

SLC4-20

and SLC4

Operating instructions

Status: 24.2.2018

Applies to software version 3.82
PIC version 1.26



Important notice:

The data and information in this documentation are made up with the utmost care. Although the utmost has been done to keep the information included in this documentation up-to-date and correct at the date of publishing, we cannot guarantee for an absolute faultlessness.

© STRACK LIFT AUTOMATION GmbH
Lise-Meitner-Straße 2, 42489 Wülfrath (GERMANY)
Telephon +49 2058 89328-0
Telefax +49 2058 89328-200
HOTLINE: +49 2058 89328-360
support@liftnet.org
www.liftnet.org

This documentation and the product described therein are protected by copyright for **STRACK LIFT AUTOMATION GmbH** or their suppliers, and all rights are reserved. In accordance with the copyright, this manual may not be copied, either as a whole or in part, without written permission from **STRACK LIFT AUTOMATION GmbH**, unless it is in the course of normal use of the product or for making back-up copies. These exceptions do not, however, apply to copies that are made for third parties and are then sold or given in any other way to these third parties. However, the complete set of material purchased (including all back-up copies) can be sold, given or lent to third parties. According to the legal regulations, translating the material also comes under the definition of copying.

All rights reserved.

TABLE OF CONTENTS

I.	SAFETY INSTRUCTIONS	4
1.	Instructions concerning this manual	4
2.	Product liability and warranty	4
3.	Intended use	4
4.	Risk assessment	5
5.	Operational earth	5
6.	EMC connecting and installation instructions	6
II.	DESCRIPTION OF THE COMPONENTS	8
1.	Mechanical set up of the control	9
2.	Operating voltages	9
3.	Supply terminals	9
4.	Ambient conditions	9
5.	Plugable bus type travelling cable	10
6.	Plugable operating panels	11
7.	Central unit AZE0	13
8.	Extensions AZE1-4	14
9.	Universal bus module ULON-16	15
10.	Emergency lighting unit	16
11.	Safety circuit	17
12.	Door zone and UCM monitoring	18
13.	DISK digital shaft encoding	31
14.	zone switch assembly	33
15.	Flush switch for electronic lift attendant	35
16.	Car terminal box	36
III.	MODES OF OPERATION	37
1.	Digital shaft encoding	37
2.	Virtual inputs/outputs VIO	38
3.	LON bus	38
4.	Group operation	39
5.	Control modes and functions	40
6.	Terminal designations and their meanings	59
7.	Stack memory	73
8.	Memorizing counter	79
9.	Operation of the central unit	80
10.	Menu overview	83
11.	Parameter	94
12.	Binary and Gray code table	164
IV.	PUTTING INTO OPERATION	165
1.	The very first installation run	165
2.	Basic settings	166
3.	VIO assignment	167
4.	Teaching travel	168
5.	Fine levelling	169
6.	Levelling correction	174
7.	Forced deceleration	175
8.	Relevelling	175
9.	ZÜS testing	176
10.	Group	176
V.	MAINTENANCE	179
1.	Safety instructions	179
2.	General maintenance intervals	179
3.	Recording intervals	179
4.	Settling of Building	180
5.	Toothed belt of the DISK-System	180
6.	Encoder exchange with DISK-Systems	181
7.	Exchange of the control software	182

I. SAFETY INSTRUCTIONS

1. INSTRUCTIONS CONCERNING THIS MANUAL

This documentation contains instructions that are absolutely to be adhered to in order to protect life or health. The knowledge and the technical implementation of the safety instructions contained in this documentation, and the accident prevention regulations applicable at the location of the lift installation are preconditional for a safe installation and commissioning. The documentation does not contain all details for each and any type of lift installations and it can not consider every possible mode of erection, operation, repair, maintenance or commissioning.



Hazard references are marked with this warning signal. It means risk of accident with physical injury or material damage, if the required precautions are not taken.



By this sign those informations are marked that, according to the author's opinion, need particular attention.

2. PRODUCT LIABILITY AND WARRANTY

STRACK LIFT AUTOMATION GmbH reserves the right, to rework this product from time to time without notice and to make those changes on the product that will support the technical progress.

Spare parts have to comply with the technical requirements laid down by STRACK LIFT AUTOMATION GmbH. This is secured anyway if original parts are used. In the case of alterations of the control unit, e.g. if products of other suppliers are used in connection with the control unit, additional hazards may crop up that exclude any responsibility of STRACK LIFT AUTOMATION GmbH for damages resulting therefrom.

The functions described in this manual are not to be considered as warranted properties. Warranted properties are to be taken exclusively from the particular acknowledgement of order.



STRACK LIFT AUTOMATION GmbH will give neither warranty nor free service for later modifications in the control and/or control functions which are not a part of the original order (group operation, emergency evacuation, fire alarm, etc.).

Otherwise, the General Contract Conditions and the Terms of Delivery of STRACK LIFT AUTOMATION GmbH shall apply.

3. INTENDED USE

The lift control SLC4 is intended to serve exclusively as a control for passenger lifts, goods lifts and hoisting devices that are complying with lift directive 2014/33/EU and other standards specified in the respective order. The purchase contract (order form, order acknowledgement, circuit diagrams etc.) shall be prevailing for the definition of the usage to the intended purpose.

All chapters of this operating instruction contain important informations for the usage to the intended purpose of the lift control. These chapters apply exclusively to technically qualified personnel, particularly trained for the installation, commissioning, maintenance and repair of the lifts which shall be installed in accordance with the relevant lift standards. The control shall be installed, commissioned, maintained and repaired by this category of persons only.

Attention is to be paid, that all activities are executed in accordance with the respective legal safety regulations. During the erection please observe your national accident prevention regulations as well as your national directives about safety measures upon installation and maintenance of lifts.

For installation two persons are required (fitter/assistant). The commissioning should be carried out by a technician or fitter that has been trained on the control system SLC4.

4. RISK ASSESSMENT

In order to ensure the fault free operation of the lift, the instructions in the documentation delivered along with the lift (circuit and wiring diagrams, manuals for external components, this manual, etc.) and the instructions in the present chapter of the operating instructions regarding the electromagnetic compatibility are to be strictly observed.

The control must, neither prior to nor after being placed on the market by the specialized lift contractor, be considerably altered without the permission of the manufacturer (STRACK LIFT AUTOMATION GmbH). Particularly the control computer, electronic modules, safety circuits and the control-internal circuitry of the power section and the safety section must not be altered.

5. OPERATIONAL EARTH

All voltages (except the computer-internal 5VDC) are single-end earthed and separately fused in order to recognize earth faults and to prevent the uncontrolled switching-on of power consuming devices.

For the purposes of commissioning however there exists an exception:

Prior to (re-)commissioning the PE-conductor shall not be connected to terminal G2 (PE) but to terminal G1 (PE-test) instead. This way it is secured that in the case of connection errors that may occur during the installation or modification of the electrical installations of the lift, the central unit and components connected thereto will not get destroyed. In the case that a connecting error exists, this will be indicated by two red LEDs (PE-test). In case that upon setting a call or command there lies already an (interference) fault voltage on the signal voltage, the lift does not start and the fault is getting indicated on the display.

CAUTION

In this case there exists a mortal danger!
Correction of the failure is imperative and must be carried out immediately!



Only when the failure has been corrected and the lift operates fault-free under all operational conditions, resp. none of the two red LEDs is lit at no time, the PE-conductor may be reconnected from terminal G1 to G2.

REMARK

It may occur that owing to extraneous voltages higher than 30V, caused by long cables, the LED's are lit without a fault voltage existing. Normally, in this case the LED's will shine equally light and weak. To find out if it is an induced voltage you may connect, for a short period, a load resistor of e.g. 1000Ω /5W between the terminals G1 and G4. If the two LED's grow dark it can be taken for sure that there is any voltage induced.



REMARK

After successful commissioning the PE-conductor must be reconnected from terminal G1 (PE-Test) to terminal G2 (PE). Thus, the operational earth of the signal voltage becomes effective.



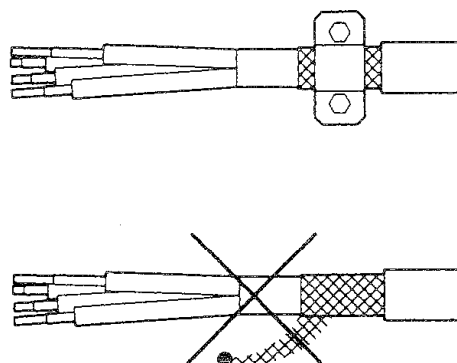
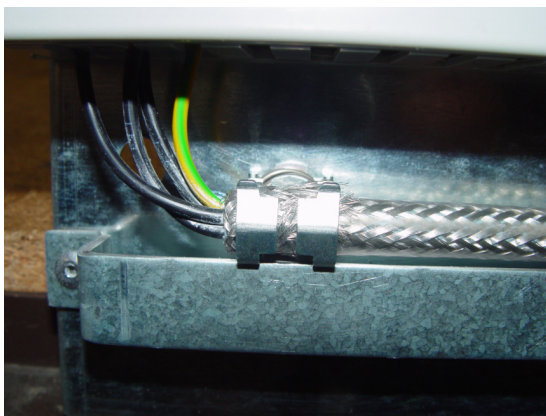
6. EMC CONNECTING AND INSTALLATION INSTRUCTIONS

REMARK

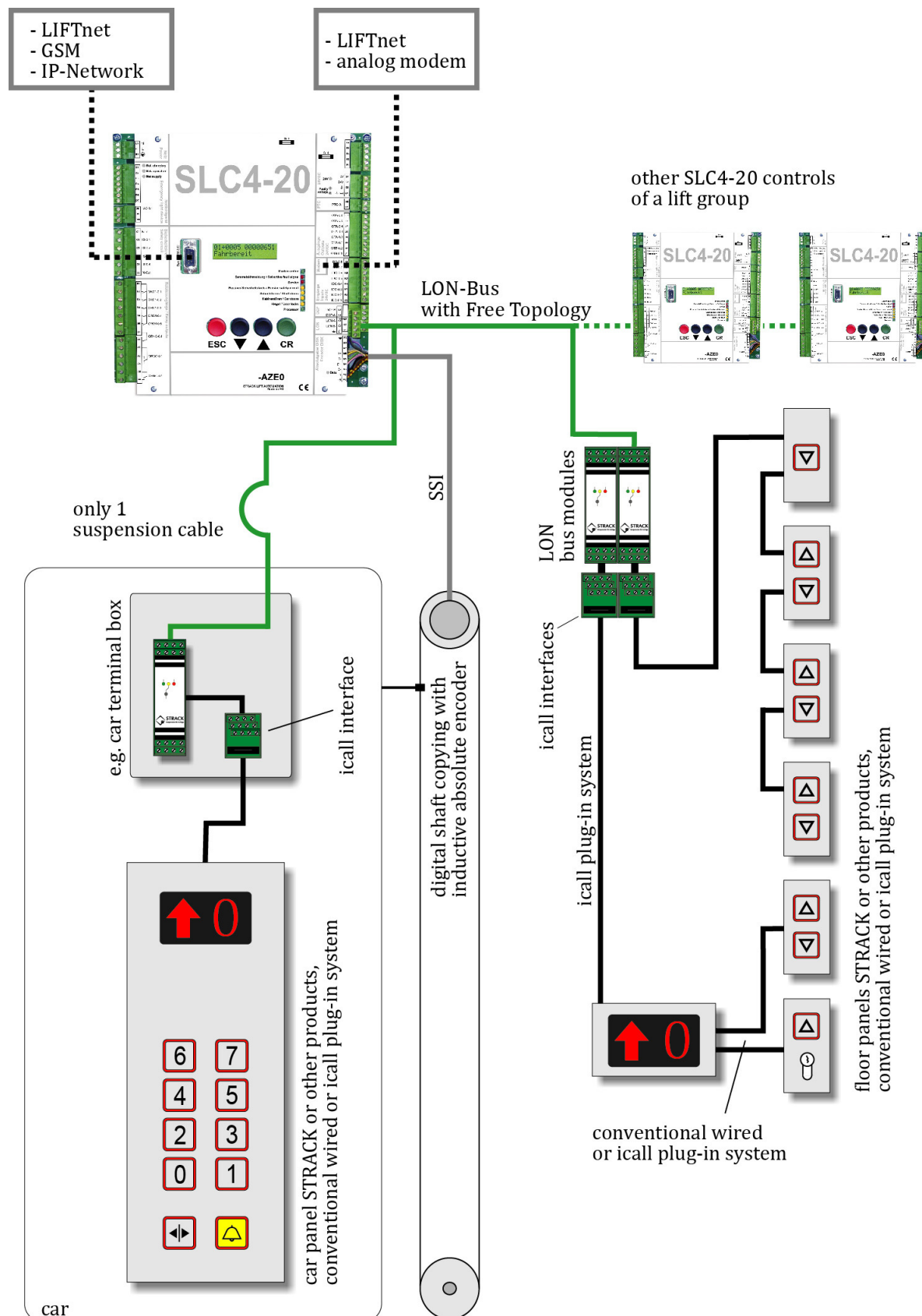
In order to be able meet the relevant safety requirements of the EMC-directive 89/336/EEC ("directive concerning the electro-magnetic compatibility of equipment"), the following proposals for connection and installation should be observed:



1. Connect the control as described in the attached circuit diagrams. All inductive power consuming devices must be provided with adequate interference suppression elements like RC-, Varistor- or semi-conductor links (e.g. free-wheeling diodes).
2. In case that particular types of cables (e.g. screened ones) are prescribed by the manufacturer or are shown in our circuit diagrams, these are a must.
3. Screenings should be connected to earth as short as possible. Do not extend the screening by means of further cable conductors. If possible, do not twist the mesh of the screen, however connect it to earth as wide-spread as possible. All screens of cables longer than 50 cm must be earthed *at both ends*.
4. In order to minimize induced voltages that may be generated in parallelly installed lines, cables should be assigned so, that for conductors belonging to different voltage ranges wires separate cables are used. For example the feeder line for the door motor (400V3P50Hz) in cable 1 and those for the door limit switches and light barrier output (24VDC) in cable 2.
5. Item 4 must be particularly observed in connection with the travelling cables. This, however, does *not* apply to the special travelling cable with marking "STRACK ELEVATOR SUSPENSION CABLE". For that, the cable assignment rules on page 10 resp. the indications in the respective circuit diagram are to be observed.
6. The encoder line of the shaft encoding system "DISK-.." must be laid in a distance of minimum 10 cm to all other lines that are loaded with more than 30V. Crossings with those cables are allowed, parallel arrangements, however, are not.
7. The flange plate of the encoder has to be connected to earth. If the encoder is mounted to an earthed car guide rail, no special earthing is required.
8. The encoder cable from DISK must not be extended. Observe the enclosed mounting instruction. An encoder cable that is too long must not be wound up since transmission errors may occur. It should be either cut or layed in long loops.
9. The manufacturer's instructions for installation and operation of motor controllers etc. have to be observed.
10. All signal cables should be laid apart from the motor feeder line (recommended dist. at least 10cm).
11. Current-loops are to be avoided if ever possible. If, for example, terminal L- (0V (24)) at travelling cables 2 *and* 3 is connected to the control and to the car connection box as well, there is a very large current-loop in which, for example, the current to the magnet of the retiring cam (laid in travelling cable 1) can easily interfere, thus causing an instability of the lift control system.
12. Upon subsequent modifications of the lift installation the above mentioned measures must be taken also for the components that have been additionally installed.
13. In case of frequency inverter controlled lifts the thermistor cable has to be screened and earthed at both ends. Item 3 needs particular attention!
14. In case of lifts with frequency inverter screened cables shall be used for the motor feeder lines (*do not use cables with a "steel wire supporting mesh"*). **The motor cable must be put on wide-spread over a large surface and at both ends!** The screen shall not be twisted and connected to one point only (aerial effect)! For the connection only original EMC-fittings or suitable screen clamps are to be used. Both are available from STRACK LIFT AUTOMATION.

Connection of the motor cable to the control**Connection of EMC – fitting at the motor terminal board / terminal box**

II. DESCRIPTION OF THE COMPONENTS



1. MECHANICAL SET UP OF THE CONTROL

All equipments (incl. door operator control, VV/VF-controllers, valve controlling devices etc.) should be mounted in a sheet steel control cabinet. The type of protection of the casing for central unit "AZE0" and protective circuit "SHB" shall be IP33 at the minimum. In case that additional electronical or safety related devices are installed in the cabinet, a higher IP-protection shall be chosen probably. Please observe the documentation of the respective device.

All devices are accessible from the front and replaceably installed on a zinc-galvanized mounting plate. The wiring is laid in wire ducts. Normally, for noise isolation, the mounting plate is mounted on rubber buffers.

If fans are installed for the ventilation of the cabinet, these are normally mounted in the lower part. In the top of the cabinet one or more exhaust filters are fixed. To allow the air-flow taking its defined direction the cable inlets should be closed, so that as little air as possible can escape there.

The references to electro-magnetic compatibility in the preceeding chapter are to be observed.

2. OPERATING VOLTAGES

Mains connection of control (power)	400V3P /50Hz /N /PE / $\pm 10\%$ (other voltages optional)
Mains connection of control (light)	230V /50Hz /N /PE / $\pm 10\%$ (other voltages optional)
Control voltage of main contactors	230V /50Hz /N /PE / $\pm 10\%$ (other voltages optional)
Signal voltage of the control	24V DC $\pm 20\%$ (smoothened, open-loop contr.)
LON bus-Module	24V DC $\pm 20\%$ (smoothened, open-loop contr.)
Emergency light	12V DC or 24V DC
Computer-internal voltage	5V DC closed-loop contr., sustained short-circuit proof

3. SUPPLY TERMINALS

- Feeder lines connected to adequately dimensioned modular screw-clamping terminals.
- Control and signal lines connected to screwless modular terminals.

On principle, all connections to the control are conducted via modular terminals or pre-wired plugs. The terminal block shall be arranged horizontally in the control.

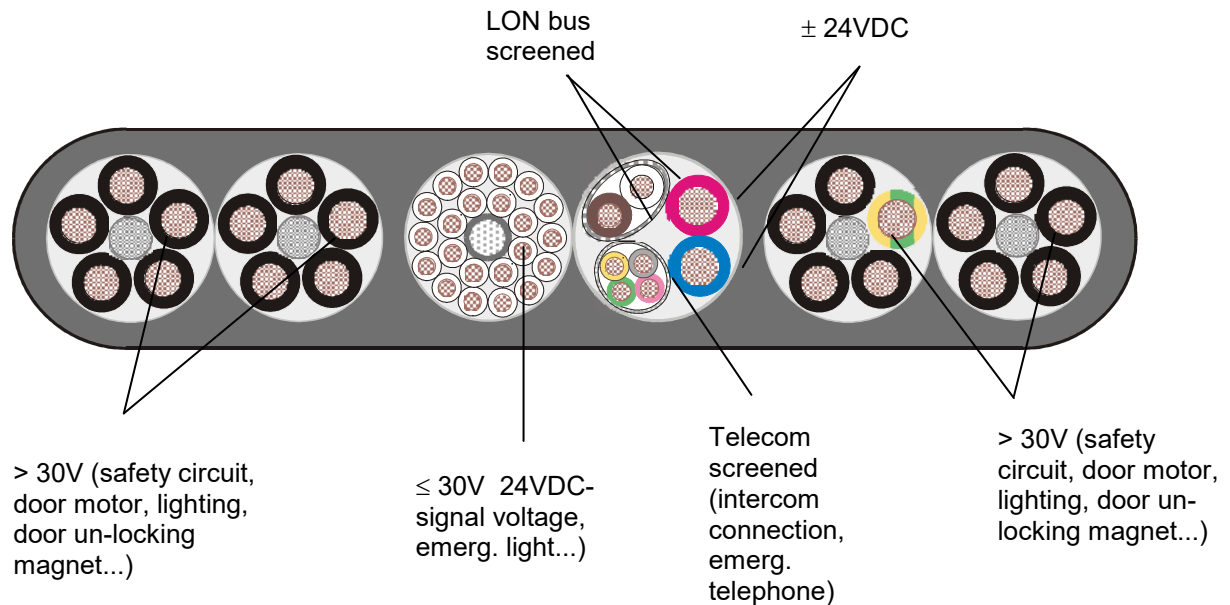
4. AMBIENT CONDITIONS

The following conditions do not apply to devices provided by the customer. For these, the respective data of the devices shall apply.

Operating temperature (environment of control cabinet)	0 to +40 °C
Storage temperature	-20 to +60 °C
Rel. humidity (operation + storage) as per IEC 1131-2	5 to 95% without condensation and free from aggressive gases
Duration of storage of the control without necessity to commission	2 years

5. PLUGABLE BUS TYPE TRAVELLING CABLE

The pluggable bus-type travelling cable is a black flat cable with PVC-coating. Normally one cable only is required. The connection of the travelling cable is carried out via pluggable WAGO terminal blocks. All connection points of the plugs can be measured conveniently and can be changed by means of normal tools (screw driver).



Description of setup:

Colours	:	DIN 47100
Coating	:	PVC, black, diamond surface
External dim.	:	about 10,5 x 51 mm

Technical properties:

free hang-up length	:	40 m
Temperature range	:	-30 °C to +70 °C
Bending radius	:	12 x conductor diameter

REMARK:

When travelling cables are provided with textile or wire rope supporting members, these should not be simply cut. They should be clamped or knotted as the supporting members are gliding within the cable. Even when being fixed by means of the generally available clamp shoes for travelling cables the supporting members will glide. This behaviour may result in the developing of so-called corkscrews in travelling cables, even in the case of low travel heights (about 10 meter) at heavily frequented lifts.

6. PLUGABLE OPERATING PANELS

6.1. Car operating panel

There are two kinds of pluggable car panels available – with the STRACK icall bus or with an external plug connection (e.g. B&S, Kronenberg, Schäfer) for prewired panels from external suppliers.

6.2. Floor operating panels

Pluggable floor panels are always equipped with the STRACK icall-plugging system.

6.3. icall plugging system

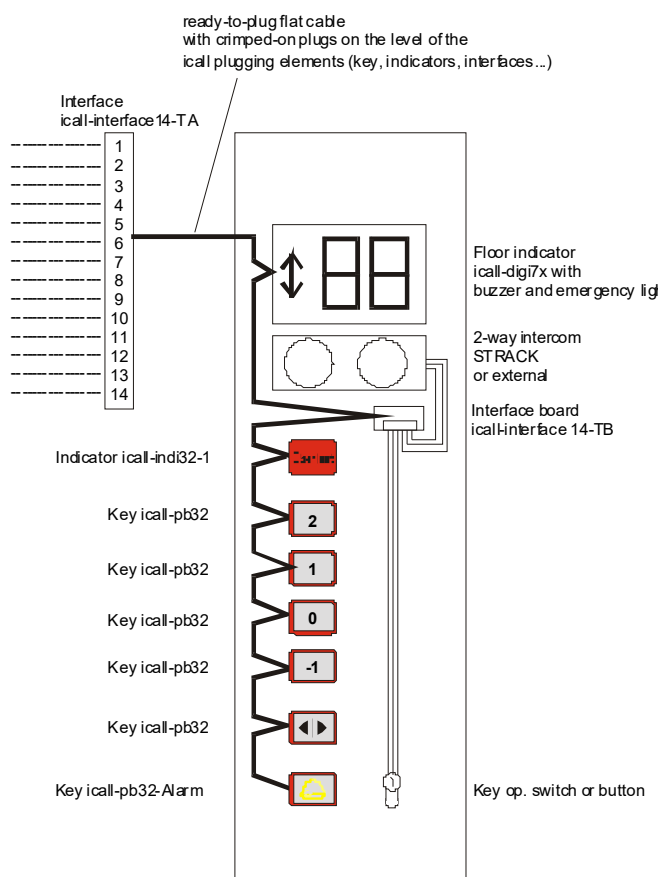
The STRACK-icall-system represents a cost saving and flexible solution of plugging for all types of operating panels.

The icall-bus is a 24VDC parallel bus by which all the panel elements can be plugged together. Every key, indicating element, intercom unit etc. is plugged directly to a 14 or 34 pole flat cable. This cable is plugged from element to element and can be continued either within a panel or directly to, for example, the car terminal box KKL or along the shaft inside to the control. In the KKL, in the control or in the LON bus stations are adapters which have screw type terminals on the other side.

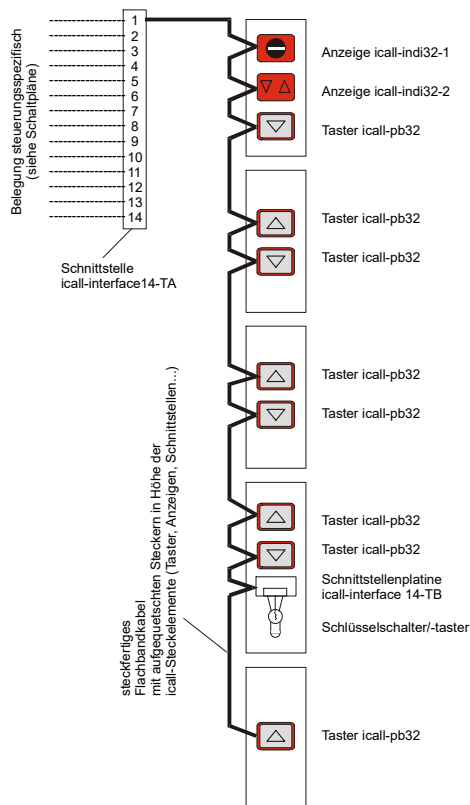
Devices purchased from external suppliers like intercom units, indicators, key switches etc. can be connected to the icall bus at any optional place by means of the interface cards.

Outside the panels, in accordance with EN 81-1/2:1998, 13.5 the flat cables with or without sheath need no screened laying, as the voltages are below 50V, they conduct a power less than 100VA, and are not connected to the safety circuit.

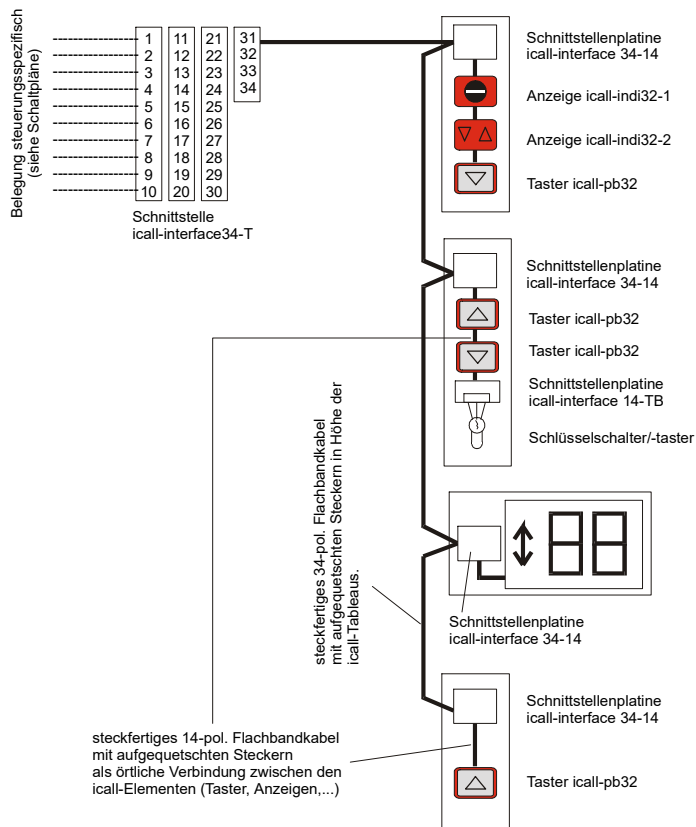
In installations acc. EN 81-20:2014, the icall plug-in system uses only flat ribbon cables with sheaths. As the sheaths provide mechanical protection acc. EN 60204-1:2006, 12.2 the cables need no screened laying.



Example for the wiring of a car operating panel with 14-pole flat cable fed through directly to the interface in the car terminal box

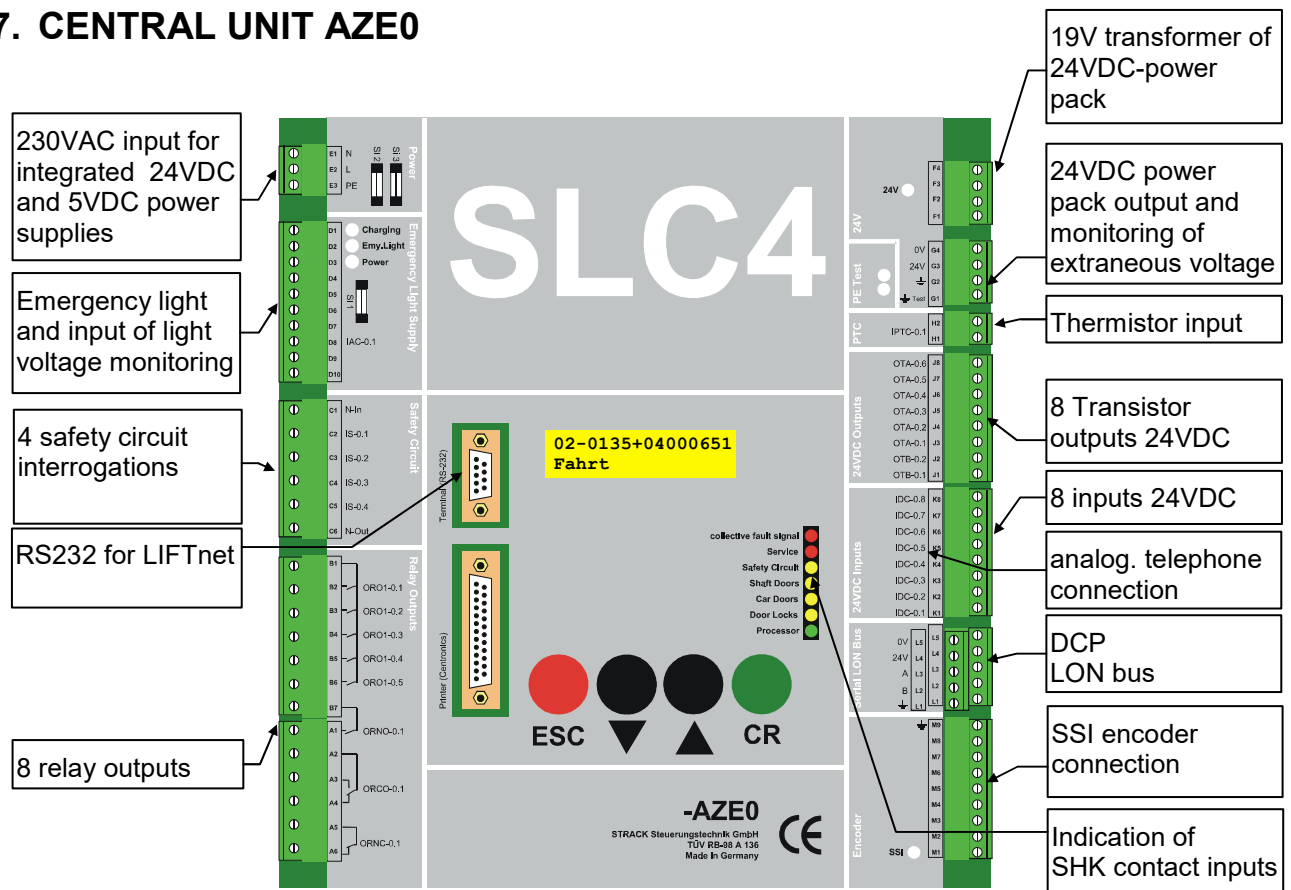


Example of call panel shaft wiring with 14-pole flat-cable



Example of call panel shaft wiring with 34-pole flat-cable

7. CENTRAL UNIT AZE0



Voltage supply	230V 50/60Hz
Output control voltage	24VDC max 1,5A
PTC	Temperature scanning in the driving unit (4k5 Ohm 10%, at 25°C)
Safety circuit interrogation	4 x, 230VAC inputs
Inputs 24VDC	8 x, opto-decoupled, input current about 16mA
Transistor outputs 24VDC	8 x, opto-decoupled, resistant to sustained short-circuit, max. 280mA
Relay outputs	8 x, pluggable; precontrol for activating of the main contractors, valves, door unlocking magnets, etc., max. 250VAC
LON bus	Connection of the serial data transmission to further components; transmission protocol "LonTalk" (Echelon); physically "Free Topology Transfer" (FTT-10A-Specification of Echelon) with 78 kbps
Absolute encoder	SSI, supply with 5VDC
Expansion plug	for the connection of expansion cards AZE1-4
Operating unit	LCD-display 2x 16 characters, background-lit, 4 large keys
Processor	Multi-microprocessor system
Program language	Programming mainly in ANSI C
Operating system	industrial multitasking operating system
Connections	Screw-plug connector for conductor cross-sections 0.08-2.5mm ²
Dimensions (LxWxD)	240mm x 240mm x 80mm

8. EXTENSIONS AZE1-4



Extension cards of the central unit in the control cabinet. They provide further 24VDC-inputs/outputs and must have to be positioned directly under the central unit AZE0.

