal is often used to notify the passenger to close the doors. Even if manual operated doors are not that common today anymore, heavy goods-lifts or older passenger lifts may still feature such classical door types.

You will find the corresponding parameters by selecting first 'Home' and then 'Settings Menu' and then go to 'Doors' → 'Door Options & Times' → 'Door Timers' → 'Pre-Warning & Nudging Times'.





68.1 Times & Options

- Usage of signal 'Please close doors'

  This parameter defines if the lift shall generate the signal '*Please close doors*', usually used for manually operated doors.

- Timer 'Please close doors' signal

  This parameter defines the time the (swing/manual) door has to be open, before the '*Please close doors*' signal indicates to close the doors manually. This function is also called '*Doorbell*' on older lift installations.

- Policy 'Please close doors' signal

  This parameter defines if calls must be pending in to trigger the '*Please close doors*' signal if the timer has expired, to indicate to close the doors manually.

69 Extra Door Lock Supervision

The extra door lock supervision functionality is usually implemented using extra contacts that are mechanically triggered via the door lock system. They shall indicate if the door has been opened unattended. This might be useful in combination with a low pit/head solution or for implementing a kind of 'Anti-Surf' feature.

You will find the extra door lock settings by selecting 'Settings' and then go to 'Doors' → 'Door Supervision' → 'Extra Door Supervision Signals'.

There you find the 'switch' to turn the feature on or off as well as a table that allows to define which doors will be included in the supervision procedure. For every door you will need a separate supervision input that has to be fed with the power of the supervision test output. You may use some kind of CANopen I/O board at the landing door for doing this in a smart way.

Figure 186: Extra Door Supervision Signal Parameter

If you chain the door supervision contacts together, rather than using a single input per door, just set the top and bottom dot in the table and define two inputs for the shaft head door supervision chain and the shaft pit door supervision chain.

All supervision inputs have to be <u>powered with a special supervision test output</u> signal, because the lift will, before every start, test all inputs by powering down/up the test output signal and check if all supervision inputs will react accordingly.

The test output has to be setup to 'all floors' while the supervision inputs have to be setup to the appropriate floor/door pair.

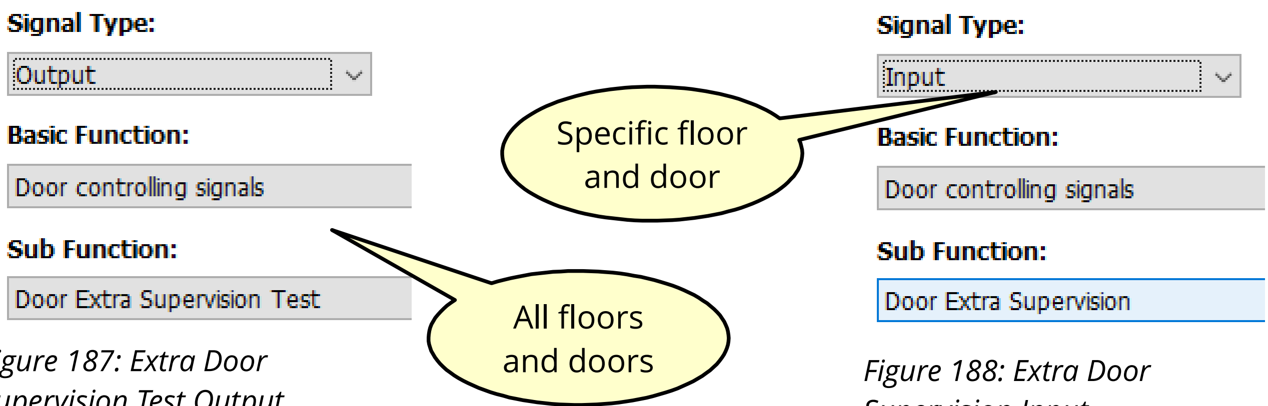


Figure 187: Extra Door Supervision Test Output

Figure 188: Extra Door Supervision Input

69.1 Indication

There are two signals, indicating that the extra door supervision has been tripped:

- Door controlling signals Extra Door → Supervision tripped
  This output will be raised and kept peaked high as long as the function has not been reset/unblocked.

- Door controlling signals → Extra Door Supervision warning siren
  This output will be raised but peaked low again after 10 minutes or if the technician is turning inspection or emergency rescue on.

69.2 Inspection Operation

Driving with inspection can be limited for the top and bottom end of the shaft in generic by using the parameter '*Settings Menu → More*... → Positioning Unit → *More... → Inspection top/bottom floor stop distance*'.

69.3 Emergency Rescue Operation

Driving with emergency rescue is normally not restricted. But in the case that the extra door supervision had been tripped and it can't be crossed out, that someone is in the critical area at the lower or upper end of the shaft (pit/head), these parameter can be used to limit the driveway '*Settings Menu → Doors → Door Supervision → Extra Door Supervision Signals → More*... → *Emergency rescue top/bottom distance, if door supervision has been tripped*'.

70 Swing Door Opener

Old manual operated swing doors have the disadvantage that a handicapped person in a wheelchair will struggle to operate it. Electric swing door openers have often been or are retrofitted to such doors in order to solve the issue. But opening and closing swing doors, using those swing door openers, is relatively slow, which leads to undesirable waiting times for other lift users. This is why there are often additional buttons (elbow buttons) at the landing entrances or in the cabin/car to activate the swing door opener.

70.1 Options

70.1.1 Swing door opener delay time

This parameter defines when to turn on the swing door opener, after the door has been unlocked, typically after the lift has arrived.

70.1.2 Swing door opener runtime

This parameter defines the runtime of the swing door opener, required to open the swing door. Basically it defines how long the output, that activates the swing door opener, shall be activated as those units don't have a feedback signal, indicating when the swing door has been fully opened.

70.1.3 Swing door opener on arrival

This parameter defines if the swing door opener shall be triggered automatically, when the lift arrives at a floor.

70.1.4 Cancel swing door opener runtime by car call

This option defines if the swing door opener (if activated) shall be turned off, when any car/cabin call is pressed.

70.1.5 Trigger swing door opener by call button

This option defines if the swing door opener shall be activated, if a car or landing call is pressed on the current floor.

70.2 Input signals

In order to activate the swing door opener, these CANopen signals shall be used:

- 'Special Function' → 'Request door open', lift X, **car/cabin**, door X
  (Push button in the car/cabin.)
- 'Special Function' → 'Request door open', lift X, **floor X**, door X
  (Elbow push button at the landings.)

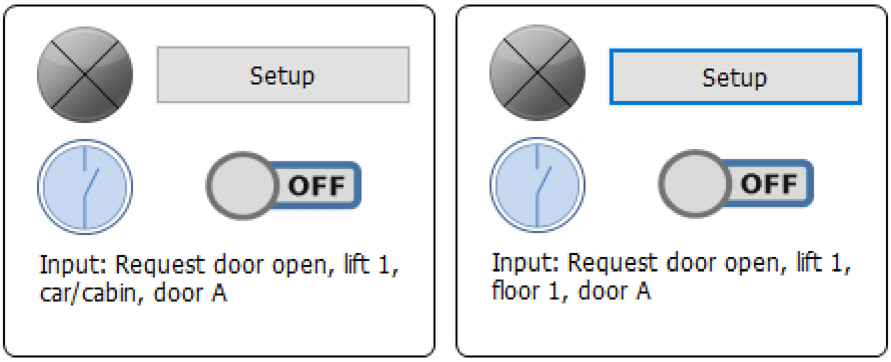


Figure 189: Toolbox: Sample input signals to trigger the swing door opener

70.3 Output signals

To activate the swing door opener, these functions can be used:

- 'Door controlling signals' → 'Swing door opener', lift X, **car/cabin**, door X
  (In the rare case that there is an opener in the car.)
- 'Door controlling signals' → 'Swing door opener', lift X, **floor X**, door X
  (Used for a typical swing door opener at the landing.)

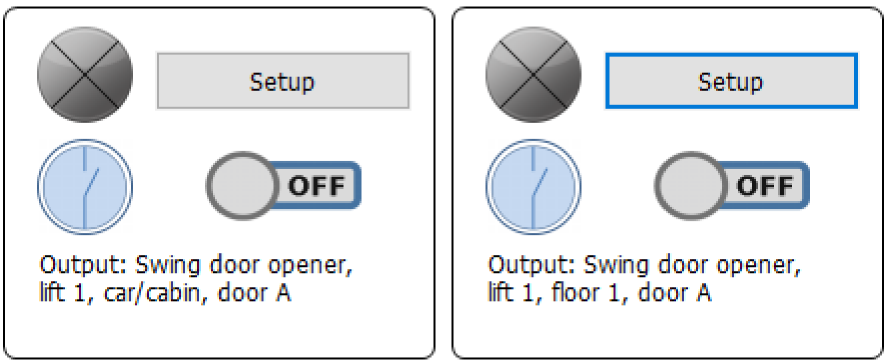


Figure 190: Toolbox: Sample output signals to activate the swing door opener

71 Safety Light Curtains

If the car/cabin is not equipped with car doors there is under some circumstances and depending on the region the lift is running, an option to use safety light curtains instead. Often this can be found on older lift installations having classic swing door solutions and no car door.

NOUS allows for each door to activate the usage of a safety light curtain separately. You will find the settings by selecting '*Settings*' and then go to '*Doors*' → '*Door Properties*' → '*Door X*' → '*More...*' → '*Safety light curtain usage*'.

71.1 Options

Usually if a safety light curtain is triggered while driving, the lift will enter an emergency stop operation. To enter normal operation again, the safety light curtain must be released again and usually a **car call** or a **swing door cycle** has to be done. In some rare cases, normal operation shall be entered without entering a car call or doing a swing door cycle first. If this is the case, you will find a special option under '*Settings*' → '*Controller/Piloting*' → '*Emergency Stop Handling*' → '*Emergency Stop Safety Light Curtain Recovery*' to define this exception.

71.2 Input signals

- Door controlling signals → Safety light curtain signal

  The status signal from the safety light curtain. Usually this is electrically high, if the light curtain is free/non interrupted.

- Door controlling signals → Safety light curtain control

  The control signal provided by the safety light curtain. Usually this acts inverted to the status signal. So if the status signal drops, this signal is risen and vice versa.

- Door controlling signals → Safety light curtain disable

  An optional input signal used to disable a safety light curtain for special transportation purposes. [seldom used]

71.3 Output signals

- Door controlling signals → Safety light curtain test signal

  This signal is used before the lift starts driving to check that the safety light curtain is still working. This signal is normally electrically high and will be dropped and risen again for the test procedure. If the signal is dropped the safety light curtain reacts as being interrupted by a passenger.

- Single fault indication → Light barrier unit fault

  This signal is risen, if there has been any faults/errors detected regarding to the light curtain system.

- *Door controlling signals → Safety light curtain tripped*

  This signal is turned on, when the safety light curtain test has failed or the curtain is interrupted while driving. In the second case, it will be kept on, until a new car call has been entered or a door cycle has been detected.

71.4 Variants

Typically, safety light curtains require a test procedure, before starting the lift, in which the lift controller pulses a test output and then interrogates the test input and light curtain status signals, which must react contrary. But since intrinsically safe models exist on the market, the light curtain variant actually used can be adjusted.

- Normal safety light curtain, requiring a test-sequence on startup
- Intrinsically safe safety light curtain, without a test-sequence on startup

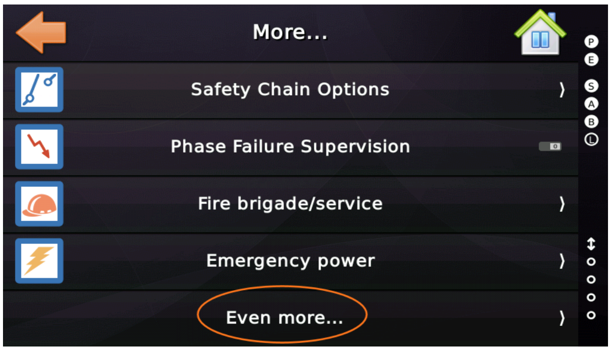
You will find the available variant by selecting '*Settings*' and then go to '*Doors*' → '*Door Properties*' → '*Door X*' → '*More...*' → '*Safety light curtain usage*'.

72 Temperatures

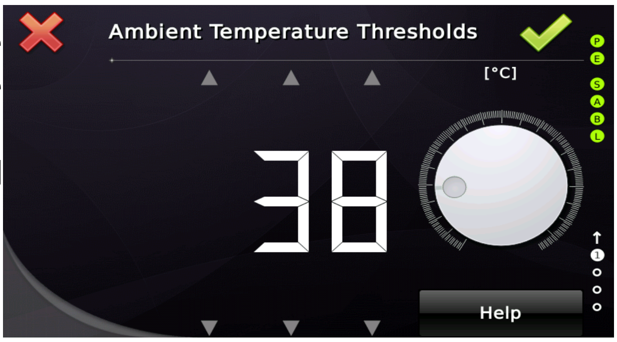
72.1 Temperature Thresholds Signals

The system has four configurable temperature thresholds with corresponding virtual outputs, that can be used to operate fans for example. The output functions can be parameterized on any CANopen I/O-unit or the NOUS board itself. You may use one of the on-board relays for that, like in the example given later on in this chapter.

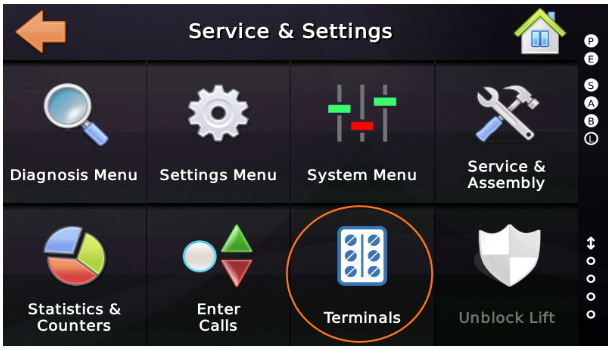
You will find the temperature threshold settings by selecting the 'Settings' and then go to 'Controller/Piloting' → 'More' → 'Even more' → 'Temperature thresholds'.

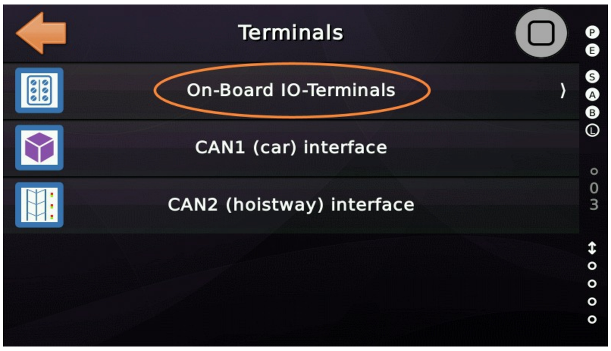


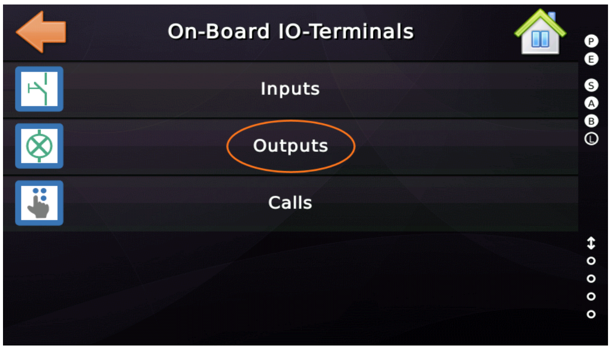
The temperature threshold outputs will be turned on, if the temperature exceeds the given value. In the example, the virtual output for the '*Temperature threshold 1*' will be turned on, if the on-board temperature sensor detects an ambient temperature over 38 degree Celsius.

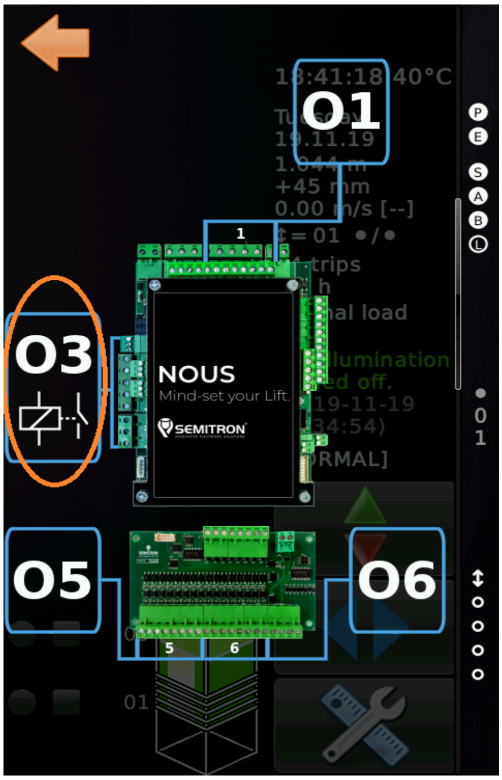


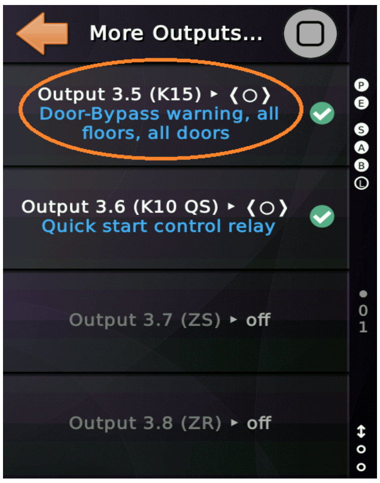
► To setup the corresponding output function for the '*Temperature threshold 1*', featuring the often unused relay K15, follow the given example.











72.2 Ambient Temperature Supervision

The lift controller is not allowed to operate if the ambient temperature is too low, so that the risk of condensation of vapor on the PCB is possible.

The lift controller is not allowed to operate if the ambient temperature is too high, so that there is a risk of failure of electronic components.

Also the EN81-20 give strict rules for the ambient temperature in the well and machinery space. Regarding to this regulation it shall be between +5°C and +40°C.

You will find the ambient temperature minimum (lowest) and maximum (highest) settings by selecting 'Favorites' and then go to 'System Menu' → 'System' → 'More' → 'Ambient Temperatures'.

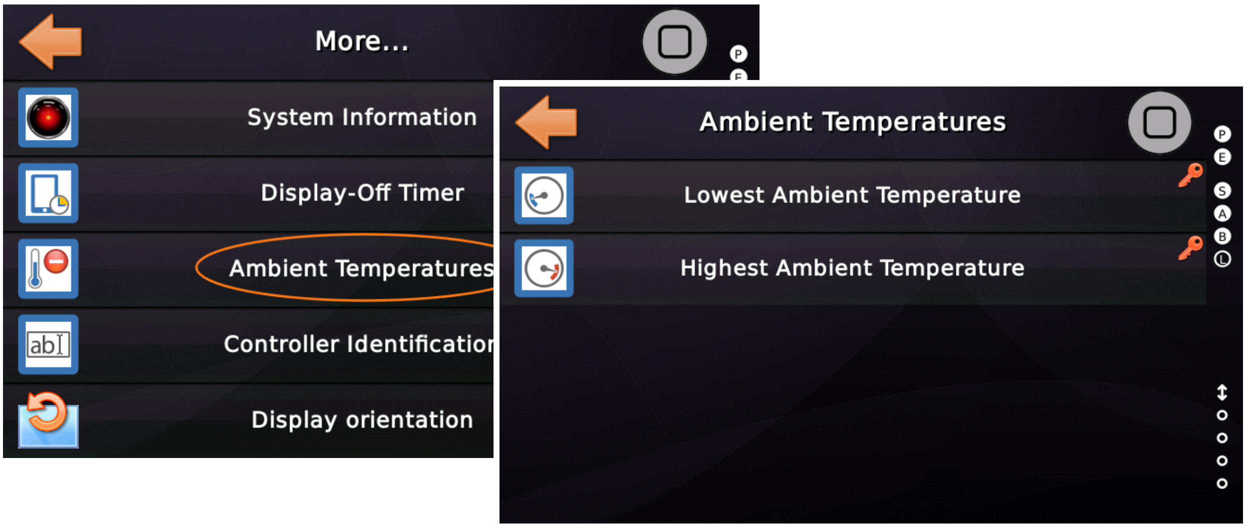


Figure 191: Lowest/highest allowed ambient temperature settings

Keep in mind that the temperature sensor is on-board of the NOUS unit and therefore may detect a somewhat higher temperature, because of the unit being placed in a closed controller cabinet.

73 Optional Inspection Barrier Supervision

In order to monitor the position of barriers or pillars, typically on the car roof or in the well pit, used for low pit/head solutions, you may need some extra supervision inputs, depending on your region and regulations your lift is working in.

These input signals pairs have to operate contrariwise. If they are not in the correct position in order to operate the lift in normal or inspection mode, they will stop the lift immediately. If the correct position is not recovered within about two seconds, the lift will get blocked and has to be unblocked manually.

NOUS provides two pairs of signals. One pair (two signals) for the Barrier 1, typically used in the pit and another pair for the Barrier 2, typically used on the car roof.

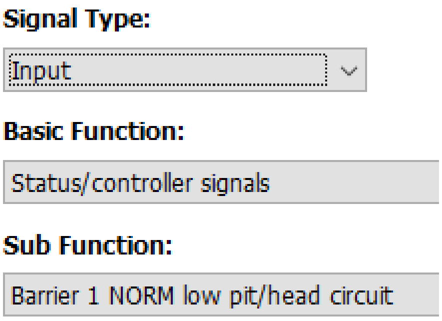


Figure 192: Barrier 1 Normal Position Signal

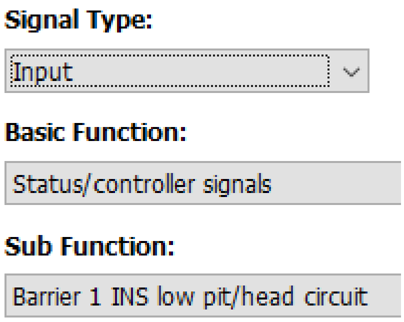


Figure 193: Barrier 1 Inspection Position Signal

You will find the required settings by selecting 'Settings Menu' and then go to 'Controller Piloting' → 'More' → 'Even more...' → 'Low Pit/Head Barrier Supervision'.

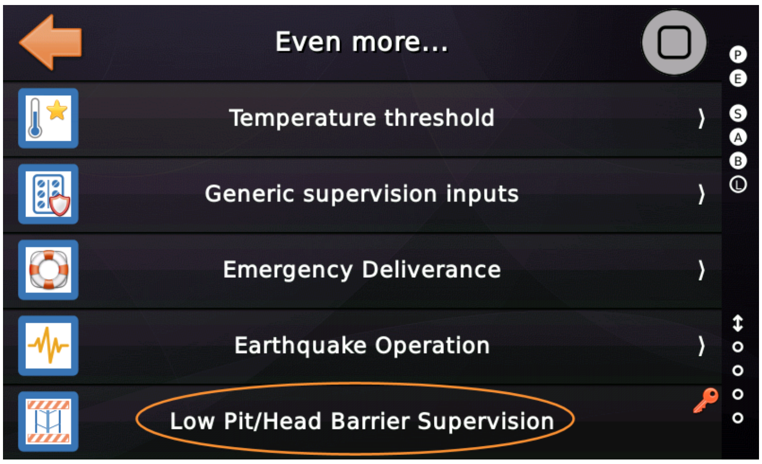
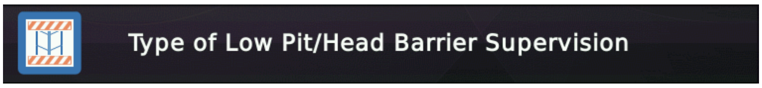


Figure 194: Optional Low Pit/Head Feature

73.1 Type of Low Pit/Head Barrier Supervision



- Low Pit & Head Supervision

  There are mechanical barriers in the shaft pit and the shaft head, in order to limit the driveway.

- Low Pit Supervision only

  There is a mechanical barrier in the shaft pit only, in order to prevent the lift in inspection mode, to drive too far down, so that the required space in the pit would be not sufficient.

- Low Head Supervision only

  There is a mechanical barrier in the shaft head only, in order to prevent the lift, in inspection mode to drive too far up, so that the required head room would be not sufficient.

- Car Fence (Inspection panel on the car top only)

  There is a mechanical solution on the car top only, to prevent the lift from driving too far up, so that a person on the car top, could be injured as the required head room would be not sufficient.

Note:

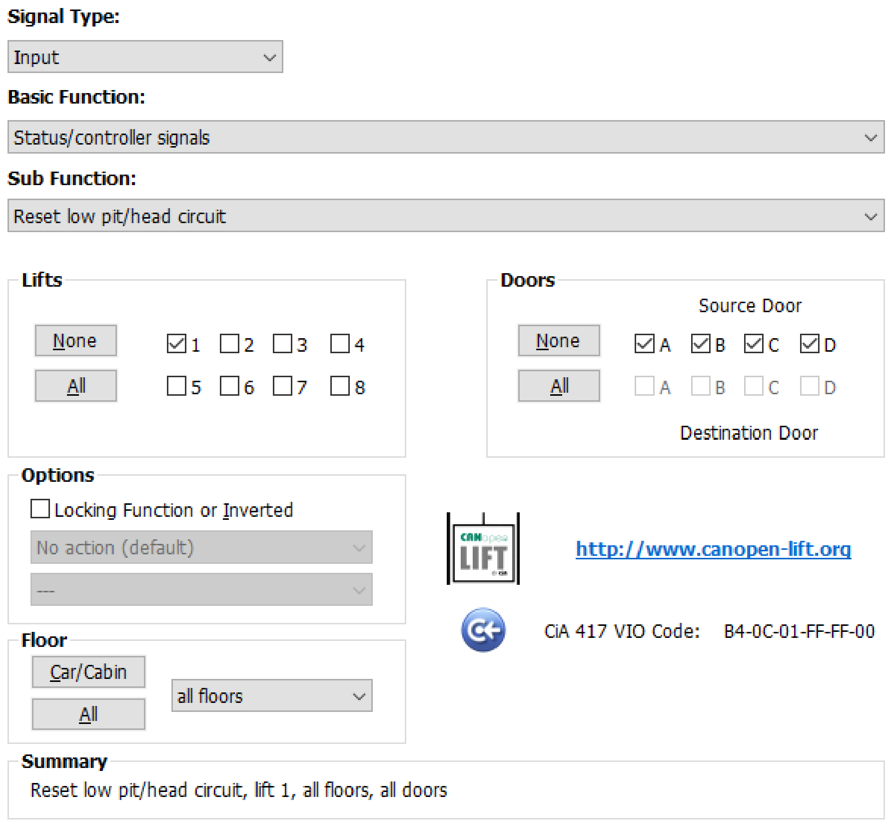
If this type of barrier is featured, it is still possible with the inspection control in the **pit** to drive the lift upward **without** the car fence being the 'Inspection position'.

Normally driving with the Emergency Rescue operation is not limited at all. Only if the Extra Door Lock Supervision indicates an unattended access to the shaft, driving with the Emergency Rescue into the safe area at top and bottom, can be limited as well.

74 Reset low pit/head circuit

There are quite a few different ways to implement an EN81-21 solution for a so called '*Low Pit/Head Solution*'. One thing that those solutions have in common is, that they need to be reset manually by the technician to turn the lift back to normal operation.

The EN81-21 defines some prerequisites that have to be fulfilled for turning the lift back to normal. One prerequisite is that the safety chain has to be '*completely*' closed in order to reset the supervision circuit. To help with that, the lift controller has an input signal, typically parameterized on an I/O component like this:



If the signal has been triggered (impulse >= 250 ms), the lift controller will command all doors to close and lock in order to produce a '*completely closed*' safety chain, which the supervision circuit requires in order to unblock. Unblocking the supervision circuit is the prerequisite for the lift controller to unblock its own operation as well.

► The lift controller will only execute the command, if the safety chain signal 'Emergency Stop' is powered. Check the 'E' symbol at NOUS desktop on the right side.

► The lift controller will detect a 'hung' reset signal, as demanded by the EN81-21 if the signal is turned on continuously for more than 10 seconds.

75 Pawl Device Support

A pawl device is a safety unit which can be combined with hydraulic and traction driven lifts. A pawl device has two main functions:

- It stops the car from dropping due to a failure of the traction or hydraulic system or because of simply being overloaded. Especially in combination with lifts that are loaded/unloaded using fork trucks, this units provide extra safety.
- It keeps the car flush on level while loading payload into the car.

In order to use the pawl device, the lift controller has to be equipped with a safety circuit for door chain bridging. This circuit is used while lifting or lowering the car on start from a floor or at arrival at a floor.

75.1 Pawl Device Parameter

Because of the wide variety of pawl devices, a couple of parameter and options are available. Check the documentation for the pawl device that you want to use.

To open the pawl device parameters select 'Favorites' and then go to 'Settings Menu' → 'More' → 'Pawl Device'.

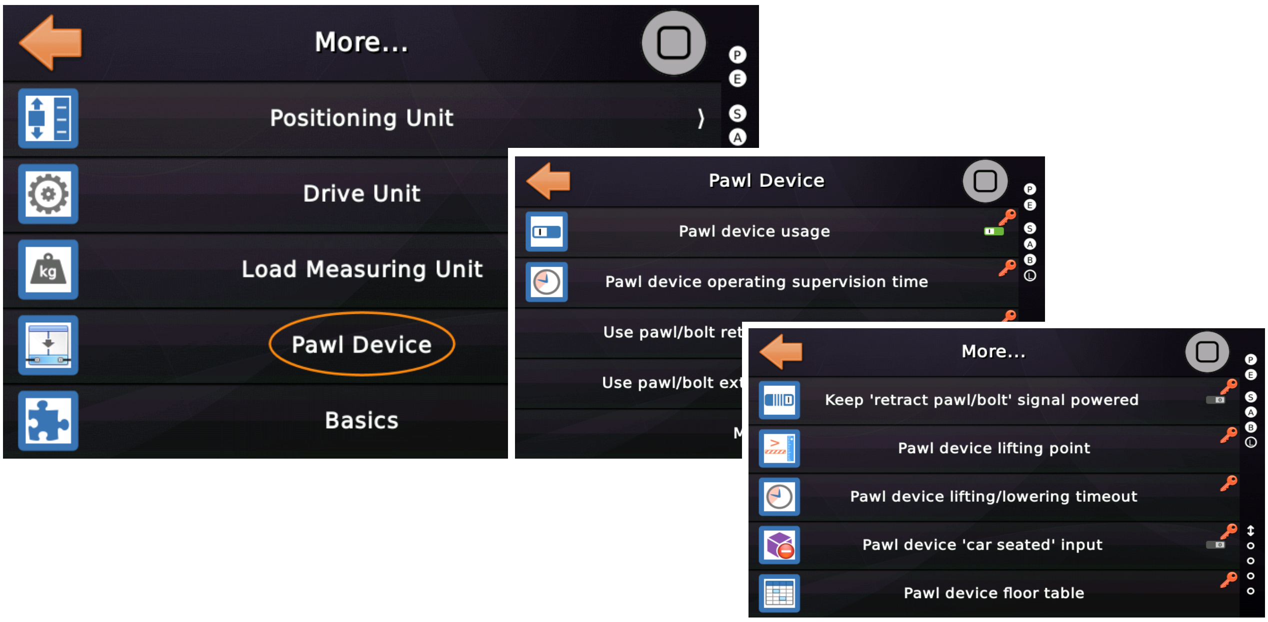


Figure 195: Pawl Device Parameter

75.1.1 Pawl device usage

This object defines if the lift installation is featuring a pawl device unit. A pawl device is a mechanical locking device for seating the car safely after having stopped in a floor, to prevent the cabin from falling. It is often used with hydraulic drives but can also be combined with traction lifts.

75.1.2 Pawl device operating supervision time [ms]

This object defines the time span used, in order to detect a hung pawl device unit, that has not responded as requested.

75.1.3 Use pawl/bolt retracted limit switch

This object defines if the pawl device features a limit switch, signaling that the pawl/bolt has been fully retracted, enabling the car/cabin to move downwards.

75.1.4 Use pawl/bolt extended limit switch

This object defines if the pawl device features a limit switch, signaling that the pawl/bolt has been fully extended, blocking the car/cabin from moving downwards.

75.1.5 Keep 'retract pawl/bolt' signal powered

This defines if the pawl device needs to have the signal for retracting the pawl/bolt powered, even if having reached the 'unlocked' position, especially when driving.

75.1.6 Pawl device lifting point [mm]

This object holds the distance above the floor level used as an lifting/lowering point for the pawl device, when arriving in a floor or starting from a floor.

75.1.7 Pawl device lifting/lowering timeout [s]

This object defines the time-out used for lowering or lifting the car, when approaching from or starting to another floor.

75.1.8 Pawl device 'car seated' input

This object defines if the pawl device provides a signal telling the lift controller that the car/cabin has properly seated. If such a signal is not provided by the pawl device, the lift will drive the car to floor level and stops then.

75.1.9 Pawl device floor table:

This object holds the floors that shall feature the pawl device in order to seat the car/cabin, if the lift arrives there. This table makes it possible to define exceptions for certain floors easily, by removing the black dot.

Figure 196: Table for defining the floors that feature the pawl device

75.1.10 Car lifting/lowering velocity

Use this object to define the velocity (V0..V4/VI/VN) that the drive shall feature, if lifting or lowering the car on pawl device operation.

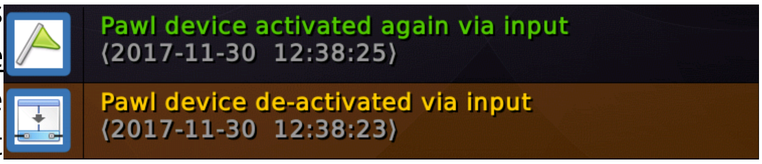
75.1.11 Pawl device external re-pumping unit

Use this object to define if the pawl device is featuring an external hydraulic unit to re-pump oil pressure, while the car has been seated. Otherwise the main drive will be used with re-levelling velocity (VN) for keeping the pressure.

75.2 Disabling the pawl device temporarily

In order to disable the pawl device in certain situations an input function can be used.

Pawl Device → Disable pawl device



If the car is still seated when this signal is activated, it will on the next trip lift the car, retract the pawl/bolt as normal, but then not seat the cabin/car again when arriving into the destination floor.

If there are certain floors that do not feature the pawl device at any time, it is better practice to feature the table described in chapter 75.1.9.

75.3 Re-pumping to keep oil pressure

If the pawl device is used with a hydraulic driven lift, the input signal function 'Pawl Device' → 'Pawl Device re-pumping' can be used to indicate to the lift controller that the oil pressure is running low after the car has been seated and needs to be increased by turning on the hydraulic oil pump for a short time span.

75.4 Pawl Device Status

To open the status of the 'Pawl Device' select 'Favorites' and then go to 'Diagnosis Menu' → 'More' → 'Pawl Device'.

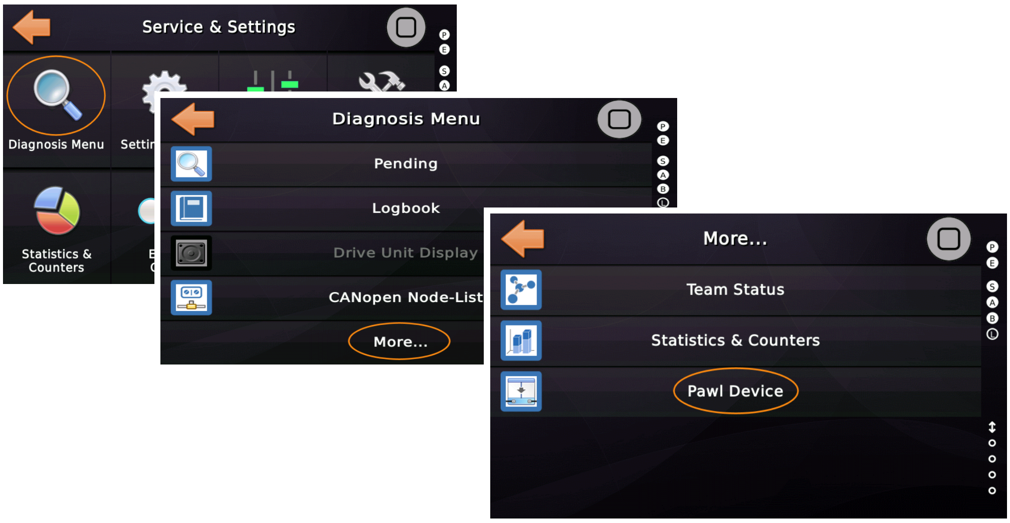


Figure 197: Path to the pawl device status

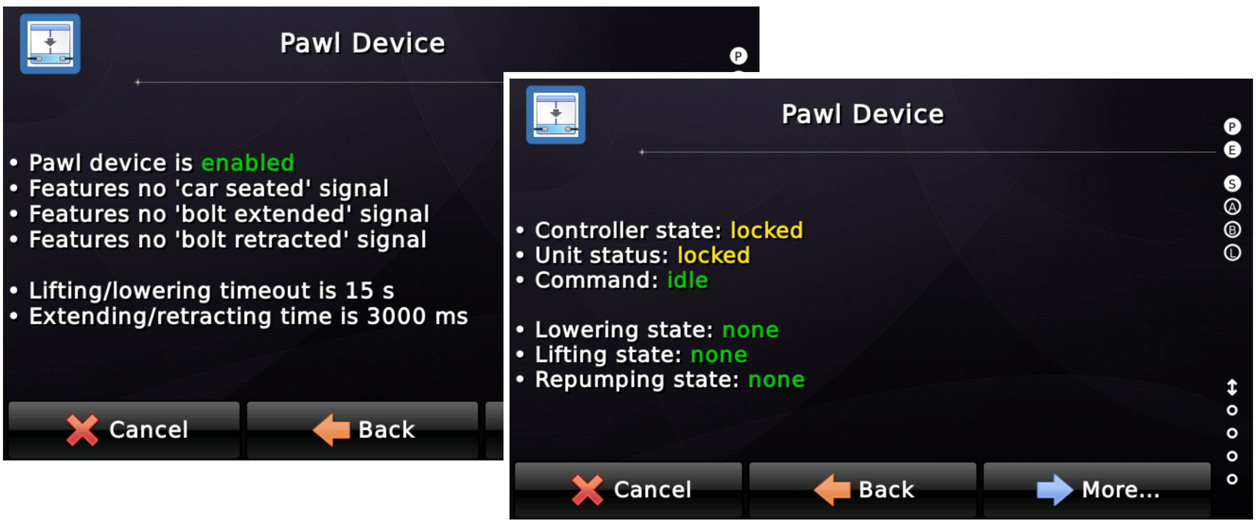


Figure 198: Pawl device status

75.5 Pawl Device Faults

75.5.1 Signal 'car seated' missing

A pawl device may support an optional signal, indicating that the car has been seated. If this option has been turned on, but the signal is not indicated, this fault message will be added to the log book. To open the pawl device parameters select 'Favorites' and then go to 'Settings Menu' → 'More' → 'Pawl Device'.

75.5.2 Pawl device lifting failed

Lifting the car/cabin in order to release the pawl device has been failed. Check the drive lifting the car in time and if connected, the input signal for 'Car being seated' being dropped.

75.5.3 Pawl device lowering failed

Lowering the car/cabin in order to seat on the pawl device has been failed. Check the drive lowering the car in time and if connected, the input signal for 'Car being seated'.

75.5.4 Pawl device re-pumping failed

If the cabin has been seated using a pawl device and the hydraulic pressure drops, the system will fire up the pump to bring the oil pressure back to normal. This has failed due to a timeout reason.

75.5.5 Pawl/bolt retracted fault/timeout

The pawl device (bolt) did not operate properly and did not retract in the given time span. It might be mechanically locked or otherwise unable to move in the 'unlocked'/'released' position, so that the cabin/car could drive. If the device features a position switch to indicate the 'unlocked' position, please check that one as well.

75.5.6 Pawl/bolt extended fault/timeout

The pawl device (bolt) did not operate properly and did not extend in the given time span. It might be mechanically locked or otherwise unable to move in the 'locked'/'safe' position, so that the cabin/car can't drop. If the device features a position switch to indicate the 'locked' position, please check that one as well.

75.6 Pawl Device Signals

Usually a pawl device has a normally open contact that is connected to the safety chain of the lift. It shall be connected right before the door lock contact, and after the car doors.

If the pawl device is in the 'released' state, allowing the car to drive, the pawl device's safety chain contact shall be closed in order to allow the lift to operate without using the SZ unit.

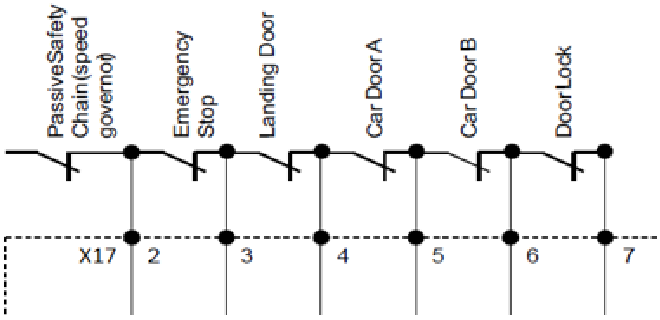
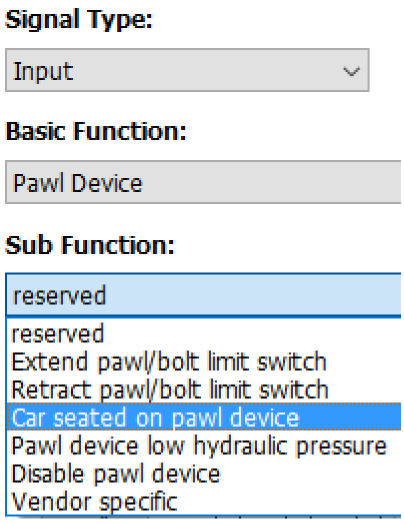
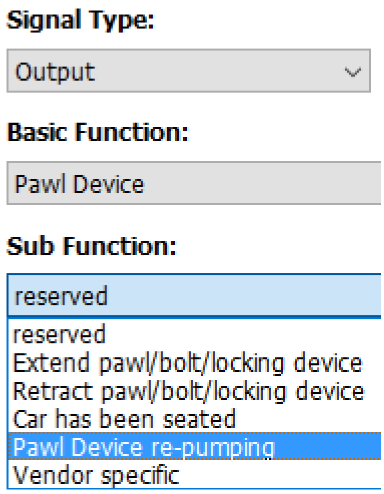


Figure 199: Pawl Device contact in the safety chain

All pawl device related input & output functions can be found in the basic function with the same name in the lift controller or the Toolbox.





► If the pawl device has position limit switches as well, it is good practice to connect them to the lift controller to make operating the unit more precise and give better support under error conditions.

76 Support for Telescopic Toe Guards

76.1 Theory of Operation

This feature can be used, if the lift has to supervise a telescopic toe guard via an input function.
These special toe guards are usually used, if having a low pit situation, having not enough room for them in the lowest floor. Usually they are spring loaded and hold by an electromagnet. On a power drop they are pushed out by the spring to their full length.
When the power comes back, the lift has to push them in again, by driving below the lowest floor, so that the toe guard will touch the ground. The lift will stop, if having reached the parameterized stop point, usually some millimeters below floor level. At this point the telescopic toe guard should have been pushed in far enough, for the magnet to get a grip on the mechanism, holding it again in the pushed-in position.
To open the telescopic toe guard parameters select the 'Favorites'
and then go to 'Settings Menu' → 'Cabin/Car' → 'More...' → 'Telescopic toe guard supervision'.

76.2 Options

76.2.1 Telescopic tor guard push-in distance

This option defines the distance to be driven below the lowest floor level, in order to push-in the telescopic toe guard completely. This value is given in millimeter, below the bottom floor level.

76.2.2 Telescopic toe guard velocity

This option determines the velocity at which the car travels to the lowest floor and then decelerates and retracts the telescopic toe guard.

76.3 Procedure

The lift will first travel at rated speed to the floor above the lowest landing and then travel to the lowest floor at the set reduced speed and then decelerate to catch the telescopic toe guard, until having reached the given point, defined via the '*Telescopic toe guard push-in distance*' parameter.

76.4 Input Function

- Status/controller signals Telescopic toe guard supervision → [NC], car/cabin
  This input signal has to be 24V when the toe guard is in the pushed-in position and drops to 0V, if the toe guard has been pushed out to full length.

76.5 Output Functions

- Status/controller signals → Telescopic toe guard operation

76.6 Logbook

If the telescopic toe guard has been successfully pushed-in again, the log-book will look as follows.

In the event of an error, the procedure is finished with the information that the telescopic toe guard could not be pushed-in again. The lift will then remain 'out of order' on the bottom floor. Usually the car is brought back to the lowest floor level position by an re-levelling operation.

77 Platform Lifts

Platform lifts are usually not used for classic passenger transportation. They might be used for container transport, on assembly lines or in any kind of production environment. An exception to this might be some home lift products at the market.

Such systems are often installed in accordance with the Machinery Directive instead of the EN81 regulations, being usually limited in velocity to 0.15 m/s or 0.3 m/s..

You find the related parameters here under 'Settings Menu' → 'More...' → 'Basics' → 'More...' → 'Platform lift mode'.

77.1 Supported Types of Platforms Lifts

- Standard Platform Lift, requiring constant pressure for the call buttons to work.
- Home Lift brand ≫Grand-Massif≪ - a special adaptation for this product series.
- Home Lift Solution with door circuit bridging on every door zone and constant pressure for the car calls. Landing calls will work normally being in the zone.

77.2 Standard Platform Lift / Construction Platforms

77.2.1 Car calls

If being used as a transport platform, rather than a lift solution, car calls are usually operated in dead-man's grip operating mode, requiring constant pressure in order to keep the cabin driving to the desired floor or level. Basically, it is a 'half automated' operating mode, were the lift is doing the acceleration, braking, stopping automatically as long as the corresponding car calls is pressed.

77.2.2 Landing calls

The operation mode of the landing calls depends on the position of the car. There are basically three rules:

- If the lift is on floor level, (door zone) landing calls do operate normally (fully automated).
- If the lift is in-between the floors (outside the door zone), the landing calls do operate using dead-man's grip (constant pressure), just like the car calls.
- Pending car calls have always priority over landing calls and may even cancel an ongoing driving operation.

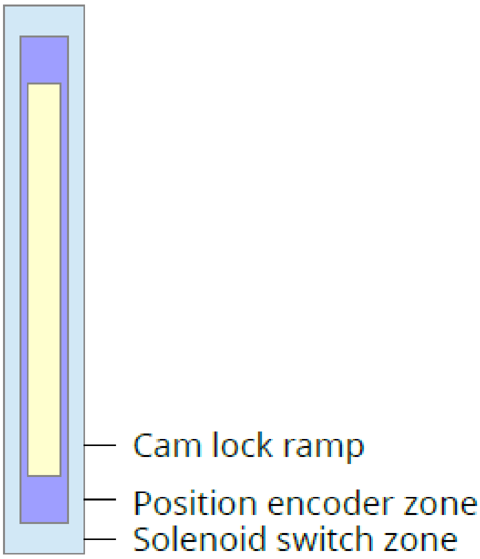
77.3 Home Lift Solution using door circuit bypass, if passing door zones

77.3.1 Calls

The car calls require constant pressure to operate. The landing calls are registered normally, unless the lift has stopped out of the door zone. In that case the landing calls require constant pressure as well to get the lift going. The landing calls can be operated in collective mode or in PB or APB operation mode.

77.3.2 Static Cam Lock Ramp

Since these lifts have static cam lock ramps, the safety circuit (SZ) has to be activated, when driving through or passing the door zones. We recommend setting up the magnetic/solenoid switch zone and absolute encoder zone so, that they '*enclose*' the static cam lock ramp.



77.4 Re-Leveling

The parameter '*Automatic re-levelling of the platform*' can be used to determine whether the lift is to re-level the cabin automatically or whether a call button must be kept pressed for this purpose.

This parameter is only in charge, if the platform type has been selected to be a '*Standard Platform Lift, requiring constant pressure for the call buttons to work*'.

78 Automobile Lifts

If the lift is mainly used for automobile or vehicle transportation, this operation mode can be used. There is an input signal indicating when the lift is exceptionally used for passenger transport and so the special positioning light barriers and the procedure of placing the vehicle shall be skipped.

78.1 Requirements

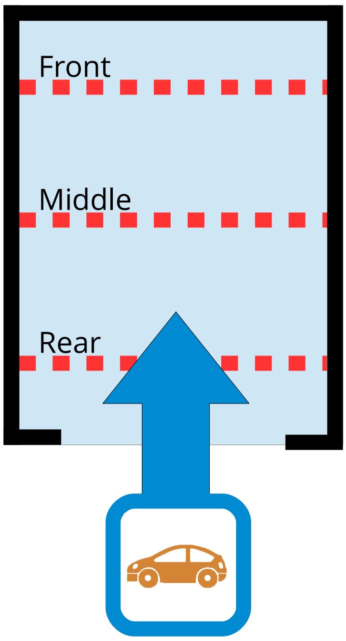
As only one vehicle can be transported at a time, it does not make sense to operate the lift in form of a collective controller. Therefore the lift turns automatically to APB operation mode, when being on Automobile operation. In that mode the landing calls will be processed in the time order and the next landing call will be proceed not before the cabin is empty again.

78.2 Input signals

- Status/controller signals → Automotive passenger/person transport

This input signals indicates that the lift is exceptionally not used for vehicles but to transport one or more persons. In that case the positioning light barriers and indicators will be disabled. As there might be still more cars/vehicles waiting at the landings, the lift will drive pass the landings to the floor, indicated by the given car call(s).

The real automobile lift might have more than three positioning light barriers. In that case those light barriers will be bundled with external logic to three easy interpretative signals for the lift controller.

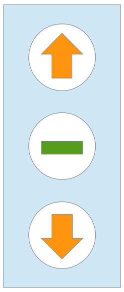


- Status/controller signals → Automobile lift light barrier 'front'
- Status/controller signals → Automobile lift light barrier 'middle'
- Status/controller signals → Automobile lift light barrier 'rear'

78.3 Output signals

- Status/controller signals → Automobile transport acknowledgment

  This indication signal is turned on as soon as the lift is in Automobile operation mode, waiting or transporting vehicles.



- Status/controller signals → Automobile Traffic Light 'Forward'
- Status/controller signals → Automobile Traffic Light 'Stop'
- Status/controller signals → Automobile Traffic Light 'Backward'

- Status/controller signals → Automobile Traffic Light 'Warning'

  This output signal is used for a 'warning' traffic at the landings, indicating to the waiting cars/vehicle, that a car is in the cabin or will leave the cabin. Anyhow it shall prevent the waiting cars to block the space in front of the cabin.

- Status/controller signals → Automotive passenger/person transport acknowledgment

  This is the acknowledge output signal, that indicates that the lift is exceptionally not used for vehicles but to transport one or more persons. See the corresponding input signals for details.

- Status/controller signals → Automotive transport 'Drive Vehicle Out' indication

  This output signal is turned on, when the vehicle has arrived the destination floor, driven via a cabin call. The signal is indicated, when the doors have been full opened to indicate to the driver, that he/she shall drive out the car.

78.4 Logbook Items

Beside the activation of the Automobile lift operation, the logbook also records if the passenger/person transport had been activated.

78.5 Visualization at the Desktop

The state of the traffic lights used for positioning of the vehicle is shown above the cabin, including icons for passenger/person transport and the '*Driving Out*' indication.

79 Helicopter Operation

The helicopter feature is usually used in hospital environments. The operation is split into two phases, with phase 1 being optional.

79.1 Phase 1 – Optional Helicopter Standby

This optional first phase can be used, to keep the lift at a standby floor, so that the medical rescue team is only in need to open the door with a high-priority landing call, without the lift being in need to drive to the floor, were the team is waiting.
The disadvantage is that the hospital will lose the transport capacity of a whole lift, if phase 1 is used. If using this feature in a group/team, the lift will automatically loose its status and leave the standby floor after standing on standby for 24h. This will make another team lift kicking in and take its place.
The team lift will only do that, if being able to '*sense*' another group/team lift, being operational and therefore able to kick in.

79.2 Phase 2 – Helicopter Allocation

The helicopter lift is called by a high priority landing call to the floor, were the medical rescue team is waiting, being ready to go straight to the helicopter allocation floor, usually the top floor of the lift or the roof stop.
When the lift has arrived at the helicopter allocation floor, with the rescue team onboard, the lift will start the allocation time, that can be setup. The default value is 15 minutes. While the allocation time is running, the lift will keep the doors open and will stay stationary without responding to landing calls. The lift is internally switched to Car Preference Mode, allowing only car calls to be entered and processed.

79.3 Parameter

You find the related parameters here under 'Settings Menu'→ 'Controller/Piloting' → 'More...' → 'Even more...' → 'Much more...' → 'Further more...' → 'Special Functions...' →'Helicopter Feature'.

79.3.1 Helicopter standby floor

This parameter defines the floor, were the lift shall be standby in order for being called to the actual helicopter floor. This is the floor for phase 1. The floor were the medical staff will rush to the lift.

79.3.2 Helicopter allocation floor

This parameter defines the floor, being used in phase 2, were the lift shall wait for the helicopter's crew. Usually an allocation time is defined as a final timeout for this operation. This is usually the topmost floor.

79.3.3 High priority call helicopter allocation time

This object defines the dwell or allocation time used by the lift after having stopped because of a high priority landing call at the helicopter floor.

79.4 Events/Logbook

These events are shown in the list of currently pending items and are recorded in the logbook as well.

79.4.1 Helicopter Function Standby

The lift is waiting to be called to the helicopter floor. Usually the lift will first be called by a high priority landing call and then the medical staff will enter the lift and drive to the helicopter floor via a car call.

79.4.2 Helicopter Allocation Time

The allocation time is running, after the lift has arrived at the helicopter allocation floor, usually the topmost floor of the building or the roof stop. The lift is waiting here for the helicopter crew to handover the patient.

79.5 Outputs

These outputs can be used to indicate, if the lift is standby, still waiting for the medical rescue crew, at the dedicated standby floor or the lift already waiting at the helicopter allocation floor, for the rescue team to bring the patient into the car.

79.5.1 Phase 1 – Optional Helicopter Standby

Status/controller signals Helicopter → standby floor

79.5.2 Phase 2 – Helicopter Allocation

Status/controller signals → Helicopter floor/allocation
► Both signals are send through the bus system for the '*car*' and the '*current floor*'.

80 Time Planer

80.1 Week Planer

The week planer entries are used to turn on/off functions based on weekdays, start and stop time. You can define a time span where the start time is lower than the stop time, like 08:00...17:00 or the other way around like for turning off the arrival indicators over night from 17:00 to 08:00 on the next morning.

You will find the corresponding time planer menu items by selecting first 'Home' and then 'Settings Menu' and then go to 'More...' → 'Basic' → 'More...' → 'Week Planer'.

In this example, we use the time planer to turn off the arrival indicator on Monday to Friday from 6PM to 7AM on the very next morning.

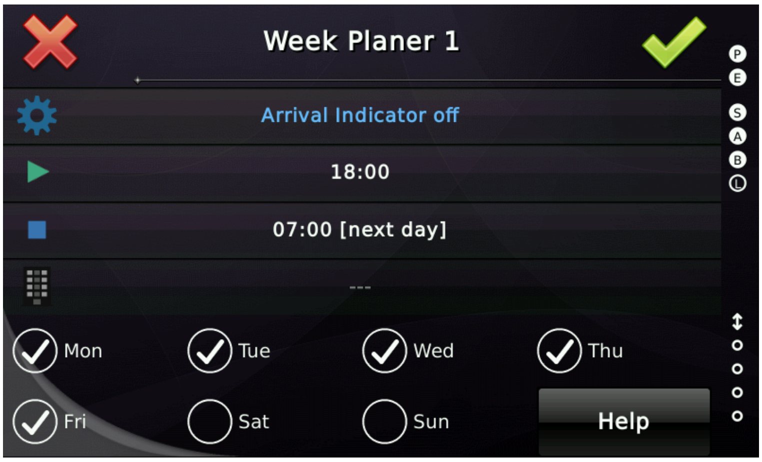


Figure 200: Time planer example

The time planer cover functions like:

- Arrival Indicator off
- Unlock car call
  Locked via the table 'Car call disabling' before.
- Unlock landing call
  Locked via the table 'Landing call disabling' before.
- Set parking floor
- Turn outputs on/off

81 Emergency Call Filtering

Regarding to the EN81-28 and other national lift regulations, the lift controller shall provide an output that can be used by the emergency call device (lift phone) to prevent unintentional emergency calls.

81.1 Output Function

The dedicated output function for this purpose is '*Misc outputs → Alarm Button Filter, all floors, all doors*'.

81.2 Theory of Operation

The filter output, when active, prevents an emergency call from being triggered. If the lift is in inspection or electrical emergency rescue operation or a maintenance function had been activated, the filter output is generally switched off.