8 inputs and outputs each can be bridged with two flat cables, to use them (for instance) for calls with acknowledging lights. The calls are only clamped to the lefthand (output) side. The cables are plugged crosswise. With the first cable, IDC-x.1 - 8 is connected with OTA-x.1 – 8, and with the second cable IDC-x.9 - 16 is connected with OTA-x.9 - 16.

Inputs 24VDC

16 x, opto-decoupled, input current 16mA

Outputs 24VDC

16 x, opto-decoupled, continued short-circuit proof, max 500mA per output, total current of all 16 outputs max. 3A

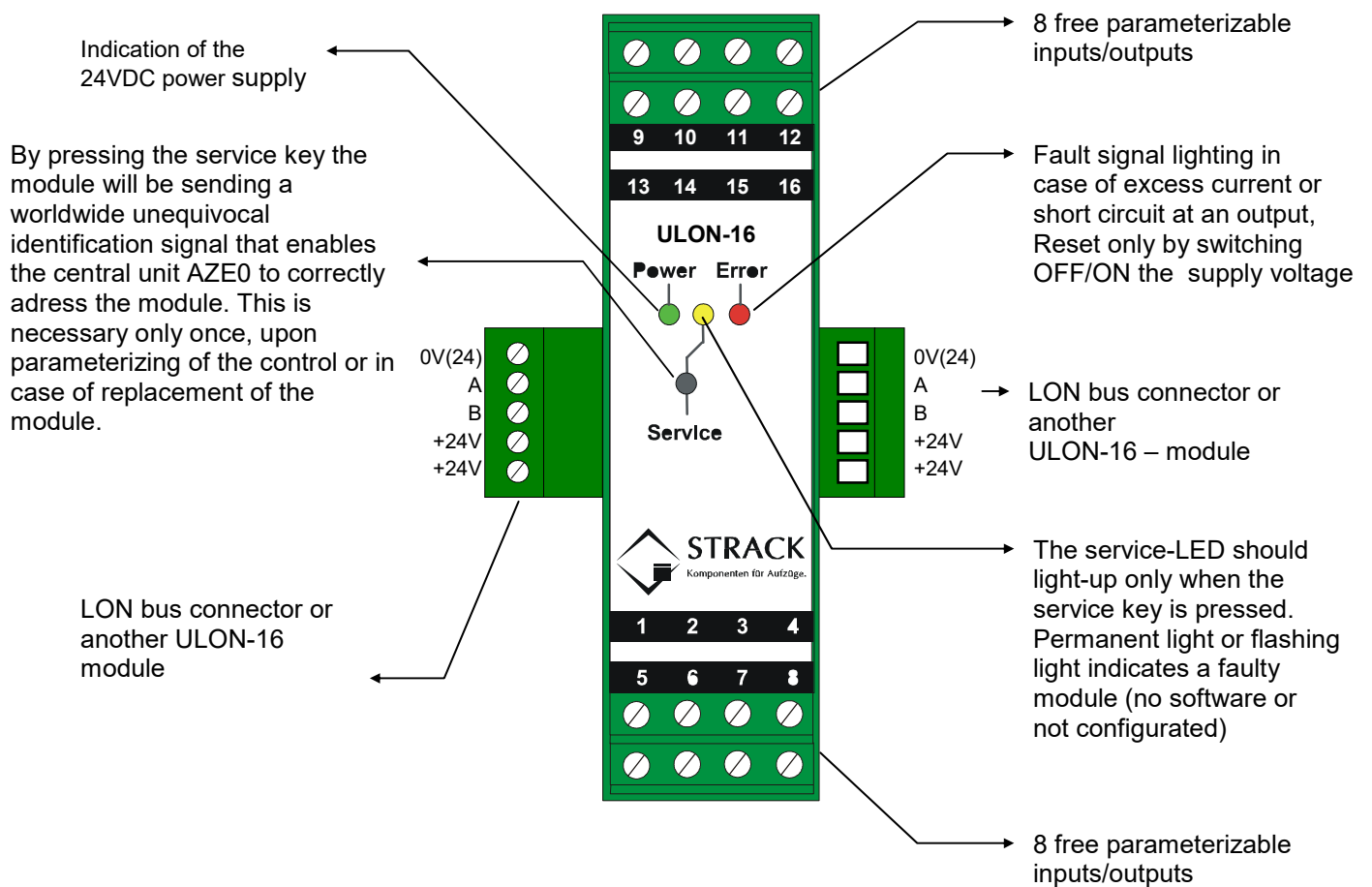
Connections

Pluggable screw connectors for sections of 0.08-2.5mm²

Dimensions (LxBxH)

240mm x 65mm x 50mm

9. UNIVERSAL BUS MODULE ULON-16



The universal bus module provides 16 inputs/outputs at the disposal of the control. The 16 terminals can be assigned to any functions, and any terminal can be used as input, output or both (e.g. for call buttons). The module can be positioned freely, e.g. in the control, shaft, car terminal box, in operating panels or at the porter's lodge.

The 16 terminals can be assigned to any function, except time-critical functions like setpoint values for motor controllers, door motors and door limit switches in case of certain types of doors, light barrier. The reaction times of the module are within 100 ms.

For the setup of the modules at the bus or the replacement of a defective module please refer to chapter III, section 3.2.

Inputs-/Outputs 24VDC

16 x, input current 16mA, not opto-decoupled; outputs not opto-decoupled, sustained short-circuit resistance, max. 500mA each output, total current of all outputs max. 3A

Connections

Screw-plug connectors for conductor cross section 0.08-2,5mm²

Dimensions (LxWxH)

105mm x 25mm x 120mm (+ lateral plugs of 35mm DIN-section module)

10. EMERGENCY LIGHTING UNIT

The emergency lighting unit ST-NSG12/24 serves as a power supply for uninterrupted duty acc to EN 81-1/-2/-20 for the alarm call (not emergency alarm device), the telephone and the intercom system. It engages automatically the emergency car light upon failure of the lighting voltage. It is a constituent of the SLC4 mainboard. There is only the storage battery that is still to be provided. Upon special demand, other emergency lighting systems can be used.

Display LEDs

- mains available
- charging
- emergency light operation

10.1. With SLC4 mainboard up to version 1.23

Power supply unit protection against short circuit and overload by PTC

Storage battery

Voltage of storage battery 12V

Fusing of storage battery 1A slow action (Si 1 on the SLC4 master board)

Battery charging current max. 300 mA, charging voltage typ. 13.5V.

Exhaustive discharge protection On battery operation lock-out of emergency light at a battery voltage of 11,1V. Upon reactivation of the power supply, prior to the reactivation of the emergency lighting, the charger unit must recharge the battery up to a voltage of 12,0V.

Voltage of storage battery 24V

Fusing of storage battery 1A slow action (Si1 on the SLC4 master board)

Battery charging current max. 170 mA, charging voltage typ. 27.0V

Exhaustive discharge protection On battery operation lock-out of emergency light at a battery voltage of 21V. Upon reactivation of the power supply, prior to the reactivation of the emergency lighting, the charger unit must recharge the battery up to a voltage of 22V.

Changing over between 12V and 24V emergency light/alarm call voltage is effected through four jumpers on the master board of the central unit "AZE0". The jumpers are arranged lefthand on top, beside of the blue transformer, and are to be plugged as follows:

with 12V storage battery with 24V storage battery



10.2. With SLC4 mainboard starting from version 1.34

The emergency lighting unit was revised extensively. It is no longer switch-selectable by jumper. A SLC4 mainboard variant is available with 12V and 24V emergency light unit.

Power supply unit Energy efficient, primarily switching regulator, short circuit and overload protected, efficiency factor 84%, power 60W

Accu

Accu voltage 12V

accu protection	electronic 2.8A
output current	max 2.8A (also while accu loading)
accu charge current	max 1.5A, end-of-charge voltage 13.5V
deep discharge protection	disconnection of the emergency light and all other powered devices at accu voltage 10.5V ±0,5V
accu capacity	valid 1-12 Ah

Accu voltage 24V

accu protection	electronic 1.4A
output current	max 1.4A (also while accu loading)
accu charge current	max 0.75A, end-of-charge voltage 27V
deep discharge protection	disconnection of the emergency light and all other powered devices at accu voltage 21V ±1V
accu capacity	valid 1-6 Ah

11. SAFETY CIRCUIT

11.1. Connecting of the PCB subdomains SHK-003x, REL-003, OUT-004x

(see the separate manual "Information for the expert" acc. SLC4 or SLC4-20)

11.2. Set-up SHK-003x, REL-003, OUT-004x

(see the separate manual "Information for the expert" acc. SLC4 or SLC4-20)

11.3. Technical data SHK-003x, REL-003, OUT-004x

(see the separate manual "Information for the expert" acc. SLC4 or SLC4-20)

11.4. Directives for the functional test

(see the separate manual "Information for the expert" acc. SLC4 or SLC4-20)

11.5. Insulation test upon first commissioning

(see the separate manual "Information for the expert" acc. SLC4 or SLC4-20)

12. DOOR ZONE AND UCM MONITORING

The safety circuits SHB100 (EN 81-1 / -2) and MULTiBUS-SHB (EN 81-1 / -2 / -20) can monitor the door unlocking zone and can serve as a detecting device for unintentional movement of the car (UCM) as part of UCM guard system.

For more information please see the operating instructions SHB100 and MULTiBUS-SHB.

12.1. Door zone monitoring

The control will respond to SHB errors as follows:

SHB error input VIO 109-111	SHB zone input VIO 106-108	Flush ≤ 50 mm according absolute encoder	Error message	Lift is locked
1	1	yes	SHB ErrorNo 1	yes
1	1	no	no	no
1	0	yes	SHB ErrorNo 2	yes
1	0	no	no	no
0	1	yes	no	no
0	1	no	no	no
0	0	yes	SHB ErrorNo 3	yes
0	0	no	no	no

Possible causes are:

- The magnetic switch in the shaft bounce or not switch. Check the distance of the magnetic switch and check the terminals on the SHB (fasten the screws if necessary).
- The signal "Drive-in" is not used. Check the SLC4 output and, if present, the contact of the speed control ($v < 0.3$ m/s).
- If the zone switch 2 is switched by the SLC4 control (VIO 100), then check the SLC4 output and the absolute encoder on possible errors (MONITOR/ABS. ENCODER).

12.2. UCM monitoring

Please read the "manual SHB". These instructions include detailed descriptions of the circuit.

In the menu **SETTINGS\MONITORING\UCM** you will find the following parameters:

Parameter UCM_Zone:

If parameter `UCM_Variant` is set to UCM GB2 or UCM ZB2 (2x SHB), the UCM zone switch II can be switched by a real switch acc. the example diagrams or by a SLC4 output. If it is switched by the SLC4, the parameter must be adapted to the zone length of UCM zone switch I. Thus both UCM zone switches switches on/off at the same time.

If parameter `UCM_Variant` is set to UCM GB0 (no SHB), the control detects a UCM case after this distance.

Parameter UCM_Variant:

The components used for the realization of UCM protection structure will vary. To ensure, the control offers always the right functionality, this parameter must be appropriately set to the used circuit.

Parameter Y6DlyMon:

The parameter is only effective when `UCM_Variant` is set to UCM-GB(x). At the end of a normal travel the always effective time delay of K36 is trimmed by shorten the capacitors of the assembly A2

or by switching off/on of the time relay K36, this is monitored by the SLC4 at the latest after the set check interval. The blocking magnet must have fallen off after the set time. The default value is 500 ms. If possible it should not be adjusted to a higher value, because during the release time of the blocking magnet an UCM triggering by the speed governor is ineffective.

Parameter Y6offTime:

The parameter is only effective when UCM Variant is set to UCM-GB1 or UCM-GB2. The locking magnet remains initially on at UCM-GB1 or UCM GB2 after entering the level. It is switched off only with doors closed (again) after the shut-down resting time. The lift must be in peace. If the parameter is null, the locking magnet will be switched off immediately with the door closed.

Note:

You should not set the switch-off time less than 540 (9 minutes), as it will shorten the life time of the relay contacts in the control of Y6. Default value is 1800 (30 minutes).

Note:

At UCM-GB0 the locking magnet is de-energized directly after stopping in the floor.

Parameter Y6TestIv:

The locking magnet is checked after the test interval time after the drive. If the parameter is null, the locking magnet is checked after every travel. After each restart of the control the locking magnet is also tested, independent from of the parameter value.

Note:

You should allow set the test interval to the default value 24 hours, because otherwise the life time of the relay contacts in the control of Y6 will shorten.

Note:

UCM-GB0 is checked after every travel.

Function in the menu `SYSTEM\SLC4-INTERN\TÜV-TESTING`:

Function UCM with drive:

By activating the function with the button [CR] simulates an unintended car movement (UCM) with the help of the drive. The drive enhances the acceleration from the level if necessary.

Function UCMwithoutDrive:

By activating the function with the button [CR] simulates an unintended car movement (UCM) without the help of the drive. After activation, no more calls, no door reversing, no door open button and no releveilling be admitted. A way spin from the floor level can then be effect by hand.

Function in the menu `SYSTEM\SLC4-INTERN`:

Function RESET UCM:

If the controller detects an unintended car movement (UCM), you can acc. to the claim of EN 81-1/ -2/ -20 reset it only by activating this menu item or by pressing the UCM reset button.

For the control of various UCM components the SLC4 has multiple in-/outputs (see page 65).

12.3. Guidelines for testing the UCM function

During the following tests, only the function can be checked. The resulting maximum possible stopping distance may not be tested. It must be calculated by the lift manufacturer previously from the data of the used components.

12.3.1. Check of the test function for the blocking magnet at speed governor

See also circuit description in the manual SHB100 or MULTIBUS-SHB.

Only perform if parameter `UCM variant` = UCM-GB1.

1. Allow the lift to enter a normal level.
2. Turn off the control.
3. Disconnect the supply line to Y6 (blocking magnet).
4. Switch the control on again.
5. Give a call to another level.
6. A travel may not occur. A "UCM error SHB" is reported, the lift is blocked.
7. Turn off the control.
8. Reconnect the supply line to Y6 (blocking magnet).
9. Bridge + 24V and A1 of the coil of K35 (SLC4 output VIO +1687).
10. Turn on the control again.
11. A "UCM error SHB" is reported, the lift is shut down.
12. Turn off the control.
13. Remove the bridge again.
14. Disconnect the coil of K34 (SLC4 output VIO +1695).
15. Turn on the control again.
16. Give a call to another level. The lift travels to this level.
17. After stopping in the level, K36 can not drop fast enough. A "UCM error SHB" is reported, the lift is blocked.
18. Turn off the control.
19. Reconnect the coil.

Additional tests acc. to EN 81-1/-2:

1. Disconnect the supply line to VIO 1597.
2. Turn on the control.
3. Give a call to a different level. The lift travels to this level.
4. After stopping in the level a "UCM SHB error" is reported, the lift is blocked. The input VIO 1597 was not deactivated during the travel.
5. Turn off the control.
6. Connect the supply line to VIO 1597 again.
7. Switch on the control.
8. Let the lift normally enter a level. No error may be reported.

Additional tests acc. to EN 81-20:

20. Disconnect the supply line to K1.
21. Turn the control on.
22. Give a call to a different level. The lift travels to this level.
23. After stopping in the level a "UCM SHB error" is reported, the lift is blocked. The input to K1 was not deactivated during the travel.
24. Turn off the control.
25. Connect the supply line to K1 again.
26. Turn on the control.
27. Give a call to a different level. The lift travels to this level.
28. Turn off the control.
29. Disconnect the supply line to K2.
30. Turn on the control.
31. Give a call to a different level. The lift travels to this level.
32. After stopping in the level a "UCM SHB error" is reported, the lift is blocked. The input to K2 was not deactivated during the travel.
33. Turn off the control.
34. Disconnect the supply line to K2 again.
35. Turn on the control.
36. Give a call to a different level. The lift travels to this level.

12.3.2. Check of the test function for the blocking magnet at speed limiter

See also the circuit description in the SHB100 or MULTiBUS-SHB operating instructions.

Only to be carried out with parameter UCM variant = UCM-GB2.

1. Allow the lift to enter a normal level.
2. Turn off the control.
3. Disconnect the supply line to Y6 (blocking magnet).
4. Switch the control on again.
5. Give a call to another level.
6. A travel may not occur. A "UCM error SHB" is reported, the lift is blocked.
7. Turn off the control.
8. Reconnect the supply line to Y6 (blocking magnet).
9. Bridge + 24V and A1 of the coil of K35 (SLC4 output VIO +1687).
10. Turn on the control again.
11. A "UCM error SHB" is reported, the lift is shut down.
12. Turn off the control.
13. Remove the bridge again.
14. Disconnect the coil of K34 (SLC4 output VIO +1695).
15. Turn on the control again.
16. Give a call to another level. The lift travels to this level.
17. After stopping in the level, K36 can not drop fast enough. A "UCM error SHB" is reported, the lift is blocked.
18. Turn off the control.
19. Reconnect the coil.

Further tests according to EN 81-1 /-2:

20. Bring + 24V to the terminal of VIO 1597.
21. Turn on the control.
22. Give a call to another level. The lift travels to this level.
23. After a stop in the level a "UCM error SHB" is signaled, the lift is blocked. Input VIO 1597 did not become inactive while driving.
24. Turn off the control.
25. Remove the jumper from the terminal with the VIO 1597.
26. Turn on the control.
27. Allow the lift to enter a normal level. No error may be reported.

Further tests according to EN 81-20:

20. Disconnect the supply cable to K1.
21. Turn on the controller.
22. Give a call to another level. The lift goes to this level.
23. After a stop in the level a "UCM error SHB" is signaled, the lift is blocked. The input to K1 did not become inactive while driving.
24. Turn off the control.

25. Reconnect the supply cable to K1.
26. Turn on the control.
27. Give a call to another level. The lift travels to this level.
28. Turn off the control.
29. Disconnect the supply cable to K2.
30. Turn on the control.
31. Give a call to another level. The lift travels to this level.
32. After a stop in the level a "UCM error SHB" is reported, the lift is blocked. The input to K2 did not become inactive while driving.
33. Turn off the control.
34. Reconnect the supply cable to K2.
35. Turn on the control.
36. Allow the lift to enter a normal level. No error may be reported.

12.3.3. Check of a UCM case with blocking magnet at speed governor

See also circuit description in the manual SHB100 or MULTIBUS-SHB.

1. Check the zone length:
 - Circuit with 1x SHB (parameter UCM Variant = UCM-GB1):
Check the switching length of the zone switch I (S81). This must match with the previously calculated UCM zone length. If the UCM zone switch II (S82) is an output of SLC4, the parameter SETTINGS\MONITORING\ZONE SWITCH\Length +/- must correspond with this switching length.
 - Circuit with 2x SHB (parameter UCM Variant = UCM-GB2):
Check the switching length of the UCM zone switch I (S85). This must match with the previously calculated UCM zone length. The parameter UCM zone must correspond with this switching length.
2. Make a normal travel to a level.
3. Make a travel in the direction of the lifts naturally mechanical travel direction, i.e. upwards with an empty traction sheave lift. Disconnect the drive at rated speed by turning off the main switch. The contactor or timer K36 must remain energized after the break at least as long until the lift has stopped; the lift may not be caught by safety catch. The switch-off time of K36 is normally set to approx. 4 seconds for that. This may be necessary extended or shortened with the jumper on A2 (capacitor assembly) or on the relay.
4. Make a normal travel to a level. The level should be chosen so that in case of UCM a large acceleration occurs, so when a traction sheave lift at an empty car the penultimate top level.
5. Let the doors close. Make sure that there are no persons in the car!
6. Start the UCM movement:
 - Testing without drive (optional only or GB0):
Activate in the control menu SYSTEM\SLC4 INTERNAL\TÜV-INSPECTION the function UCM wout drive (by 1x pressing [CR]). No more calls, no door reverse functions, and no relevellings are now approved. Exit the menu to see the status display. It appears UCMtest wout drv. Release the brake. You simulate an unintended car movement thus by way spin from the level.
 - Testing with drive (not possible with GB0):
Activate in the control menu SYSTEM\SLC4 INTERNAL\TÜV-INSPECTION the function UCM with drive (by 1x pressing [CR]). No more calls, no door reverse functions, and no relevellings are now approved. Exit the menu to see the status display. It appears UCMtest with drv. If the drive control has a test function for UCM-A3 proposed by them as maximum speeds up (e.g. frequency converter type SP by Control Techniques), you can enable this now in addition, observe the safety instructions of the system manufacturer! Give a call via the quick menu of SLC4 control ([minus] key until "call up" or "call down", then [CR]). Thus, you simulate an unintended car movement out of the level with the "help" of drive.
7. UCM detection, release and braking:
 - Circuit without SHB (parameter UCM Variant = UCM-GB0):
The locking magnet Y6 has fallen already at a standstill of the lift in the level. When the lift moves now, the catch must move at the latest after the release distance of the speed governor (e.g. 250 mm, depending on the type) and must stop the car. Has the car moved more than set in the parameter UCM zone, the control reports UCM detected.
 - Circuit with 1x SHB (parameter UCM Variant = UCM-GB1):
If the door zone is exited (K81 turns off), the locking magnet Y6 turns off immediately, the control shows UCM recognized and the catch must move at the latest after the release distance of the speed governor (e.g. 250 mm, depending on the type) and must stop the car.



- Circuit with 2x SHB (parameter UCM Variant = UCM-GB2):
If the door zone is exited (K1 and K2 of A12 turn off), the locking magnet Y6 turns off immediately, the control shows `UCM recognized` and the catch must move at the latest after the release distance of the speed governor (e.g. 250 mm, depending on the type) and must stop the car.
8. The control locks now any further movement. Inspection is no longer possible. Return control is still allowed. Switch off the control and after some waiting on again. The control must show again `UCM recognized` and there are all movements blocked according to EN 81-1 /-2:1998 + A3:2009.
 9. Reset now the lockout by activating the function `UCM reset` in the menu `SYSTEM\SLC4 INTERNAL` (there is a safety query, confirm with [CR]) or alternatively by a UCM reset button in the control.
 10. Now the lift may be exempted from the catch manually or with return control.

12.3.4. Check of a UCM case with certified brake

See also circuit description in the manual SHB100 or MULTIBUS-SHB.

1. Check the zone length:
 - Circuit with 1x SHB (parameter UCM Variant = UCM-ZB1):
Check the switching length of the zone switch I (S81). This must match with the previously calculated UCM zone length. If the UCM zone switch II (S82) is an output of SLC4, the parameter `SETTINGS\MONITORING\ZONE SWITCH\Length +/-` must correspond with this switching length.
 - Circuit with 2x SHB (parameter UCM Variant = UCM-ZB2):
Check the switching length of the UCM zone switch I (S85). This must match with the previously calculated UCM zone length. The parameter UCM zone must correspond with this switching length.
2. Make a normal travel to a level. The level should be chosen so that in case of UCM a large acceleration occurs, so when a traction sheave lift at an empty car the penultimate top level.
3. Let the doors close. Make sure that there are no persons in the car!
4. UCM detection, release and braking:
 - Testing without drive (optional only):
Activate in the control menu `SYSTEM\SLC4 INTERNAL\TÜV-INSPECTION` the function `UCM wout drive` (by 1x pressing [CR]). No more calls, no door reverse functions, and no relevellings are now approved. Exit the menu to see the status display. It appears `UCMtest wout drv.` Release the brake. You simulate an unintended car movement thus by way spin from the level.
 - a) If only the normal brake is used for UCM, open it and close it again immediately when the braking contactor turn off!
 - b) If a separate emergency brake is used, open the normal brake. The lift must not move. Now open the emergency brake and close it again immediately when the braking contactor turn off! Then close also the normal brake.
You simulate an unintended car movement thus by way spin from the level..
 - Testing with drive:
Activate in the control menu `SYSTEM\SLC4 INTERNAL\TÜV-INSPECTION` the function `UCM with drive` (by 1x pressing [CR]). No more calls, no door reverse functions, and no relevellings are now approved. Exit the menu to see the status display. It appears `UCMtest with drv.` At circuit with 1x SHB you have a disconnect terminal in the safety circuit (see wiring diagram behind the door lock contacts): open it. If the drive control has a test function for UCM-A3 proposed by them as maximum speeds up (e.g. frequency converter type SP by Control Techniques), you can enable this now in addition, observe the safety instructions of the system manufacturer! Give a call via the quick menu of SLC4 control ([minus] key until `call up` or `call down`, then [CR]). Thus, you simulate an unintended car movement out of the level with the "help" of drive. When leaving the zone (A11) or the UCM zone (A12) the safety circuit must open immediately and the brake must stop the car. Close the disconnect terminal again.
5. The display shows `UCM recognized` and the control locks now any further movement. Inspection is no longer possible. Return control is still allowed. Switch off the control and after some waiting on again. The control must show again `UCM recognized` and there are all movements blocked.
6. Reset now the lockout by activating the function `UCM reset` in the menu `SYSTEM\SLC4 INTERNAL` (there is a safety query, confirm with [CR]) or alternatively by a UCM reset button in the control.



12.3.5. Check of a UCM case with hydr. drive and certified valve system

See also circuit description in the manual SHB100 or MULTIBUS-SHB.

1. Check the switch length of the zone switch I (S81). This must match with the previously calculated UCM zone length. When the UCM zone switch II (S82) is an output of SLC4, the parameter `SETTINGS\MONITORING\ZONE SWITCH\Area +/-` must correspond with the length of this switch.
2. Make a normal travel to a level.
3. Let the doors close. Make sure that there are no persons in the car!
4. Detection of UCM, release and braking:
 - Testing without drive:
Activate in the control menu `SYSTEM\SLC4 INTERNAL\TÜV-INSPECTION` the function `UCM wout drive` (by 1x pressing [CR]). No more calls, no door reverse functions, and no relevellings are now approved. Exit the menu to see the status display. It appears `UCMtest wout drv.`
Press the emergency drain until the cabin leaves the flush area and the UCM detection trips. "UCM detected" is shown in the display.
You simulate an unintended car movement thus by way spin from the level.
5. The display shows `UCM recognized` and the control locks now any further movement. Inspection is no longer possible. Return control is still allowed. Switch off the control and after some waiting on again. The control must show again `UCM recognized` and there are all movements blocked.
6. Reset now the lockout by activating the function `UCM reset` in the menu `SYSTEM\SLC4 INTERNAL` (there is a safety query, confirm with [CR]) or alternatively by a UCM reset button in the control.



12.3.5.1. Valve end position monitoring

Parameters:

SETTINGS/DRIVE 4/ValveMoni: y/n / monitoring - enable or disable

SETTINGS/DRIVE 4/ValveMoniTm: 4000 [ms] / query time after starting

SETTINGS/MONITORING/UCM/UCM variant: (6) UCM-DSV

VIO function numbers:

VIO 10 = end position contact 1

VIO 11 = end position contact 2

Description:

The monitoring of the valve end position contacts is done like the brake levers monitoring before and during the travel. Before the travel, the inputs must be active (contacts closed), and during the travel downwards the inputs must be inactive after the query time (contact open). During the travel upwards is no monitoring of the contacts.

If there is an error, the lift is locked and is lowered to the lowering level.

If an error is detected during the travel, an emergency stop of the lift is carried out.

The error is documented with the message F-VALVELIMITSW in the stack memory.

Special features:

In the return and inspection operating modes there is no monitoring of the contacts.

While lowering travel, which is initiated by a locked lift, there is also no further monitoring of the contacts.

If the parameter SETTINGS/DRIVE 4/ValveMoniTm is set to zero, there is no query during the travel.

The examination of the UCM case can be performed only with the function "Test without drive".

12.3.5.2. iValve lift control valve

Parameters:

SETTINGS/MONITORING/UCM/UCM variant: (8) UCM iValve

Function number:

VIO 348 = SMA monitoring

Description:

Monitoring is performed only once after start of the travel as described in the installation and commissioning instructions of the company Bucher.

If the control recognizes an error after starting a travel, the error message F-SHB UCM cause 9 is written in the stack memory and the lift will be locked. It performs also no return travel. The inspection and return travels acknowledge the error and remain in function.

If the control recognizes an error after a travel, the error message F-SHB UCM cause 10 is written in the stack memory and the lift will be locked. It performs also no return travel. The inspection and return travels acknowledge the error and remain in function.

The monitoring takes place also at the return travel.

12.3.5.3. NGV A3 electronically controlled valve control block

Parameters:

SETTINGS/MONITORING/UCM/UCM variant: (11) UCM NGV 1

Function numbers:

VIO 265 = ready contact

VIO 266 = run contact

Description:

The monitoring of the contacts ready and run please refer to the manufacturer's manual of the valve control block NGV A3.

13. DISK DIGITAL SHAFT ENCODING

The small dimensions of the digital shaft encoding system allows an assembly to any known lift system by simply clamping it to the car guide rail. In order to be able to provide the right system for all applications and requirements, we offer various encoders and mechanical systems. Upon demand (relevelling or approach with early opening doors) additional magnet switches for the zone monitoring are needed. By means of the digital shaft encoding a very high stopping accuracy is achieved. Depending on the system the resolution is 0.07 to 1.0mm through the whole travel height.

Various DISK-systems

There are various mechanical systems available, each optimized for low, medium and high travel heights as well as for the Ex-sector. All parts fitting to any size of car guide rails are included in the supply.

Type	Mechanical feature	max. travel height in m	max. rated speed of the lift in m/s	Encoder values per meter of travelling distance	Resulting resolution in mm
DISK-1	Continuous toothed belt	45	1,6	15368	0,07
DISK-2	Continuous toothed belt	70 *	4	8940	0,11
DISK-3	Continuous toothed belt	95 *	4	8940	0,11
DISK-4(Ex)	Continuous toothed belt, Explosion proof version	70 *	4	8692	0,12
DISK-5	Spring-return rope based encoder system	30 *	4	13653	0,07
DISK-6	LASER	70	4	1000	1
DISK-10 DISK-10-W DISK-10-Ex	Knobbed belt , type W in angular design for lifts with cantilevered frame, type Ex for ex-proof lifts	70 *	4 (Type Ex = 2)	10243	0,1
DISK-10A	Knobbed belt , compatible with DISK-10	90*	4	10243	0,1
DISK-10A-W	Knobbed belt , type W in angular design for lifts with cantilevered frame, compatible with DISK-10-W	70*	4	10243	0,1

The DISK systems 1, 2, 3 and 4 are no longer used since 2007, the DISK system 6 since 2010. The data are given only for information.

* With the rated speed of more than 1,6 m/s the max. travel height is reduced by the length of the extended overtravelling and undertravelling distance.