In normal operation, the filter output is activated when the lift is driving or having valid position encoder data, indicating the car to be in the door zone and having the manual swing door opened. In the case of automatic (power driven) doors however, not only the safety chain but the door '*opened*' limit switch must indicate as well, that at least one door has been mechanically fully opened, so that no passenger can remain trapped. Additionally the program checks the door table to ensure that the opened car door matches to an existing landing door.

82 Customizable buzzer output

Since acoustic signals are required for various purposes according to today's standards, the lift controller offers the option of using a single signal instead of the dedicated individual signals provided for this purpose. You can choose from a list of events, that shall trigger that buzzer output.

You will find the corresponding time planer menu items by pressing first 'Home' and then 'Settings Menu' and then go to '*Cabin/Car*' → '*More...*' → '*Customizable buzzer signal*'.

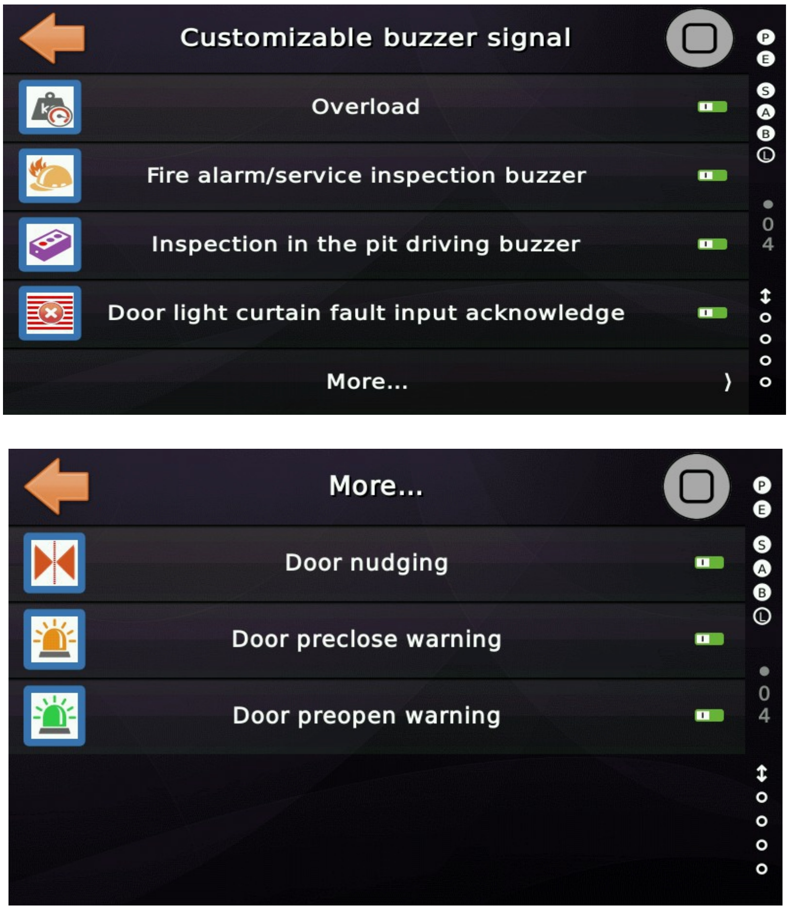


Figure 201: Customizable buzzer output

The associated output signal is '*Status/controller signals* → *Adaptable buzzer signal*'.

83 Generic Supervision Inputs

In order to implement monitoring functions for which no dedicated input function is available, the NOUS control system supports 16 freely parameterizable monitoring inputs. By default, these inputs are low active. That means they have to be 24V when the '*normal*' or '*safe*' condition is signaled. However, the inputs can - like any other input - be inverted if necessary.

You find the related parameters here under 'Settings Menu' → 'Controller/Piloting' → 'More...' → 'Even more...' → 'Generic Supervision Inputs'.

The following options are available to adapt these inputs to their use. These options can be freely and independently set for each of the 16 inputs.

Figure 202: Options for the Generic Supervision Inputs

83.1 Options/Parameter

83.1.1 Input delay

This parameter defines the input delay of the generic supervision input. This is used to delay the activation, if the signal changes its state.

83.1.2 Fault signalization

This parameter defines the fault signalization of the generic supervision input. This parameter defines, if the signal shall cause a 'fault', 'out of order' or 'blocking' event.

83.1.3 Inspection handling

This parameter defines if the generic supervision input shall be excluded being on inspection or emergency rescue operation.

Possible settings are:

- off – *The lift will usually be able to drive with inspection/emergency rescue operation, even if the generic supervision signal indicates a fault.*
- preventing the fault being thrown, if INS/EMY was already in charge
- preventing the lift from being driven in inspection mode
- preventing the lift from being driven in inspection and emergency rescue (INS/EMY) mode

83.1.4 Disable relevelling

This parameter defines if the generic supervision input shall be disable the relevelling operation, if being indicated.

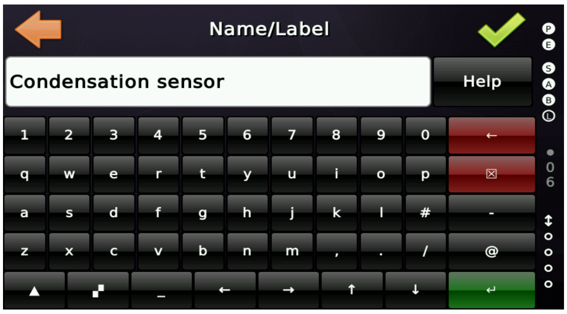
83.1.5 Energy saving policy

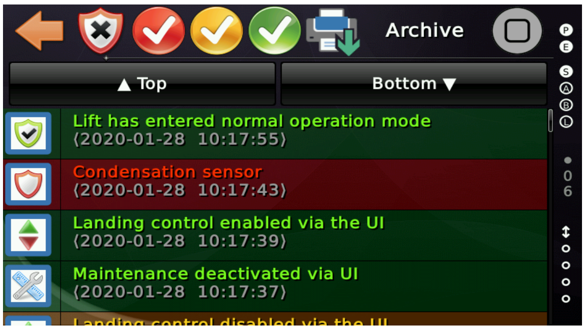
This parameter defines if the generic supervision input shall be excluded being on energy saving or standby operation.

83.1.6 Name/Label

This parameter defines an additional text or label, given for the generic supervision input, to make it less 'generic' for the technician or user.

This text is then written into the history when the supervision input has been tripped.





83.1.7 Destination Floor and Doors to open

This object defines if the generic supervision input shall be used to drive the lift to a dedicated destination floor. If so, the second parameter let you define if any door shall be opened and closed again.

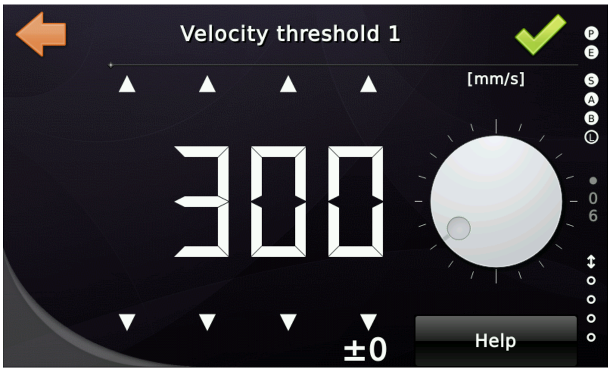
84 Velocity Thresholds

Velocity threshold values can be setup, to be used to trigger output signals, that then can operate deceleration supervision circuits, for example.

84.1 Theory of Operation

The output signals will be activated when the velocity has been fallen below the specified threshold, like v_real < v_threshold. A hysteresis of 15 mm/s is used to prevent the signal from '*flickering*' when the lift passes the switching point and the speed of the car oscillates slightly.

You find the related parameters here under 'Settings Menu' → 'Controller/Piloting' → 'More...' → 'Even more...' → '...' → 'Temperature Thresholds'.



84.2 Outputs

The velocity thresholds are corresponding to the outputs signals with the same name:

- Velocity thresholds → Velocity threshold 1
- Velocity thresholds → Velocity threshold 2
- Velocity thresholds → Velocity threshold X

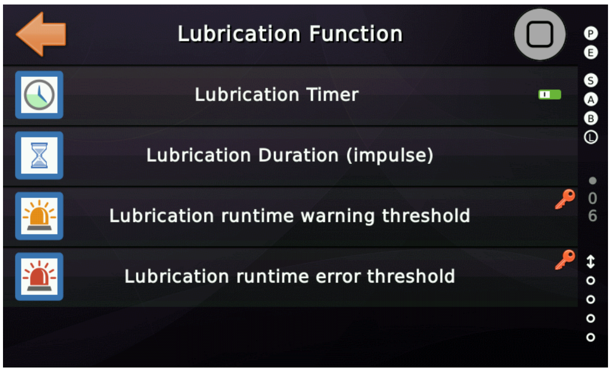
The output signals are switched on logically when the velocity of the car falls below the specified threshold, taking into account a small switching hysteresis.

85 Oil-pump lubrication runtime supervision

Especially for lifts using a thread/nut based drive system – like car ramps or lifters – a supervision function has been implemented, that records the runtime of the oil-pump, providing lubricant to the thread/nut. The runtime is supposed to be proportional to the amount of lubricant being transported. By recording the runtime of the pump and having a warning and an error threshold, the system shall ensure that it will only be rendered operational as long as lubricant is available in the oil-bottle or oil-reservoir.

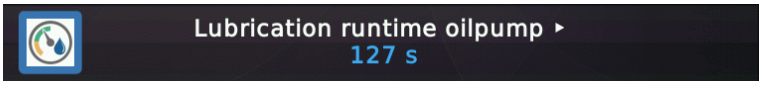
You find the settings regarding the lubrication timer in the Settings Menu, following:

'Settings Menu' → 'More' → 'Drive Unit' → 'More' → 'Even more' → Lubrication Function'



The current value of the runtime counter can be checked at the Maintenance menu:

'Service & Assembly' → 'Maintenance' → 'More' → 'Even more' → 'Lubrication Function'



Here you can also reset the current run-timer value, if the oil reservoir has been refilled.

85.1 Warning Threshold

This parameter defines the time span of engaging the oil pump (lubrication) in seconds that need to have passed, before the lift controller throw a warning about the remaining oil in the oil reservoir to be low.

85.2 Error Threshold

This parameter defines the time span of engaging the oil pump in seconds that need to have passed, before the lift controller throw an error about the oil reservoir being empty. This will then actually turn the lift to Out Of Order operation mode.

86 Maintenance Intervals

You find the settings regarding the maintenance intervals in the Maintenance Menu, following:

'Service & Assembly' ▸ 'Maintenance' ▸ 'More...' ▸ 'Even more...' ▸ 'Maintenance Intervals'

86.1 Maintenance interval trip counter

This parameter defines the trip counter threshold to signal, that the lift installation requires maintenance. With this counter it is possible that the lift signals a maintenance requirement, when the specified number of trips has been reached.

86.2 Maintenance interval operation time meter

This parameter defines the operating hour meter threshold to signal, that the lift installation requires maintenance. With this counter it is possible that the lift signals a maintenance requirement, when the operating hours exceed the given value.

86.3 Maintenance interval Date & Time

This parameter defines the date and time that has to be reached, to indicate, that the lift installation requires maintenance. With this date and time being setup, it is possible that the lift signals a maintenance requirement, when the actual date and time has exceed the given value.

▸ To turn this interval off, enter '01.01.2999' as date.

86.4 Maintenance Interval Indication

The lift can indicate that a maintenance interval has been reached via:

- Output signal
  Status/controller signals → Maintenance interval indication
- CANopen/Cloud
  Object 0x501D "*Maintenance interval indication*"
- BACnet/IP
  BV-6 - Maintenance interval indication
- Logbook items telling which interval has been reached

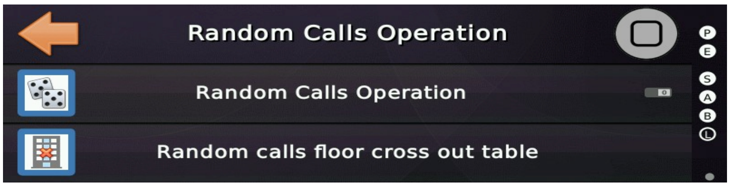
87 Random Calls/Trips Operational

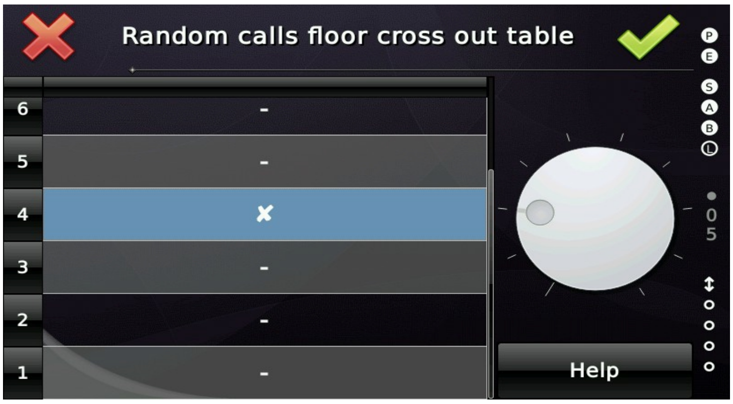
Random calls are often used to have the lift travel a few times after a repair or after a fault or issue has been fixed - simply to ensure that the lift works properly before it is handed over back to the customer. Random calls can also be combined with the '*Doors stay closed*' function, so that real passengers can be prevented from boarding.

You will find the Random Calls operation and related options, here:
'Service & Assembly' ▸ 'Maintenance'▸ 'Random Calls Operation'

Usually, the function for generating random calls generates car calls and landing calls. In the case of a group/team lift (like a duplex lift), other lifts will also react to these landing calls. However, if you turn off the landing control on the lift, that generates the random calls, only car calls will be generated.

If certain floors in a building are to be excluded from random trips, you can mark or cross out these floors in the dedicated table provided.

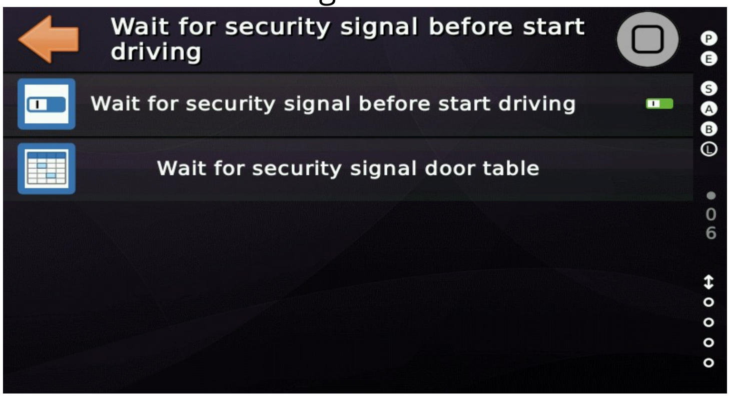


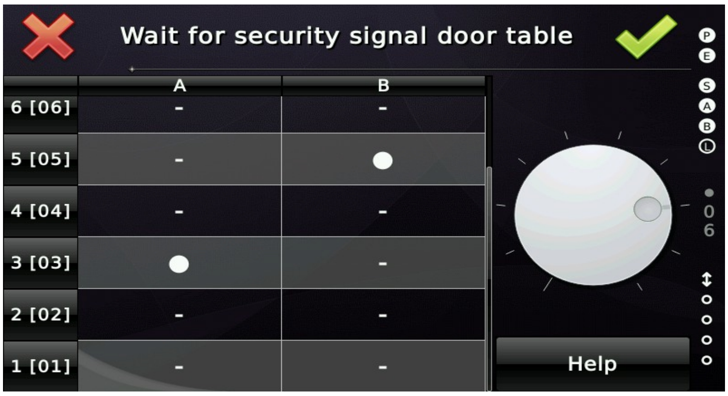


88 Wait for a Security Signal before start driving

Using this feature it is possible to define, that the lift shall wait at certain floors for a security signal to peak up once. The signal in question is 'Special Function ▸ Security Run'.
You will find the dedicated settings regarding this feature in the Settings Menu, following:

'Settings Menu' → 'Controller/Piloting' → 'Times & Options' → 'More...' → 'Wait for security signal before start driving'.
The following table defines the floors and doors were the lift shall wait for the security signal to peak up, in order to start driving.





A dedicated warning and output function is activated, while the lift is waiting.

Output:

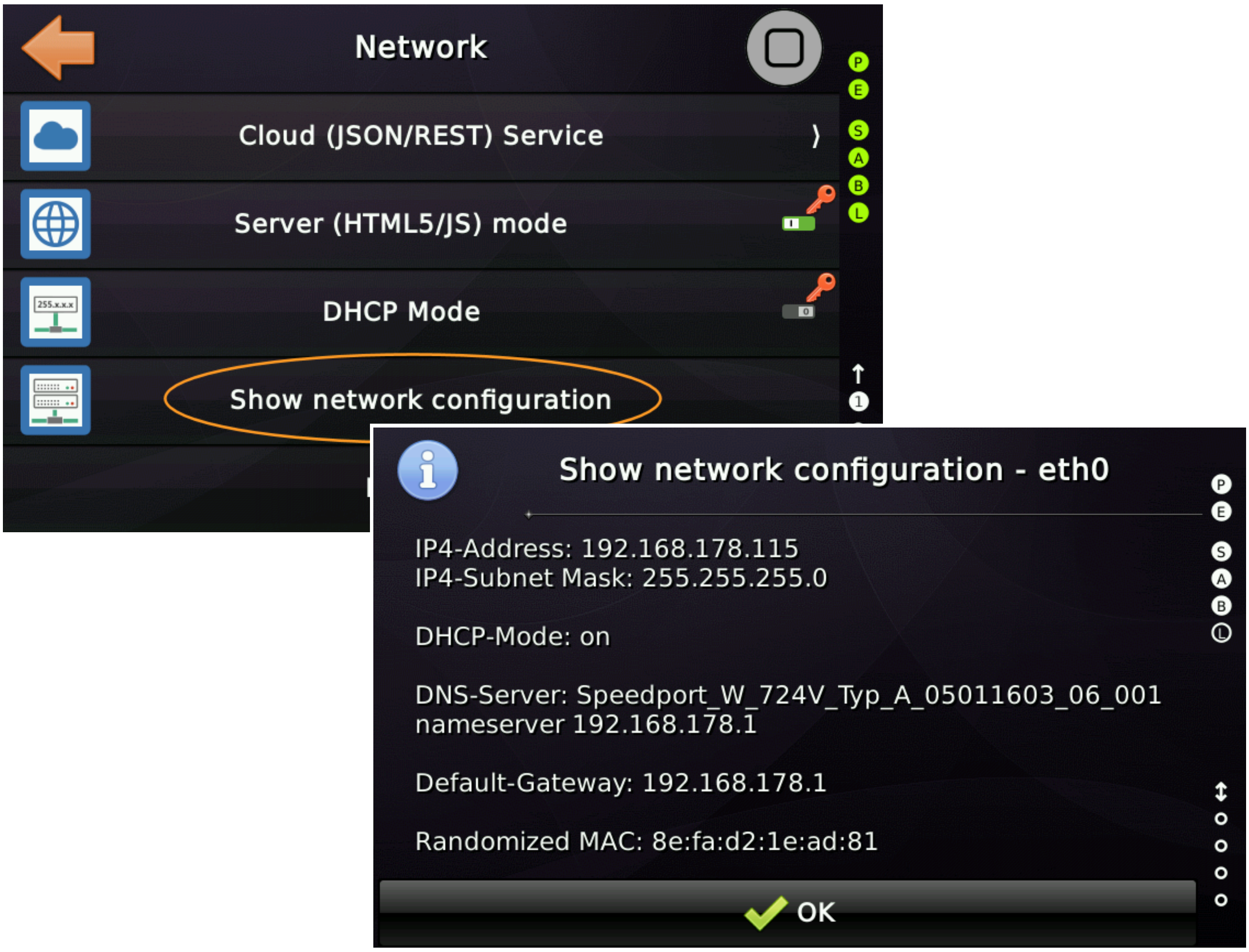
- Special Function Acknowledgment ▸ Security run acknowledge, lift x, all floors, all doors

89 Network Connection

89.1 Network Interface

The main interface for connecting NOUS to the outer world is the build-in RJ-45 100 MBit Ethernet connection.

The network settings can be found by selecting 'Favorites' and then go further to 'System Menu' → 'Network' parameters'. Here you can easily check if NOUS got an IP-address (lease) by using the button '*Show network configuration*'.

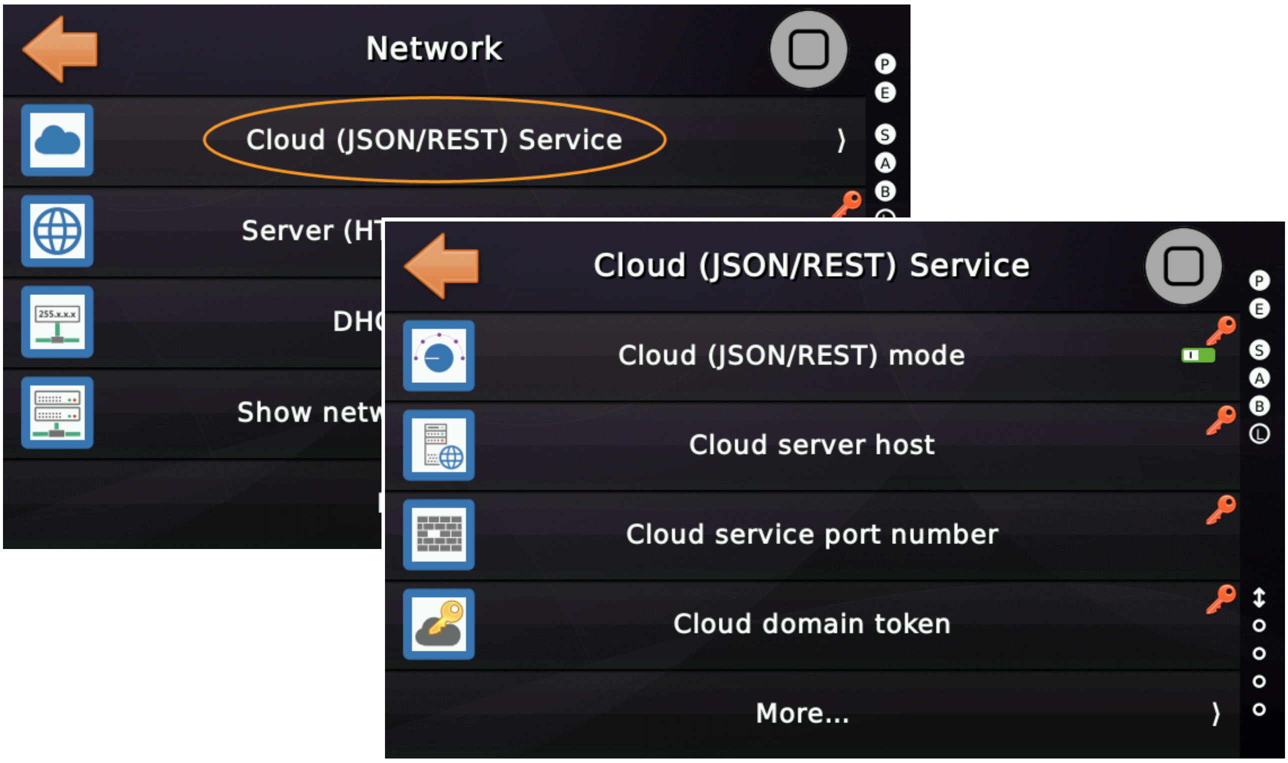


By default NOUS is set to DHCP, which is fine if you want to connect NOUS to your Emergency Lift Telephone or to your 3G/4G router.

If you want to adjust the network settings manually, you can disable DHCP and set the network parameters manually under '*More...*'. This can be useful in local networks if you want to work with static addresses.

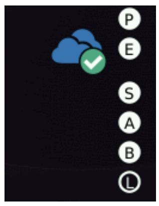
89.2 Cloud Connection (Internet Connection)

NOUS can be connected to any NeXt® Group compatible cloud solution. For this, the connection parameters can be set here.



The connection parameter, such as the host name and the port number, as well as the domain token, shall be obtained from your cloud provider.

Ensure that Date & Time of the NOUS unit is correct when connecting to the cloud server. Time & Date should not be of more than a couple of days. Otherwise the cloud server might refuse connection.



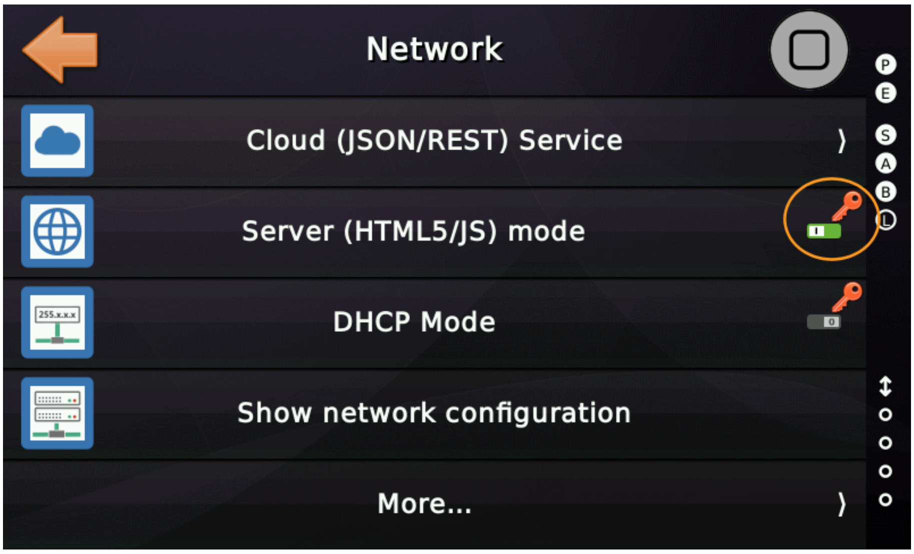
The connection status is indicated by a little '*Cloud*' icon on NOUS user interface desktop.

The icon might be red if there is no connection or yellow, if a connection is pending but not granted yet. That might be the case after a '*hard*' power cycle.

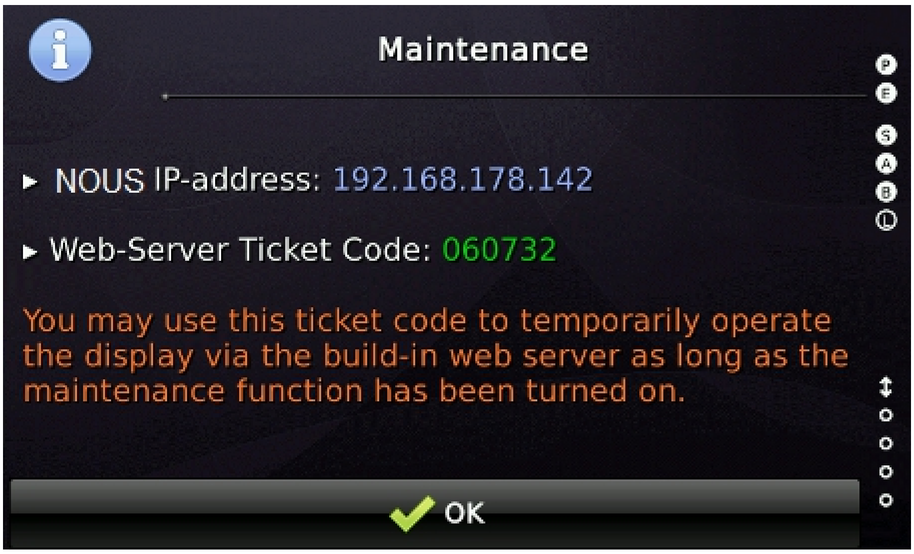
89.3 Build-in Web Server (Local WiFi/Network)

In addition to the connection of a lift controller to the cloud, there is also the option of using a WiFi® router directly on the spot with the mobile phone to access the NOUS.

To do this, turn on the integrated web server.



When the maintenance has been turned on, the technician receives the '*ticket*' code as well as the IP address in order to access the display via his/her phone, using an simple web browser. We suggest using the Opera® Mini browser as this one has a build-in full screen mode, that actually works quite well.



90 BACnet/IP

Building management systems (BMS) might feature a network of sensors and actors within the building, used to control climatic-systems, lighting and other active building automation components, such as lifts.

To connect NOUS to a BACnet/IP system, the build-in BACnet server can be used.

90.1 Copyright of the used BACnet Stack

This application features the BACnet Protocol Stack implementation that is Copyright © 2012 Steve Karg <skarg@users.sourceforge.net> For more information about this high quality project, visit the BACnet Protocol Stack project web site. This BACnet protocol stack implementation is specifically designed for the embedded BACnet appliance, using a GPL with exception license (like eCos), which means that any changes to the core code that are distributed get to come back into the core code, but the BACnet library can be compiled and linked to proprietary code without the proprietary code becoming GPL.

http://bacnet.sourceforge.net

90.2 BACnet PICS

To include NOUS into an existing BACnet network, the administrator might ask for a BACnet Protocol Implementation Conformance Statement (PICS). This includes a list of services supported by the unit.

90.2.1 Product Description

This product provides process data information about the lift controller and system. The supported *Data Link Layer* of choice is BACnet/IP.

90.2.2 Vendor Name and ID

- Thor Engineering GmbH
- Vendor-ID = 1231

90.2.3 BACnet Device Profile - Annex L

- BACnet Application Specific Controller (B-ASC)

90.2.4 Segmentation Capability

- None
- Maximum APDU Length is 1476 bytes

90.2.5 BACnet Building Blocks Supported (BIBB) - Annex K

- DS-RP-B, Data Sharing-ReadProperty-B
- DS-RPM-B, Data Sharing-ReadProperyMultiple-B
- DS-WP-B, Data Sharing-WriteProperty-B
- DS-WPM-B, Data Sharing-WriteProperyMultiple-B
- DS-COV-B, Data Sharing-COV-B
- DS-COVU-B, Data Sharing-COV-Unsolicited-B

90.2.6 Standard Object Types Supported

- Device – BV
- Binary values – BV
- Analogue values – AV
- Character Strings – CSV

90.2.7 Device Address Binding

- Static device address binding is **not** supported as it is only required for MS/TP solutions.
- Dynamic binding **is** supported. This is where the device uses the Who Is/I Am services to determine the physical network address needed to communicate with a given device, identified by its device ID.

90.2.8 Data Link Layer

- BACnet/IP

90.2.9 Character Sets Supported

- UTF-8 / ANSI X3.4

90.2.10 Network Options

- The BACnet/IP Broadcast Management Device (BBMD) feature is not included, as this application is a simple BACnet device, rather than a BACnet router.

90.3 How to activate the BACnet/IP Support

The BACnet settings can be found by selecting 'Favorites' and then go further to 'System Menu' → 'Network' → 'More...' → 'Even more...'.

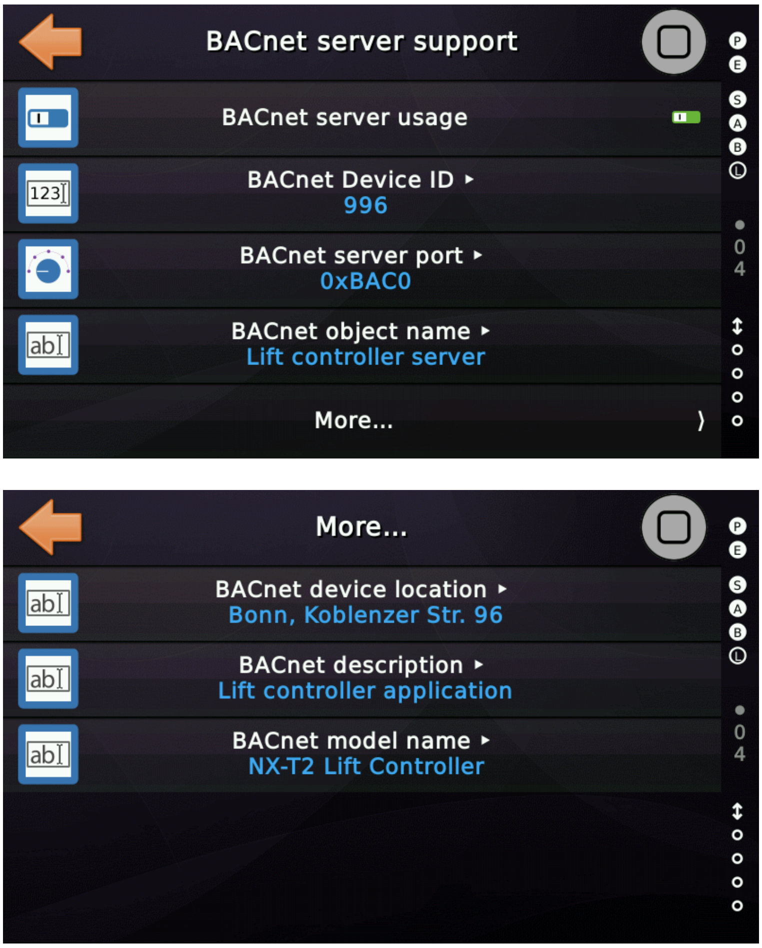


Figure 203: BACnet settings in NOUS user interface

90.4 BACnet Device ID

The Device Identifier (Device ID) is part of the Instance Number, which can be found in the '*Object Identifier Property*' of the Device. The Instance Number has to be uniquely on the entire interconnected BACnet network. The Device Id, which is the lower part of the Instance Number, can be setup locally by the BACnet administrator. For the NOUS unit, this is done via NOUS graphical user interface. The value is stored non-volatile at the unit's internal memory.

Object Identifier	OBJECT_DEVICE:996
Instance	**996**
Type	**OBJECT_DEVICE**

By default NOUS is using the last digits of the serial number to have a proposed/default Device Id, that will not conflict with other NOUS units.

90.5 Process Data provided via BACnet

90.5.1 Analogue values

Object Type	Object Instance	Object Name	Object Description
AV	0	Trip counter	This object represents the internal trip counter of the lift controller.
AV	1	Operation Time Meter	This object represents the operating hour meter of the lift controller in 0.1 hours.
AV	2	Direction change counter	This object holds the internal counter, which counts how often the cabin has changed the driving direction.
AV	3	Leveling inaccuracies last maintenance	This object holds a counter reflecting how often the lift did not stop flush on level, since the last maintenance.
AV	4	Temperature of the controller	This object reflects the current lift controller temperature in degree celsius.
AV	5	Average landing call waiting time	This object holds the average landing call waiting time in tenth of a seconds.
AV	6	Average travel time	This object holds the average travel time (passenger being in the cabin) in tenth of a seconds.
AV	7	Current car floor	This object holds the floor were the car currently is.
AV	8	Lift controller mode	This object holds the current lift controller mode, like fire alarm, fire service or emergency power operation.
AV	9	Current travel direction	This object holds the current direction the car is travelling.
AV	10	Safety chain status bit mask	This object holds the current safety chain status as a bit mask, starting with BIT0 being the passive safety chain input.
AV	11	Trigger landing/car call	This object can be used to trigger/enter a call. The call is provided as a numerical

Object Type	Object Instance	Object Name	Object Description
			value (tuple) containing the floor, door and call type. Bit0..7 - Floor Bit8..15 - Door mask Bit16..19 - Call type 1 - Car call 4 - Landing direction independent 8 - Upward landing call 9 - Downward landing call
AV	12	Position value	This object contains the position values measured by the car position units.
AV	13	Speed value	This object contains the speed (velocity) values measured (indirectly) by the car position units.
AV	14	Status Register	General status information in the form of an error code, which can be found in the appendix to this manual.
AV	15	Bottom Floor	The lowest floor that the lift can approach. Typically 1, this value can also be > 1 for group lifts if, for example, one lift cannot go into the basement or the parking garage.
AV	16	Top Floor	The top (upper) floor of the lift hoistway.
AV	17	Single fault indication	This value is actually a bit field, representing pending fault indicators. Bit 0 – Door fault Bit 1 – Drive fault Bit 2 – Weighing device fault Bit 3 – Positioning unit fault Bit 4 – Emergency call unit fault Bit 5 – Unattended car movement Bit 6 – Light power unit failure Bit 7 – Car illumination failure Bit 8 – Light barrier fault Bit 9 – Door open button failure Bit 10 – Stop accuracy failure Bit 11 – Unintended safety door opening

Object Type	Object Instance	Object Name	Object Description
			Bit 12 – Safety circuit (door bridging) fault Bit 13 – Power supply failure
AV	18	Door A status	0 - Door is in an ambiguous state. 1 - Door is in emergency stop operation. 2 - Door stopped (with torque) at the current (intermediate) position. 3 - Door is opening. 4 - Door opened. 5 - Door is closing. 6 – Door is closed.
AV	19	Door B status	This object has the same structure as the object for door A.
AV	20	Door C status	This object has the same structure as the object for door A.
AV	21	Door D status	This object has the same structure as the object for door A.
AV	22	Car distance from floor level	This value tells the distance of the car from the dedicated floor level in millimeters, when the car had stopped.
AV	23	Generic Input Terminals	This object is used to reflect the state of the first 16 generic input terminals. The first terminal is Bit 0 and the last Bit 15.
AV	24	Lift scenery	This object reflects the current lift scenery as an enumeration. 0 - normal operation 1 - parking operation 2 - car preference/independent mode (VIP) 3 - low priority landing/hall call operation 4 - high priority landing/hall call operation 5 - low priority car call operation 6 - high priority car call operation 7 - Guest call operation 8 - Helicopter standby operation 9 - Helicopter serving operation 10 - Chemical operation

Object Type	Object Instance	Object Name	Object Description
			11 - Circulating operation 12 - Peak up/down operation 13 - Automobile operation
AV	25	Trigger a door command	0 - none 1 - push door A open button 2 - push door A close button 3 - push door B open button 4 - push door B close button 5 - push door C open button 6 - push door C close button 7 - push door D open button 8 - push door D close button
AV	26	Block or unblock calls	This object can be used to block or unblock car or landing calls on floors on discrete door sides. That might be useful in managed building environments. Bit 0..7 - Floor Bit 8 - Door A Bit 9 - Door B Bit 10 - Door C Bit 11 - Door D Bit 12 - 0 - Landing calls / 1 - Car calls Bit 13 - reserved Bit 14 - 0 - Enable / 1 - Disable Bit 15 - reserved
AV	27	Trigger or cancel a standby operation	This object can be used to trigger or cancel a standby operation, optionally sending the lift to the dedicated recall floor. 0 – off 1 – standby
AV	28	Deactivate the landing control	Use this object to deactivate the landing control by setting the value to one. By setting the value back to zero, you will activate the landing control again. 0 – landing control active 1 – landing control deactivated

Object Type	Object Instance	Object Name	Object Description
AV	29	Activate this function to keep the doors closed	Use this function to keep the doors closed, usually for maintenance purposes. The lift will still react on calls. Ensure not to trap a passenger by mistake, using this feature. 0 – off 1 – keep the doors closed
AV	30	Maintenance operation on/off	Use this function to turn on or off the maintenance operation mode. Being on maintenance a lot of faults will be not recorded to the history. 0 – off 1 – maintenance mode activated
AV	31	Car illumination overwrite trigger	This object can be used to trigger turning on or off the cabin illumination, if possible in the current operation mode. 0 – automatic car light mode 1 – overwrite to turn the car light on again once 2 – overwrite to skip the timer and turn the car light off immediately once, if possible (doors closed, no passengers trapped)
AV	32	Car load situation	This object reflect the current car load situation. 0 – normal load 1 – no load 2 – full load 3 – overload 4 – slack rope (not always available) 5 – error 6 – high rope tension difference
AV	33	Time the lift has been broken down	This object reflects in minutes how long the lift is stationary being broken down or out or order.

90.5.2 Character values (Strings)

Object Type	Object Instance	Object Name	Object Description
CSV	0	Lift Identification Number	This object holds the vendor/manufacturer specific lift identification number as a string.
CSV	1	Controller Identification Number	This object holds the vendor/manufacturer specific controller identification number as a string.

90.5.3 Binary Values

Object Type	Object Instance	Object Name	Object Description
BV	0	Maintenance Mode	This object holds the current maintenance mode. If the maintenance mode has been turned on, no faults will be recorded or forwarded to any kind of data gateway.
BV	1	Keep doors closed operation	This object reflects if the doors are being commanded to stay closed, usually in combination with some kind of maintenance work, being in progress.
BV	2	Status landing control off	This object is a bit mask and reflects if the landing control has been turned off via several sources.
BV	3	Collective fault indicator	The collective fault indicator can be used as a simplified way of detecting a lift not being in service anymore. It is activated with a short delay when the lift has switched to one of the operating modes that prevent its use by passengers.
BV	4	The lift has reached the recall floor.	Indicates that the lift has arrived at the recall floor. The lift can be recalled to a specific floor by means of a pending fire alarm, fire service, standby or evacuation operation.

Object Type	Object Instance	Object Name	Object Description
BV	5	Lift parking indication	If no passenger calls are pending, the lift may enter the parking operation mode. That usually means the lift will drive to a specific floor or zone.
BV	6	Maintenance interval indication	If one of the maintenance intervals (trip counter, or operating hour meter or date and time) has been expired, the maintenance interval signal, indicates that the lift installation is in need of maintenance.
BV	7	Car in door zone	This indication reflects, if the car/cabin is currently in a door zone or not.
BV	8	Car illumination	This indicates the state of the car illumination being turned on or off.
BV	9	Lift Telephone	This reflects the state of the lift phone readiness signal, if being connected to the lift controller.
BV	10	Engineer on site	This signal indicates, that the engineer or technician on site has turned on the maintenance function via input or the user interface. 0 – off / 1 – on

91 MODbus/TCP

A Modbus/TCP server has been implemented for the connection to a building management system. The connection is using an Ethernet interface (LAN). The protocol used is TCP at the standard port 502.

91.1 Copyright of the used MOD bus Stack

This application features the MODbus Protocol Stack implementation that is Copyright c 2006 Christian Walter wolti@sil.at. For more information about this project, visit the MODbus Protocol Stack project web site. This MODbus protocol stack implementation is specifically designed for the embedded MODbus applications, using a BSD with exception license, which means that any changes to the core code that are distributed get to come back into the core code, but the MODbus library can be compiled and linked to proprietary code without the proprietary code becoming part of that license.

https://sourceforge.net/projects/freemodbus.berlios

91.2 How to activate the MODbus/TCP Support

The MODbus settings can be found be pressing the hardware button 'Favorites' and then go further to 'System Menu' → 'Network' → More...' → 'Even more...'.

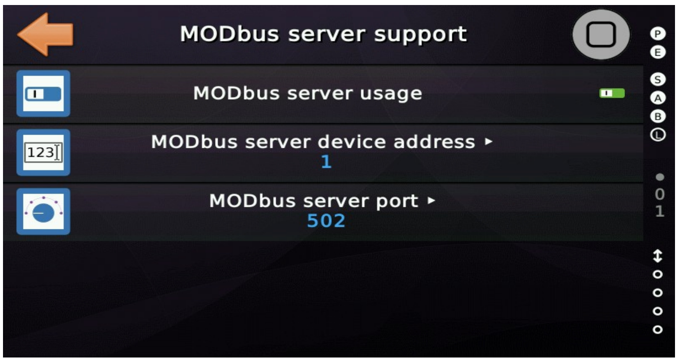


Figure 204: MODbus settings in NOUS user interface

91.3 Process Data provided via MODbus

91.3.1 Input registers

Register Address	Value Range	Object Name	Object Description
30001	0..65535	Trip counter	This object represents the internal trip counter of the lift controller.
30002	0..65535	Operation Time Meter	This object represents the operating hour meter of the lift controller in full hours.
30003	0..65535	Direction change counter	This object holds the internal counter, which counts how often the cabin has changed the driving direction.
30004	0..65535	Leveling inaccuracies last maintenance	This object holds a counter reflecting how often the lift did not stop flush on level, since the last maintenance.
30005	-100..100	Temperature of the controller	This signed object reflects the current lift controller temperature in degree Celsius.
30006	0..9999	Average landing call waiting time	This object holds the average landing call waiting time in tenth of a seconds (1/10 s).
30007	0..9999	Average travel time	This object holds the average travel time (passenger being in the cabin) in tenth of a seconds (1/10 s).
30008	1..127	Current car floor	This object holds the floor were the car currently is.
30009	0..99	Lift controller mode	This object holds the current lift controller mode, like fire alarm, fire service or emergency power operation.
30010	0..2	Current travel direction	This object holds the current direction the car is travelling (0 – none, 1 – up, 2 - down).
30011	0..63	Safety chain	This object holds the current safety

	(Bit 0..5)	status bit mask	chain status as a bit mask, starting with BIT0 being the passive safety chain input.
30012	0..65535	Position value	This object contains the position value [mm] measured by the car position units.
30013	0..99999	Speed value	This object contains the speed (velocity) values measured (indirectly) by the car position units. The value is given in mm/s.
30014	0..99999	Status Register	General status information in the form of an error code, which can be found in the appendix to this manual.
30015	1..8	Bottom Floor	The lowest floor that the lift can approach. Typically 1, this value can also be > 1 for group lifts if, for example, one lift cannot go into the basement or the parking garage.
30016	1..127	Top Floor	The top (upper) floor of the lift hoistway.
30017	0..1	Maintenance Mode	This object holds the current maintenance mode. If the maintenance mode has been turned on, no faults will be recorded or forwarded to any kind of data gateway.
30018	0..1	Keep doors closed operation	This object reflects if the doors are being commanded to stay closed, usually in combination with some kind of maintenance work, being in progress.
30019	0..1	Status landing control off	This object reflects if the landing control has been turned off.
30020	0..1	Collective fault indicator	The collective fault indicator can be used as a simplified way of detecting a lift not being in service anymore. It is activated with a short delay when the lift has switched to one of the operating

			modes that prevent its use by passengers.
30021	0..1	The lift has reached the recall floor.	Indicates that the lift has arrived at the recall floor. The lift can be recalled to a specific floor by means of a pending fire alarm, fire service, standby or evacuation operation.
30022	0..1	Lift parking indication	If no passenger calls are pending, the lift may enter the parking operation mode. That usually means the lift will drive to a specific floor or zone.
30023	0..1	Maintenance interval indication	If one of the maintenance intervals (trip counter, or operating hour meter or date and time) has been expired, the maintenance interval signal, indicates that the lift installation is in need of maintenance.
30024	0..65535	Installation number	The lower 16 bits of the serial number, that can be used as a unique identification number for this lift controller.
30025	0..65535	Single fault indication	This value is actually a bit field, representing pending fault indicators. Bit 0 – Door fault Bit 1 – Drive fault Bit 2 – Weighing device fault Bit 3 – Positioning unit fault Bit 4 – Emergency call unit fault Bit 5 – Unattended car movement Bit 6 – Light power unit failure Bit 7 – Car illumination failure Bit 8 – Light barrier fault Bit 9 – Door open button failure Bit 10 – Stop accuracy failure Bit 11 – Unintended safety door opening

			Bit 12 – Safety circuit (door bridging) fault Bit 13 – Power supply failure
30026	0..6	Door A status	0 - Door is in an ambiguous state. 1 - Door is in emergency stop operation. 2 - Door stopped (with torque) at the current (intermediate) position. 3 - Door is opening. 4 - Door opened. 5 - Door is closing. 6 - Door is closed.
30027	0..6	Door B status	See door A status.
30028	0..6	Door C status	See door A status.
30029	0..6	Door D status	See door A status.
30030	0..65535	Car distance from floor level	This value tells the distance of the car from the dedicated floor level in millimeters, when the car had stopped.
30031	0..65535	Generic Input Terminals	This object is used to reflect the state of the first 16 generic input terminals.
30032	0/1	Car in door zone	This object indicates, if the car/cabin is in the door zone of a floor or not.
30033	0/1	Car illumination	This indicates the state of the car illumination being turned on or off.
30034	0/1	Lift Telephone	This reflects the state of the lift phone readiness signal, if being connected to the lift controller.
30035	0..65535	Lift scenery	This object reflects the current lift scenery as an enumeration. 0 - normal operation 1 - parking operation 2 - car preference/independent mode (VIP) 3 - low priority landing/hall call operation 4 - high priority landing/hall call operation

			5 - low priority car call operation 6 - high priority car call operation 7 - Guest call operation 8 - Helicopter standby operation 9 - Helicopter serving operation 10 – Gas (Chemical) operation 11 - Circulating operation 12 - Peak up/down operation 13 - Automobile operation
30036	0..6	Car Load Situation	This object reflect the current car load situation. 0 – normal load 1 – no load 2 – full load 3 – overload 4 – slack rope (not always available) 5 – error 6 – high rope tension difference
30037	0/1	Engineer on site	This signal indicates, that the engineer or technician on site has turned on the maintenance function via input or the user interface. 0 – off / 1 – on
30038	0..65535	Time the lift has been broken down	This object reflects in minutes how long the lift is already stationary being broken down or out or order, waiting to be fixed.

91.3.2 Holding Registers

Register Address	Value Range	Object Name	Object Description
40000	0..65535	reserved	This object is reserved for later usage.
40001	0..65535	Trigger a call	This object let you enter a call to a floor and door. The lower 8 bits are the floor. Bit 0..7 – Floor Bit 8..11 – Doors (A..D)

			Bit 12..15 – Call type 1 – normal car call 2 – low priority car call 3 – high priority car call 4 – landing call (no direction) 5 – landing call extra (no direction) 6 – landing call low priority 7 – landing call high priority 8 – landing upward call 9 – landing upward call extra 10 – landing downward call 11 – landing downward call extra
40002	0..1	Unlock Date & Time	This object must be described with '1' so that the date and time can be set. The objects are locked again automatically after 10 minutes.
40003	0..65535	Date	The top 8 bits contain the month and the bottom 8 bits the day of the month.
40004	0..65535	Time	The top 8 bits contain the hours and the bottom 8 bits the minutes.
40005	0..8	Trigger a door command	0 – none 1 – push door A open button 2 – push door A close button 3 – push door B open button 4 – push door B close button 5 – push door C open button 6 – push door C close button 7 – push door D open button 8 – push door D close button
40006	0..65535	Block or unblock calls	This object can be used to block or unblock car or landing calls on floors on discrete door sides. That might be useful in managed building environments. Bit 0..7 - Floor Bit 8 - Door A Bit 9 - Door B Bit 10 - Door C Bit 11 - Door D

			Bit 12 - 0 - Landing calls / 1 - Car calls Bit 13 - reserved Bit 14 - 0 - Enable / 1 - Disable Bit 15 - reserved
40007	0/1	Trigger or cancel a standby operation	This object can be used to trigger or cancel a standby operation, optionally sending the lift to the dedicated recall floor. 0 – off 1 – standby
40008	0/1	Deactivate the landing control	Use this object to deactivate the landing control by setting the value to one. By setting the value back to zero, you will activate the landing control again. 0 – landing control active 1 – landing control deactivated
40009	0/1	Activate this function to keep the doors closed	Use this function to keep the doors closed, usually for maintenance purposes. The lift will still react on calls. Ensure not to trap a passenger by mistake, using this feature. 0 – off 1 – keep the doors closed
40010	0/1	Maintenance	Use this function to turn on or off the maintenance operation mode. Being on maintenance a lot of faults will be not recorded to the history. 0 – off 1 – maintenance mode activated
40011	0..2	Car illumination overwrite trigger	This object can be used to trigger turning on or off the cabin illumination, if possible in the current operation mode. 0 – automatic car light mode 1 – overwrite to turn the car light on again once 2 – overwrite to skip the timer & turn the car light off immediately once, if possible (doors closed, no passengers trapped)

92 Appendix – I/O Signals

92.1 Input Functions

All input functions can be parameterized using an On-Board terminal or using an external terminal, provided by a CiA417 compatible I/O-Panel unit.

There are a few exceptions regarding input signals that have to be On-Board:

- Safety Chain Input Signals
- Main Power Supervision (Power Loss Detection)

Generic input

- Terminal x

Hall call

- Up
- Down
- No direction
- Up [extra]
- Down [extra]
- No direction [extra]

Low priority hall call

- Up
- Down
- No direction
- Up [extra]
- Down [extra]
- No direction [extra]

High priority hall call

- Up
- Down
- No direction
- Up [extra]
- Down [extra]
- No direction [extra]

Car call

- Floor x

Low priority car call

- Floor x

Special function

- Request fan 1
- Request fan 2
- Request load time 1
- Request load time 2
- Key lock 1
- Key lock 2
- Key lock 3
- Key lock 4
- Request door open
- Request door close
- Fire recall
- Fire service
- Hall call disable
- Attendant service
- VIP service (car preference)
- Out of Order/Remote off
- Bed passenger service
- Special service
- Service run
- Fire alarm
- Provide priority
- Lift attendant start button
- Lift attendant drive through button
- Security run
- Second call car operation panel
- Door enabling
- Call cancel fire brigade
- Fire alarm reset
- Body detector
- Earthquake detector
- Cleaning travel
- Emergency alarm ready
- Emergency alarm green pictogram
- Emergency alarm yellow pictogram
- Emergency alarm button pressed

Fire detector

- Fire detector 1 [PID]
- Fire detector 2 [PIA]
- Fire detector 3 [PIDF]
- Fire detector 4 [PIAF]
- Fire detector 5...16

Inspection / Emergency Rescue

- Car top inspection enable [NC]
- Car top inspection upward
- Car top inspection downward
- Car top inspection fast button
- Shaft pit inspection enable [NC]
- Shaft pit inspection upward
- Shaft pit inspection downward
- Shaft pit inspection fast button
- Emergency rescue enable [NC]
- Emergency rescue upward
- Emergency rescue downward
- Emergency rescue fast button
- Inspection in the pit reset signal

Floor selector

- Floor Level Sensor [PSU]
- Door Zone Sensor [PSU]
- Position correction [preset] upward
- Position correction [preset] downward

Safety circuit

- Passive safety circuit
- Emergency stop
- Shaft door
- Car door A
- Car door B
- Door lock

Guest call

- Floor x

Selection Call

- Up
- Down
- No direction

Drive unit signals

- Enable drive unit control signals
- Contactor stuck supervision [NC]
- Brake supervision [NC]
- Safety valve (UCM/RUN) state
- Safety valve (UCM/RDY) state
- Disable re-leveling
- PTC (Drive/Engine) [NC]
- Low hydraulic oil pressure
- Hydraulic oil overpressure
- Second brake supervision [NC]
- Third brake supervision [NC]
- Fourth brake supervision [NC]
- Drive readiness signal
- Traction sheave brake supervision [NC]
- Hydraulic pump enable (UCM/UP) signal
- Drive battery warning indication
- Drive battery error indication
- Lift start interlock
- Low Oil Protection [NC]
- Oil tank temperature shutdown switch [NC]
- Rope Brake status indication
- Rope Brake, door-zone contactor supervision
- Rope Brake, safety chain contactor supervision
- Brake enable signal

Door controlling signals

- Limit Switch Door opened
- Limit Switch Door closed
- Door Light Curtain
- Force limit signal
- Door motion detector
- Selective door open button
- Fault Door Light Curtain
- Door open button
- Door close button
- Door Extra Supervision
- Extra Door Contactor Monitoring [NC]
- Safety light curtain signal
- Safety light curtain control
- Safety light curtain disable
- Car door locked
- Hidden door contact chain
- Secondary landing door table
- Third landing door table
- Fourth landing door table
- Fire service door open button

• Fire service door close button
• Finger protector sensor
• Wheel chair door open button
• Extra landing door light curtain
• Extra landing door force limit signal
• Extra landing door fully open indication

Status/controller signals

• No load
• Full load
• Overload
• Light Voltage [NC]
• Supply Voltage [NC]
• Unblock lift operation
• Phase Failure Supervision [NC]
• Bypass shaft doors
• Bypass car doors
• Lift undergoing maintenance
• Drop Protection, bolt released
• Reset low pit/head circuit
• Barrier 1 NORM low pit/head circuit
• Barrier 1 INS low pit/head circuit
• Barrier 2 NORM low pit/head circuit
• Barrier 2 INS low pit/head circuit
• Emergency Power activation
• Emergency Power enable evacuation
• Emergency Power lift stays operational
• Emergency Power battery rescue
• Emergency Power battery rescue direction
• Enter car roof inspection operation
• Enter shaft pit inspection operation
• Separating door supervision
• Manual Emergency Evacuation
• Automatic Emergency Evacuation
• Fire Service Hold
• Disable team/group operation
• Rescue/Salvage operation active
• Rescue/Salvage operation car calls enable
• Circulating operation
• Chemical transport
• Chemical transport reset
• Automotive passenger/person transport
• Automobile lift light barrier 'middle'
• Automobile lift light barrier 'front'
• Automobile lift light barrier 'rear'
• Over travel reset button
• Brake test switch
• Peak-up operation key switch

- Peak-down operation key switch
- Key switch 'Keep doors closed'
- Brake test circuit supervision
- Rescue/Salvage operation via Building Management (BMS)
- Evacuation/Rescue operation suspend signal
- Automatic evacuation/rescue service operation
- Driver assisted evacuation/rescue service operation
- Remote assisted evacuation/rescue service operation
- Fire Alarm Center
- Emergency Lift Phone Readiness Indication
- In-Car Stop-Switch
- Telescopic toe guard supervision [NC]
- Shuttle Service/Snow Cleaning
- External door bridging module feedback (SZ)
- External door bridging module zone (SZ)
- Platform operation activation
- Barrier 3 NORM low pit/head circuit
- Barrier 3 INS low pit/head circuit

Call enabling

- Car call enabling
- Landing call enabling
- Car & Landing call enabling
- Disable car & landing calls

Generic supervision inputs

- Generic supervision input X

Pawl Device

- Extend pawl/bolt limit switch
- Retract pawl/bolt limit switch
- Car seated on pawl device
- Pawl device low hydraulic pressure
- Disable pawl device

ASME Access Function [US]

- ASME Access Switch
- ASME Access upward
- ASME Access downward

92.2 Output Functions

All output functions can be parameterized using an On-Board terminal or using an external terminal, provided by a CiA417 compatible I/O-Panel unit.

There are a few exceptions regarding output signals that have to be 'on-board':

- Pilot relays
- Quickstart relay

Generic output

- Terminal x

Hall call acknowledge

- Up
- Down
- No direction
- Up [extra]
- Down [extra]
- No direction [extra]

Low priority hall call acknowledge

- Up
- Down
- No direction
- Up [extra]
- Down [extra]
- No direction [extra]

High priority hall call acknowledge

- Up
- Down
- No direction
- Up [extra]
- Down [extra]
- No direction [extra]

Car call acknowledge

- Floor x

Low/High priority car call acknowledge

- Floor x

Special function acknowledgment

- Request fan 1 acknowledge
- Request fan 2 acknowledge
- Request load time 1 acknowledge
- Request load time 2 acknowledge
- Key lock 1 acknowledge
- Key lock 2 acknowledge
- Key lock 3 acknowledge
- Key lock 4 acknowledge
- Door open request acknowledge
- Door close request acknowledge
- Fire recall acknowledge
- Fire service acknowledge
- Hall call disable acknowledge
- Attendant service acknowledge
- VIP service acknowledge (car preference)
- Out of service acknowledge
- Bed passenger service acknowledge
- Special service acknowledge
- Service run acknowledge
- Fire alarm acknowledge
- Provide priority acknowledge
- Lift attendant start button acknowledge
- Lift attendant bypass button acknowledge
- Security run acknowledge
- Second call COP acknowledge
- Door enabling acknowledge
- Call cancel fire brigade acknowledge
- Fire alarm reset acknowledge
- Body detector acknowledge
- Earthquake detector acknowledge
- Cleaning travel acknowledge
- Emergency alarm ready acknowledge
- Emergency alarm green pictogram acknowledge
- Emergency alarm yellow pictogram acknowledge
- Emergency alarm button pressed acknowledge

Fire detector acknowledge signals

- Fire detector X acknowledge

Guest call

- Floor x

Lift lights

- Main light on acknowledge
- Main light off acknowledge
- Secondary light on acknowledge
- Secondary light off acknowledge
- Emergency light on acknowledge
- Emergency light off acknowledge
- Ambient light on acknowledge
- Ambient light off acknowledge
- Panel light on acknowledge
- Panel light off acknowledge
- Floor light on acknowledge
- Floor light off acknowledge
- Shaft light on acknowledge
- Shaft light off acknowledge

Floor indicator (1-out-n)

- Clear display data
- Floor x

Hall lantern

- Up
- Down
- Up/down

Direction indication

- Up
- Down
- Up/down
- Moving up
- Moving up
- Moving down
- Moving down
- Moving up/down

Special indication

- No load
- Full load
- Overload
- Fire recall

- Fire service
- Help is coming
- Special service
- Load time
- Lift occupied
- Out of service
- Please close door
- Fire alarm
- Hall call disable
- Travel to fire alarm floor
- Travel to fire recall floor
- Lift in maintenance
- VIP transport
- Guest Call Indication
- Medical emergency transport
- Chemical transport
- Bed transport
- Test travel
- Low priority hall call transport
- High priority hall call transport
- Step warning indication
- Attendant service
- Rescue operation
- Emergency power operation
- Passengers may are trapped
- Lift is traveling

Arrival indication

- Up
- Down
- No direction

Floor announcement

- Turn off speech synthesis
- Floor x
- Speak current floor

Vocal messages

- Switch off messages
- Announce door opening
- Announce door closing
- Announce lift is going up
- Announce lift is going down
- Announce lift is reserved
- Announce lift is available

- Announce lift is overloaded
- Announce lift is out of order
- Announce lift is in maintenance
- Announce lift is in emergency operation
- Announce lift is in firemen service
- Announce to step away from the doors
- Announce floor is access protected
- Announce to mind the step
- Announcement 'Please leave the lift'
- Announcement 'Select a destination'
- Announcement 'Don't use this lift'
- Announcement 'Wait for the rescue service'

Misc outputs

- Hall calls enable
- Lift operational
- Lift fault
- Lift blocked
- Alarm Button Filter

Single fault indication

- Door fault
- Drive unit fault
- Load measuring fault
- Position unit fault
- Emergency call unit fault
- Unintended car movement (UCM)
- Light power supply
- Car light fault
- Light barrier unit fault
- Door “open" button fault
- Stopping accuracy fault
- Unintended safety contact door fault
- Protective Circuit (SZ) fault
- Mains power failure

Next Stop

- No next stop available
- Floor x

Time to door closure

- Time off
- Time span X seconds

Lift status indication

- Car in door zone indication
- Car on level indication
- Car above floor level indication
- Car below floor level indication
- Alarm button actuated indication
- Remote off activated indication
- Reached remote off floor indication
- Reached control floor indication
- Travel to Emergency Power floor indication
- Reached Emergency Power floor indication
- Lift remains active on em-power operation
- Reached fire recall floor indication
- Maintenance switch activated
- Inspection car top activated indication
- Inspection pit activated indication
- Emergency electrical operation activated
- Keep doors closed for maintenance indication
- Earth quake operation indication
- Travel to the earth quake operation floor
- Arrived at earthquake operation floor
- Test travel active indication
- Test travel has been completed
- Test travel has been failed
- Disabled/blocked door indication
- Lift parking indication
- Energy-saving mode 1
- Energy-saving mode 2
- Safety space head established indication
- Safety space pit established indication
- Safety space head not established indication
- Safety space pit not established indication

Selection Call acknowledge

- Up
- Down
- No direction

Floor indicator binary code

- Terminal 1...8

Floor indicator gray code

- Terminal 1..8

Floor indicator 7-segment

- 7-segment low digit terminal a..g
- 7-segment low digit terminal dp
- 7-segment tens digit terminal a..g
- 7-segment tens digit terminal dp

Pilot control relays

- Pilot control relay 1 (up)
- Pilot control relay 2 (down)
- Pilot control relay 3
- Pilot control relay 4
- Pilot control relay 5
- Quick start control relay (K10)

Drive unit signals

- Drive unit control signal 1
- Drive unit control signal 2
- Drive unit control signal 3
- Drive unit control signal 4
- Drive unit control signal 5
- Drive unit control signal 6
- Drive unit control signal 7
- Drive unit control signal 8
- Drive unit control signal 9
- Drive unit control signal 10
- Drive/Run
- Drive/Brake
- Drive/Power
- Drive/Enabled
- Hydraulic/Slow upward valve
- Re-leveling upward
- Re-leveling downward
- Manual Emergency Evacuation Brake enable
- Automatic Emergency Evacuation Brake release
- Lubrication trigger
- Lift start interlock indication
- Motor fan

Door controlling signals

- Door is moving
- Door open
- Door close
- Door nudging
- Retiring cam
- Door pre-open warning

- Door pre-close warning
- Door unlock motor
- Swing door opener
- Door Extra Supervision Test
- Extra Door Contactor
- Extra Door Supervision Warning Siren
- Safety light curtain test signal
- Cabin/car door lock unit
- Car door fully opened
- Car door fully closed
- Vertical landing or swing door closed
- Safety light curtain tripped
- Light curtain power supply off
- Light curtain power supply off car indication
- Safety light curtain tripped in door zone
- Extra Door Supervision tripped
- Safety light curtain tripped in door zone
- Extra Door Supervision tripped
- Fire service door open button acknowledge
- Fire service door close button acknowledge
- Door power contact
- Landing door unlocked indication
- Door closing buzzer signal
- Door closing buzzer signal fire/evacuation
- UCM test, open safety chain for the doors
- Default landing door table
- Secondary landing door table
- Third landing door table
- Fourth landing door table
- Allocation time is running
- Door is blocked red indication
- Door is free/clear green indication
- Door light curtain fault input acknowledge
- Wheel chair door open button acknowledge
- Door is re-opening

Position Signals

- Car flush on level
- Car at door zone
- Car/cabin moving upwards
- Car/cabin moving downwards
- Floor passing signal

Status/controller signals

- Lift parking
- Car illumination off
- Re-leveling active

• Re-leveling error
• Driving to check/stopover floor
• Arrived at check/stopover floor
• Driving to standby floor
• Arrived at standby floor
• Door-Bypass warning
• Car-Fan signal
• Drop Protection activation
• Emergency rescue active
• Inspection active
• Control cabinet light
• Enter code indicator
• Travel to Emergency Power floor
• Lift arrived at Emergency Power floor
• Service operation acknowledge
• Drive to service position
• Arrived at service position
• Lift at fire recall floor
• Fire alarm/service inspection buzzer
• Emergency Evacuation Acknowledge
• Travel to the low priority call floor
• Travel to the high priority call floor
• Arrived at the low priority call floor
• Arrived at the high priority call floor
• Circulating operation acknowledge
• Speed governor tripping output
• Chemical transport acknowledgment
• Drive to the chemical/hazardous goods operation floor
• Speed governor reset trigger
• Over travel reset indication
• Brake test acknowledge
• Travel to rescue operation floor
• Arrived at rescue operation floor
• Rescue/Salvage acknowledgment
• Automobile transport acknowledgment
• Automobile Traffic Light 'Forward'
• Automobile Traffic Light 'Backward'
• Automobile Traffic Light 'Stop'
• Automobile Traffic Light 'Warning'
• Automotive passenger/person transport acknowledgment
• Automotive transport 'Drive Vehicle Out' indication
• Reached Emergency Power floor, doors fully opened
• Lift in special operation mode
• Lift controller powered up
• Maintenance interval indication
• Telescopic toe guard operation [NC]
• External door bridging module activation (SZ)
• Barrier free passenger operation
• Barrier 1 low pit/head acknowledge display

- Barrier 1 low pit/head acknowledge buzzer
- Barrier 2 low pit/head acknowledge display
- Barrier 2 low pit/head acknowledge buzzer
- Barrier 3 low pit/head acknowledge display
- Barrier 3 low pit/head acknowledge buzzer
- Lift unblock operation...
- Helicopter standby
- Helicopter floor/allocation

Temperature thresholds

- Temperature threshold X

Generic supervision acknowledges

- Generic supervision acknowledge X

Pawl Device

- Extend pawl/bolt/locking device
- Retract pawl/bolt/locking device
- Car has been seated
- Pawl Device re-pumping
- Pawl device error indication
- Pawl device has been locked
- Pawl device has been unlocked

Call disabling acknowledge

- Car call disabled acknowledge
- Landing call disabled acknowledge
- Disabled car call pressed indication
- Disabled landing call pressed indication

ASME Access Function [US]

- ASME Access Indication [US]

Energy Saving Indication

- Energy saving indication
- Energy standby indication

Velocity Thresholds

- Velocity threshold X

Generic supervision siren/indication

- Generic supervision siren/indication X

Cloud based generic outputs

- Cloud based generic output X

Safety Chain Acknowledge

- Acknowledge Passive safety circuit
- Acknowledge Emergency stop
- Acknowledge Shaft door
- Acknowledge Car door A
- Acknowledge Car door B
- Acknowledge Door lock

93 Appendix – Drive Signal Mapping

93.1 CANopen CiA417 compatible Drive Unit

93.1.1 Main Contactors

Output Function	Default On-Board Hardware Terminal	Meaning
K1	O3.1 (K11)	Upward
K2	O3.2 (K12)	Downward
K3	O3.3 (K13)	Driving (up/down)
K4	O3.4 (K14)	Brake signal

93.1.2 Drive Unit Signals (direction/velocity)

► For modern CANopen CiA417 drives, all direction and velocity signals, as well as status and error signals, are transmitted using the CANopen bus system.

93.2 DCP 3/4+ compatible Drive Unit

93.2.1 Main Contactors

Output Function	Default On-Board Hardware Terminal	Meaning
K1	O3.1 (K11)	Upward
K2	O3.2 (K12)	Downward
K3	O3.3 (K13)	Driving (up/down)
K4	O3.4 (K14)	Brake signal

93.2.2 Drive Unit Signals (direction/velocity)

► For DCP 3/4+ drives, all direction and velocity signals, as well as status and error signals, are transmitted using the serial DCP connection.

93.3 Classic Terminal controlled Drive Unit

93.3.1 Main Contactors

Output Function	Default On-Board Hardware Terminal	Meaning
K1	O3.1 (K11)	Upward
K2	O3.2 (K12)	Downward
K3	O3.3 (K13)	Driving (up/down)
K4	O3.4 (K14)	Brake signal

93.3.2 Drive Unit Signals (direction/velocity/brake/enable)

93.3.2.1 Brake enable

The brake enable signal from the legacy inverter to the lift controller is called '*Brake Enable*' and can be programmed to one of the input terminals of the lift controller.

You will need to turn the usage of that signal on, before using it, following '*Settings Menu → More... → Drive Unit → Type of Drive Unit & Properties → Drive Options → More... → Brake enable signal usage*'.

93.3.2.2 Drive enable

If the legacy inverter is in need of some kind of '*Enable*' signal, that is indicated before any direction or brake signal is peaked high, use the '*Drive/Enabled*' output function signal for that purpose and parameterized it on some output terminal of the lift controller unit.

93.3.2.3 Direction Indication

The drive control signals 7 and 8 run along as direction signals, with '7-up' and '8-down' signaling.

93.3.2.4 KEB mapping

Velocity	Drive unit control signals
Velocity V0 (creeping)	4
Velocity V1 (slow)	5 + 3

Velocity	Drive unit control signals
Velocity V2 (medium)	5 + 4
Velocity V3 (intermediate)	5 + 4 + 3
Velocity V4 (rated)	4 + 3
Velocity VI (inspection)	5
Velocity VR (emergency rescue)	5
Velocity VN (re-levelling)	3

93.3.2.5 Generic drive unit mapping

Velocity	Drive unit control signals
Velocity V0 (creeping)	3
Velocity V1 (slow)	3 + 6
Velocity V2 (medium)	3 + 4
Velocity VI (inspection)	3 + 5
Velocity VR (emergency rescue)	3 + 5
Velocity VN (re-levelling)	2

93.3.2.6 Fuji mapping

Velocity	Drive unit control signals
Velocity V0 (creeping)	4 + 3
Velocity V1 (slow)	5
Velocity V2 (medium)	5 + 3
Velocity V3 (intermediate)	3 + 2
Velocity V4 (rated)	5 + 4 + 3
Velocity VI (inspection)	4
Velocity VR (emergency rescue)	4
Velocity VN (re-levelling)	3

93.3.2.7 Mentor mapping

Velocity	Drive unit control signals
Velocity V0 (creeping)	5 + 3
Velocity V1 (slow)	5 + 4
Velocity V2 (medium)	5 + 4 + 3
Velocity V3 (intermediate)	6
Velocity V4 (nominal)	6 + 3
Velocity VI (inspection)	4
Velocity VR (emergency rescue)	3
Velocity VN (re-levelling)	5

93.3.2.8 Arkel mapping

Velocity	Drive unit control signals
Velocity V0 (creeping)	3
Velocity V1 (slow)	6 + 3
Velocity V2 (medium)	4 + 3
Velocity VI (inspection)	5 + 3
Velocity VR (emergency rescue)	5 + 3
Velocity VN (re-levelling)	6 + 5
Quickstart	2

93.3.2.9 MFC2x/3x mapping

Velocity	Drive unit control signals
Velocity V0 (MFC-V0)	3
Velocity V1 (MFC-V2)	6
Velocity V2 (MFC-VN)	4
Velocity VI (MFC-VI)	5
Velocity VR (emergency rescue)	5
Velocity VN (re-levelling)	3

93.3.2.10 Legacy CT mapping

Velocity	Drive unit control signals
Velocity V0	2
Velocity V1	2 + 3
Velocity V2	1 + 2
Velocity V3	3 + 2 + 1
Velocity V4	4 + 3 + 2 + 1
Velocity VI (inspection)	2 + 3
Velocity VR (emergency rescue)	2 + 3
Velocity VN (re-levelling)	2

93.4 Legacy Pole changing Motor

93.4.1 Main Contactors

Output Function	Default On-Board Hardware Terminal	Meaning
K1	O3.1 (K11)	Upward
K2	O3.2 (K12)	Downward
K3	O3.3 (K13)	Generic Fast
K4	O3.4 (K14)	Generic Slow

93.4.2 Drive Unit Signals (direction/velocity)

None. Legacy Pole Changing Motor are controlled just with the main contactors.

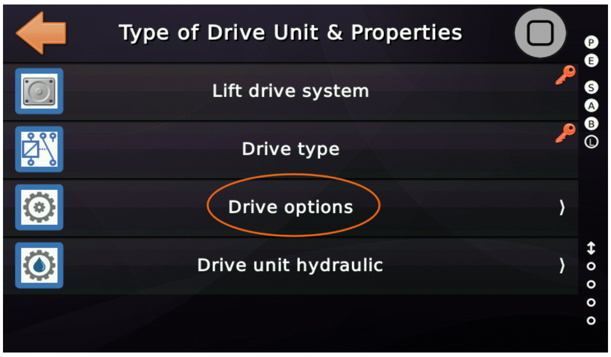
93.5 Hydraulic Drives

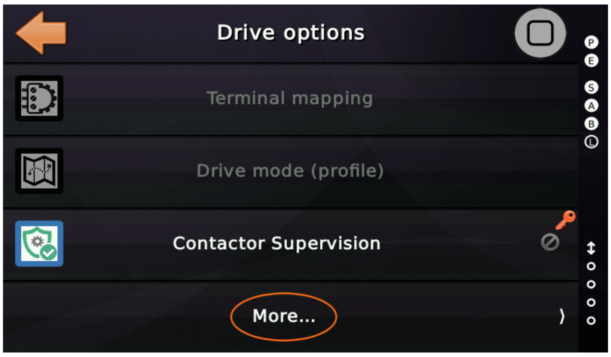
93.5.1 Main Contactors

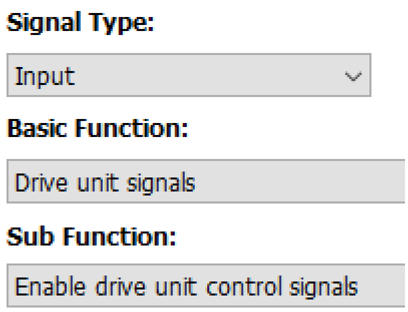
Output Function	Default On-Board Hardware Terminal	Meaning
K1	O3.1 (K11)	Upward
K2	O3.2 (K12)	Downward
K3	O3.3 (K13)	Generic Fast
K4	O3.4 (K14)	Depends on the actual pump model used: • Soft starter activation • Star/<u>Delta</u> signal *(K4 is activated to turn from Star to Delta)* • Inverter power signal • Primary power signal upward only

93.5.2 Soft-starter 'ramp-up' indication

In order to fire up the hydraulic valves **not** before the soft-starter has ramp-up the pump engine's current, the following input signal on NOUS can be used in conjunction with the corresponding option, that enables this feature in the first place.

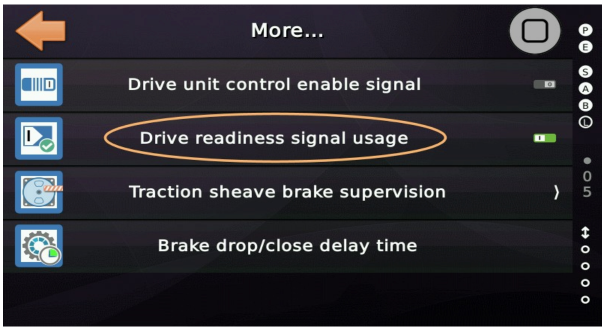






93.5.3 Drive Readiness Signal

If the drive provides a '*Ready Signal*', e. g. LRV, then this shall be connected to the lift controller as well. The input function in question would be '*Drive signals → Drive readiness signal*'. To tell the lift controller to expect a readiness signal, the following option has to be turned on as well '*Settings Menu → More... → Drive Unit → Type of Drive Unit & Properties → Drive Options → More... → Drive readiness signal usage'*.



► This signal should be peaked high if the drive unit is ready and dropped low if not.

93.5.4 Drive Unit Signals (direction/velocity)

93.5.4.1 Simple unregulated Hydraulic Drives

For simple unregulated hydraulic drives (3 or 4 valves) an additional signal exists to control the slow upward valve, featuring an optional afterrun time.

You will find the corresponding valve time by selecting first 'Home' and then 'Settings Menu' and then go to 'More' → 'Drive Unit' → 'Type of Drive Unit' → 'Drive unit hydraulic' → 'Hydraulic valve delayed off (upward)'.

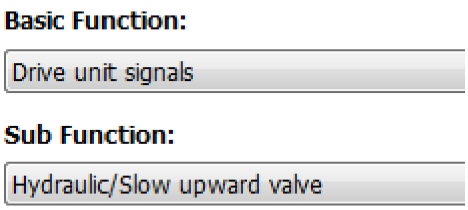


Figure 205: Output functions for the slow upward valve

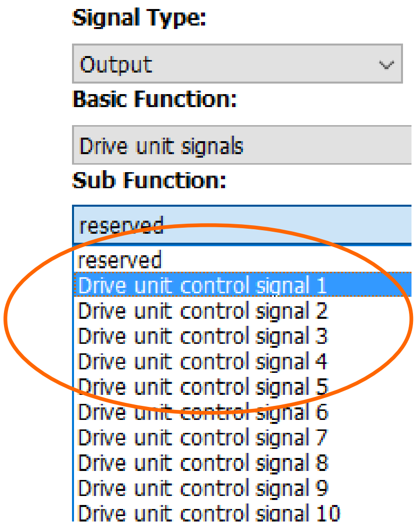
In the very same menu path, you also find an afterrun time for the oil pump, called 'Hydraulic pump delayed off' time. It only effects the pump engine for the upward direction.

► Both time parameters are setup in milliseconds and are 'off' by default.

93.5.4.2 LRV Signal Mapping

Velocity	Drive unit control signals
Velocity V0 (creeping) upward	7
Velocity V0 (creeping) downward	8
Velocity V1 (slow) upward	7 + 5 + 1
Velocity V1 (slow) downward	8 + 6 + 1
Velocity V2 (medium) upward	7 + 5 + 2
Velocity V2 (medium) downward	8 + 6 + 2
Velocity V3 (intermediate) upward	7 + 5 + 3
Velocity V3 (intermediate) downward	8 + 6 + 3
Velocity V4 (rated) upward	7 + 5
Velocity V4 (rated) downward	8 + 6
Velocity VI (inspection) upward	7 + 5 + 4
Velocity VI (inspection) downward	8 + 6 + 4
Velocity VR (emergency rescue) upward	7 + 5 + 4
Velocity VR (emergency rescue) downward	8 + 6 + 4
Velocity VN (re-levelling) upward	7
Velocity VN (re-levelling) downward	8

► For connecting the iValve (UCM) supervision (feedback) signal '**SMA**', the input function '*Drive unit signals → **Safety valve (UCM/RUN)** state*' shall be used.



93.5.4.3 NGV Signal Mapping

Velocity	Drive unit control signals
Velocity V0 (creeping) upward	7
Velocity V0 (creeping) downward	8
Velocity V1 (slow) upward	7 + 3
Velocity V1 (slow) downward	8 + 3
Velocity V2 upward	7 + 5
Velocity V2 downward	8 + 6
Velocity VI (inspection) upward	7 + 4
Velocity VI (inspection) downward	8 + 4
Velocity VR (emergency rescue) upward	7 + 4
Velocity VR (emergency rescue) downward	8 + 4
Velocity VN (re-levelling) upward	7
Velocity VN (re-levelling) downward	8

► For connecting the UCM supervision (feedback) signals, the input functions '*Drive unit signals → Safety valve (UCM/RUN) state / Safety valve (UCM/RDY) state*' shall be used.

The NGV/A3 controller cards deliver actually three signals to the lift controller, which have to be wired to some controller inputs terminals.

- RDY – 'Drive Unit Signals' → Safety valve [UCM/RUN] state, lift 1
- RUN - 'Drive Unit Signals' → Safety valve [UCM/RDY] state, lift 1
- UP - 'Drive Unit Signals' → Hydraulic pump enable (UCM/UP) signal, lift 1

► In order to feature the ' Hydraulic pump enable (UCM/UP) signal', turn the dedicated option on as well.

You find that option under '*Settings Menu*' → '*More...*' → '*Drive unit*' → '*Type of Drive Unit & Properties*' → '*Drive unit hydraulic*' → '*More...*' → '*Hydraulic pump enable signal usage*'.

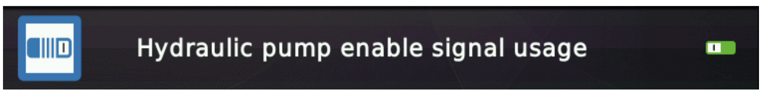


Figure 206: NGV specific 'UP' signal to enable the pump

93.5.4.4 GMV 3010 Signal Mapping

Velocity	Drive unit control signals
Velocity V0 (creeping) upward	7 (VMP)
Velocity V0 (creeping) downward	8 (VMD)
Velocity V1 upward	7 (VMP) + 3 (VML)
Velocity V1 downward	8 (VMD) + 3 (VML)
Velocity VI (inspection) upward	7 (VMP) + 3 (VML)
Velocity VI (inspection) downward	8 (VMD) + 3 (VML)
Velocity VR (emergency rescue) upward	7 (VMP) + 3 (VML)
Velocity VR (emergency rescue) downward	8 (VMD) + 3 (VML)
Velocity VN (re-levelling) upward	7 (VMP)
Velocity VN (re-levelling) downward	8 (VMD)

93.5.4.5 BLAIN SEV Signal Mapping

Velocity	Drive unit control signals
Velocity V0 (creeping) upward	7
Velocity V0 (creeping) downward	8
Velocity V1 upward	7 + 5
Velocity V1 downward	8 + 6
Velocity VI (inspection) upward	7 + 5 + 4
Velocity VI (inspection) downward	8 + 6 + 4
Velocity VR (emergency rescue) upward	7 + 5 + 4
Velocity VR (emergency rescue) downward	8 + 6 + 4
Velocity VN (re-levelling) upward	7
Velocity VN (re-levelling) downward	8

93.5.4.6 AZRS-1/2/3 Signal Mapping

Velocity	Drive unit control signals
Velocity V0 (creeping) upward	7 + 1
Velocity V0 (creeping) downward	8 + 1
Velocity V1 (slow) upward	7 + 3 + 1
Velocity V1 (slow) downward	8 + 3 + 1
Velocity V2 upward	7 + 4 + 1
Velocity V2 downward	8 + 4 + 1
Velocity VI (inspection) upward	7 + 5
Velocity VI (inspection) downward	8 + 5
Velocity VR (emergency rescue) upward	7 + 5
Velocity VR (emergency rescue) downward	8 + 5
Velocity VN (re-levelling) upward	7
Velocity VN (re-levelling) downward	8

► For connecting the UCM supervision (feedback) signal, the input function '*Drive unit signals → Safety valve (UCM/RUN) state*' shall be used.

93.5.4.7 AZFR Signal Mapping

Velocity	Drive unit control signals
Velocity V0 (creeping) upward	7
Velocity V0 (creeping) downward	8
Velocity V1 (slow) upward	7 + 5 + 4
Velocity V1 (slow) downward	8 + 4 + 3
Velocity V2 upward	7 + 5
Velocity V2 downward	8 + 5
Velocity VI (inspection) upward	7 + 4
Velocity VI (inspection) downward	8 + 4
Velocity VR (emergency rescue) upward	7 + 4
Velocity VR (emergency rescue) downward	8 + 4
Velocity VN (re-levelling) upward	7 + 6
Velocity VN (re-levelling) downward	8 + 6

► For connecting the UCM supervision (feedback) signal, the input function '*Drive unit signals → Safety valve (UCM/RUN) state*' shall be used.

93.5.4.8 AZMR Signal Mapping

Velocity	Drive unit control signals
Velocity V0 (creeping) upward	7 (Valve 1)
Velocity V0 (creeping) downward	8 (Valve 2)
Velocity V1 upward	7 (Valve 1) + 5 (Valve 4)
Velocity V1 downward	8 (Valve 2) + 6 (Valve 3)
Velocity VI (inspection) upward	7 (Valve 1) + 5 (Valve 4)
Velocity VI (inspection) downward	8 (Valve 2) + 6 (Valve 3)
Velocity VR (emergency rescue) upward	7 (Valve 1) + 5 (Valve 4)
Velocity VR (emergency rescue) downward	8 (Valve 2) + 6 (Valve 3)
Velocity VN (re-levelling) upward	7 (Valve 1)
Velocity VN (re-levelling) downward	8 (Valve 2)

93.5.4.9 Hydronic H300 Signal Mapping

Velocity	Drive unit control signals
Velocity V0 (creeping) upward	5 (Valve 12:A) in advance 300 ms
Velocity V0 (creeping) downward	5 (Valve 12:A) in advance 300 ms 8 (Valve 12:N)
Velocity V1 upward	5 (Valve 12:A) in advance 300 ms 3 (Valve 12:H)
Velocity V1 downward	5 (Valve 12:A) in advance 300 ms 8 (Valve 12:N) + 3 (Valve 12:H)
Velocity VI & VR (inspection) upward	5 (Valve 12:A) in advance 300 ms 3 (Valve 12:H)
Velocity VI & VR (inspection) downward	5 (Valve 12:A) in advance 300 ms 8 (Valve 12:N) + 3 (Valve 12:H)
Velocity VN (re-levelling) upward	5 (Valve 12:A) in advance 300 ms
Velocity VN (re-levelling) downward	5 (Valve 12:A) in advance 300 ms 8 (Valve 12:N)

► The valve 12:A is turned on 300 ms before starting and turned off 1,5 s after stop.

93.5.4.10 Hydronic H300-S Signal Mapping

Velocity	Drive unit control signals
Velocity V0 (creeping) upward	5 (Valve 12:A) in advance 300 ms
Velocity V0 (creeping) downward	5 (Valve 12:A) in advance 300 ms 8 (Valve 12:N)
Velocity V1 upward	5 (Valve 12:A) in advance 300 ms 3 (Valve 12:H)
Velocity V1 downward	5 (Valve 12:A) in advance 300 ms 8 (Valve 12:N) + 3 (Valve 12:H)
Velocity VI & VR (inspection) upward	5 (Valve 12:A) in advance 300 ms 4 (Valve 12:S)
Velocity VI & VR (inspection) downward	5 (Valve 12:A) in advance 300 ms 8 (Valve 12:N) + 4 (Valve 12:S)
Velocity VN (re-levelling) upward	5 (Valve 12:A) in advance 300 ms
Velocity VN (re-levelling) downward	5 (Valve 12:A) in advance 300 ms 8 (Valve 12:N)

► The valve 12:A is turned on 300 ms before starting and turned off 1,5 s after stop.

94 Appendix – Safety Chain on the NOUS-SB

94.1 Scope of Application

The Safety Chain Sensing circuit monitors the speed governor contact (passive safety chain), the emergency stop signal, the landing door contact, the car door contacts and the door lock contact in lift controller applications for hydraulic and traction/cable lifts. A sequential switching circuit evaluates these signals further and makes them available to the micro controller (MCU). The connection diagram is shown in the figure below.

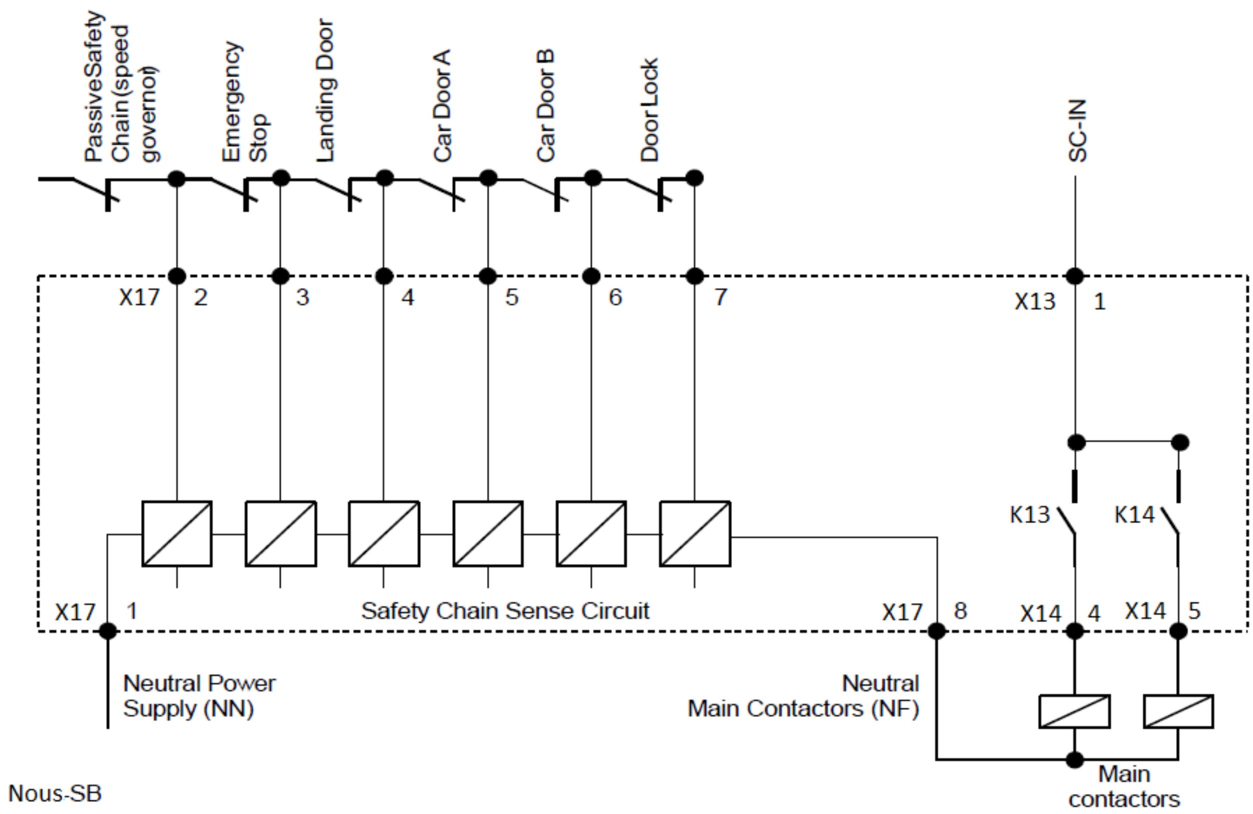


Figure 207: Schematics of the Safety Chain Sense Circuit at the NOUS-SB board

The safety circuit with the safety chain sensing unit included in the NOUS, is fused with a maximum current of 4 A. The connection of the neutral potential "NN" from the power supply network is done via the terminal **X17.1** at the NOUS-SB board.

The common neutral potential of the drive contactors, labeled as "NF", shall only be connected to terminal **X17.8** of the NOUS-SB board.

94.2 Testability

In order to test the correct wiring related to the drive/main contactors and the NOUS-SB board, including the terminals **X17.1**, **X17.8**, **X13.1**, **X14.4**, **X14.5**, the neutral potential (NN) and the common/shared neutral for the main/drive contactors (NF) shall be verified.

1. Start the lift by a call to the very next stop. The pilot relays that driving the main contactors are turned on then.

2. The safety chain is closed, causing terminal **X14.4** or **X14.5** of the NOUS-SB to have safety chain potential and the driving/main contactors are activated.

3. Disconnect the wire at terminal **X17.1** from the NOUS-SB board, thus the neutral of the power supply network (NN) is interrupted for the NOUS-SB board and the main/driving contactors.

4. The driving/main contactors are turned off and separate the energy to the drive unit on all electrical poles.

5. After that, reconnect the wire at terminal **X17.1** again.

6. Repeat this test procedure using the terminal **X17.8** of the NOUS-SB labeled "NF" the next time.

7. After that, reconnect the wire at terminal **X17.8** again.

8. The lift is correctly wired, if the main/driving contactors had been turned off in both test scenarios. Otherwise the wiring has to be briefly checked for faults.

Figure 208: I/O SB-Board – X14

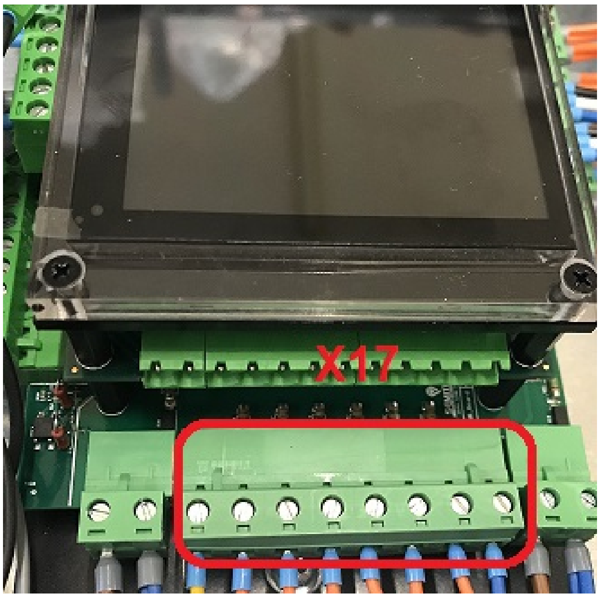


Figure 209: I/O SB-Board – X17

95 Safety Circuit at the NOUS-SZ Board

The safety circuit (SZ) may be used for these purposes:

- Electrical safety devices in accordance with DIN EN81 part 20 & part 50, especially chapter 5.6 and is used as a replacement for mechanical switches.

- Approaching and re-levelling with opened car and landing doors - see DIN EN81 part 20 & part 50, especially chapter 5.12.1.4 "*Control of levelling, re-levelling and preliminary operation with doors not closed and locked*".

- Detection of unintended car movement (UCM) in accordance with the doors open being - see DIN EN 81 part 20 & 50, especially chapter 5.6.

The safety circuit is implemented featuring four positively driven safety relays.

- Relay "RL1A" = Start relay

- Relay "RL2A" = Supervision relay

- Relay "RL3A" = Door zone relay channel 2 (internally generated featuring an absolute positioning encoder.

- Relay "RL4A" = Door zones relay channel 1 (externally from a door zone sensor, e. g. magnetic/solenoid switch.

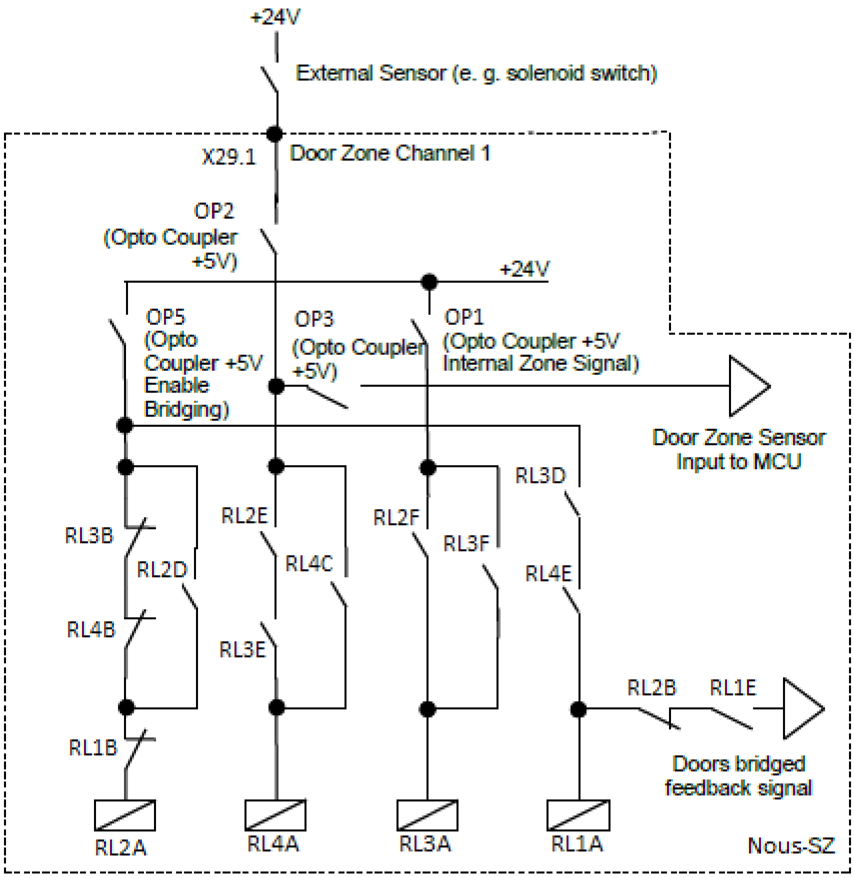


Figure 210: Principle of the Safety Circuit at the NOUS-SZ board.

95.1 Testability

1. Start the lift by a call to the very next stop. All relays of the safety circuit are turned off when the cabin/car is leaving the door zone.

2. Disconnect the wire to terminal **X29.1**, therefore, the sensor element input on channel one will keep being off.

3. The lift controller activates the safety circuit (Enable Bridging) and the relay RL2A will be turned on.

4. After the door zone is reached, the relay RL3A will be turned on, but the relay RL4A can not be turned on.

5. The circuit is not working properly and the bypass/bridging of the door safety chain can not happen.

6. The lift stops and notes that no door chain bridging had occurred. The system issues a fault and the lift stays blocked.

7. Now reconnect the wire to terminal **X29.1** and unblock the lift control system via the user interface. The lift is operational again.

Figure 211: I/O SZ-Board – Terminal X29.

95.2 Certification

LIFTINSTITUUT

EU-TYPE EXAMINATION CERTIFICATE

Issued by Liftinstituut B.V.
identification number Notified Body 0400,
commissioned by Decree no. 2018-0000125182

Certificate no.	: NL20-400-1002-335-01 Revision no.: -
Description of the product	: Lift control unit for electric or hydraulic lifts with monitoring circuit for safety chain, door bridging circuit, detection of uncontrolled movement of the car (UCMP) and brake monitoring (ACOP/UCMP)
Trademark	: Semitron S.A.
Type no.	: NOUS control, SB and SZ board
Name and address of the Manufacturer	: Semitron S.A. Industrial area of Sindos P.C. 57022, Thessaloniki Greece
Name and address of the certificate holder	: Semitron S.A. Industrial area of Sindos P.C. 57022, Thessaloniki Greece
Certificate issued on the following requirements	: Lifts Directive 2014/33/EU
Certificate based on the following standard	: EN 81-20:2014, clause 5.6.6.2, 5.6.7.3, 5.6.6.7, 5.6.7.9, 5.11.1, 5.11.2.1.2 and 5.11.2.3 EN 81-50:2014, clause 5.8 and 5.15
Test laboratory	: None
Date and number of the laboratory report	: None
Date of EU-type examination	: October 2019 – January 2020
Additional document with this Certificate	: Report belonging to the EU type-examination certificate no.: NL20-400-1002-335-01
Additional remarks	: Key parameters for detecting UCM Detection distance: installed door-zone (variable) Max. response time NOUS control : 10ms Speed and distance travelled : to be calculated
Conclusion	: The safety component meets the requirements of the Lifts Directive 2014/33/EU taking into account any additional remarks mentioned above.

Amsterdam
Date : 23-01-2020
Valid until : 23-01-2025

ing. P.J. Peeters
Manager Certification

Certification decision by

96 Application Menu Structure

96.1 Settings Menu

```
- Cabin/Car
|
+- Car/cabin light off timer [CO:4111]
| This object defines the time after the car/cabin light is turned off, if the lift is
| being idle.
|
+- Cabin light voltage monitoring [CO:414A]
| The car/cabin light voltage monitoring is using a 230V input on the safety board to
| detect a fail of the power supply feeding the cabin light. The input is extra debounced
| for stability reasons.
|
+- Displays & Indicators
| |
| +- Arrival indication
| | |
| | +- Arrival indicator delay time [CO:4114]
| | | This object defines the arrival indicator delay time, starting after having
| | | passed the counting pulse.
| | |
| | +- Arrival indicator trigger [CO:4115]
| | | This object defines which call types will trigger the arrival indicator -
| | | typically landing calls do.
| | |
| | +- Arrival indicator pulse duration [CO:4116]
| | | This object defines how long the pulse is that triggers the arrival (gong)
| | | module. The gong pulse length was originally made for mechanical bells with a
| | | magnet to push a rod to the bell house.
| | |
| | +- Pulse the arrival indicator in down direction twice [CO:41C1]
| | This object defines, if the arrival indicator for the downward direction, shall
| | be pulsed twice via the bus system. Be aware that a lot of voice announcers or
| | displays already pulsing it twice, so activating this option may make them
| | pulse four times then.
| | |
| | +- Arrival indicator delay policy [CO:41EE]
| | This object defines when the arrival indicator delay time shall start. By
| | default it will start, when the lift is approaching. But you may want to start
| | the delay time with the doors opening.
| |
| +- Hall lantern
| | |
| | +- Hall lantern options [CO:4112]
| | | This object defines the moment to turn on the hall lantern, usually when the
| | | lift arrives. For swing doors that are unlocked by the car door being fully
| | | opened, it might be useful, that the hall lantern is not turned on, before the
| | | car door has been fully opened.
| | |
| | +- Hall lantern priority policy [CO:41BA]
| | This object defines if the hall lanterns shall blink at the dedicated floor,
| | when the lift is on priority or guest call operation mode.
| | |
| | |
| | +- Hall lantern timeout [CO:41C3]
| | This object defines a timeout for the hall lanterns to be dropped. This might
| | be useful if local regulations ask for the hall lanterns to be turned off after
| | a while, with the lift being stationary or parking.
| |
| +- Floor announcement
| | |
| | +- Floor announcement delay time [CO:4308]
| | This object defines the floor announcement delay time, starting after having
| | passed the counting pulse.
```

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| |
| +- Announcement lift going up/down
| | |
| | +- Announcement lift going up/down delay time [CO:4382]
| | This object defines the delay time, starting after door opening, to trigger the
| | voice announcement, telling the direction were the lift will go next.
| |
| +- Car floor display supervision
| |
| |  +- Car floor display supervision 1 [CO:42A8]
|      | This object defines if the lift shall supervise the communication to the car's floor
|      | display, by means of monitoring the heartbeat, that the floor display is
|      | transmitting to indicate its current operating state. If the heartbeat is missing
|      | for five minutes in a row, the lift will enter out of order operation. This
|      | supervision is ignored as long as the lift in on Assembling/Installation operation
|      | mode.
|
|    +- Car floor display supervision 2 [CO:42A9]
|       | This object defines if the lift shall supervise the communication to the car's floor
|       | display, by means of monitoring the heartbeat, that the floor display is
|       | transmitting to indicate its current operating state. If the heartbeat is missing
|       | for five minutes in a row, the lift will enter out of order operation. This
|       | supervision is ignored as long as the lift in on Assembling/Installation operation
|       | mode.
|
+- Car Preference
| |
| +- Car calls on car preference [CO:4105]
| | Defines if one or more car calls can be entered on car preference operation
| |
| +- Landing calls on car preference [CO:4140]
| | This object defines if landing calls should be collected or canceled on car
| | preference operation.
| |
| +- Input Terminal Type [CO:4142]
| | This object defines if the input for activating car preference is operated like a
| | (key) switch or like a button or card reader, just providing an impulse.
| |
| +- Car Preference Timeout [CO:41A0]
| | This object defines the timeout for the car preference function, if featuring a card
| | reader/button instead of a key switch having two permanent positions.
| |
| +- More…
|        |
|        +- Re-enable locked car calls [CO:4175]
|        | This object defines if car calls, being disabled via the internal table, shall
|        | be re-enabled, if the lift enters car preference operation.
|        |
|        +- Open doors on activation [CO:4141]
|        | This object defines to re-open the last opened door, if car preference is
|        | activated and the lift is idle at the door zone.
|        |
|        +- Manual door operation on car preference [CO:419A]
|          This object defines if the doors shall be operated in manual operation mode,
|          using constant pressure on the door open/close buttons, if car preference (VIP
|           or independent mode) has been activated.
|
+- More…
|
+- Car Fan
|        |
|        +- Operating mode [CO:4290-1]
|        | This object defines how the cabin/car fan shall operate. Typically the fan
|        | starts automatically when the lift starts. An After-Run-Time parameter defines
|        | how long the fan shall be kept going after the lift has stopped. Beside that
|        | the fan can be started and stopped with a push-button. A Maximum-Run-Time
|        | parameter is used to turn the fan off automatically after a certain time-span.
|        |
|        +- Afterrun time [CO:4290-2]
|        | This object defines how the cabin/car fan shall operate. Typically the fan
|        | starts automatically when the lift starts. An After-Run-Time parameter defines
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```
|       | how long the fan shall be kept going after the lift has stopped. Beside that
|       | the fan can be started and stopped with a push-button. A Maximum-Run-Time
|       | parameter is used to turn the fan off automatically after a certain time-span.
|       |
|       +- Maximum runtime [CO:4290-3]
|       This object defines how the cabin/car fan shall operate. Typically the fan
|       starts automatically when the lift starts. An After-Run-Time parameter defines
|       how long the fan shall be kept going after the lift has stopped. Beside that
|       the fan can be started and stopped with a push-button. A Maximum-Run-Time
|       parameter is used to turn the fan off automatically after a certain time-span.
|
+- Customizable buzzer signal
| |
| +- Overload [CO:41EF-1]
| | This object defines which indications shall turn the customizable buzzer output
| | on. This output can be helpful, to have one single output for driving a buzzer,
| | triggered by different events, like overload, door nudging, driving with pit
| | inspection, having fire service indicated while being on inspection operation
| | or indicating a light barrier fault.
| |
| +- Fire alarm/service inspection buzzer [CO:41EF-2]
| | This object defines which indications shall turn the customizable buzzer output
| | on. This output can be helpful, to have one single output for driving a buzzer,
| | triggered by different events, like overload, door nudging, driving with pit
| | inspection, having fire service indicated while being on inspection operation
| | or indicating a light barrier fault.
| |
| +- Inspection in the pit driving buzzer [CO:41EF-3]
| | This object defines which indications shall turn the customizable buzzer output
| | on. This output can be helpful, to have one single output for driving a buzzer,
| | triggered by different events, like overload, door nudging, driving with pit
| | inspection, having fire service indicated while being on inspection operation
| | or indicating a light barrier fault.
| |
| +- Door light curtain fault input acknowledge [CO:41EF-4]
| | This object defines which indications shall turn the customizable buzzer output
| | on. This output can be helpful, to have one single output for driving a buzzer,
| | triggered by different events, like overload, door nudging, driving with pit
| | inspection, having fire service indicated while being on inspection operation
| | or indicating a light barrier fault.
| |
| +- More…
| |
| +- Door nudging [CO:41EF-5]
| | This object defines which indications shall turn the customizable buzzer
| | output on. This output can be helpful, to have one single output for
| | driving a buzzer, triggered by different events, like overload, door
| | nudging, driving with pit inspection, having fire service indicated while
| | being on inspection operation or indicating a light barrier fault.
| |
| +- Door preclose warning [CO:41EF-6]
| | This object defines which indications shall turn the customizable buzzer
| | output on. This output can be helpful, to have one single output for
| | driving a buzzer, triggered by different events, like overload, door
| | nudging, driving with pit inspection, having fire service indicated while
| | being on inspection operation or indicating a light barrier fault.
| |
| +- Door preopen warning [CO:41EF-7]
| This object defines which indications shall turn the customizable buzzer
| output on. This output can be helpful, to have one single output for
| driving a buzzer, triggered by different events, like overload, door
| nudging, driving with pit inspection, having fire service indicated while
| being on inspection operation or indicating a light barrier fault.
|
+- Telescopic toe guard supervision
        |
        +- Telescopic toe guard usage [CO:4198-1]
        | This object defines if the lift has to supervise a telescopic toe guard via an
        | input function. These special toe guards are usually used, if having a low pit
        | situation, having not enough room for them in the lowest floor. Usually they
        | are spring loaded and hold by an electromagnet. On a power drop they are pushed
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       | out and when the power comes back, the lift has to push them in again, by
       | driving below the lowest floor, so that the toe guard will touch the ground.
       | The lift will stop, if having reached the parameterized stop point, usually
       | some millimeters below floor level.
       |
       +- Telescopic toe guard push-in distance [CO:4198-2]
       | This object defines the distance to be driven below the lowest floor level, in
       | order to push-in the telescopic toe guard completely. This value is given in
       | millimeter, below the bottom floor level.
       |
       +- Telescopic toe guard velocity [CO:4198-3]
       This option determines the velocity at which the car travels to the lowest
       floor and then decelerates and retracts the telescopic toe guard. The lift will
       travel at rated speed to the floor above the lowest landing and then travel to
       the lowest floor at the set reduced speed and then decelerate.