Special designs for extended travel height or increased travelling speed are possible.

Spring tension in mm (measured without eyes!)	DISK-1	DISK-2	DISK-3	DISK-4	DISK-10 DISK-10-W DISK-10-A DISK-10A-W DISK-10-Ex
Encoder in shaft headroom	500	340	340	340	280
Encoder in shaft pit	550	370	Not possible	370	280



For the installation and maintenance of the DISK systems please observe the installation instructions supplied along with the mechanical system! Kindly keep these installation instructions on a safe place. The instructions for maintenance are described in Chapter "IV Maintenance".



Use only the **original** cable for installation.

Otherwise faults may occur upon data transmission!

In the following diagram the DISK-10A mechanism is shown as an example. DISK-10A represents the system that is most frequently used. The mechanical dimensions have been chosen so, that DISK-10A can be quickly mounted at all lift types known to us. The accuracy of the detection of the car position is here **0.1 Millimeter**



The spring should be checked annually.

The spring shall be loaded in accordance with the separate installation instruction! If the spring load is too high, the service life of the encoder will be reduced. If it is too low, the knobbed belt may jump over the grooves of the encoder pulley.

14. ZONE SWITCH ASSEMBLY

In lifts that are equipped with re-levelling or early opening door functions, the safety circuit for the monitoring of the door-unlocking-zone SHB is included in the control. There are two possibilities for the connection to the two channels:

- 1) Channel I is a magnet switch, channel II is an output of the control computer (path information from DISK). This variant is the standard for lifts with car doors.
- 2) Both channels are realized by means of magnet switches. This variant is the standard for lifts without car doors.

Important

1. Magnet switches must be treated carefully. If magnet switches are subject to a strong impact, e.g. by dropping it on erection, you should replace as a precaution the switch inserts against new ones! Otherwise the function might get affected later on.
2. **Only original magnets shall be used.**
3. Magnets **shall be fixed with non-magnetic screws only**, e.g. of brass.



Zone switches and holders

The zone assemblies are manufactured in different variants (IP33, IP67, Ex, slotted magnet switch IP67, ...). They are characterized by flexibility and a very small size.

BN85	MKF24	Ex-dS93	MKF30
IP33 (zone length ± 50 to ± 300 mm)	IP67 (zone length ± 50 to ± 300 mm)	Ex (zone length ± 50 to ± 300 mm)	Slotted magnet switch IP67 (zone length ± 50 mm, ± 100 mm, ± 150 mm, ± 200 mm, ± 250 mm)
			
- lateral track displacement of the magnet to switch max. ± 5 mm! - operating distance of the magnet to the switch 4-8 mm - max. speed 3 m/s - protection class IP 33 - switching voltage max. 60VAC/DC ohmic! - switching current max. 1A ohmic! - switching capacity max. 30 VA/W	- lateral track displacement of the magnet to switch max. ± 8 mm - operating distance of the magnet to the switch 5-15 mm - protection class IP67, connection IP00 - switching voltage max. 250 VAC/DC ohmic! - switching current max. 0,8A ohmic! - switching capacity max. 80 VA/W - incl. LED indicators	- lateral track displacement of the magnet to switch max. ± 15 mm - operating distance of the magnet to the switch 5-20 mm - EEx d IIC T6 - protection class IP 68 - switching voltage max. 250 VAC/DC ohmic! - switching current max. 1,5A ohmic! - switching capacity max. 50 VA/W	- lateral track displacement of the magnet to switch max. ± 4 mm - depth of immersion the switch flag 32mm ± 5mm! - protection class IP 67 - switching voltage max. 230 VAC/DC ohmic! - switching current max. 2A ohmic! - switching capacity max. 40 VA/W

Enclosed:
1x spacer to bridge a rail joint up to 300 mm



15. FLUSH SWITCH FOR ELECTRONIC LIFT ATTENDANT

Only if the control system is to be equipped with an electronic hoist function, additional flush monitoring with a precisely working, dirt-resistant forked light barrier must be installed.

Fork light barrier and console

With the standard attachment, the range of $\pm 10\text{mm}$ required by EN 81-1 / -2 / -20 is realized. The $\pm 20\text{mm}$ monitoring after re-levelling, which is still required by EN 81, is carried out by evaluating the absolute encoder of the DISK. Optionally, the monitoring can also be done by the mounting kit with a double forked light barrier. The metal flags on the levels remain the same.

Standard mounting kit:

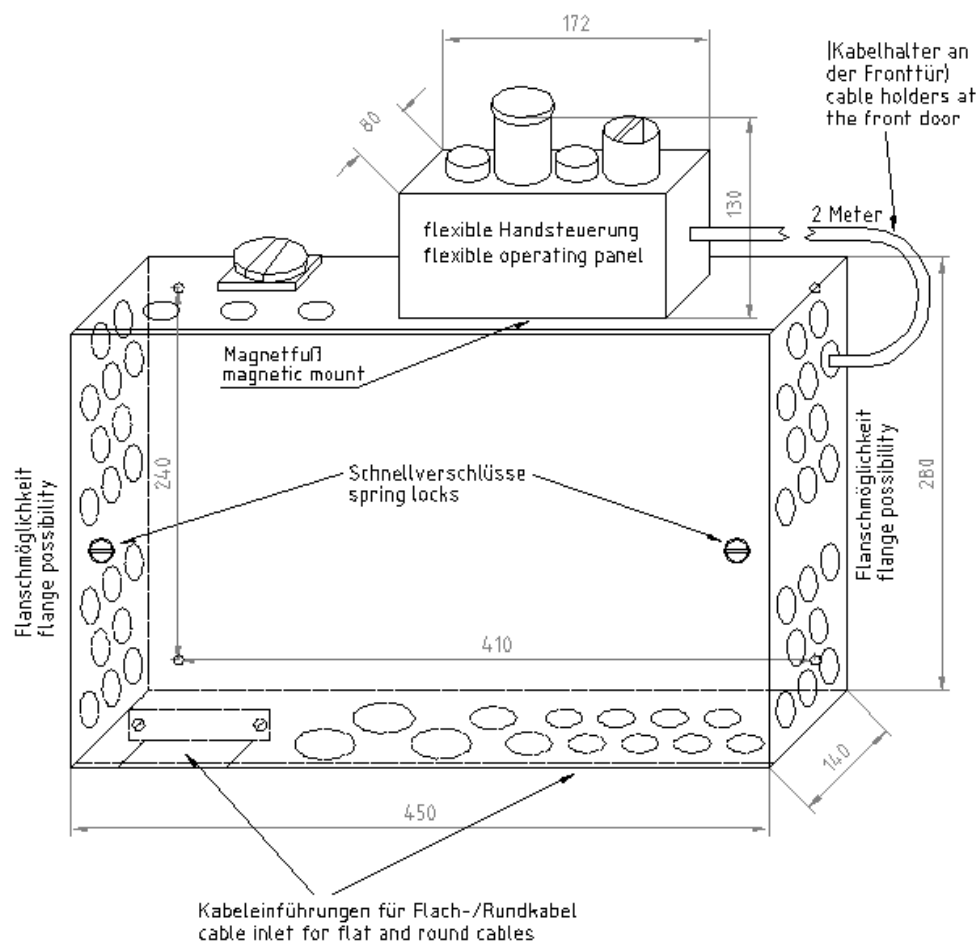
1x forked light barrier IP67 for monitoring the $\pm 10\text{mm}$ ($\pm 20\text{mm}$ done by DISK)



- lateral track offset max. $\pm 7\text{mm}$
- immersion depth of the switching lug $15\text{ mm} \pm 7\text{mm}$
- degree of protection IP 67
- zinc die cast housing
- power supply 10-30 VDC
- output voltage = voltage supply less (max.) 2.8V
- switching current max. 0.2 A ohmic, plus switching (adjustable)
- switching hysteresis 0.2 mm
- external light-resistant up to 20,000 lux (constant light)
- high power reserve in case of pollution

16. CAR TERMINAL BOX

Here below the STRACK standard terminal box (KKL) acc. to EN 81-1/ -2 is shown. It will be fixed on the car roof. In the KKL line-up terminals are installed and probably some modules like relay coupler and LON bus-modules. The inspection control device will be connected with the box by a 2 meter long cable and can be placed everywhere by means of the magnetic mount. The emergency stopping switch is protected against "outwitting" and is provided with a switching sequence indicator acc.to EN 81. The spring-locks at the front side need to be turned only by 90° to let them snap out. Upon relocking simply press in the spring-lock screw with your thumb.



Note: Illustration of the control unit for EN 81-1 / -2, different for EN 81-20.

III. MODES OF OPERATION

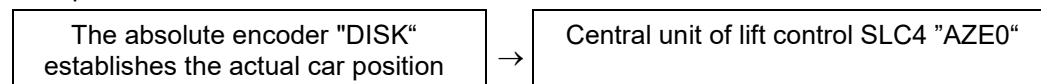
1. DIGITAL SHAFT ENCODING

Besides of the digital absolute shaft encoding system DISK, the control does not need any further information for the positioning of the lift car. Even with high-speed lifts and in case of near landings resp. short landing distances, no (magnet-) switches will be required. Magnet switches are needed for safety reasons only for the recognition of the door unlocking zone (function relevelling / approach with early opening doors) or the deceleration control circuit (high-speed lifts faster than 2 m/s).

The electrical positioning accuracy is less than one millimetre. The real positioning accuracy of the lift however depends also on the mechanical properties of the installation (brake, guiding system, (un-)regulated, etc.). In connection with certain VV-controllers and nearly all frequency inverters, the direct approach is possible simply, without any further reference switches owing to the very fast reaction time of the central unit „AZE0“ (very much faster than 1 millisecond). DISK offers the highest installation comfort, stopping accuracy and appearance (no visible switches in case of panorama lifts). There are no time and material consuming vanes to be mounted in the shaft and no "forest" of magnet switches is mounted on the car.

The functional principle

To any lift control the actual position of the lift car must be known. Normally, the control obtains these information from switches mounted in the lift shaft. This is not the case with DISK. No switches at all are required.



The absolute encoder applied here is able to establish the actual car position immediately, without reference switch and without slip. Owing to the system miscounting is not possible. Therefore, no loss of information, even not in the case of a power failure. All advantages of digital shaft encoding are becoming effective and, moreover, by the application of absolute encoders it is granted even in the case of a power failure that the actual car position will not get lost.

1.1. Automatic deceleration paths

As the correct level distances are known to the control, the deceleration paths can be automatically calculated in the case of short travelling distances. The correct way of operation however depends decisively on the settings made on occasion of putting the lift into operation. The settings in menu `Settings\Drive basically` must be carried out very accurate.



One of the decisive advantages of the system is that it is now absolutely independent from level distances. Irrespective whether the level distance is 5 cm or 20 m, the travel to the destination will always be the fastest possible. Moreover, an electrical stopping accuracy of less than 1 mm is granted (mechanical inaccuracies of the lift installation are not considered). The control always needs only one fast travelling speed, even with high-speed lifts.

Attention!:



The special processing of short-distance resp. speed-arc travel in the drive control must be switched on.

2. VIRTUAL INPUTS/OUTPUTS VIO

Basically, all control functions are provided in any control unit. We call the inputs/outputs needed for these control functions **virtual inputs/outputs resp. VIO**. These virtual inputs/outputs bear *function numbers*. The virtual inputs/outputs can be simply assigned to any terminal. This terminal may be located on the central unit AZE0, on the supplementary card AZE1-4 or on the bus modules (e.g. „ULON-x“). The assignment is made automatically by selection of a so-called template (see in farther below) and/or individually in menu `SETTINGS\VIO-ASSIGNMENTS`. By means of the sign („+“ or „-“) it is indicated whether the input resp. output shall be switching inverted or not. This will result in a comprehensive functionality and it saves a lot of wiring work and of materials like relay couplers etc. For safety reasons, modifications made in menu `SETTINGS\VIO-ASSIGNMENTS` will become effective only after leaving this sub-menu and terminating of the lift travel.

3. LON BUS

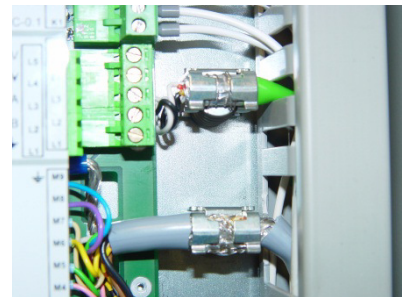
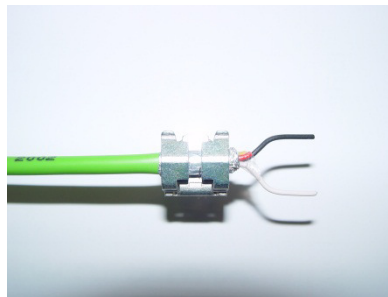
The here applied serial 2-wire LON bus is an option. The control can be conventionally set up as a central system without LON bus. It however can use the LON bus, for example, between car and control and anywhere for the simple connection of devices.

The here applied 2-wire LON field-bus corresponds physically to the FTT-10A - specification of Echelon. The bus transfer rate is 78000 bits per second.

This design shows a multitude of advantages against all other usually applied physical bus connections (e.g. RS 485/CAN). On application of FTT-10A the fitter must not adhere to a particular bus structure (star-type, bus-type, loop-type...). Branch circuits can be laid as per demand. Both bus connections A and B can be interchanged. In brief, you can conduct the bus lines exactly as required by local conditions. This will considerably reduce the planning cost, and later on the expenses for trouble-shooting. You must not be specially trained to interconnect the bus modules with each other. For the bus connections, however, you have to use exclusively the prefabricated plug-fitted cables supplied by STRACK LIFT AUTOMATION GmbH.

As transmission protocol the LONTALK protocol is used. This protocol secures the fault-free and interference-safe data transmission on the field-bus. The reaction times of the bus lie within the range of 10 to 100 ms. However, owing to the transmission protocol no maximum reaction time can be guaranteed.

Examples for the connection of the STRACK LON bus cable:



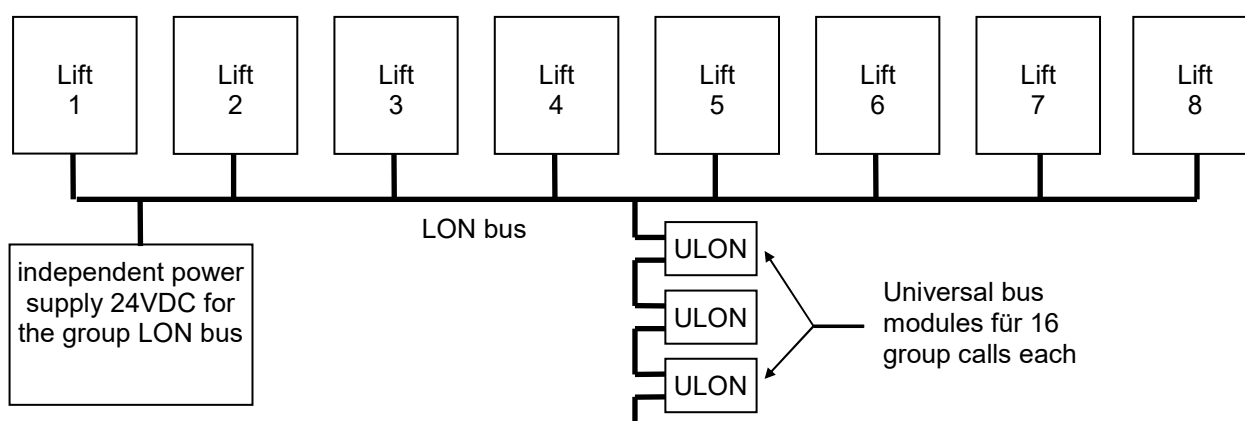
How you can **set up and replace the bus modules** you will learn on page 167.

4. GROUP OPERATION

Lift groups with control SLC4 are working with high effectiveness. Generally, all control computers are capable to operate groups. They don't need any special supplementary cards or additional so-called group selectors. Each control in a lift group decides by itself whether it will respond to a registered group call or not. This decision is based on group travelling-time tables that each group control actualizes and communicates to the other controls in intervals of 500 ms. The group travelling-time tables contain the actually measured travelling times from each level to each level. Additionally, the time-losses at the doors are calculated on each level on the basis of the average of the last 51 stops on the respective level ("door time-loss" = hold-up time at the level in normal operation and the availability of further calls, caused by door run-times, door open times, entering and leaving times of the users...).

This procedure shows, among others, the following **advantages**:

- No further settings are to be made.
- Therefore, setting errors are avoided.
- The group recognizes automatically any modification of use as the losses of travelling time and door-time losses are determined again and again, permanently and precisely.
- Varying lift speeds, door run-times, door open times etc. are considered automatically.
- Different level distances owing to different group levels are considered automatically.
- Different landing doors resp. access sides of the lifts are considered automatically, as well as temporarily locked entrances.



All group calls (also group priority calls etc.) are connected to the LON bus via the ULON-16 bus moduls.

Thus, all marketable conventional or ready-for-plugging call panels can be used. The ULON-16 may be installed in the call panels, in the shaft or in one of the control cabinets (e.g. lift 1). To each ULON-16 16 calls can be connected. The assignments are free parameterizable. If a group call is registered, the signal from the respective ULON-16 goes to all controls. Any control active in the group will acknowledge the call to the ULON-16. Now, each control decides by itself whether it will respond to this group call or if another lift will be doing faster.

For **putting into operation or modification** of groups see page 176.

5. CONTROL MODES AND FUNCTIONS

5.1. Distribution of special operating mode priorities

The following table provides an overview on the controlling sequence in the case of several special modes to be managed at a time. Where "equal" is entered, the operating modes are co-functioning with the same priority. Please read them in the following way: "Line takes priority over column".

Example in line 5:

Fire emergency mode takes priority over monitoring of lighting mains. That means, in case of a car light failure the fire emergency mode continues to work.

Homing travel takes no priority over internal priority. That means, in the case that the internal priority is activated the homing travel will not be initiated.

→ ...takes priority over... →	Fire- men ser- vice emer- gency <u>eva- cua- tion</u>	Fire- men <u>ser- vice</u>	Emer- gency power <u>eva- cua- tion</u>	Emer- gency power <u>oper- ation</u>	Fire emer- gency mode	Attenda nt ope- ration	Re- mote shut- down	Ser- vice ope- ration	Car sepa- rating door	Inter- nal pri- ority mode	Moni- toring of car light	Pri- ority of exter- nal call	Ho- ming travel	Limit switc h on top
Firemen <u>evacuation</u>	X	yes	no	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	no
Firemen <u>service</u>	no	X	no	equal	yes	yes	yes	yes	yes	yes	yes	yes	yes	no
Emergency power <u>evacuation</u>	yes	yes	X	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Emergency power <u>op.</u>	no	equal	no	X	no	equal	no	equal	equal	equal	no	equal	equal	no
Fire emergency	no	no	no	yes	X	yes	yes	yes	yes	yes	yes	yes	yes	yes
Attendant operation	no	no	no	equal	no	X	no	no	yes	yes	yes	yes	yes	no
Remote shutdown	no	no	no	yes	no	yes	X	no	no	no	yes	yes	yes	no
Service operation	no	no	no	equal	no	yes	yes	X	yes	yes	yes	yes	yes	no
Separating door in car	no	no	no	equal	no	no	yes	no	X	yes	yes	yes	yes	no
Internal priority	no	no	no	equal	no	no	yes	no	no	X	yes	yes	yes	no
Monitoring of car light	no	no	no	yes	no	no	no	no	no	no	X	yes	yes	no
Priority of external call	no	no	no	equal	no	no	no	no	no	no	no	X	yes	no
Homing travel	no	no	no	equal	no	no	no	no	no	no	no	no	X	no
Limit switch on top	yes	yes	no	yes	no	yes	yes	yes	yes	yes	yes	yes	yes	X

Note! Overload and thermistor have highest priority and are carried out independently from the priorities described above.

5.2. Door operator control

The door operator control has been integrated into the lift control, i.e. all switches needed for controlling the door operator like the limit switches "door open/closed" and the connections for the door motor(s) are directly connected to the control. By means of parameters all available types of doors can be set conveniently. Door controllers are handled by the lift control in correspondence with the specific device. Here, the door reversing contacts, e.g., photo-cell and door-open key should not be connected to the door controller but to the lift control directly. Special equipment like **lobby scan** can be connected directly to the control computer without any additional appliances.

The operating time (duty cycles of the respective door motor) is measured. In the case of doors without limit switches, only the "door closed" position can be monitored as the signal "door is open" will not be available. The closing of the door in this case is monitored by interrogation of the door contacts in the safety circuit.

After tripping of the monitoring feature the whole control remains functional. All internal and external calls are cancelled. There will be no self-locking action. Upon input of a new command the control goes automatically back into normal operation and tries again to move the doors.

5.3. Doors opening on approach

At the deceleration point of the destination level the lift decelerates to approaching speed. After arriving in the door-unlocking-zone the doors are shunted by the "protective circuit for the monitoring of the door-unlocking-zone" and the unlocking magnet drops. After elapse of the set time period for "retarded door opening" the doors will open. After reaching level position the lift stops. If the protective circuit SHB has been deactivated by the user, the function "doors opening on approach" will be inoperable.

Note

By parameter "retarded door opening" the start of door opening of each door can be easily set after reaching the zone, so as to, as an example, cur the time of travelling with doors open in the case of slowly approaching lifts with fast opening doors.

5.4. Nudging

If control identifies an interruption of the light barrier for more than the default nudging time (parameter Nudging see page 124) and if a travel command is given, output Nudging (VIO No. 133, 134) is set and the door closed ("Door motor closing" is set VIO No. 130, 131). The light barrier is out of function as long as output Nudging is active. If door movement reverses (reversing contact, door-open key operated, internal command, external call etc.) or if the door is closed, output "nudging" will be disabled and the time reset. A message "nudging" is saved in the stack memory in order to exclude that there is a defective photo cell. If the parameter "nudging" is 0, the function is not active. The function "nudging" is inactive with the following special functions:
fire emergency control, firemen control, hazardous freight, evacuation with emergency power, loading time.

In case of external priority the nudging function active only with lift on external priority level (calling).

5.5. Door sluice

With, for example, an opposite entrance to the open air, to an operating theatre or a warehouse and the door limit switch of the automatic door drive is closed, the main side (parameter `DOOR SLUICE` see page 129) is opened at first in case of external calls at both sides or internal calls or operation by door-open-key. If the door at the main side is reclosed, the opposite door opens automatically if there is a call from the other side. Only then a possibly registered travel command is carried out. The external and internal calls (no group calls and no calls for both entrance sides) of the waiting entrance side are indicated with a blinking signal.

Parameterizing is made individually for each level. The default value is "(2) both doors", i.e. the sluice operation is not active. If, e.g., door A is considered as the main side on level 5, for level 5 (see page 129) "(0) door A" must be set.

If the waiting door must wait longer than the door timeout period (see page 135 parameter `DoorTimeout`), a fault message is set in the stack memory (see page 76) with a note which door is not closed (e.g. "limit switch-closed door B timeout fault").

A door not actively closed (limit-switch closed is not active) is automatically closed by the other door

before this one opens. This condition can occur, for example, after a computer reset or in case of a door fault. Closing of doors is simultaneously.

Attention!

For fault-free operation the following conditions must be fulfilled:

- automatic doors with limit switch-closed (optionally with limit switch-open)
- door dwelling time should not be 0 as otherwise one door remains permanently open
- parameter "limited door opening" (see page 121) must be 0, as otherwise both doors might run open for maximum 1 second.

The sluice function is not active with the following operating modes:

external priority, fire emergency control, firemen service, attendant operation, service switch, inspection, return, actual level = 0, remote shut-down, car light monitoring, car separating door, transport of hazardous goods, emergency power evacuation (no emergency power operation), parking and lowering.

5.6. Car separating doors

If there is a car separating door the monitoring contact is connected to a computer input (VIO No. 57). The key switch for shunting the car separating door will also be connected directly to an input of the computer (VIO No. 58).

If the contact of the separating door is operated, the lift remains stopped at the actual level (with doors open). Should the separating door contact be opened during operation, the lift will be stopped at the next level and the remaining calls will be cancelled. Only when the key switch for shunting the separating door is switched on, the lift can be operated by internal calls (only one internal call at a time can be set). During the travel no further internal call can be set. The external control remains OFF.

If the contact of the separating door is not operated, the shunting switch has no function.

5.7. Relevelling

Relevelling will be initiated when relevelling in menu `SETTINGS\RELEVELLING` has been activated, a protective circuit SHB has been installed and activated in menu `SETTINGS\MONITORING`, and the protective circuit SHB is signalling "enabled" to the control.

As a standard, a **hysteresis** has been established. Thus you may, for example, start the relevelling function upward at -7 mm and terminate it at -2 mm only. The values can be set separately for upward and downward travel.

Remark:

With traction lifts, the relevelling mode works only with just opening or already open doors. If the last door is closing with further calls still active or all doors are closed, no relevelling will be effected resp. relevelling will be discontinued.

5.8. Internal call priority

For initiating an internal priority trip the key switch (VIO No. 48; 59) in the car must be set in ON-position. That way, all registered external calls will be cancelled. If the internal priority mode is switched on while travelling and no new internal call for the same direction will be registered immediately, the lift stops at the next possible level and opens the doors.

Now, the lift reacts only upon internal calls. With automatic doors and internal priority mode active the doors remain open when the lift is in rest position.

Switches: During travel the key has to remain in priority position. After termination of priority travel(s) the key can be taken off in position "normal operation".

If upon travelling in internal priority mode the switch is switched off and on, the internal calls will be cancelled and a new destination can be set. If no new destination is set, the lift will stop on the next possible landing and will open the doors.

Keys: If the internal priority key switch (VIO No. 59) gets operated the function is as described above. Now, within 30 seconds an internal call can be set, that will be executed immediately. In that there has been a maloperation, the lift returns automatically to normal

operation after elapse of the waiting time (30 seconds). If the key is operated while the internal priority trip is just in progress, the internal calls are not cancelled.

5.9. External call priority

External call priority is possible at all entrances. If the priority call is operated (key switch), all existing calls will be cancelled and the acknowledge signal "external priority" is lit.

If the priority call is set while the lift is in the process of travelling it will stop at the next possible level. Via the output "special trip" (VIO No. 162) the signal "special trip, please leave the car" should be activated in the car. The doors will not open. The lift travels immediately without further stop to the external priority level, opens the corresponding door and waits for 25 sec for an internal call or for the activation of the internal priority mode.

If the external priority switch at that landing is operated permanently (e.g. by key switch), the door remains open and no internal call can be set. After disengagement of the key switch the 25 sec waiting period will run.

If the internal priority mode is switched during the waiting period, the door-open time will be set to zero and the destination landing will be approached directly without intermediate stopping (priority trip). During this trip no further calls will be accepted. After completion of the trip the control remains in the external call priority mode for the preset time (parameter "external call priority time" see page 131).

If during the waiting time internal priority is switched on, the lift will go into this operation mode.

In case that there has been a maloperation of the external priority mode, the lift returns automatically to normal operation after elapse of the waiting periode.

5.10. Soft external priority

A "Soft External Priority" is possible at any entrance. If "Soft External Priority" is confirmed (key operated button or switch), all set external calls are cancelled and the acknowledgement signal "Soft External Priority" is lit. Registered internal calls are **not** cancelled. Further external and internal calls are **not** accepted.

The registered internal calls are processed with priority and the soft external priority call is answered only, if no other internal calls are registered. The acknowledgement of the "Soft External Priority" is not cancelled if the "Soft External Priority Level" is approached and further internal calls are still registered.

If a "Soft External Call" is set while the lift is moving and no internal calls are registered it will stop on the next available level. Through the output "Special travel" (VIO No. 162) the signal "Special travel, please leave the car" should be displayed in the car. The doors remain closed. The lift runs immediately without further stop to the "Soft External Priority Call Level", opens the door and waits there for 25 seconds for an internal call or for activation of the internal priority in the car.

If the external priority on that level is operated permanently (e.g. by a key operated switch), the door remains open and no internal call can be set. After deactivation of the key switch the 25-second waiting time will elapse.

If during this waiting time an internal call is registered, the door-open-time will be set to zero und the destination landing will be approached directly without further intermediate stop (priority trip). If during this waiting time an internal call is registered, this destination will be approached directly without further intermediate stop (priority trip). During this trip no further calls are saved. After completion of the trip the control remains in operating mode "External Priority" for the set time (parameter "External Priority Time", see page 131).

If internal priority is activated during the waiting time, the lift goes into this operating mode.

If the external priority was operated in a wrong way, the lift goes automatically back to normal operation after elapse of the waiting time.

5.11. Transport control / Rescue trip

Important: The input "Transport control" (external key operated switch) must be wired in parallel to input "Soft External Priority"!

Example: Connect the transport control on first level VIO No 3321 at hardware side with VIO No 2321.

Transport control is possible at any entrance. If the transport control is operated (key operated switch), the operating mode "Soft External Priority" is carried out until the lift has reached the transport control level and no further internal calls are registered. The internal calls can be set only by operating the key switch in the car at the same time (VIO No 3475). Between the individual trips the car door remains open on the respective landing. The transport control can be quit only by deactivation of the external key switch.

If during the waiting time the internal priority is activated the lift changes into this operating mode.

Speciality: If the parameter Rescue trip (see page 132) in folder Control is set to "yes", the registered internal calls will be cancelled upon activation of the rescue trip. If the lift is just running it will stop at the next possible level, when the transport landing is not in the actual travelling direction, and the door will open. Otherwise the transport landing will be approached directly.

5.12. Service operation

For maintenance and readjustment travels the service operation mode can be activated. While service operation mode is on, the external control (priority of external calls also) is inactive and the automatic doors do not open, so that no persons can enter the lift.

This function will be activated and deactivated by means of the shortcut menu (menu level „service“) with key CR See also section on page 82.

5.13. External calls OFF

For maintenance activities the external control can be switched off in a pretty soft way. If the external calls are switched off in the shortcut-menu (menu level "external calls off", section on page 82) with key CR, the already set calls remain memorized. Only setting of new external calls (also external priority calls) is not possible. The door operation will not be affected. The rest position of the door is the same as in normal operation.

The result is that by this mode switching off the external calls you can get free even a heavily frequented lift for maintenance without disturbing the lift users. Simply wait until the lift has come to rest for a couple of seconds.

5.14. Emergency stop

Upon actuation of the emergency stop switch in the car, an already commenced travel will be stopped immediately by the now interrupted safety circuit.

With lifts having automatic doors all calls are getting cancelled. With lifts having manual doors on at least one side the calls remain memorized in order to prevent maloperation of the emergency stop switch.

After de-engagement of the emergency stop switch the lift returns immediately to normal operation. In case of automatic doors a new call is required to re-initiate the door operation or the travelling.

5.15. Reaction to falling short of the rated speed with hydraulic lifts

If in upward travel, after a defined interrogation time (see page 115), the parameterized rated speed (see page 115) was not reached, the lift stops on the next possible level and performs a lowering trip. After the lowering trip the lift is shut-down.

Remark:

The reaction to the rated speed has priority over all the other operating modes except emergency power and fire emergency. In case of emergency power or fire emergency an attempt is made to approach the emergency power or fire emergency level; if this is not possible, the lowering level will be approached.

5.16. Reaction to "top limit switch" with hydraulic lift

TRA 200: With hydraulic lifts complying with TRA an immediate lock-out of the travel outputs happens upon travelling against the top limit switch, caused by the disconnected safety circuit. The lift remains locked out as long as the safety circuit is open. If later on the limit switch gets re-engaged automatically, e.g. owing to a slow downward creeping, the control will attempt to return to normal operation.