- Call Processing
    |
    +- Type of Call Processing
    | |
    | +- Type of Call Processing [CO:4004]
    | | This parameter defines the type/mode of the lift controller's call processing, like
    | | PB, APB or Collective.
    | |
    | +- Car calls on APB lift operation [CO:4104]
    | Defines if one or more car calls can be entered on APB lift operation.
    |
    +- Car calls
    | |
    | +- Car call cancelling
    | | |
    | | +- Enable Car call cancelling [CO:410E]
    | | | Enable car call cancelling by pressing the already acknowledge car call again.
    | | | This needs 4-wire technology or a I/O component that supports pulsing the
    | | | output to be able to read the input (button) even if the lamp has been lit up.
    | | |
    | | +- Button hold time car cancellation [CO:4120]
    | | This object defines the time the passenger has to hold the car call button
    | | pressed in order to cancel an already active car call.
    | |
    | +- Car call disabling
    | | |
    | | +- Car call disabling table [CO:401A]
    | | | This object holds the table containing a door mask entry per floor for car
    | | | calls being disabled. These locked car calls may be enabled via a input
    | | | terminal or bus system message.
    | | |
    | | +- Car call 'enabling' afterrun time [CO:401C]
    | | | This object defines an 'after-run' time that has to expire after the car call
    | | | enabling signal peaks down, before the car call is disabled again.
    | | |
    | | +- Passenger user groups enable
    | |        |
    | |        +- Passenger user groups enable [CO:408B]
    | |        | This object enables a table that may contain a door mask entry per floor,
    | |        | defining a secondary passenger user group. The idea is that those
    | |        | passengers will only be able to enter car calls on the given floors/doors,
    | |        | when they have entered the lift from one of those landings as well. In
    | |        | order to make this work, those car calls have to be disabled for normal
    | |        | passengers, via the car call disabling table in the first place.
    | |        |
    | |        +- First passenger user group table [CO:408C]
    | |        | This object holds the table containing a door mask entry per floor,
    | |        | defining a secondary passenger user group. The idea is that those
    | |        | passengers will only be able to enter car calls on the given floors/doors,
    | |        | when they have entered the lift from one of those landings. In order to
    | |        | make this work, those car calls have to be disabled for normal passengers
    | |        | via the car call disabling table in the first place.
    | |        |
    | |        +- Second passenger user group table [CO:408D]
    | |        | This object holds the table containing a door mask entry per floor,
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| |        | defining a secondary passenger user group. The idea is that those
| |        | passengers will only be able to enter car calls on the given floors/doors,
| |        | when they have entered the lift from one of those landings. In order to
| |        | make this work, those car calls have to be disabled for normal passengers
| |        | via the car call disabling table in the first place.
| |        |
| |        +- Third passenger user group table [CO:408E]
| |          This object holds the table containing a door mask entry per floor,
| |          defining a secondary passenger user group. The idea is that those
| |          passengers will only be able to enter car calls on the given floors/doors,
| |          when they have entered the lift from one of those landings. In order to
| |          make this work, those car calls have to be disabled for normal passengers
| |          via the car call disabling table in the first place.
| |
| +- Car call code table
| |     |
| |     +- Car call code table [CO:404A]
| |     | This object holds the table containing the floors and their door masks,
| |     | together with the numerical code needed to enable the call. The code has to be
| |     | entered via the car call panel, using the car call buttons as a number pad. You
| |     | may use the output 'Status/controller signals > Enter code indicator' to signal
| |     | that a code has to be entered.
| |     |
| |     +- Car call code time [CO:404B]
| |     |   This object defines the time span granted to the user in order to enter the
| |     |   numerical code.
| |     |
| |     +- Door open button using car call codes [CO:407F]
| |        This object defines if for locked car calls, the door open button shall trigger
| |        the code entering request. The codes are entered via the car call panel.
| |
| +- Max. car calls on 'no-load' [CO:4040]
| |    This parameter defines how many car calls can be registered, if the load measuring
| |    unit of the car/cabin indicates, that the car is empty.
| |
| +- Cancel car calls on no-load policy [CO:4063]
|     This object defines if pending car calls shall be cancelled when the doors are
|     closing, if more car calls had been registered as stated by the 'Max. car calls on
|     no-load' car call policy and the load measuring unit of the car/cabin indicates,
|     that the car is actually empty.
|
+- Landing calls
| |
| +- Misboarder detection [CO:410F]
| | Enable the detection of misboarders - passengers that had pressed the wrong landing
| | call direction and then step into the car giving a car call in the opposite
| | direction. The lift controller will check which door had been opened and on which
| | door, using the light curtain, passengers had stepped in. If the given car call is
| | then entered in the wrong direction, the remaining landing call in the other
| | direction will then be canceled on that door side.
| |
| +- Landing call disabling
| | |
| | +- Landing call disabling table [CO:401B]
| | | This object holds the table containing a door mask entry per floor for landing
| | | calls being disabled. These locked landing calls may be enabled via an input
| | | terminal, a bus system message or a time planner function.
| | |
| | +- Landing call 'enabling' afterrun time [CO:401D]
| | | This object defines an 'after-run' time that has to expire after the landing
| | | call enabling signal peaks down, before the landing call is disabled again.
| | |
| | +- Lock low priority calls as well [CO:42F0]
| | | This object declares if the table used for locking landing calls, applies to
| | | low priority landing calls as well.
| | |
| | +- Lock high priority calls as well [CO:42F1]
| | This object declares if the table used for locking landing calls, applies to
| | high priority landing calls as well.
| |
| +- Landing call acknowledge policy [CO:4062]
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| | This object defines when the landing call acknowledge (lamp) shall be canceled.
| | Usually the landing call acknowledge is turned off, when the lift has arrived to the
| | designated floor. For swing doors that are unlocked by the car door being fully
| | opened, it might be useful, that the landing call lamp is not turned off, before the
| | car door has been fully opened.
| |
| +- Latched landing call lamps blink while driving [CO:430E]
| | This option makes all the pending (latched) landing call acknowledges (lamps) do
| | blink/flash, when the lift is driving. If the lift is standstill the acknowledges
| | (lamps) will be constantly turned on.
| |
| +- Inhibit time between up & down call [CO:41EB]
|    This object defines if an inhibit time shall prevent the passenger from pressing
|    both landing calls at about the same time. This shall prevent the bad habit of some
|    passengers pressing both hall call buttons, thinking that the lift would arrive
|    faster and later on moan about the lift, driving in the wrong direction.
|
+- Priority calls
| |
| +- Low priority landing calls
| | |
| | +- Collect low priority landing calls [CO:410A]
| | | Use this object to allow collecting low priority call calls.
| | |
| | +- Allow multiple low priority calls on the very same floor [CO:410C]
| | | Allow multiple low priority landing calls on the very same floor, for example
| | | used for bed transportation in a hospital.
| | |
| | +- Unlock car calls via car preference [CO:4163]
| | | Use this object to define if the car calls on a low priority operation, shall
| | | only be enabled, if the car preference switch has been activated.
| | |
| | +- Rule for pending car calls [CO:4100]
| | | This object defines what happens to pending car calls, if a low priority
| | | landing call is received.
| | |
| | +- More…
| |        |
| |        +- Enter car calls on priority operation [CO:414C]
| |        | This object defines if the passenger on a low priority operation is
| |        | allowed to enter several car calls or just one.
| |        |
| |        +- Cancel/disable landing calls [CO:414E]
| |        | This object defines if pending landing calls shall be cancelled, if a low
| |        | priority call has been entered or if they shall be collected.
| |        |
| |        +- Pickup passenger with no-load [CO:4102]
| |        | This object defines whether passengers are to be picked up on a low
| |        | priority operation, when the cabin is emptied. This requires a reliable
| |        | load measuring device.
| |        |
| |        +- Re-enable car calls on low priority operation [CO:41B1]
| |        | This object defines if car calls, being disabled via the internal table,
| |        | shall be re-enabled, if the lift enters low priority landing call
| |        | operation.
| |        |
| |        +- Cancel load time on low priority calls [CO:42EE]
| |          This object defines, if a pending load time, usually started with a key
| |          switch in the car, shall be aborted, if a priority landing call has been
| |          registered.
| |
| +- High priority landing calls
|          |
|          +- Collect high priority landing calls [CO:410B]
|          | Use this object to allow collecting high priority call calls.
|          |
|          +- Allow multiple high priority calls on the very same floor [CO:40FF]
|          | Allow multiple high priority landing calls on the very same floor, for example
|          | used for the medical personal in a hospital.
|          |
|          +- Unlock car calls via car preference [CO:413F]
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    |          | Use this object to define if the car calls on a high priority operation, shall
    |          | only be enabled, if the car preference switch has been activated.
    |          |
    |          +- Rule for pending car calls [CO:4101]
    |          | This object defines what happens to pending car calls, if a high priority
    |          | landing call is received.
    |          |
    |           +- More…
    |                 |
    |                 +- Enter car calls on priority operation [CO:414D]
    |                 | This object defines if the passenger on a low priority operation is
    |                 | allowed to enter several car calls or just one.
    |                 |
    |                 +- Cancel/disable landing calls [CO:414F]
    |                 | This object defines if pending landing calls shall be canceled, if a high
    |                 | priority call has been entered or if they shall be collected.
    |                 |
    |                 +- Pickup passenger with no-load [CO:4103]
    |                 | This object determines whether passengers are to be picked up on a high
    |                 | priority operation, when the cabin is emptied. This requires a reliable
    |                 | load measuring device.
    |                 |
    |                 +- Re-enable car calls on high priority operation [CO:41B2]
    |                 | This object defines if car calls, being disabled via the internal table,
    |                 | shall be re-enabled, if the lift enters high priority landing call
    |                 | operation.
    |                 |
    |                 +- Cancel load time on high priority calls [CO:42EF]
    |                    This object defines, if a pending load time, usually started with a key
    |                    switch in the car, shall be aborted, if a priority landing call has been
    |                    registered.
    |
    +- Guest calls
       |
       +- Allow car call reentering [CO:4301-1]
       | This option handles the reentering of car calls while the guest call operation if
       | waiting for the lift to be ready. After enabling this option newly entered guest
       | calls will be processed while the guest transfer is delayed.
       |
       +- Collect landing calls [CO:4301-2]
       | This option enables the collection of landing calls during an ongoing guest call
       | operation. If deactivated landing calls will not be accepted.
       |
       +- Guest pick-up with empty car [CO:4301-3]
       | This option decides if an empty car is necessary for starting the guest call
       | operation. Otherwise it can not be ensured that all passengers left the car.
       |
       +- Guest delivery by car call [CO:4301-4]
       | This option enables the start of the guest delivery by pressing the car call button.
       |
       +- Guest delivery by weight change [CO:4301-5]
       This option enables the start of the guest delivery by noticing a weight change.

- Controller/Piloting
       |
       +- Times & Options
       | |
       | +- Parking
       | |     |
       | |     +- Parking strategy [CO:419F]
       | |     | This object defines if the lift shall feature a simple parking floor or a more
       | |     | enhanced mode, like 'zone parking' in a group/team environment. If running in
       | |     | 'zone parking' mode, the program would split the hoistway into parts and
       | |     | ensures that every part is covered by a team lift.
       | |     |
       | |     +- Parking timer [CO:4117]
       | |     | This object defines the time to park the lift when no calls are present. The
       | |     | parking floor is determined by the parking strategy/mode and other options.
       | |     |
       | |     +- Parking floor [CO:4107-3]
       | |     | This object defines the parking floor, used for parking the lift, if being
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| |     | idle.
| |     |
| |     +- Parking in-between floors [CO:4060]
| |     | This object defines the distance used to park in-between floors, relative to
| |     | the floor level position of the parking floor used.
| |     |
| |     +- More…
| |            |
| |            +- Cars at lobby floor [CO:419E]
| |            | This object defines how many cars shall be kept at the lobby floor, if
| |            | featuring the 'zone parking' strategy.
| |            |
| |            |
| |            +- Lobby floor/main entrance [CO:4107-2]
| |            | Defines the lobby floor, which is the main entrance of the building.
| |            |
| |            +- Doors in parking floor [CO:4064]
| |            |  This object defines if the doors shall close after a while after having
| |            |  reached the parking floor.
| |            |
| |            +- Parking floor cross out table [CO:41C8]
| |              This object holds the table containing the floors that shall be crossed
| |              out in zone parking mode (team only). Crossing floors out for zone parking
| |              might be useful, if certain floors in a building are, for security
| |              reasons, protected and parking the cars at those floors is unwanted.
| |
| |
| +- Intermediate stopover
| | |
| | +- Stopover floor [CO:4107-1]
| | | Defines a stopover floor used for example in a hotel's lobby.
| | |
| | +- Direction for stopover floor [CO:4109]
| | | Defines in which direction the car should stop at the stopover floor.
| | |
| | +- Stopover at floor with cabin load only [CO:4108]
| | | Defines if the car no-load signal should be taken in account for stopping at
| | | the stopover floor.
| | |
| | +- Doors at intermediate-stop-over floor [CO:413C]
| | | Use this object to define the doors that shall open when doing a intermediate
| | | stop-over, typically in the lobby floor.
| | |
| | +- Wait for security signal at the intermediate stopover floor [CO:41E7]
| | This object defines if the lift shall wait, having arrived at the intermediate
| | stopover floor, for the security run signal being indicated, before continuing
| | driving to its dedicated destination.
| |
| +- Floor display timers
| |     |
| |     +- Floor displays off timer [CO:4110-1]
| |     | This object defines the time after the floor displays will be turned off, if
| |     | the lift is being idle. This timer will effect hall lanterns and floor
| |     | indicators.
| |     |
| |      +- Floor displays reducing timer [CO:4110-2]
| |         This object defines the time after the floor displays will be reduced in
| |         brightness, if the lift is being idle. This timer will effect hall lanterns and
| |         floor indicators.
| |
| +- Lift fault signalization delay [CO:415B]
| |  This object defines the delay to turn on the 'Lift fault' output signal, if the lift
| |  is in a fault situation.
| |
| +- More…
| |
| +- Shuttle Service (snow cleaning) [CO:4199-1]
| | This object defines if the lift has to travel once in a while to one end of the
| | hoistway and then the next time to the other end. This might be used for snow
| | cleaning, if the lift in question is an inclining lift or there is the risk of
| | the car freezing to the rails. This function is usually activated via an input
```

```
| | terminal.
| |
| +- Wait for security signal before start driving
| |     |
| |     +- Wait for security signal before start driving [CO:41E8-1]
| |     | Using this feature it can be defined, that the lift shall wait at certain
| |     | floors for a security signal to peak up once. The signal in question is
| |     | 'Special Function > Security Run'.
| |     |
| |     +- Wait for security signal door table [CO:41E9]
| |     This table defines the floors and doors were the lift shall wait for the
| |     security signal to peak up, in order to start driving.
| |
| +- Lift occupied signalization policy [CO:4197]
| | This object defines if the 'Lift occupied' signal shall only be generated for
| | APB & PB operation or generally for any kind of call processing.
| |
| +- Afterrun time Occupied signal [CO:42E0]
| |     This object defines a short delay time to switch off the occupied signal again,
| |     when the doors are closed, there are no car calls, optionally the load
| |     measuring device indicates no-load and the lift is free again to accept landing
| |     calls.
| |
| +- Use alternative destination instead of creeping [CO:4081]
|       This object defines that if the lift can't go to a designated destination,
|       because there is no discrete velocity to use and only creeping would be an
|       option, the lift will automatically determine an alternate destination as a
|       stopover to start from there. This is a feature, that is turned on by default
|       but maybe turned off, if the lift is used in a bank building or a prison
|       building or another environment, were this would be not accepted.
|
+- Remote-Off/Standby
| |
| +- Final/destination floor [CO:4107-4]
| | This object defines the floor to which the car/cabin is moved, if the lift is
| | switched to remote-off/standby mode.
| |
| +- Check/stop-over floor [CO:4107-5]
| | This object defines the floor to which the car/cabin is moved for a stop-over,
| | before finally being driven to the destination floor. Useful for hotel/lobby
| | operation to have a look in the car, before the lift goes to standby.
| |
| +- Doors at check/stop-over floor [CO:4145]
| | Use this object to define the doors that shall open when doing a stop-over,
| | typically in the lobby floor, for checking that the car/cabin is empty, before
| | leaving to the destination floor and turning the lift to remote-off/standby.
| |
| +- Doors at standby/remote-off floor [CO:41EA]
| | This object defines if the doors shall close or be kept open, when having reached
| | the standby/remote-off floor.
| |
| +- More…
|       |
|       +- Landing call at standby floor [CO:4144]
|       | Use this object to define if the landing call button shall open the door at the
|       | remote-off/standby floor, if being in standby operation.
|       |
|       +- Floor displays if being standby [CO:4146]
|         Use this object to define if the displays, normally used to show the lift floor
|         and direction, shall be turned off. This might not work if the display show
|         some kind of 'Out of Order' indication, if a zero floor value is transmitted to
|         them.
|
+- Fire alarm
|       |
|       +- Fire Alarm Strategy [CO:4151]
|       |   This object holds the fire alarm strategy. This parameter defines how the lift
|       | targets the fire alarm floor. In simple mode, it just drives to one defined floor.
|       | Using the 'Fire Alarm Center' strategy, the lift is informed via inputs to which
|       | floor it shall drive. In 'Dynamic' mode the lift has fire/smoke detectors on the
|       | relevant floors used to decide which floor shall be targeted.
```

```
|       |
|       +- Fire Alarm Levels
|       |    |
|       |    +- Fire Alarm Levels [CO:4153]
|       |    |  This object holds the fire alarm levels supported. Depending on the fire
|       |    |  alarm strategy, the lift will decide which fire alarm level will be
|       |    |  targeted. For details see the parameter 'Fire Alarm Strategy'.
|       |    |
|       |    +- Building Zones Fire Alarm Policy [CO:41CB-2]
|       |    | This object defines if the index of the current building zone (1…n) shall be
|       |    | used to pick the fire alarm floor from the fire alarm level table. To use that
|       |    | feature you have to set the fire alarm strategy to 'simple' in the first
|       |    | place.
|       |    |
|       |    +- Building Zones
|       |         |
|       |         +- Building Zones Usage [CO:41CB-1]
|       |         | This object defines if the lift shall interprete the different zone
|       |         | tables as zones or floor ranges in a building. Other functions, like
|       |         | fire alarm,can feature that information, in order to apply rules and
|       |         | policies, depending in which zone the car currently is or is driving to.
|       |         |
|       |         +- Building Zone Tables
|       |         |    |
|       |         |    +- Building Zone Table 1 [CO:41CC]
|       |         |    |  This object defines a zone or range of floors in a building. The
|       |         |    |  table works basically like a floor table, having set a bit (dot)
|       |         |    |  for every floor, that belongs to the given zone.
|       |         |    |
|       |         |    +- Building Zone Table 2 [CO:41CD]
|       |         |    |  This object defines a zone or range of floors in a building. The
|       |         |    |  table works basically like a floor table, having set a bit (dot)
|       |         |    |  for every floor, that belongs to the given zone.
|       |         |    |
|       |         |    +- Building Zone Table 3 [CO:41CE]
|       |         |     |  This object defines a zone or range of floors in a building. The
|       |         |     |  table works basically like a floor table, having set a bit (dot)
|       |         |     |  for every floor, that belongs to the given zone.
|       |         |     |
|       |         |     +- Building Zone Table 4 [CO:41CF]
|       |         |        This object defines a zone or range of floors in a building. The
|       |         |        table works basically like a floor table, having set a bit (dot)
|       |         |        for every floor, that belongs to the given zone.
|       |         |
|       |         +- Building Zones Car Calls Policy [CO:41CB-3]
|       |         |  This object defines how car calls shall be handled within a building
|       |         |  zone. Typically only car calls within the very same zone are allowed,
|       |         | preventing passengers from cross a zone by entering a car call. This
|       |         | rule excludes high priority car calls, that are usually key locked
|       |         | anyway.
|       |         |
|       |         +- Building Zones Fire Alarm Policy [CO:41CB-2]
|       |            This object defines if the index of the current building zone (1…n)
|       |             shall be used to pick the fire alarm floor from the fire alarm level
|       |             table. To use that feature you have to set the fire alarm strategy to
|       |             'simple' in the first place.
|       |
|       +- Policy for passing smoked/burning floors [CO:4152]
|       | This object holds the policy for passing smoked/burning floors, when evacuating the
|       | lift and its passengers to the fire alarm (evacuation) floor. If passing
|       | smoked/burning floors is allowed or not, depends heavily on the used doors in the
|       | lift installation.
|       |
|       +- More..
|       |
|       +- Door options at fire alarm floor
|       |   |
|       |   +- Doors in fire alarm floor [CO:4150]
|       |   |  This object defines if the doors shall close after a while after having
|       |   |  reached the fire alarm floor.
|       |   |
```

```
|       |   +- Doors at fire alarm floor closing time [CO:41C2]
|       |      This object defines an optional time span, if the doors shall close after a
|       |      while, having reached the fire alarm floor.
|       |
|       +- Policy for driving to the fire alarm floor [CO:417F]
|       |  This object holds the policy for driving to the fire alarm floor. Depending on
|       |  the rules of the local fire department, the lift shall always drive to the fire
|       |  alarm floor or only, if the fire alarm was activated while the lift was driving
|       |  but not if it was standstill.
|       |
|       +- Fire Alarm & Fire Alarm Cancel [CO:4154]
|       | This object defines if a single static signal shall be used for fire alarm
|       | handling or if activation and deactivation shall feature two separate signals
|       | edge controlled. If featuring two signals (fire alarm & fire alarm cancel) the
|       | 'inverted' property of the inputs define if a fallen or raising edge is used.
|       |
|       +- Door open button, driving to the fire alarm floor [CO:417E]
|       This object defines if the door-open button shall be kept operational, when the
|       lift does a stop over at some floor, in order to change the direction, driving
|       towards the dedicated fire alarm floor.
|
+- Emergency Stop Handling
| |
| +- Emergency Stop Recovery [CO:4148]
| | This defines if the emergency stop state can be recovered by releasing the em.stop
| | signal or if a car call has to be entered or a landing door has to be opened,
| | additionally.
| |
| +- Emergency Stop Safety Light Curtain Recovery [CO:41C0]
| This defines if the emergency stop state can be recovered simply by releasing the
| safety light curtain or if a car call has to be entered or a landing door has to be
| opened, as well.
|
+- More…
       |
       +- Safety Chain Options
       | |
       | +- Safety chain debounce time before start [CO:4070]
       | | This object defines the time span that the safety chain has to be complete,
       | | before the lift starts driving, after having boarded the passengers.
       | |
       | +- Safety Chain Bypass Supervision [CO:413D]
       | | This object defines if the status of the doors (unlocked, opening or opened)
       | | shall be checked against the status of the safety chain, in order to detect
       | | safety chain bridges or bypasses.
       | |
       | +- Door <-> Lock Crossover Short Supervision [CO:413E]
       | | This object defines if the SZ shall be used to activate shortly power to the
       | | door lock in order to detect a crossover-short to the cabin door contacts, if
       | | the cabin doors had been opened.
       | |
       | | +- Door crossover test delay [CO:430B]
       | |    This object defines the time span after the doors have been opened, befor the
       | |    cross-over test starts.
       | |
       | +- Safety Chain Debounce times
       |      |
       |      +- Passive safety chain debounce time [CO:4074]
       |      | This object defines the time span, used to extra debounce the passive
       |      | safety chain. If using locking devices in the chain, this value might be
       |      | increased. If using safety gear that does not mechanically stay in a
       |      | locked position, if having tripped, this value might be decreased.
       |      |
       |       +- Emergency Stop safety chain debounce time [CO:4073]
       |          This object defines the time span, used to extra debounce the emergency
       |          stop safety chain. If using locking devices in the chain, this value
       |          might be increased. If using safety gear that does not mechanically stay
       |          in a locked position, if having tripped, this value might be decreased.
       |
       +- Phase Failure Supervision [CO:4156]
       | This object defines if an external unit is used to implement the phase failure
```

```
| detection, featuring the corresponding lift controller input 'Phase Failure
| Supervision'. Generally spoken the supervision function will detect a 'fallen peak'
| and then set the lift 'Out Of Order'.
|
+- Fire brigade/service
| |
| +- Fire brigade/service on/off [CO:4190]
| | This object defines if the lift features fire brigade/service (fire fighter)
| | operation. This parameter also defines the actual variant of the fire service
| | operation, as there are some local/national differences. So please refer to
| | your local regulations.
| |
| +- Fire brigade recall floor [CO:4191]
| | This object defines the floor to which the lift drives, if the fire brigade
| | (fighter) operation has been activated, using the key switch at one of the
| | landings.
| |
| +- Fire brigade recall floor doors [CO:4192]
| | Use this object to define the doors to operate when the lift has arrived at the
| | fire recall (brigade) floor.
| |
| +- Fire service door cross-out table [CO:4193]
| | This object holds the cross-out table of all landing doors that can not be
| | operated in fire service operation, as requested by the EN81-72 regulations.
| | After arrival of the lift, the output signal 'Special Indication > Door open
| | request acknowledge, lift 1, car/cabin, door X' can be used to lit up the 'Door
| | open button' on that floor and door side, that actually can be opened by the
| | fire fighter.
| |
| +- More…
|      |
|      +- Fire service door operation mode [CO:4194]
|      | Use this object to define how the doors shall behave in fire service
|      | operation mode. Typically the doors are opened manually via the door open
|      | button and shall automatically close, if the door has not been moved into
|      | the 'opened' position. Anyhow, depending on local regulations, the doors
|      | might have just to stop in the position they are, instead of auto closing.
|      |
|      +- Fire service door open/close buttons [CO:4195]
|      | Use this object to define if the regular door open/close buttons shall be
|      | featured for fire service phase 2 or if only the specific 'Fire service
|      | door open/close' buttons shall be featured for this operation mode.
|      |
|      +- Fire service car call panel A/B/C/D usage [CO:4196]
|         Use this object to define which car call panel (door A/B/C/D) shall be
|         featured for the fire service operation. This panel might include calls
|         for a door X even if there is no door X at a specific floor. In fire
|         service operation, the lift will just check the floor indicated by the
|         call buttons of that panel and will drive there.
|
+- Emergency power
| |
| +- Emergency Power usage [CO:4180]
| | This object defines if the lift installation features the Emergency Power
| | operation mode.
| |
| +- Emergency Power floor [CO:4107-6]
| | This object defines the floor to which the lift drives, in a case of an
| | emergency power operation.
| |
| +- Emergency Power floor doors [CO:4181]
| | Use this object to define the doors to operate when the lift has arrived at the
| | emergency power floor.
| |
| +- Doors at Emergency Power floor [CO:4187]
| | This object defines if the doors shall close after a while after having reached
| | the emergency power floor.
| |
| +- More…
|      |
|      +- Emerg. Power evacuation sequence timeout [CO:4182]
```

```
               |       | Use this object to define the timeout, used when evacuating the lifts in a
               |       | sequence, to ensure that the next lift can evacuate even if the predecessor
               |       | lift does not react as intended or simply does not reach the 'Emergency
               |       | Power Floor'. You can create a sequence by connecting the output 'Lift
               |       | arrived at Emergency Power floor' to the input 'Emergency Power enable
               |       | evacuation' of the very next lift.
               |       |
               |       +- Emergency Power nominal velocity [CO:4183]
               |       | Use this object to define the velocity (V1..V9) that the drive shall
               |       | feature if running on 'Emergency Power', regarding to limitations of the
               |       | emergency power supply.
               |       |
               |       +- Emergency Power sequence via CANbus [CO:4184]
               |       | Use this object to define that the output signal 'Lift arrived at
               |       | Emergency Power floor' from the predecessor lift is monitored directly on
               |       | the CANbus, in order to start the 'Emergency Power' evacuation trip for
               |       | the very next lift in the sequence.
               |       |
               |       +- Emergency Power evacuation delay [CO:4185]
               |       | Use this object to define a time span that has to expire, before the lift
               |       | drives to the emergency power floor.
               |       |
               |       +- Emergency Stop on Emergency Power activation [CO:4186]
               |       This object defines if the lift shall do a quick stop (Emergency Stop), if
               |       the Emergency Power function has been activated. Otherwise the lift will
               |       try to finish the current driving operation to reach the next floor in the
               |       current direction.
               |
               +- Even more…
                       |
                       +- Temperature thresholds
                       | |
                       | +- Temperature threshold 1 [CO:4167-1]
                       | | This object defines ambient temperature thresholds used to control output
                       | | signals, that can be used to operate a fan or simply signal that a
                       | | temperature values has been exceeded.
                       | |
                       | +- Temperature threshold 2 [CO:4167-2]
                       | | This object defines ambient temperature thresholds used to control output
                       | | signals, that can be used to operate a fan or simply signal that a
                       | | temperature values has been exceeded.
                       | |
                       | +- Temperature threshold 3 [CO:4167-3]
                       | | This object defines ambient temperature thresholds used to control output
                       | | signals, that can be used to operate a fan or simply signal that a
                       | | temperature values has been exceeded.
                       | |
                       | +- Temperature threshold 4 [CO:4167-4]
                       | This object defines ambient temperature thresholds used to control output
                       | signals, that can be used to operate a fan or simply signal that a
                       | temperature values has been exceeded.
                       |
                       +- Generic supervision inputs
                       | |
                       | +- Generic supervision input #1
                       | | |
                       | | +- Usage [CO:4168-1]
                       | | | This object defines if the given generic supervision input shall be
                       | | | used by the system or not.
                       | | |
                       | | +- Input delay [CO:4168-2]
                       | | | This object defines the input delay of the generic supervision input.
                       | | | This is used to delay the activation, if the signal changes its
                       | | | state.
                       | | |
| | +- Fault signalization [CO:4168-3]
| | | This object defines the fault signalization of the generic
| | | supervision input. This parameter defines, if the signal shall cause
| | | a 'fault', 'out of order' or 'blocking' event.
| | |
| | +- Inspection handling [CO:4168-4]
```

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| | | This object defines if the generic supervision input shall be
| | | excluded being on inspection or emergency rescue operation.
| | |
| | +- More…
| | |
| | +- Disable relevelling [CO:4168-5]
| | | This object defines if the generic supervision input shall be
| | | disable the relevelling operation, if being indicated.
| | |
| | +- Energy saving policy [CO:4168-7]
| | | This object defines if the generic supervision input shall be
| | | excluded being on energy saving or standby operation.
| | |
| | +- Fire Alarm/Service policy [CO:4168-8]
| | | This object defines if the generic supervision input shall be
| | | excluded being on Fire alarm or fire recall/service operation.
| | |
| | +- Name/Label [CO:4168-6]
| | | This object defines an additional text or label, given for the
| | | generic supervision input, to make it less 'generic' for the
| | | technician or user.
| | |
| | +- Even more…
| | |
| | +- Destination Floor [CO:4168-9]
| | | This object defines if the generic supervision input shall
| | | be used to drive the lift to a dedicated destination floor.
| | |
| | +- Door to open at recall floor [CO:4168-11]
| | | This object is used to define the doors that shall open,
| | | when the lift has arrived at the given recall floor, if any
| | | floor had been defined.
| | |
| | +- Duration of the sirens/indication signal [CO:4168-10]
| | This object defines how long the siren/display output
| | signal should remain switched on when the supervision
| | functions has been triggered. By default, the signal will
| | remain on as long as the supervision has been triggered.
| | However, if you drive a siren or a buzzer, it may make
| | sense to limit the duration.
| |
| +- Generic supervision input #2
| | |
| | +- Usage [CO:4169-1]
| | | This object defines if the given generic supervision input shall be
| | | used by the system or not.
| | |
| | +- Input delay [CO:4169-2]
| | | This object defines the input delay of the generic supervision input.
| | | This is used to delay the activation, if the signal changes its
| | | state.
| | |
| | +- Fault signalization [CO:4169-3]
| | | This object defines the fault signalization of the generic
| | | supervision input. This parameter defines, if the signal shall cause
| | | a 'fault', 'out of order' or 'blocking' event.
| | |
| | +- Inspection handling [CO:4169-4]
| | | This object defines if the generic supervision input shall be
| | | excluded being on inspection or emergency rescue operation.
| | |
| | +- More…
| | |
| | +- Disable relevelling [CO:4169-5]
| | | This object defines if the generic supervision input shall be
| | | disable the relevelling operation, if being indicated.
| | |
| | +- Energy saving policy [CO:4169-7]
| | | This object defines if the generic supervision input shall be
| | | excluded being on energy saving or standby operation.
| | |
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| | +- Fire Alarm/Service policy [CO:4169-8]
| | | This object defines if the generic supervision input shall be
| | | excluded being on Fire alarm or fire recall/service operation.
| | |
| | +- Name/Label [CO:4169-6]
| | | This object defines an additional text or label, given for the
| | | generic supervision input, to make it less 'generic' for the
| | | technician or user.
| | |
| | +- Even more…
| | |
| | +- Destination Floor [CO:4169-9]
| | | This object defines if the generic supervision input shall
| | | be used to drive the lift to a dedicated destination floor.
| | |
| | |
| | +- Door to open at recall floor [CO:4169-11]
| | | This object is used to define the doors that shall open,
| | | when the lift has arrived at the given recall floor, if any
| | | floor had been defined.
| | |
| | +- Duration of the sirens/indication signal [CO:4169-10]
| | This object defines how long the siren/display output
| | signal should remain switched on when the supervision
| | functions has been triggered. By default, the signal will
| | remain on as long as the supervision has been triggered.
| | However, if you drive a siren or a buzzer, it may make
| | sense to limit the duration.
| |
| +- Generic supervision input #3
| | |
| | +- Usage [CO:416A-1]
| | | This object defines if the given generic supervision input shall be
| | | used by the system or not.
| | |
| | +- Input delay [CO:416A-2]
| | | This object defines the input delay of the generic supervision input.
| | | This is used to delay the activation, if the signal changes its
| | | state.
| | |
| | +- Fault signalization [CO:416A-3]
| | | This object defines the fault signalization of the generic
| | | supervision input. This parameter defines, if the signal shall cause
| | | a 'fault', 'out of order' or 'blocking' event.
| | |
| | +- Inspection handling [CO:416A-4]
| | | This object defines if the generic supervision input shall be
| | | excluded being on inspection or emergency rescue operation.
| | |
| | +- More…
| | |
| | +- Disable relevelling [CO:416A-5]
| | | This object defines if the generic supervision input shall be
| | | disable the relevelling operation, if being indicated.
| | |
| | +- Energy saving policy [CO:416A-7]
| | | This object defines if the generic supervision input shall be
| | | excluded being on energy saving or standby operation.
| | |
| | +- Fire Alarm/Service policy [CO:416A-8]
| | | This object defines if the generic supervision input shall be
| | | excluded being on Fire alarm or fire recall/service operation.
| | |
| | +- Name/Label [CO:416A-6]
| | | This object defines an additional text or label, given for the
| | | generic supervision input, to make it less 'generic' for the
| | | technician or user.
| | |
| | +- Even more…
| | |
| | +- Destination Floor [CO:416A-9]
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| | | This object defines if the generic supervision input shall
| | | be used to drive the lift to a dedicated destination floor.
| | |
| | +- Door to open at recall floor [CO:416A-11]
| | | This object is used to define the doors that shall open,
| | | when the lift has arrived at the given recall floor, if any
| | | floor had been defined.
| | |
| | +- Duration of the sirens/indication signal [CO:416A-10]
| | This object defines how long the siren/display output
| | signal should remain switched on when the supervision
| | functions has been triggered. By default, the signal will
| | remain on as long as the supervision has been triggered.
| | However, if you drive a siren or a buzzer, it may make
| | sense to limit the duration.
| |
| +- Generic supervision input #4
| | |
| | +- Usage [CO:416B-1]
| | | This object defines if the given generic supervision input shall be
| | | used by the system or not.
| | |
| | +- Input delay [CO:416B-2]
| | | This object defines the input delay of the generic supervision input.
| | | This is used to delay the activation, if the signal changes its
| | | state.
| | |
| | +- Fault signalization [CO:416B-3]
| | | This object defines the fault signalization of the generic
| | | supervision input. This parameter defines, if the signal shall cause
| | | a 'fault', 'out of order' or 'blocking' event.
| | |
| | +- Inspection handling [CO:416B-4]
| | | This object defines if the generic supervision input shall be
| | | excluded being on inspection or emergency rescue operation.
| | |
| | +- More…
| | |
| | +- Disable relevelling [CO:416B-5]
| | | This object defines if the generic supervision input shall be
| | | disable the relevelling operation, if being indicated.
| | |
| | +- Energy saving policy [CO:416B-7]
| | | This object defines if the generic supervision input shall be
| | | excluded being on energy saving or standby operation.
| | |
| | +- Fire Alarm/Service policy [CO:416B-8]
| | | This object defines if the generic supervision input shall be
| | | excluded being on Fire alarm or fire recall/service operation.
| | |
| | +- Name/Label [CO:416B-6]
| | | This object defines an additional text or label, given for the
| | | generic supervision input, to make it less 'generic' for the
| | | technician or user.
| | |
| | +- Even more…
| | |
| | +- Destination Floor [CO:416B-9]
| | | This object defines if the generic supervision input shall
| | | be used to drive the lift to a dedicated destination floor.
| | |
| | +- Door to open at recall floor [CO:416B-11]
| | | This object is used to define the doors that shall open,
| | | when the lift has arrived at the given recall floor, if any
| | | floor had been defined.
| | |
| | +- Duration of the sirens/indication signal [CO:416B-10]
| | This object defines how long the siren/display output
| | signal should remain switched on when the supervision
| | functions has been triggered. By default, the signal will
| | remain on as long as the supervision has been triggered.
```

```
| | However, if you drive a siren or a buzzer, it may make
| | sense to limit the duration.
| |
| +- More…
| |
| +- Generic supervision input #5
| | |
| | +- Usage [CO:41D4-1]
| | | This object defines if the given generic supervision input shall
| | | be used by the system or not.
| | |
| | +- Input delay [CO:41D4-2]
| | | This object defines the input delay of the generic supervision
| | | input. This is used to delay the activation, if the signal
| | | changes its state.
| | |
| | +- Fault signalization [CO:41D4-3]
| | | This object defines the fault signalization of the generic
| | | supervision input. This parameter defines, if the signal shall
| | | cause a 'fault', 'out of order' or 'blocking' event.
| | |
| | +- Inspection handling [CO:41D4-4]
| | | This object defines if the generic supervision input shall be
| | | excluded being on inspection or emergency rescue operation.
| | |
| | +- More…
| | |
| | +- Disable relevelling [CO:41D4-5]
| | | This object defines if the generic supervision input shall
| | | be disable the relevelling operation, if being indicated.
| | |
| | +- Energy saving policy [CO:41D4-7]
| | | This object defines if the generic supervision input shall
| | | be excluded being on energy saving or standby operation.
| | |
| | +- Fire Alarm/Service policy [CO:41D4-8]
| | | This object defines if the generic supervision input shall
| | | be excluded being on Fire alarm or fire recall/service
| | | operation.
| | |
| | +- Name/Label [CO:41D4-6]
| | | This object defines an additional text or label, given for
| | | the generic supervision input, to make it less 'generic'
| | | for the technician or user.
| | |
| | +- Even more…
| | |
| | +- Destination Floor [CO:41D4-9]
| | | This object defines if the generic supervision input
| | | shall be used to drive the lift to a dedicated
| | | destination floor.
| | |
| | +- Door to open at recall floor [CO:41D4-11]
| | | This object is used to define the doors that shall
| | | open, when the lift has arrived at the given recall
| | | floor, if any floor had been defined.
| | |
| | +- Duration of the sirens/indication signal [CO:41D4-10]
| | This object defines how long the siren/display output
| | signal should remain switched on when the supervision
| | functions has been triggered. By default, the signal
| | will remain on as long as the supervision has been
| | triggered. However, if you drive a siren or a buzzer,
| | it may make sense to limit the duration.
| |
| +- Generic supervision input #6
| | |
| | +- Usage [CO:41D5-1]
| | | This object defines if the given generic supervision input shall
| | | be used by the system or not.
| | |
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| | +- Input delay [CO:41D5-2]
| | | This object defines the input delay of the generic supervision
| | | input. This is used to delay the activation, if the signal
| | | changes its state.
| | |
| | +- Fault signalization [CO:41D5-3]
| | | This object defines the fault signalization of the generic
| | | supervision input. This parameter defines, if the signal shall
| | | cause a 'fault', 'out of order' or 'blocking' event.
| | |
| | +- Inspection handling [CO:41D5-4]
| | | This object defines if the generic supervision input shall be
| | | excluded being on inspection or emergency rescue operation.
| | |
| | +- More…
| | |
| | +- Disable relevelling [CO:41D5-5]
| | | This object defines if the generic supervision input shall
| | | be disable the relevelling operation, if being indicated.
| | |
| | +- Energy saving policy [CO:41D5-7]
| | | This object defines if the generic supervision input shall
| | | be excluded being on energy saving or standby operation.
| | |
| | +- Fire Alarm/Service policy [CO:41D5-8]
| | | This object defines if the generic supervision input shall
| | | be excluded being on Fire alarm or fire recall/service
| | | operation.
| | |
| | +- Name/Label [CO:41D5-6]
| | | This object defines an additional text or label, given for
| | | the generic supervision input, to make it less 'generic'
| | | for the technician or user.
| | |
| | +- Even more…
| | |
| | +- Destination Floor [CO:41D5-9]
| | | This object defines if the generic supervision input
| | | shall be used to drive the lift to a dedicated
| | | destination floor.
| | |
| | +- Door to open at recall floor [CO:41D5-11]
| | | This object is used to define the doors that shall
| | | open, when the lift has arrived at the given recall
| | | floor, if any floor had been defined.
| | |
| | +- Duration of the sirens/indication signal [CO:41D5-10]
| | This object defines how long the siren/display output
| | signal should remain switched on when the supervision
| | functions has been triggered. By default, the signal
| | will remain on as long as the supervision has been
| | triggered. However, if you drive a siren or a buzzer,
| | it may make sense to limit the duration.
| |
| +- Generic supervision input #7
| | |
| | +- Usage [CO:41D6-1]
| | | This object defines if the given generic supervision input shall
| | | be used by the system or not.
| | |
| | +- Input delay [CO:41D6-2]
| | | This object defines the input delay of the generic supervision
| | | input. This is used to delay the activation, if the signal
| | | changes its state.
| | |
| | +- Fault signalization [CO:41D6-3]
| | | This object defines the fault signalization of the generic
| | | supervision input. This parameter defines, if the signal shall
| | | cause a 'fault', 'out of order' or 'blocking' event.
| | |
| | +- Inspection handling [CO:41D6-4]
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| | | This object defines if the generic supervision input shall be
| | | excluded being on inspection or emergency rescue operation.
| | |
| | +- More…
| | |
| | +- Disable relevelling [CO:41D6-5]
| | | This object defines if the generic supervision input shall
| | | be disable the relevelling operation, if being indicated.
| | |
| | +- Energy saving policy [CO:41D6-7]
| | | This object defines if the generic supervision input shall
| | | be excluded being on energy saving or standby operation.
| | |
| | +- Fire Alarm/Service policy [CO:41D6-8]
| | | This object defines if the generic supervision input shall
| | | be excluded being on Fire alarm or fire recall/service
| | | operation.
| | |
| | +- Name/Label [CO:41D6-6]
| | | This object defines an additional text or label, given for
| | | the generic supervision input, to make it less 'generic'
| | | for the technician or user.
| | |
| | +- Even more…
| | |
| | +- Destination Floor [CO:41D6-9]
| | | This object defines if the generic supervision input
| | | shall be used to drive the lift to a dedicated
| | | destination floor.
| | |
| | +- Door to open at recall floor [CO:41D6-11]
| | | This object is used to define the doors that shall
| | | open, when the lift has arrived at the given recall
| | | floor, if any floor had been defined.
| | |
| | +- Duration of the sirens/indication signal [CO:41D6-10]
| | This object defines how long the siren/display output
| | signal should remain switched on when the supervision
| | functions has been triggered. By default, the signal
| | will remain on as long as the supervision has been
| | triggered. However, if you drive a siren or a buzzer,
| | it may make sense to limit the duration.
| |
| +- Generic supervision input #8
| | |
| | +- Usage [CO:41D7-1]
| | | This object defines if the given generic supervision input shall
| | | be used by the system or not.
| | |
| | +- Input delay [CO:41D7-2]
| | | This object defines the input delay of the generic supervision
| | | input. This is used to delay the activation, if the signal
| | | changes its state.
| | |
| | +- Fault signalization [CO:41D7-3]
| | | This object defines the fault signalization of the generic
| | | supervision input. This parameter defines, if the signal shall
| | | cause a 'fault', 'out of order' or 'blocking' event.
| | |
| | +- Inspection handling [CO:41D7-4]
| | | This object defines if the generic supervision input shall be
| | | excluded being on inspection or emergency rescue operation.
| | |
| | +- More…
| | |
| | +- Disable relevelling [CO:41D7-5]
| | | This object defines if the generic supervision input shall
| | | be disable the relevelling operation, if being indicated.
| | |
| | +- Energy saving policy [CO:41D7-7]
| | | This object defines if the generic supervision input shall
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| | | be excluded being on energy saving or standby operation.
| | |
| | +- Fire Alarm/Service policy [CO:41D7-8]
| | | This object defines if the generic supervision input shall
| | | be excluded being on Fire alarm or fire recall/service
| | | operation.
| | |
| | +- Name/Label [CO:41D7-6]
| | | This object defines an additional text or label, given for
| | | the generic supervision input, to make it less 'generic'
| | | for the technician or user.
| | |
| | +- Even more…
| | |
| | +- Destination Floor [CO:41D7-9]
| | | This object defines if the generic supervision input
| | | shall be used to drive the lift to a dedicated
| | | destination floor.
| | |
| | +- Door to open at recall floor [CO:41D7-11]
| | | This object is used to define the doors that shall
| | | open, when the lift has arrived at the given recall
| | | floor, if any floor had been defined.
| | |
| | +- Duration of the sirens/indication signal [CO:41D7-10]
| | This object defines how long the siren/display output
| | signal should remain switched on when the supervision
| | functions has been triggered. By default, the signal
| | will remain on as long as the supervision has been
| | triggered. However, if you drive a siren or a buzzer,
| | it may make sense to limit the duration.
| |
| +- Even more…
| |
| +- Generic supervision input #9
| | |
| | +- Usage [CO:41D8-1]
| | | This object defines if the given generic supervision input
| | | shall be used by the system or not.
| | |
| | +- Input delay [CO:41D8-2]
| | | This object defines the input delay of the generic
| | | supervision input. This is used to delay the activation, if
| | | the signal changes its state.
| | |
| | +- Fault signalization [CO:41D8-3]
| | | This object defines the fault signalization of the generic
| | | supervision input. This parameter defines, if the signal
| | | shall cause a 'fault', 'out of order' or 'blocking' event.
| | |
| | +- Inspection handling [CO:41D8-4]
| | | This object defines if the generic supervision input shall
| | | be excluded being on inspection or emergency rescue
| | | operation.
| | |
| | +- More…
| | |
| | +- Disable relevelling [CO:41D8-5]
| | | This object defines if the generic supervision input
| | | shall be disable the relevelling operation, if being
| | | indicated.
| | |
| | +- Energy saving policy [CO:41D8-7]
| | | This object defines if the generic supervision input
| | | shall be excluded being on energy saving or standby
| | | operation.
| | |
| | +- Fire Alarm/Service policy [CO:41D8-8]
| | | This object defines if the generic supervision input
| | | shall be excluded being on Fire alarm or fire
| | | recall/service operation.
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| | |
| | +- Name/Label [CO:41D8-6]
| | | This object defines an additional text or label, given
| | | for the generic supervision input, to make it less
| | | 'generic' for the technician or user.
| | |
| | +- Even more…
| | |
| | +- Destination Floor [CO:41D8-9]
| | | This object defines if the generic supervision
| | | input shall be used to drive the lift to a
| | | dedicated destination floor.
| | |
| | +- Door to open at recall floor [CO:41D8-11]
| | | This object is used to define the doors that
| | | shall open, when the lift has arrived at the
| | | given recall floor, if any floor had been
| | | defined.
| | |
| | +- Duration of the sirens/indication signal
| | [CO:41D8-10]
| | This object defines how long the siren/display
| | output signal should remain switched on when the
| | supervision functions has been triggered. By
| | default, the signal will remain on as long as the
| | supervision has been triggered. However, if you
| | drive a siren or a buzzer, it may make sense to
| | limit the duration.
| |
| +- Generic supervision input #10
| | |
| | +- Usage [CO:41D9-1]
| | | This object defines if the given generic supervision input
| | | shall be used by the system or not.
| | |
| | +- Input delay [CO:41D9-2]
| | | This object defines the input delay of the generic
| | | supervision input. This is used to delay the activation, if
| | | the signal changes its state.
| | |
| | +- Fault signalization [CO:41D9-3]
| | | This object defines the fault signalization of the generic
| | | supervision input. This parameter defines, if the signal
| | | shall cause a 'fault', 'out of order' or 'blocking' event.
| | |
| | +- Inspection handling [CO:41D9-4]
| | | This object defines if the generic supervision input shall
| | | be excluded being on inspection or emergency rescue
| | | operation.
| | |
| | +- More…
| | |
| | +- Disable relevelling [CO:41D9-5]
| | | This object defines if the generic supervision input
| | | shall be disable the relevelling operation, if being
| | | indicated.
| | |
| | +- Energy saving policy [CO:41D9-7]
| | | This object defines if the generic supervision input
| | | shall be excluded being on energy saving or standby
| | | operation.
| | |
| | +- Fire Alarm/Service policy [CO:41D9-8]
| | | This object defines if the generic supervision input
| | | shall be excluded being on Fire alarm or fire
| | | recall/service operation.
| | |
| | +- Name/Label [CO:41D9-6]
| | | This object defines an additional text or label, given
| | | for the generic supervision input, to make it less
| | | 'generic' for the technician or user.
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| | |
| | +- Even more…
| | |
| | +- Destination Floor [CO:41D9-9]
| | | This object defines if the generic supervision
| | | input shall be used to drive the lift to a
| | | dedicated destination floor.
| | |
| | +- Door to open at recall floor [CO:41D9-11]
| | | This object is used to define the doors that
| | | shall open, when the lift has arrived at the
| | | given recall floor, if any floor had been
| | | defined.
| | |
| | +- Duration of the sirens/indication signal
| | [CO:41D9-10]
| | This object defines how long the siren/display
| | output signal should remain switched on when the
| | supervision functions has been triggered. By
| | default, the signal will remain on as long as the
| | supervision has been triggered. However, if you
| | drive a siren or a buzzer, it may make sense to
| | limit the duration.
| |
| +- Generic supervision input #11
| | |
| | +- Usage [CO:41DA-1]
| | | This object defines if the given generic supervision input
| | | shall be used by the system or not.
| | |
| | +- Input delay [CO:41DA-2]
| | | This object defines the input delay of the generic
| | | supervision input. This is used to delay the activation, if
| | | the signal changes its state.
| | |
| | +- Fault signalization [CO:41DA-3]
| | | This object defines the fault signalization of the generic
| | | supervision input. This parameter defines, if the signal
| | | shall cause a 'fault', 'out of order' or 'blocking' event.
| | |
| | +- Inspection handling [CO:41DA-4]
| | | This object defines if the generic supervision input shall
| | | be excluded being on inspection or emergency rescue
| | | operation.
| | |
| | +- More…
| | |
| | +- Disable relevelling [CO:41DA-5]
| | | This object defines if the generic supervision input
| | | shall be disable the relevelling operation, if being
| | | indicated.
| | |
| | +- Energy saving policy [CO:41DA-7]
| | | This object defines if the generic supervision input
| | | shall be excluded being on energy saving or standby
| | | operation.
| | |
| | +- Fire Alarm/Service policy [CO:41DA-8]
| | | This object defines if the generic supervision input
| | | shall be excluded being on Fire alarm or fire
| | | recall/service operation.
| | |
| | +- Name/Label [CO:41DA-6]
| | | This object defines an additional text or label, given
| | | for the generic supervision input, to make it less
| | | 'generic' for the technician or user.
| | |
| | +- Even more…
| | |
| | +- Destination Floor [CO:41DA-9]
| | | This object defines if the generic supervision
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| | | input shall be used to drive the lift to a
| | | dedicated destination floor.
| | |
| | +- Door to open at recall floor [CO:41DA-11]
| | | This object is used to define the doors that
| | | shall open, when the lift has arrived at the
| | | given recall floor, if any floor had been
| | | defined.
| | |
| | +- Duration of the sirens/indication signal
| | [CO:41DA-10]
| | This object defines how long the siren/display
| | output signal should remain switched on when the
| | supervision functions has been triggered. By
| | default, the signal will remain on as long as the
| | supervision has been triggered. However, if you
| | drive a siren or a buzzer, it may make sense to
| | limit the duration.
| |
| +- Generic supervision input #12
| | |
| | +- Usage [CO:41DB-1]
| | | This object defines if the given generic supervision input
| | | shall be used by the system or not.
| | |
| | +- Input delay [CO:41DB-2]
| | | This object defines the input delay of the generic
| | | supervision input. This is used to delay the activation, if
| | | the signal changes its state.
| | |
| | +- Fault signalization [CO:41DB-3]
| | | This object defines the fault signalization of the generic
| | | supervision input. This parameter defines, if the signal
| | | shall cause a 'fault', 'out of order' or 'blocking' event.
| | |
| | +- Inspection handling [CO:41DB-4]
| | | This object defines if the generic supervision input shall
| | | be excluded being on inspection or emergency rescue
| | | operation.
| | |
| | +- More…
| | |
| | +- Disable relevelling [CO:41DB-5]
| | | This object defines if the generic supervision input
| | | shall be disable the relevelling operation, if being
| | | indicated.
| | |
| | +- Energy saving policy [CO:41DB-7]
| | | This object defines if the generic supervision input
| | | shall be excluded being on energy saving or standby
| | | operation.
| | |
| | +- Fire Alarm/Service policy [CO:41DB-8]
| | | This object defines if the generic supervision input
| | | shall be excluded being on Fire alarm or fire
| | | recall/service operation.
| | |
| | +- Name/Label [CO:41DB-6]
| | | This object defines an additional text or label, given
| | | for the generic supervision input, to make it less
| | | 'generic' for the technician or user.
| | |
| | +- Even more…
| | |
| | +- Destination Floor [CO:41DB-9]
| | | This object defines if the generic supervision
| | | input shall be used to drive the lift to a
| | | dedicated destination floor.
| | |
| | +- Door to open at recall floor [CO:41DB-11]
| | | This object is used to define the doors that
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| | | shall open, when the lift has arrived at the
| | | given recall floor, if any floor had been
| | | defined.
| | |
| | +- Duration of the sirens/indication signal
| | [CO:41DB-10]
| | This object defines how long the siren/display
| | output signal should remain switched on when the
| | supervision functions has been triggered. By
| | default, the signal will remain on as long as the
| | supervision has been triggered. However, if you
| | drive a siren or a buzzer, it may make sense to
| | limit the duration.
| |
| +- Much more…
| |
| +- Generic supervision input #13
| | |
| | +- Usage [CO:41DC-1]
| | | This object defines if the given generic supervision
| | | input shall be used by the system or not.
| | |
| | +- Input delay [CO:41DC-2]
| | | This object defines the input delay of the generic
| | | supervision input. This is used to delay the
| | | activation, if the signal changes its state.
| | |
| | +- Fault signalization [CO:41DC-3]
| | | This object defines the fault signalization of the
| | | generic supervision input. This parameter defines, if
| | | the signal shall cause a 'fault', 'out of order' or
| | | 'blocking' event.
| | |
| | +- Inspection handling [CO:41DC-4]
| | | This object defines if the generic supervision input
| | | shall be excluded being on inspection or emergency
| | | rescue operation.
| | |
| | +- More…
| | |
| | +- Disable relevelling [CO:41DC-5]
| | | This object defines if the generic supervision
| | | input shall be disable the relevelling operation,
| | | if being indicated.
| | |
| | +- Energy saving policy [CO:41DC-7]
| | | This object defines if the generic supervision
| | | input shall be excluded being on energy saving or
| | | standby operation.
| | |
| | +- Fire Alarm/Service policy [CO:41DC-8]
| | | This object defines if the generic supervision
| | | input shall be excluded being on Fire alarm or
| | | fire recall/service operation.
| | |
| | +- Name/Label [CO:41DC-6]
| | | This object defines an additional text or label,
| | | given for the generic supervision input, to make
| | | it less 'generic' for the technician or user.
| | |
| | +- Even more…
| | |
| | +- Destination Floor [CO:41DC-9]
| | | This object defines if the generic
| | | supervision input shall be used to drive the
| | | lift to a dedicated destination floor.
| | |
| | +- Door to open at recall floor [CO:41DC-11]
| | | This object is used to define the doors that
| | | shall open, when the lift has arrived at the
| | | given recall floor, if any floor had been
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| | | defined.
| | |
| | +- Duration of the sirens/indication signal
| | [CO:41DC-10]
| | This object defines how long the
| | siren/display output signal should remain
| | switched on when the supervision functions
| | has been triggered. By default, the signal
| | will remain on as long as the supervision
| | has been triggered. However, if you drive a
| | siren or a buzzer, it may make sense to
| | limit the duration.
| |
| +- Generic supervision input #14
| | |
| | +- Usage [CO:41DD-1]
| | | This object defines if the given generic supervision
| | | input shall be used by the system or not.
| | |
| | +- Input delay [CO:41DD-2]
| | | This object defines the input delay of the generic
| | | supervision input. This is used to delay the
| | | activation, if the signal changes its state.
| | |
| | +- Fault signalization [CO:41DD-3]
| | | This object defines the fault signalization of the
| | | generic supervision input. This parameter defines, if
| | | the signal shall cause a 'fault', 'out of order' or
| | | 'blocking' event.
| | |
| | +- Inspection handling [CO:41DD-4]
| | | This object defines if the generic supervision input
| | | shall be excluded being on inspection or emergency
| | | rescue operation.
| | |
| | +- More…
| | |
| | +- Disable relevelling [CO:41DD-5]
| | | This object defines if the generic supervision
| | | input shall be disable the relevelling operation,
| | | if being indicated.
| | |
| | +- Energy saving policy [CO:41DD-7]
| | | This object defines if the generic supervision
| | | input shall be excluded being on energy saving or
| | | standby operation.
| | |
| | +- Fire Alarm/Service policy [CO:41DD-8]
| | | This object defines if the generic supervision
| | | input shall be excluded being on Fire alarm or
| | | fire recall/service operation.
| | |
| | +- Name/Label [CO:41DD-6]
| | | This object defines an additional text or label,
| | | given for the generic supervision input, to make
| | | it less 'generic' for the technician or user.
| | |
| | +- Even more…
| | |
| | +- Destination Floor [CO:41DD-9]
| | | This object defines if the generic
| | | supervision input shall be used to drive the
| | | lift to a dedicated destination floor.
| | |
| | +- Door to open at recall floor [CO:41DD-11]
| | | This object is used to define the doors that
| | | shall open, when the lift has arrived at the
| | | given recall floor, if any floor had been
| | | defined.
| | |
| | +- Duration of the sirens/indication signal
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| | [CO:41DD-10]
| | This object defines how long the
| | siren/display output signal should remain
| | switched on when the supervision functions
| | has been triggered. By default, the signal
| | will remain on as long as the supervision
| | has been triggered. However, if you drive a
| | siren or a buzzer, it may make sense to
| | limit the duration.
| |
| +- Generic supervision input #15
| | |
| | +- Usage [CO:41DE-1]
| | | This object defines if the given generic supervision
| | | input shall be used by the system or not.
| | |
| | +- Input delay [CO:41DE-2]
| | | This object defines the input delay of the generic
| | | supervision input. This is used to delay the
| | | activation, if the signal changes its state.
| | |
| | +- Fault signalization [CO:41DE-3]
| | | This object defines the fault signalization of the
| | | generic supervision input. This parameter defines, if
| | | the signal shall cause a 'fault', 'out of order' or
| | | 'blocking' event.
| | |
| | +- Inspection handling [CO:41DE-4]
| | | This object defines if the generic supervision input
| | | shall be excluded being on inspection or emergency
| | | rescue operation.
| | |
| | +- More…
| | |
| | +- Disable relevelling [CO:41DE-5]
| | | This object defines if the generic supervision
| | | input shall be disable the relevelling operation,
| | | if being indicated.
| | |
| | +- Energy saving policy [CO:41DE-7]
| | | This object defines if the generic supervision
| | | input shall be excluded being on energy saving or
| | | standby operation.
| | |
| | +- Fire Alarm/Service policy [CO:41DE-8]
| | | This object defines if the generic supervision
| | | input shall be excluded being on Fire alarm or
| | | fire recall/service operation.
| | |
| | +- Name/Label [CO:41DE-6]
| | | This object defines an additional text or label,
| | | given for the generic supervision input, to make
| | | it less 'generic' for the technician or user.
| | |
| | +- Even more…
| | |
| | +- Destination Floor [CO:41DE-9]
| | | This object defines if the generic
| | | supervision input shall be used to drive the
| | | lift to a dedicated destination floor.
| | |
| | +- Door to open at recall floor [CO:41DE-11]
| | | This object is used to define the doors that
| | | shall open, when the lift has arrived at the
| | | given recall floor, if any floor had been
| | | defined.
| | |
| | +- Duration of the sirens/indication signal
| | [CO:41DE-10]
| | This object defines how long the
| | siren/display output signal should remain
```

```
| | switched on when the supervision functions
| | has been triggered. By default, the signal
| | will remain on as long as the supervision
| | has been triggered. However, if you drive a
| | siren or a buzzer, it may make sense to
| | limit the duration.
| |
| +- Generic supervision input #16
| |
| +- Usage [CO:41DF-1]
| | This object defines if the given generic supervision
| | input shall be used by the system or not.
| |
| +- Input delay [CO:41DF-2]
| | This object defines the input delay of the generic
| | supervision input. This is used to delay the
| | activation, if the signal changes its state.
| |
| +- Fault signalization [CO:41DF-3]
| | This object defines the fault signalization of the
| | generic supervision input. This parameter defines, if
| | the signal shall cause a 'fault', 'out of order' or
| | 'blocking' event.
| |
| +- Inspection handling [CO:41DF-4]
| | This object defines if the generic supervision input
| | shall be excluded being on inspection or emergency
| | rescue operation.
| |
| +- More…
| |
| +- Disable relevelling [CO:41DF-5]
| | This object defines if the generic supervision
| | input shall be disable the relevelling operation,
| | if being indicated.
| |
| +- Energy saving policy [CO:41DF-7]
| | This object defines if the generic supervision
| | input shall be excluded being on energy saving or
| | standby operation.
| |
| +- Fire Alarm/Service policy [CO:41DF-8]
| | This object defines if the generic supervision
| | input shall be excluded being on Fire alarm or
| | fire recall/service operation.
| |
| +- Name/Label [CO:41DF-6]
| | This object defines an additional text or label,
| | given for the generic supervision input, to make
| | it less 'generic' for the technician or user.
| |
| +- Even more…
| |
| +- Destination Floor [CO:41DF-9]
| | This object defines if the generic
| | supervision input shall be used to drive the
| | lift to a dedicated destination floor.
| |
| +- Door to open at recall floor [CO:41DF-11]
| | This object is used to define the doors that
| | shall open, when the lift has arrived at the
| | given recall floor, if any floor had been
| | defined.
| |
| +- Duration of the sirens/indication signal
| [CO:41DF-10]
| This object defines how long the
| siren/display output signal should remain
| switched on when the supervision functions
| has been triggered. By default, the signal
| will remain on as long as the supervision
```

```
| has been triggered. However, if you drive a
| siren or a buzzer, it may make sense to
| limit the duration.
|
+- Emergency Evacuation
| |
| +- Emergency Evacuation on/off [CO:41A3]
| | This operating mode is used to move the car to the very next floor by
| | opening the brake and limiting the velocity to 0.3 m/s maximum.
| |
| +- Emergency Evacuation stopping distance [CO:41A4]
| | If the operating mode 'Emergency Evacuation' is used to move the car to
| | the very next floor by opening the brake and limiting the velocity to
| | 0.3 m/s maximum, this object defines the stopping distance, used to
| | fine-tune the stop position in order to reduce the 'step' between the car
| | and the floor level.
| |
| +- Automatic Emergency Evacuation delay [CO:41A5]
| | If the operating mode 'Emergency Evacuation' is used to move the car
| | automatically to the very next floor, by releasing the brake and limiting
| | the velocity to 0.3 m/s maximum, this object defines the delay time used
| | to release the brake, after the operating mode has been activated.
| |
| +- Automatic Emergency Evacuation duration [CO:41A6]
| | If the operating mode 'Emergency Evacuation' is used to move the car
| | automatically to the very next floor, by releasing the brake and limiting
| | the velocity to 0.3 m/s maximum, this object defines the timeout used to
| | limit the operation duration, before the procedure is finally defined as
| | 'having failed'.
| |
| +- More…
| |
| +- Automatic Emergency Evacuation activation time [CO:41B6]
| | This object defines a delay time used to accept the input for turning
| | the lift into 'Automatic Evacuation Operation'. This might be useful,
| | if the output that triggers this input, may be peaked up for a short
| | time, without the lift being in need to react on it.
| |
| +- Emergency Evacuation maximum velocity [CO:41B5]
| | This operating mode is used to move the car to the very next floor by
| | opening the brake and limiting the velocity to the given value,
| | typically 0.3 m/s maximum. This object is used to define the velocity
| | threshold used to engage the brake.
| |
| +- Automatic Emergency Evacuation Movement Supervision [CO:41B9]
| | If the operating mode 'Emergency Evacuation' is used to move the car
| | automatically to the very next floor, by releasing the brake and
| | limiting the velocity to typically 0.3 m/s maximum, this object
| | defines a supervision time used to detect, if the car actually starts
| | moving at all. This supervision timer is re-triggered as long as the
| | car is moving.
| |
| +- Manual Emergency Evacuation Safety Chain Check [CO:41B7]
| This object defines, if on manual emergency evacuation operation
| mode, the safety chain is taken in account as a prerequisite to open
| the brake. In the case there is no power on the safety chain, the
| technician has manually to check that all doors have been closed,
| before releasing the brake. This is the same as he/she would manually
| release the brake mechanically. We always suggest to keep the safety
| chain alive for this operation mode, but it is not always possible.
| So use that feature with care.
|
+- Low Pit/Head Barrier Supervision
| |
| +- Low Pit/Head Barrier Supervision [CO:4043]
| | This object defines if supervision signals are used to monitor the
| | mechanical position of the barriers used in low pit/head solutions. The
| | requirements for this might be differ in different countries.
| |
| +- Type of Low Pit/Head Barrier Supervision [CO:4059]
| | This object defines if the lift features a low pit & head or only pit or
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| | only head solution.
| |
| +- Input terminal assignment Low Pit/Head Barriers
| | |
| | +- Barrier 1 INS low pit/head circuit [CO:40C0-1]
| | | This objects can be used to assign a specific barrier function or
| | | placement to a low head/pit supervision input pair. Using these
| | | objects, you can define if an input signal pair is specifically used
| | | for the pit, the head or a fence supervision. This information can be
| | | used by the lift controller to draw the icons in the right colour
| | | onto the screen, making it easier to see, which barrier or balustrade
| | | is in the wrong position to operate the lift in normal or inspection
| | | mode.
| | |
| | +- Barrier 2 INS low pit/head circuit [CO:40C0-2]
| | | This objects can be used to assign a specific barrier function or
| | | placement to a low head/pit supervision input pair. Using these
| | | objects, you can define if an input signal pair is specifically used
| | | for the pit, the head or a fence supervision. This information can be
| | | used by the lift controller to draw the icons in the right colour
| | | onto the screen, making it easier to see, which barrier or balustrade
| | | is in the wrong position to operate the lift in normal or inspection
| | | mode.
| | |
| | +- Barrier 3 INS low pit/head circuit [CO:40C0-3]
| | This objects can be used to assign a specific barrier function or
| | placement to a low head/pit supervision input pair. Using these
| | objects, you can define if an input signal pair is specifically used
| | for the pit, the head or a fence supervision. This information can be
| | used by the lift controller to draw the icons in the right colour
| | onto the screen, making it easier to see, which barrier or balustrade
| | is in the wrong position to operate the lift in normal or inspection
| | mode.
| |
| |
| +- More…
| |
| +- Extra Door Supervision Signals
| | |
| | +- Extra Door Supervision Signals [CO:4042]
| | | This object defines if some doors feature an extra supervision
| | | contact, indicating that the door has been opened unattended.
| | |
| | +- Door Supervision Table [CO:4041]
| | | This object holds the table declaring which doors feature an extra
| | | supervision contact, indicating that the door has been opened
| | | unattended.
| | |
| | +- Extra Door Supervision Time Span [CO:4048]
| | | This object defines the time the extra door supervision contacts must
| | | be low in order to throw a supervision fault event.
| | |
| | +- Extra Door Supervision Contactor Monitoring [CO:4049]
| | | This object defines if a special contactor is monitored, that is used
| | | to turn off the safety chain power, if one or more of the extra door
| | | supervision contacts signal, that a door has been opened.
| | |
| | +- More…
| | |
| | +- Extra Door Supervision Landing Contact [CO:4068]
| | | This object defines if the closed landing door contact shall be
| | | used to decide, if the extra door supervision contact on the
| | | current floor, shall be checked as well, before start or not.
| | |
| | +- Emergency Rescue top distance, if shaft head door supervision
| | | has been tripped [CO:4094]
| | | This object defines the distance to stop before the last floor
| | | level position, if driving on emergency rescue operation, if the
| | | extra door supervision, usually used together with a low head or
| | | low pit solution, has been tripped.
| | |
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| | +- Emergency Rescue bottom distance, if shaft pit door supervision
| | has been tripped [CO:4095]
| | This object defines the distance to stop before the last floor
| | level position, if driving on emergency rescue operation, if the
| | extra door supervision, usually used together with a low head or
| | low pit solution, has been tripped.
| |
| +- Low Pit/Head Barrier Blocking Policy [CO:41E0]
| | This object defines if the lift shall be blocked, if the Low Pit/Head
| | Barrier solution has been tripped. Usually the lift has to be blocked
| | in that situation. But for some regions, exceptions for renovating
| | older lifts had been introduced, which do not require or not allow
| | the lift to enter blocking operation.
| |
| +- Inspection floor stop distance
| | |
| | +- Inspection top floor stop distance [CO:401E]
| | | This object defines the distance to stop before the top floor level
| | | position, if driving on inspection operation.
| | |
| | +- Inspection bottom floor stop distance [CO:401F]
| | | This object defines the distance to stop before the bottom floor
| | | level position, if driving on inspection operation.
| | |
| | +- Terminal (Pre-limit) Hoistway Switches [CO:4157]
| | This object defines if terminal (pre-limit) hoistway switches are
| | regularly used to ensure the lift decelerating to V0, before the very
| | end of the hoistway has been reached.
| |
| +- Low pit barrier safe distance [CO:405A]
| This object defines the lowest position to which the car/cabin can
| travel downwards without the low pit barrier set to inspection.
|
+- Much more…
|
+- Energy Saving Operation
| |
| +- Energy Saving Timer
| | |
| | +- Energy Saving Timer [CO:41AE]
| | | If the lift is idle for the given time span, the lift will
| | | activate the dedicated output and transmits 'Energy Saving Level
| | | S4' via the CANopen bus. Usually the CANopen displays and drive
| | | units will react on this automatically, entering an energy
| | | saving operation mode. Be aware that this actually means, that
| | | processing the first landing call might take a bit longer as the
| | | systems have to enter normal operation first.
| | |
| | +- Energy Saving Wakeup Time [CO:41AC]
| | If the lift is idle for the given time span, the lift will
| | activate the dedicated output and transmits 'Energy Saving Level
| | S4' via the CANopen bus. Usually the CANopen displays and drive
| | units will react on this automatically, entering an energy
| | saving operation mode. This time defines how long it takes to
| | wake up all components, that had entered the energy saving
| | operation before.
| |
| +- Standby Timer
| |
| +- Standby Timer [CO:41AF]
| | If the lift is idle for the given time span, the lift will
| | activate the dedicated output and transmits 'Energy Saving Level
| | S6' via the CANopen bus. Usually the CANopen displays, doors and
| | drive units will react on this automatically, entering standby
| | operation mode. Be aware that this actually means, that
| | processing the first landing call might take quite a bit longer
| | as the systems have to enter normal operation first and the
| | drive unit needs to power up its DC-bus again.
| |
| +- Standby Wakeup Time [CO:41AD]
| If the lift is idle for the given time span, the lift will
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| activate the dedicated output and transmits 'Energy Saving Level
| S6' via the CANopen bus. Usually the CANopen displays, doors and
| drive units will react on this automatically, entering standby
| operation mode. This time defines how long it takes to wake up
| all components, that had entered standby operation before.
|
+- Earthquake Operation
|
+- Rescue/Salvage operation
| |
| +- Rescue/Salvage operation usage [CO:416C]
| | This object is used to turn on the usage of the rescue operation
| | mode, that is usually activated via an input terminal and will behave
| | like a simple fire alarm operation but provides the possibility to
| | control the car via car calls, once the lift has arrived at the
| | rescue floor and a key-switch in the car has been activated. Doors
| | are on constant pressure operation mode and the light curtains will
| | be ignored to ensure they are not effected by smoke. This operation
| | mode is usually used to evacuate people in a wheelchair out of the
| | building.
| |
| +- Rescue operation floor [CO:416D]
| | This object is used to select the floor to which the car is driven,
| | when the lift has been turned to rescue operation mode.
| |
| +- Rescue operation floor doors [CO:416E]
| | This object is used to select the doors to open at the floor to which
| | the car is driven, when the lift has been turned to rescue operation
| | mode.
| |
| +- Table for excluding doors in Rescue operation [CO:417A]
| | This object holds the cross-out table of all landing doors that can
| | not be operated in evacuation service operation. After arrival of the
| | lift, the output signal 'Special Indication > Door open request
| | acknowledge, lift 1, car/cabin, door X' can be used to lit up the
| | 'Door open button' on that floor and door side, that actually can be
| | opened by the evacuation assistant.
| |
| +- Rescue operation stopovers [CO:417B]
| This object defines if being on automatic rescue/evacuation operation
| it shall be allowed to do stopover on the way back to the recall
| floor. This shall usually only be allowed, if the lift is equipped
| with sensors that indicate that there is enough space left to take
| more wheel chairs and passengers. This sensor shall trigger the full
| load in order to prevent stopovers.
|
+- Circulating operation
| |
| +- Circulating operation usage [CO:41A7]
| | This operating mode can be used, if the lift shall drive
| | automatically to a set of floors, stopover on each defined floor, do
| | a door cycle at the floor and finally drive to the next given floor,
| | from the floor table. Once the floor table has been completed, the
| | lift will start over again. You can define how many complete cycles
| | the lift shall do, before pausing this operation mode for an
| | adjustable time span.
| |
| +- Floor table/plan for circulating operation [CO:41AA]
| | This object defines the floor table/plan used, if running on
| | circulating operation, to define to which floors the lift shall drive
| | in which order. The lowest entry is the main floor, were the car will
| | in the end return to.
| |
| +- Cycle counts on circulating operation [CO:41A8]
| | This object defines how many cycles the lift controller shall
| | perform, before doing a pause and operating normally.
| |
| +- Pausing time in-between cycles on circulating operation [CO:41A9]
| | This object defines the pause time in-between cycles, if having
| | performed the given count of cycles.
| |
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| +- More…
| |
| +- Inhibit time for regularly passenger calls [CO:41AB]
| | This object defines the inhibit time used, if a regularly
| | passenger call has been processed, before the next could
| | interrupt the circulating operation again.
| |
| +- Light barrier power off function [CO:41B4]
| | This object defines if the light barrier shall be powered off
| | after arrival, when operating in circulating operation mode
| |
| +- Light barrier power off time [CO:41B3]
| This object defines the time the light barrier will be powered
| off after arrival, if the lift is running on circulating
| operation mode.
|
+- Further more…
|
+- Chemical operation parameter
| |
| +- Chemical operation usage [CO:41D0-1]
| | This object defines if the lift shall support the transportation
| | of chemicals or hazard goods. In this operation mode a
| | technician can load the car with a key and then move the car to
| | another floor by using the same key on a different landing
| | floor.
| |
| +- Chemical operation timeout [CO:41D0-2]
| This object defines the timeout for the chemical operation mode,
| if the technician using it, would forget to use the key switch
| in the 'Reset' position once to bring the lift back to normal
| operation.
|
+- Peak-up/down operation
| |
| +- Peak-up mode ignores downward landing calls [CO:41E5]
| | This object defines if the lift being in peak-up operation,
| | shall ignore pending downward landing calls. Use this function
| | with care. Ensure that other group/team lifts are able to serve
| | downwards calls, as long as this lift ignores them.
| |
| +- Peak-down mode ignores upward landing calls [CO:41E6]
| This object defines if the lift being in peak-down operation,
| shall ignore pending upward landing calls. Use this function
| with care. Ensure that other group/team lifts are able to serve
| upwards calls, as long as this lift ignores them.
|
+- Velocity thresholds
| |
| +- Velocity Threshold 1 [CO:41F0-1]
| | This object defines velocity thresholds used to control output
| | signals, that can for example be featured to operate
| | deceleration supervision circuits. The signals will be turned
| | on, if the velocity has fallen under the given threshold.
| |
| +- Velocity Threshold 2 [CO:41F0-2]
| | This object defines velocity thresholds used to control output
| | signals, that can for example be featured to operate
| | deceleration supervision circuits. The signals will be turned
| | on, if the velocity has fallen under the given threshold.
| |
| +- Velocity Threshold 3 [CO:41F0-3]
| | This object defines velocity thresholds used to control output
| | signals, that can for example be featured to operate
| | deceleration supervision circuits. The signals will be turned
| | on, if the velocity has fallen under the given threshold.
| |
| +- Velocity Threshold 4 [CO:41F0-4]
| This object defines velocity thresholds used to control output
| signals, that can for example be featured to operate
| deceleration supervision circuits. The signals will be turned
```

```
| on, if the velocity has fallen under the given threshold.
|
+- Timeout Emergency Lift Phone readiness indication [CO:41EC]
This object defines the timeout used to render the lift non
operational, if the emergency telephone system indicates to be not
ready anymore. This might happen, if the mobile telephone net is down
or the unit has no receiption for any other reason.
|
+- Special Functions…
|
+- Automobile transport parameter
| |
| +- Automobile transport usage [CO:41D1-1]
| This object specifies that the lift is mainly used for
| automobile or vehicle transportation. There is an input
| signal that can be used when the lift is exceptionally used
| for passenger transport and the positioning light barriers
| shall be ignored.
|
+- Building Zones
|
+- Building Zones Usage [CO:41CB-1]
| This object defines if the lift shall interprete the
| different zone tables as zones or floor ranges in a
| building. Other functions, like fire alarm, can feature
| that information, in order to apply rules and policies,
| depending in which zone the car currently is or is driving
| to.
|
+- Building Zone Tables
| |
| +- Building Zone Table 1 [CO:41CC]
| | This object defines a zone or range of floors in a
| | building. The table works basically like a floor
| | table, having set a bit (dot) for every floor, that
| | belongs to the given zone.
| |
| +- Building Zone Table 2 [CO:41CD]
| | This object defines a zone or range of floors in a
| | building. The table works basically like a floor
| | table, having set a bit (dot) for every floor, that
| | belongs to the given zone.
| |
| +- Building Zone Table 3 [CO:41CE]
| | This object defines a zone or range of floors in a
| | building. The table works basically like a floor
| | table, having set a bit (dot) for every floor, that
| | belongs to the given zone.
| |
| +- Building Zone Table 4 [CO:41CF]
| This object defines a zone or range of floors in a
| building. The table works basically like a floor
| table, having set a bit (dot) for every floor, that
| belongs to the given zone.
|
+- Building Zones Car Calls Policy [CO:41CB-3]
| This object defines how car calls shall be handled within a
| building zone. Typically only car calls within the very
| same zone are allowed, preventing passengers from cross a
| zone by entering a car call. This rule excludes high
| priority car calls, that are usually key locked anyway.
|
+- Building Zones Fire Alarm Policy [CO:41CB-2]
This object defines if the index of the current building
zone (1…n) shall be used to pick the fire alarm floor from
the fire alarm level table. To use that feature you have
to set the fire alarm strategy to 'simple' in the first
place.
|
+- Helicopter Feature
|
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+- Helicopter Feature [CO:419B]
| This object defines whether the lift should support the
| helicopter function used in some hospitals. There the lift
| must be ready to be called to the helicopter floor and then
| wait for the patient to be transported.
|
+- Helicopter allocation floor [CO:4107-7]
| This object defines the floor, were the lift shall wait for
| the helicopter's crew. Usually an allocation time is
| defined as a final timeout.
|
+- Helicopter standby floor [CO:4107-8]
| This object defines the floor, were the lift shall be
| standby in order for being called to the actual helicopter
| floor.
|
+- High priority call helicopter allocation time [CO:4113-11]
This object defines the dwell or allocation time used by
the lift after having stopped because of a high priority
landing call at the helicopter floor.
|
- Doors
|
+- Count of car/cabin doors [CO:4003]
| The count of car/cabin doors of the lift.
|
+- Landing Door Tables
| |
| +- Landing Door Table 1 (Default) [CO:400B]
| | This object holds the table declaring all landing doors. (Door table 1)
| |
| +- Landing Door Table 2 [CO:400C]
| | This object holds the second alternate table declaring all landing doors. (Door
| | table 2)
| |
| +- Landing Door Table 3 [CO:400D]
| | This object holds the third alternate table declaring all landing doors. (Door table
| | 3)
| |
| +- Landing Door Table 4 [CO:400E]
| | This object holds the fourth alternate table declaring all landing doors. (Door
| | table 4)
| |
| +- Swing/Manual Door Table [CO:400F]
| This object holds the table declaring swing door exceptions for generally as
| automatic door defined landing doors. This table is rarely used.
|
+- Door Properties
| |
| +- Door A
| | |
| | +- Type of Door A [CO:4005-1]
| | | The type of each of the lift doors, like 'Automatic car door & landing door'.
| | | This object defines only the mechanical type of the door not the way it is
| | | controlled.
| | |
| | +- Door limit switches & signals
| | | |
| | | +- Door limit switch 'opened' [CO:4006-1]
| | | | This object defines if the door unit has limit switch information,
| | | | signaling if the door has been 'fully opened'.
| | | |
| | | +- Door limit switch 'closed' [CO:4007-1]
| | | | This object defines if the door unit has limit switch information,
| | | | signaling if the door has been 'fully closed'.
| | | |
| | | +- Door drive at limit switch 'opened' [CO:4017-1]
| | | | This objects defines the behaviour of the door drive, if the limit switch
| | | | 'opened' has been reached. The door drive may be turned off at the limit
| | | | switch or kept being turned on.
| | | |
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| | | +- Door drive at limit switch 'closed' [CO:4018-1]
| | | | This objects defines the behaviour of the door drive, if the limit switch
| | | | 'closed' has been reached. The door drive may be turned off at the limit
| | | | switch or kept being turned on.
| | | |
| | | +- More…
| | | |
| | | +- Car door safely closed position switches [CO:4039-1]
| | | | In order to comply with the EN81-20, some doors provide an separate
| | | | position switch, signalling that the car door is safely
| | | | (mechanically) closed. This signal is used to ensure that the lift
| | | | can be safely driven in car door bypass operation.
| | | |
| | | +- Door signals reversal time [CO:4091-1]
| | | | This object defines the minimum time span for reversing the door open
| | | | and close signals.
| | | |
| | | +- Door close signal afterrun on opening [CO:4090-1]
| | | This object defines if the door close signal shall be kept on for a
| | | short timespan, when the doors start to open. Some door solutions
| | | involving car door locking mechanism required this behaviour.
| | |
| | +- Door opening time span [CO:4123-1]
| | | This object defines the time span the door needs usually to open. This time is
| | | used if the limit switch does not signal the door to be opened or the door has
| | | no limit switches at all.
| | |
| | +- Door closing time span [CO:4172-1]
| | | This object defines the time span the door need usually to close. This time is
| | | used if the limit switch does not signal the door to be closed or the door has
| | | no limit switches at all.
| | |
| | +- More…
| | |
| | +- Door locking time span [CO:4174-1]
| | | This object defines the time span the door/cam lock needs to lock the
| | | landing door mechanically.
| | |
| | +- Door unlocking time span [CO:4173-1]
| | | This object defines the time span the door/cam lock needs to unlock the
| | | landing door mechanically.
| | |
| | +- Door lock engage delay [CO:4069-1]
| | | This object defines the delay time between the door lock policy being
| | | fulfilled (typically the landing door being closed) and the door lock
| | | output (magnet) being engaged.
| | |
| | +- Door lock dropping delay [CO:406E-1]
| | | This object defines the delay time between the moment the door lock output
| | | (magnet) could be released and the output really dropping the power. This
| | | might be useful if the mechanics of the door require the magnet being
| | | dropped belated, while the car door is already opening.
| | |
| | +- More…
| | |
| | +- Close door A at idle [CO:4009-1]
| | | Use this object to define the time span for closing the lift doors
| | | automatically, if no load, dwell or allocation time is running.
| | |
| | +- Close door at idle after last car call [CO:4093-1]
| | | Use this object to define if after the last car call the dwell time
| | | or idle time shall close the door.
| | |
| | +- Open door before unlocking [CO:406F-1]
| | | This object defines if the automatic car door shall and can be
| | | opened, before the landing door has been unlocked, usually via a cam
| | | lock magnet.
| | |
| | +- Safety light curtain usage [CO:403A-1]
| | This object defines if the cabin/car features safety light curtains.
| | Those safety light curtains may be used instead of car/cabin doors on
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| | older lifts having swing/manual doors.
| |
| +- Door B
| | |
| | +- Type of Door B [CO:4005-2]
| | | The type of each of the lift doors, like 'Automatic car door & landing door'.
| | | This object defines only the mechanical type of the door not the way it is
| | | controlled.
| | |
| | +- Door limit switches & signals
| | | |
| | | +- Door limit switch 'opened' [CO:4006-2]
| | | | This object defines if the door unit has limit switch information,
| | | | signaling if the door has been 'fully opened'.
| | | |
| | | +- Door limit switch 'closed' [CO:4007-2]
| | | | This object defines if the door unit has limit switch information,
| | | | signaling if the door has been 'fully closed'.
| | | |
| | | +- Door drive at limit switch 'opened' [CO:4017-2]
| | | | This objects defines the behaviour of the door drive, if the limit switch
| | | | 'opened' has been reached. The door drive may be turned off at the limit
| | | | switch or kept being turned on.
| | | |
| | | +- Door drive at limit switch 'closed' [CO:4018-2]
| | | | This objects defines the behaviour of the door drive, if the limit switch
| | | | 'closed' has been reached. The door drive may be turned off at the limit
| | | | switch or kept being turned on.
| | | |
| | | +- More…
| | | |
| | | +- Car door safely closed position switches [CO:4039-2]
| | | | In order to comply with the EN81-20, some doors provide an separate
| | | | position switch, signalling that the car door is safely
| | | | (mechanically) closed. This signal is used to ensure that the lift
| | | | can be safely driven in car door bypass operation.
| | | |
| | | +- Door signals reversal time [CO:4091-2]
| | | | This object defines the minimum time span for reversing the door open
| | | | and close signals.
| | | |
| | | +- Door close signal afterrun on opening [CO:4090-2]
| | | This object defines if the door close signal shall be kept on for a
| | | short timespan, when the doors start to open. Some door solutions
| | | involving car door locking mechanism required this behaviour.
| | |
| | +- Door opening time span [CO:4123-2]
| | | This object defines the time span the door needs usually to open. This time is
| | | used if the limit switch does not signal the door to be opened or the door has
| | | no limit switches at all.
| | |
| | +- Door closing time span [CO:4172-2]
| | | This object defines the time span the door need usually to close. This time is
| | | used if the limit switch does not signal the door to be closed or the door has
| | | no limit switches at all.
| | |
| | +- More…
| | |
| | +- Door locking time span [CO:4174-2]
| | | This object defines the time span the door/cam lock needs to lock the
| | | landing door mechanically.
| | |
| | +- Door unlocking time span [CO:4173-2]
| | | This object defines the time span the door/cam lock needs to unlock the
| | | landing door mechanically.
| | |
| | +- Door lock engage delay [CO:4069-2]
| | | This object defines the delay time between the door lock policy being
| | | fulfilled (typically the landing door being closed) and the door lock
| | | output (magnet) being engaged.
| | |
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| | +- Door lock dropping delay [CO:406E-2]
| | | This object defines the delay time between the moment the door lock output
| | | (magnet) could be released and the output really dropping the power. This
| | | might be useful if the mechanics of the door require the magnet being
| | | dropped belated, while the car door is already opening.
| | |
| | +- More…
| | |
| | +- Close door B at idle [CO:4009-2]
| | | Use this object to define the time span for closing the lift doors
| | | automatically, if no load, dwell or allocation time is running.
| | |
| | +- Close door at idle after last car call [CO:4093-2]
| | | Use this object to define if after the last car call the dwell time
| | | or idle time shall close the door.
| | |
| | +- Open door before unlocking [CO:406F-2]
| | | This object defines if the automatic car door shall and can be
| | | opened, before the landing door has been unlocked, usually via a cam
| | | lock magnet.
| | |
| | +- Safety light curtain usage [CO:403A-2]
| | This object defines if the cabin/car features safety light curtains.
| | Those safety light curtains may be used instead of car/cabin doors on
| | older lifts having swing/manual doors.
| |
| +- Door C
| | |
| | +- Type of Door C [CO:4005-3]
| | | The type of each of the lift doors, like 'Automatic car door & landing door'.
| | | This object defines only the mechanical type of the door not the way it is
| | | controlled.
| | |
| | +- Door limit switches & signals
| | | |
| | | +- Door limit switch 'opened' [CO:4006-3]
| | | | This object defines if the door unit has limit switch information,
| | | | signaling if the door has been 'fully opened'.
| | | |
| | | +- Door limit switch 'closed' [CO:4007-3]
| | | | This object defines if the door unit has limit switch information,
| | | | signaling if the door has been 'fully closed'.
| | | |
| | | +- Door drive at limit switch 'opened' [CO:4017-3]
| | | | This objects defines the behaviour of the door drive, if the limit switch
| | | | 'opened' has been reached. The door drive may be turned off at the limit
| | | | switch or kept being turned on.
| | | |
| | | +- Door drive at limit switch 'closed' [CO:4018-3]
| | | | This objects defines the behaviour of the door drive, if the limit switch
| | | | 'closed' has been reached. The door drive may be turned off at the limit
| | | | switch or kept being turned on.
| | | |
| | | +- More…
| | | |
| | | +- Car door safely closed position switches [CO:4039-3]
| | | | In order to comply with the EN81-20, some doors provide an separate
| | | | position switch, signalling that the car door is safely
| | | | (mechanically) closed. This signal is used to ensure that the lift
| | | | can be safely driven in car door bypass operation.
| | | |
| | | +- Door signals reversal time [CO:4091-3]
| | | | This object defines the minimum time span for reversing the door open
| | | | and close signals.
| | | |
| | | +- Door close signal afterrun on opening [CO:4090-3]
| | | This object defines if the door close signal shall be kept on for a
| | | short timespan, when the doors start to open. Some door solutions
| | | involving car door locking mechanism required this behaviour.
| | |
| | +- Door opening time span [CO:4123-3]
```

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| | | This object defines the time span the door needs usually to open. This time is
| | | used if the limit switch does not signal the door to be opened or the door has
| | | no limit switches at all.
| | |
| | +- Door closing time span [CO:4172-3]
| | | This object defines the time span the door need usually to close. This time is
| | | used if the limit switch does not signal the door to be closed or the door has
| | | no limit switches at all.
| | |
| | +- More…
| | |
| | +- Door locking time span [CO:4174-3]
| | | This object defines the time span the door/cam lock needs to lock the
| | | landing door mechanically.
| | |
| | +- Door unlocking time span [CO:4173-3]
| | | This object defines the time span the door/cam lock needs to unlock the
| | | landing door mechanically.
| | |
| | +- Door lock engage delay [CO:4069-3]
| | | This object defines the delay time between the door lock policy being
| | | fulfilled (typically the landing door being closed) and the door lock
| | | output (magnet) being engaged.
| | |
| | +- Door lock dropping delay [CO:406E-3]
| | | This object defines the delay time between the moment the door lock output
| | | (magnet) could be released and the output really dropping the power. This
| | | might be useful if the mechanics of the door require the magnet being
| | | dropped belated, while the car door is already opening.
| | |
| | +- More…
| | |
| | +- Close door C at idle [CO:4009-3]
| | | Use this object to define the time span for closing the lift doors
| | | automatically, if no load, dwell or allocation time is running.
| | |
| | +- Close door at idle after last car call [CO:4093-3]
| | | Use this object to define if after the last car call the dwell time
| | | or idle time shall close the door.
| | |
| | +- Open door before unlocking [CO:406F-3]
| | | This object defines if the automatic car door shall and can be
| | | opened, before the landing door has been unlocked, usually via a cam
| | | lock magnet.
| | |
| | +- Safety light curtain usage [CO:403A-3]
| | This object defines if the cabin/car features safety light curtains.
| | Those safety light curtains may be used instead of car/cabin doors on
| | older lifts having swing/manual doors.
| |
| +- Door D
| |
| +- Type of Door D [CO:4005-4]
| | The type of each of the lift doors, like 'Automatic car door & landing door'.
| | This object defines only the mechanical type of the door not the way it is
| | controlled.
| |
| +- Door limit switches & signals
| | |
| | +- Door limit switch 'opened' [CO:4006-4]
| | | This object defines if the door unit has limit switch information,
| | | signaling if the door has been 'fully opened'.
| | |
| | +- Door limit switch 'closed' [CO:4007-4]
| | | This object defines if the door unit has limit switch information,
| | | signaling if the door has been 'fully closed'.
| | |
| | +- Door drive at limit switch 'opened' [CO:4017-4]
| | | This objects defines the behaviour of the door drive, if the limit switch
| | | 'opened' has been reached. The door drive may be turned off at the limit
| | | switch or kept being turned on.
```

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| | |
| | +- Door drive at limit switch 'closed' [CO:4018-4]
| | | This objects defines the behaviour of the door drive, if the limit switch
| | | 'closed' has been reached. The door drive may be turned off at the limit
| | | switch or kept being turned on.
| | |
| | +- More…
| | |
| | +- Car door safely closed position switches [CO:4039-4]
| | | In order to comply with the EN81-20, some doors provide an separate
| | | position switch, signalling that the car door is safely
| | | (mechanically) closed. This signal is used to ensure that the lift
| | | can be safely driven in car door bypass operation.
| | |
| | +- Door signals reversal time [CO:4091-4]
| | | This object defines the minimum time span for reversing the door open
| | | and close signals.
| | |
| | +- Door close signal afterrun on opening [CO:4090-4]
| | This object defines if the door close signal shall be kept on for a
| | short timespan, when the doors start to open. Some door solutions
| | involving car door locking mechanism required this behaviour.
| |
| +- Door opening time span [CO:4123-4]
| | This object defines the time span the door needs usually to open. This time is
| | used if the limit switch does not signal the door to be opened or the door has
| | no limit switches at all.
| |
| +- Door closing time span [CO:4172-4]
| | This object defines the time span the door need usually to close. This time is
| | used if the limit switch does not signal the door to be closed or the door has
| | no limit switches at all.
| |
| +- More…
| |
| +- Door locking time span [CO:4174-4]
| | This object defines the time span the door/cam lock needs to lock the
| | landing door mechanically.
| |
| +- Door unlocking time span [CO:4173-4]
| | This object defines the time span the door/cam lock needs to unlock the
| | landing door mechanically.
| |
| +- Door lock engage delay [CO:4069-4]
| | This object defines the delay time between the door lock policy being
| | fulfilled (typically the landing door being closed) and the door lock
| | output (magnet) being engaged.
| |
| +- Door lock dropping delay [CO:406E-4]
| | This object defines the delay time between the moment the door lock output
| | (magnet) could be released and the output really dropping the power. This
| | might be useful if the mechanics of the door require the magnet being
| | dropped belated, while the car door is already opening.
| |
| +- More…
| |
| +- Close door D at idle [CO:4009-4]
| | Use this object to define the time span for closing the lift doors
| | automatically, if no load, dwell or allocation time is running.
| |
| +- Close door at idle after last car call [CO:4093-4]
| | Use this object to define if after the last car call the dwell time
| | or idle time shall close the door.
| |
| +- Open door before unlocking [CO:406F-4]
| | This object defines if the automatic car door shall and can be
| | opened, before the landing door has been unlocked, usually via a cam
| | lock magnet.
| |
| +- Safety light curtain usage [CO:403A-4]
| This object defines if the cabin/car features safety light curtains.
```

```
| Those safety light curtains may be used instead of car/cabin doors on
| older lifts having swing/manual doors.
|
+- Door Options & Times
| |
| +- Door Times
| | |
| | +- Opening/Closing/Locking Times
| | | |
| | | +- Door A
| | | | |
| | | | +- Door opening time span [CO:4123-1]
| | | | | This object defines the time span the door needs usually to open.
| | | | | This time is used if the limit switch does not signal the door to be
| | | | | opened or the door has no limit switches at all.
| | | | |
| | | | +- Door closing time span [CO:4172-1]
| | | | | This object defines the time span the door need usually to close.
| | | | | This time is used if the limit switch does not signal the door to be
| | | | | closed or the door has no limit switches at all.
| | | | |
| | | | +- Door locking time span [CO:4174-1]
| | | | | This object defines the time span the door/cam lock needs to lock the
| | | | | landing door mechanically.
| | | | |
| | | | +- Door unlocking time span [CO:4173-1]
| | | | | This object defines the time span the door/cam lock needs to unlock
| | | | | the landing door mechanically.
| | | | |
| | | | +- More…
| | | | |
| | | | +- Door lock engage delay [CO:4069-1]
| | | | | This object defines the delay time between the door lock policy
| | | | | being fulfilled (typically the landing door being closed) and
| | | | | the door lock output (magnet) being engaged.
| | | | |
| | | | +- Door lock dropping delay [CO:406E-1]
| | | | This object defines the delay time between the moment the door
| | | | lock output (magnet) could be released and the output really
| | | | dropping the power. This might be useful if the mechanics of the
| | | | door require the magnet being dropped belated, while the car
| | | | door is already opening.
| | | |
| | | +- Door B
| | | | |
| | | | +- Door opening time span [CO:4123-2]
| | | | | This object defines the time span the door needs usually to open.
| | | | | This time is used if the limit switch does not signal the door to be
| | | | | opened or the door has no limit switches at all.
| | | | |
| | | | +- Door closing time span [CO:4172-2]
| | | | | This object defines the time span the door need usually to close.
| | | | | This time is used if the limit switch does not signal the door to be
| | | | | closed or the door has no limit switches at all.
| | | | |
| | | | +- Door locking time span [CO:4174-2]
| | | | | This object defines the time span the door/cam lock needs to lock the
| | | | | landing door mechanically.
| | | | |
| | | | +- Door unlocking time span [CO:4173-2]
| | | | | This object defines the time span the door/cam lock needs to unlock
| | | | | the landing door mechanically.
| | | | |
| | | | +- More…
| | | | |
| | | | +- Door lock engage delay [CO:4069-2]
| | | | | This object defines the delay time between the door lock policy
| | | | | being fulfilled (typically the landing door being closed) and
| | | | | the door lock output (magnet) being engaged.
| | | | |
| | | | +- Door lock dropping delay [CO:406E-2]
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| | | | | This object defines the delay time between the moment the door
| | | | | lock output (magnet) could be released and the output really
| | | | | dropping the power. This might be useful if the mechanics of the
| | | | | door require the magnet being dropped belated, while the car
| | | | | door is already opening.
| | | | |
| | | | +- Door C
| | | | | |
| | | | | +- Door opening time span [CO:4123-3]
| | | | | | This object defines the time span the door needs usually to open.
| | | | | | This time is used if the limit switch does not signal the door to be
| | | | | | opened or the door has no limit switches at all.
| | | | | |
| | | | | +- Door closing time span [CO:4172-3]
| | | | | | This object defines the time span the door need usually to close.
| | | | | | This time is used if the limit switch does not signal the door to be
| | | | | | closed or the door has no limit switches at all.
| | | | | |
| | | | | +- Door locking time span [CO:4174-3]
| | | | | | This object defines the time span the door/cam lock needs to lock the
| | | | | | landing door mechanically.
| | | | | |
| | | | | +- Door unlocking time span [CO:4173-3]
| | | | | | This object defines the time span the door/cam lock needs to unlock
| | | | | | the landing door mechanically.
| | | | | |
| | | | | +- More…
| | | | | |
| | | | | +- Door lock engage delay [CO:4069-3]
| | | | | | This object defines the delay time between the door lock policy
| | | | | | being fulfilled (typically the landing door being closed) and
| | | | | | the door lock output (magnet) being engaged.
| | | | | |
| | | | | +- Door lock dropping delay [CO:406E-3]
| | | | | This object defines the delay time between the moment the door
| | | | | lock output (magnet) could be released and the output really
| | | | | dropping the power. This might be useful if the mechanics of the
| | | | | door require the magnet being dropped belated, while the car
| | | | | door is already opening.
| | | | |
| | | | +- Door D
| | | | |
| | | | +- Door opening time span [CO:4123-4]
| | | | | This object defines the time span the door needs usually to open.
| | | | | This time is used if the limit switch does not signal the door to be
| | | | | opened or the door has no limit switches at all.
| | | | |
| | | | +- Door closing time span [CO:4172-4]
| | | | | This object defines the time span the door need usually to close.
| | | | | This time is used if the limit switch does not signal the door to be
| | | | | closed or the door has no limit switches at all.
| | | | |
| | | | +- Door locking time span [CO:4174-4]
| | | | | This object defines the time span the door/cam lock needs to lock the
| | | | | landing door mechanically.
| | | | |
| | | | +- Door unlocking time span [CO:4173-4]
| | | | | This object defines the time span the door/cam lock needs to unlock
| | | | | the landing door mechanically.
| | | | |
| | | | +- More…
| | | | |
| | | | +- Door lock engage delay [CO:4069-4]
| | | | | This object defines the delay time between the door lock policy
| | | | | being fulfilled (typically the landing door being closed) and
| | | | | the door lock output (magnet) being engaged.
| | | | |
| | | | +- Door lock dropping delay [CO:406E-4]
| | | | This object defines the delay time between the moment the door
| | | | lock output (magnet) could be released and the output really
| | | | dropping the power. This might be useful if the mechanics of the
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| | | door require the magnet being dropped belated, while the car
| | | door is already opening.
| | |
| | +- Dwell time values
| | | |
| | | +- Car call dwell time [CO:4113-1]
| | | | This object defines the dwell time used by the lift after having stopped
| | | | because of a car call.
| | | |
| | | +- Landing call dwell time [CO:4113-2]
| | | | This object defines the dwell time used by the lift after having stopped
| | | | because of a landing call.
| | | |
| | | +- Landing call lobby floor dwell time [CO:4113-3]
| | | | This object defines the dwell time used by the lift after having stopped
| | | | at the lobby floor because of a landing call.
| | | |
| | | +- Priority & guest call dwell times
| | | | |
| | | | +- Low priority call dwell time [CO:4113-4]
| | | | | This object defines the dwell time used by the lift after having
| | | | | stopped because of a low priority landing call.
| | | | |
| | | | +- High priority call dwell time [CO:4113-5]
| | | | | This object defines the dwell time used by the lift after having
| | | | | stopped because of a high priority landing call.
| | | | |
| | | | +- Guest call dwell time [CO:4113-6]
| | | | This object defines the dwell time used by the lift after having
| | | | stopped because of a guest landing call.
| | | |
| | | +- More…
| | | |
| | | +- Cancel dwell time by car call [CO:4126]
| | | | This object defines if the current dwell time should be cancelled by
| | | | a car call entered in the cabin.
| | | |
| | | +- Usage of barrier free door dwell times [CO:410D]
| | | | This object defines how barrier free door dwell times (for passengers
| | | | using wheel chairs) are used.
| | | |
| | | +- Car call barrier free dwell time extension [CO:4113-7]
| | | | This object defines the dwell time extension used by the lift after
| | | | having stopped because of a low priority car call, if being operated
| | | | in a 'barrier free' operating mode, typically for supporting wheel
| | | | chair passengers.
| | | |
| | | +- Landing call barrier free dwell time extension [CO:4113-8]
| | | | This object defines the dwell time extension used by the lift after
| | | | having stopped because of an extra landing call, if being operated in
| | | | a 'barrier free' operating mode, typically for supporting wheel chair
| | | | passengers.
| | | |
| | | +- Door detector dwell time [CO:4113-9]
| | | This object defines the dwell time used if a door was re-opened
| | | triggered by the door detector or force detector.
| | |
| | | +- Wheel chair door open button dwell time [CO:4113-10]
| | | This object defines the dwell time, used if a door was re-opened
| | | triggered by the door open button for wheel chairs. This button
| | | is usually using a longer dwell time, compared to the regular
| | | door open button.
| | |
| | +- Load time values & options
| | | |
| | | +- Load time span 1 [CO:4128]
| | | | This object defines the time span of the load time, triggered by the
| | | | signal 'Load Time 1'.
| | | |
| | | +- Load time span 2 [CO:4129]
| | | | This object defines the time span of the load time, triggered by the
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| | | | signal 'Load Time 2'.
| | | |
| | | +- Cancel load time by car call [CO:4127]
| | | | This object defines if the current load time should be canceled by a car
| | | | call entered in the cabin.
| | | |
| | | +- Cancel car calls on load time activation [CO:412A]
| | | | This object defines if the pending car calls should be cancelled, if a
| | | | load time operation has been activated.
| | | |
| | | +- Cancel landing calls on load time activation [CO:412B]
| | | This object defines if the pending landing calls should be canceled, if a
| | | load time operation has been activated.
| | |
| | +- Pre-Warning & Nudging Times
| | | |
| | | +- Door Preclose Warning [CO:4019]
| | | | Use this object to warn passengers for the given time span, before the
| | | | doors actually start closing, being in normal operation mode, for instance
| | | | if the 'passengers' are fork-lift trucks.
| | | |
| | | +- Door Nudging Preclose Warning [CO:4020]
| | | | Use this object to warn passengers for the given time span, before the
| | | | doors actually start closing, being in nudging operation mode, ignoring
| | | | the light curtain and motion detector.
| | | |
| | | +- Door Preopen Warning [CO:4021]
| | | | Use this object to warn passengers for the given time span, before the
| | | | doors actually start to open, being in normal operation mode, for instance
| | | | if the 'passengers' are fork-lift trucks.
| | | |
| | | +- Door Close Nudging Timer [CO:4023]
| | | | Use this object to start closing the door in nudging operation, if the
| | | | light curtain is continuously interrupted for the given time.
| | | |
| | | +- Signal 'Please close doors'
| | | |
| | | +- Usage of signal 'Please close doors' [CO:403C]
| | | | This object defines if the lift shall generate the signal 'Please
| | | | close doors', usually used for manually operated doors.
| | | |
| | | +- Timer 'Please close doors' signal [CO:402F]
| | | | This object defines the time the (swing/manual) door has to be open,
| | | | before the 'Please close doors' signal indicates to close the doors
| | | | manually. This function is also called 'Doorbell' on older lift
| | | | installations.
| | | |
| | | +- Policy 'Please close doors' signal [CO:4030]
| | | This object defines if calls must be pending in order to trigger the
| | | 'Please close doors' signal after the timer has expired, to indicate
| | | to close the doors manually. This function is also called 'Doorbell'
| | | on older lift installations.
| | |
| | +- Door motor idle off timer
| | |
| | +- Door motor idle off time, when closed [CO:402E]
| | | This object defines when to turn off the door motor/drive, when the door
| | | has been closed, after the lift is idle for the given time.
| | |
| | +- Door motor idle off time, when opened [CO:4092]
| | This object defines when to turn off the door motor/drive, when the door
| | has been opened, after the lift is idle for the given time.
| |
| +- Advance Door Opening
| | |
| | +- Advance Door Opening [CO:4143]
| | | This object defines if the doors shall open while the lift is still approaching
| | | to a floor. It requires a safety circuit (SZ). The door will open, if the car
| | | is at the door zone with v<=0.8 m/s. > Consider the maintenance function
| | | 'SZ-Test Operation' too.
| | |
```

```
| | +- Advance door opening velocity [CO:4164]
| | | This object defines the maximum allowed velocity to open the doors while
| | | approaching to the floor. The value shall be given in multiples of 1 mm/s.
| | |
| | +- Keep retiring cam locked until stop [CO:4177]
| | This object defines if the door's retiring cam shall be kept in the locked
| | position until the lift has stopped at the floor level, even if 'Advance Door
| | Opening' is activated. This might only be useful for some old manual door types
| | (swing doors/gates).
| |
| +- Door Detectors & Buttons
| | |
| | +- Door Close Button Enabling [CO:4008]
| | | Use this object to define the 'Door Close Button' being enabled after the door
| | | has fully opened or already when the door is opening.
| | |
| | +- Light curtain permanently interrupted control time [CO:406A]
| | | This object defines the time span that the light curtain has to be permanently
| | | interrupted in order to generate a fault item in the log book.
| | |
| | +- Motion detector on door opening [CO:4124-1]
| | | This object defines the delay for enabling the motion detector when the door is
| | | opening.
| | |
| | +- Motion detector on door closing [CO:4124-2]
| | | This object defines the delay for disabling the motion detector when the door
| | | is closing.
| | |
| | +- Motion detector general timeout [CO:4124-3]
| | This object defines the timeout used if the door detector is triggered again
| | and again and blocks the lift on that floor.
| |
| +- Door Lock Activation Prerequisite [CO:4022]
| | Use this object to select the safety chain signal, that must be closed, in order to
| | activate the door lock signal - even if the door does not have a physical door lock
| | magnet. If this value is set to 'automatic', the program will select the appropriate
| | signal depending on the door type.
| |
| +- More…
| |
| +- Door reopenings by a landing call [CO:4125]
| | This object defines the maximum count of door re-openings, caused by a landing
| | call on the very same floor and door side.
| |
| +- Doors being not automatically closed [CO:4122]
| | This object holds the table declaring the doors that should not automatically
| | been closed, if the lift is being idle.
| |
| +- Swing door opener
| | |
| | +- Swing door opener delay time [CO:4037]
| | | This object defines when to turn on the swing door opener, after the door
| | | has been unlocked, typically after the lift has arrived.
| | |
| | +- Swing door opener runtime [CO:4038]
| | | This object defines the runtime of the swing door opener, required to open
| | | the swing door. Basically it defines how long the output, that activates
| | | the swing door opener, shall be activated as those units don't have a
| | | feedback signal, indicating when the swing door has been fully opened.
| | |
| | +- Swing door opener on arrival [CO:4302]
| | | This object defines if the swing door opener shall be triggered
| | | automatically, when the lift arrives at a floor.
| | |
| | +- Cancel swing door opener runtime by car call [CO:4303]
| | | This option defines if the swing door opener (if activated) shall be
| | | turned off, when any car call is pressed.
| | |
| | +- Trigger swing door opener by call button [CO:430C]
| | This option defines if the swing door opener shall be activated, if a car
| | or landing call is pressed on the current floor.
```

```
| |
| +- Interlocked door operation
| | |
| | +- Interlocked door operation [CO:4304]
| | | This option defines if the doors shall operate interlocked. That means
| | | that even the lift has several car/cabin doors, only one door shall be
| | | unlocked/opened at the very same time. Keep in mind that this requires the
| | | cam lock magnet to have 100% duty cycle, if the door has one.
| | |
| | +- Interlocked doors table (mutual exclude) [CO:406D]
| | This object holds the floors were the doors shall operate in interlocked
| | (mutual exclude) operation mode.
| |
| +- More…
| |
| +- Keep retiring cam locked outside floor level [CO:4176]
| | This object defines if the door's retiring cam shall be kept in the locked
| | position if the lift has stopped not at the floor level but in the door
| | zone. This might only be useful for some old manual door types (swing
| | doors/gates).
| |
| +- Unlock the landing door after the car door has been fully opened [CO:406B]
| | This object defines if the landing door lock magnet shall be engaged after
| | the car/cabin door has been fully opened. Usually the door lock would be
| | engaged before the car doors open.
| |
| +- Automatic car doors on swing door opening [CO:430D]
| This option defines if the automatic car/cabin doors shall open/re-open,
| if the manual landing door or swing door is opened by hand. As the lift
| controller has only one single landing door contact, all of the car doors
| may open then. As the car doors usually stay open after arrival, if having
| manual landing doors, this will usually not be an issue. But for some lift
| installations the customer may requests that the car doors being
| automatically closed, even that the landing doors are manually operated,
| especially when the car doors are mechanically locking the manual/swing
| doors.
| |
| +- Disable door open button, if all car calls are blocked [CO:4378]
| This object defines if the door open button shall be blocked anyway, if
| all the car calls on that very floor are disabled, even if that means that
| the passenger could not leave the car via any door.
|

| |
| +- Do not open doors automatically after arrival [CO:4379]
| This object defines if the doors shall stay shut closed, when the lift
| arrives at some floor. The doors are then in need to be opened manually,
| using the door open/close buttons in the car and at the landings.
|
+- Door Supervision
|
+- Door opening supervision timer [CO:4118]
| This object defines the time used for monitoring the doors being opened. This value
| is meant to be a timeout and should be long enough. Keep in mind that the door may
| need more time to open, if being in 'teaching/learning' operation mode or door
| nudging is turned on.
|
+- Door closing supervision timer [CO:4119]
| This object defines the time used for monitoring the doors being closed. This value
| is meant to be a timeout and should be long enough. Keep in mind that the door may
| need more time to open, if being in 'teaching/learning' operation mode or door
| nudging is turned on.
|
+- Door locking supervision timer [CO:411A]
| This object defines the time used for monitoring (supervision) the doors being
| locked, if requested by the lift application. This value is meant to be a timeout
| and should be long enough.
|
+- Extra Door Supervision Signals
| |
| +- Extra Door Supervision Signals [CO:4042]
| | This object defines if some doors feature an extra supervision contact,
```

```
| | indicating that the door has been opened unattended.
| |
| +- Door Supervision Table [CO:4041]
| | This object holds the table declaring which doors feature an extra supervision
| | contact, indicating that the door has been opened unattended.
| |
| +- Extra Door Supervision Time Span [CO:4048]
| | This object defines the time the extra door supervision contacts must be low in
| | order to throw a supervision fault event.
| |
| +- Extra Door Supervision Contactor Monitoring [CO:4049]
| | This object defines if a special contactor is monitored, that is used to turn
| | off the safety chain power, if one or more of the extra door supervision
| | contacts signal, that a door has been opened.
| |
| +- Extra Door Supervision Landing Contact [CO:4068]
| This object defines if the closed landing door contact shall be used to decide,
| if the extra door supervision contact on the current floor, shall be checked as
| well, before start or not.
| |
| +- Emergency Rescue top distance, if shaft head door supervision has been
| | tripped [CO:4094]
| | This object defines the distance to stop before the last floor level
| | position, if driving on emergency rescue operation, if the extra door
| | supervision, usually used together with a low head or low pit solution,
| | has been tripped.
| |
| +- Emergency Rescue bottom distance, if shaft pit door supervision has been
| tripped [CO:4095]
| This object defines the distance to stop before the last floor level
| position, if driving on emergency rescue operation, if the extra door
| supervision, usually used together with a low head or low pit solution,
| has been tripped.
|
+- More…
|
+- Separating door supervision [CO:41A1-0]
| This object defines if the car/cabin has a separating door used for goods
| transportation. If yes, this door is only allowed to be open, if the car
| preference signal has been activated. In normal operation the separating door
| has to be always closed. Otherwise it would allow more passengers to step into
| the car as allowed. The supervision signal shall be active as long as the door
| is closed.
|
+- Hidden door contact chain supervision
| |
| +- Hidden door contact chain supervision [CO:42A5]
| | This is a supervision used for old swing door solutions, typically in
| | Northern Europe. A secondary (hidden) solenoid switch is basically
| | verifying the function of the regularly door contact and has to follow its
| | state changes.
| |
| +- Hidden door contact chain timeout [CO:42A6]
| | This parameter controls the time span granded to the hidden/secondary door
| | contact to follow the regularly door contact, when the door is opened or
| | closed.
| |
| +- Emergency stop hidden door contact chain [CO:42A7]
| This object defines if the lift shall do an instant emergency stop if the
| hidden door contact has been triggered or if the lift shall drive to the
| next floor, releasing the passengers.
|
+- Limit switch 'closed' bridge detection [CO:4061]
| This object defines if the door 'close' limit switches shall be monitored in
| order to detect, if they have been over-bridged. If the door is fully opened,
| indicated by the door opening time and door 'open' limit switches and the door
| safety chain is opened as well, the door 'close' limit switch must follow and
| shall not be operated.
|
+- Attempts to fully open the doors (US-ASME) [CO:405F]
| Use this object to define how many attempts to fully open the doors shall be
```