EN 81: With hydraulic lifts complying with EN 81-2, section 10.5.3, an immediate lock-out of the travel outputs happens upon travelling against the top limit switch, caused by the disconnected safety circuit. The lift remains locked as long as the safety circuit is open. If later on the limit switch gets re-engaged automatically, e.g. owing to a slow downward creeping, the lift remains interlocked for travelling commands. All special operating modes like, e.g., fire emergency, emergency power evacuation, firemen service etc. are no longer functioning. The re-levelling mode will be working again after re-engagement of the limit switch.

5.17. Full-load

In case of full-load, external calls are furtheron accepted and acknowledged but not processed, in order to get the car emptied first before any persons or goods are taken-up again.

External priority calls are handled like in normal operation.

The "full-load" condition is informed to the control by an external load measuring device (with traction lifts by, e.g., a load weighing contact at the car) or via a computer input.

Note:

The load weighing is carried out only with lift in standstill with doors open.

In case of following special modes the input will not be evaluated: fire emergency, firemen service, internal priority, car light switched off, remote shut-down, external priority, overload and separating door in car.

5.18. Overload

The "overload"-condition prevents the starting of an overloaded car. It is signalled to the control via computer input by an external load weighing device (with traction lifts by, e.g., a load weighing contact at the car). Upon identification of the overload condition, the start of the lift will be prevented.

Automatic doors remain open, if they have been opened before. A closed or just closing door will be reversed in case that an overload condition has been identified. Already set internal and external calls are saved and processed after overload condition has been terminated. An output (VIO No. 166) is provided for the "overload"-signal in the car. It would be advisable to simultaneously indicate the condition visually and acoustically.

EN 81-1:1998:

Traction lift: In case of overload mode being active relevelling is not allowed

Remark:

Load weighing is carried out with lift in standstill.

5.19. Zero-load

Zero-load (anti-nuisance) operation shall prevent misuse of the lifts by passengers. If in the case of a (nearly) empty car too many internal calls are registered, all internal calls will be cancelled. In menu level `SETTINGS\CONTROL\ZeroLoadCalls` (parameter *ZeroLoad* see page 124) the threshold for internal call is set.

The information "Zero-load (anti-nuisance)" is signalled to the control by a load weighing contact on the car, that will trip with about 60 kg load. The load weighing is made in standstill only, shortly prior to the start of the lift, in order to avoid wrong results that may be caused by dynamic forces occurring during travel.

Remark:

In case of the following special modes the input will not be evaluated: fire emergency, firemen service, internal call priority, car light switched off, remote shut-down, attendant operation, external call priority, overload, car separating door, thermistor, emergency power evacuation, service, monitoring of motor run-time.

5.20. Monitoring of brake lever

Brake lever monitoring is performed by means of two brake lever inputs (VIO No. 10 and 11), the monitoring of which is only carried out if the parameter `BrakeLeverMon` (see page 107) in the `DRIVE BASICALLY` folder is set to 1, 2 or 3. If the parameter is set to 0, the inputs are not evaluated.

A query is made at the start (contactors not yet set) and a query after the start, whereby the time is determined by the `BrakeLeverT` parameter (see page 107).

If both inputs are active for the controller at startup ("*" is set in the VIO assignment), no error message occurs. If one of the inputs is inactive (no "*" is set in the VIO assignment), an error message is issued and the lift is disabled.

If both inputs are inactive for the controller (no "*" in the VIO assignment) while the drive is running, no error message will be displayed. If one of the inputs is active ("*" is set in the VIO assignment), an error message is issued and the lift is disabled depending on the `BrakeLeverMon` parameter.

Note setting parameter `BrakeLeverMon`:

- 0 = The brake lever monitoring is disabled.
- 1 = The brake lever monitoring is enabled and in the event of an error, the lift is blocked.
- 2 = The brake lever monitoring is enabled and in the event of a fault while travelling, a load-dependent (dependent on VIO 54) evacuation travel to the next level is carried out after the stop without further monitoring of the brake levers while travelling. The pre-ride monitoring is performed.
- 3 = The brake lever monitoring is enabled and in the event of a fault while travelling, a load-dependent (dependent on VIO 54) evacuation travel to the next level with monitoring of the brake levers is carried out after the stop. If a brake lever error occurs again, the lift will be locked without further travel. The pre-ride monitoring is also performed.

Remark:

Upon relevering, inspection operation or return operation, the monitoring is carried out only upon starting.

5.21. Monitoring of brake lining

The monitoring of the brake lining is carried out only starting of the lift (travelling contactors). If the input for the computer is inactive (no * set in the VIO-assignment), no fault signal is shown. Is the input active (* set in the VIO-assignment), a fault signal is shown and the lift will be locked-down.

5.22. Travelling direction indicators

The indication of the travelling direction is made through two computer outputs (VIO No. 160 and 161).

The control establishes two times the internal direction of ongoing travel and, that way, the direction indication. The first establishing effects at the deceleration point or, with a lift that is in standstill, upon setting of the first call. The second establishment effects when the doors are closing again for the first time. This direction will be maintained imperatively.

- If the lift starts for the first time upon an external call, the respective directional arrow gets lit when the lift starts.
- If an unused lift is standing on a level in which an internal call or a direction independent external call is registered, both arrows are switched on upon opening of the door. If the door is opened via a door-open key, no arrow will be lit. If it is opened by a direction dependent external call, the respective arrow will be switched on. This will be the preselected travelling direction.

- If the lift approaches to a destination level, the probable direction of the ongoing travel will be established, considering the available travel commands. That means, if the computer recognizes a possible travel to the opposite direction, the arrow will be inverted. Recognizes the computer an ongoing travel to the actual travelling direction the actual arrow remains lit.
- In case the lift decelerates upon a direction-dependent external call to the opposite direction, the arrow gets inverted upon approaching to the level. This will be the direction of the ongoing travel.
- If there exists no further travel command to the probable travelling direction established at the deceleration point, the current arrow remains on for the moment. It will be waited now until the doors will close again for the first time. Now, by means of the available travelling commands, the actual direction of ongoing travel can be established and maintained, and the respective arrow can be switched on.

5.23. Ongoing-travel indicators

If the lifts have directional arrows at the landings, you may choose whether they shall function like those in the car (indicators on all levels in parallel) or as so-called ongoing-travel indicators. Upon engagement as an ongoing-travel indicator, the arrow will be switched on upon arrival of the lift at the level (lift decelerates and actual lift position = destination level). Thereby, the most probable direction of the ongoing-travel will be established in the same way as described in the preceding paragraph. The indication remains on until the lift starts again from the landing or when upon readiness for starting no further commands are registered. For each arrow there is a computer output provided. With opposite entrances on the same level, the arrows will be activated separately at the different entrance sides.

5.24. Inspection

For the execution of maintenance work in the lift shaft the inspection operation can be handled from the car roof by means of the inspection operating panel.

By switching over of the inspection switch all travel outputs and all outputs for door movements and the internal and external control will be switched off, all registered calls are cancelled. The operational movement of the doors is prevented by soft ware, and lift travels are additionally prevented by contacts of the inspection switch. The key Inspection UP and DOWN, and, optionally, the keys DOOR CLOSING and DOOR OPENING are made functional. All keys are locked against each other by the software.

Before an inspection travel can start all doors have to be closed. If any automatic doors are still unclosed, they will close first in case of key UP or DOWN getting pressed. All reversing devices like light barrier and reversing contact will not be operating.

The speed for inspection travel can be set by parameters `InspFast` (see page 106) or VIO No. 63. With speed-controlled lifts a separate inspection speed (VIO No. 81) can be activated (active also with return operation).

With DISK-encoding, travelling up to the levelled position at the terminal levels is possible. Additionally, with parameters "inspection limitation top" (see page 107) and "inspection limitation bottom" (see page 107), a limitation of the inspection travel relative to the terminal levels can be set in mm.

With magnet switch shaft information only travelling up to the deceleration points of the terminal levels can be carried out.

Caution: no teaching travel or encoder fault

If a teaching travel is not provided, the inspection mode is allowed for installation work. In this exceptional case it has to be observed that no travel limitation is active at the terminal levels. If the fast inspection travel is activated, there will be no disengagement of the fast speed at the terminal levels.

If an encoder fault has occurred, the inspection operation is allowed to enable the fitter to free himself. In this case, the inspection speed is automatically set to levelling speed. There also will be no travel limitation at the terminal landings.



Extension EN 81-20:

- In addition to the inspection control on the car, there must be an additional inspection control in the pit. The inspection control in the pit is connected to the inspection control on the car roof so that when both are turned on, the lift moves only when both inspection controls are operated in the same direction.
- A condition for returning to normal operation of the lift after resetting the inspection switch in the pit is an electric resetting device e.g. to be provided in the landing panel at the lowest level. The electrical reset device is monitored by the controller (relay KIR VIO 2633) and in case of error a message is issued and the controller does not go into normal operation. If there is a separate pit door, the reset must be done outside of this pit door.
- Before an inspection run can be carried out, the driving switch must also be pressed in conjunction with a pressed direction button UP or DOWN.
Travel button on car roof: VIO 2628
Travel button in shaft pit: VIO 2630
- The fast travel button (VIO 63) for the inspection trip is only valid for the inspection control on the car roof. When the inspection control in the pit is turned on, there is no fast inspection run.

5.25. Return

For freeing of persons or goods trapped in the car, the return mode is intended.

By switching over the return switch all travel outputs, the outputs for the door movements and the internal and external control are switched off, all registered calls are cancelled. The operational moving of the doors is prevented by the software, movements of the lift are prevented additionally by contacts of the return switch. The keys return UP and DOWN are getting enabled. All keys are locked back-to-back by the software.

The return travel can be made without limitation on the terminal landings, so that for example in the case of a lift inspection the slipping-through of the traction pulley with touched-down counterweight can be easily executed. For return operation all doors must be closed before the trip can start. If the automatic doors are still unclosed, they will close first upon pressing of key ↑ or ↓. All reversing devices like light barrier and reversing contact will not be operating.

The travelling speed on emergency operation can be set by the lift parameters. With closed-loop controlled lifts a particular emergency operation speed (VIO No. 81) can be activated (active also in the inspection mode).

5.26. Functional extensions EN 81-20

Device for bridging the shaft and car door contacts (Bypass) according to 5.12.1.8

A device (e.g., cam switches with switch positions) is required to bridge shaft and car door contacts, including the corresponding interlock contacts, for service. The contacts must not be bridged at the same time. The following functional requirements apply when activating the bridging, which are implemented by software functions:

- The effect of the normal control including the car doors must be stopped. Normal operation is no longer allowed.
- The car door has an additional monitoring signal for the closed position of the door so that the car can move with bridged car door contacts with the car door closed.
- Movement of the lift is only possible with the return or inspection control.
- An audible signal in the cabin and a flashing light/buzzer under the car must be switched on while travelling.

Assignment of function numbers (VIO):

VIO Bypass 0: 2622
VIO Bypass 1: 2623
VIO Bypass 2: 2624
VIO Bypass 3: 2625

VIO flashing light/buzzer: 2627

VIO monitoring signal car door contact (KT signal): 2626

Note on the additional monitoring signal of car door:

The additional monitoring signal can be tapped from the door control (software closed limit switch). The lift control software checks the KT signal to the closed position before travelling and, with the car door open, checks whether the KT signal is inactive.

Prevention of normal operation with faulty door contact circuits according to 5.12.1.9

The control software cyclically checks the door and locking contacts for faults every time the door is fully moved. In the event of an error, a message is written to the stack memory and the lift is blocked. The check is carried out once each time the door is closed (shortly before the door motor is set).

Assignment of function numbers (VIO):

VIO car door contact: 27

VIO locking contact: 28

VIO KT lock: 17 (only if a separate car door lock is available)

Important note:

In the operating modes inspection, return, fire alarm, firemen service and emergency power evacuation, no monitoring takes place.

The following SHK errors block the lift until it is reset by a competent person

In the event of the following faults, the lift may only return to normal operation if all necessary works have been done to ensure safe operation of the system following the intervention of a competent person for maintenance. The error status persists even after switching the control off and on and can only be reset by the menu function "RESET LOCK". In case of error the inspection and return control remains in function.

The following SHK errors require targeted resetting:

- release of the safety gear acc. to 5.6.2.1.4.3
- tripped overspeed upwards acc. to 5.6.6.7
- tripped of the monitoring of limit switch at the top or bottom acc. to 5.12.2.3.3

Assignment of function numbers (VIO):

VIO SHK: 25

VIO SHK lock: 16

Protection when moving the doors 5.3.6

A light grid must cover the entrance over a range of at least 25mm to 1600mm above the threshold of the car door. The light grid must be able to reliably detect foreign objects with a diameter of 50mm. The jostling function is still allowed, but it must be ensured that the door closes with reduced closing force and an audible signal sounds in case of failure of the light grid. The light grid is checked by the lift controller once every time the door is closed (shortly before the door motor is set). In the event of a fault, the lift is either blocked or the door closes only with reduced closing force. **In this case, there must be a door closing device that provides the reduced closing force (e.g. a door speed control).**

Assignment of function numbers (VIO):

VIO test output door A: 1670

VIO test output door B: 1671

VIO light grid door A: 118

VIO light grid door B: 119
VIO jostling door A: 133
VIO jostling door B: 134

The monitoring of the light grids can be controlled by two parameters in the folder DOOR SIDE A/B:

- **LS test:** release of the test function. **To meet the requirements of EN 81-20, this parameter must be set to yes.**
- **LS testLock:** specifies whether the lift is locked in the event of a fault or the system continues to operate with the door's closing force reduced.

Important note:

In the modes inspection, return, fire alarm, firemen service, emergency power evacuation and on blocked lift, no monitoring takes place.

5.27. Fire emergency operation

For lifts with fire emergency operation the fire emergency detection (VIO No. 42) is connected to a control input. In addition ten smoke detectors (VIO No. 43, 44, 150, 151, 152, 153, 154, 155, 209, 210) can be connected to ten additional control inputs.

Note:

If the fire emergency detection (VIO No. 42) is not connected to a control input, fire emergency operation is automatically initiated by the smoke detectors.

After activating the fire emergency, the control checks the first smoke detector. If this reports no smoke, the **first fire emergency level** (parameter "1.FireEmLvl") is approached. However, if the first smoke detector reports smoke, the control checks the second smoke detector. If this reports no smoke, the **second fire emergency level** (parameter "2.FireEmLvl") is approached. But if the first and the second smoke detectors report smoke, the control checks the third smoke detector. If this reports no smoke, the **third fire emergency level** (parameter "3.FireEmLvl") is approached. However, if the first, second and the third smoke detectors report smoke, the control checks the fourth smoke detector. If this reports no smoke, the **fourth fire emergency level** (parameter "4.FireEmLvl") is approached. This principle will continue until the 10th smoke detector with its eleventh fire emergency level. If all smoke detectors report smoke, the **eleventh fire emergency level** (parameter "11.FireEmLvl") is approached. The fire emergency level is approached without delay, i.e. all saved calls are deleted and the appropriate level immediately approached. It stops if necessary in the next level to turn without having to open the doors. Are the doors already open when fire emergency detection occurs, the light barriers, lobby scan, door-open button and the calls in this level are out of operation. The reversing contacts, however, remain functional, in order to re-engage "flipping-out" doors automatically, and to avoid the lift to get out of operation that way. At the fire emergency landing the lift remains resting with open doors and the internal and external control is switched off.

Important remarks:

If parameter "fire emergency trip in standstill" (parameter "TravAtStandst") has been set to "no", no fire emergency trip will be initiated out of the standstill position, however the doors will be opened and the internal and external control is switched off.

If parameter "variant 1" (parameter „variant1“) is set to "yes", the fire emergency signal is detected during the trip and no smoke detector is active, the lift will stop at the next possible level. If all four smoke detectors detect smoke, the **fifth fire emergency level** (parameter "5.FireEmLvl") will be approached.

In case of a locked lift (e.g. when overload, three interlocking faults one after the other, motor controller fault, interlocked lift are occurring at the same time) the door-open keys will remain functioning, in order to enable the users to leave the car.

The fire emergency level will be selected just before a fire emergency trip is starting. A change in smoke detecting while the lift is in motion will not cause a change of the fire emergency level (see EN81-73:2005).

5.28. Firemen service

In firemen service lifts a key operated switch is provided at the firemen entrance level (SS1 VIO No. 41). Upon operation of the SS1 all registered calls are cancelled. If necessary, The lift will be stopped for reversing at the next landing, without opening of doors. The output "firemen evacuation set, but not yet evacuated" (VIO No.96) will be set. If the door is open an acoustic signal will sound in the car and the light barriers, lobby-scan, door-open key and calls from this level are deactivated. The reversing contacts however remain functional (if parameter "reversing" is set to "yes") in order to reengage "flipping-out doors" automatically and to avoid the lift to get out of operation that way. The firemen lift runs to the firemen entrance level (parameter "firemen level" see page 126) and remains stopped with doors open. The output "firemen evacuation set but not yet evacuated" (VIO No 101) will be cancelled. Output "firemen evacuation completed" (VIO No. 99) will be set. The external control is disengaged.

TRA 200 und EN 81: The internal control will become operational again only when the lift is on the firemen level and the additionally provided firemen key switch in the car (SS2 VIO No. 40) is switched on. Operation is possible only with internal calls, therefore parameter OneInternCall must be set on "no". After completion of the trip all calls will be cancelled. Additionally, already registered travel commands can be cancelled in standstill by switching the SS2 in the car on and off. Travel commands can also be cancelled via the cancellation key or via a further car call (parameter OneInternCall to yes). If during a trip the SS2 in the car is switched on and off, the lift stops on the next level and all calls are cancelled.

Note: At the firemen entrance level at least, a position indicator must be installed close to the firemen key operated switch. An intercom system for communication between car and machine room must be provided.

The special function "firemen service without main switch" is to be observed!

EN 81 Netherlands: Functionality is identical to TRA 200. However, call cancelling during a trip is not possible since the SS2 in the car (VIO No. 40) is not provided.

Special function "dead man's control"

Can be activated via parameter "Dead man contrl.". The door is opened only by the active door-open key resp. closed by the active door-closing key. The door moves only with the key pressed. The door-open key has priority over the door-closing key. Should the door-open key be released before the door is completely opened, the door will close automatically once again if the "DoorSelfClose" parameter is set to "yes".

Special function "door self close":

Can be activated via the "DoorSelfClose" parameter. The door automatically closes if the door-open key (dead man's control) is released before the door is completely opened. The "DoorSelfClose" parameter must be set to "no" if this function is not desired. In accordance with the guidelines of EN 81-72, this parameter is set to "yes".

Special function "fireman service without main switch":

The internal control will be operative at once if the fireman key switch in the car (SS2 VIO No. 40) is switched on. For that, parameter "main switch" has to be set to "no".

Special function "cancel key":

If during the trip the cancel key (VIO -Nr. 255) is operated, all internal calls will be cancelled. If within two seconds no new internal call is set or when the internal call is not in the ongoing travel direction there will be a stop on the next possible level.

Special function "level disable":

In folder "LEVEL DISABLE" individual levels can be prohibited for the fireman service. These prohibited levels cannot be approached by means of internal calls.

Special function "reversing":

Door will not be kept open resp. not opened with active reversing contact if the parameter has been set to "no". The door-open-key will not be affected by this parameter.

Special function "MemorizgEvac":

In case of a voltage failure the status of the fireman evacuation will be saved, i.e. no further evacuation trip to the fire service level will be initiated when the voltage returns. With fireman key switch active, the internal control in the car (SS2 VIO No. 40) can be switched on immediately.

Special function "shutdown of the fire fighting operation only possible on the main access level":

This function is switched on or off via the "RestMainLv" parameter. If this parameter is set to yes, the fire fighting operation is only ended when the lift has returned to the main access level, the door has opened and the firemen switches have been switched off. If the fire fighting switches are switched off on another level, the lift will stop and no travel commands are accepted. The door-open key continues to function. In accordance with the guidelines of EN 81-72, this parameter is set to yes.

Special function "only one travel command is accepted":

This function is switched on or off via the "OneInternCall" parameter. If the parameter is set to yes, only one travel command will be accepted and the previous travel command is cancelled. The lift moves to the new destination as quickly as possible. If the lift is not moving and the car call at the current level is pressed, the existing car calls are cancelled and the dead man's switch (if the DeadManContrl" parameter is set to yes) is approved. In accordance with the guidelines of EN 81-72, this parameter is set to yes.

Please also consult the section "Distribution of special operating mode priorities" on page 40

Remark:

If no firemen entry level ("Firemen level" parameter, see page 126) is given, the lower end level is automatically entered as the firemen evacuation level.

Special functions, parameter Variant:

If the **Variant is set to 0**, all other parameters will behave as described above.

Fire brigade Düsseldorf: Variant = 1:

To meet the functionality of the fire brigade of Düsseldorf, the parameters must be set as follows:

- Main switch = yes
- DeadManContrl = yes
- DoorSekfClose = no
- Reversing = yes
- MemorizgEvac = yes
- ResetMainLv = yes
- OneInternCall = yes
- Variant = 1

Following changes of functions raised by the parameter Variant = 1:

- A command can only be given and acknowledged, after the door has been closed with the door close button in dead man's operation.
- When the door is closed, just a single command may be given, even while the firemen travel. A change of the destination landing is only possible by pressing the delete button and pressing a new command.

5.29. Car light / alarm / emergency light

In case of failure of the lighting mains, the emergency lighting device mounted on the AZE0-mainboard engages automatically the car emergency light in the car, and enables the alarm key to remain functional. The duration of the emergency light supply depends on the storage battery, but is one hour at the minimum. After that the battery will need up to twelve hours for recharging in order to regain its full capacity.

Upon disconnection or failure of the light and if there is a travel still in process, the lift continues travelling up to the set destination and opens the doors. It can be defined whether the lift shall run immediately to a particular shutdown level (see page 138). If the parameter is set to 0, no such travel will be effected. Furthermore it can be chosen whether the shutdown shall be with open or closed doors (see page 138). The door-open key remains functional. During the homing trip an already switched-off car light (VIO 56) will not be switched on again. The lift is in rest and it is assumed that in case of normal use the car is empty.

Remark:

When the lighting supply is working again, the control will go automatically into normal operation.

5.30. Remote shutdown

Function "Control OFF"

If, for example, the control is „remotely“ switched off by a key switch installed in the call panel or the car operating panel (VIO No. 46), it will shut down the lift. An already commenced travel will be completed. If there is a checklevel set (parameter "checklevel" see page 149), this will be approached first and the doors will open. After that, the remote shutdown level will be approached (parameter "remote shutdown level"). If no checklevel is set, the remote shutdown level will be approached immediately. The checklevel will be effective only if a remote shutdown level has been set, too. You may select whether after shutdown of the lift the doors remain open or closed (parameter "door status"). The door-open button remains operative.

If the trip to the remote shutdown level is interrupted by a fault (e.g. SHK-open), the checklevel will be approached again and after that the remote shutdown level.

Function "control and light off"

If, for example, control and car light have been "remotely" switched off by a key switch installed in the call panel (VIO No. 47), the function is identical with "control off", however upon reaching the destination level or the remote shutdown level, the car light will additionally be switched off after about 5 seconds. This function not allowed to be performed by a key switch in the car. The adjustable checklevels and shutdown levels are identical with function "control off".

Remark:

When the remote shutdown is switched off again, the control goes automatically into normal operation.

5.31. Emergency power

If the main supply fails, an emergency power evacuating system can be initiated. The required emergency power source will be provided either by the customer with/without signalling contact, or together with the control by means of storage batteries, eventually with a downstream power inverter.

Emergency power evacuating system, monitored by the control computer

In case of an emergency travel with involvement of the computer, the control remains fully functional as the main power supply will either remain effective resp. will be returning. By means of parameter "external evacuation" you can define whether the emergency power evacuation shall be coordinated by a higher level external evacuation control or not. The following functions have relevance only without having a connection to an external evacuation control (parameter "external evacuation" set to "no").

Emergency power evacuation travel:

If the input "emergency power" (VIO No. 45) is active (* is set in the VIO-assignment), an emergency power evacuation travel to the set level will be carried out with a delay of up to 15 seconds (parameter "emergency power level" see page 152). If the level is set = 0, the bottom terminal level will be approached automatically. Upon arrival the doors will be operated according to the set parameter "door status" (see page 152).

Load-dependent evacuation travel:

(with DISK-encoding only)

If the parameter "load-depending" (see page 152) has been set to "yes", there will be no travel carried out to a defined emergency power level, but it will be approaching either the actual level, one level upwards or one level downwards, and the parameter "emergency power level" (see page 152) will be adapted automatically. The travelling direction will be selected by the input "semi-load" (VIO No. 54) always in that direction to which the car will be drawn according to the actual load situation.

Table 1: Definition of the destination level in case of load-dependent emergency power evacuation

Lift is on level (absolute distance to the level $\leq 50\text{mm}$)	Yes	no	no	no	no
Input semi-load (VIO No. 54)	yes/no	yes	no	yes	no
Car is above level	yes/no	yes	yes	no	no
Car is below level	yes/no	no	no	yes	yes
Selected level	Evacuation at actual level	same level downward	one level upward *	one level upward *	same level upward

* If the lift is at the terminal level, the terminal level will be approached.

Upward travel with hydraulic lifts:

If the parameter "UpAtHydr" is set to no, there will be no upwards movement with hydraulic actuators. The parameter is effective during emergency power evacuation and emergency power operation. Set the parameter to yes if upwards travel is allowed.

Note: The parameter is only effective when drive type 4 (hydraulics) is set.

Sequential evacuation control:

(with DISK-encoding only)

If several lifts (group lifts, individual lifts or mixed) are connected to an emergency power supply, the sequential evacuation control can be activated.

In this case the controls must **only be connected via the LON bus**.

The lifts will run in sequence to the evacuation level (several lifts can be set to work simultaneously; parameter "maximum no. of lifts" see page 152). Permanent malfunctioning lifts cannot be evacuated. As soon as the malfunction is settled (even after termination of the sequencing process), these too will be automatically evacuated.

Emergency power operation

If all lifts that are not malfunctioning permanently are evacuated, they can, upon demand, continue to operate in emergency power operation mode. You may define how many lifts may run at the same time (parameter "maximum no. of lifts" see page 152), in order not to overstress the emergency power supply, i.e. there is always only one lift operative. Only if this one has terminated the trip another one will be starting.

The emergency power operation mode should be clearly indicated in the cars as, naturally, extended waiting times are to be expected.

External evacuation control

(with DISK-encoding only)

Special functions are possible, for example, to tie the control to an already existent external higher-level emergency evacuation control. The parameter "external evacuation" must be set to "yes" (see page 152). If the lift is ready for operation, the output "evacuation ready" (VIO No. 37) will be set. If the lift is ready for operation, the output "evacuation ready" (VIO No. 37) will be set. If the lift shall continue to operate under emergency power conditions, the parameter "release" (see page 152) must be set to "no". This condition is indicated via the output "release for emergency power operation" (VIO No. 38).

Note:

The outputs "evacuation ready" (VIO No. 37), "emergency power evacuation terminated" (VIO No. 36) will be set, even without external evacuation control.

In the following cases the output "evacuation ready" will not be activated:

inactive emergency power input (VIO No. 45), no teaching travel available, no VIO-assignment available, lift is locked up, SHK-open, full-load active, controller fault, thermistor, inspection, return, encoder fault, foreign voltage, external device fault, limit switch on top open.

5.32. Attendant operation

A key switch is provided in the car (VIO No. 39). Upon engagement, external calls and external priority calls will no longer be served automatically. They, however, will be acknowledged and via separate computer outputs signalled to the attendant in the car. He now can decide if and in which sequence the calls shall be served. The status "attendant operation" –condition can be displayed via a computer output. The output "attendant operation active" (VIO No. 170) will be set.

With attendant operation active, the doors remain open during standstill.

5.33. Single lift control (industrial automatic system)

The lift serves the external control only when the doors are closed and no further external calls are registered. One external call after the other will be processed.

Note: Inspection mode, return mode, firemen control, operation by emergency power and the fire emergency mode are having priority and will deactivate the automatic operation.

5.34. Motor run-time monitoring

If the lift remains inactive for a period exceeding the set one (parameter "travel monitoring time" see page 138) the control signals run-time monitoring. In the stack-memory is the entry F_MONITORING TIME. In the following tables the behaviour of the control with hydraulic and traction driving systems is described.

Remark:

Observe, that with **hydraulic lifts** the accent lies on "**motor start**", which means there is a distinction made between **motor** run-time upon starting and **travel** run-time. In the meaning of EN 81-2, section 12.12.1 it is attempted to keep a hydraulic lift operative as long as possible, so that an uncontrolled lowering owing to leakage may not occur. The EN 81-2 prescribes that with hydraulic drives the supply of energy to the motor has to be interrupted and to be kept interrupted if "with initiated start the motor does not start".

Note: Re-levelling remains active (EN 81-2, section 12.12.4 and 14.2.1.5a and b).

Hydraulic drive acc. to EN 81-2, section 12.12

Run-time monitoring in case of	Stopping and continuing in normal operation	Stopping and lowering, after completion of the lowering trip the lift is locked up	Stopping and locking up the lift
Start upward	-	yes	-
Start downwd.	yes	-	-
During travel (up/down)	yes	-	-

Traction drive acc. to EN 81-1

Start upward	Stopping and continuing in normal operation	Stopping and lowering, after completion of the lowering trip the lift is locked up	Stopping and locking up the lift
Start downwd.	-	-	yes
During travel (up/down)	-	-	yes
Start upward	-	-	yes

Inspection or return operation with locked-up lift is allowed and cancels the interlocked status.

Note on EN 81-2, section 12.12.3

Upon re-establishing of the main supply the drive is not held in standstill.

Note on the testing of run-time monitoring

Run-time monitoring is activated if the car does not move despite a registered travel command ("travel" is displayed), although all inputs/outputs are o.k. In case of closed-loop controlled traction lifts the function can mainly be checked by disengaging the controller release. In case of open-loop controlled lifts the check is possible by disconnecting the travel contactor activation in the safety circuit (mainly terminal B1 -> see the relevant diagram). The test can alternatively be activated in the control menu in the folder SYSTEM/SLC4-INTERNAL/ZÜS-INSPECTION.

Special function "RunTimeLocking": If parameter „RunTimeLocking“ is set to "yes", then the lift is locked, if the watchdog detects a too long upward **and** downward travel, and there will be a lowering travel. The parameter "variant" must also be set to "0".

Special function "variant": If parameter "variant" is set to "1", the following applies:

Motor run-time monitoring for hydraulic lift with "pre-engaged speed governor" as drop prevention.

Case distinctions:

1: Run-time monitoring trips during upward or downward travel. The position of the car is within flush ± 10 mm. Reaction:

- Lock the lift, disable external control, disable re-levelling, perform no lowering travel, open and close the door
- Door open button and car call in current level open the door, as long as the car is in the range ± 10 mm

2: Run-time monitoring trips during upward or downward travel. The position of the car is lower than -10 mm (independent of the zone). Reaction:

- Lock the lift, disable external control
- Trying 1x to travel to the next level downwards, open and close the doors. Should the travel leads to an error again, no further attempt is made.
- Door open button and car call in current level open the door, as long as the car is in the range ± 10 mm, relevelling is deactivated
- Do no lowering travel to the lowest level

3: Run-time monitoring trips during upward or downward travel. The position of the car is higher than $+10$ mm, but still in the zone. Reaction:

- Lock the lift, disable external control, perform relevelling downwards, open and close the door. Should the relevelling downwards leads to an error again, no further revelling attempt is made.
- Door open button and car call in current level open the door, as long as the car is in the range ± 10 mm
- Deactivate the relevelling
- Do no lowering travel to the lowest level

4: Run-time monitoring trips during upward or downward travel. The position of the car is above the zone. Reaction:

- Lock the lift, disable external control, trying 1x to travel downwards to the current level, open and close the doors. Should the travel leads to an error again, no further travel attempt is made.
- Door open button and car call in current level open the door, as long as the car is in the range ± 10 mm
- Deactivate the relevelling
- Do no lowering travel to the lowest level

Note: The distance (10mm) can be adjusted by parameter "Distance".