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| done, before the lift would block itself, regarding to US-ASME regulations.
|
+- Attempts to fully close the doors (US-ASME) [CO:405E]
Use this object to define how many attempts to fully close the doors shall be
done, before the lift would block itself, regarding to US-ASME regulations.
|
- More…
|
+- Positioning Unit
| |
| +- Type of Positioning Unit
| | |
| | +- Encoder type [CO:4250-6]
| | | This object defines if the encoder is a linearly or rotary encoder.
| | |
| | +- Orientation/direction [CO:4250-1]
| | | This object defines the mechanical orientation of the encoder to make sure,
| | | that the position values getting larger with the car/cabin moving upward.
| | |
| | +- Circumference/scale [CO:4250-2]
| | | This object defines the circumference of the pulley for rotary encoders and for
| | | linearly encoders the lengths per increment.
| | |
| | +- Position Supervisor Unit (PSU) on/off [CO:42A3]
| | This object indicates if the lift installation is featuring a Position
| | Supervisor Unit (PSU), ie a secure encoder system.
| |
| +- Distances & Parameter
| | |
| | +- Shaft pit [CO:4011]
| | | The height of the shaft pit in millimeter.
| | |
| | +- Shaft head room [CO:4012]
| | | The height of the shaft headroom in millimeter.
| | |
| | +- Level zone below [CO:4013]
| | | This object holds the length of the level zone below the floor level.
| | |
| | +- Level zone above [CO:4014]
| | | This object holds the length of the level zone above the floor level.
| | |
| | +- More Distances…
| | |
| | +- Door zone below [CO:4015]
| | | This object holds the length of the door zone below the floor level.
| | |
| | +- Door zone above [CO:4016]
| | | This object holds the length of the door zone above the floor level.
| | |
| | +- Re-levelling zone below [CO:4025]
| | | This object hold the length of the re-levelling zone below the floor
| | | level.
| | |
| | +- Re-levelling zone above [CO:4024]
| | | This object hold the length of the re-levelling zone above the floor
| | | level.
| | |
| | +- Even more…
| | |
| | +- Use extended re-leveling zone [CO:402D]
| | | This object defines if an extended 're-leveling zone below' shall be
| | | featured, if the doors are closed and the lift is idle. > Consider
| | | the extended re-leveling zone value [mm] at 'Position & Distances'
| | | too.
| | |
| | +- Extended Re-levelling zone below [CO:4026]
| | | This object hold the length of the extended re-levelling zone below
| | | the floor level used in order to save energy.
| | |
| | +- Enter car roof operation distance [CO:403D]
| | | This object defines the distance to move the car downwards in order
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| | | to make it easy to step on the car's roof.
| | |
| | +- Enter shaft pit operation distance [CO:403E]
| | This object defines the distance to move the car upwards in order to
| | make it easy to step into the shaft pit.
| |
| +- Floor Level Positions [CO:4010]
| | This object holds the floor levels in millimeter.
| |
| +- Position supervisor unit (PSU)
| | |
| | +- Commands & Options (PSU)
| | | |
| | | +- Change operating mode (PSU) [CO:42A0]
| | | | This object holds the current operating mode of the Position Supervisor
| | | | Unit (PSU). Teaching mode is for setting up the floor positions,
| | | | configuration mode for adjustments and normal mode (having a valid
| | | | configuration) is for operating the lift.
| | | |
| | | +- Configure & Teach
| | | | |
| | | | +- 1.) Write/configure bottom/top floor value
| | | | |
| | | | +- 2.) Write/configure door zone values
| | | | |
| | | | +- 3.) Teach top/bottom limits
| | | | | |
| | | | | +- 1.) Teach top position absolute limit
| | | | | |
| | | | | +- 2.) Teach bottom position absolute limit
| | | | | |
| | | | | +- 3.) Limit switch positions (PSU)
| | | | | |
| | | | | +- Distance final limit switch top [CO:4031]
| | | | | | This object holds the distance of the final limit switch on
| | | | | | top, measured from the top floor position.
| | | | | |
| | | | | +- Distance final limit switch bottom [CO:4032]
| | | | | | This object holds the distance of the final limit switch on
| | | | | | bottom, measured from the bottom floor position.
| | | | | |
| | | | | +- Distance inspection limit switch top [CO:4033]
| | | | | | This object holds the distance of the inspection limit
| | | | | | switch on top, measured from the top floor position.
| | | | | |
| | | | | +- Distance inspection limit switch bottom [CO:4034]
| | | | | | This object holds the distance of the inspection limit
| | | | | | switch on bottom, measured from the bottom floor position.
| | | | | |
| | | | | +- Distance inspection terminal (pre-limit) switches
| | | | | |
| | | | | +- Distance inspection terminal (pre-limit) switch top
| | | | | | [CO:4033]
| | | | | | This object holds the distance of the inspection limit
| | | | | | switch on top, measured from the top floor position.
| | | | | |
| | | | | +- Distance inspection terminal (pre-limit) switch bottom
| | | | | [CO:4036]
| | | | | This object holds the distance of the inspection
| | | | | terminal (pre-limit) switch on bottom, measured from
| | | | | the bottom floor position.
| | | | |
| | | | +- 4.) Teaching Operation
| | | | |
| | | | +- 1.) Learning Trip
| | | | | |
| | | | | +- Manual Learning Trip
| | | | | |
| | | | | +- Teach already learned floor levels to the PSU
| | | | |
| | | | +- 2.) Floor Level Positions [CO:4010]
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| | | | | | This object holds the floor levels in millimeter.
| | | | | |
| | | | | +- 3.) Adjustment Trip Operation
| | | | | |
| | | | | +- Automatic Adjustment Trip Operation
| | | | | |
| | | | | +- Manual Adjustment Trip Operation
| | | | |
| | | | +- Reset a pending blocking event
| | | |
| | | +- Limit switch positions (PSU)
| | | | |
| | | | +- Distance final limit switch top [CO:4031]
| | | | | This object holds the distance of the final limit switch on top, measured
| | | | | from the top floor position.
| | | | |
| | | | +- Distance final limit switch bottom [CO:4032]
| | | | | This object holds the distance of the final limit switch on bottom,
| | | | | measured from the bottom floor position.
| | | | |
| | | | +- Distance inspection limit switch top [CO:4033]
| | | | | This object holds the distance of the inspection limit switch on top,
| | | | | measured from the top floor position.
| | | | |
| | | | +- Distance inspection limit switch bottom [CO:4034]
| | | | | This object holds the distance of the inspection limit switch on bottom,
| | | | | measured from the bottom floor position.
| | | | |
| | | | +- Distance inspection terminal (pre-limit) switches
| | | | |
| | | | +- Distance inspection terminal (pre-limit) switch top [CO:4033]
| | | | | This object holds the distance of the inspection limit switch on top,
| | | | | measured from the top floor position.
| | | | |
| | | | +- Distance inspection terminal (pre-limit) switch bottom [CO:4036]
| | | | This object holds the distance of the inspection terminal (pre-limit)
| | | | switch on bottom, measured from the bottom floor position.
| | | |
| | | +- PSU Safety door bridging usage [CO:42A4]
| | | This object defines if the position supervisor unit (PSU) shall be featured for
| | | door bridging, typically used for advance door opening or re-levelling. Using
| | | the PSU for bridging the door circuit is only possible, if the PSU actually
| | | supports that feature. If not, this option does not have any effect.
| | |
| | +- More…
| | |
| | +- Inspection top floor stop distance [CO:401E]
| | | This object defines the distance to stop before the top floor level position,
| | | if driving on inspection operation.
| | |
| | +- Inspection bottom floor stop distance [CO:401F]
| | | This object defines the distance to stop before the bottom floor level
| | | position, if driving on inspection operation.
| | |
| | +- Terminal (Pre-limit) Hoistway Switches [CO:4157]
| | | This object defines if terminal (pre-limit) hoistway switches are regularly
| | | used to ensure the lift decelerating to V0, before the very end of the hoistway
| | | has been reached.
| | |
| | +- Position-correction (Preset)
| | |
| | +- Position correction/preset switches [CO:4307]
| | | Mainly used for inclining lifts, this feature provides tables
| | | (up-/downward) containing the positions to which the special correction
| | | (preset) switches trip. This method is typically used if the absolute
| | | encoder is mechanically connected to a pulley and has to deal with
| | | micro-slip.
| | |
| | +- Position-correction-switch table upward [CO:4305]
| | | Mainly used for inclining lifts, this feature provides tables
| | | (up-/downward) containing the positions to which the special correction
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| | (preset) switches trip. This method is typically used if the absolute
| | encoder is mechanically connected to a pulley and has to deal with
| | micro-slip.
| |
| +- Position-correction-switch table downward [CO:4306]
| Mainly used for inclining lifts, this feature provides tables
| (up-/downward) containing the positions to which the special correction
| (preset) switches trip. This method is typically used if the absolute
| encoder is mechanically connected to a pulley and has to deal with
| micro-slip.
|
+- Drive Unit
| |
| +- Type of Drive Unit & Properties
| | |
| | +- Lift drive system [CO:4133]
| | | This object defines the basic drive system of the lift, like hydraulic lift or
| | | traction/cable lift.
| | |
| | +- Drive type [CO:4131]
| | | This object defines the type of the drive unit used to operate the traction
| | | lift.
| | |
| | +- Drive options
| | | |
| | | +- Terminal mapping [CO:4138]
| | | | This object defines the mapping of the velocity signals, if the drive
| | | | features a classic terminal interface.
| | | |
| | | +- Drive mode (profile) [CO:4149]
| | | | This object defines in which profile mode the drive shall be operated. The
| | | | classic drive mode is the 'velocity mode'. For operating without a
| | | | 'creeping' distance, the more modern 'position mode' should be featured,
| | | | if the drive unit (inverter) supports that profile.
| | | |
| | | +- Contactor Supervision
| | | | |
| | | | +- Contactor Supervision [CO:413A]
| | | | | This object defines how the main contactors are monitored. If the
| | | | | used drive unit is a contactorless model or controls the main
| | | | | contactors internally, the contactor supervision can be done in the
| | | | | drive unit. In that case the lift controller may not or just monitor
| | | | | turning off the contactors. On classic drive units, the lift
| | | | | controller directly turns the main contactors on and off.
| | | | |
| | | | +- Contactor stuck supervision Time [CO:417D]
| | | | This object defines how long the lift controller shall wait before
| | | | declaring the main contactors as being 'hung' or 'stuck', when having
| | | | turned the contactor off, after stop. This will usually put the lift
| | | | into blocking operation mode.
| | | |
| | | +- Brake Supervision [CO:413B]
| | | | This object defines if the lift features supervision on the brake
| | | | contacts.
| | | |
| | | +- More…
| | | |
| | | +- Drive unit control enable signal [CO:4134]
| | | | This object defines if an external input signal is used in order to
| | | | enable the drive unit control output signals.
| | | |
| | | +- Drive readiness signal usage [CO:404E]
| | | | This object defines if the drive unit features a classical external
| | | | readiness signal. Some hydraulic drives like the LRV provide such a
| | | | signal that the lift controller may monitor in order to detect the
| | | | drive unit being ready for driving or not.
| | | |
| | | +- Brake enable signal usage [CO:4096]
| | | | This object defines if an input signal is used in order to enable the
| | | | brake output signal. This signal is used for classic inverters with
| | | | terminal interface.
```

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| | | +- Traction sheave brake supervision
| | | | |
| | | | +- Traction sheave brake supervision [CO:4088]
| | | | | This object defines if the system features a separate traction
| | | | | sheave brake, that is monitored via a supervision input by the
| | | | | lift controller.
| | | | |
| | | | +- Traction sheave brake supervision time [CO:4089]
| | | | | This object defines the supervision time for monitoring a
| | | | | separate traction sheave brake, that is checked via an input by
| | | | | the lift controller. When the lift has stopped this supervision
| | | | | input shall peak up again, when the brake has been released.
| | | | |
| | | | +- Traction sheave brake inspection policy [CO:408A]
| | | | This object defines, if the lift can be driven with inspection
| | | | or emergency rescue operation, if the sheave brake supervision
| | | | has been tripped before.
| | | |
| | | +- Even more…
| | | |
| | | +- Main contactors afterrun time [CO:408F]
| | | | This object defines a short afterrun time of the main
| | | | contactors, after the brake has already been dropped. This can
| | | | be used to prevent the drive from reversing. This also allows
| | | | stopping with less jerk.
| | | |
| | | +- Brake drop/close delay time [CO:405D]
| | | This object defines the time used to delay the moment, when the brake
| | | is dropped/closed after stop. Setting up this time might be useful,
| | | if the 'zero speed' indication from the drive comes a bit early.
| | |
| | | +- Even more…
| | | |
| | | +- Drive unit afterrun time [CO:4084]
| | | | This object defines a short delay, that the drive and brake will
| | | | be kept going, after the direction and velocity signals have
| | | | been dropped. That makes it possible for the drive unit to do
| | | | the last bit of stopping electrically.
| | | |
| | | +- Motor fan afterrun time [CO:4381]
| | | This object defines an after-run time to keep the motor fan running
| | | after the lift has stopped. The value is given in seconds.
| | |
| | +- Drive unit hydraulic
| | |
| | +- Hydraulic pump power model [CO:4135]
| | | This object defines the way/technique for electrically powering the
| | | hydraulic pump.
| | |
| | +- Hydraulic pump delayed off [CO:4136]
| | | This object defines if the hydraulic pump motor should be turned off
| | | delayed in upward direction.
| | |
| | +- Hydraulic valve delayed off (upward) [CO:4137]
| | | This object defines if the hydraulic valve should be turned off delayed in
| | | upward direction.
| | |
| | +- Main contactor K12 delayed off (downward) [CO:418F]
| | | This object defines if the main contactor 'downwards' (K12) should be
| | | turned off delayed. This might be useful for some hydraulic drives, like
| | | some LRV variants.
| | |
| | +- More…
| | |
| | +- Hydraulic pump enable signal usage [CO:4065]
| | | This object defines if the drive unit features a dedicated enable
| | | signal to power up the pump in upward direction. An example is the
| | | NGV/A3 valve block unit.
| | |
| | +- Motor Star/Delta time [CO:416F]
| | | This object defines the time span between 'star' and 'delta'
```

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| | | activation for very old motors/pumps.
| | |
| | +- Hydraulic Homing Timer [CO:4147]
| | | This object defines the time after the car/cabin does start a
| | | hydraulic homing operation, sending the lift back to the bottom
| | | floor.
| | |
| | +- Valve block error/status via bus system [CO:418E-0]
| | | This object defines if the LRV valve block error/status signals will
| | | be transmitted via the CANopen bus system or if they are parallel
| | | wired to the status relays.
| | |
| | +- Even more…
| | |
| | +- Low oil pressure supervision [CO:4045]
| | | This object defines if a low pressure situation shall be
| | | detected via an input by the lift controller. Depending on your
| | | actual hydraulic system, this might be done by the hydraulic
| | | drive itself. If required, the lift controller can do the
| | | supervision via an oil pressure switch. The supervision signal
| | | has by default to be electrically high if pressure is fine.
| | |
| | +- Oil overpressure supervision [CO:4046]
| | This object defines if a high pressure situation shall be
| | detected via an input by the lift controller. Depending on your
| | actual hydraulic system, this might be done by the hydraulic
| | drive itself. If required, the lift controller can do the
| | supervision via an oil pressure switch. The supervision signal
| | has by default to be electrically high if pressure is fine.
| | |
| | +- Low oil level protection [CO:4360]
| | | This object defines if a dedicated input function is used to
| | | sense that there is enough liquid/oil in the tank to drive the
| | | lift in upward direction.
| | |
| | +- Oil tank temperature shutdown [CO:4361]
| | This object defines, if a dedicated input for monitoring the
| | temperature in the hydraulic oil tank is used. Those switches
| | are usually closed if the temperature in normal and will open
| | the circuit, when the temperature exceed the operation range.
| |
| +- Drive velocities
| | |
| | +- Drive velocities V0…V4
| | | |
| | | +- Velocity V0 (creeping) [CO:412D-1]
| | | | This object defines all the velocities the drive may use to move the
| | | | cabin/car.
| | | |
| | | +- Velocity V1 (slow) [CO:412D-2]
| | | | This object defines all the velocities the drive may use to move the
| | | | cabin/car.
| | | |
| | | +- Velocity V2 (medium) [CO:412D-3]
| | | | This object defines all the velocities the drive may use to move the
| | | | cabin/car.
| | | |
| | | +- Velocity V3 (intermediate) [CO:412D-4]
| | | | This object defines all the velocities the drive may use to move the
| | | | cabin/car.
| | | |
| | | +- Velocity V4 (rated) [CO:412D-5]
| | | This object defines all the velocities the drive may use to move the
| | | cabin/car.
| | |
| | +- Drive velocities VI…VN
| | | |
| | | +- Velocity VI (inspection) [CO:412D-11]
| | | | This object defines all the velocities the drive may use to move the
| | | | cabin/car.
| | | |
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| | | +- Velocity VR (emergency rescue) [CO:412D-12]
| | | | This object defines all the velocities the drive may use to move the
| | | | cabin/car.
| | | |
| | | +- Velocity VN (re-levelling) [CO:412D-13]
| | | This object defines all the velocities the drive may use to move the
| | | cabin/car.
| | |
| | +- Overspeed threshold [CO:4083]
| | This object defines the maximum allowed velocity of the car, moving through the
| | hoistway. If this velocity value has been exceeded, the lift will be stopped
| | with an emergency unconditional stop of the braking system. This is *not* a
| | safety function. It will *not* replace your speed governor or SIL-3 position
| | supervisior unit. This feature is just meant to be an additionally supervision.
| | It has not been certified in any way.
| |
| +- Drive deceleration distances
| | |
| | +- Deceleration distances V0…V4
| | | |
| | | +- Deceleration V0 (creeping)
| | | | |
| | | | +- upward [CO:412E-1]
| | | | | This object defines the deceleration distances, needed to stop the
| | | | | cabin, if using the corresponding velocity in upward direction.
| | | | |
| | | | +- downward [CO:412F-1]
| | | | | This object defines the deceleration distances, needed to stop the
| | | | | cabin, if using the corresponding velocity in downward direction.
| | | | |
| | | | +- Deceleration V0 distance table usage [CO:4085]
| | | | | This object defines if for the creeping velocity (V0) deceleration
| | | | | distance (stopping), tables shall be used that allows to specify the
| | | | | value for each floor for upward and downward direction.
| | | | |
| | | | +- Deceleration distance V0 table upward [CO:4086-128]
| | | | | This object defines for the creeping velocity (V0) deceleration
| | | | | distances (stopping) for each floor in the upward direction.
| | | | |
| | | | +- Deceleration distance V0 table downward [CO:4087-128]
| | | | This object defines for the creeping velocity (V0) deceleration
| | | | distances (stopping) for each floor in the downward direction.
| | | |
| | | +- Deceleration V1 (slow)
| | | | |
| | | | +- upward [CO:412E-2]
| | | | | This object defines the deceleration distances, needed to stop the
| | | | | cabin, if using the corresponding velocity in upward direction.
| | | | |
| | | | +- downward [CO:412F-2]
| | | | This object defines the deceleration distances, needed to stop the
| | | | cabin, if using the corresponding velocity in downward direction.
| | | |
| | | +- Deceleration V2 (medium)
| | | | |
| | | | +- upward [CO:412E-3]
| | | | | This object defines the deceleration distances, needed to stop the
| | | | | cabin, if using the corresponding velocity in upward direction.
| | | | |
| | | | +- downward [CO:412F-3]
| | | | This object defines the deceleration distances, needed to stop the
| | | | cabin, if using the corresponding velocity in downward direction.
| | | |
| | | +- Deceleration V3 (intermediate)
| | | | |
| | | | +- upward [CO:412E-4]
| | | | | This object defines the deceleration distances, needed to stop the
| | | | | cabin, if using the corresponding velocity in upward direction.
| | | | |
| | | | +- downward [CO:412F-4]
| | | | This object defines the deceleration distances, needed to stop the
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| | | | | cabin, if using the corresponding velocity in downward direction.
| | | | |
| | | | +- Deceleration V4 (rated)
| | | | |
| | | | +- upward [CO:412E-5]
| | | | | This object defines the deceleration distances, needed to stop the
| | | | | cabin, if using the corresponding velocity in upward direction.
| | | | |
| | | | +- downward [CO:412F-5]
| | | | This object defines the deceleration distances, needed to stop the
| | | | cabin, if using the corresponding velocity in downward direction.
| | | |
| | | +- Deceleration distances VI…VN
| | | |
| | | +- Deceleration VI (inspection)
| | | | |
| | | | +- upward [CO:412E-11]
| | | | | This object defines the deceleration distances, needed to stop the
| | | | | cabin, if using the corresponding velocity in upward direction.
| | | | |
| | | | +- downward [CO:412F-11]
| | | | This object defines the deceleration distances, needed to stop the
| | | | cabin, if using the corresponding velocity in downward direction.
| | | |
| | | +- Deceleration VR (emergency rescue)
| | | | |
| | | | +- upward [CO:412E-12]
| | | | | This object defines the deceleration distances, needed to stop the
| | | | | cabin, if using the corresponding velocity in upward direction.
| | | | |
| | | | +- downward [CO:412F-12]
| | | | This object defines the deceleration distances, needed to stop the
| | | | cabin, if using the corresponding velocity in downward direction.
| | | |
| | | +- Deceleration VN (re-levelling)
| | | |
| | | +- upward [CO:412E-13]
| | | | This object defines the deceleration distances, needed to stop the
| | | | cabin, if using the corresponding velocity in upward direction.
| | | |
| | | +- downward [CO:412F-13]
| | | This object defines the deceleration distances, needed to stop the
| | | cabin, if using the corresponding velocity in downward direction.
| | |
| | +- Drive minimum travelling distances
| | | |
| | | +- Minimum distances V0…V4
| | | | |
| | | | +- Minimum distance V0 (creeping) [CO:4130-1]
| | | | | This object specifies the minimum travelling distances, which are needed
| | | | | to use the corresponding velocity. The overall travelling distance is the
| | | | | sum of minimum travelling distance and deceleration distance and must be
| | | | | less than the distance to travel.
| | | | |
| | | | +- Minimum distance V1 (slow) [CO:4130-2]
| | | | | This object specifies the minimum travelling distances, which are needed
| | | | | to use the corresponding velocity. The overall travelling distance is the
| | | | | sum of minimum travelling distance and deceleration distance and must be
| | | | | less than the distance to travel.
| | | | |
| | | | +- Minimum distance V2 (medium) [CO:4130-3]
| | | | | This object specifies the minimum travelling distances, which are needed
| | | | | to use the corresponding velocity. The overall travelling distance is the
| | | | | sum of minimum travelling distance and deceleration distance and must be
| | | | | less than the distance to travel.
| | | | |
| | | | +- Minimum distance V3 (intermediate) [CO:4130-4]
| | | | | This object specifies the minimum travelling distances, which are needed
| | | | | to use the corresponding velocity. The overall travelling distance is the
| | | | | sum of minimum travelling distance and deceleration distance and must be
| | | | | less than the distance to travel.
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| | | |
| | | +- Minimum distance V4 (rated) [CO:4130-5]
| | | This object specifies the minimum travelling distances, which are needed
| | | to use the corresponding velocity. The overall travelling distance is the
| | | sum of minimum travelling distance and deceleration distance and must be
| | | less than the distance to travel.
| | |
| | +- Minimum distances VI…VN
| | |
| | +- Minimum distance VI (inspection) [CO:4130-11]
| | | This object specifies the minimum travelling distances, which are needed
| | | to use the corresponding velocity. The overall travelling distance is the
| | | sum of minimum travelling distance and deceleration distance and must be
| | | less than the distance to travel.
| | |
| | +- Minimum distance VR (emergency rescue) [CO:4130-12]
| | | This object specifies the minimum travelling distances, which are needed
| | | to use the corresponding velocity. The overall travelling distance is the
| | | sum of minimum travelling distance and deceleration distance and must be
| | | less than the distance to travel.
| | |
| | +- Minimum distance VN (re-levelling) [CO:4130-13]
| | This object specifies the minimum travelling distances, which are needed
| | to use the corresponding velocity. The overall travelling distance is the
| | sum of minimum travelling distance and deceleration distance and must be
| | less than the distance to travel.
| |
| +- More…
| |
| +- PTC Temperature monitoring [CO:414B]
| | The drive temperature (PTC) monitoring is using a special input on the safety
| | board to detect an overheating issue using a typical PTC. The input is extra
| | debounced and galvanically isolated for stability reasons.
| |
| +- Drive Supervision Times
| | |
| | +- Driving supervision time
| | | |
| | | +- Driving supervision time [CO:411C]
| | | | This object defines the time used for monitoring (supervision) the
| | | | drive running, if requested by the lift application. This value is
| | | | meant to be a overall timeout and should be long enough, for the
| | | | lift to complete the longest possible trip.
| | | |
| | | +- Re-trigger driving run-timer [CO:4047]
| | | This object defines if the runtime supervision shall be re-triggered
| | | if the current floor has changed or the lift having moved a defined
| | | distance.
| | |
| | +- Drive start supervision time [CO:411B]
| | | This object defines the time used for monitoring (supervision) the drive
| | | starting, if requested by the lift application. This value is meant to be
| | | a timeout and should be long enough. The time ends, if the car leave the
| | | door zone.
| | |
| | +- Drive deceleration supervision time [CO:411D]
| | | This object defines the time used for monitoring (supervision) the drive
| | | stopping, if requested by the lift application. This value is meant to be
| | | a timeout and should be long enough. The time starts when the lifts
| | | decelerate and ends if it has stopped.
| | |
| | +- Brake close supervision time [CO:404C]
| | | This object defines the time span used in order to detect a stuck brake
| | | supervision element or contact, when closing the brake after stop.
| | |
| | +- Brake open supervision time [CO:404D]
| | This object defines the time span used in order to detect, that the brake
| | supervision element or contact does not signal that the brake has actually
| | opened, when the lift wants to start driving.
| |
| +- Re-leveling
```

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| | |
| | +- Re-leveling on/off [CO:4028]
| | | This object defines if re-leveling shall be featured or not.
| | |
| | +- Featuring a separate re-level unit [CO:402A]
| | | This object defines if re-leveling is implemented via an external separate
| | | re-levelling unit rather than the main drive.
| | |
| | +- Re-leveling attempts per floor/hour [CO:4029]
| | | This object defines how many attempts to re-level the car will be made
| | | within one hour on the very same floor.
| | |
| | +- Re-leveling with closed doors only [CO:4027]
| | | This object defines if re-leveling shall only be done, having the doors
| | | closed, without need for the safety circuit (SZ).
| | |
| | +- More…
| | |
| | +- Re-leveling timeout [CO:402B]
| | | This object defines the timeout used for a re-leveling operation.
| | |
| | +- Re-leveling operation delay [CO:402C]
| | | This object defines the delay before a re-leveling operation starts,
| | | if necessary to move the car back to level.
| | |
| | +- Use extended re-leveling zone [CO:402D]
| | This object defines if an extended 're-leveling zone below' shall be
| | featured, if the doors are closed and the lift is idle. > Consider
| | the extended re-leveling zone value [mm] at 'Position & Distances'
| | too.
| |
| +- Drop Protection
| | |
| | +- Drop Protection on/off [CO:4159]
| | | This object enables the usage of a drop protection unit, usually blocking
| | | with a bolt the pulley of the speed governor, after the lift has stopped.
| | |
| | +- Operation timeout (bolt) [CO:415A]
| | | This object sets the timeout (time monitoring) to be used when the bolt is
| | | to be moved to the actuated or unactuated position.
| | |
| | +- Deactivation delay [CO:415F]
| | | This object defines the time span after stop (delay), before the bolt will
| | | be put back into the blocking position.
| | |
| | +- Safety Chain enables Drop Protection operation [CO:41CA]
| | This object defines, if the drop protection bolt can only be engaged with
| | the safety chain being closed. If so, the supervision of the feedback
| | signal will take the end of the safety chain in account, in order to
| | decide if the drop protection works correctly or is faulty.
| |
| +- Even more…
| |
| +- Reduced velocity for low shaft head & pit
| | |
| | +- Low shaft head, reduced velocity
| | | |
| | | +- Low shaft head, reduced velocity [CO:4309-1]
| | | | This object defines if a reduced nominal velocity shall be
| | | | featured when driving towards the reduced hoistway head.
| | | |
| | | +- Reduced shaft head velocity distance [CO:4309-2]
| | | | This object defines the point for reducing the nominal velocity,
| | | | when driving towards the reduced hoistway head.
| | | |
| | | +- Reduced shaft head velocity selection [CO:4309-3]
| | | This object defines the reduced velocity to use, when driving
| | | towards the reduced hoistway head.
| | |
| | +- Low shaft pit, reduced velocity
| | |
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| | +- Low shaft pit, reduced velocity [CO:430A-1]
| | | This object defines if a reduced nominal velocity shall be
| | | featured when driving towards the reduced hoistway pit.
| | |
| | +- Reduced shaft pit velocity distance [CO:430A-2]
| | | This object defines the distance for reducing the nominal
| | | velocity, when driving towards the reduced hoistway pit.
| | |
| | +- Reduced shaft pit velocity selection [CO:430A-3]
| | This object defines the reduced velocity to use, when driving
| | towards the reduced hoistway pit.
| |
| +- Quickstart
| | |
| | +- Drive Quickstart feature [CO:415C]
| | | This object defines if the drive shall feature 'Quickstart'. That
| | | means it will already power-up the drive unit, while the doors are
| | | still closing, in order to reduce the delay on starting the lift
| | | driving.
| | |
| | +- Quickstart timeout [CO:415D]
| | | This object defines how long (maximum) the drive unit may be kept
| | | continuously in 'Quickstart' operation, while waiting for the
| | | passengers to have finished boarding. That means the drive will
| | | already be powered-up while the doors are still closing, in order to
| | | reduce the delay on starting the lift driving.
| | |
| | +- Quickstart delay [CO:41D2]
| | | This object defines a delay time, starting with the doors closing,
| | | before the quick start sequence will be engaged and the drive is
| | | powered up, while the doors are still closing.
| | |
| | +- Drive Quickstart door closing width [CO:41D3]
| | This object defines how wide the doors have to be closed, before the
| | quick start sequence will be engaged and the drive is powered up,
| | while the doors are still closing. To use this feature a CANopen door
| | machine is required that is capable of transmitting the door opening
| | width via the bus system.
| |
| +- Lubrication Function
| | |
| | +- Lubrication Timer [CO:41E1]
| | | This object defines the time span between two lubrication cycles. The
| | | duration of the lubrication impulse is set via another object.
| | |
| | +- Lubrication Duration (impulse) [CO:41E2]
| | | This object defines the duration of the lubrication impulse. The time
| | | span between two impulses is set via another object.
| | |
| | +- Lubrication runtime warning threshold [CO:41E3]
| | | This object defines the time span of engaging the oil pump
| | | (lubrication) in seconds that need to have passed, before the lift
| | | controller throw a warning about the remaining oil in the oil
| | | reservoir to be low.
| | |
| | +- Lubrication runtime error threshold [CO:41E4]
| | This object defines the time span of engaging the oil pump
| | (lubrication) in seconds that need to have passed, before the lift
| | controller throw an error about the oil reservoir being empty. This
| | will then actually turn the lift to Out Of Order operation mode.
| |
| +- Lift/Drive start interlocking
| | |
| | +- Lift start interlock usage [CO:430F]
| | | This options is used to interlock the start of several lifts at the
| | | very same time by connecting one output and one input signal from
| | | every lift to the very same line. The lift will only start when the
| | | line is low. For the output signal a timeout can be defined. When the
| | | lift stops again before the timeout has been expired, the output is
| | | dropped as well.
| | |
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| | +- Lift start interlock timeout [CO:4310]
| | This options is used to interlock the start of several lifts at the
| | very same time by connecting one output and one input signal from
| | every lift to the very same line. The lift will only start when the
| | line is low. For the output signal a timeout can be defined. When the
| | lift stops again before the timeout has been expired, the output is
| | dropped as well.
| |
| +- Brake Test Circuit Supervision [CO:4311]
| This object defines if a special input shall be featured in order to
| detect, that the brake testing circuit is in the right state and not by
| mistake activated or hung. The input function 'Brake test circuit
| monitoring' must be at 24V in normal operation and may only drop to 0V
| when the brake test is activated. This ensures that the lift cannot change
| to normal operation if one of the contactors, used to hold the brake open,
| has got stuck.
|
| +- Count of discrete brake test circuits [CO:4312]
| | This object defines if a special input shall be featured in order to
| | detect, that the brake testing circuit is in the right state and not
| | by mistake activated or hung. The input function 'Brake test circuit
| | monitoring' must be at 24V in normal operation and may only drop to
| | 0V when the brake test is activated. This ensures that the lift
| | cannot change to normal operation if one of the contactors, used to
| | hold the brake open, has got stuck.
| |
| +- Rope Brake external circuit usage [CO:41F1-1]
| This object defines if an external circuit is used to trigger a rope
| brake (rope gripper) in an UCM situation. Refer to the manual for
| details about the circuit.
|
+- Load Measuring Unit
| |
| +- Cabins load thresholds
| | |
| | +- Download values from load measuring unit
| | |
| | +- No load parameter value [CO:4260-2]
| | | This object defines the 'no load' parameter value of the car load measuring
| | | unit.
| | |
| | +- Full load parameter value [CO:4260-3]
| | | This object defines the 'full load' parameter value of the car load measuring
| | | unit.
| | |
| | +- Overload parameter value [CO:4260-4]
| | | This object defines the 'overload' parameter value of the car load measuring
| | | unit.
| | |
| | +- Upload values to load measuring unit
| |
| +- Set cabin load to zero
| |
| +- Number load measuring sensors [CO:4260-6]
| | This object contains the count of sensors that the car load measuring unit uses to
| | determine the car load.
| |
| +- Cable diameter & Suspension Ratio
| | |
| | +- Rope/cable diameter [CO:4260-10]
| | |  This object contains the diameter of a single rope/cable, required by some load
| | |   measuring units operating with sensors, mechanically connected to the traction
| | |  cables.
| | |
| | |
| | +- Load suspension ratio [CO:4260-11]
| | This object contains the ratio of the traction cable suspension, for example
| | 1:1 or 2:1. Setting this value is a hint for the load measuring to calculate
| | the correct weight from the sensor values.
| |
| +- More…
```

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| |
| +- Load Measuring Calibration
| | |
| | +- Zero/empty cabin weight [CO:4260-7]
| | | This object is used to teach the empty cabin weight in order to calibrate
| | | the load measuring unit.
| | |
| | +- Known cabin weight [CO:4260-8]
| | This object is used to teach a known weight in order to calibrate the load
| | measuring unit.
| |
| +- No-Load & Occupied signal [CO:4106]
| | Defines if the car no-load signal should be taken in account in creating the
| | occupied signal.
| |
| +- Load unit supervision [CO:4160]
| | This object defines if the lift shall enter 'Out Of Order' state, if the cabin
| | load measuring unit signals a failure or its heartbeat gets lost, indicating
| | that the unit does not communicate anymore.
| |
| +- Compensation of weight changes [CO:41A2]
| | This object defines if the car load measuring unit shall try to compensate the
| | weight change caused by the traction cables, depending were the car currently
| | is. For that purpose the unit detects when the lift is driving and in which
| | direction.
| |
| +- Rope/cable load difference limit [CO:4260-9]
| This object contains the allowed load difference per rope/cable, before the car
| load measuring unit will throw an fault/alarm.
|
+- Pawl Device
| |
| +- Pawl device usage [CO:4050]
| | This object defines if the lift installation is featuring a pawl device unit. A pawl
| | device is a mechanical locking device for seating the car safely after having
| | stopped in a floor, to prevent the cabin from falling. It is often used with
| | hydraulic drives but can also be combined with traction lifts.
| |
| +- Pawl device operating supervision time [CO:4051]
| | This object defines the time span used, in order to detect a hung pawl device unit
| | (bolt), that has not retracted or extended as requested.
| |
| +- Use pawl/bolt retracted limit switch [CO:4052]
| | This object defines if the pawl device features a limit switch, signalling that the
| | pawl/bolt has been fully retracted, enabling the car/cabin to move downwards.
| |
| +- Use pawl/bolt extended limit switch [CO:4053]
| | This object defines if the pawl device features a limit switch, signalling that the
| | pawl/bolt has been fully extended, blocking the car/cabin from moving downwards.
| |
| +- More…
| |
| +- Keep 'retract pawl/bolt' signal powered [CO:4054]
| | This object defines if the pawl device needs to have the signal for retracting
| | (releasing) the pawl/bolt powered, even if having reached the 'unlocked'
| | position, especially when driving.
| |
| +- Pawl device lifting point [CO:4055]
| | This object holds the distance above the floor level used as an
| | lifting/lowering point for the pawl device, when arriving in a floor or
| | starting from a floor.
| |
| +- Pawl device lifting/lowering timeout [CO:4058]
| | This object defines the time-out used for lowering or lifting the car, when
| | approaching from or starting to another floor.
| |
| +- Pawl device 'car seated' input [CO:4057]
| | This object defines if the pawl device provides a signal telling the lift
| | controller that the car/cabin has properly seated. If such a signal is not
| | provided by the pawl device, the lift will drive the car to floor level and
| | stops then.
```

```
| |
| +- Even more…
| |
| +- Pawl device floor table [CO:4056]
| | This object holds the floors that shall feature the pawl device in order
| | to seat the car/cabin, if the lift arrives there. This table makes it
| | possible to define exceptions for certain floors easily, by removing the
| | black dot.
| |
| +- Car lifting/lowering velocity [CO:4066]
| | Use this object to define the velocity (V0..V4/VI/VN) that the drive shall
| | feature, if lifting or lowering the car on pawl device operation.
| |
| +- Pawl device external re-pumping unit [CO:4067]
| | Use this object to define if the pawl device is featuring an external
| | hydraulic unit to re-pump oil pressure, while the car has been seated.
| | Otherwise the main drive will be used with re-levelling velocity (VN) for
| | keeping the pressure.
| |
| +- Block lift, if pawl device could not be locked [CO:406C]
| Use this object to define if the lift shall enter blocked operation mode,
| if the pawl-device (bolt) could not be locked and the car/cabin can't be
| safely seated.
|
+- Basics
|
+- Lift Identification Number [CO:400A]
| This object holds the vendor/manufacturer specific lift identification number as a
| string.
|
+- Single/Team settings
| |
| +- Single/Team lift [CO:4000]
| | Declares this lift to be a single or a team lift. If setting this lift up to be
| | a team member, double check the selection to avoid duplicates in the lift team.
| |
| +- Lift team operation strategy [CO:41B0-1]
| | This option defines, if the passenger call processing in the team, shall put
| | the main focus on energy consumption or performance.
| |
| +- Reflect landing calls back to the bus system [CO:41B0-2]
| | This option is rarely used and defines if landing calls, that are just
| | addressed to one single lift, shall be reflected/broadcasted back to the bus
| | system having set the lift mask to 'All Lifts'. This feature might be used, if
| | a lift team needs to be split up into smaller teams via key switch.
| |
| +- Time-span to leave the group, when the swing door has been left open [CO:41B0]
| This option define the time span the swing/manual door has to be left open by a
| passenger, before the lift will leave the group/team.
|
+- Floors
| |
| +- Top floor [CO:4002]
| | The top (upper) floor of the lift hoistway.
| |
| +- Bottom floor [CO:4001]
| | The bottom (lowest) floor of the lift hoistway.
| |
| +- Floor names [CO:4270]
| | This object holds the floor names or labels.
| |
| +- Lobby floor/main entrance [CO:4107-2]
| | Defines the lobby floor, which is the main entrance of the building.
| |
| +- More…
| |
| +- Broadcast Floor Names via CANbus [CO:4179]
| | This object defines if the lift controller shall broadcast the floor names
| | via the CANopen bus system.
| |
| +- 7-Segment Display Terminals via CANbus [CO:4178]
```

```
| This object defines if the lift controller shall generate 7-segment
| display signals and transmit them via the CANbus.
|
+- Interfaces
| |
| +- Terminals
| | |
| | +- On-Board IO-Terminals
| | | |
| | | +- Inputs
| | | |
| | | +- Outputs
| | | |
| | | +- Calls
| | |
| | +- CAN1 (car) interface
| | |
| | +- CAN2 (hoistway) interface
| |
| +- CAN1 (car) interface [CO:4201-1]
| | This object defines the function of the CAN1 interface, connecting the
| | car/cabin.
| |
| +- CAN2 (hoistway) interface [CO:4202-1]
| This object defines the function of the CAN2 interface, connecting the
| hoistway/shaft.
|
| |
| +- CAN Interface Settings
| |
| +- CAN1 (car) bitrate [CO:4201-2]
| | This object selects the bitrate used for the CAN interface. The standard
| | bitrate is 250kBit/s.
| |
| +- CAN2 (hoistway) bitrate [CO:4202-2]
| This object selects the bitrate used for the CAN interface. The standard
| bitrate is 250kBit/s.
|
+- More…
|
+- Weights & Payload
| |
| +- Rated car load [CO:6465-1]
| | This object contains the rated car load - the load that the car is made
| | for. The value shall be given in multiples of [kg].
| |
| +- Car weight [CO:6465-2]
| | This object contains the actual weight of the car/cabin itself. The value
| | shall be given in multiples of [kg].
| |
| +- Counter weight [CO:6465-3]
| This object contains the actual weight of the counter weight. The value
| shall be given in multiples of [kg].
|
+- Inspection & Emergency Rescue
| |
| +- Inspection control panel in the pit, usage [CO:403F]
| | This object defines if an inspection control panel in the hoistway pit
| | (EN81-20) is used or if the lift is installed without such an inspection
| | control panel. If such a panel is used and has been turned on once, keep
| | in mind that after having it turned off again, the operation has to be
| | reset via a separate input the user interface as well.
| |
| +- Inspection control panel in the pit, policy [CO:4044]
| | This object defines if unlocking the inspection pit operation shall be
| | possible via the user interface (display) or via pulsing the lowest
| | landing door call button, after the inspection pit switch has been turned
| | off again and the landing door has been cycled. Otherwise it will only be
| | possible via the electrical input function 'Inspection in the pit reset
| | signal'.
| |
```

```
| +- Inspection 'fast' button usage [CO:405C]
| | This object defines if for inspection operation a 'fast' button is
| | featured to drive with inspection velocity. If a 'fast' is used but not
| | pressed, creeping velocity would be used instead.
| |
| +- Emergency rescue 'fast' button usage [CO:405B]
| | This object defines if for emergency rescue operation a 'fast' button is
| | featured to drive with emergency rescue velocity. If a 'fast' is used but
| | not pressed, creeping velocity would be used instead.
| |
| +- Emergency rescue control ignores passive safety chain [CO:404F]
| This object defines if the emergency rescue operation shall ignore the
| state of the safety board input for the passive safety chain. This can be
| useful for retrieving the lift back after some testing operations, if the
| emergency rescue control supplies power again to the emergency stop input
| in the safety chain, but the input of the passive safety chain on the SB
| board remains dropped, due to two open contacts in the chain.
|
+- Platform lift mode
| |
| +- Platform lift operation on/off [CO:4080-1]
| | This object defines if the platform lift support shall be used or not. In
| | this operating mode the calls are usually operated in dead-mans-grip,
| | requiring constant-pressure to drive the lift.
| |
| +- Automatic re-levelling of the platform [CO:4080-2]
| This object defines if the platform lift shall automatically re-level the
| platform, without the operator using the call buttons.
|
+- Time Planner
| |
| +- Week Planner 1 [CO:40B0-1]
| | This object holds the week planner entries, used to turn on/off functions
| | based on weekdays, start and stop time. You can define a time span where
| | the start time is lower than the stop time, like 08:00..17:00 or the other
| | way around like for turning off the arrival indicators over night from
| | 17:00 to 08:00 on the next morning.
| |
| +- Week Planner 2 [CO:40B0-2]
| | This object holds the week planner entries, used to turn on/off functions
| | based on weekdays, start and stop time. You can define a time span where
| | the start time is lower than the stop time, like 08:00..17:00 or the other
| | way around like for turning off the arrival indicators over night from
| | 17:00 to 08:00 on the next morning.
| |
| +- Week Planner 3 [CO:40B0-3]
| | This object holds the week planner entries, used to turn on/off functions
| | based on weekdays, start and stop time. You can define a time span where
| | the start time is lower than the stop time, like 08:00..17:00 or the other
| | way around like for turning off the arrival indicators over night from
| | 17:00 to 08:00 on the next morning.
| |
| +- Week Planner 4 [CO:40B0-4]
| | This object holds the week planner entries, used to turn on/off functions
| | based on weekdays, start and stop time. You can define a time span where
| | the start time is lower than the stop time, like 08:00..17:00 or the other
| | way around like for turning off the arrival indicators over night from
| | 17:00 to 08:00 on the next morning.
| |
| +- More…
|
+- Even more…
|
+- Lift Standard/Code [CO:4400]
| This option defines which lift/elevator standard/code the lift controller
| shall make use of. The EN81-20 standard is usually applied for Europe and
| the ASME code for the North American market.
|
+- Standard/Code Version [CO:4401]
| This option defines which version of the lift/elevator standard/code the
| lift controller shall make use of.
```

```
|
+- In-Car Stop-Switch Usage [CO:41ED]
| This object defines if the lift shall feature a 'Stop Switch' in the car,
| that is normally closed when the lift is operational and will open, when
| the lift shall do a quick stop.
|
+- Passive Safety Chain blocks lift operation [CO:4188-0]
| This object defines if the lift shall enter the 'blocked operation' mode,
| when the passive safety chain has been tripped.
|
+- Check car top I/O module (LXC) at start [CO:4380]
This option defines if the lift at startup shall assume a LXC, CLK or
other car top electronic I/O panel being present.
```

96.2 System Menu

```
- Language
|
+- Primary language [CO:42FA]
| Select the primary language used for the user interface.
|
+- Alternative language [CO:42FB]
| Select the alternative language used for the user interface, for being able to turn the
| user interface temporarily to this language.
|
+- Optional third language [CO:42F4]
This object declares a third optional language used for the user interface, for being
able to turn the user interface temporarily to this language.

- Security
|
+- New Setup Password [CO:4280]
| This object stores the 'Setup Password'. This password is used to grant access to
| fundamentally parameters that are used to setup the lift.
|
+- New Service Password [CO:4281]
| This object holds the 'Service Password'. This password is used to grant access to
| parameters that are used to define properties of the lift.
|
+- Lift Parameter Change Log

- Internal Settings
|
+- Training Board Mode [CO:42FF]
| This object declares this board to be a training board having a simulated safety chain
| behaviour. You may set the doors to emulation mode too in order to have a full working
| training board. Do not use the 'training board' features on a real operating lift.
|
+- Safety Chain Emulation for training boards [CO:42F6]
| This object declares if the board being in training board mode, shall emulate the safety
| chain as well.
|
+- Create virtual floor positions
|
+- Erase floor positions
|
+- More…
|
+- Reset to Factory Defaults
|
+- Reset on-board terminals
|
+- Screenshot Mode [CO:42F8]
| The 'Screenshot Mode' may be used for creating photos of the lift controller's
| display that will be stored on a plugged-in USB-mass storage. Those screenshots will
| be saved as compressed PNG files, usually suitable for manuals and instructions.
|
+- SZ-Board detection (safety circuit)
| |
+- SZ-Board detection (safety circuit) [CO:42F7]
| This object declares, if an on-board SZ safety circuit (door bridging) shall be
| automatically detected, if being present. If turned off, on-board SZ boards will
| generally not be detected and therefore not be used. Optionally this parameter can
| be used, to declare, that a classical external SZ board is featured instead. This
| does *not* apply to SIL-3 encoders with integrated safety circuits. These types are
| auotmatically detected.
|
| |
| +- SZ-Board Manufacturer [CO:42F3]
| This object defines the manufacturer of the SZ board in use.
|
+- Even more…
|
```

```
+- Printout menu structure
| |
| +- Printout menu structure
| |
| +- Printout menu structure without help texts
|
+- Printout event reference
|
+- Printout JSON lists
| |
| +- Printout event JSON list
| |
| +- Printout object JSON list
|
+- Delete old backup files
|
+- Much more…
|
+- Reset non-volatile fire alarm, fire service and chemical operation states
|
+- Service/Setup recovery
|
+- Preset statistical values
| |
| +- Trip counter
| |
| +- Operation Time Meter
| |
| +- Direction changes
| |
| +- Main Contactors Cycles
|       |
|       +- Main contactors cycle count upward
|       |
|       +- Main contactors cycle count downward
|
+- Purchase a license online

- Network
|
+- Cloud (JSON/REST) Service
| |
| +- Cloud (JSON/REST) mode [CO:4300-5]
| | This option enables the communication with a web/cloud based service using a JSON
| | based API.
| |
| +- Cloud server host [CO:4300-7]
| | This object defines the host name of the cloud service server. This is usually the
| | URL used by the lift controller to automatically connect to the cloud.
| |
| +- Cloud service port [CO:4300-8]
| | This object defines the host port number of the cloud service server.
| |
| +- Cloud domain token [CO:4300-9]
| | This object defines a public token used to pre-declare a new lift installation to be
| | installed/assembled by a specific company. This makes it easier to integrate new
| | lifts into the cloud provider's database.
| |
| +- More…
| |
| +- Show cloud statistics
| |
| +- Install/update CA certificate
| |
| +- Show installed CA certificate
| |
| +- Remove all manually installed certificates
| |
| +- Developer mode - accept any certificate [CO:4300-12]
| This object defines, if for development purposes, any possible server
| certificate shall be accepted by the lift controller. Beware that accepting any
```

```
| certificate make a 'Man in the Middle' attack possible.
|
| +- Cloud Event Push Filter [CO:4300-17]
| This object defines if for the trival events, like parking or turning the
| car illumination off, turning the floor displays off or keeping a swing
| door long open and other likewise events, a default filter shall prevent,
| that they are pushed automatically all the time.
|
+- Server (HTML5/JS) mode
| |
+- Server (HTML5/JS) mode [CO:4300-6]
| This option enables the communication with the on-board web server service using HTML5
| and JavaScript.
| |
| +- Enter Calls enabling code [CO:4300-15]
| | This object defines the code that has to be entered on the web page in order to give
| | calls to the lift.
| |
| +- Enable page for call disabling/blocking [CO:4300-16]
| This object defines if the technician shall be able to disable/block car and landing
| calls using the build-in web interface. This requires entering the ticket code for
| accessing calls.
| |
| +- Use the last digits of the UID as ticket [CO:4300-18]
| This object defines, if the last six digits of the unique board identifier (UID)
| shall be used as a ticket code for the local web server, that can be used for
| maintenance purposes, with the technician being on side. The UID can be found in the
| System Information dialogue.
|
+- DHCP Mode [CO:4300-4]
| The Dynamic Host Configuration Protocol (DHCP) is a communication network protocol used
| to automatically distribute network configuration parameter to clients from a server.
|
+- Show network configuration
|
+- More…
|
+- IP-address [CO:4300-1]
| This object defines the IP-address used for network based communication.
|
+- Subnet-mask [CO:4300-2]
| This object defines the sub-net mask used for network based communication. A typical
| value for class-C network would be '255.255.255.0'.
|
+- Gateway-address [CO:4300-3]
| This object defines the gateway address used for network based communication.
| Typically the address of the gateway is in the same address range like the device
| but ends with '.1'.
|
+- DNS-server-address [CO:4300-10]
| This object defines the DNS-server address (domain name server) used for network
| based communication.
|
+- Even more…
|
+- SSH Activation (4 h) [CO:5013]
| The Secure Shell (SSH) network protocol is used for securely cryptographic
| operating of services over an unsecured network. It is most common used to
| remotely operate the command line shell. This object can be used to activate
| SSH temporarily for about four hours.
|
+- NTP Server (Net Time Protocol)
| |
| +- NTP Usage (Net Time Protocol) [CO:4300-14]
| | This object defines the NTP server, which is short for Net Time Protocol
| | server. These servers usually are connected to a trustful time source and
| | can be used to keep the system time of local device up-to-date.
| |
| +- NTP Server (Net Time Protocol) [CO:4300-13]
| This object defines the NTP server, which is short for Net Time Protocol
| server. These servers usually are connected to a trustful time source and
```

```
| can be used to keep the system time of local device up-to-date.
|
+- BACnet server support
|
+- BACnet server usage [CO:4320-1]
| This options defines if the lift controller shall provide a BACnet server
| instance.
|
+- BACnet Device ID [CO:4320-2]
| This option defines the BACnet instance number, that this lift controller
| shall use when performing BACnet network communication.
|
+- BACnet server port [CO:4320-3]
| This option defines the BACnet/IP port number used for the network
| interface. This is usually 0xBAC0 but may change due to customer network
| requirements. The value shall not be lower than 1023 as those ports are
| defined by IANA, the Internet Assigned Numbers Authority.
|
+- BACnet object name [CO:4320-7]
| This option defines the BACnet object name, a string typically telling
| that this is a kind of lift controller application.
|
+- More…
|
+- BACnet device location [CO:4320-4]
| This option defines the BACnet location, a string describing in which
| building or street or city the unit has been installed.
|
+- BACnet description [CO:4320-5]
| This option defines the BACnet description, a string typically
| telling what kind of device or station it is.
|
+- BACnet model name [CO:4320-6]
This option defines the BACnet model name, a string typically telling
what kind lift controller model the system actually is.
|
+- MODbus server support
|
+- MODbus server usage [CO:4330-1]
| This options defines if the lift controller shall provide a MODbus server
| instance.
|
+- MODbus server device address [CO:4330-2]
| This option defines the MODbus device address, that this lift controller
| shall use when performing MODbus communication. The device address is
| usually 1 and used as an offset for the register addresses.
|
+- MODbus server port [CO:4330-3]
This option defines the MODbus port number used for the network interface.
This is usually 502 or 802(TLS) but can be altered to suit customer needs.
The values are defined by IANA, the Internet Assigned Numbers Authority.

- System
|
+- Software Backup/Update
| |
| +- Software Update
| |
| +- Software Backup
|
+- Parameter Backup/Update
| |
| +- Parameter-Set Update
| |
| +- Parameter-Set Backup
| |
| +- Parameter, Printout, Logbook & Statistic
| |
| +- Structured Parameter Printout (Text)
| | |
| | +- Structured Parameter Printout (Text)
```

```
| | |
| | +- Compressed Structured Parameter Printout (Text)
| |
| +- Simple Parameter Printout (Text)
| |
| +- Parameter Printout (Text)
| |
| +- Compressed Parameter Printout (Text)
|
+- Date & Time
| |
| +- Date & Time [CO:42FE]
| | This object declares the current date and time represented by the on-board realtime
| | clock.
| |
| +- Automatic Daylight Saving Time [CO:407E]
| | This object defines if the lift controller shall automatically change between winter
| | and summer (Daylight Saving) time.
| |
| +- Local Time Zone [CO:42F5]
| This object defines the local time zone of the lift installation, defined relative
| to UTC/GMT.
|
+- About & Copyright
| |
| +- About & Copyright
| |
| +- Hash (SHA)
|
+- More…
|
+- Display Settings
| |
| +- Display-Off Timer [CO:42FD]
| | This object defines the time after the display background light is turned off,
| | if there is no user input.
| |
| +- Display orientation [CO:42F9]
| | This object declares the orientation (landscape or portrait) of the display and
| | the user interface.
| |
| +- Startup Banner Image usage [CO:5030]
| | This object defines if a custom/company specific image banner shall be shown on
| | the startup screen. The start banner graphics file shall be a PNG file being
| | 480x128 pixels in dimension and less than 120 KB in size. The file might feature
| | alpha channel driven transparency effects.
| |
| +- Startup Banner Image (*.png)
|
+- Ambient Temperatures
| |
| +- Lowest Ambient Temperature [CO:4165]
| | This object defines the lowest ambient temperature that the lift controller is
| | allowed to operate at.
| |
| +- Highest Ambient Temperature [CO:4166]
| This object defines the highest ambient temperature that the lift controller is
| allowed to operate at.
|
| +- Board Temperature Sensor Offset
|
+- Controller Identification [CO:6501]
| This object holds the vendor/manufacturer specific controller identification number
| as a string.
|
+- System Information
|
+- Even more…
|
+- Application Restart (Warm Start)
|
```

```
+- System Reboot (Cold Start)
```

96.3 Service & Assembly

```
- Maintenance
|
+- Status Maintenance Mode [CO:5003]
| This object holds the current maintenance mode. If the maintenance mode has been turned
| on, no faults will be recorded or forwarded to any kind of data gateway.
|
+- Random Calls Operation
| |
| +- Random Calls Operation [CO:5010]
| | This object is used to turn on or off random call operation. Random calls are
| | typically used to verify with some test drives, that the lift is properly working,
| | before passenger will use the lift regularly.
| |
| +- Random calls floor cross out table [CO:41C9]
| This object holds a table containing the floors that shall be crossed out when
| performing random calls operation for maintenance or after having done repairs.
|
+- Status Keep doors closed operation [CO:5004]
| This object reflects if the doors are being commanded to stay closed, usually in
| combination with some kind of maintenance work, being in progress.
|
+- Drive beyond top/bottom floor [CO:411E]
| This object defines if the car is allowed to drive beyond the top or bottom floor level
| position. If being activated, this option will automatically be turned off, after the
| lift being in normal operation for a while.
|
+- More…
|
+- Manual door operation [CO:412C]
| This option defines, if the technician on the car top can activate the 'Inspection
| switch' and hold the direction buttons together pressed for 10 s in order to turn
| those buttons into 'door open' and 'door close'. To turn them back he/she can redo the
| process or just toggle the inspection switch. Alternatively the existing 'door
| open/close' buttons can be used to steer the door.
+- Trigger SZ-Test Operation
|
+- Enter car roof service operation
|
+- Enter shaft pit service operation
|
+- Even more…
|
+- Test smoke detector service operation
|
+- Direction change counter
| |
| +- Reset direction change counter
| |
| +- Direction change counter pre-warning threshold [CO:4170-1]
| | If the lift is using plastic coated cables, the manufacturer of the cables
| | defines a maximum count of direction changes allowed. There is a parameter
| | for defining a 'pre-warning' and an 'out of order' threshold. You can
| | alter the thresholds and reset the counter if having 'Setup' password
| | privileges granted.
| |
| +- Direction change counter 'out of order' threshold [CO:4170-2]
| If the lift is using plastic coated cables, the manufacturer of the cables
| defines a maximum count of direction changes allowed. There is a parameter
| for defining a 'pre-warning' and an 'out of order' threshold. You can
| alter the thresholds and reset the counter if having 'Setup' password
| privileges granted.
|
+- Maintenance intervals
| |
| +- Maintenance interval trip counter [CO:4298]
| | This object defines the trip counter threshold to signal, that the lift
| | installation requires maintenance. With this counter it is possible that
```

```
| | the lift signals a maintenance requirement, when the specified number of
| | trips has been reached.
| |
| +- Maintenance interval operation time meter [CO:4299]
| | This object defines the operating hour meter threshold to signal, that the
| | lift installation requires maintenance. With this counter it is possible
| | that the lift signals a maintenance requirement, when the operating hours
| | exceed the given value.
| |
| +- Maintenance interval Date & Time [CO:429A]
| This object defines the date and time that has to be reached, to indicate,
| that the lift installation requires maintenance. With this date and time
| being setup, it is possible that the lift signals a maintenance
| requirement, when the actual date and time has exceed the given value. To
| turn this interval off, enter '01.01.2999' as date.
|
+- Lubrication Function
| |
| +- Lubrication runtime oilpump [CO:5037]
| This object hold the summed up runtime of the oil pump (lubrication) in
| seconds used to check against the warning and error runtime threshold.
|
+- Much more…
|
+- Enable the floor indicators on inspection operation [CO:4171]
| This object defines if the floor displays shall be enabled, if being in
| inspection operation. Normally they are blanked. Turning them on again
| might be useful in some situations, when checking the displays to operate
| properly.
|
+- Re-enable disabled calls temporary
|
+- Re-enable disabled car calls temporary [CO:5014]
| This object defines if disabled car calls shall be re-enabled for
| maintenance purposes, for about 30 minutes.
|
+- Re-enable disabled landing calls temporary [CO:5015]
This object defines if disabled landing calls shall be re-enabled for
maintenance purposes, for about 30 minutes.
```

96.4 Diagnosis

```
- Diagnosis Menu
|
+- Pending
|
+- Logbook
|
+- Drive Unit Display
|
+- CANopen Node-List
| |
| +- CAN1 (car) interface
| |
| +- CAN2 (hoistway) interface
| |
| +- Create backup of node configuration
| |
| +- CAN1 (car) interface
| | |
| | +- Create local backup of node configuration
| | |
| | +- Backup node configuration to mass storage
| |
| +- CAN2 (hoistway) interface
| |
| +- Create local backup of node configuration
| |
| +- Backup node configuration to mass storage
|
```

```
+- More…
|
+- Team Status
| |
| +- Team Overview
| |
| +- Team Information
|
+- Statistics & Counters
|
+- Quantity List of Faults
|
+- Door Status
|
+-Even more..
|
+- Distances & Deceleration
|
+- Drive curve view
|
+- Car load measuring unit
|
+- Position supervisor unit status
|
+- Further more…
|
+- Fire Alarm Status
|
+- Parking statistics / Self learning parking
| |
| +- Parking statistics floor table Monday [CO:503C]
| | This object holds the parking levels which were determined by
| | recording the travel statistics of the lift for every 15 minutes of
| | each week day. For each weekday there is one floor table.
| |
| +- Parking statistics floor table Tuesday [CO:503D]
| |
| +- Parking statistics floor table Wednesday [CO:503E]
| |
| +- Parking statistics floor table Thursday [CO:503F]
| |
| +- More…
| |
| +- Parking statistics floor table Friday [CO:5040]
| |
| +- Parking statistics floor table Saturday [CO:5041]
| |
| +- Parking statistics floor table Sunday [CO:5042]
| |
| +- Reset the self learning parking statistics
|
+- Pawl Device
|
+- Smart Power Supply Status
|
+- VVVF DC bus enable
|
+- Inverter software reset
|
+- Position correction
```

96.5 Assembling & Repair

```
- Assembling & Repair
|
+- Assembling/Installation operation mode [CO:411F]
| The Assembling/Installation Operation mode allows driving the lift via inspection or
| emergency rescue control without a positioning unit. Additional terminal (pre-limit)
| switches shall be used to limit the driving distance.
|
+- Installation Pre-limit (Terminal) Hoistway Switches [CO:4158]
| This object defines if terminal (pre-limit) hoistway switches are used for
| Assembling/Installation Operation to ensure the lift decelerating to V0, before the very
| end of the hoistway is reached, even if having no absolute position encoder installed
| yet.
|
+- Learning Trip
| |
| +- Simple position encoder
| | |
| | +- Manual Learning Trip
| | |
| | +- Automatic Learning Trip
| | |
| | +- Floor Level Positions [CO:4010]
| | This object holds the floor levels in millimeter.
| | |
| | +- Erase floor positions
| |
| +- Position supervisor unit (PSU)
| | |
| | +- Commands & Options (PSU)
| | | |
| | | +- Change operating mode (PSU) [CO:42A0]
| | | | This object holds the current operating mode of the Position Supervisor
| | | | Unit (PSU). Teaching mode is for setting up the floor positions,
| | | | configuration mode for adjustments and normal mode (having a valid
| | | | configuration) is for operating the lift.
| | | |
| | | +- Configure & Teach
| | | | |
| | | | +- 1.) Write/configure bottom/top floor value
| | | | |
| | | | +- 2.) Write/configure door zone values
| | | | |
| | | | +- 3.) Teach top/bottom limits
| | | | | |
| | | | | +- 1.) Teach top position absolute limit
| | | | | |
| | | | | +- 2.) Teach bottom position absolute limit
| | | | | |
| | | | | +- 3.) Limit switch positions (PSU)
| | | | | |
| | | | | +- Distance final limit switch top [CO:4031]
| | | | | | This object holds the distance of the final limit switch on
| | | | | | top, measured from the top floor position.
| | | | | |
| | | | | +- Distance final limit switch bottom [CO:4032]
| | | | | | This object holds the distance of the final limit switch on
| | | | | | bottom, measured from the bottom floor position.
| | | | | |
| | | | | +- Distance inspection limit switch top [CO:4033]
| | | | | | This object holds the distance of the inspection limit
| | | | | | switch on top, measured from the top floor position.
| | | | | |
| | | | | +- Distance inspection limit switch bottom [CO:4034]
| | | | | | This object holds the distance of the inspection limit
| | | | | | switch on bottom, measured from the bottom floor position.
| | | | | |
| | | | | +- Distance inspection terminal (pre-limit) switches
| | | | | |
```

```
| | | | | | +- Distance inspection terminal (pre-limit) switch top
| | | | | | | [CO:4033]
| | | | | | | This object holds the distance of the inspection limit
| | | | | | | switch on top, measured from the top floor position.
| | | | | | |
| | | | | | +- Distance inspection terminal (pre-limit) switch bottom
| | | | | | [CO:4036]
| | | | | | This object holds the distance of the inspection
| | | | | | terminal (pre-limit) switch on bottom, measured from
| | | | | | the bottom floor position.
| | | | | |
| | | | | +- 4.) Teaching Operation
| | | | | |
| | | | | +- 1.) Learning Trip
| | | | | | |
| | | | | | +- Manual Learning Trip
| | | | | | |
| | | | | | +- Teach already learned floor levels to the PSU
| | | | | |
| | | | | +- 2.) Floor Level Positions [CO:4010]
| | | | | | This object holds the floor levels in millimeter.
| | | | | |
| | | | | +- 3.) Adjustment Trip Operation
| | | | | |
| | | | | +- Automatic Adjustment Trip Operation
| | | | | |
| | | | | +- Manual Adjustment Trip Operation
| | | | |
| | | | +- Reset a pending blocking event
| | | |
| | | +- Limit switch positions (PSU)
| | | | |
| | | | +- Distance final limit switch top [CO:4031]
| | | | | This object holds the distance of the final limit switch on top, measured
| | | | | from the top floor position.
| | | | |
| | | | +- Distance final limit switch bottom [CO:4032]
| | | | | This object holds the distance of the final limit switch on bottom,
| | | | | measured from the bottom floor position.
| | | | |
| | | | +- Distance inspection limit switch top [CO:4033]
| | | | | This object holds the distance of the inspection limit switch on top,
| | | | | measured from the top floor position.
| | | | |
| | | | +- Distance inspection limit switch bottom [CO:4034]
| | | | | This object holds the distance of the inspection limit switch on bottom,
| | | | | measured from the bottom floor position.
| | | | |
| | | | +- Distance inspection terminal (pre-limit) switches
| | | | |
| | | | +- Distance inspection terminal (pre-limit) switch top [CO:4033]
| | | | | This object holds the distance of the inspection limit switch on top,
| | | | | measured from the top floor position.
| | | | |
| | | | +- Distance inspection terminal (pre-limit) switch bottom [CO:4036]
| | | | This object holds the distance of the inspection terminal (pre-limit)
| | | | switch on bottom, measured from the bottom floor position.
| | | |
| | | +- PSU Safety door bridging usage [CO:42A4]
| | | This object defines if the position supervisor unit (PSU) shall be featured for
| | | door bridging, typically used for advance door opening or re-levelling. Using
| | | the PSU for bridging the door circuit is only possible, if the PSU actually
| | | supports that feature. If not, this option does not have any effect.
| | |
| | +- Braking distance assistant
| | |
| | +- Floor level tune assistant
| |
| | |
| | +- Trigger door teaching operation
| | |
```

```
| +- Door A
| |
| +- Door B
| |
| +- Door C
| |
| +- Door D
|
+- Positioning encoder replacement
|
+- Drive Auto-Tuning Operation
```

96.6 Testing & Inspection

```
- Testing & Inspection
|
+- UCM-Testing Assistant
| |
| +- UCM-Testing Door Operation [CO:4155]
| | This object defines if the doors shall be physically open for an UCM-testing
| | operation or if (for safety reason) they shall stay closed and the technician or
| | inspection operator opens the safety chain electrically instead, simulating the
| | doors being opened.
| |
| +- UCM-Testing GV/Drop Protection [CO:417C]
| | This object defines, if the drop protection bolt at the speed governor shall be kept
| | engaged or shall be released while doing the test. In the moment UCM is detected the
| | bolt will always drop and engage the speed governor. This option basically defines,
| | if the bolt shall be released at all, when doing the test.
| |
| +- UCM-Testing Assistant
|
+- Runtime Testing-Assistant
|
+- Limit-Switch-Testing Assistant
| |
| +- Top-limit-switch testing distance [CO:4161]
| | This object defines the distance used to 'shift' the top floor position in order to
| | make the lift driving controlled into the top-limit driveway switch to test its
| | function.
| |
| +- Bottom-limit-switch testing distance [CO:4162]
| | This object defines the distance used to 'shift' the bottom floor position in order
| | to make the lift driving controlled into the bottom-limit driveway switch to test
| | its function.
| |
| +- Limit-Switch-Testing Assistant
|
+- Buffer Testing-Assistant
| |
| +- Buffer testing velocity [CO:40A0]
| | This object defines the velocity used for the buffer testing operation. It defines
| | which velocity shall be featured when driving the car onto the driveway buffers.
| |
| +- Buffer Testing-Assistant
|
+- More…
|
+- Speed Governor Testing-Assistant
| |
| +- Speed Governor Testing-Assistant
| |
| +- Speed Governor testing velocity [CO:4082]
| This object defines the velocity commanded to the drive unit, when performing
| the speed governor testing operation.
|
+- Brake Testing-Assistant
|
| |
| +- Brake testing velocity [CO:40A1]
| | This object defines the velocity used for the brake testing operation. It
| | defines which velocity shall be featured when driving in order to check
| | stopping with a single brake circuit.
| |
| +- Brake Testing-Assistant
|
+- Overload Indication Testing-Assistant
|
+- Safety circuit bridge testing assistant
|
+- Even more…
```

```
|
+- PSU electrical safety gear testing
|
+- Checksums & Software Versions
|
+- Lift Parameter Change Log
|
- Enter Calls
|
+- Enter Car Calls
|
+- Enter Upward Landing Calls
|
+- Enter Downward Landing Calls
```

97 Reference List of Faults, Warnings and Messages

97.1 Messages

```
The lift drives to the parking floor. [0001]

    Because of being idle, the lift has entered the parking operating
    mode.


The lift is parking at floor x. [0002]

    Because of being idle, the lift has entered the parking operating
    mode.


The lift is re-levelling. [0003]

    Because of the car being not flush on level, the lift has started
    to re-level the cabin/car slowly.


Car illumination turned off. [0004]

    Because of the lift being idle, the car/cabin illumination had
    been turned off. If the car load signals are included into the
    'occupied' signal, the car has to be empty too.


Lift had been unblocked. [0005]

    The lift was in blocking operation mode and had been unblocked by
    a technician via the user interface or an input terminal.


Landing control enabled via the UI [0006]

    The landing control has been re-enabled via the user interface
    (menu) at the lift controller unit.


Landing control enabled via input [0007]

    The landing control has been re-enabled via an input signal.


Landing control remotely enabled [0008]

    The landing control has been re-enabled via a command from a
    remote monitoring application.


Keeping the doors closed deactivated [0009]

    The operation mode for 'keeping the doors closed' has been turned
    off. The lift doors shall now open when approaching to a floor.


Maintenance deactivated via UI [0010]

    The maintenance operation mode has been turned off via the user
    interface. Faults will now be recorded or forwarded again. Parking
    is basically enabled.
```

Maintenance deactivated via input [0011]

The maintenance operation mode has been turned off via an input signal. Faults will now be recorded or forwarded again. Parking is basically enabled.

Car preference activated [0012]

The car preference (VIP) has been activated. Depending on the 'Car Preference' settings, landing calls may be stored but will not be processed. So the passenger in the car/cabin has exclusive control.

Inspection turned off [0013]

The inspection control operation has been turned off via the inputs assigned to the hoistway (shaft) pit and car top inspection control box.

Emergency rescue turned off [0014]

The emergency rescue control operation has been turned off via an input assigned to the emergency rescue control box.

Loadtime 1 activated door x [0015]

The load time has been activated. The doors stays open to allow the passenger loading the car/cabin with goods. Two different load-time values can be setup to support a short and a long load-timer operation.

Loadtime 2 activated door x [0016]

The load time has been activated. The doors stays open to allow the passenger loading the car/cabin with goods. Two different load-time values can be setup to support a short and a long load-timer operation.

Standby operation turned off [0017]

The standby operation has been turned off. The lift will turn on the peripherals again and is after a short while operational again.

Driving to check/stop-over floor [0018]

The lift is driving to the check/stop-over floor. If arrived there, the lift will open/close the doors once to ensure that the cabin is empty. This is typically done in a lobby/hotel environment.

Lift arrived at check/stopover floor [0019]

The lift has arrived at the check/stop-over floor. The lift will open/close the doors once to ensure that the cabin is empty. This is typically done in a lobby/hotel environment.

Driving to standby floor [0020]

The lift is driving to the standby floor. If arrived there, the lift will switch off peripherals in order to reduce the energy consumption.

Lift arrived at standby floor [0021]

The lift has arrived at the standby floor. The lift will now switch off peripherals in order to reduce the energy consumption.

Assembling mode turned off [0022]

The Assembling Operation mode has been turned off. This mode allows driving the lift via inspection or emergency rescue control without a positioning unit. Additional terminal (pre-limit) switches shall be used to limit the driving distance.

Low priority call operation [0023]

A low priority call operation has been activated, usually by a low priority landing call. This call may be on the current or any other floor. See low priority call options for handing pending car calls and setting up allocation time.

High priority call operation [0024]

A high priority call operation has been activated, usually by a high priority landing call. This call may be on the current or any other floor. See high priority call options for handing pending car calls and setting up allocation time.

Fire Alarm operation has been turned off [0025]

The fire alarm operation mode has been activated, because the corresponding input 'Fire Alarm' has been turned on. Usually this input is inverted, so that a zero signal trigger the function. But anyhow, you should look at the schematics to make sure.

Driving to fire alarm floor [0026]

The fire alarm operation mode has been activated, because the corresponding input 'Fire Alarm' has been turned on. Usually this input is inverted, so that a zero signal trigger the function. But anyhow, you should look at the schematics to make sure.

Arrived at fire alarm floor [0027]

The fire alarm operation mode has been activated, because the corresponding input 'Fire Alarm' has been turned on. Usually this input is inverted, so that a zero signal trigger the function. But anyhow, you should look at the schematics to make sure.

Drive beyond top/bottom floor turned off [0028]

The option 'Drive beyond top/bottom floor' let the technician move the cabin/car beyond the top floor and below the bottom floor positions. This means to risk to drive into the limit switches. But it can be quite handy for inspection or testing operations.

Random calls turned on [0029]

Random calls have been turned on or off via the user interface. Random calls are typically used to verify with some test drives, that the lift is properly working, before passenger will use the lift regularly.

Random calls turned off [0030]

Random calls have been turned on or off via the user interface. Random calls are typically used to verify with some test drives, that the lift is properly working, before passenger will use the lift regularly.

Learning trip finished [0031]

The 'Learning Trip Operation' has been finished successfully. That may cause the 'Assembly/Installation Operation Mode' being turned off automatically as well.

Floor displays turned off [0032]

The floor displays have been turned off, because the 'display-off' timer has been expired, while the lift was being idle.

Floor displays reduced [0033]

The floor displays have been reduced in brightness, because the 'display-reducing' timer has been expired, while the lift was being idle.

Hydraulic homing [0034]

The 'Hydraulic Homing' feature send the lift back to the bottom floor after the time-span being setup has expired. You find the hydraulic homing time-span under 'Settings' > 'More' > 'Drive Unit' > 'Type of Drive Unit' > 'Drive Unit options' > 'Hydraulic Homing'. If you have setup a parking floor as well, the lift may oscillate between those two floors.

Limit-switch testing assistant closed [0035]

The assistant used to perform a limit-switch-test operation has been finished. The lift controller enters usually the 'blocked' operation mode and has be unblocked via the user interface.

UCM testing finished [0036]

The assistant used to perform an UCM-test operation has been finished. The lift controller enters usually the 'blocked' operation mode and has be unblocked via the user interface.

Safe encoder self test running [0037]

The safe position encoder system may need a self test regularly. This is usually done automatically by the unit and takes a few seconds. The lift will takes calls but will not drive while the self test is ongoing.

Direction change counter/threshold reset [0038]

The direction change counter/threshold has been reset manually by a technician. This should only be done, if the plastic coated cables, that hold the cabin weight, had been properly renewed.

Pawl device activated again via input [0039]

The pawl device has been activated again via an input terminal. That means that the cabin/car will be seated the next time the lift approaches to a floor.

Emergency Power operation finished [0040]

The Emergency Power operation has been turned off again, usually via the input function 'Emergency Power'.

Travel to Emergency Power floor [0041]

The lift is traveling to the Emergency Power floor, defined in the Emergency Power settings. The doors that shall be operated in that floor can be setup as well.

Lift arrived at Emergency Power floor [0042]

After having activated the 'Emergency Power' input, the lift has finally arrived at the 'Emergency Power' floor, defined in the 'Emergency Power' settings. The doors that shall be operated can be defined there as well.

Safety light curtain activated door x [0043]

The safety light curtains can be deactivated and activated per door, via input signals. Consider possible security issue if the safety light curtains are disabled.

Finished trip to service position [0044]

To enter the car roof or the shaft pit easily, this automated operation will first drive the car to the floor where the technician is waiting, giving him/her a chance to peak into the car, ensuring that it is empty. Finally the car will moved to the service position by the distance given for entering the car roof or the shaft pit. You find those distances under 'Settings Menu' > 'More' > 'Position Unit' > 'Distances & Parameter' > 'More' > 'Even more'.

Cancelled trip to service position [0045]

To enter the car roof or the shaft pit easily, this automated operation will first drive the car to the floor where the technician is waiting, giving him/her a chance to peak into the car, ensuring that it is empty. Finally the car will moved to the service position by the distance given for entering the car roof or the shaft pit. You find those distances under 'Settings Menu' > 'More' > 'Position Unit' > 'Distances & Parameter' > 'More' > 'Even more'.

Guest calls waiting for the lift to become idle. [0046]

In order to transport the guest to the destination, the guest call feature is waiting for the lift to finish its current tasks. If all passenger have deboarded and the lift is idle, it will finally start to pick-up the guest.

Guest calls, lift is driving to the source floor. [0047]

In order to pick the guest up, the guest call feature steers the lift to the source floor.

Guest calls, lift is waiting for the guest to step into the car. [0048]

In order to transport the guest to the destination, the guest call feature is waiting for the guest to enter the car.

Guest calls, lift is driving the guest to the destination floor. [0049]

In order to deliver the guest, the guest call feature steers the lift to the destination floor.

Guest call operation is finished. [0050]

The guest has been successfully transported from the source floor to the destination floor. The guest call operation is finished.

Fire service turned off [0051]

The fire service operation has been turned off, usually via a key switch at a landing. You can find the related settings under 'Settings' > 'Controller/Piloting' > 'More' > 'Fire Brigade/Service'.

Emergency evacuation finished [0052]

The Emergency Evacuation operation has been finished. This operating mode is used to move the car to the very next floor by opening the brake and limiting the velocity to typically 0.3 m/s maximum.

Platform lift operation turned off [0053]

In the platform lift operating mode the calls are usually operated in dead-mans-grip, requiring constant-pressure to drive the lift or the platform to the defined level positions.

Arrival indicator turned off via time planner [0054]

The arrival indicator (gong) has been turned off via one of the time planner functions. This is typically used in hospitals or hotels to avoid the people in the night time being disturbed by the sound of the lifts.

Car call unlocked via time planner [0055]

A car call has been unlocked or enabled via a time planner function. To disable or lock a car call in the first place, you can use the 'Car call disabling table' in the first place.

Landing call unlocked via time planner [0056]

A landing call has been unlocked or enabled via a time planner function. To disable or lock a landing call in the first place, you can use the 'Landing call disabling table' in the first place.

Parking floor set via time planner [0057]

The parking floor has been set via a time planner function. This means that the parameterized parking floor or the zone parking function has been overruled.

Daylight saving time (+1 h) [0058]

If having turned on the option 'Automatic Daylight Saving Time' the unit will automatically switch between regular (winter) time and daylight saving (summer) time. Daylight Saving Time (DST) is the practice of setting the clocks forward 1 hour from standard time during the summer months, and back again in the fall, in order to make better use of natural sunlight.

Regular (winter) time (-1 h) [0059]

If having turned on the option 'Automatic Daylight Saving Time' the unit will automatically switch between regular (winter) time and daylight saving (summer) time. Daylight Saving Time (DST) is the practice of setting the clocks forward 1 hour from standard time during the summer months, and back again in the fall, in order to make better use of natural sunlight.

Floor level tune assistant finished [0060]

The assistant used to simplify fine tuning of the floor level positions has been finished.

Team operation re-enabled via input terminal [0061]

The team or group operation has been re-enabled again via an input terminal. This lift is now running again in team lift operation mode, sharing the landing calls with the other lifts, using a voting system.

Manual door inspection operation [0062]

If the option 'Manual door operation' has been turned on in the Maintenance menu, the technician on the car top may activate the 'Inspection car top operation switch' and hold the 'Inspection car top upward' and 'Inspection car top downward' together pressed for 10 s in order to turn those buttons into 'door open' and 'door close'. To turn them back he/she can redo the process or just toggle the inspection switch.

Manual door operation turned off [0063]

If the option 'Manual door operation' has been turned on in the Maintenance menu, the technician on the car top may activate the 'Inspection car top operation switch' and hold the 'Inspection car top upward' and 'Inspection car top downward' together pressed for 10 s in order to turn those buttons into 'door open' and 'door close'. To turn them back he/she can redo the process or just toggle the inspection switch.

Speed governor testing assistant closed [0064]

The assistant used to perform a speed-governor-test operation has been finished. The lift controller enters usually the 'blocked' operation mode and has to be unblocked via the user interface.

Brake distance learning assistant closed [0065]

The braking distance assistant is used to automatically determine the required deceleration distances required to stop the lift, when driving V1…Vn. Usually this assistant is used for classical drive systems, running in velocity rather than position profile mode.

Second alternative door table active [0066]

An alternative landing door table has been activated via the dedicated input function. You find the landing door tables following 'Settings' > 'Doors' > 'Landing Door Tables'.

Third alternative door table active [0067]

An alternative landing door table has been activated via the dedicated input function. You find the landing door tables following 'Settings' > 'Doors' > 'Landing Door Tables'.

Fourth alternative door table active [0068]

An alternative landing door table has been activated via the dedicated input function. You find the landing door tables following 'Settings' > 'Doors' > 'Landing Door Tables'.

Standard door table active [0069]

The standard landing door table has been activated by dropping all input functions, that had activated an alternative landing door table before. You find the landing door tables following 'Settings' > 'Doors' > 'Landing Door Tables'.

Rescue operation mode turned off [0070]

The rescue operation mode has been activated, because the corresponding input 'Rescue operation' has been activated.

Driving to rescue operation floor [0071]

The rescue operation mode has been activated, because the corresponding input 'Rescue operation' has been activated.

Arrived at rescue operation floor [0072]

The rescue operation mode has been activated, because the corresponding input 'Rescue operation' has been activated.

Circulating operation turned off [0073]

The Circulating operation has been turned off. This operation mode had made the lift stop at every floor, open and close the doors and finally altering the direction at the top and bottom floor.

Main contactor cycle counters have been reset [0074]

The cycle counters (activation cycles) of the main contactors have been reset via the user interface. This should be done, when the contactors have been replaced.

Re-levelling cycle counters have been reset [0075]

The counters (activation cycles) for the re-levelling operation up/down have been reset via the user interface.

Chemical operation finished [0076]

The Chemical/Hazard goods operation mode has been finished, usually via a key switch at the landings. This operation mode let a technician at the landings drive the car to any floor, were such a key switch is mounted. Usually those key switches have three positions. A neutral position, one for activating and one for resetting the operation mode.

Smoke detector service operation finished [0077]

In order to test the smoke detector in the shaft head, an automated procedure had be used to enter the car roof. Driving to the shaft head is done via the inspection control. The smoke detector can now be tested with a spray. A buzzer is activated when the smoke detector is tripped.

Smoke detector has been tested [0078]

In order to test the smoke detector in the shaft head, an automated procedure had be used to enter the car roof. Driving to the shaft head is done via the inspection control. The smoke detector can now be tested with a spray. A buzzer is activated when the smoke detector is tripped.

Lift has entered normal operation mode [0079]

After being in any kind of special operation mode or being on inspection/testing or any kind of error operation mode, the lift has finally entered the normal operation mode again.

Brake testing assistant closed [0080]

The assistant used to perform a brake-test operation has been finished. The lift controller enters usually the 'blocked' operation mode and has to be unblocked via the user interface.

Buffer Testing finished [0081]

The buffer testing operation has been finished by leaving the test assistant.

Overload indication test finished [0082]

The overload indication testing operation has been finished by leaving the test assistant.

Electrical safety gear test assistant closed [0083]

The assistant used to perform a test of the electrical safety gear has been finished. The lift controller enters usually the 'blocked' operation mode and has to be unblocked via the user interface.

Peak-up/down operation finished [0084]

The 'peak-up/down' operation is used, if a large group of passengers is in need of transportation to the lower or upper floors, for example when employees enter an office building in the morning or later leave the building in the evening again.

Swing door closed again [0085]

After the manual swing door was kept open for a while continuously, it was finally closed again.

Safety chain bridging test assistant finished [0086]

The assistant for testing the safety chain bridging supervision function has been finished. This assistant is usually used to emulate a bridge in the safety chain in order to check, if the lift would get blocked.

Random calls active via time planner [0087]

Random calls have been turned on via a time planner function. You find the time planner in the Settings Menu > More >Basics >More > Time Planner. Random calls are typically used to verify with some test drives, that the lift is properly working, before passenger will use the lift regularly.

Arrived at the telescopic toe guard push-in position [0088]

These special toe guards are usually spring loaded and hold by an electromagnet. On a power drop they are pushed out and when the power comes back, the lift has to push them in again, by driving below the lowest floor, so that the toe guard will touch the ground. The lift will stop, if the input indicates, that the toe guard has been pushed in again or the maximum given travel distance has been reached.

Shuttle Service (snow cleaning) active [0089]

This message indicates that the lift is travelling to one end of the hoistway and then the next time to the other end. This might be used for snow cleaning, if the lift in question is an inclining lift or there is the risk of the car freezing to the rails. This function is usually activated via an input terminal.

Shuttle Service (snow cleaning) timer [0090]

This message indicates that the lift is travelling to one end of the hoistway and then the next time to the other end. This might be used for snow cleaning, if the lift in question is an inclining lift or there is the risk of the car freezing to the rails. This function is usually activated via an input terminal.

Shuttle Service (snow cleaning) turned off [0091]

This message indicates that the lift is travelling to one end of the hoistway and then the next time to the other end. This might be used for snow cleaning, if the lift in question is an inclining lift or there is the risk of the car freezing to the rails. This function is usually activated via an input terminal.

Time planner generic output 1 on [0092]

One or more of the time planner output terminals have been activated via the time planner functions. The terminals will be turned off again, if no more timer planner is holding them activated. You find the time planner functions under 'Settings > More… > Basics > More… > Time Planner'.

Time planner generic output 2 on [0093]

One or more of the time planner output terminals have been activated via the time planner functions. The terminals will be turned off again, if no more timer planner is holding them activated. You find the time planner functions under 'Settings > More… > Basics > More… > Time Planner'.

Time planner generic output 3 on [0094]

One or more of the time planner output terminals have been activated via the time planner functions. The terminals will be turned off again, if no more timer planner is holding them activated. You find the time planner functions under 'Settings > More… > Basics > More… > Time Planner'.

Time planner generic output 4 on [0095]

One or more of the time planner output terminals have been activated via the time planner functions. The terminals will be turned off again, if no more timer planner is holding them activated. You find the time planner functions under 'Settings > More… > Basics > More… > Time Planner'.

Time planner generic output 1 off [0096]

One or more of the time planner output terminals have been activated via the time planner functions. The terminals will be turned off again, if no more timer planner is holding them activated. You find the time planner functions under 'Settings > More… > Basics > More… > Time Planner'.

Time planner generic output 2 off [0097]

One or more of the time planner output terminals have been activated via the time planner functions. The terminals will be turned off again, if no more timer planner is holding them activated. You find the time planner functions under 'Settings > More… > Basics > More… > Time Planner'.

Time planner generic output 3 off [0098]

One or more of the time planner output terminals have been activated via the time planner functions. The terminals will be turned off again, if no more timer planner is holding them activated. You find the time planner functions under 'Settings > More… > Basics > More… > Time Planner'.

Time planner generic output 4 off [0099]

One or more of the time planner output terminals have been activated via the time planner functions. The terminals will be turned off again, if no more timer planner is holding them activated. You find the time planner functions under 'Settings > More… > Basics > More… > Time Planner'.

Runtime supervision test has been finished [0100]

The runtime supervision testing operation has been activated via the dedicated testing assistant.

Stops per floor statistics had been reset [0101]

The recorded statistic for stops per floor has been reset via the user interface.

Maintenance deactivated remotely [0102]

The maintenance operation mode has been turned off remotely (field-bus/cloud). Faults will now be recorded or forwarded again. Parking is basically enabled.

Keeping the doors closed deactivated remotely [0103]

The operation mode for 'keeping the doors closed' has been deactivated remotely (field-bus/cloud). The lift doors shall not open when approaching to a floor.

97.2 Warnings

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Landing control disabled via the UI [1001]

    The landing control has been disabled via the user interface
    (menu) at the lift controller unit.


Landing control disabled via input [1002]

    The landing control has been disabled via an input signal.


Landing control remotely disabled [1003]

    The landing control has been disabled via a command from a remote
    monitoring application.


Keeping the doors closed activated [1004]

    The operation mode for 'keeping the doors closed' has been
    activated. The lift doors shall not open when approaching to a
    floor.


Maintenance activated via UI [1005]

    The maintenance operation mode has been turned on via the user
    interface. Faults will not be recorded or forwarded. Parking is
    being disabled.


Maintenance activated via input [1006]

    The maintenance operation mode has been turned on via an input
    signal. Faults will not be recorded or forwarded. Parking is being
    disabled.


Inspection turned on in the pit [1007]

    The inspection control operation has been activated via an input
    assigned to the hoistway (shaft) pit inspection control box.


Inspection turned on at car top [1008]

    The inspection control operation has been activated via an input
    assigned to the cabin/car top inspection control box.


Emergency rescue activated [1009]

    The emergency rescue control operation has been activated via an
    input assigned to the emergency rescue control box.


Standby operation activated [1010]

    The standby operation has been activated. The lift will first
    drive to a check/stop-over floor (if parameterized) and open/close
    the doors once. Then finally, it will drive to the standby floor,
    keeping the doors closed.


Assembling mode activated [1011]

    The Assembling Operation mode has been activated. This mode allows
```

driving the lift via inspection or emergency rescue control without a positioning unit. Additional terminal (pre-limit) switches shall be used to limit the driving distance.

Drive is not ready, still waiting… [1012]

The drive is not ready yet, so the lift is still waiting for readiness. If this happens regularly, please check the fault log of the drive for further details. Check communication, temperature and power issues.

Waiting for 'zero-load' signalization [1013]

The lift is waiting for 'zero-load' signalization, because the option for picking up the passenger on priority call operation only with an empty car has been turned on.

Light curtain continuously interrupted at door A [1014]

The light curtain has been continuously interrupted for more than 30s. The lift stores this event in the log-book, because it slows down call processing and ends up in a bad performance.

Light curtain continuously interrupted at door B [1015]

The light curtain has been continuously interrupted for more than 30s. The lift stores this event in the log-book, because it slows down call processing and ends up in a bad performance.

Light curtain continuously interrupted at door C [1016]

The light curtain has been continuously interrupted for more than 30s. The lift stores this event in the log-book, because it slows down call processing and ends up in a bad performance.

Light curtain continuously interrupted at door D [1017]

The light curtain has been continuously interrupted for more than 30s. The lift stores this event in the log-book, because it slows down call processing and ends up in a bad performance.

Fire Alarm Mode [1018]

The fire alarm operation mode has been activated, because the corresponding input 'Fire Alarm' has been turned on. Usually this input is inverted, so that a zero signal trigger the function. But anyhow, you should look at the schematics to make sure.

Door A in nudging operation [1019]

The doors are in nudging operation and do close even if the light curtain is interrupted. The door machine shall close with limited force, signaled via an output or status word. This may be caused by the 'nudging timer' being expired or fire alarm/service operation.

Door B in nudging operation [1020]

The doors are in nudging operation and do close even if the light curtain is interrupted. The door machine shall close with limited force, signaled via an output or status word. This may be caused by the 'nudging timer' being expired or fire alarm/service operation.

Door C in nudging operation [1021]

The doors are in nudging operation and do close even if the light curtain is interrupted. The door machine shall close with limited force, signaled via an output or status word. This may be caused by the 'nudging timer' being expired or fire alarm/service operation.

Door D in nudging operation [1022]

The doors are in nudging operation and do close even if the light curtain is interrupted. The door machine shall close with limited force, signaled via an output or status word. This may be caused by the 'nudging timer' being expired or fire alarm/service operation.

Drive beyond top/bottom floor active [1023]

The option 'Drive beyond top/bottom floor' let the technician move the cabin/car beyond the top floor and below the bottom floor positions. This means to risk to drive into the limit switches. But it can be quite handy for inspection or testing operations.

Landing door bypass is active [1024]

For maintenance/repair of the door safety chain contacts, a device (switch) shall provide a safe way of bypassing these contacts. This is signaled to the lift controller via two monitoring inputs.

Car door bypass is active [1025]

For maintenance/repair of the door safety chain contacts, a device (switch) shall provide a safe way of bypassing these contacts. This is signaled to the lift controller via two monitoring inputs.

Drop protection activation delayed [1026]

The drop protection could not be activated properly. That means that the feedback contact of the bolt, blocking the speed governor, did not signal that the bolt is free and therefore enabling the speed governor pulley to spin.

Learning trip operation started [1027]

The 'Learning Trip Operation' has been started via the user interface. The current floor position will be replaced with the new taught ones.

Learning trip operation aborted [1028]

The 'Learning Trip Operation' has been aborted. The old floor position will be restored.

Limit-switch testing assistant active [1029]

The assistant used to perform a limit-switch-test operation has been started. The lift controller enters usually the 'Out of Order' operation mode.

UCM testing started [1030]

The assistant used to perform a UCM-test operation has been started. The lift controller enters usually the 'Out of Order' operation mode.

Limit switch-test executed [1031]

The limit-switch test has been done. Check the details, like the velocity or reached position, by simply opening the event by touching the table row.

UCM-test executed [1032]

The UCM test has been done. Check the details, like the velocity or reached position, by simply opening the event by touching the table row.

Inspection pit reset signal required [1033]

Regarding to the EN81 regulations, an inspection pit reset signal is required in order to turn the lift back to normal operation, if the inspection control panel in the hoistway-pit was once activated.

Door x teach-in operation [1034]

The door unit is in 'teach-in' operation mode. In this mode the door will determine the closed and opened position, the needed force to operate the door and calculates the optimized curve for operating the door engine.

Direction change counter pre-warning [1035]

The direction change counter has reached the warning limit. If the lift is using plastic coated cables, the manufacturer of the cables defines a maximum count of direction changes allowed. There is a parameter for defining a 'pre-warning' and an 'out of order' threshold. You can alter the thresholds and reset the counter if having 'Setup' password privileges granted.

PSU Teaching Mode [1036]

The safe encoder or position supervisor unit (PSU) is in teach mode, ready to get the floor level positions trained. In this mode the lift can usually only be operated in emergency electrical operation.

PSU Configuration Mode [1037]

The safe encoder or position supervisor unit (PSU) is in configuration mode, ready to get the floor level positions fine tuned. In this mode the lift can usually be operated in normal operation, so the technician can adjust the floor levels.

Floor positions not ascending [1038]

The floor level positions are not sorted in ascending order, beginning from bottom to top. You may review them via the floor level table. You find the floor level table in the 'Settings Menu' > 'More' > 'Positioning Unit' > 'Floor Level Positions'.

Separate 'door x safely closed' switch fault [1039]

The option for supporting a separate 'door safely closed' switch is parameterized, but that signal did not respond, when the door had been closed. In order to comply with the EN81-20, some doors provide an separate position switch, signalling that the car door is safely (mechanically) closed. This signal is used to ensure that the lift can be safely driven in car door bypass operation.

Calls re-enabled for maintenance [1040]

Disabled calls have been re-enabled for maintenance purposes using the 'Service & Assembly' menu. They will be automatically disabled again after 30 minutes, if the option is not turned off manually.

Pawl device de-activated via input [1041]

The pawl device has been temporarily deactivated via an input terminal. That means that the cabin/car will not be seated the next time the lift approaches to a floor.

Emergency Power operation activated [1042]

The Emergency Power operation has been activated, usually via the input function 'Emergency Power'.

Emergency Power lift stays operational [1043]

The lift has turned into 'Emergency Power lift stays operational' operation mode. This means it will process calls but with limitations, defined by the emergency power system. One limitation can be the nominal velocity the lift is running on. Turning into this mode is usually cause by the input function 'Emergency Power lift stays operational'.

Emergency Power evacuation delay [1044]

A delay (time span) has been setup that has to expire, before the lift drives to the emergency power floor. You find that option under 'Settings Menu' > 'Controller/Piloting' > 'More' > 'Emergency Power' > 'More'.

Emergency Power battery rescue [1045]

The lift has been turned to Emergency Power Battery Rescue operation. In this mode the lift will start driving to the nearest floor, but let the drive (inverter) choose the direction of the lowest resistance.

Safety light curtain deactivated door x [1046]

The safety light curtains can be deactivated and activated per door, via input signals. Consider possible security issue if the safety light curtains are disabled.

Safety light curtain interrupted door x [1047]

The safety light curtain has been interrupted while driving. The lift has been put to a halt, calls have been cancelled. The lift now waits for a car call or the landing door to be opened, to start again.

Waiting for car call or door opening [1048]

Because of an emergency stop or safety light curtain indication, the lift is now waiting for car call or a door opening event to recover from the halt state.

Door x closing issue [1049]

The door has several times tried to close but failed. This can be caused by the door being mechanically blocked.

Service trip operation [1050]

To enter the car roof or the shaft pit easily, this automated operation will first drive the car to the floor where the technician is waiting, giving him/her a chance to peak into the car, ensuring that it is empty. Finally the car will moved to the service position by the distance given for entering the car roof or the shaft pit. You find those distances under 'Settings Menu' > 'More' > 'Position Unit' > 'Distances & Parameter' > 'More' > 'Even more'.

Driving to waiting floor [1051]

To enter the car roof or the shaft pit easily, this automated operation will first drive the car to the floor where the technician is waiting, giving him/her a chance to peak into the car, ensuring that it is empty. Finally the car will moved to the service position by the distance given for entering the car roof or the shaft pit. You find those distances under 'Settings Menu' > 'More' > 'Position Unit' > 'Distances & Parameter' > 'More' > 'Even more'.

Driving to service position [1052]

To enter the car roof or the shaft pit easily, this automated operation will first drive the car to the floor where the technician is waiting, giving him/her a chance to peak into the car, ensuring that it is empty. Finally the car will moved to the service position by the distance given for entering the car roof or the shaft pit. You find those distances under 'Settings Menu' > 'More' > 'Position Unit' > 'Distances & Parameter' > 'More' > 'Even more'.

Waiting for inspection panel to be turned on [1053]

The service operation is waiting for the technician to turn on one of the the inspection control panels.

Service operation timed out [1054]

The service operation has timeout out, waiting for the technician to turn on one of the the inspection control panels.

Guest calls, lift arrived at the wrong floor. [1055]

During guest call operation the car arrived on a floor other than the source or destination floor.

Guest calls, an invalid guest call has been entered. [1056]

An invalid guest call has been entered. Check if the parameters match the actual floors and door tables.

Limit switch-test upward executed [1057]

The limit-switch test has been done. Check the details, like the velocity or reached position, by simply opening the event by touching the table row.

Limit switch-test downward executed [1058]

The limit-switch test has been done. Check the details, like the velocity or reached position, by simply opening the event by touching the table row.

Check position encoder settings [1059]

The lift has detected a mismatch between the position encoder settings of the controller and the real/installed position encoder unit. Check if you are using a linearly or rotary encoder and check the settings found under 'Settings' > 'More' > 'Positioning Unit' > 'Type of Positioning Unit' > 'Encoder Type'.

PSU Validation Mode [1060]

The safe encoder or position supervisor unit (PSU) is in validation mode, ready to get the floor level positions adjusted and revisited. In this mode the lift can usually be operated in normal mode without advance door opening.

PSU Pre-commissioning Mode [1061]

The safe encoder or position supervisor unit (PSU) is in pre-commissioning mode. In this mode the lift can only be operated in emergency rescue operation.

Travel to fire recall floor [1062]

Fire recall operation has been activated, usually via a key switch at a landing floor. The lift is now travelling to the fire recall floor, that had been setup to pickup the fire fighter. You can find the settings under 'Settings' > 'Controller/Piloting' > 'More' > 'Fire Brigade/Service'.

Lift arrived at fire recall floor [1063]

The lift has arrived at the fire recall floor, waiting for the fire fighter to enter the car. The lift is waiting for the second phase of the fire service operation to start. You can find the related settings under 'Settings' > 'Controller/Piloting' > 'More' > 'Fire Brigade/Service'.

Fire fighter operation activated [1064]

Fire fighter operation has been activated, usually via a key switch at a landing floor. The lift is now travelling to the fire recall floor, that had been setup to pickup the fire fighter. You can find the settings under 'Settings' > 'Controller/Piloting' > 'More' > 'Fire Brigade/Service'.

Fire service (car) operation [1065]

Fire service operation, having the fire fighter in the car, has been activated. The lift is now travelling via car calls, controlled by the fire fighter. You can find the settings under 'Settings' > 'Controller/Piloting' > 'More' > 'Fire Brigade/Service'.

Separating door not closed [1066]

This lift is equipped with a separating door used for goods transportation. The door is only allowed to be open, if the car preference signal has been activated. In normal operation the separating door has to be always closed. Otherwise it would allow more passengers to step into the car as allowed.

Emergency evacuation operation [1067]

The Emergency Evacuation operation has been activated. This operating mode is used to move the car to the very next floor by opening the brake and limiting the velocity to typically 0.3 m/s maximum.

Automatic Learning Trip active [1068]

The 'Learning Trip Operation' has been started via the user interface. The current floor position will be replaced with the new taught ones.

Lift standard/code turned to US-ASME-A17.1 [1069]

The standard/code that the lift is using to operate had been altered. Be careful to select the right code for the region the lift is operated. The EN81-20 standard is usually applied for Europe and the ASME code for the North American market.

Lift standard/code turned to EU-EN81-20 [1070]

The standard/code that the lift is using to operate had been altered. Be careful to select the right code for the region the lift is operated. The EN81-20 standard is usually applied for Europe and the ASME code for the North American market.

Both safety bypass device signals active [1071]

For maintenance/repair of the door safety chain contacts, a device (switch) shall provide a safe way of bypassing these contacts. This is signaled to the lift controller via two monitoring inputs.

Indication 'Overload' active [1072]

The car load measurement has signalled that the car is overloaded. The lift does not start a journey until the weight has been reduced. Normally there should be an acoustic signal in the car that tells the passengers that too many people have entered the car.

Automatic Emergency Rescue operation disabled [1073]

The Automatic Emergency Evacuation feature has been disabled, due to the time span being expired, that had been setup as a timeout. Anyhow the Manual Emergency Evacuation feature is still being enabled. This operating mode is used to move the car to the very next floor by opening the brake and limiting the velocity to 0.3 m/s maximum.

Platform lift operation activated [1074]

In the platform lift operating mode the calls are usually operated in dead-mans-grip, requiring constant-pressure to drive the lift or the platform to the defined level positions.

System start/Power cycle [1075]

The system has been rebooted. This can be caused by a power failure.

Floor level tune assistant started [1076]

In order to simplify fine tuning of the floor level positions, an assistant has been started that allows to level the car and confirming the adjusted level position, using nothing more than the existing car call buttons.

Maintenance deactivated via timeout [1077]

The maintenance operation mode has been automatically turned off via a timeout of the maintenance timer, typically after 4 hours. Faults will now be recorded or forwarded again. Parking is basically enabled.

Keeping the doors closed deactivated via time-out [1078]

The operation mode for 'keeping the doors closed' has been turned off automatically via a timeout of the maintenance timer, typically after 4 hours. The lift doors shall now open when approaching to a floor.

Landing control enabled via time-out [1079]

The landing control has been re-enabled automatically via a timeout of the maintenance timer, typically after 4 hours.

Max. re-leveling attempts per floor/hour [1080]

The lift has done as many attempts to re-level the car, within one hour on the very same floor, as stated in the parameter 'Settings Menu' > 'More…' > 'Drive unit' > 'More…' > 'Re-leveling' > 'Re-leveling attempts per floor/hour'.

Energy saving timer active [1081]

As the lift was idle for the given time span of the 'Energy Saving Timer', the lift has activated the dedicated output and has transmitted 'Energy Saving Level S4' via the CANopen bus. Usually the CANopen displays and drive units will react on this automatically, entering an energy saving operation mode.

Standby timer active [1082]

As the lift was idle for the given time span of the 'Standby Timer', the lift has activated the dedicated output and has transmitted 'Energy Saving Level S6' via the CANopen bus. Usually the CANopen displays, door machines and drive units will react on this automatically, entering an energy saving operation mode.

Energy Saving Wakeup Time active [1083]

As the lift was idle for the given time span of the 'Energy Saving Timer', the lift has activated the dedicated output and has transmitted 'Energy Saving Level S4' via the CANopen bus. Usually the CANopen displays and drive units will react on this automatically, entering an energy saving operation mode.

Standby Wakeup Time active [1084]

As the lift was idle for the given time span of the 'Standby Timer', the lift has activated the dedicated output and has transmitted 'Energy Saving Level S6' via the CANopen bus. Usually the CANopen displays, door machines and drive units will react on this automatically, entering an energy saving operation mode.

Team operation disabled via input terminal [1085]

The team or group operation has been disabled via an input terminal. This lift is now running in single lift operation mode, assuming that there are no other lifts, connected to the same landing calls.

Speed governor testing [1086]

The assistant used to perform a speed-governor-test operation has been started.

Brake distance learning assistant active [1087]

The braking distance assistant is used to automatically determine the required deceleration distances required to stop the lift, when driving V1…Vn. Usually this assistant is used for classical drive systems, running in velocity rather than position profile mode.

Rescue operation mode activated [1088]

The rescue operation mode has been activated, because the corresponding input 'Rescue operation' has been activated.

Circulating operation active [1089]

The Circulating operation has been activated. This will make the lift stop at every floor, open and close the doors and finally altering the direction at the top and bottom floor.

Circulating operation paused [1090]

The Circulating operation has been paused as the given count of complete floor cycles has been completed. After the pause time has expired, the lift will start to cycle the floor table again.

Passenger calls inhibited (Circulating operation) [1091]

The normal passenger calls have been inhibit for the given time span to not interrupt the circulating operation too much.

Chemical/Hazard goods operation [1092]

The Chemical/Hazard goods operation mode has been activated, usually via a key switch at the landings. This operation mode let a technician at the landings drive the car to any floor, were such a key switch is mounted. Usually those key switches have three positions. A neutral position, one for activating and one for resetting the operation mode.

Chemical operation, finishing car calls [1093]

The Chemical/Hazard goods operation mode has been activated, usually via a key switch at the landings. This operation mode let a technician at the landings drive the car to any floor, were such a key switch is mounted. Usually those key switches have three positions. A neutral position, one for activating and one for resetting the operation mode.

Automobile transport operation [1094]

The Automobile transport operation mode had been activated via the corresponding parameter in the lift controller's menu. In this operation mode the lift controller will feature positioning light barriers to ensure the car or vehicle being in the right spot on the platform. In order to instruct the driver, traffic light signals are generated by the lift controller, that shall be visible for the driver in the car.

Automobile lift, passenger transport active [1095]

If the Automobile lift is used by persons as well as by cars or vehicles, there is usually a key switch in the cabin/car, that can be used to indicate that this passenger is a person not a car and there is not need to place the vehicle via the position light barriers.

Waiting for the car/vehicle to be positioned [1096]

The lift is waiting for the car/vehicle to be properly placed on the platform or in the cabin. The position of the car/vehicle is indicated via the positioning light barriers.

Smoke detector service operation started [1097]

In order to test the smoke detector in the shaft head, an automated procedure had be used to enter the car roof. Driving to the shaft head is done via the inspection control. The smoke detector can now be tested with a spray. A buzzer is activated when the smoke detector is tripped.

Driving back to floor level [1098]

Due to a fault and because the car is not flush on level, the lift returns to the next floor in order not to trap the passengers.

Brake testing started [1099]

The assistant used to perform a brake-test operation has been started.

Lift starting interlock active [1100]

The input signal that is used to interlock the start of several lifts at the very same time has been indicated by some other lift. A timeout for this signal can be setup under 'Settings > More… > Drive Unit > More… > Even more… > Lift start interlocking timeout'

Buffer test has been activated [1101]

The buffer testing operation has been activated via the dedicated testing assistant.

Overload indication test has been activated [1102]

The overload indication testing operation has been activated via the dedicated testing assistant.

Electrical Safety gear testing active [1103]

The assistant used to perform an electrical safety brake test operation has been started.

Peak-up operation activated via time planner [1104]

The 'peak-up' operation is used, if a group of passengers is in need of transportation to the upper floors, for example when filling an office building in the morning or a group of guests leaving a meeting for lunch.

Peak-down operation activated via time planner [1105]

The 'peak-down' operation is used, if a group of passengers is in need of transportation to the lower floors, for example when employees leave an office building in the evening or a group of guests leaving a meeting for lunch.

Peak-up operation activated via terminal [1106]

The 'peak-up' operation is used, if a group of passengers is in need of transportation to the upper floors, for example when filling an office building in the morning or a group of guests leaving a meeting for lunch.

Peak-down operation activated via terminal [1107]

The 'peak-down' operation is used, if a group of passengers is in need of transportation to the lower floors, for example when employees leave an office building in the evening or a group of guests leaving a meeting for lunch.

Key switch 'Keep doors closed' active [1108]

The operation mode for 'keeping the doors closed' has been activated. The lift doors shall not open when approaching to a floor.

Lift standard/code turned to the old EU-EN81-1/2 [1109]

The standard/code that the lift is using to operate had been altered. Be careful to select the right code for the region the lift is operated. The EN81-20 standard is usually applied for Europe and the ASME code for the North American market.

Lubrication runtime warning threshold reached [1110]

The lift controller throws a warning about the remaining oil in the reservoir to be low, when the parameterized runtime of the oilpump (lubrication) has been exceed. You can change the value under Settings Menu > More... > Drive Unit > More... > Even more... > Lubrication Function

Automatic service for rescuing disabled people [1111]

The second phase for rescuing people with disabilities from a building has been activated. Regarding to the EN81-76 there are three possible operation modes, including 'Automatic evacuation operation', 'Remote assisted evacuation' and 'Driver assisted evacuation operation'.

Remote service for rescuing disabled people [1112]

The second phase for rescuing people with disabilities from a building has been activated. Regarding to the EN81-76 there are three possible operation modes, including 'Automatic evacuation operation', 'Remote assisted evacuation' and 'Driver assisted evacuation operation'.

Driver assisted service for rescuing disabled people [1113]

The second phase for rescuing people with disabilities from a building has been activated. Regarding to the EN81-76 there are three possible operation modes, including 'Automatic evacuation operation', 'Remote assisted evacuation' and 'Driver assisted evacuation operation'.

Evacuation/rescue service operation has been suspended [1114]

The evacuation/rescue service operation has been suspended via the dedicated input signal 'Evacuation/Rescue operation suspend'. This signal is usually issued by an building management system, if smoke or fire/heat has been detected in the machine room or some other important electrically installation room and/or the safe areas, used to evacuate the people.

Swing door is continuously open [1115]

The manual/swing door has been continuously opened for more than a minute. This happens usually if someone has left the car and forgot to close the manual door again. If this lift is a team member, the lift will leave the team. You can setup a 'door bell' to signal to passengers to close the door again.

Please close the swing door [1116]

The swing doors has been left open. After the parameterized time has been expired, the signal 'Please close the door' will be indicated.

The oil pump lubrication run time has been reset [1117]

Resetting the oil pump runtimer value shall be done, when the oil bottle or reservoir has been refilled with oil and so the runtimer shall start again, counting the seconds the oil pump has been engaged.

Maintenance interval trip counter [1118]

The maintenance interval threshold for the trip counter indicates that the lift is in need of maintenance. You can set the next interval or threshold at 'Service & Assembly' > 'Maintenance' > 'More…' > 'Even more…' > 'Maintenance Intervals'.

Maintenance interval operation time meter [1119]

The maintenance interval threshold for the operating hours indicates that the lift is in need of maintenance. You can set the next interval or threshold at 'Service & Assembly' > 'Maintenance' > 'More…' > 'Even more…' > 'Maintenance Intervals'.

Maintenance interval Date & Time [1120]

The maintenance interval Date & Time indicates that the lift is in need of maintenance. You can set the next Date & Time at 'Service & Assembly' > 'Maintenance' > 'More…' > 'Even more…' > 'Maintenance Intervals'.

Safety chain bridging test assistant started [1121]

The assistant for testing the safety chain bridging supervision function has been started. This assistant is usually used to emulate a bridge in the safety chain in order to check, if the lift would get blocked.

Lift standard/code turned to AS1735 (Australia) [1122]

The standard/code that the lift is using to operate had been altered. Be careful to select the right code for the region the lift is operated. The EN81-20 standard is usually applied for Europe and the ASME code for the North American market.

Drive indicated ▸ <*Reason for not being ready to drive*> [1123]

If the drive is not ready to drive, it can transmit a message to simplify troubleshooting.

Drive to telescopic toe guard push-in position [1124]

These special toe guards are usually spring loaded and hold by an electromagnet. On a power drop they are pushed out and when the power comes back, the lift has to push them in again, by driving below the lowest floor, so that the toe guard will touch the ground. The lift will stop, if the input indicates, that the toe guard has been pushed in again or the maximum given travel distance has been reached.

Telescopic toe guard push-in operation [1125]

These special toe guards are usually spring loaded and hold by an electromagnet. On a power drop they are pushed out and when the power comes back, the lift has to push them in again, by driving below the lowest floor, so that the toe guard will touch the ground. The lift will stop, if the input indicates, that the toe guard has been pushed in again or the maximum given travel distance has been reached.