5.35. Deceleration control circuit

In this section only the solution by software shall be described. It does not represent a protective circuit. In case of an operating speed as from 2.5 m/s upward or of reduced overtravel resp. undertravel distances a separate monitoring circuit must be provided (see separate description which is available from STRACK LIFT AUTOMATION GMBH).

To avoid travelling of the lift to the terminal landings with an inadmissible speed, this travel to terminal landings is checked additionally.

If the measured speed at the set distance 1...3 to the terminal landing (parameter *Dstance1...3*, see page 139) is higher than the set speed 1...3 (parameter *Speed1...3*, see page 139), the set value "fast" is disengaged by the control. At the switch-off point the setpoint value "slow" is disengaged so that the lift will, normally, remain in normal operation.

Note: If parameter "EmergStop" in folder "FORCED DECELERAT" is set to yes, an emergency stop will be carried out.

The recommended standard values for speed 1 are 80% of the nominal speed and for the deceleration distance 150%. If speed-arc travels are carried out, additional speeds 2/3 and distances 2/3 can be set. The evaluation is carried out in the sequence speed 1 and distance 1, speed 2 and distance 2, speed 3 and distance 3. If all parameters are 0, no check is carried out.

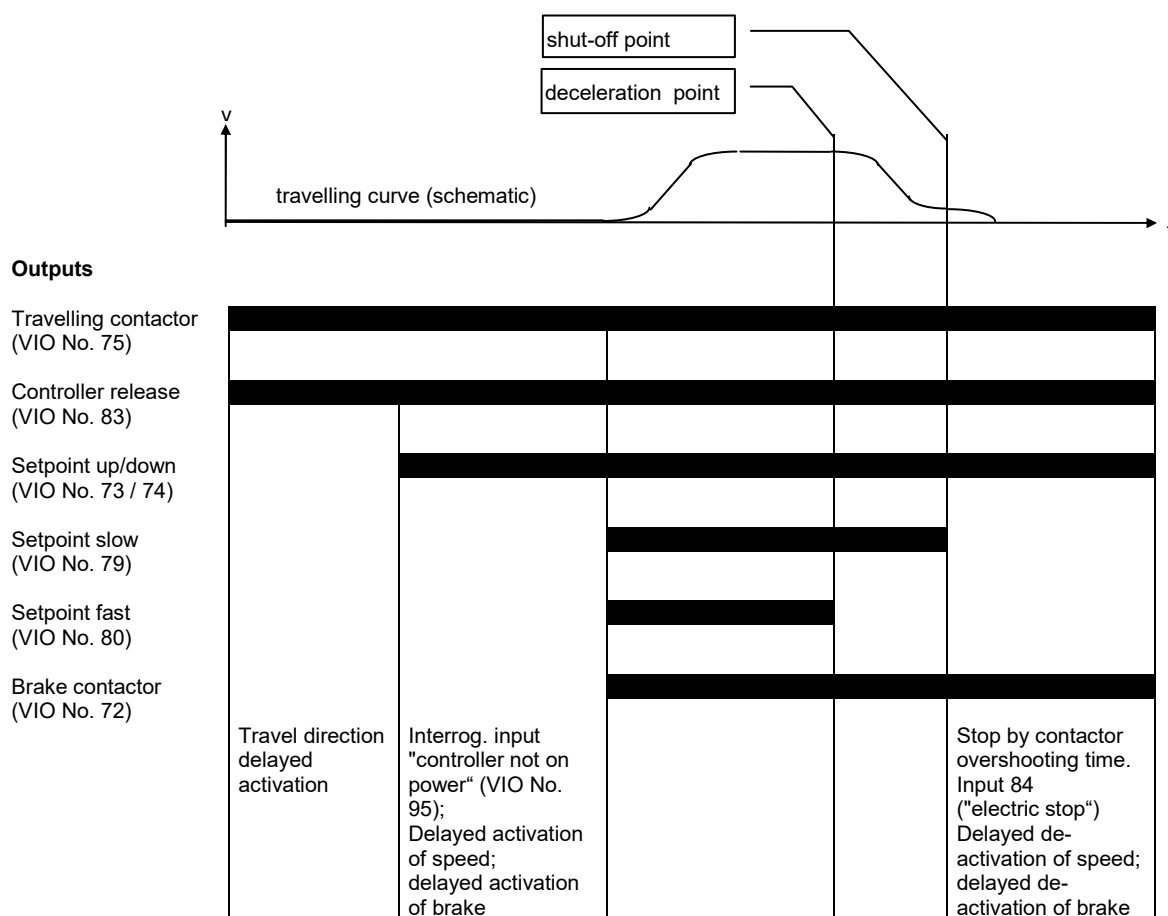
Note!

If all the three distances and speeds are set, the following has to be observed for the distances:

$\text{Distance1} > \text{Distance2} > \text{Distance3}$

5.36. Speed-controlled lifts

The switching sequence of the control computer outputs during a travelling process (except in the inspection and return mode) with speed-controlled lifts looks as follows:



5.37. Lift disabled

If the control recognizes a fault that does not allow the further operation of the lift, the lift is interlocked. In the status-display you will see "lift disabled". No travel is carried out any more (also no relevelling; this applies only to speed-controlled traction drives) and all calls are interlocked. This interlocking can be deactivated only by switching the control ON/OFF or by inspection or return operation.

The lift is disabled in case of the following faults:

Controller fault (depending on the set parameter, see page 109; thermistor (depending on the set parameter, see page 110/111), contactor monitoring, run-time monitoring (depending on the set driving mode, see page 55), SHB-fault (see page 17), relevelling (depending on the set parameter, see page 144), and encoder fault.

5.38. Collective fault signal, out-of-operation indicator

The controls are provided with comprehensive monitoring functions. If the control has spotted a fault, it will switch off the respective outputs and the standard output ready for operation" (VIO No. 1) is dropping (collective fault signal).

Table 2: Conditions for the collective fault signal and the out-of-service indication

	Collectivefault signal	Out-of-service indic.
No teaching travel	Yes	yes
No VIO-assignment	Yes	yes
Encoder fault	Yes	yes
External device fault	Yes	yes
Controller fault	Yes	
Emerg. power evacuation (not "-operation")		yes
Car light off	Yes	yes
Firemen service		yes
Fire emergency		yes
Thermistors	Yes	yes
Extraneous voltage	Yes	yes
SHK-open (no inspection or return operation)	yes	yes
Locked-up lift	yes	yes
Remote shutdown	yes	yes
Remote shutdown and light off		yes
Return operation		yes
Inspection		yes
Maintenance switch activated		yes
Service switch activated		yes

If one of the conditions applies, the respective output will be set

6. TERMINAL DESIGNATIONS AND THEIR MEANINGS

All inputs/outputs have got English short designations describing their nature.

Nature

I = Input
O = Output
IO = In- and Output

xxxx-x.x

Technik

AC = alternating current
ACN = alternating current with N-conductor
DC = direct current
PTC = posistor (PTC, thermistor)
S = safety circuit
TA = transistor version A 250 mA
TB = transistor version B 750 mA
RO1 = relay normally open contact 1 pin
RC1 = relay normally close contact 1 pin
RNO = relay normally open contact 2 pin's
RNC = relay normally close contact 2 pin's
RCO = relay change over contact 3 pin's

No. of subassembly

0 = central unit AZE0
1 = central unit AZE1
2 = central unit AZE2
3 = central unit AZE3
4 = central unit AZE4

Consecutive number

of this kind of
input/output on this
subassembly

Short designation	Nature of input/output
IDC-x.x	Input 24V DC
IACN-x.x	Input 230V 50/60Hz 2-pole (with separately clip-on N-connection) ATTENTION: do not connect to the safety circuit
IAC-x.x	Input 230V 50/60Hz 1-pole (N-connection, also used by other input terminals) (ATTENTION: do not connect to the safety circuit)
IS-x.x	Input safety circuit interrogation 230V 50/60Hz
IPTC-x.x	Input thermistor 2,5V DC (PTC of driving motor, oiltank ...)
IO x.E	IO as input 24VDC
IO x.A	IO as output 24VDC transistor max. 500 mA
OTA-x.x	Output 24V DC transistor max. 250 mA
OTB-x.x	Output 24V DC transistor max. 750 mA
ORO1-x.x	Output relay make-contact 1-pole (one common connection is also used by other relay outputs -> "relay group")
ORC1-x.x	Output relay break-contact 1-pole (one common connection is also used by other relay outputs -> "relay group")
ORNO-x.x	Output relay make-contact 2-pole potential-free
ORNC-x.x	Output relay break-contact 2-pole potential-free
ORCO-x.x	Output relay change-over contact 3-pole potential-free

6.1. VIO function numbers

How you can assign the input/output functions to the terminals of the control computer and of the bus modules you will learn on page 167.

VIO-designation	Type	No.	Explanation
Ready (collective fault signal)	output	1	see page 58
Supervision			
Deceleration control top and bottom	input	4	see page 76 (fault signal 28)
Deceleration control bottom	input	5	see page 76 (fault signal 28)
Deceleration control top	input	6	see page 76 (fault signal 28)
Lift expecting EVA-trip	output	7	Message for external STRACK evacuation computer.
Emergency power operation	output	8	Message for external STRACK evacuation computer.
Lift wants to releve	output	9	Message for external STRACK evacuation computer.
Brake-lever monitoring 1	input	10	see page 46
Brake-lever monitoring 2	input	11	see page 46
Brake-lever monitoring 1+2	input	12	see page 46
Fault signal of external devices	input	14	Monitoring of optionally available devices (not the drive control). Fault signals of external devices can be logged in the control by means of one input. The input is monitored at the start of a travel and during the trip. Caution! Special trips (e.g. fire emergency) have no priority, i.e. if the associated parameters are set to 2 or 3, the lift will be shut down or in case of 4 or 5 it will stop on the next level. The reaction upon a fault can be parameterized (see page 138): Parameter MONOFEXTDEVICE: 1) Store The fault is displayed and written into the stack memory as message. Further calls are registered and the lift is ready for operation. 2) Stop The fault is displayed and written into the stack memory as message. All registered calls are cancelled and no new calls are registered. As long as the fault exists the lift is not operable. 3) Stop + lock The fault is displayed and written into the stack memory as a message. All available calls are cancelled and no new calls will be accepted. The lift will be shut down. 4) Stopping on next level The fault is displayed and written into the stack memory as message. All registered calls are cancelled and a stop will be performed on the next possible level in case the lift is moving. 5) Stop on the next level and shut down See item 4: in addition the lift is shut down! Note: In case of a fault relevelling is carried out only when parameter "MONOFEXTDEVICE" is set as 1 or 4.
Extraneous voltage on signal section	input	20	If for putting into operation the PE-conductor is connected to the computer input PE-test and is an extraneous voltage there, it can be noticed in a limited way by this input.
Thermistor input	input	21	Thermistor for driving motor. Reaction to thermistor faults can be parameterized, dep. from type of drive (see page 110; 111)
Controller fault	input	22	Fault signal from a drive controller. Reaction to fault in the controller can be parameterized, dep. from the mode of operation (see page 109)
Contactormonitoring	input	23	Monitoring of the travelling contactors upon dropping in standstill. If input "contactormonitoring prior to start" is active (* set in the VIO-assignment), the fault will be signalled and the lift is locked. If the input is inactive during travel (no * set in the VIO-assignment), the fault will be signalled, the lift stops on the next level and is locked. The interrogation during the travel is made 5 seconds after starting. Upon relevelling no interrogation will be made. In case of inspection or return operation no contactormonitoring will be carried out.
Limit switch on top (acc. to EN 81)	input	24	

SHK-interrogation: safety circuit	input	25	Monitoring of the safety circuit SHK. being not activated during normal operation (limit switches, slack rope, emerg.stop, pressure deficit...): The debouncing time of the input is increased as against the other inputs. It is three times the standard debouncing time (normally 50ms).
SHK-interrogation: landing door(s)	input	26	Safety circuit interrogation of landing door contacts. If no landing door contact is provided, the input must be bridged with input VIO No. 25. The debouncing time of the input is increased as against the other inputs. It is three times the standard debouncing time (normally 50ms).
SHK-interrogation: car door (s) (or safety light grid)	input	27	Safety circuit interrogation of car door contacts. If a safety light grid for goods lifts is used, this input has to be connected as a car door contact to the SHK. The debouncing time of the input is increased as against the other inputs. It is three times the standard debouncing time (normally 50ms).
SHK- interrogation: door lock	input	28	Safety circuit interrogation of door lock contacts. The debouncing time of the input is increased as against the other inputs. It is three times the standard debouncing time (normally 50ms).
Lift blocks after after SHK open	input	16	After release from the catch or after the overspeed has tripped upwards or the limit switch up/down has tripped, the lift may only return to normal operation by an installer. The state must also remain stored after switching the control off and on again. A reset takes place via the menu item RESET LOCK. The inspection or return control continues to work.
SHK input KT lock or LTÜ	input	17	
Car light monitoring	input	29	see page 51
Door unlocking cam magnet all entrance sides	output	30	
Lock magnet door side A	output	31	Lock magnet control for roller door
Lock magnet door side B	output	32	Lock magnet control for roller door
Start interlocking	input	35	With active input (* set in the VIO-assignment) no normal travel, direct approach and relevelling travel is carried out. The lift will be waiting until the entrance is inactive (no * set in the VIO-assignment).
Disable of relevelling	input	259	With active input (* set in the VIO-assignment) no relevelling trip is carried out. Is used together with STRACK safety light grid.
Response from brake	input	1598	Response from brake: The time behaviour (LIFTnet VIO-List) of the travel nominal values can be determined using the response. This input can be optionally occupied. It has no effect upon the travel behaviour.
Control			
Emerg. power evacuation terminated	output	36	see page 53
Ready for external evacuation	output	37	see page 53
External release for emerg. power oper.	input	38	see page 53
Attendant operation	input	39	see page 53
Firemen switch in car	input	40	see page 50
Firemen switch external	input	41	see page 50
Fire detector	input	42	see page 50
10x smoke detector	input	43, 44, 150, 151, 152, 153, 154, 155, 209, 210	see page 50
Emergency power	input	45	see page 53
Remote shutdown	input	46	see page 52
Remote shutdown & light off	input	47	see page 52

Internal car priority	input	48	see page 42
Internal car priority key	input	59	see page 42
Key "loading time"	input	50	Raises the door-open-time by parameter "loading time" (see page 118). Condition loading time can be displayed (blinking) via an output (VIO No. 171). The loading time will be aborted by an internal call or the door-closing key. Will not be carried out with: closed car door, a door is closing, active out-of-service indicator, service switch, internal control, attendant operation, external priority, active door-closing key
Full load	input	51	see page 45
Overload	input	52	see page 45
Overload compare	Input	264	see page 45
Zero-load	input	53	see page 45
Semi-load	input	54	Is used in connection with emergency power evacuation. see page 53. Semi-load condition can be indicated via output (VIO No. 169)
Car fan	output	55	The car fan is switched on upon starting and switched off after completion of travel. Deactivation can be delayed by parameter CarFan. See also parameter CarFan on page 130. The car fan is not engaged with relevelling, inspection or return.
Car light	output	56	The car light can be switched off automatically by the control in case of e.g. remote shutdown (see VIO No. 47) or of the function "light off in standstill" or parking with "LightOff". The output is not switched on during a parking or lowering trip when it was already switched off before the trip was started.
Car separating door contact	input	57	see page 42
Car separating door shunting key switch	input	58	see page 42
NGV Rdy signal	input	265	NGV A3 status signal Ready
NGV Run signal	input	266	NGV A3 status signal Run
SMA monitoring iValve	input	348	SMA monitoring iValve.
Arrival signal for safety light grid	output	258	Arrival signal for STRACK safety light grid. Caution! Ask for circuiting examples as the output is not directly associated to the safety light grid.
Emergency call	input	377	
Emergency call suppression	output	378	Is set with normal travel or if a door is open (with automatic door only). Output is also set in case of inactive emergency call input (VIO 377).
Fault alarm input 1 emergency call device	input	370	Monitor input for emergency call devices. The behavior in the event of a fault determines the parameter SETTINGS/MONITORING/EM.CALL FAULT
Fault alarm input 2 emergency call device	input	371	Monitor input for emergency call devices. The behavior in the event of a fault determines the parameter SETTINGS/MONITORING/EM.CALL FAULT
Emergency call acknowledge lamp	output	1740	After a remote emergency voice communication, this output remains active as long as the input VIO 1741 is set.
Switch-off the emergency call acknowledge lamp	input	1741	See VIO 1740
Cover plate protection	input	254	If the input is active a remote shutdown trip is activated and the lift will be deactivated. The parameters of the remote shutdown apply. The display shows "CoverPlateProt" and in the stack memory "M-SPECIAL CoverPlateProt switched-on". The function can be reset only by activation of the menu function SYSTEM/SLC4-INTERN/RESET SPECFACT. Inspection, return action or switching the control on/off <u>do not</u> reset the function. Emergency power, fire emergency, firemen and service have priority over cover plate protection.
Firemen service internal call cancelling key	input	255	Cancels all internal calls in firemen service. Responds only to change from inactive to active. If no new call is set, the lift will stop at the next possible landing.
Door open firemen evacuation	output	256	If a door is open (the door contact not closed) and a firemen evacuation shall be carried out, the output is active. Output is set only if the evacuation is not yet completed.

UPS mode	input	257	Switches the display to UPS mode. See Operating and maintenance manual S-MRL
Activation Service operation	input	375	
Deactivation external control	input	376	
Emergency braking system	input	1646	Input for the emergency braking system for speed-controlled and uncontrolled traction drives. The description of this function is found in chapter Stack memory, under F-NBS (see page 77).
Output light grid test A	output	1670	Test output for the light grid at entrance side A. The light grids are tested prior to each travel when parameter "DOORSIDE A/LS-Test" has been set to "yes". Function: a) The output is set for 1 second. b) Evaluation of the light grid input (VIO No.: 118) c) When the light grid input does not become active within this one second there must be a fault. d) The lift will be blocked if parameter "DOORSIDE A/Blocking" is set to "yes". e) A fault message F-doors is written into the stack memory. When parameter "DOORSIDE A/Blocking" is set to "no", only a fault message F-doors is sent!
Output light grid test B	output	1671	Test output for the light grid at entrance side B. The light grids are tested prior to each travel when parameter "DOORSIDE B/LS-Test" has been set to "yes". Function: a) The output is set for 1 second. b) Evaluation of the light grid input (VIO No.: 119) c) When the light grid input does not become active within this one second there must be a fault. d) The lift will be blocked if parameter "DOORSIDE B/Blocking" is set to "yes". e) A fault message F-doors is written into the stack memory. When parameter "DOORSIDE B/Blocking" is set to "no", only a fault message F-doors is sent!
Activation of Maintenance	input	1672	When the input is active, the function Maintenance is engaged. See "Maintenance switch over" in the shortcut menu. With maintenance engaged, the out-of-service indication is set and no messages will be written into the stack memory (Exception: M-maintenance switch and F-System). If parameter Release (see page 96) is set to yes, all maintenance intervals will be reset. If maintenance is engaged by the shortcut menu it will not be reset by an inactive input 1672! If maintenance is engaged via input 1672 it will not be reset by the shortcut menu with "Maintenance switch over"!
Monitoring of emergency releases	input	2635	The contactors behind the emergency release contacts are checked for similar switching. In the event of a fault (active input) the lift is blocked with the remote shutdown function.
Inspection / return control			
Inspection	input	60	see page 47
Inspection up	input	61	see page 47
Inspection down	input	62	see page 47
Inspection fast	input	63	see page 47
Return operation	input	64	see page 47
Return up	input	65	see page 47
Return down	input	66	see page 47
Encoding/shaft information			
Teaching key	input	67	see page 167
Teaching key-acknowledgement	output	68	see page 167
Car in levelling zone	Input	69	Depending on parameter MONITORING\Zone switches\range. Output is set if the distance from car to current level is $\leq$ of the parameterized value.
Car in levelling zone and approaching to destination level	output	1656	Depending on parameter MONITORING\Zone switches\range. Output is set if the distance from car to actual level is $\leq$ of the

			parameter value, the lift is in approach to the destination level and the actual level is identical with the destination level.
Drive			
Inching motor downward	output	70	A separate inching machine for relevelling can be operated (for hydraulic drives only)
Inching motor upward	output	87	A separate inching machine for relevelling can be operated (for hydraulic drives only)
Motor ventilator	output	71	If the travel contactor (VIO No. 75) is energized, the motor ventilator will be switched on. After deenergizing of the travel contactor the motor ventilator is switched off after elapse of the parameterized period of time (see page 107). Exception: with relevelling the motor ventilator is not active.
Brake contactor	output	72	
Travel direction contactor/setpoint up	output	73	
Travel direction contactor/setpoint down	output	74	
Travel contactor	output	75	
2nd Travel contactor	output	76	Function identical VIO No. 75, however time-delayed by 75ms
Star contactor	output	77	For star-delta starting with hydraulic lifts
Delta contactor	output	78	For star-delta starting with hydraulic lifts
Speed V_0	output	79	
Speed V_4	output	80	Travel speed fast
Inspection/return operation speed	output	81	
Relevelling speed	output	82	
Controller release	output	83	Release for drive controller (activated simultaneously with VIO No. 75)
End of contactor overshooting time	input	84	With speed-controlled lifts the controller can communicate the end of the travel, so that the control can drop e.g. the brake and the travel contactors exactly at that moment, see page 57
Controller ready for starting	input	85	With active input (* is set in the VIO-assignment) no travel will be made. Will be inquired before starting.
Upwards travel valve	output	86	Hydraulic valve for the upwards travel
Digital input 0 for controller	output	88	e.g. for Dietz controller
Digital input 1 for controller	output	89	e.g. for Dietz controller
Digital input d.c.brake	output	90	e.g. for Dietz controller
Controller not energized	input	95	Input will be inquired after setting of release and direction. If the input is active, after a time-out period of 2 seconds a fault signal will be sent and all registered calls will be cancelled. If "lift interlocking" is parameterized in case of controller fault, the lift will be interlocked, see page 57
Arrival signal V_E for DIETZ Multidrive	output	372	
Speed V_3 for DIETZ Multidrive	output	373	
Speed V_1	output	395	This output is active only in the special software "several speed modes".
Speed V_2	output	396	This output is active only in the special software "several speed modes".
Speed V_3	output	397	This output is active only in the special software "several speed modes".
shut-off valve	output	1738	Control of the shut-off valve at the Giehl hydraulic block: The output is switched on for 0.5 seconds before the VIO 75 contactor and switched off 0.5 seconds after the VIO 75 contactor has stopped. So that the normal hydraulic control is not affected in time, it is checked with each VIO assignment whether the VIO 1740 is present. If the VIO 1740 is not present, there will be no delay in turning the VIO 75 on and off.
Fast inspection speed	output	398	Inspection speed "fast"
Zone / safety module			
Zone A (entrance side A)	output	100	see page 17

Zone B (entrance side B)	output	101	see page 17
SHB A preparation	output	103	see page 17
SHB B preparation	output	104	see page 17
SHB A in zone	input	106	see page 17
SHB B in zone	input	107	see page 17
SHB A fault	input	109	see page 17
SHB B fault	input	110	see page 17
UCM			
UCM detection	input	1596	
UCM SHB error	input	1597	
UCM SHB enable	output	1595	
UCM SHB preparation	output	1594	
Hold the locking magnet in (UCM) zone	output	1643	
DSV	output	1644	
Monitoring of locking magnet	input	1686	
Travel (without relevelling)	output	1687	
Relevelling travel	output	1688	
UCM zone switch	output	1689	
Shorten the turn-off delay of the blocking magnet	output	1695	
Reset button	input	1699	
EN 81-20			
SHB A K1	input	2610	MULTiBUS SHB only
SHB A K2	input	2611	MULTiBUS SHB only
SHB A K3	input	2612	MULTiBUS SHB only
SHB A K4	input	2613	MULTiBUS SHB only
SHB B K1	input	2614	MULTiBUS SHB only
SHB B K2	input	2615	MULTiBUS SHB only
SHB B K3	input	2616	MULTiBUS SHB only
SHB B K4	input	2617	MULTiBUS SHB only
UCM SHB K1	input	2618	MULTiBUS SHB only
UCM SHB K2	input	2619	MULTiBUS SHB only
UCM SHB K3	input	2620	MULTiBUS SHB only
UCM SHB K4	input	2621	MULTiBUS SHB only
BYPASS 0	input	2622	BYPASS switch in position "0" = normal operation
BYPASS 1	input	2623	
BYPASS 2	input	2624	
BYPASS 3	input	2625	
KT signal door A	input	2626	"own signal" for car doors closed at BYPASS operation
KT-signal door B	input	2634	"own signal" for car doors closed at BYPASS operation
Indicator "lift moving" with active BYPASS	output	2627	Warning "caution lift moves" under the car, when the lift travels with inspection or return control and the BYPASS switch is active (output not flashing).
Inspection travel FS	input	2628	Switch in car top control box
Inspection GS	input	2629	Switch in shaft pit control box
Inspection travel GS	input	2630	
Inspection up GS	input	2631	

Inspection down GS	input	2632	
Reset KIR inspection GS	input	2633	
Doors generally			
Key open (side A+B)	input	112	
Key close (side A+B)	input	113	The door-closed key breaks off the door-open time
Door A			
Opening	output	127	
Closing	output	130	
Nudging	output	133	see page 41
Reversing contact	input	115	
Light barrier	input	118	
Key open	input	121	
Key close	input	124	The door closing key will cancel the door-open time and close the door. The function is active with open door only.
Limit switch open	input	136	
Limit switch closed	input	139	
Motor protection	input	142	If a motor protection switch is provided, the tripping can be recognized by means of this input
Door closes in n seconds	output	144	If the door is supposed to close within n seconds (parameter DoorClsGong, see page 118) the output will be set
Lobby-scan	input	148	A possibly installed lobby-scan device (infra-red, radar device, light beam ...) can be connected directly to a computer input. The lobby-scan acts like a light barrier, however, it will no longer be evaluated after door starting to reclose, when the time set in parameter "lobby-scan" (see page 122) has elapsed, so that the motion of the own door will not cause the door to reverse.
Door B			
Opening	output	128	
Closing	output	131	
Nudging	output	134	see page 41
Reversing contact	input	116	
Light barrier	input	119	
Key open	input	122	
Key close	input	125	The door-closing key breaks off the door-open time
Limit switch open	input	137	
Limit switch closed	input	140	
Motor protection	input	143	If a motor protection switch is provided, release can be recognized by means of this input
Door closes in n seconds	output	147	If the door is supposed to close within n seconds (parameter DoorClsGong, see page 118) the output will be set.
Lobby-scan	input	149	see VIO No. 148 (see page 66)
Indicators visual / acoustic			
Acknowledgement external control off	output	49	Is set in case of inactive external control. Engaged with: Inspection, return, shortcut menu "External control off", service operation, internal control, car separating door, remote shutdown, transport of hazardous goods and collective fault signal active (VIO No. 1)
Firemen evacuation set but evacuation not yet performed	output	96	see page 50
Fire emergency evacuation completed	output	97	Lift positioned level on fire emergency level if fire emergency is active
Firemen <u>evacuation</u> completed	output	99	see page 50

Ongoing travel indication upward door A	output	156	Ongoing travel upward, door A for all levels. The output will be set upon arrival at the destination level. It will be used in connection with intelligent floor position indicators that can, by means of the preset floors, recognize themselves, whether they show the arrow or not. See also page 46
Ongoing travel indication downw. door A	output	157	Ongoing travel ind. downward, door A for all levels (see above)
Ongoing travel indication upward door B	output	158	Ongoing travel ind. upward, door B for all levels (see above)
Ongoing travel indication downw. door B	output	159	Ongoing travel ind. downward, door B for all levels (see above)
Travel direction indicator upward	output	160	see page 46
Travel direction indicator downward	output	161	see page 46
Special mode indicator (external priority active)	output	162	Will be set with external priority. The indication will be switched off only, when the subsequent prioritized internal call has been processed, too.
Occupied-indication	output	163	The output will be set if the lift is not at rest, i.e.. the rest timer is 0 (can be checked in the shortcut menu, see page 46)
Out-of-service indication	output	164	see page 58
Zero-load indication	output	248	The output is set when zero-load is active.
Full-load indication	output	165	see page 45
Overload indication	output	166	see page 45
Indication of half load	output	169	see half load (VIO No. 54)
Loading-time-running indication	output	167	Do not use any more as from software version 2.11.
Loading-time- indication blinking	output	171	See key "loading time" (VIO No. 50); replacement for VIO No. 167
Hazardous goods indication blinking	output	168	Detailed information reg. transport of hazardous goods please take from the respective special instruction.
Hazardous goods indication static	output	206	Detailed information reg. transport of hazardous goods please take from the respective special instruction.
Telescopic apron contact	input	207	
Emergency release contact	input	208	
Anzeige Führerbetrieb	output	170	see page 53
32x pos. indicator analog (1 out of N ...)	output	172...203	
32x Actually here indication	output	211...232	Actually-here indication is set selectively as per level, if the lift is in normal operation and positioned to level (VIO No. 69), with door unlocking magnet dropped (VIO No. 30). The outputs will not be set if the out-of-service display is active (VIO No. 164). Important for magnet switch shaft information: outputs are not set if the level is 0.
Inspection mode	output	245	Display inspection mode
Return mode	output	246	Display return mode
Door fault side A	output	244	Display of door fault for door A; see VIO No.: 247
Door fault side B	output	249	Display of door fault for door B; see VIO No.: 247
Door fault	output	247	Display of door fault for both entrance sides All F-door, M-door and F-interlock signals are setting the output (set only door contact fault with door unlocking magnet, not SHK or SHB bridging). The output is reset with the next trip (level to be cleared) or with inspection, return activation/deactivation, or control activation/deactivation
Remote shutdown completed	output	260	Output is set if remote shutdown is terminated.
Remote shutdown indication	output	262	The output is set if remote shutdown is active.
Thermistor input active	output	261	The output is set if "thermistor" is active.
Emergency power indication	output	263	The output is set if emergency power is active.
Firemen service indication	output	1653	The output is set if firemen service is active.
Fire emergency indication	output	1654	The output is set if fire emergency is active .
Automatic control indication	output	1658	The output is set if "automatic control" is active.