Waiting for security signal at stopover floor [1126]

As defined by the dedicated parameter 'Wait for security signal at the intermediate stopover floor', the lift is waiting at the Intermediate stopover floor for the 'Special Function > Security Run' signal to peak up once, in order to proceed to the registered destination.

Waiting for security signal before start driving [1127]

As defined by the dedicated table 'Wait for security signal door table', the lift is waiting for the 'Special Function > Security Run' signal to peak up once, in order to start driving to the registered destination.

Generic supervision input 1 # [1128]

One of the the generic supervision inputs has been triggered. These inputs can be used for a wide range of functions. Please refer to the actual schematics of your lift. Usually they are used 'broken wire interlock'.

Generic supervision input 2 # [1129]

Generic supervision input 3 # [1130]

Generic supervision input 4 # [1131]

Generic supervision input 5 # [1132]

Generic supervision input 6 # [1133]

Generic supervision input 7 # [1134]

Generic supervision input 8 # [1135]

Generic supervision input 9 # [1136]

Generic supervision input 10 # [1137]

Generic supervision input 11 # [1138]

Generic supervision input 12 # [1139]

Generic supervision input 13 # [1140]

Generic supervision input 14 # [1141]

Generic supervision input 15 # [1142]

Generic supervision input 16 # [1143]

External door zone signal belated when leaving floor x [1144]

While driving from one floor to another, the external door zone signal seems to have lately dropped. This may cause the safety circuit at the stopping floor to fail and the lift to be blocked non-volatile.

Door x close limit switch hung/jammed [1145]

One of the door-limits seems to be hung or be jammed. The signal is activated permanently. This might be a mechanical issue or an electrical bypass/bridge. If the door limit goes straight into a door drive, which then gives a potential free relay output to the controller, it might even be that this relay is faulty. If the limits are 'normally closed' also check the wiring. A broken wire could then indicate a permanently activated door limit.

Door x open limit switch hung/jammed [1146]

One of the door-limits seems to be hung or be jammed. The signal is activated permanently. This might be a mechanical issue or an electrical bypass/bridge. If the door limit goes straight into a door drive, which then gives a potential free relay output to the controller, it might even be that this relay is faulty. If the limits are 'normally closed' also check the wiring. A broken wire could then indicate a permanently activated door limit.

Runtime supervision test has been activated [1147]

The runtime supervision testing operation has been activated via the dedicated testing assistant.

Terminal (pre-limit) switch top not dropped at upper floor [1148]

The terminal (pre-limit) switches are usually dropped at the top and bottom floor, preventing the lift from driving further in the direction of the terminal floors. The switches are usually high and will be dropped to low, when the lift approached the lowest or highest landing. The fault is thrown when those switches are dropped with the car being at a different floor.

Terminal (pre-limit) switch bottom not dropped at lowest floor [1149]

The terminal (pre-limit) switches are usually dropped at the top and bottom floor, preventing the lift from driving further in the direction of the terminal floors. The switches are usually high and will be dropped to low, when the lift approached the lowest or highest landing. The fault is thrown when those switches are dropped with the car being at a different floor.

Speed governor test results [1150]

The assistant used to perform a speed governor test operation has been executed. The test results can be found in the text of the item.

Brake test result [1151]

The assistant used to perform a brake-test operation has been executed. The test results can be found in the text of the item.

Electrical Safety gear test results [1152]

The assistant used to perform the electrical safety gear testing operation has been executed. The test results can be found in the text of the item.

UCM testing upward result [1153]

The assistant used to perform the UCM testing operation has been executed. The test results can be found in the text of the item.

UCM testing downward result [1154]

The assistant used to perform the UCM testing operation has been executed. The test results can be found in the text of the item.

Limit-switch top test results [1155]

The assistant used to perform the limit switch testing operation has been executed. The test results can be found in the text of the item.

Limit-switch bottom test results [1156]

The assistant used to perform the limit switch testing operation has been executed. The test results can be found in the text of the item.

Helicopter Allocation Time [1157]

The allocation time is running, after the lift has arrived at the helicopter allocation floor, usually the topmost floor of the building or the roof stop. The lift is waiting here for the helicopter crew to handover the patient.

Helicopter Function Standby [1158]

The lift is waiting to be called to the helicopter floor. Usually the lift will first be called by a high priority landing call and then the medical staff will enter the lift and drive to the helicopter floor via a car call.

Smoke Detectors active [1159]

One or more fire/smoke detectors had been activated. Those inputs are usually powered and dropped, if smoke or fire had been detected at some floor level.

Position encoder replacement operation [1160]

The position encoder replacement operation can be used to swap the encoder unit. Select at which floor the car/cabin is flush on level and the system will then initialize the new installed positioning encoder matching this floor level.

Maintenance activated remotely [1161]

The maintenance operation mode has been turned on remotely (field-bus/cloud). Faults will not be recorded or forwarded. Parking is being disabled.

Keeping the doors closed activated remotely [1162]

The operation mode for 'keeping the doors closed' has been activated remotely (field-bus/cloud). The lift doors shall not open when approaching to a floor.

Waiting for the safety light curtain to be cleared [1163]

The safety light curtain is still interrupted, so that the lift cannot start the safety light curtain test in order to begin the ride.

97.3 Faults

Lift is in blocking operation mode. [2001]

The lift is in blocking operation mode, because a fault has occurred, that does not allow the lift to enter operation mode automatically again.

The lift stopped inaccurate - risk of stumbling. [2002]

The lift stopped inaccurate, so the passengers may stumble, when entering or leaving the cabin. Regarding to EN regulations, the lift shall stop within a range of no more that 10 mm.

Passive Safety Chain Fault [2003]

The 'Passive Safety Chain' has been opened. This can be caused by limit switches, the speed governor or the safety gear unit. Consult the schematics of this lift installation for tracking the fault in the passive safety chain.

Passive Safety Chain Fault while driving [2004]

The 'Passive Safety Chain' has been opened. This can be caused by limit switches, the speed governor or the safety gear unit. Consult the schematics of this lift installation for tracking the fault in the passive safety chain.

Emergency Stop Safety Chain [2005]

The 'Emergency Stop Safety Chain' has been opened. This can be caused by an emergency stop switch, some safety light curtains or other safety equipment. Consult the schematics of this lift installation for tracking the fault in the emergency stop chain.

Emergency Stop Safety Chain while driving [2006]

The 'Emergency Stop Safety Chain' has been opened. This can be caused by an emergency stop switch, some safety light curtains or other safety equipment. Consult the schematics of this lift installation for tracking the fault in the emergency stop chain.

Landing/Swing Door Safety Chain [2007]

The 'Landing Door Safety Chain' has been opened. This can be caused by some faulty swing/manual door contact or the car/cabin touching the door bolt. Consult the schematics of this lift installation for tracking the fault in the landing door chain.

Landing/Swing Door Safety Chain while driving [2008]

The 'Landing Door Safety Chain' has been opened. This can be caused by some faulty swing/manual door contact or the car/cabin touching the door bolt. Consult the schematics of this lift installation for tracking the fault in the landing door chain.

Car Door A Safety Chain [2009]

The 'Car Door A Safety Chain' has been opened. This can be caused by some faulty car door contact or the door A panel not being properly closed. Consult the schematics of this lift installation for tracking the fault in the car door A chain.

Car Door A Safety Chain while driving [2010]

The 'Car Door A Safety Chain' has been opened. This can be caused by some faulty car door contact or the door A panel not being properly closed. Consult the schematics of this lift installation for tracking the fault in the car door A chain.

Car Door B Safety Chain [2011]

The 'Car Door B Safety Chain' has been opened. This can be caused by some faulty car door contact or the door B panel not being properly closed. Consult the schematics of this lift installation for tracking the fault in the car door B chain.

Car Door B Safety Chain while driving [2012]

The 'Car Door B Safety Chain' has been opened. This can be caused by some faulty car door contact or the door B panel not being properly closed. Consult the schematics of this lift installation for tracking the fault in the car door B chain.

Door Lock Safety Chain [2013]

The 'Door Lock Safety Chain' has been opened. This can be caused by some faulty door lock contact or the cabin/car touching the door/lock bold/roller. Consult the schematics of this lift installation for tracking the fault in the door lock chain.

Door Lock Safety Chain while driving [2014]

The 'Door Lock Safety Chain' has been opened. This can be caused by some faulty door lock contact or the cabin/car touching the door/lock bold/roller. Consult the schematics of this lift installation for tracking the fault in the door lock chain.

Safety Chain Fault [2015]

The 'Safety Chain' has been opened. This can be caused by safety equipment or some faulty door/lock contact or the cabin/car touching the door/lock bold or roller. Consult the schematics of this lift installation for tracking the fault in the safety chain.

Safety Chain Fault while driving [2016]

The 'Safety Chain' has been opened. This can be caused by safety equipment or some faulty door/lock contact or the cabin/car touching the door/lock bold or roller. Consult the schematics of this lift installation for tracking the fault in the safety chain.

Re-levelling failed [2017]

The car/cabin was not flush on level, so the lift tried to re-level the cabin/car. Anyhow this operation failed.

Re-levelling safety circuit fault [2018]

The car/cabin was not flush on level, so the lift tried to re-level the cabin/car. Anyhow this operation failed, because of an issue regarding the safety circuit (SZ) for door bridging.

Re-levelling door fault [2019]

The car/cabin was not flush on level, so the lift tried to re-level the cabin/car. Anyhow this operation failed, because of the door contact or state.

Re-levelling drive fault [2020]

The car/cabin was not flush on level, so the lift tried to re-level the cabin/car. Anyhow this operation failed, because of a drive related issue.

Re-levelling unit failed [2021]

The car/cabin was not flush on level, so the lift tried to re-level the cabin/car. Anyhow this operation failed, because of the used external re-levelling unit.

Door opening timeout [2022]

The door did not open in the given time span. Check the door drive & operation and the time span that has been setup as 'Door opening supervision time' at the 'Door Settings'.

Door closing timeout [2023]

The door did not (fully) close in the given time span. Check the door drive & contacts and the time span that has been setup as 'Door closing supervision time' at the 'Door Settings'.

Door locking timeout [2024]

The door did not lock in the given time span. Check the door lock/bold & contacts and the time span that has been setup as 'Door locking supervision time' at the 'Door Settings'.

Drive contactors stuck (drive off) [2025]

The supervision signal for the drive contactors indicates that the contactors are turned on, but the lift has them turned off. Check the logic/polarity of the contactor and the supervision signal.

Drive contactors activation failed [2026]

Activating the drive contactors for start driving has been failed. Check the contactors and the supervision signal for polarity and function.

Drive contactors disrupted [2027]

The drive contactors have been disrupted (turned off) while being driving. Check the connection and the function of the supervision (feedback) signal that is used to monitor the contactors.

Drive brake x stuck (brake off) [2028]

The supervision signal for the brake indicates that the brake is still turned on, but the lift has them turned off. Check the logic/polarity of the brake contactor and the supervision signal.

Releasing the brake x failed [2029]

Releasing the brake on start driving has been failed. Check the brake contactors and the supervision contact used as a feedback signal.

Brake (contactors) x disrupted [2030]

The brake has been disrupted (turned off) while being driving. Check the connection and the function of the supervision (feedback) signal that is used to monitor the brake.

Drive not ready [2031]

The drive unit is not ready. Check the 'ready' signal of the drive or the bus connection to the drive system. Check the status indication or the drive's display for more detailed error information.

Drive not ready [2032]

The drive unit is not ready. Check the 'ready' signal of the drive or the bus connection to the drive system. Check the status indication or the drive's display for more detailed error information.

Position encoder data fault [2033]

The lift controller did not receive valid position encoder messages in time. Please check the encoder bus connection and its power supply or try to replace the encoder unit, to check if the unit has a fault.

Position encoder value out of range [2034]

The lift controller did receive position encoder messages, however out of the valid range (bottom/top floor). You may do a learning trip or if you just replaced the encoder, use the 'Encoder Replacement' at the 'Assembly' menu.

Drive Start supervision time [2035]

The drive start supervision time has been expired. The lift was not able to leave the current door zone within the given time. Check the drive and the 'Start Supervision Time' parameter. A typical value would be 15 s.

Driving supervision time [2036]

The driving supervision time has been expired. The lift was not able to reach the destination within the given time. Check the drive and the 'Driving Supervision Time' parameter. A typical value would be 45 s.

Drive deceleration supervision time [2037]

The drive deceleration supervision time has been expired. The lift was not able to decelerate/brake within the given time, when approaching to the floor. Check the drive and the 'Drive Deceleration Supervision Time' parameter. A typical value would be 15 s.

Drive command timeout [2038]

A drive command timeout has been detected. The drive did not react to a command, send by the lift controller, in the appropriate time span. Check if the drive unit gives more hints about a possible error or warning.

Rotation sense supervision [2039]

A rotation sense supervision error has been detected. The car/cabin moved in the wrong (opposite) direction while driving, regarding to the positioning encoder system. Check cabling, brake and the drive system and parameters. Check the positioning encoder too.

Door x close button hung/jammed [2040]

The door-close button seems to be hung or jammed. The signal is activated permanently. This might be a mechanical issue or an electrical bypass/bridge.

Door x open button hung/jammed [2041]

The door-open button seems to be hung or jammed. The signal is activated permanently. This might be a mechanical issue or an electrical bypass/bridge.

Boarding could not be completed. [2042]

The lift was not able to close/lock the doors and start driving, because of some door fault, preventing the safety chain to be closed.

Drive message timeout [2043]

The drive unit normally transmit a status word regularly via the bus interface. If not, a timeout will expire and the lift assume the drive to be not ready anymore.

Door/lock contact bridging failed [2044]

The safety circuit was not able to bridge the door/lock contact. This might be because of one of the zone signals not set or being unstable.

Door/lock bridging failed by external zone [2045]

The safety circuit was not able to bridge the door/lock contact, because of the external zone signal not switched on or being unstable.

Door/lock contact bridging collapsed [2046]

The door/lock contact bridging circuit has been unexpectedly turned off, usually caused by one of the door zone signals being interrupted or peaked down.

Door/lock bridging external zone collapsed [2047]

The door/lock contact bridging circuit has been unexpectedly turned off, usually caused by one of the door zone signals being interrupted or peaked down.

The drive/engine temperature is too high. [2048]

The drive/engine temperature is too high to operate. This can be signaled by a classic PTC via an input, directly from the engine or the inverter unit controlling the engine.

Car/cabin light voltage supervision [2049]

The cabin light voltage monitoring detected a power failure. Usually, the supply for the light of the cabin has its own circuit and fuse.

Error handshaking the target position with the drive. [2050]

The lift controller and the drive unit do handshake the target position in order to drive to a defined destination. This handshake has failed several times.

Unintended car movement detection [2051]

An unintended car/cabin movement has been detected. The cabin has left the door zone, although the doors were still open according to the safety chain.

Fire Alarm level not reachable [2052]

The Fire Alarm level can not be reached, because some smoke/fire detectors indicate that the lift would have to pass an already smoked/burning floor. You may change the policy for passing smoked/burning floors, if the doors of the lift installation fulfill the specification for doing so.

Safety Chain bridge/bypass detected [2053]

A safety chain bridge or bypass had been detected via monitoring the doors, that had been unlocked or opened and checking the safety chain for being opened too. Normally the safety chain has to open, if the doors are unlocked or opened. If this is not the case for some seconds, the system will block the lift. A bridged safety chain cause high risk of accident.

Lift blocked by Testing Assistant [2054]

The lift has been blocked by the 'Testing Assistant' to ensure that the lift can not automatically go back to normal operation. Before unblocking the lift, check that all modifications that had been done for testing/inspection have been undone. Generally spoken, check that it is safe to turn the lift back to 'normal'.

Door/lock bridge collapsed by velocity too high [2055]

The door/lock contact bridging circuit has been unexpectedly turned off, because of the velocity of the car/cabin exceeding the maximum allowed value for the given operation.

Phase failure/loss detected [2056]

A electrical phase failure/loss has been signaled via the supervision input. Often the drive unit monitors phase loss today, but if not, an external unit may be used and connected via an input to the lift controller throwing the error then.

Terminal (Pre-limit) switches faulty [2057]

The hoistway terminal (pre-limit) switch signals are faulty. Basically the pre-limit switches at top and bottom of the hoistway can not be actuated at the very same time. Keep in mind that the switches are normally closed. They open, if the car reaches the top or bottom position.

Both safety bypass device signals active [2058]

For maintenance/repair of the door safety chain contacts, a device (switch) shall provide a safe way of bypassing these contacts. This is signaled to the lift controller via two monitoring inputs. It shall not be possible to bridge the car and landing doors together.

Door x 'open' limit switch not operated in time. [2059]

The door 'open' limit switch has not been operated within the given time-span, when the doors was opening. Check the time-out and the switch (polarity). You can find the door-open time under 'Settings' > 'Doors' > 'Door Properties' > 'Door X' > 'Door opening/closing time span.

Door x 'close' limit switch not operated in time. [2060]

The door 'close' limit switch has not been operated within the given time-span, when the doors was closing. Check the time-out and the switch (polarity). You can find the door-close time under 'Settings' > 'Doors' > 'Door Properties' > 'Door X' > 'Door closing time span.

SB-board (safety chain) hardware fault. [2061]

The SB-board (safety chain) could not be recognized on system startup. Check the flappy cable connecting the SB-Board to the CPU board for being properly connected.

CAN1: Node-Id conflict with some component. [2062]

Some other component at CAN1 is in conflict with this lift controller, regarding the node-id. Check your bus configuration and red 'Error LED' of other components to solve the conflict.

CAN2: Lifts using the same team-id. [2063]

If running in lift team mode, each team lift has to be told which team member it shall represent. It is not allowed to have the same team member (number) twice. Check the settings of all via CAN2 connected lifts at 'Settings' > 'More' > 'Basics' > 'Single/Team Lift'.

Drop protection activation fault [2064]

The drop protection could not be activated properly. That means that the feedback contact of the bolt, blocking the speed governor, did not signal that the bolt is free and therefore enabling the speed governor pulley to spin.

Drop protection release fault [2065]

The drop protection could not be released properly. That means that the feedback contact of the bolt did not signal, that the bolt is back in its position, blocking the speed governor wheel.

Car movement sense supervision [2066]

A cabin movement supervision error has been detected. The car/cabin has unexpectedly stopped moving, while being already driving. This might happen for rotation encoder systems, if the toothbelt of the encoder is ripped up from the pulley. The same may happen on linearly encoder systems in a similar way.

Emergency Rescue & Inspection activated [2067]

Emergency Rescue and Inspection has been activated together. Regarding to the EN regulations the inspection control panel has to neutralize the emergency rescue panel.

Inspection car top & pit activated [2068]

The Inspection control panel at the car top and hoistway pit are activated together. Regarding to the EN regulations driving is only allowed if both panels signal the very same direction.

Low oil pressure [2069]

The hydraulic drive system signalled a low oil pressure in the system. This signal is usually transmitted low-active, meaning that it should be signalled as long as the pressure is not low. Please check the drive unit for further investigation.

Oil overpressure [2070]

The hydraulic drive system signalled a oil overpressure in the system. This signal is usually transmitted low-active, meaning that it should be signalled as long as the pressure is not too high. Please check the drive unit for further investigation.

Lift missed floor level [2071]

The lift has passed/missed flush floor level. If operating the lift in classic velocity mode, check the braking distance of the fast velocity in order to ensure that the lift does a short creeping.

Drive not ready [2072]

The drive unit is not ready. Check the 'ready' signal of the drive or the bus connection to the drive system. Check the status indication or the drive's display for more detailed error information.

Error handshaking the target position with the drive. [2073]

The lift controller and the drive unit do handshake the target position in order to drive to a defined destination. This handshake has failed several times.

Quickstart, external door zone missing [2074]

For doing a drive unit quickstart, the external door zone signal has to be present in order to activate the safety circuit, used for bridging the door safety chain, while the doors are still closing.

Load measuring unit communication fault [2075]

The car load measuring unit stopped to communicate properly. Check cabling and bus termination. Ensure that it is powered constantly and not may be turned off with the cabin light.

Load measuring unit internal (sensor) fault [2076]

The car load measuring unit signals an internal fault, probably caused by a faulty sensor or connection. Check sensor cabling and power supply. Refer to the unit's manual for further solutions.

Ambient temperature too low [2077]

The lift controller is not allowed to operate if the ambient temperature is too low, so that the risk of condensation of vapor on the PCB is possible.

Ambient temperature too high [2078]

The lift controller is not allowed to operate if the ambient temperature is too high, so that there is a risk of failure of electronic components.

Generic supervision input 1 # [2079]

One of the the generic supervision inputs has been triggered. These inputs can be used for a wide range of functions. Please refer to the actual schematics of your lift. Usually they are used 'broken wire interlock'.

Generic supervision input 2 # [2080]

Generic supervision input 3 # [2081]

Generic supervision input 4 # [2082]

Generic supervision input 1 # [2083]

Generic supervision input 2 # [2084]

Generic supervision input 3 # [2085]

Generic supervision input 4 # [2086]

Generic supervision input 1 # [2087]

Generic supervision input 2 # [2088]

Generic supervision input 3 # [2089]

Generic supervision input 4 # [2090]

Fault signal light curtain x [2091]

Regarding to EN-regulations, the light curtain has to signal an internal fault state, so that the lift controller can finish the last trip and enter Out of Order operation. This fault signal has been turned on by the light curtain.

Door & Lock Safety Chain Problem [2092]

The 'Door & Lock Safety Chain' could not been closed as required. This can be caused by some faulty door or lock contacts or the cabin/car touching the door/lock bold/roller. Consult the schematics of this lift installation for tracking the fault in the door lock chain.

Hall Door Safety Chain Problem [2093]

The 'Hall Door Safety Chain' could not been closed as required. This can be caused by some faulty door contact or some other device keeping the safety chain open. Consult the schematics of this lift installation for tracking the fault in the landing door chain.

Final limit switch bottom activated [2094]

The hoistway limit switch at the bottom (FLB) has been activated. This is usually signalled via a safe positioning unit. Beside the drive and braking system, low traction can be a cause for that.

Final limit switch top activated [2095]

The hoistway limit switch at the top (FLT) has been activated.

This is usually signalled via a safe positioning unit. Beside the drive and braking system, low traction can be a cause for that.

Overspeed detected by safe position encoder [2096]

The installed safe positioning encoder has detected an over velocity situation. In some scenarios, like re-levelling, a maximum velocity is defined. If exceeded a corresponding fault is thrown and the lift is stopped via the safety chain.

Deceleration monitoring via safe position encoder [2097]

Safe position encoder units usually supply a deceleration monitoring function used to ensure, that the lift will not crash into the top/bottom floors without having started to slow down.

Safe encoder unit (PSU) not in valid state [2098]

The safe encoder unit, also called position supervisor unit (PSU), detected an unsafe event. The unit will return to normal operation, if the problem has been fixed.

Safe encoder unit (PSU) blocked, safety reset required [2099]

The safe encoder unit, also called position supervisor unit (PSU), detected a fault and has been put to 'blocked' operation mode. To turn the unit back to normal operation a reset has to be done.

Safe encoder unit (PSU) internal device fault [2100]

The safe encoder (position supervisor unit) detected an internal device/system error. First try to restart the device electrically (power cycle). If the error remains, contact the manufacturer of the position encoder.

Door unit x error operation [2101]

The door unit signals to be in error operation mode. Please check the door drive or door controller unit for further details. It might be a stuck door or defective engine or belt.

Direction change counter expired [2102]

The direction change counter has been expired and therefore the lift has been turned to 'out of order' operation. If the lift is using plastic coated cables, the manufacturer of the cables defines a maximum count of direction changes allowed. There is a parameter for defining a 'pre-warning' and an 'out of order' threshold. You can alter the thresholds and reset the counter if having 'Setup' password privileges granted.

Re-levelling external zone fault [2103]

The re-levelling operation has not been started because of the external door zone signal missing.

Limit switch top activated [2104]

A limit switch has been activated and therefore will interrupt the safety chain. The cabin might has to be moved out off the limit switch with emergency electrical operation.

Limit switch bottom activated [2105]

A limit switch has been activated and therefore will interrupt the safety chain. The cabin might has to be moved out off the limit switch with emergency electrical operation.

Inspection limit switch top activated [2106]

A limit switch has been activated and therefore will interrupt the safety chain. The cabin might has to be moved out off the limit switch with emergency electrical operation.

Inspection limit switch bottom activated [2107]

A limit switch has been activated and therefore will interrupt the safety chain. The cabin might has to be moved out off the limit switch with emergency electrical operation.

Inspection terminal (pre-limit) switch top activated [2108]

A limit switch has been activated and therefore will interrupt the safety chain. The cabin might has to be moved out off the limit switch with emergency electrical operation.

Inspection terminal (pre-limit) switch bottom activated [2109]

A limit switch has been activated and therefore will interrupt the safety chain. The cabin might has to be moved out off the limit switch with emergency electrical operation.

PSU detected UCM failure [2110]

The safe encoder or position supervisor unit (PSU) has detected a case of an unattended car movement (UCM). The lift is therefore blocked.

PSU detected overspeed [2111]

The safe encoder or position supervisor unit has detected that the car/cabin has moved faster than allowed in the actual operating mode. Please check the details of the log-book item for details about position and velocity.

PSU detected deceleration fault [2112]

The safe encoder or position supervisor unit has detected that the car/cabin has not decelerated while running out of runway. Please check the details of the log-book item for details about position and velocity.

Door x unit communication fault [2113]

The door unit stopped to communicate properly. Check cabling and bus termination. Ensure that it is powered constantly and not may be turned off with the cabin light.

Car I/O panel communication fault [2114]

The car I/O panel stopped to communicate properly. Check cabling and bus termination. Ensure that it is powered constantly and not may be turned off with the cabin light.

Extra door supervision signal fault [2115]

One or more of the extra door supervision contacts are not in the assumed state. Those signals are usually used to monitor the door lock and detect unattended opening of the doors. These supervision inputs have to be powered by an special test output, called 'Door Extra Supervision Test'.

Low pit/head barrier fault [2116]

The barrier for the low pit/head hoistway solution have to be in the right position in order to drive normally or with inspection operation. If this is not the case the lift usually gets blocked. For detecting the mechanical position a signal pair (NORM/INS) is used.

Extra door contactor monitoring fault [2117]

The extra door contactor used to turn off the safety circuit power seems to be hung. This is detected via the extra door contactor monitoring input that follows the contactor coil signal using inverted logic.

Separate 'door x safely closed' switch fault [2118]

The option for supporting a separate 'door safely closed' switch is parameterized, but that signal did not respond, when the door had been closed. In order to comply with the EN81-20, some doors provide an separate position switch, signalling that the car door is safely (mechanically) closed. This signal is used to ensure that the lift can be safely driven in car door bypass operation.

Pawl/bolt retracted fault/timeout [2119]

The pawl device (bolt) did not operate properly and did not retract in the given time span. It might be mechanically locked or otherwise unable to move in the 'unlocked'/'released' position, so that the cabin/car could drive. If the device features a position switch to indicate the 'unlocked' position, please check that one as well.

Pawl/bolt extended fault/timeout [2120]

The pawl device (bolt) did not operate properly and did not extend in the given time span. It might be mechanically locked or otherwise unable to move in the 'locked'/'safe' position, so that the cabin/car can't drop. If the device features a position switch to indicate the 'locked' position, please check that one as well.

Pawl device re-pumping failed [2121]

If the cabin has been seated using a pawl device and the hydraulic pressure drops, the system will fire up the pump to bring the oil pressure back to normal. This has failed due to a timeout reason.

Pawl device lowering failed [2122]

Lowering the car/cabin in order to seat on the pawl device has been failed. Check the drive lowering the car in time and if connected, the input signal for 'Car being seated'.

Pawl device lifting failed [2123]

Lifting the car/cabin in order to release the pawl device has been failed. Check the drive lifting the car in time and if connected, the input signal for 'Car being seated' being dropped.

Signal 'car seated' missing [2124]

A pawl device may support an optional signal, indicating that the car has been seated. If this option has been turned on, but the signal is not indicated, this fault message will be added to the log book. To open the pawl device parameters press the hardware button 'Favorites' and then go to 'Settings Menu' > 'More' > 'Pawl Device'.

Safety light curtain status/control door x [2125]

On normal operation the status and the control signal of the safety light curtain should follow each other inverted. That means, if the status signal is peaked up, the control signal will peak down and vice versa. If this does not happen, within a long enough time span, a fault will be thrown.

Safety light curtain test failed door x [2126]

Before the lift starts driving to another floor, all safety light curtains have to be tested. For that a test signal (output) is generated that will cause the light curtains to react as being interrupted. This will change the state of the status and control signals accordingly.

Load measuring unit internal (sensor) fault [2127]

The car load measuring unit signals an internal fault, probably caused by a faulty sensor or connection. Check sensor cabling and power supply. Refer to the unit's manual for further solutions.

Load measuring unit 'slack rope' fault [2128]

The car load measuring unit signals a 'slack rope' event. This can be caused by a traction cable/rope fallen of the pulley or the sensor being mechanically disconnected from the cable. In rare situations it may also be a sensor fault that can cause the event.

The pawl device did not respond as intended. [2129]

The pawl device did not respond as intended. This may be caused by the SZ not being able to bridge the door contacts or a mechanical issue preventing the pawl device to operate the feedback switches. Check for the pawl device being able to mechanically operate and that the feedback signals are working as well.

Drive fault event > [2130]

The drive has signaled an emergency message, presented as a text, coming directly from the unit. This text is non-translatable afterwards as it has been fetched directly from the drive (inverter) unit. For more details about the message, please refer to the drive's manual.

Drop protection activation fault [2131]

The drop protection could not be activated properly. That means that the feedback contact of the bolt, blocking the speed governor, did not signal that the bolt is free and therefore enabling the speed governor pulley to spin.

Hydraulic fault (SIU) [2132]

The hydraulic drive unit indicates to be not ready or has run into an issue. Check the 'ready' signal of the hydraulic drive. For LRV drives this ready signal is labeled with SIU.

Safety hydraulic valve fault (UCM) [2133]

The hydraulic safety valve (UCM/SMA) has been tripped. This fault is non-volatile and has to be reset manually.

Separating still door not closed [2134]

This lift is equipped with a separating door used for goods transportation. The door is only allowed to be open, if the car preference signal has been activated. In normal operation the separating door has to be always closed. Otherwise it would allow more passengers to step into the car as allowed.

Position encoder data not applicable [2135]

The position encoder data can't be used to operate the lift. This might be because of a non finished learning trip operation, a non finished encoder replacement operation or because of the encoder data simply being out of range.

Team Operation Strategy mismatch [2136]

The 'Lift Team Operation Strategy' setting is not the very same across the lift team/group members. Please check this setting, that can be found following this path 'Settings' > 'Basics' > 'More' > 'Team/Group' on all lift team members. It has to be the very same.

Reset low pit/head reset signal hung [2137]

The reset signal used to reset the low pit/head solution seems to hung as it is turned on continuously for more than 10 seconds. Please check the switch, input signal and wiring.

Unblock lift operation signal hung [2138]

The signal used to unblock the lift seems to hung as it is turned on continuously for more than 10 seconds. Please check the switch, input signal and wiring.

Error initial handshaking the target position on start. [2139]

The lift controller and the drive unit do handshake the target position in order to drive to a defined destination. The first handshake on start has failed.

Waiting for the door 'closed' indication [2140]

Especially on a 'Car Door Bypass' operation the lift controller is only allowed to drive, if the door can indicate in a secondary way (door limit switch) that the door is actually mechanically closed. The door 'closed' limit switch might be a virtual one that a CANopen door machine is providing.

Extra door supervision test fault [2141]

The extra door supervision contact on the current floor has not be in the assumed state. Those signals are usually used to monitor the door lock and detect unattended opening of the doors. These supervision inputs have to be powered by an special test output, called 'Door Extra Supervision Test'.

Attempts to fully open the doors failed [2142]

All attempts to fully open the doors have been failed. Regarding to US-ASME regulations, the lift has blocked itself and is in need to be unblocked by a service technician.

Attempts to fully close the doors failed [2143]

All attempts to fully close the doors have been failed. Regarding to US-ASME regulations, the lift has blocked itself and is in need to be unblocked by a service technician.

Hidden door contact chain fault [2144]

The hidden door contact chain has not been following the regularly door contact in the safety chain. This is a feature used for old swing door solutions, typically in Northern Europe. A secondary (hidden) solenoid switch is basically verifying the function of the regularly door contact and has to follow its state changes. If that does not happen this fault will be thrown.

Hidden door contact chain fault while driving [2145]

The hidden door contact chain has not been following the regularly door contact in the safety chain. This is a feature used for old swing door solutions, typically in Northern Europe. A secondary (hidden) solenoid switch is basically verifying the function of the regularly door contact and has to follow its state changes. If that does not happen this fault will be thrown.

Force limit signal door x continuously triggered [2146]

The force limit signal has been continuously interrupted for more than 30s. This will stop the lift from driving in normal or inspection operation.

Door x close limit switch bridge detected [2147]

A door close limit switch bridge detected. As requested by the EN81-20 5.12.1.9 regulations, the lift will be blocked, until the problem is fixed.

Traction sheave brake fault [2148]

The brake of the traction sheave has failed to operate as intended. Usually the input 'Traction sheave supervision' indicates if the brake is released or engaged. Check the micro-switch on the brake itself and the wiring. Usually if the brake is released the signal should be low but if the brake is blocking the sheave again, then the signal shall be high.

Hydraulic pump enable (UCM/UP) signal missing [2149]

The hydraulic pump enable (UCM/UP) signal from the drive controller card is missing. Double check wiring and measure the signal on the drive (NGV/A3) card in upward direction.

Drive unit blocking error > E [2150]

The drive unit has indicated an error that usually blocks the drive from operating properly. So fix the drive unit's error and then power cycle the drive unit and finally unblock the lift controller.

Low oil pressure [2151]

The hydraulic drive system signalled a low oil pressure in the system. This signal is usually transmitted low-active, meaning that it should be signalled as long as the pressure is not low. Please check the drive unit for further investigation.

Inspection overspeed detection [2152]

Depending on local or national rules, running the lift on inspection operation comes with a limitation of velocity. Regarding to the EN81-20 the velocity is limited to 0.63 m/s. The US-ASME code states 0.75 m/s here.

Chemical/Hazard transport timeout [2153]

The maximum time span (timeout) for the chemical/hazard transport operation has been expired and therefore the operation has been turned off. This might happen, if the technician using this feature has forgotten to use the key-switch in order to reset the operation, when being finished. You find the time value in the 'Settings' menu under 'Controller/Piloting' > 'More…' >'Even more…' >'Further more…' > 'Chemical Operation'.

Low Oil Protection [2154]

The Low Oil Protection supervision shall render the lift on normal operation inoperative if for any reason the liquid level in the tank falls below the permissible minimum.

Auxiliary power active [2155]

When the auxiliary lowering operation has been initiated, the car shall descend to the lowest landing or the designated landing in a fire alarm/recall situation.

Fire reset switch hung [2156]

The fire reset switch is continuously activated for an unusual long time period. Check the electrical wiring to the reset key switch and the input of the I/O card to work properly.

Unattended landing door opening [2157]

The landing doors have been opened unattended for more than 4 seconds. This is usually an indication that a person might have entered the hoistway without the lift being on inspection operation mode. The lift will travel to the next floor level away from the top and bottom floor and enter blocked operation mode.

Generic supervision input 5 # [2158]

    One of the the generic supervision inputs has been triggered.
    These inputs can be used for a wide range of functions. Please
    refer to the actual schematics of your lift. Usually they are used
    'broken wire interlock'.

Generic supervision input 6 # [2159]

Generic supervision input 7 # [2160]

Generic supervision input 8 # [2161]

Generic supervision input 9 # [2162]

Generic supervision input 10 # [2163]

Generic supervision input 11 # [2164]

Generic supervision input 12 # [2165]

Generic supervision input 13 # [2166]

Generic supervision input 14 # [2167]

Generic supervision input 15 # [2168]

Generic supervision input 16 # [2169]

Generic supervision input 5 # [2170]

Generic supervision input 6 # [2171]

Generic supervision input 7 # [2172]

Generic supervision input 8 # [2173]

Generic supervision input 9 # [2174]

Generic supervision input 10 # [2175]

Generic supervision input 11 # [2176]

Generic supervision input 12 # [2177]

Generic supervision input 13 # [2178]

Generic supervision input 14 # [2179]

Generic supervision input 15 # [2180]

Generic supervision input 16 # [2181]

Generic supervision input 5 # [2182]

Generic supervision input 6 # [2183]

Generic supervision input 7 # [2184]

Generic supervision input 8 # [2185]

Generic supervision input 9 # [2186]

Generic supervision input 10 # [2187]

Generic supervision input 11 # [2188]

Generic supervision input 12 # [2189]

Generic supervision input 13 # [2190]

Generic supervision input 14 # [2191]

Generic supervision input 15 # [2192]

Generic supervision input 16 # [2193]

Low pit/head barrier issue [2194]

The barrier for the low pit/head hoistway solution have to be in the right position in order to drive normally or with inspection operation. If this is not the case the lift will not respond to drive. For detecting the mechanical position a signal pair (NORM/INS) is used.

Terminal (pre-limit) switch top dropped at wrong floor [2195]

The terminal (pre-limit) switches are usually dropped at the top and bottom floor, preventing the lift from driving further in the direction of the terminal floors. The switches are usually high and will be dropped to low, when the lift approached the lowest or highest landing. The fault is thrown when those switches are dropped with the car being at a different floor.

Terminal (pre-limit) switch bottom dropped at wrong floor [2196]

The terminal (pre-limit) switches are usually dropped at the top and bottom floor, preventing the lift from driving further in the direction of the terminal floors. The switches are usually high and will be dropped to low, when the lift approached the lowest or highest landing. The fault is thrown when those switches are dropped with the car being at a different floor.

Terminal (pre-limit) switch top not dropped at upper floor [2197]

The terminal (pre-limit) switches are usually dropped at the top and bottom floor, preventing the lift from driving further in the direction of the terminal floors. The switches are usually high and will be dropped to low, when the lift approached the lowest or highest landing. The fault is thrown when those switches are dropped with the car being at a different floor.

Terminal (pre-limit) switch bottom not dropped at lowest floor [2198]

The terminal (pre-limit) switches are usually dropped at the top and bottom floor, preventing the lift from driving further in the direction of the terminal floors. The switches are usually high and will be dropped to low, when the lift approached the lowest or highest landing. The fault is thrown when those switches are dropped with the car being at a different floor.

Overspeed Governor Safety Chain Fault [2199]

The 'overspeed governor safety chain' has been opened. This can be caused by the lift having tripped the speed governour, because of the lift or platform moving faster than allowed. Consult the schematics of this lift installation for tracking the fault in the safety chain.

Overspeed Governor Safety Chain Fault while driving [2200]

The 'overspeed governor safety chain' has been opened. This can be caused by the lift having tripped the speed governour, because of the lift or platform moving faster than allowed. Consult the schematics of this lift installation for tracking the fault in the safety chain.

Safety Edges Fault [2201]

The safety edges have been tripped. This will usually stop the platform or car immediately from driving. Starting the lift again is only possible, when the safety edges have been released again. Consult the schematics of this lift installation for tracking the fault in the safety chain.

Safety Edges Fault while driving [2202]

The safety edges have been tripped. This will usually stop the platform or car immediately from driving. Starting the lift again is only possible, when the safety edges have been released again. Consult the schematics of this lift installation for tracking the fault in the safety chain.

Overtravel/Nutswitch tripped [2203]

The overtravel switch (final limit top) or the nutswitch (final limit bottom) has been tripped. This will usually stop the platform or car immediately from driving. Starting the lift again is only possible, when the safety switches have been released again. Consult the schematics of this lift installation for tracking the fault in the safety chain.

Overtravel/Nutswitch tripped while driving [2204]

The overtravel switch (final limit top) or the nutswitch (final limit bottom) has been tripped. This will usually stop the platform or car immediately from driving. Starting the lift again is only possible, when the safety switches have been released again. Consult the schematics of this lift installation for tracking the fault in the safety chain.

Safety hatch switch has triggered [2205]

The safety hatch switch has been tripped. This will usually stop the platform or car immediately from driving. Starting the lift again is only possible, when the safety switches have been released again. Consult the schematics of this lift installation for tracking the fault in the safety chain.

Safety hatch switch has triggered while driving [2206]

The safety hatch switch has been tripped. This will usually stop the platform or car immediately from driving. Starting the lift again is only possible, when the safety switches have been released again. Consult the schematics of this lift installation for tracking the fault in the safety chain.

Pawl/bolt extended fault/timeout [2207]

The pawl device (bolt) did not operate properly and did not extend in the given time span. It might be mechanically locked or otherwise unable to move in the 'locked'/'safe' position, so that the cabin/car can't drop. If the device features a position switch to indicate the 'locked' position, please check that one as well.

Smart Power Supply communication fault [2208]

The smart power supply unit stopped to communicate properly. Check cabling and bus termination. Ensure that it is powered constantly and not may be turned off with the cabin light.

Car floor display 1 communication fault - [2209]

The communication to the floor display in the car, via the bus system, has been failed. The heartbeat of the floor display timed out. Check the function and power of the display unit and that the bus cabling is properly done with terminations on both ends. Check as well that the node-id that is supervised actually matches the node-id that the car floor display is using.

Car floor display 2 communication fault - [2210]

The communication to the floor display in the car, via the bus system, has been failed. The heartbeat of the floor display timed out. Check the function and power of the display unit and that the bus cabling is properly done with terminations on both ends. Check as well that the node-id that is supervised actually matches the node-id that the car floor display is using.

Brake fault event > [2211]

The drive has signaled an emergency message, presented as a text. Please double check the brake monitoring settings of the lift controller. Check as well, if the brake monitoring input on stopping indicates, that the brake has been locked again.

Brake test circuit supervision tripped [2212]

The input function 'Brake test circuit monitoring' must be at 24V in normal operation and may only drop to 0V when the brake test is activated. This ensures that the lift cannot change to normal operation if one of the contactors, used to hold the brake open, has got stuck.

Lubrication runtime error threshold reached [2213]

The lift controller throws an error about the oil reservoir to be empty, when the parameterized runtime of the oil-pump (lubrication) has been exceeded. This will turn the lift to Out Of Order operation mode. You can change the value under Settings Menu > More... > Drive Unit > More... > Even more... > Lubrication Function

Overspeed detection [2214]

Depending on local or national rules, running the lift on inspection operation comes with a limitation of velocity. Regarding to the EN81-20 the velocity is limited to 0.63 m/s. The US-ASME code states 0.75 m/s here.

Finger detector signal door x continuously triggered [2215]

The finger protection sensor signal has been continuously interrupted for more than 10s. This will stop the lift from driving in normal or inspection operation.

Opening force limit door x continuously triggered [2216]

The door or the door drive unit permanently signalled that the permissible opening force had been exceeded. The problem may be caused by an object or stone in the door sill.

No braking point from drive [2217]

The drive unit did not transmit a brake point (control effort) via the bus system. Check if the drive unit is capable of doing positioning mode. If this is a hydraulic CANopen unit, then it is likely that it only can do velocity mode. In that case change the parameter 'Drive mode (profile)' to 'Velocity Profile (classic)'.

Lift emergency telephone is not ready [2218]

The lift emergency telephone indicated to be not ready anymore. This might happen, if the connection or subscription to the mobile phone network has been interrupted. This will usually render the lift out of order.

In-Car Stop-Switch tripped [2219]

The In-Car Stop-Switch has been tripped. This input signal is normally peaked high (24V), if the lift shall be rendered operational. If this signal has been dropped, the lift will do an emergency stop. You find the related option at 'Settings Menu > More… > Basics > More… > Even more… > In-Car Stop Switch Usage'.

Failed to push-in the telescopic toe guard [2220]

Telescopic toe guard are usually spring loaded and hold by an electromagnet. On a power drop they are pushed out and when the power comes back, the lift has to push them in again, by driving below the lowest floor, so that the toe guard will touch the ground. This procedure has been failed. The lift was not able to push the toe guard in again.

Drive unit out of order > Drive fault Exxx [2221]

The drive unit has indicated an error that usually blocks the drive from operating properly. So fix the drive unit's error and then power cycle the drive unit and finally unblock the lift controller.

Oil tank temperature shutdown [2222]

The dedicated input for monitoring the temperature in the hydraulic oil tank has been tripped. The temperature threshold is defined by the switch itself. Those devices are usually closed if the temperature in normal and will open the circuit, when the temperature exceed the operation range.

Fire service switch hung [2223]

One of the fire service switches in the car/cabin is permanently activated without the fire recall switch being engaged. If that happens unattended, without actually using the fire service, you should check the wiring for any issue, like the switch being shorted.

Fire service hold switch hung [2224]

One of the fire service switches in the car/cabin is permanently activated without the fire recall switch being engaged. If that happens unattended, without actually using the fire service, you should check the wiring for any issue, like the switch being shorted.

Supply voltage drop detected (UAC<180V) [2225]

The main supply voltage, monitored by the lift controller unit, has dropped for a short time under 180V AC. That can cause a variety of secondary faults, that can be very hard to track down. The two supervision inputs (L/N) shall be connected to the 110/230V input of the very main power supply, that provide the 24V DC for the controller itself.

Position encoder preset distance out of range [2226]

The position encoder preset value triggered by the dedicated input for that floor and direction was larger than 150 mm away from the current position value. The encoder preset has therefore been dismissed. Check the input assignment and the solenoid switches, that usually trigger the preset for the position encoder to work properly.

Safety Chain bridge/bypass cam/lock detected [2227]

A safety chain bridge or bypass had been detected by activating the safety circuit (SZ) in order to check for a bridge between the last point of the safety chain (L - landing door lock) and the one before (A/B - doors). This test is done after the doors have been fully opened. When doing the test only (L) shall light up. A bridged safety chain cause a high risk of an accident.

Rope brake (gripper) has tripped [2228]

The rope brake or the rope gripper has been tripped. This usually happens, if a UCM (unattended car movement) has been detected. The lift should be double checked by a lift technician before putting it back in operation.

Rope Brake door zone contactor supervision [2229]

The supervision of the contactors that reflect the status of the two door zone channels has been tripped. This supervision signal is normally peaked high, if the car has left the door zone and will be dropped again, when the lift arrives at the door zone. This signal shall be a logical 'AND' of both door zone channels. It might be the result of a safety circuit, testing that none of the channel is 'hung' as well.

Rope Brake safety chain contactor supervision [2230]

The supervision of the contactors that reflect the status of the end of the safety chain has been tripped. This supervision signal is normally peaked high, if the safety chain has been opened within the door zone. The signal will be peaked low, if the end of the safety chain is closed or has been opened but with the car being already out of the door zone.

Timeout waiting for load measuring readout [2231]

No valid load measurement had been received when starting the drive. This is usually a problem specific to platform lifts, where the platform moves up and down on a rotating threaded rod. These lifts can only measure the load when the brake is open and the drive is energized.

Inspection car-top signal is missing [2232]

Even after about 10 seconds, there is still no car-top inspection signal indicated. This is required to be sure the lift shall be on normal or inspection operation.

Inspection pit signal is missing [2233]

Even after about 10 seconds, there is still no pit inspection signal indicated. This is required to be sure the lift shall be on normal or inspection operation.

Brake enable signal missing on start [2234]

The brake enable signal is used for classical terminal driven inverters to indicate to the controller, that it is fine to open the brake. On standstill the signal shall be dropped and will be peaked high at start and dropped again, when the velocity signals have been dropped.

Brake enable signal active after stop [2235]

The brake enable signal is used for classical terminal driven inverters to indicate to the controller, that it is fine to open the brake. On standstill the signal shall be dropped and will be peaked high at start and dropped again, when the velocity signals have been dropped.

Brake enable signal missing on driving [2236]

The brake enable signal is used for classical terminal driven inverters to indicate to the controller, that it is fine to open the brake. On standstill the signal shall be dropped and will be peaked high at start and dropped again, when the velocity signals have been dropped.

Brake enable signal peaked on standstill [2237]

The brake enable signal is used for classical terminal driven inverters to indicate to the controller, that it is fine to open the brake. On standstill the signal shall be dropped and will be peaked high at start and dropped again, when the velocity signals have been dropped.

Emergency rescue signal is missing [2238]

Even after about 10 seconds, there is still no emergency rescue signal indicated. This is required to be sure the lift shall be on normal or emergency rescue operation.

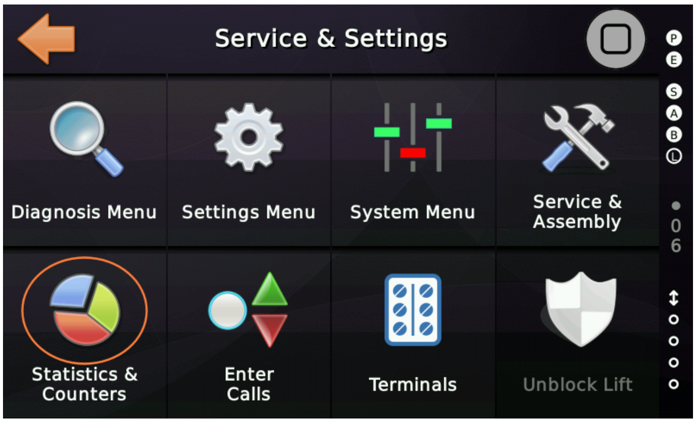
Door Lock/Hall Door Safety Chain while driving floor [2240]

The 'Door Lock Safety Chain' has been opened. This can be caused by some faulty door lock contact or the cabin/car touching the door/lock bold/roller. Consult the schematics of this lift installation for tracking the fault in the door lock chain.

98 Statistics & Counter

NOUS provides a rich set of statistical values recorded at runtime. They are stored non-volatile in the NOUS flash memory.

You find the related dialogue by pressing the Favorites option and then follow the 'Statistics & Counters' icon.



98.1 Generic counters& times

- Trip Counter
- Operation Time Meter
- Direction Changes
- Drive energy meter, if using a CANopen drive unit, providing the consumption

- Main contactors cycle count in upward and downward direction
- Re-levelling cycles in upward and downward direction

- Call waiting time (average and maximum)
- Transfer time (average and maximum)
- Travel time (average and maximum)

- Car/cabin door cycles for door A/B/C/D
- Shaft/Landing door cycles for A/B/C/D per floor

98.2 TOP#5 Landing Door Cycles

In addition to the list of landing door movements for all floors/doors, NOUS also has a TOP#5 list of the most frequently cycled landing doors to make it easier to identify the doors that need the most 'care'.

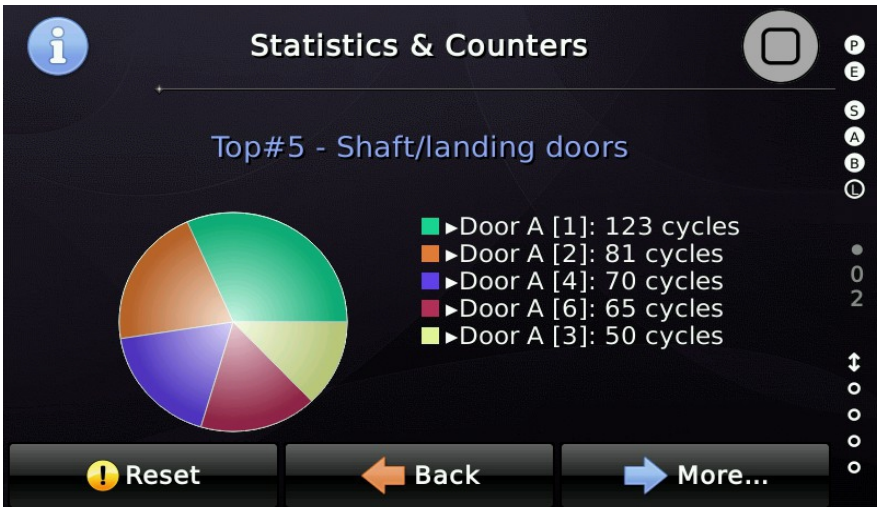


Figure 212: TOP#5 of the landing doors most frequently operated

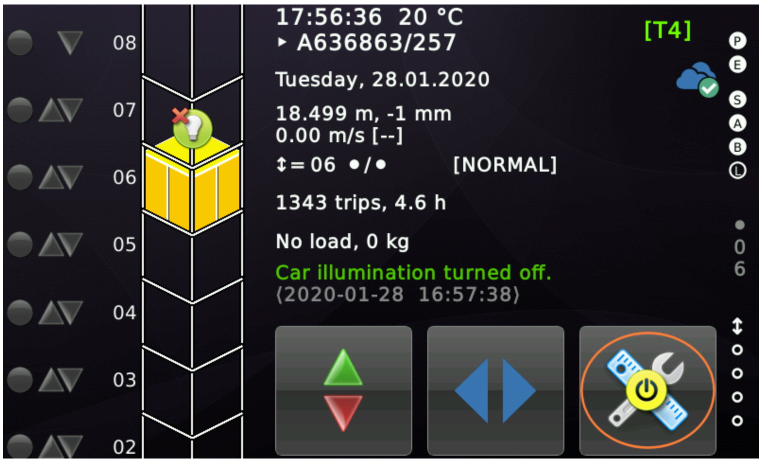
98.3 Car Illumination Runtime Meter

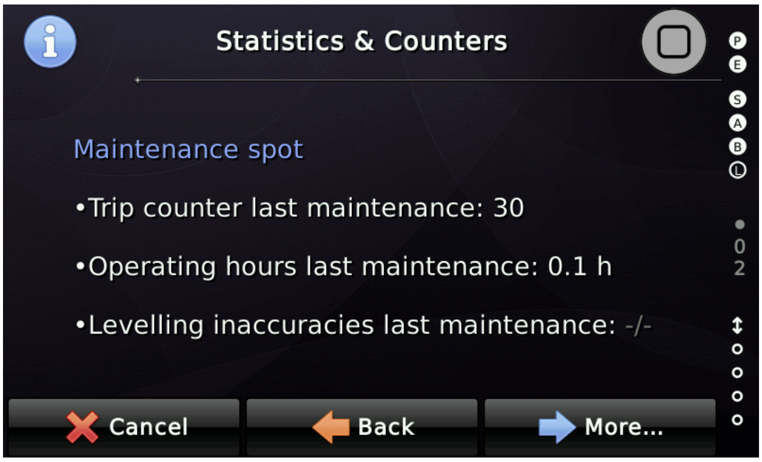
The operating hours of the car illumination, that is usually switched on, is counted internally. The counter stops when the car illumination has been switched off via the '*Status/controller signals → Car illumination off*' output function. The value is specified in hours with one decimal place.

Figure 213: Car Illumination Runtime Meter

98.4 Maintenance Spot

Every time you finally turn off Maintenance again, the 'spot' values will be set back to zero, making it easier to get an idea what the lift did since the last time it was maintained.





99 Emergency Lift Telephone Readiness Input

In order to render the lift only operational, if the emergency call device is operational as well and has reception and a valid subscription, the telephone unit may provide an output, that can be connected to the input function '***Status/controller signals** → **Emergency Lift Phone Readiness Indication***' at the lift controller.
Using an adjustable delay for detecting the readiness signal having peaked down, the lift will enter '*Out Of Order*' operation state and release the passenger on the next possible floor.
As long as the readiness signal is peaked up, the lift controller will assume the telephone unit to be ready. At system startup an extra delay makes sure, that the telephone has some time to become operational.

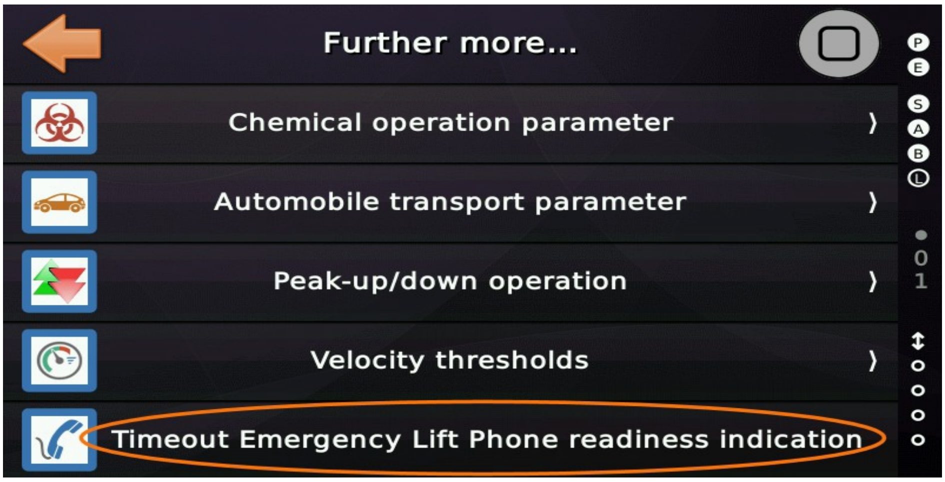


Figure 214: Emergency Lift Phone readiness timeout

The settings can be found by pressing 'Favorites' and then go further to 'Settings Menu' → 'Controller/Piloting' → 'More...' → 'Even more...' → 'Much more...' → 'Further more...' → 'Timeout Emergency Lift Phone readiness indication'.

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