Emergency call indication	output	1659	The output is set if the emergency call (alarm) is active.
20x pos. digital indicator (Graycode, binary code, 2x10-segm., ...) For setting the segment indicator: digits = 268-282, tens = 283-297	output	268...297	
Gray-Code parameterizable	output	2601...2606	Parameterizable Gray-code outputs for each level, see page 148.
Driving direction upward	output	299	Is set with any upward trip (normal, direct, inspection, return and relevelling trip) simultaneously with outputs 79,80,81,82,86, depending on the set kind of drive.
Driving direction downward	output	300	Is set with any upward trip (normal, direct, inspection, return and relevelling trip) simultaneously with outputs 79,80,81,82,86, depending on the set kind of drive.
Internal call registered	output	340	At least one internal call for entrance side A or B or for both entrance sides is set.
External call registered	output	341	At least one external call (control and group) is registered
Internal call downward registered	output	342	At least one internal call below current level is registered.
Internal call upward registered	output	343	At least one internal call above current level is registered.
External call downward registered	output	344	At least one external call (control or group) below actual level is registered.
External call upward registered	output	345	At least one external call (control or group) above the current level is registered.
Call registered downward	output	346	At least one internal or external call below actual level is registered.
Call registered upward	output	347	At least one internal or external call above actual level is registered.
31x ong. travel indicators upw. door A	output	1441...1471	Ong. travel indicator door A level-selective. The output will be set upon arrival at the respective destination level, see page 47
31x ong. travel indicators downwd. door A	output	1482...1512	see above
31x ong. travel indicators upw. door B	output	1521...1551	see above
31x ong. travel indicators downwd. door B	output	1562...1592	see above
Levelled-indication for the actual level with indication of distance by parameter	output	1599	If the absolute distance from the car to actual level is equal or less than parameter Monitoring/Level switch (see page 138), the output is active. Irrespective of the zone and the relevelling run. If the lift is in the normal operation mode the output is switched off, irrespective of the distance to the level.
Disable signal for both entrance sides	output	1600	see page 118
Disable for entrance side A	output	1601	see page 118
Disable for entrance side B	output	1602	see page 118
Indic. door timeout for both entrance sides	output	1603	see page 176
Indic. door timeout for entrance side A	output	1604	see page 176
Indic. door timeout for entrance side B	output	1605	see page 176
Indic. lift active in group	output	1606	Output is set if lift is active in group
Indic. take lift out of group	input	1607	Lift is taken out of group if input is active
Door A is open	output	1608	Output is active only if automatic doors are parameterized, car door contact opened and x35 shown on the display. No interrogation of a possibly available limit switch. For manual doors with automatic car door the output is set independently from the landing door contact.
Door B is open	output	1609	see VIO No.: 1608
Door A and door B are open	output	1610	Output is active when VIO No. 1608 and 1609 are active.
32 x position indicators	output	1611...1642	Position indicators 1 out of N → irrespective of operating mode. These outputs are set always if teaching travel is set !
6 x position indicators Gray-Code	output	1680...1685	Position indicators with Gray-Code → independent from operating mode. These outputs are set always if teaching travel is set!
Indication safety light grid	output	1645	The output is set if a safety light grid fault has occurred
Indication emergency braking system (NBS)	output	1647	The output is set if a NBS fault has occurred.

Light grid test-output	output	1648	The output is set prior to the travel for the time set in Parameter MONITORING/TestoutputZ. The output will not be set in case of inspection, return and releveilling modes!
Indic. 1 dwell time exceeded	output	1650	Output is set if dwell time is longer than or equalling parameter Control/DwellTme1 (see page 132).
Indic. 2 dwell time exceeded	output	1651	Output is set if dwell time is longer than or equalling parameter Control/DwellTme2 (see page 132).
Initializing pulse upon start-up	output	1652	The output is set for a period of 250 msec upon engagement of control.
Levelling switches with indication of distance by parameter	output	1655	When the absolute distance from the car to current level is equalling or less than the parameter Monitoring/ Level swtch (see page 138), the output is active.
Travel indication	output	1668	Output is set with normal travel. With inspection, return and releveilling the output will not be set.
Deactivate the monitoring of nominal speed	input	1669	If the input is active then the nominal speed control will not be performed.
Destination level	output	1700...1732	Actual destination of the lift. If the lift has not got a destination level, output 1700 will be active.
Car gong	output	2500	Is set with active external control in approach to the level and with destination level being the actual one, or if door reversing is set by an external call.
32x External gong door A	output	2501...2532	(see above) Will be set however at the actual level only
32x External gong door B	output	2541...2572	(see above) Will be set however at the actual level only
Landing gong entrance A for all levels	output	2575	see VIO No. 2500
Landing gong entrance B for all levels	output	2576	see VIO No. 2500
Car gong upward	output	2577	Is set with active external control in approach to the level and with destination level being the current one, if drive direction is upward. Is not set with door reversal by external call.
Car gong downward	output	2578	Is set with active external control in approach to the level and with destination level being the current one, if drive direction is downward. Is not set with door reversal by external call.
Indic. transport control active	output	3476	Is set with active transport control.
Transport control: Key switch in the car	input	3475	See operation mode Transport control (see page 43)
Output transport control cancelled	output	3477	If the lift is on transport level and the key switch in the car (VIO No: 3475) is taken off, the output will be set. The output can be used to terminate the transport control automatically. With external call key, the output shall be given also to the coil of the impulse relay.
Indication internal priority active	output	3479	Is set with active internal priority.
Output fault standstill monitoring	output	1660	Output is active only in the special version "Standstill monitoring".
Indic.: soft external priority active	output	1661	Is set with active "Soft external priority".
Lowering indicator	Ausg	1663	The output is set when lowering is active.
Indic. parking	output	1664	The output is set when parking is active.
Output maintenance disable	output	1665	see page 77
Output maintenance request active	output	1666	see page 77 Signal Maintenance
Output monitoring of motor run-time	output	3885	The output will be set set if the monitoring of motor run-time is recognized. Will be made inactive by inspection or return mode.
Indication of normal operation	output	1657	The output is active, if the output "Out of service (VIO No.:164)" and "External control off (VIO No:49)" are not active. The parking and lowering run have no influence on the output.
Indication of SHK	output	3886	Corresponds to input safety circuit (VIO No.:25)
Indication of landing door contact	output	3887	Corresponds to input landing door contact (VIO No.:26)
Indication of car door contact	output	3888	Corresponds to input car door contact (VIO No.:27)
Indication of door interlock contact	output	3889	Corresponds to input door interlock contact (VIO No.:28)
Speed monitoring 1	output	1696	see page 142
Speed monitoring 2	output	1697	see page 142

Speed monitoring 3	output	1698	see page 142
Indication of setpoint "travel direction change counter" reached	output	1649	The setpoint "travel direction change counter" is reached. The trigger is set by the error message F-DRIVE in the DCP protocol and is thrown from the inverter. The output remains the same also after switching the control off and on and can be reset only by the menu function "RESET TrvDChCnt" in the folder "SLC4 INTERNAL".
Special functions			
CEDES test output	output	250	Output for CEDES light grid function
CEDES test input	input	251	Input for CEDES light grid function
CEDES release	input	252	Input for CEDES light grid function
CEDES emergency stop output	output	253	Output for CEDES light grid function
5x time switch	input	333...337	Outputs of onr integrated time switch each. See parameter page 150
Special input SE1	input	350	Reserved combi-special-input for order-related software versions
Special input SE2	input	351	(see above)
Special input SE3	input	352	(see above)
Special input SE4	input	353	(see above)
Special input SE5	input	354	(see above)
Special output SA1	output	355	(see above)
Special output SA2	output	356	(see above)
Special output SA3	output	357	(see above)
Special output SA4	output	358	(see above)
Special output SA5	output	359	(see above)
Special combi-input SE6	input	360	Reserved combi-special-input for order-related software versions (will be treated internally as call registration)
Special combi-output SA6	output	361	(see above)
Special combi-input SE7	input	362	(see above)
Special combi-output SA7	output	363	(see above)
Special combi-input SE8	input	364	(see above)
Special combi-output SA8	output	365	(see above)
Special combi-input SE9	input	366	(see above)
Special combi-output SA9	output	367	(see above)
Special combi-input SE10	input	368	(see above)
Special combi-output SA10	output	369	(see above)
Input activates output E1	input	380	Input activates an output (Software-controlled). See parameter "TimeOnOff1" page 133.
Input activates output A1	output	381	Associated output of E1 (VIO No. 380)
Input activates output E2	input	382	Input activates an output (Software-controlled). See parameter "TimeOnOff1" page 133.
Input activates output A2	output	383	Associated output of E1 (VIO No. 382)
Input activates output E3	input	384	Input activates an output (Software-controlled). See parameter "TimeOnOff1" page 133.
Input activates output A3	output	385	Associated output of E1 (VIO No. 384)
Input activates output E4	input	386	Input activates an output (Software-controlled). See parameter "TimeOnOff1" page 133.
Input activates output A4	output	387	Associated output of E1 (VIO No. 386)
Input activates output E5	input	388	Input activates an output (Software-controlled). See parameter "TimeOnOff1" page 133.
Input activates output A5	output	389	Associated output of E1 (VIO No. 388)

Calls for all entrance sides			
32x Internal call	input	401...432	
32x Internal call acknowledgmt.	output	441...472	
31x External calls down	input	1782...1812	
31x External calls down acknowledgmt.	output	1862...1892	
31x External calls up	input	1821...1851	
31x External calls up acknowledgmt.	output	1901...1931	
32x direction independent external calls	input	3721...3752	
32x direction indep. external calls acknowledgmt.	output	3761...3792	
32x direction indep. groups external calls	input	3801...3832	
32x direction indep. group external calls acknowledgmt.	output	3841...3872	
31x group external calls down	input	3482...3512	
31x group external calls down ackn.	output	3522...3552	
31x group external calls up	input	3561...3591	
31x group external calls up ackn.	output	3601...3631	
Internal and external calls entrance side A			
32x Internal call	input	481...512	
32x Internal call acknowledgmt.	output	521...552	
31x External calls up	input	561...591	
31x External calls up acknowledgmt.	output	601...631	
31x External calls down	input	642...672	
31x External calls down acknowledgmt.	output	682...712	
32x direction indep. external calls	input	1201...1232	
32x Direction indep. external calls acknowledgmt.	output	1241...1272	
32x Direction indep. external group calls	input	2761...2792	
32x Direction indep. external group calls acknowlmt.	output	2801...2832	
31x group calls up	input	3001...3031	
31 x group calls up acknowledgmt	output	3041...3071	
31x group calls down	input	3082...3112	
31x group calls down acknowledgmt.	output	3122...3152	
32x external priority	input	2001...2032	
32x external priority acknowledgmt.	output	2041...2072	
32x soft external priority	input	2321...2352	
32x soft external priority acknowledgmt	output	2361...2392	
32x soft external group priority	input	2921...2952	
32x soft external group priority acknowledg.	output	2961...2992	
32x external group priority	input	2081...2112	
32x external group priority acknowlmt.	output	2121...2152	
32x key switch transport control	input	3321...3352	see operating mode transport control (page 43)
32x hazardous goods calls	input	3641...3672	detailed information reg. transport of hazardous goods please take from the respective special instruction.
Internal and external calls entrance side B			
32x internal call	input	721...752	
32x internal call acknowledgmt.	output	761...792	

31x external calls up	input	801...831	
31x external calls up acknowledgmt.	output	841...871	
31x external calls down	input	882...912	
31x external calls down acknowledgmt.	output	922...952	
32x direction indep. external calls	input	1281...1312	
32x direction indep. external calls acknowledgmt.	output	1321...1352	
32x direction indep. external group calls	input	2841...2872	
32x direction indep. external group calls acknowlmt.	output	2881...2912	
31x group calls up	input	3161...3191	
31 x group calls up acknowledgmt.	output	3201...3231	
31x group calls down	input	3242...3272	
31x group calls down acknowledgmt.	output	3282...3312	
32x external priority	input	2161...2192	
32x external priority acknowledgmt.	output	2201...2232	
32x soft external priority	input	2401...2432	
32x soft external priority acknowledgmt.	output	2441...2472	
32x soft external group priority	input	961...992	
32x soft external group priority	output	1001...1032	
32x external group priority	input	2241...2272	
32x group external priority acknowlmt.	output	2281...2312	
32x key switch transport control	input	3401...3432	see operating mode transport control (page 43)
32x hazardous goods calls	input	3681...3712	Detailed information reg. transport of hazardous goods please take from the respective special instruction.

7. STACK MEMORY

Faults, warnings and messages are shown on the display, e.g. "F-SHK OPEN" (safety circuit open). The first character here is an F for fault, W for warning and M for message.

All relevant events are written into the stack memory as a message. There are 99 entries possible.

The stack memory can be called in menu "INFORMATION/STACK MEMORY". The topmost entry 01 is the latest message.

You can interlock individual messages. In this case they will be no longer memorized in the stack memory. *Example:* The lift is frequently run with external and internal priority. You are searching for a temporarily occurring fault but the stack memory is full with priority calls. You suppress the external and internal priority calls to track down the actual faults.

You will see the headline e.g. "F-SHK OPEN". In order to get more information about this message, you have to point with the menu-arrow onto it and to press [CR]. You will see:

Supplementary information	Example	Explanation
Headline	F-SHK OPEN	
Date	23.10.16	Day.Month.Year
Time	15.37.34	Hour.Minute.Second
Description	SHK open	
Description	during travel	
Start level	01	on this level the lift has started
Destination level	04	this was the destination of the lift
Actual level	01	on this level the fault occurred
Distance from level in mm	+ 473	exact position of car related to the actual level
Program module	Fahrmisc.c	helpful for fault explanation in case of an inquiry to STRACK
Line	7212	dto.

With some messages not all supplementary information would be useful. In this case they are not indicated.

You may clear the stack memory upon leaving the menu by confirming the question "clearing of stack memory?" with [CR]. With [ESC] the memory will not be cleared. In case that the memory is full, with any new entry the oldest entry no.99 will drop out automatically.

List of messages

Title	No. in memo- rizing counter	Explanation
F-SHK OPEN	F 01	The safety circuit, closed under operational conditions, was interrupted during travelling. (VIO number 25)
F-DOOR LOCK	F 02	Door lock contact opened (VIO- number 28)
F-CAR DOOR	F 03	Car door contact opened (VIO- number 27)
F-LANDING DOOR	F 04	Landing door contact opened (VIO- number 26)
F-CONTROLLER	F 05	Controller fault (VIO- number 22)
F-SHB	F 06	Fault safety circuit SHB for door zone monitoring (see page 18) UCM error messages: 1) „UCM-SHB Cause 1“ (VIO 1596 and VIO 1597 inactive): Detected an unintended movement of the car at a standstill. The lift will be locked. By a deliberate reset of the UCM case, the lift goes back to normal operation. 2) „UCM-SHB Cause 2“ (VIO 1596 and VIO 1597 inactive): Detected an unintended movement of the car during relevelling. The lift will be locked. By a deliberate reset of the UCM case, the lift goes back to normal operation. 3) „UCM-SHB Cause 3“ (VIO 1686 inactive in the variant UCM-GBx): At the stop in the floor a quick turn-off of Y6 failed to timely reports to the control. The lift will be locked. 4) „UCM-SHB Cause 4“ (VIO 1596 active): Error of the safety circuit SHB-UCM at restart. The lift will be locked. 5) „UCM-SHB Cause 5“ (VIO 1686 active in the variant UCM-GBx): Y6 doesn't turn-on before a travel. The lift will be blocked. 6) „UCM-SHB Cause 6“ (VIO 1596 active): Error of the safety circuit SHB-UCM. 7) „UCM-SHB Cause 7“ Monitoring function of the connection of the input "UCM-Zone-Scharfgeschaltet". The input "UCM-Zone-Scharfgeschaltet" (VIO 1597) hasn't change his status from active to inactive during travel. 8) „UCM-SHB Cause 8“ (VIO 1686 inactive after restart): Y6 is active after restart. The lift will be blocked. Check the wiring. 9) "UCM-SHB Cause 9" (VIO 348 faulty active before travelling): The lift is blocked. Check the SMA signal from the hydraulic block for errors. 10) "UCM-SHB cause 10" (VIO 348 faulty inactive after travelling): The lift is blocked. Check the SMA signal from the hydraulic block for errors. MULTIBUS-SHB error messages: 0) UA/B=0 K1=0/1 K2=0/1: UA=0: Error SHB door side A/B cause 0 1=0/1 2=0/1 3=0/1 4=0/1: the current state of the relays K1 to K4 K1=0/1: channel 1 has switched off while travelling (0) or remained switch on. K2=0/1: channel 2 has switched off while travelling (0) or remained switch on. Cause: Channel 1 not switched on or channel 2 (before) not switched off. Channel 2 not switched on or channel 1 (before) not switched off. 1) UA/B=1 K1=0/1 K2=0/1: UA=0: Error SHB door side A/B cause 1 1=0/1 2=0/1 3=0/1 4=0/1: the current state of the relays K1 to K4 K1=0/1: channel 1 has switched off while travelling (0) or remained switch on. K2=0/1: channel 2 has switched off while travelling (0) or remained switch on. Cause: K3 is active after release time. 2) UA/B=2 K1=0/1 K2=0/1: UA=0: Error SHB door side A/B cause 2 1=0/1 2=0/1 3=0/1 4=0/1: the current state of the relays K1 to K4 K1=0/1: channel 1 has switched off while travelling (0) or remained switch on. K2=0/1: channel 2 has switched off while travelling (0) or remained switch on. Cause: SHB has not switched, although the lift is in the door zone. Check the channels 1 and 2 to correct switching and whether the enable input is used.
F-ENCODER	F 07	Fault in encoder of shaft encoding system DISK
F-THERMISTOR	F 09	Thermistor fault in driving unit (VIO- number 21)
F-EXTRAN VOLTGE	F 10	Extraneous voltage found on 24V-signal voltage (VIO- number 20)
F-CHECK TIME	F 11	The lift has not moved for a period longer than the set check time, although the respective outputs have been activated (see page 55).

F-DOORS	F 13	An error has been detected on the doors, e.g. door limit switch error, door runtime error, door motor overheated. 1) Cause 0 DA/B; KT signal: VIO 2626/2634 is incorrectly inactive 2) Cause 1 DA/B; KT signal: VIO 2626/2634 is incorrectly active when the door is open. 3) Door A/B fault cause 5: When checking the door contacts according to EN 81-20, the car door contact VIO 27 was incorrectly active when the door was open or the locking contact VIO 28 was incorrectly inactive. 4) Door A/B fault cause 6: When checking the door contacts according to EN 81-20, the car door contact VIO 27 was incorrectly active when the door was open. 5) Door A/B fault cause 7: When checking the door contacts according to EN 81-20, the car door contact VIO 27 was incorrectly active when the landing door was open. 6) Door A/B fault cause 8: When checking the door contacts according to EN 81-20, the locking contact VIO 28 was incorrectly active when the landing door was open. 7) Door A/B fault cause 9: When checking the door contacts according to EN 81-20, the VIO 28 locking contact was incorrectly inactive during the test. 8) Door A/B fault cause 10: Faulty door function before travelling. Check the car door, landing door and locking contacts and, if available, the limit switches. 9) Door A/B fault cause 11: When checking the door contacts according to EN 81-20, the car door contact VIO 27 was incorrectly active during the test. 10) Max attempts door A/B reached: When the maximum number of door faults has been reached, the lift is locked. Parameter "OnErrorStore" in folder ENTRANCE SIDE A/B. If the parameter is set to zero, the lift is not locked. 11) Fault door A/B photocell: In the light grid test according to EN 81-20, the light grid input VIO 118/119 was incorrectly inactive. Or when the doors were opened, the light grid input was permanently active. It must have been inactive at least once when opening the door. Check the wiring of the light grid inputs.
F-CONTACTORS	F 14	1) see page 60 2) Standstill monitoring for uncontrolled car movement. The error message in the stack memory is "Travel contactor monitoring while stopping". Applies only to drive type "Rope controlled". As soon as the parking point has been reached (parameter distance flush up/down) and the car has reached the area ± 50 to the level, standstill monitoring is activated. As long as the input speed equals zero (VIO No.: 84) is not active, the car must not leave the flush area (distance to plane ± 60). If the area is left, the contactors are switched off and the lift is blocked.
F-DRIVE	F 15	1) Parameter SETTINGS/DRIVE 3/StandstillMon A stand still monitoring is carried out when the lift is flush to the level. An error message is issued if the cabin moves 100 mm in an uncontrollable manner and the lift is locked. Associated error message: "F-DRIVE error position StandstillMon". 2) Monitoring of the direction of travel: If the direction of travel does not correspond to the specified direction nominal value, the journey is stopped and the lift is locked. Associated error message: "F-DRIVE error position during journey" 3) Monitoring of the distance parameters: An error message is issued and the lift is locked if errors are detected during the calculation of the deceleration points and speed specifications. The parameter settings in DRIVE BASICALLY and DRIVE 3 must be inspected. Associated error message: "F-DRIVE calculation incorrect" 4) Parameter SETTINGS/MONITORING/ZONE SWITCHES/SpeedMonit Speed monitoring to $v < 0.3\text{m/s}$ during the readjustment journey. Associated error message: "F-DRIVE during readjustment, speed $> 0.3\text{m/s}$" 5) DCP error messages: Error message: "F-DRIVE DCP remaining path incorrect" During the journey, no change to the remaining path has taken place within 150ms. See also SETTINGS/DRIVE 3/DCP/RemainDistT parameter Error message: "F-DRIVE DCP inverter timeout error" No telegrams have been received from the inverter within a time period of 150ms. Inspect the settings of the control unit and inverter DCP connection. Also inspect the cable connection to ensure that the wire assignment and the shielding are both correct.

		Error message: "F-DRIVE DCP inverter cause 2" The inverter has not set the S1 bit (drive active) during the start process. Possible causes are: • A short-break of the safety circuit when starting, without detecting of the SLC4 because of the debounce time of the SHK inputs. • Missing STO signals or missing CO (travel contactors) during the start process. Error message: "F-DRIVE DCP inverter cause 3" The inverter has during the start process not set the S6 bit (brake open). Possible causes are: • A short-break of the safety circuit when starting, without detecting of the SLC4 because of the debounce time of the SHK inputs. • Missing STO signals or missing CO (travel contactors) during the start process. Error message: "F-DRIVE DCP inverter cause 7" The inverter did not respond to the I7 communication telegram before the journey. Information concerning distance to the destination level, speed specification and the braking distance are transferred in this telegram. The calls are cancelled and the lift remains in normal operation mode if no response is received after two attempts. Error message: „F-DRIVE DCP inverter cause 8“ The inverter has got the travel status (bit S1), although he is not ready (bit S0). Possible causes are: • A short-break of the safety circuit when starting, without detecting of the SLC4 because of the debounce time of the SHK inputs. The inverter sets no alarm output. Error message: „F-DRIVE DCP inverter cause 9“ The inverter has got the ready status during travel (bit S0), but not the travel status (bit S1). Possible causes are: • A short-break of the safety circuit when starting, without detecting of the SLC4 because of the debounce time of the SHK inputs. The inverter sets no alarm output.
F-RELEVELLING	F 16	No. of maximum attempts surpassed
F-EEPROM	F 17	The check-sum of the flash-memory is no longer correct. Lift parameters have been lost. Reason for that could be a defective control computer or an inadequate EMC of the lift (see page 6).
F-LIGHT GRID	F 19	If in the putting-into-operation menu a door type without car door is set, but opens the car door contact interrogation in spite of that (VIO number 27), the control assumes that there is a light grid or light barrier installed. If the output of the light grid opens, this fault message is sent.
F-EXT DEV FAULT	F 20	see page 60
F-BRAKE LEVER	F 21	see page 46
F-BRAKE LINING	F 22	see page 46
F-FORCED DECEL	F 23	1) see page 55 Error messages: "F-FORCED DELAY forced delay activated" and "F-FORCED DELAY forced delay when stopping" 2) During travel-in, the flush position is monitored in addition to the normal travel route. If there is a run over of the flush, the drive is stopped immediately. This monitoring only becomes active if the normal stop has not been performed. One cause could be absolute encoder noise caused by EMC problems. Check the wiring of the absolute encoder and pay particular attention to a proper shielding of the cable. Error message: "F-FORCED DELAY forced delay Encoder data "
F-OVERSPEED	F 24	Recognition of overspeed with +10% allowance. Comparison of the values max. rated speed (parameter MaxVt, see page 155) with measured speed. Comparison not possible in case of magnet switch shaft information.
F-DOOR SLUICE	F 25	see page 41
F-SYSTEM	F 26	May occur in case of instable control computer caused by e.g. hardware or software fault, extreme interference on mains or signal lines, loose or corroded/dirty plug connections at the control computer ...
F-RATED SPEED	F 27	see page 44
F-DECELERATION CONTROL	F 28	Interrogation only in standstill prior to travel. Applies only to drive types "TRACTION

		CLOSED-LOOP CONTROLLED" and "TRACTION OPEN-LOOP CONTROLLED ". Deceleration control on top: With input (VIO No. 6) active and parameter <code>DeclContrTop</code> (see page 110) is set to yes and the actual level is the top level, all calls will be cancelled and the lift shut down. Deceleration control on bottom: With input (VIO No. 5) active and parameter <code>DeclContrBtm</code> (see page 110) is set to yes and the actual level is the bottom level, all calls will be cancelled and the lift shut down. Deceleration control on top and bottom: With parameter <code>DeclContrTopBtm</code> (see page 110) set to yes and the actual level is set with "1" in parameter <code>DECLCONTRMASK</code> (see page 110) and the input (VIO No. 4) is not active, all calls will be cancelled and the lift shut down. If the actual level is set "0" in parameter <code>DECLCONTRMASK</code> and input (VIO No. 4) is active, also all calls will be cancelled and the lift shut down.
F-NBS (emergency braking system)	F 29	Fault message Emergency Braking System: (applies only to traction lifts) 1) Parameter <code>MONITORING/ BrakCheckT</code> unequals 0 Brake carries out a self-test every 24 hours; that this will not be memorized as a fault, faults (active input 1646) are recognized with a certain delay only (parameter <code>BrakCheckT</code>). If during the travel a fault is occurring, it will be recognized without any delay. If there is a fault, the lift will be shut down (in case that parameter "NBS locking" is set to yes) and fault message F-NBS is written into the stack memory. 2) Parameter <code>MONITORING/ BrakCheckT</code> equals 0 If a SHK-fault is recognized in connection with an active input 1646 (NBS), an NBS-fault is obvious and the lift is shut down. If a fault has occurred, a fault message F-NBS will be written into the stack memory.
W-FULL LOAD	W 30	Full-load has tripped (VIO number 51)
W-OVERLOAD	W 31	Overload has tripped (VIO- number 52)
W-ZEROLOAD	W 32	Zero-load has tripped (VIO- number 53)
W-LONBUS	W 33	A fault or warning has been identified on the LON bus. (1) <code>InBufOverflow</code>: Input Buffer LON Bus full (2) <code>OutBufOverflow</code>: Output Buffer LON Bus full (3) <code>NI-Reset</code>: Network interface SLC4 started a reset sequence (4) <code>Module reset</code>: Module started up (ex. power fail) (5) <code>Module timeout</code>: Module doesn't answer over a set period (6) <code>module init</code>: After a reset at the control the module doesn't answer Number: with (2) command, bei (1),(3) no meaning, with (4) ... (6) Module number
W-DOORS	W 34	Error message: KT signal cause 0/1 Cause 0: the KT signal is not active, although the door is closed. Cause 1: the KT signal is active, although the door is opened.
W-COM-MODEM	W 35	Serial interface warning
W-KIR	W 36	Error message: Error KIR cause 0/1 Cause 0: The KIR signal is not available when the control is turned on or after switched off I-GS (reset button was not activated). Cause 1: The KIR signal is faulty after switching on I-GS. Check the relay KIR and the wiring for possible errors.
M-RESTART	M 50	Control ON or reset
M-ERASED	M 51	The stack memory has been erased.
M-LOGON	M 52	A user has entered the menu (with the respective password).
M-MAINTENANCE	M 53	General demand for maintenance for operating time, travelling time, no. of trips, door cycles and lock-faults. Note: Maintenance intervals are registered in folder STATISTICS; except door locking faults: Maintenance intervals are registered in folder MEMORIZG COUNTR/F-INTERLOCK/Messglv.
M-RELEVELLING	M 54	Relevelling trip started
M-TEMPLATE	M 55	Basic template set

M-FIREMEN	M 56	see page 50
M-FIRE EMERG	M 57	see page 50
M-EMERG POWER	M 58	see page 53
M-CONTROL OFF	M 59	see page 52
M-INSPECT ON	M 60	see page 47
M-INSPECT OFF	M 61	see page 47
M-EMERG OP ON	M 62	see page 47
M-EMERG OP OFF	M 63	see page 47
M-TEACHING TRVL	M 64	Start of teaching travel; fault upon teaching travel by invalid terminal level
M-ENCOD REPLACE	M 65	The connected encoder has been replaced.
M-CAR LIGHT	M 67	see page 51
M-INTERNAL PRIOR	M 68	see page 42
M-SERVICE	M 70	see page 44
M-PARKING	M 71	A parking travel has been carried out.
M-EXTERNL PRIOR	M 72	see page 42
M-CAR SEP DOOR	M 73	see page 41
M-START RELEASE	M 74	1) The VIO 35 prevents the lift from starting, see page 61 2) During the emergency power evacuation, the lift is prevented from starting until the emergency power server issues the release. 3) In DCP operation, the lift is prevented from starting following events: a) Break of the DCP connection (DCP timeout message) b) Prewarning inverter fault. Is transmitted by the inverter in the DCP protocol. With active warning, no travel may be initiated. In all three cases the message "M-Start release No release" written to the stack.
M-CONTR RELEASE	M 75	see page 64
M-ATTENDANT	M 76	see page 53
M-DOORS	M 77	1) The controller wanted to open the door → Door motor was set to but the car door contact has not opened. 2) door timeout Parameter DoorTimeout (see page 135): The parameter is present so that a blocked (but not faulty) lift does not permanently obstruct the group. It indicates the time in seconds, from when the lift deregistering from group operation with a blocked door, e.g. photocell is active.
M-COM-RDT	M 78	Event occurred at data communication.
M-SPECIAL FUNCTION	M 79	Special messages for special software versions
M-EMERGENCY CALL	M 80	Emergency Call demanded
M-LIFT NO	M 81	Lift number was changed
M-NUDGING	M 82	see page 41
M-GROUP	M 83	Lift (No. is mentioned in the first text line) is taken out of the group since no telegrams were received any longer. Timeout-time can be parameterized, see page 136
M-COM-LOGIN	M 84	Login via interface (LIFTnet)
M-COM-LOGOUT	M 85	Logout via interface (LIFTnet)
M-LIGHT GRID	M 86	Light grid fault occurred
M-MAINT SWITCH	M 87	Maintenance has been set.
M-LIFTNET	M 88	By message M-LIFTNET, changes at the VIO-assignment carried out with LIFTnet are recorded.

8. MEMORIZING COUNTER

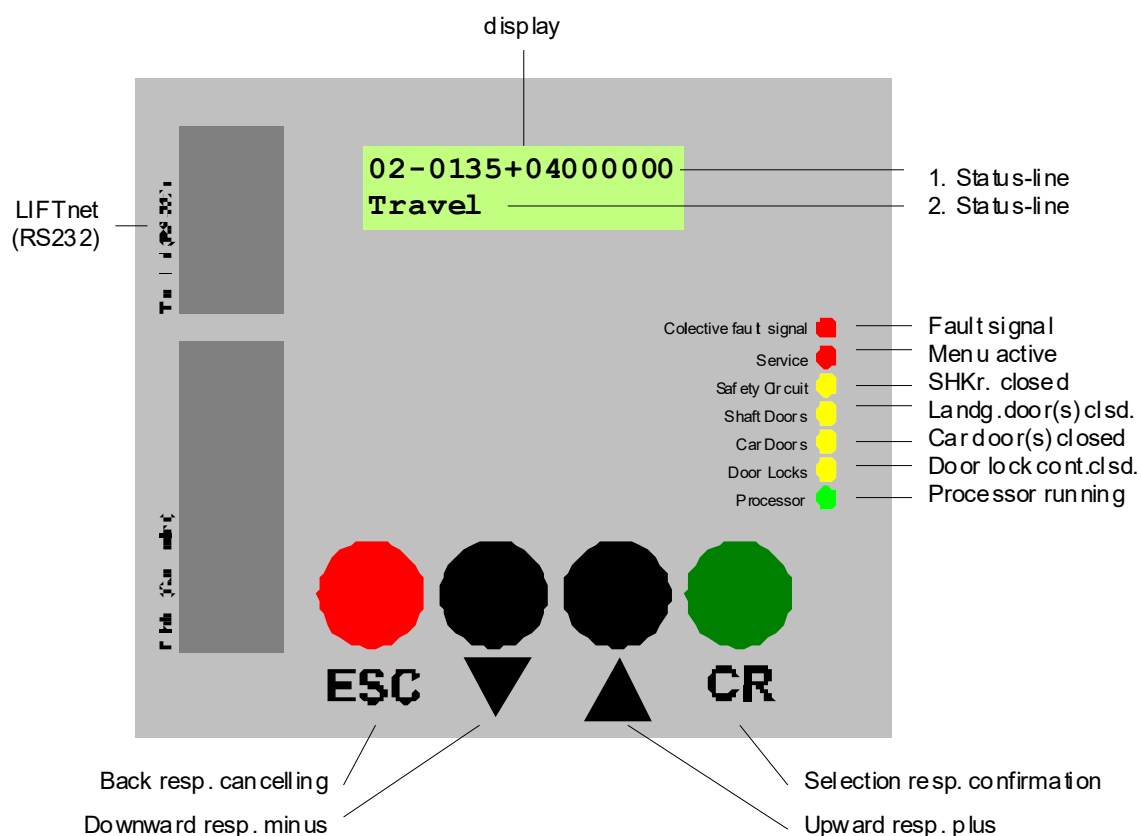
For the purposes of statistics, all registered messages are summed up in the memorizing counter. The memorizing counter can be called up in menu „INFORMATION/COUNTMEMORY“.

For each entry you see the starting-date of the counter, and the value. You can de-activate each message individually, set the occurred frequency to any value (even to "0") or set the starting-date manually.

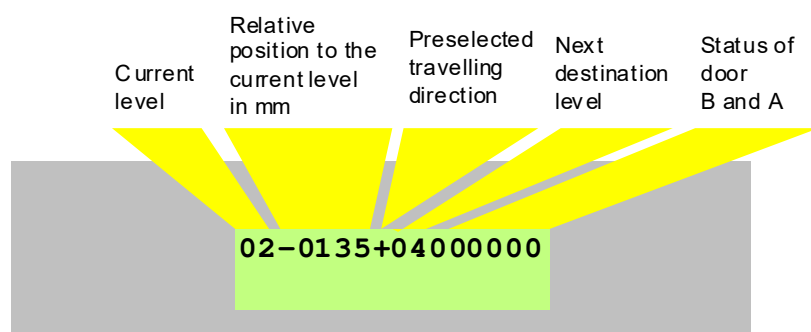
If you have de-activated any message number (-type), it will be no longer written into the message and memorizing counter.

You may cancel the memorizing counter if upon leaving the menu you are confirming the question "cancelling memorizing counter?" with [CR]. With [ESC] the memory will not be cancelled. Upon cancelling, the actual date will be entered as the starting date automatically in all entries.

9. OPERATION OF THE CENTRAL UNIT



9.1. First status line



The *current* level is the level at which the lift is currently located.

With encoding by absolute encoder this level will always be switched over exactly between two levels (Example: level 2 on elevation 4500 mm, level 3 on elevation 7000 mm ⇒ switch over on elevation 5750 mm).

Door status:

The 3 lefthand numerals represent the status of door B, the right hand numerals those of door A, with the following meaning:

X51 door closed
 X24 door opening
 X35 door is open
 X42 door closing motion
 X45 light grid test acc. EN 81-20
 376 door stopped
 for X-- the numbers 4, 6, 8 may stand
 8: door has been reversed
 6: door opening when travel is completed
 4: door closing before travel has started.

9.2. Moving in the menu

You will always see only two lines of the whole menu. The arrow at the begin of the line marks the actual position in the menu. By means of the black keys [↑] and [↓] you will scroll in the menu up and down line by line. When you have reached the top or the bottom of the menu you will not get further by another pressing of the key, i.e. the menu does not scroll through. With the green key [CR] you will change to a sub-menu (folder) resp. select a menu level. By the red key [ESC] you will leave the sub-menu (folder) or abort the actual function. Files are always written in CAPITAL LETTERS.

By pressing the red key [ESC] in the main menu, the menu system will be cancelled. Already set resp. changed data will be written automatically into the read only memory (Flash).

9.2.1. Kinds of input

By pressing the green key [CR] you will be changing the input mode and the red key [ESC] breaks off the input any time. There are two kinds of input, depending on the type of variables.

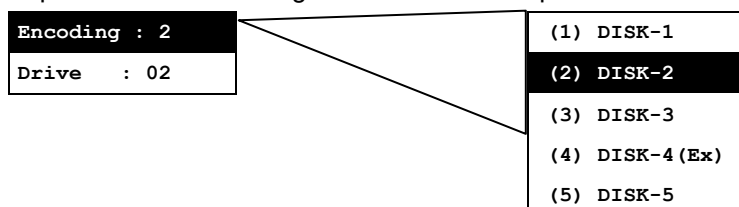
9.2.2. Input mode 1

An underlining marks the numeral that is to be processed. By means of the black keys [↑] or [↓] the character can be modified. By pressing the of green key [CR] you will come to the next numeral or you will acknowledge the input after the last one.

DeclUp : <u>1</u> 200 DeclDwn: 1200
--

9.2.3. Input mode 2

After changing into the input mode the actual line equals the value (in parentheses) set hitherto. By means of the black keys [↑] or [↓] you can scroll up or down line by line. By pressing the green key [CR] the input will be acknowledged and the value in parentheses will be taken over.

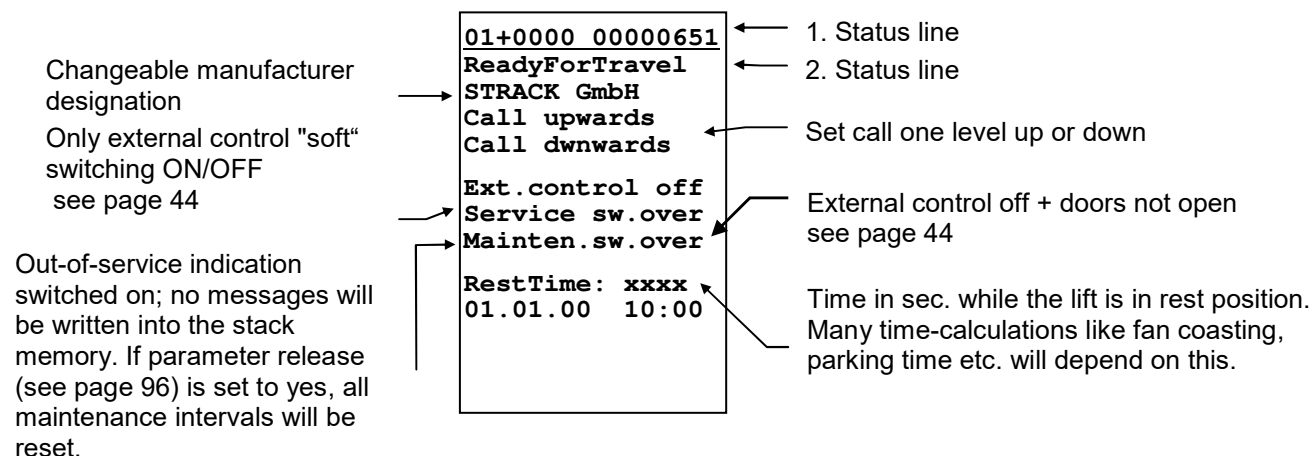


9.3. Shortcut menu

If you see the status image, e.g.

```
01+0000 00000651
ReadyForTravel
```

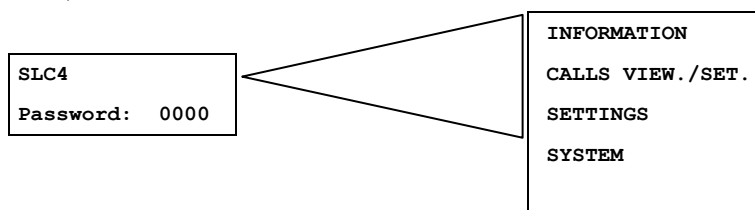
you may, without entering the main menu, set calls to the next level, switch-off/on the external control, switch-off doors, etc.. With key [↓] you will change the line below. You will scroll downward through a menu that looks as follows:



Scroll upward with key [↑]. On very top or by pressing key [ESC] you will see again the normal 2nd status line. **Only** out of the normal status image you may enter into the main menu

9.4. Main menu

After pressing key [CR] you will be asked to enter a password. You will find an overview of the menu set-up below, under section "Menu overview".



The preset standard passwords can be changed in the menu "SYSTEM\USER\".

Password	
0010	"Attendant" Supervisory viewing: fault reports etc., calls viewing/setting
0020	"Fitter" for maintenance and trouble shooting Viewing and changing however no modification of safety relevant parts (e.g. no change of VIO numbers)
0030	"Technician" Viewing and changing
xxxx	"Supervisor" Adjusting of template and drive (required for the first basic settings of the control computer only)

10. MENU OVERVIEW

As a rule, the setting values shown below are the maximum values that can be set.

10.1. INFORMATION

```

STACK MEMORY
  01_LOGON
      M18-LOGON
      Time: 23:59:59
      Date: 31.12.99
  02_RESTART
      M16-RESTART
      Time: 23:59:59
      Date: 31.12.99
  03_***** (=empty)
      ...
MEMORIZG COUNTR
  F01: 99999999
      F-SHK OPEN
      Active: y
      RDT-active: 0
      Number: 99999999
      Date : 31.12.03
  F02: 99999999
      ...
  F03: 99999999
      ...
  ...
STATISTICS
  OPERATING TIME
      Year/Mon: 00.00
      Days/Hrs: 00.00
      Min/Sec : 00.00
      Hrs      : 99999999
      MessgIv : 65535
      cancel  : n
      TEST
          TEST -14 days
          Test 100%
          Test +14 days
  TRAVELLING TIME
      Year/Mon : 00.00
      Days/Hrs : 00.00
      Min/Sec  : 00.00
      Hrs: 99999999
      MessgIv: 65535
      Cancel: n
  TRAVELS
      Num: 4294967295
      Up : 4294967295
      Dwn: 4294967295
      MessgIv: 99999999
      Erase: n
  DOOR CYCLES
      Door A: 4294967295
      Door: 4294967295
      MessgIv A: 99999999
      MessgIv B: 99999999
      Erase A: n
      Erase B: n
  LEVELS
      Lv-01: 99999999
      Lv-02: 99999999
      Lv-03: 99999999
      ...
      Lv-32: 99999999
      Erase: n
  MAINTENANCE
      Release: n
      Disable: n
      RESET MAINT
  AVAILABILITIES
      COMMISSIONING
      Time: 23:59:59
      Date: 31.12.99

```

```

ON-PERIOD
    Year/Mon : 00.00
    Days/Hrs : 00.00
    Min/Sec  : 00.00
    Hrs      : 99999999
OFF-PERIOD
    Year/Mon : 00.00
    Days/Hrs : 00.00
    Min/Sec  : 00.00
    Hrs      : 99999999
LIFT DISABLED
    Year/Mon : 00.00
    Days/Hrs : 00.00
    Min/Sec  : 00.00
    Hrs      : 99999999
PRIORITY TRIPS
    Year/Mon : 00.00
    Days/Hrs : 00.00
    Min/Sec  : 00.00
    Hrs      : 99999999
MAINTENANCE PERIOD
    Year/Mon : 00.00
    Days/Hrs : 00.00
    Min/Sec  : 00.00
    Hrs      : 99999999
EXT.CONTROL ON
    Year/Mon : 00.00
    Days/Hrs : 00.00
    Min/Sec  : 00.00
    Hrs      : 99999999
EXT.CONTROL OFF
    Year/Mon : 00.00
    Days/Hrs : 00.00
    Min/Sec  : 00.00
    Hrs      : 99999999
LIFT
    No.   : SLC4-1234
    Name  : Owner
    Place : Building
CONTROL
    SLC4
    PrgVers: x.xx
    AwVersion: x.xx
    AwLength: 00xxxH
    DtaVers: x.xx
    Revision: 0 - z
    EPROM: Standard/Special
    PICVers: 1.22
    HwVers : 480k
    STRACK LIFT AUTOMATION GmbH
DATE/TIME
    Date : 31.12.99
    Time : 23:59:59
    ST chngeover: y
LEVEL-INFO
    Levels: 32
    Height: 999999mm
    01-02 : 999999mm
    02-03 : 999999mm
    03-04 : 999999mm
    ...
MONITOR
    DRIVE
    DOORS
    GROUP
    ENCODER
    CCP
    COM-RDT
    EMERGENCY POWER
    LON BUS

```

10.2. CALLS VIEWING/SETTING

```

Call level-up
Call level-down
INTERNAL
    01-08: 00000000
    09-16: 00000000

```

```

17-24: 00000000
25-32: 00000000
EXTERNAL UP
01-08: 00000000
09-16: 00000000
17-24: 00000000
25-32: 00000000
EXTERNAL DOWN
01-08: 00000000
09-16: 00000000
17-24: 00000000
25-32: 00000000
EXTERNAL
01-08: 00000000
09-16: 00000000
17-24: 00000000
25-32: 00000000
RANDOM PROGRAM
Internal: 0000
External: 0000

```

10.3. SETTINGS

```

VIO-ASSIGNMENT
AZE0
    IDC-0.1 : +3650
    ...
    IDC-0.8 : +3650
    OTB-0.1 : +3650
    OTB-0.2 : +3650
    OTA-0.1 : +3650
    ...
    OTA-0.6 : +3650
    ORO1-0.1: +3650
    ...
    ORO1-0.5: +3650
    ORNO-0.1: +3650
    ORCO-0.1: +3650
    ORNC-0.1: +3650
    IS-0.1  : +3650
    ...
    IS-0.4  : +3650
    IAC-0.1 : +3650
    IPTC-0.1: +3650
    PE-Test : +3650
AZE1
    IDC-1.1 : +3650
    ...
    IDC-1.16: +3650
    OTA-1.1 : +3650
    ...
    OTA-1.16: +3650
AZE2
    ...
AZE3
    ...
AZE4
    ...
BUS-MODULE 1
    D:000000000000
    Type: UMOD1410
    Definition: 3
    IO- 1E: +3650
    IO- 1A: +3650
    ...
    IO- 16E: +3650
    IO- 16A: +3650
BUS-MODULE 2
    ...
    ...
BUS-MODULE 40
    ...
DRIVE BASICALLY
    DistV4 : 32000
    DeclUp : 20000
    DeclDown : 20000
    DistV3 : 32000
    DeclUpV3 : 20000

```

```

DeclDnV3 : 20000
DistV2   : 32000
DeclUpV2 : 20000
DeclDnV2 : 20000
DistV1   : 32000
DeclUpV1 : 20000
DeclDnV1 : 20000
DistLevUp: -250
DistLevDn: +250
InspFast : y
InspLimUp: 5000
InspLimDn: 5000
MaxSpAdCu: 32000
DirectCor: 20000
SpAdDirTr: y
CORRSPADCU
    Lv 01-02: 20000
    Lv 01-03: 20000
    ...
    Lv 31-32: 20000
MotorFan: 600
BrakeLeverMon: 9
BrakeLeverT: 9999
StandstillMon: j
Drive 3 (Traction brake controlled)
TrDirDlyOn:2000
SpeedDlyOn:2000
BrakeDlyOn:2000
TrDiDlyOff:4000
BrkeDlyOff:4000
CntctrDeclA:99
SpeedReLev: n
BrReLevDly: n
CNTRLRFAULT:2
    (1) stop+lock
    (2) stop
IvCntrlFault: 255
THERMISTOR: 4
    (1) abort
    (2) abort+lock
    (3) next level
    (4) nxt lv+lock
DeclCntrTop: n
DeclCntrBtm: n
DeclCntrTopBtm:n
DECLCONTRMASK
    01-08: 00000000
    09-16: 00000000
    17-24: 00000000
    15-32: 00000000
Inching motor: j
DCP
    DCP: 4
    RelevRemDist: y
    DCPDclDis: 00000
    RemainDistT: 000
    SpeedCheck: y
    SpeedChkDT: 0000
    LCD format: 1
    FREQ.INVERTR
DRIVE 4 (Hydraulic)
StarDltaRe:5000
MotDlyOff:2000
TrDiDlyOff:4000
ShutOffVOn: 2000
ShutOffVOF: 2000
WthFltLowering: 2
    (1) abort+lock
    (2) abort
TERMISTOR: 6
    (1) abort
    (2) abort+lock
    (3) nextlevel
    (4) nxt lv+lock
    (5) lowering
    (6) lowrng+lock
LowrngLevel: 32
LowrngTime : 900

```

```

Doors close : n
InchingMotor: y
RATED SPEED
    v mm/s: 9999
    InterrogTime:255
ValveMoni: n
ValveMoniTm: 9999
DistV2: 20000
DcelUpV2: 20000
DcelDnV2: 20000
MOTORRUNTIMEMON
    RunTmLocking: n
Variant: 00
    Distance: 000
DOORS GENERALLY
    DoorOpnDly:2000
    LckDebncTm:2000
    DoorContCl:5000
SK-DebncT: 5
ReverseCalls:n
OpnOnApprch: n
LoadingTime:900
DoorClsGong: 00
BlockingSig:000
IDLE TRIP
    Level 01: 03
    ...
    Level 32: 03
DoorTimeout: n
LckFltDisab: n
ENTRANCE SIDE A
DOOR : 5
    (0) no door
    (1) manual door
    (2) manual/auto
    (3) AutoWoutLim
    (4) AutoLimOpen
    (5) AutoLimOpCl
LimSwitchOpen:y
MotorOnOpen :n
LimSwitchClos:y
MotorOnClose :n
OpenTimeInt: 19
OpenTimeExt: 19
DOOR_REST_OPTM
    Time Lv 01: 999
    Time Lv 02: 999
    Time Lv 03: 999
    ...
LimDoorOpn:1000
MinOpenTime: 9
PauseRevrs:9999
RunTimeOpen: 999
RunTimeClos: 999
MotRestOff: 999
Lobby time:9999
LS-Test: Y
Disable: Y
WtFltDisabl: 9
RollDoorVar: 99
ENTRANCE SIDE B
    ...
CONTROL
CONTROL MODE : 4
    (1) IndivTravel
    (2) 1K ColdiInd
    (3) 1K ColdiDep
    (4) 2K Collectg
DblCallCancel:y
LockCalls: n
LockTime: 00
OngTravelDly:19
Nudging: 240
ZeroLdCalls: 15
FIRE EMERGENCY
    1.FireEmLvl: 00
    2.FireEmLvl: 00
    3.FireEmLvl: 00

```

```

4.FireEmLvl: 00
5.FireEmLvl: 00
6.FireEmLvl: 00
7.FireEmLvl: 00
8.FireEmLvl: 00
9.FireEmLvl: 00
10.FireEmLvl: 00
11.FireEmLvl: 00
variant1: n
ControlMode: 99
LevelChange: n
TravAtStandst: y
Door status: 9
DoorOpenT: 255
FIRST DOOR
    Level 01: 02
    ...
    Level 32: 02
FIREMEN
    FiremenLvl: 01
    Main switch: y
    FIRST DOOR
        Level 01: 02
        ...
        Level 32: 02
    DeadManContrl: y
    DoorSekfClose: y
    Reversing: y
    MemorizgEvac: n
    ResetMainLv: y
    OneInternCall: y
    Variant: 99
    LEVEL DISABLE
        01-08: 00000000
        09-16: 00000000
        17-24: 00000000
        25-32: 00000000
EXTERNAL PRIORITY
    ExtPriorTime: 60
    WaitingTime: 255
    AccptHdPrior: n
    AccptSoPrior: n
    HPriOustgSPri: y
    Variant: 255
SLUICE OPERATION
    FIRST DOOR
        Level 01: 02
        ...
        Level 32: 02
THERMISTOR
    FIRST DOOR
        Level 01: 02
        ...
        Level 32: 02
EMERGENCY CALL
    EmCallTime: 03
    EmCallSuppr:n
    BothDoorsOpen: y
CarFan      : 99
LightDlyOff: 99
InpDebcTime:200
SHKCallSettg: n
SHKDebounce: 16
StartDelay: 00
RescueTrip: y
Resttime1: 9999
Resttime2: 9999
LB-SetTime: y
OvrloadOnlyLv: y
TimeInOut1: 255
TimeInOut2: 255
TimeInOut3: 255
TimeInOut4: 255
TimeInOut5: 255
EN81 variant: 9
TELESCOPICPRPAN
    DistContct: 9999
    DistSpeed: 9999

```

```
Variant: 9
GROUP
  LiftNo: 8
  Active: n
  GROUP MASK
    Group lifts
    01-08: 11111111
  CallThreshld: 15
  DoorTimeout: 900
  InaktivTime: 255
  BonusTime: 60
  NmbrBonuses: 00
  BONUSTIME MASK
    01-08: 11111111
    09-16: 11111111
    17-24: 11111111
    25-32: 11111111
  Timeout: 10
  PENALTY TIME
    Level01: 99
    ...
    Level32: 99
  DOORLOSSTIME A
    Level01: 60
    ...
    Level32: 60
  DOORLOSSTIME B
    ...
MONITORING
  ZONE SWITCHES
  Zone switches: 2
  ZONE A: 2
    (1) NO
    (2) SHB A
    (3) SHB B
  ZONE B: 2
    ...
  Range+/-: 250
  SpeedMonit: n
  TrvlMonTime: 45
  MONOFEXTDEVCE
    InCsOfFault: 3
    (1) save
    (2) stop
    (3) stop+lock
    (4) next level
    (5) neLv+disabl
  CAR LIGHT
    Shutdown Lv: 32
    DOOR STATUS: 3
    (1) open
    (2) open+close
    (3) closed
    FIRST DOOR
      Level 01: 02
      ...
      Level 32: 02
  FORCED DECELERAT
    Speed1: 10000
    Dstancel: 25000
    Speed2: 10000
    Distance2: 25000
    Speed3: 10000
    Distance3: 25000
    EmergStop: y
  LevelSwrch: 250
  Flush 1: 50
  Flush 2: 50
  UCM
    UCM variant: 6
    (0) UCM-OFF
    (1) UCM-GB2
    (4) UCM-GB1
    (5) UCM-GB0
    (2) UCM-ZB1
    (3) UCM-ZB2
    (6) UCM-DSV
    (8) UCM-iValve
```

```

        (11) UCM-NGV 1
        UCM zone: 250
        Y6DlyMon: 4000
        Y6offTme: 65535
        Y6TestIv: 24
SLG: 0
        0: NONE
        1: STRACK LTU2
        2: STRACK LTU2-STV
        8: CEDES LI
        9: CEDES LI STV
AtSLCFailLev: y
BrakCheckT: 99
EmBr disable: n
TestOutpZ: 9999
Speed1: 10000
Speed2: 10000
Speed3: 10000
EM.CALL FAULT
        (1) Save
        (2) Save + Stop
        (3) Fire alarm
        (4) Shtdn+LiOff
LIFT ATTENDANT
        Flushing: 255
        IvFlush: 1
        MonFlush: 2
        MonEmCall: 2
        EmCallTime: 255
        MonLSensor: 2
        MonTravelCnt: 2
        MonOperateT: 2
        MonParameter: 2
        Idletime: 9999
        K1: 111111111111
        TIMER
                Start1 23:59:59
                End1 23:59:59
                Start2 23:59:59
                End2 23:59:59
                Day: 31
                Su-Sa: 1111111
                M: 111111111111
RELEVELLING
        Active: y
        StartUpw: 49
        EndUpw: 49
        StartDwn: 49
        EndDwn: 49
        Pause[sec]: 9
        Max trials: 99
        InLowergLvl: 99
        WITHMAXTRIALS: 2
                (1) ReLev frm
                (2) Disable
        Pause travel: 9
INDICATORS/GONG
        DISPLAYDIGIT: 4
                (1) binary
                (2) Graycode
                (3) inv.Gray
                (4) 15-Segment
        SEGMENTDISPLAY
                UNIT SEGMENTS
                        Level: 32
                        1111111111111111
                TENS SEGMENTS
                        Level: 32
                        1111111111111111
        DISPLAYANALG: 2
                (1) 1 of N
                (2) adding
        Signals off: 9
        DisplayBlink: y
        BlinkIntvOn: 9
        BlinkIntvOff: 9
        Gong time: 9
        Gong delay: 9000

```

```

Double arrow: y
GRAYCODE PARAM
    GrayCodePerm: y
    LV 01: 111111xx
    ...
    Lv 32: 111111xx
PARKING
    PARKING 1
        ParkTime: 900
        ParkLevel: 32
        StartLevel1:32
        StartLevel2:32
        StartLevel3:32
        Doors close: y
        Light off: y
        VIO No: 333-337
        ...
    PARKING 5
        ...
REMOTE SHUTDOWN
    CheckLevel : 32
    RemShDwnLev: 32
    DOOR STATUS: 3
        (1) open
        (2) open+close
        (3) close
    FIRST DOOR
        Level 01: 02
        ...
        Level 32: 02
TIME SWITCHES
    TIME SW VIO 333
        Start1 23:59:59
        End1   23:59:59
        Start2 23:59:59
        End2   23:59:59
        Day:   31
        Sun-Sat:111111
        M: 111111111111
        ...
    TIME SW VIO 337
        ...
EMERGENCY POWER
    ExtEvac: y
    EmrgPowerLv:00
    DOOR STATUS: 3
        (1) open
        (2) open+close
        (3) close
    Release: y
    LoadDependent: y
    UPWithHydr: y
    MaxLifts: 8
    SwOnWaitingT: 60
    FIRST DOOR
        Level 01: 02
        ...
        Level 32: 02
SHAFT MAPPING
    DOOR A
        Level 01: 11111111
        ...
        Level 32: 11111111
    DOOR B
        ...
ENCODING
    EncoderType: 6
        (1) DISK-1
        (2) DISK-2
        (3) DISK-3
        (4) DISK-4 (Ex)
        (5) DISK-5
        (6) LASER
        (7) Magnetic tape
        (10) DISK-10
        (11) DISK-10 Ex
    TEACHING TRAVEL
    TEACHING START

```

```

        BottomLevel: 32
        TopLevel   : 32
LEVELCORRECTION
        INDIVID IN MM
        ALL SAME
        PROP.FROM ABOVE
        PROP.FROM BELOW
        INDIV. ABSOLUTE
ENCODER
        Resolution:15368
        DataCapacity: 25
        MinVt      : 1000
        MaxVt      : 9999
        ValRange   : 3000
ENCODER REPLACE
RDT-REMOTE CONTROL STATION
BAUDRATE
        (1) 4800 Baud
        (2) 9600 Baud
        (3) 19200 Baud
        (4) 38400 Baud
Timeout: 15
MessgRpt: 2
TimeMesRet: 10
MessagesSend: n
Multiplelogin: n
DestCallVar: 99
Modem: 0
Init: AT&F&D0X3
ModIntdigPse:30
MESSAGE 1
        DialMode: 0
        Diallg: 00000000
MESSAGE 2
...
DIALLING 1
        TNo:
        DialAttempts:00
...
DIALLING 8
TEMPLATES
DRIVE 4
        (1) TracOpnLoop
        (3) TracClsdLp
        (4) Hydraulic

```

10.4. SYSTEM

```

USER
Logout
LogoutDelay: 99
USER LEVEL 1
        Name: LiftAttnD
        Password: 0010
USER LEVEL 2
        Name: Fitter
        Password: 0020
USER LEVEL 3
        Name: Technician
        Password: 0030
USER LEVEL 4
        Name: Supervisor
        Password: xxxx
LON CONFIG
ID: FFFFFFFFFF
NoTrialTest: 255
NoTrialProg: 15
NoTrialConf: 15
NoTrialUncf: 15
SLC4 INTERNAL
DISPLAY
        Text: STRACK GmbH
RESET SPECFUNCT
RESET ENCODEFLT
RESET MEMOCNT
RESET LOCK
ZÜS-INSPECTION
        RuningTimeUp

```

RuningTimeDn
LimitSwitUp
LimitSwitDn
Buffer up
Buffer down
Traction
UCM with drive
UCM without drv
DATA SAVING
LIFTATTD OFF
LIFTATTD ON
TEST EMCALL OFF
TEST EMCALL ON
TEST LIFTATTD

11. PARAMETER

Most of the parameters are active instantaneously after setting, however not immediately taken over into the memory (EEPROM). The modified parameters are automatically saved upon leaving the complete menu (you will again see the status image)

11.1. INFORMATION

11.1.1. STACK MEMORY

Stack memory

Description

In the stack memory the messages are listed-up in the chronological order of occurrence, the topmost entry with no. 01 being the last message. 99 messages can be saved. When the memory is full, the oldest entry (99) will be overwritten. Empty memory space is marked with "*****".

If you prefer not to save individual kinds of messages, you may interlock them by de-activating in the memorizing counter. Upon leaving the sub-menu you will be asked whether you want to cancel the complete stack memory. See also on page 73.

```
→M17_LOGON
  Time: 23.59.59
  Date: 31:12:99
  Technician
  ....
```

11.1.2. MEMORIZING COUNTER

MEMORIZING COUNTER

Range 0 - 99999999

Unit -

Description

For statistics purposes messages of the same type are added up in the memorizing counter.
F = fault; W = warnings; M = messages

F-SHK OPEN:
Message type in plain text

Active:
If "yes", message is entered into stack memory, if "no" message is only counted but not entered into stack memory.

RDT-active (RDT=remote data transfer):
If "yes", message is entered into the memorizing counter for the remote data transfer. If "no", the message is not entered for remote data transfer.

Number:
Total amount of messages since the specified date.
The number can be changed by means of keys CR, UP and DOWN.

Date:
Starting date for the total of messages. By operating key CR the date is set to the actual date and the number is reset to 0.

```
→F-SHK OPEN
  Active: y
  RDT-Active: y
  Num: 00000000
  Date: 07.05.00
  .....
```

11.1.3. STATISTICS

OPERATING TIME

Description

Here, the operating time of the control from last reset (resp. erasing of EEPROM) is indicated. Additionally, a reporting interval (in hours) can be set here upon which a message is saved that again can be sent to a LIFTnet®-control station. By setting "yes" in menu level 'cancel', the operating time is reset to 0.

→Year/Mon: 00.00
Days/Hrs: 00.00
Min/Sec : 00.00
Hrs: 99999999
MessgIv: 65535
Cancel: n
MessgIv: 0000

TRAVELLING TIME

Description

Here, the travelling time of the car from last reset (resp. erasing of EEPROM) is indicated. Additionally, a reporting interval (in hours) can be set here upon which a message is saved that can be sent to a LIFTnet®-control station. By setting "yes" in menu level 'cancel', the operating time is reset to 0.

→Year/Mon: 00.00
Days/Hrs: 00.00
Min/Sec: 00.00
Hrs: 99999999
MessgIv: 65535
Cancel: n

TRAVELS

Description

Here the no. of travels is indicated which the car has absolved since last reset (resp. erasing of EEPROM). Additionally, a messaging interval in no. of trips can be set here to memorize a message that in turn can be forwarded to a LIFTnet®-Station. By setting "yes" in menu level 'cancel', the no. of trips is reset to 0.

→Num: 4294967295
Up : 4294967295
Dwn: 4294967295
MessgIv: 9999999
Erase: n

DOOR CYCLES

Description

Here, the number of door opening motions from last reset (resp. erasing of EEPROM) is indicated. Additionally, a reporting interval in numbers of cycles can be indicated upon which a message is saved that can be sent to a LIFTnet®-control station. By setting "yes" in menu levels 'erase A' or 'erase B', the number of (DoorA/DoorB) is reset to 0.

→DOORA: 4294967295
DOORB: 4294967295
MessgIvA: 9999999
MessgIvB: 9999999
Erase A: n
Erase B: n

LEVELS

Description

Here it is indicated how often each individual level has been approached since the last reset (or erasing of memory). By setting "yes" in menu level 'cancel' the number is reset to 0 for all levels.

→Lv-01: 0
...
Lv-32: 0
Erase: n

Maintenance

Description

Parameter 'Release':

If parameter 'Release' is set to 'yes', the following maintenance intervals are reset upon activation of the maintenance switch: Operating times, travelling times, trip counter and door cycles. If the intervals are not reset automatically the parameter must be set to 'no'.

→Release: n
Disable: n
RESET MAINT

Parameter 'Disable':

If parameter 'Disable' is set to 'yes', the lift is disabled by operating mode 'Remote shutdown' upon exceeding the set maintenance intervals by 150% (see parameter Messglv with operating time, travelling time, travels and door cycles). The disable can be reset only by menu level RESET MAINT or via LIFTnet®. The output 'Maintenance disable' (VIO No.: 1665) is set.

Menu Level RESET MAINT:

By selecting menu level RESET MAINT the disable of the lift (see parameter 'Disable') can be reset. For that, a password has to be entered from Level 4.

AVAILABILITIES \ COMMISSIONING

Description

Time stamp of first teaching trip.

This time stamp cannot be changed and it is the reference time for the turn-off period. The time will neither be changed by another teaching trip.

Note: The time should be checked prior to the teaching trip and possibly be corrected.

→Time: 23:59:59
Date: 31.12.99

AVAILABILITIES \ ON-period

Description

Time indication for the control is activated. Will be updated every second as soon as the time of commissioning was set.

Note: Data saving is performed in 8-hour intervals, so that differences in time may occur when the control is frequently switched on and off.

→Year/Mon: 00.00
Days/Hrs: 00.00
Min/Sec : 00.00
Hrs: 99999999

AVAILABILITIES \ OFF-period

Description

Time indication for the control is deactivated. Will be calculated upon each restart out of "current time minus startup-time minus ON-Time", when the startup-time is set.

Note: The correct time has to be set in the control so that the OFF-Time can be calculated correctly. Data saving is performed in 8-hour intervals, so that differences in time may occur when the control is frequently switched on and off.

→Year/Mon: 00.00
Days/Hrs: 00.00
Min/Sec : 00.00
Hrs: 99999999

AVAILABILITIES \ LIFT DISABLED**Description**

Time indication for "lift disabled". Is updated every second when the time of commissioning was set.

Note: Data saving is performed in 8-hour intervals, so that differences in time may occur when the control is frequently switched on and off.

→Year/Mon: 00.00
Days/Hrs: 00.00
Min/Sec : 00.00
Hrs: 99999999

AVAILABILITIES \ PRIORITY TRIPS**Description**

Time indication for priority trips (internal priority, external priority, transport travels and car separating door function). Is updated every second when the startup-time was set.

Note: Data saving is performed in 8-hour intervals, so that differences in time may occur when the control is frequently switched on and off.

→Year/Mon: 00.00
Days/Hrs: 00.00
Min/Sec : 00.00
Hrs: 99999999

AVAILABILITIES \ MAINTENANCE PERIOD**Description**

Time indication for the duration of maintenance (inspection, return mode, service or maintenance is activated). Is updated every second when the startup-time was set.

Note: Data saving is performed in 8-hour intervals, so that differences in time may occur when the control is frequently switched on and off.

→Year/Mon: 00.00
Days/Hrs: 00.00
Min/Sec : 00.00
Hrs: 99999999

AVAILABILITIES \ EXT. CONTROL ON**Description**

Time indication for external control is activated, i.e. the lift is available for normal users. Is updated every second when the startup-time was set.

Note: Data saving is performed in 8-hour intervals, so that differences in time may occur when the control is frequently switched on and off.

→Year/Mon: 00.00
Days/Hrs: 00.00
Min/Sec : 00.00
Hrs: 99999999

AVAILABILITIES \ EXT. CONTROL OFF**Description**

Time indication for external control is deactivated, i.e. the lift is not available to normal users. Is updated every second when the startup-time was set.

Note: Data saving is performed in 8-hour intervals, so that differences in time may occur when the control is frequently switched on and off.

→Year/Mon: 00.00
Days/Hrs: 00.00
Min/Sec : 00.00
Hrs: 99999999

11.1.4. LIFT

Information about the lift

Description

For general information detailed lift data can be entered here.
Possible length of each entry is 15 characters. These entries will also be used in the remote data telecommunication.

→No. : SLC4-1234
Name : Owner
Place: Building

11.1.5. CONTROL

Version of control program

Description

Here the type of control and the version of the control software is indicated.

SLC4
PrgVers: 2.46
DtaVers: 1.13
Revision: 0-z
EPROM: Standard
PICVers: 1.22
HwVers : 480k
STRACK LIFT AUT

11.1.6. DATE / TIME

Date / Time

Description

Display and setting of the current system date and time.
For the automatic summer time changeover, the parameter ST changeover must be set to yes. For the automatic conversion, the controller must be switched on at the time of the changeover.

→Date: 31.12.99
Time : 23:59:59
ST chngeover:y

11.1.7. LEVEL-INFO

LEVEL-INFO

Description

Here the results of the teaching travel are indicated. *Levels* indicates the no. of the taught levels, *height* indicates the travelling height, i.e. the distance between the lowest and the highest level, and 01-02 etc. shows the distance of two levels in relation to each other. In case the calculated distances do not meet with the actual ones, possibly a wrong encoder has been installed (Disk-1 to Disk-5).

Note:

If no teaching trip is provided the menu will not be displayed!

→LEVELS: 05
Height:130000mm
01-02: 3195mm
02-03: 3212mm
...

11.1.8. MONITOR

DRIVE

Description

In : Inputs

B = controller ready for starting (VIO No. 0085)
 E = end contactor overshoot time (VIO- No.0084)
 C = travel contactor monitoring (VIO- No. 0023)
 S = motor-controller fault (VIO- No. 0022)

Out: Outputs

B = brake (VIO- No. 0072)
 O = up (VIO- No. 0073)
 U = down (VIO- No. 0074)
 F = travelling contactor (VIO No. 0075)
 T = travelling contactor 2 (VIO No. 0076)
 1 = fast speed V1 (VIO No. 0395)
 2 = fast speed V2 (VIO No. 0396)
 L = slow (VIO No. 0079)
 4 = fast speed V4 (VIO No. 0080)
 I = inspection/return speed. (VIO No. 81)
 N = relevelling speed. (VIO No. 0082)
 V = fast speed V2 (VIO No. 0397)
 R = door unlocking magnet (VIO No. 0030)

I: B---
 O: BO-F2---S---R

A: 16309 K: 00000
 DeclPoint: 85555

S: 00800 I: 00800
 E: 26049

A: 16309 K: 00000
 St: 02 S: 06 I: 04

A: 16309 distance starting level to destination level
 K: 00000 speed-arc correction value
 DeclPoint: c31bc deceleration point set by the encoder (hexadezimal).

S (setpoint value): Expected deceleration distance in mm (related to preceding trip).
 I (actual value): Passed deceleration distance in mm (related to preceding trip).
 E (distance between levels): Calculated distance in mm from starting level up to the deceleration point (related to preceding trip).

A: 16309 Actual level distance from start to destination level; dynamic value is calculated at deceleration point as the destination level can change during travel
 K: 00000 Actual speed-arc correction value from start to destination level; dynamic value is calculated at deceleration point as the destination level can change during travel.
 St: 02 Starting level of preceding trip
 S: 06 Destination level at the begin of travel
 I: 04 Actual destin. level; the dynamic value is calculated at the deceleration point.

DOORS

Description

A-In: Door A inputs

R = reversing contact (VIO No. 115)
 L = light barrier (VIO No. 118)
 V = lobby scan (VIO No. 148)
 T = door open key (VIO No. 112 or 121)
 C = door close key (VIO No. 113 or 124)
 A = limit switch open (VIO No. 136)
 Z = limit switch close (VIO No. 139)

K = call to actual level available
 1 = loading time active
 0 = door in rest
 1 = trip upon internal call (1), external call (2); is used for

A In: -L---A- K010
 A Out: Ö---- 11111

B In: -L---A- K010
 B Out: Ö---- 11111

DoorOpZA: 000 000
 DoorOpZB: 000 000

setting the door open time.

A-Out: Door A outputs

O = opening (VIO No. 127)
 S = closing (VIO No. 130)
 D = urging (VIO No. 133)
 V = delayed open (dynamic display)
 S = door shall open

1 = new door time by internal/external call
 1 = status of rest time
 1 = door timeout active
 1 = door function active
 1 = door task active

B-In: Door B inputs

R = reversing contact (VIO No. 116)
 L = light barrier (VIO No. 119)
 V = lobby scan (VIO No. 149)
 T = door open key (VIO No. 112 or 122)
 C = door close key (VIO No. 113 or 125)
 A = limit switch open (VIO No. 137)
 Z = limit switch close (VIO No. 140)

K = call to actual level available
 1 = loading time active
 1 = door in rest
 1 = travel upon internal call(1), external call (2); is
 used to set the door open time.

B-Out: Door B outputs

O = opening (VIO No. 128)
 S = closing (VIO No. 131)
 D = urging (VIO No. 134)
 V = delayed open (dynamic display)
 S = door shall open

1 = new door open time upon internal/external call
 1 = status rest time
 1 = door timeout active
 1 = door function active
 1 = door task active

Door open time door A:

000 = indication in seconds
 000 = internal call, external call up, external call down

Door open time door B:

000 = indication in seconds
 000 = call image internal, call image up-down, call image
 priority

GROUP

Description

A1 (up to A8): 1 (status in the group active; 0 = not active; 1 = active)
 Lv = actual level of the displayed lift
 Dest = actual destination of the lift
 DoorAB = door status doors A,B of indicated lift
 - = inactive
 Z = closed
 Ö = opening

A1:0 Lv00 Dest00
 DoorAB:--

A = open
S = closing

Upon entering into the menu the statuses belonging to group lift 1 are displayed.
This lift will receive the data via the LON bus. With down-arrow key you will get to the lifts 2 to 8, with up-key back again.

ENCODER

Description

Upon PIC check will be found out whether the interface to the encoder is activated.
a) "PIC is inactive" means that the interface is inactive and that no encoder values are received.
The interface is activated by selecting menu level 'teaching travel'.
b) Version 1.xx means that the interface is active. The actual version of the PIC-software is indicated

Check of teaching travel:
Teaching travel available
Teaching travel not available

Check of installed absolute encoder:

Encoder is inactive

Encoder is active

Note:

If the PIC-interface is inactive, the encoder is inactive as well.
Consequently there is no encoder fault.

RoughVal = rough value of encoder (hex)

Normalzd = normalized value of encoder (hex)

Vact = actual speed

Vmax = actually achieved speed

Err1 = fault counter 1 encoder interface

Err2 = fault counter 2 encoder interface

Cnt = actual fault counter (dynamic)

Receive = transmission error PIC→Control

Border = transmission error Encoder→PIC

Range of values [W]: Invalid change of position between two consecutive values is higher than parameter "range of values".

Forced deceleration [Z]: forced deceleration by encoder event, with terminal landing not set as the destination.

Overflow: the lift is outside the valid area (related to the teaching trip)

Overspeed = act. measured speed is higher than the set MaxVt (see page 155)

PIC recheck
PIC is inactive
Teaching travel available
Encoder check
Encoder inactive
RoughVal :003AE0C
Normalzd:00800CC
Vact: 01500 mm/s
Vmax: 01620 mm/s
Err1 Err2 Cnt
00000 00000 00
R:00000 B:00000
W:00000 Z:00000
Shaft pos:00000
Overspeed:00000

DCP

Description

Status information regarding the status of the DCP interface. In case of problems please communicate these information to the Support of STRACK LIFT AUTOMATION GmbH

COM-RDT (remote data transfer)

Description

Status information regarding the status of the serial interface. In case of problems please communicate these information to the Support of STRACK LIFT AUTOMATION GmbH

EMERGENCY POWER**Description**

Status information for evacuation and operation by emergency power. In case of problems please communicate these information to the Support of STRACK LIFT AUTOMATION GmbH

LON BUS**Description**

Status information regarding the status of the LON bus. In case of problems please communicate these information to the Support of STRACK LIFT AUTOMATION GmbH

11.2. CALLS VIEWING AND SETTING**Setting internal call directly****Description**

By calling these menu levels a direct internal call for the next level above or below is set. The calls are effective on all entrance sides.

→ Call level-up
Call level-down

Internal calls viewing / setting

Selectable 00000000 - 11111111

Effective instantaneously

Description

Here, all internal calls can be overviewed easily. Furthermore internal calls can be set also. Calls are accepted in configured levels only. The calls are effective on all entrance sides.

Description of functions of keys:

Go to next level with key CR.

Go to the preceding level with key DOWN.

Set a call with key UP.

Quit the menu with key ESC.

→ 01-08: 00000000
09-16: 00000000
17-24: 00000000
25-32: 00000000

Viewing / setting of external calls UP

Selectable 00000000 - 11111111

Effective instantaneously

Description

Here all external calls UP can be overviewed easily. Furthermore, external calls can be set here also. Calls are accepted only on the configured levels. The calls are effective on all entrance sides. Functions of keys as described under Viewing / setting of external calls.

→ 01-08: 00000000
09-16: 00000000
17-24: 00000000
25-32: 00000000

Viewing / setting of external calls DOWN

Selectable 00000000 - 11111111

Effective instantaneously

Description

→ 01-08: 00000000
09-16: 00000000
17-24: 00000000
25-32: 00000000

Here all external calls DOWN can be overviewed easily.
Furthermore, external calls can be set here also. Calls are accepted only on the configured levels. The calls are effective on all entrance sides. Functions of keys as described under Viewing / setting of external calls.

Viewing/setting of direction independent external calls

Selectable 00000000 - 11111111

Selectable instantaneously

Description

Here all direction-independent external calls can be overviewed easily. Furthermore, external calls can be set here also. Calls are accepted only on the configured levels. The calls are effective on all entrance sides. Functions of keys as described under Viewing / setting of external calls.

→ 01-08: 00000000
09-16: 00000000
17-24: 00000000
25-32: 00000000

RANDOM PROGRAM

Selectable 0 - 9999

Standard value 0

Effective instantaneously

Description

The here mentioned number of internal and/or external calls will be set one by one and are processed additionally to the other travel orders. The calls are effective on all entrance sides.

→ Innen : 0000
Außen : 0000

11.3. SETTINGS

11.3.1. VIO-ASSIGNMENT

Auxiliary cards: input / output assignment

Selectable -4352 - +4352

Standard value depending on the template applied

Effective after quitting the menu and reassignment completed.
In the display the phrase "System reorganization, please wait ..." shall appear, so that the new assignment is adopted.

Description see page 167

→ IDC-0.1 : +0060*
...

Bus modules: input- / output assignment

Selectable -4352 - +4352

Standard value 0

Effective after quitting the menu and completed reassignment.
In the display the phrase "System reorganization, please wait ..." shall appear, so that the new assignment can be adopted.

Description see page 167

→ ID: 00000000000000
Typ: UMOD 1410
Definition: 0
IO- 1.E: 481*
IO- 1.A: 521*

11.3.2. DRIVE BASICALLY

DistV4

Selectable 0 - 32000

Unit mm

Standard value 2500

Effective next drive

Description

Minimum required path for fast travel speed V_4 . The following order applies: $V_4 > V_3 > V_2 > V_1$

→DistV4 : 32000

DeclUp

Selectable 0 - 20000

Unit mm

Standard value 1000

Effective next drive

Description

Upward deceleration for fast travel speed V_4 .

→DeclUp : 1500

DeclDn

Selectable 0 - 20000

Unit mm

Standard value 1000

Effective next drive

Description

Downward deceleration for fast travel speed V_4 .

→DeclDown : 1500

DistV3

Selectable 0 - 32000

Unit mm

Standard value 2500

Effective next drive

Description

Minimum required path for fast travel speed V_3 .

→DistV3 : 32000

DeclUpV3

Selectable 0 - 20000

Unit mm

Standard value 1000

Effective next drive

Description

Upward deceleration for fast travel speed V_3 .

→DeclUpV3 : 1500

DeclDnV3**Selectable** 0 - 20000**Unit** mm**Standard value** 1000**Effective** next drive**Description**Downward deceleration for fast travel speed V_3 .**→DeclDnV3 : 1500****DistV2****Selectable** 0 - 32000**Unit** mm**Standard value** 2500**Effective** next drive**Description**Minimum required path for fast travel speed V_2 .**→DistV2 : 32000****DeclUpV2****Selectable** 0 - 20000**Unit** mm**Standard value** 1000**Effective** next drive**Description**Upward deceleration for fast travel speed V_2 .**→DeclUpV2 : 1500****DeclDnV2****Selectable** 0 - 20000**Unit** mm**Standard value** 1000**Effective** next drive**Description**Downward deceleration for fast travel speed V_2 .**→DeclDnV2 : 1500****DistV1****Selectable** 0 - 32000**Unit** mm**Standard value** 2500**Effective** next drive**Description**Minimum required path for fast travel speed V_1 .**→DistV1 : 32000**

DeclUpV1**Selectable** 0 - 20000**Unit** mm**Standard value** 1000**Effective** next drive**Description**Upward deceleration for fast travel speed V_1 .

→DeclUpV1 : 1500

DeclDnV1**Selectable** 0 - 20000**Unit** mm**Standard value** 1000**Effective** next drive**Description**Downward deceleration for fast travel speed V_1 .

→DeclDnV1 : 1500

Upward-levelling distance**Selectable** -250 - 0**Unit** mm**Standard value** -50**Effective** next drive**Description**

Setting of the levelled "switch" below levelled position. Among other functions, for level stopping out of a normal upward travel.

→DistLevUp: -050

Downward-levelling distance**Selectable** 0 - +250**Unit** mm**Standard value** +50**Effective** next drive**Description**

Setting of the levelled "switch" above level position. Among other functions for level stopping out of a normal downward travel.

→DistLevDn: +050

Inspection speed fast**Selectable** y or n**Unit** yes / no**Standard value** n**Effective** instantaneously**Description**

Observe the instructions on page 47 (Inspection mode)!

→InspFast: n

Limitation of inspection travel TOP**Selectable** 0 - 5000

→ InspLimUp: 0

Unit mm**Standard value** 0**Effective** instantaneously**Description** see page 47**Limitation of inspection travel BOTTOM****Selectable** 0 - 5000

→ InspLimDn: 0

Unit mm**Standard value** 0**Effective** instantaneously**Description** see page 47**Motor ventilator****Selectable** 0 - 900

→ MotorFan: 900

Unit sec**Standard value** 0**Effective** instantaneously**Description** see page 64**Brake lever monitoring****Selectable** y or n

→ BrakeLeverMon: n

Unit yes / no**Standard value** n**Effective** instantaneously**Description** see page 45**Brake lever time****Selectable** 0 - 9999

→ BrakeLevrT: 0000

Unit ms**Standard value** 5000**Effective** instantaneously**Description** see page 45**Standstill monitoring****Selectable** y or n

→ StandstillMon: j

Unit yes / no**Standard value** j**Effective** instantaneously**Description** see page 60 (SLC4 Fault signal No. 14)

11.3.3. DRIVE 3 (traction, closed-loop controlled)

Travel direction setpoint values delayed ON

Selectable 0 - 2000

Unit ms

Standard value 0

Effective instantaneously

Description

Delayed activation of travel direction setpoint values upon starting.

→ TrDirDlyOn: 0100

Speed setpoint values delayed ON

Selectable 0 - 2000

Unit ms

Standard value 0

Effective instantaneously

Description

Delayed activation of speed setpoint values (Ve and Vnom) upon starting.

→ SpeedDlyOn: 0000

Brake delayed ON

Selectable 0 - 2000

Unit ms

Standard value 0

Effective instantaneously

Description

Delayed activation of brake upon starting.

→ BrakeDlyOn: 0000

Travel direction setpoint values delayed OFF

Selectable 0 - 4000

Unit ms

Standard value 4000

Effective instantaneously

Description

Delayed deactivation of travel direction setpoint values upon end of travel.

→ TrDiDlyOff: 4000

Brake delayed OFF

Selectable 0 - 4000

Unit ms

Standard value 0

Effective instantaneously

Description

Delayed switching-off of brake upon end of travel. This parameter is not used with standard activation of the motor-controllers (see the respective circuit diagram).

→ BrkeDlyOff: 0000

Contactors delayed OFF**Selectable** 0 - 99**Unit** 100 ms**Standard value** 0**Effective** instantaneously

→ CntctrDeclA: 00

Description

Delayed disconnection of the contactors in case of "speed = 0" (VIO No. 84).

Relevelling speed**Selectable** y or n**Unit** yes / no**Standard value** n**Effective** instantaneously

→ SpeedReLev: n

Description

Depending on the make of the motor-controller, during relevelling, the setpoint value levelling speed V_e has to be emitted in addition to the relevelling speed. In case of "n" no additional V_e is emitted.

Brake delay in case of relevelling**Selectable** y or n**Unit** yes / no**Standard value** n**Effective** instantaneously

→ BrReLevDly: n

Description

Settings for brake engagement upon relevelling.

Speed-controller fault**Selectable** (1) Stop with locking
(2) Stop without locking**Standard value** (2)**Effective** instantaneously

→ CNTRLRFault: 2

Description

Adjustment of reaction to motor-controller fault signal.

Speed-controller fault interval**Selectable** 0 .. 255**Standard value** 0**Effective** instantaneously

→ IvCntrlFlt: 000

Description

If parameter "CNTRLRFault" is set to "Stop with locking", the lift will be disabled only when the number of faults is equal or higher than parameter "IvCntrlFlt". After each normal trip, upon inspection or return mode, or upon a control-restart the fault counter is reset to zero.

Fault treatment in case of thermistor tripping

Selectable (1) abort
(2) abort and locking
(3) next level
(4) next level and locking

→ **THERMISTOR: 4**

Standard value 4

Effective instantaneously

Description

Adjustment of reaction to tripping of motor thermistor. Parameters apply during travel. Prior to travelling the input is evaluated. With active input the travel will not be started. During travel, with active input, action is taken according to the set parameter. With inspection or return mode only the input is evaluated and the set parameters remain unconsidered.

Deceleration control on top

Selectable y or n

→ **DeclCntrTop: n**

Unit yes / no

Standard value n

Effective instantaneously

Description see page 76 (SLC4 Fault message No. 28)

Deceleration control on bottom

Selectable y or n

→ **DeclCntrBtm: n**

Unit yes / no

Standard value n

Effective instantaneously

Description see page 76 (SLC4 Fault signal No. 28)

Deceleration control on top and bottom

Selectable y or n

→ **DeclCntrTopBtm:n**

Unit yes / no

Standard value n

Effective instantaneously

Description see page 76 (SLC4 Fault signal No. 28)

Level mask for deceleration control on top and bottom

Selectable 1 or 0

→ **01-08: 00000000**
09-16: 00000000
17-24: 00000000
18-32: 00000000

Standard value 0

Effective instantaneously

Description see page 76 (SLC4 Fault signal No. 28)

Inching motor

Selectable y or n

→ **InchingMotor:n**

Unit yes / no

Standard value n**Effective** instantaneously**Description**

Separate releveling speed.

DCP**Selectable** 0 - 4

→DCP: 4

Standard value 0**Effective** after restart**Description**

Setting of the DCP protocol. DCP protocols 3 and 4 are currently supported. A precise description of the DCP interface can be found in a separate manual.

RelevRemDist**Selectable** y or n

→RelevRemDist:n

Unit yes / no**Standard value** n**Effective** instantaneously**Description**

The re-leveling is controlled via the remaining path. This setting is only valid in DCP 4.

DCPDc1Dis**Selectable** 0...20000

→DCPDc1Dis: 0

Unit mm**Standard value** 0**Effective** instantaneously**Description**

In the event that the destination level is changed during the journey and the inverter hits a deceleration ramp "too hard" (or overshoots the level), this can be prevented by means of the minimum required deceleration distance (fast speed). In general, this parameter can be set to zero due to the fact that the required deceleration path can be determined during the journey. However, the problems as stated above can occur when dealing with an MFC inverter and a fixed value should be selected. This setting is only valid in DCP 4.

RemainDistT**Selectable** 0...255

→RemainDistT: 0

Unit sec**Standard value** 0**Effective** instantaneously**Description**

The remaining path is monitored for changes as soon as the journey is started. The lift is locked if no change to the remaining path is detected within ten telegrams (150ms). The monitoring can be switched on with a delay in order to prevent a slow start-up from causing an error.

Quick start function

Selectable	y or n	→Quickstart:n
Unit	yes / no	
Standard value	y	
Effective	instantaneously	
Description	Activation of the DCP 4 quick start function. There must be a SHB in the control.	

Delay time for the quick start function

Selectable	0 ... 9000	→QuickSDly: 0000
Unit	seconds	
Standard value	0	
Effective	instantaneously	
Description	Delay time from when after the start of the doors close the quick start is initiated.	

Evaluate speed control bits

Selectable	y or n	→SpeedCheck: j
Unit	yes / no	
Standard value	y	
Effective	instantaneously	
Description	The speed bits in the DCP protocol are evaluated by the control. This includes e.g. the lowering speed, which is important to enable the SHB. If the inverter hasn't included this speed control in his protocol (e.g. VACON open loop), this parameter must has to be set to No and the parameter MONITORING/ZONE SWITCHES/SpeedCheck to Yes.	

Inverter LCD format

Selectable	0 ... 1	→LCD format: 1
Standard value	1	
Effective	instantaneously	
Description	Adjusts the inverter LCD format, whereby the value one a LCD with 4*20 characters and the value zero indicates 2*16 characters.	

FREQ.INVERTR

Selectable	-	→FREQ. INVERTR
Effective	after pushing [CR]	
Description		

Illustration of the inverter menu via the control display. This means that the inverter can be operated via the control menu. The inverter menu can be exited by pressing the CR and ESC keys (simultaneously). Further information can be found in the DCP Connection Chapter.

11.3.4. DRIVE 4 (Hydraulic)

Star-Delta-Reversing

Selectable 0 - 5000

→StarDltaRe:1000

Unit ms

Standard value 1000

Effective instantaneously

Description

In case of star-delta-starting of the pump motor, the star-operation period will be set here.

Pump motor/Valves delayed off

Selectable 0 - 2000

→MotDlyOff:0500

Unit ms

Standard value 500

Effective instantaneously

Description

When reaching the stop point in the floor of destination the VIO no. 86 is switched off undelayed. After the delay time, the rest of the travel outputs are switching off.

Travel direction setpoint delayed off

Selectable 0 - 4000

→TrDiDlyOff:4000

Unit ms

Standard value 4000

Effective instantaneously

Description

The setpoint "travel direction downwards" (VIO 74) is turned off delayed when the lift stops.

shut-off valve on-delay time

Selectable 0 - 2000

→ShutOfffVOn:0500

Unit ms

Standard value 500

Effective instantaneously

Description

After activating the shut-off valve (VIO 1740) the set time is serviced until the other travel outputs are switched on.

shut-off valve off-delay time

Selectable 0 - 2000

→ShutOfffVOF:0500

Unit ms

Standard value 500

Effective instantaneously

Description

The shut-off valve (VIO 1740) is switched off delayed by the time set.

Adjustment of reaction in case of valve control fault; lowering protection

Selectable (1) Stop + locking
(2) Stop w/o locking

→WthFltLowerg: y

Standard value (2)

Effective instantaneously

Description

If upon starting VIO number 95 is active for 4 seconds the travel will be aborted with fault signal F-DRIVE fault lowering protection. The interrogation follows immediately after the activation of the travel contactor (VIO 75).

Fault treatment in case of thermistor tripping

Selectable (1) abort
(2) abort and locking
(3) next level
(4) next level and locking
(5) lowering
(6) lowering and locking

→THERMISTOR: 6

Standard value (6)

Effective instantaneously

Description

Setting of the reaction to tripping of motor thermistor. Parameters apply during the travel. Prior to travelling the input will be evaluated. With active input the travel will not be started. During travel, with active input, action is taken depending on the set parameter. With inspection or return mode, only the input will be evaluated and the set parameter remain unconsidered.

Note: In case of a direct travel the destination level is approached as the control cannot stop on the next level.

Lowering level

Selectable 1 - 32

→LowrngLevel: 01

Unit Level

Standard value 01

Effective instantaneously

Description

Setting of the level for the automatic lowering run with hydraulic lifts.

Lowering time

Selectable 0 - 900

→LowrngTime: 900

Unit sec

Standard value 900

Effective instantaneously

Description

Setting of the rest time on a level after initiation of an automatic lowering trip in case of hydraulic lifts.

Doors closed**Selectable** y or n

→Doors close: y

Unit yes / no**Standard value** y**Effective** instantaneously**Description**

Door remains closed on lowering level.

Inching motor**Selectable** y or n

→InchingMotor:n

Unit yes / no**Standard value** n**Effective** instantaneously**Description** Separate re-levelling speed.**RATED SPEED/Actual value of speed****Selectable** 0 ... 9999

→v mm/s: 9999

Unit mm/s**Standard value** 0**Effective** instantaneously**Description** see page 44**RATED SPEED /Interrogation time****Selectable** 0 ... 255

→InterrogTime:255

Unit s**Standard value** 0**Effective** instantaneously**Description** see page 44**UCM valve end position monitoring****Selectable** y or n

→ValveMoni:n

Unit yes / no**Standard value** n**Effective** instantaneously**Description** See chapter "Valve end position monitoring" on page 28.**Query time UCM valve end position monitoring****Selectable** 0 - 9999

→ValveMoniTm:5000

Unit ms**Standard value** 5000**Effective** instantaneously

Description See chapter "Valve end position monitoring" on page 28.

MOTORRUNTIMEMON / RunTimeLocking

Selectable	y or n	→ RunTmLocking: n
Unit	yes / no	
Standard value	n	
Effective	instantaneously	
Description	See chapter "Valve end position monitoring" on page 28.	

MOTORRUNTIMEMON /Variant

Selectable	0 - 99	→Variant: 00
Standard value	0	
Effective	instantaneously	
Description	See chapter "Valve end position monitoring" on page 28.	

MOTORRUNTIMEMON /Distance

Selectable	0 - 000	→Distance: 000
Unit	mm	
Standard value	10	
Effective	instantaneously	
Description	See chapter "Valve end position monitoring" on page 28.	

11.3.5. DOORS GENERALLY

Door opening delay

Selectable	0 - 2000	→DoorOpnDly: 0000
Unit	ms	
Standard value	0	
Effective	instantaneously	
Description		

Prior to the opening of the door the set time allows complete unlocking (period from dropping of door unlocking magnet to door-open command)

Door lock debouncing time

Selectable	0 - 2000	→LckDebncTm: 0800
Unit	ms	
Standard value	400	
Effective	instantaneously	
Description		

Bouncing of lock contacts is not transferred to the travelling contactors etc. Starting will be commenced only after elapse of the preset time.

Door contact monitoring**Selectable** 0 - 5000

→DoorContC1: 0500

Unit ms**Standard value** 500**Effective** instantaneously**Description**

Waiting time between door closing (limit switch or, as a substitute, car door contact are closed) and (repeated) inquiring of the car door contact prior to starting. This check of the door closing process monitors the correct closing. In case of a failure the door will again open and close. Doors not existing at the actual level will also be run open for a short time (see menu levels "ENTR.SIDE A(B)\LimOpening" below). The closing process will be repeated up to 3 times. After three attempts all calls will be cancelled.

Landing door contact monitoring**Selectable** 0 - 5

→SK-DebncT: 0

Unit 0: no additional debouncing
 1: 4-fold input debounce time in ms
 2: 5-fold input debounce time in ms
 3: 6-fold input debounce time in ms
 4: 7-fold input debounce time in ms
 5: 8-fold input debounce time in ms

Standard value 0**Effective** instantaneously**Description**

Read-in of function number 26 (input landing door contact) delayed by set factor. The additional debouncing depends on the set input debounce time (parameter SETTINGS/CONTROL/InpDebcTime).

Door reversal by external calls**Selectable** y or n

→ReverseCalls: y

Unit yes / no**Standard value** y**Effective** after next door reversal**Description**

Upon closing of the doors following a call, they can be reopened by setting an external call on the actual level and for the actual travelling direction.

Doors opening on approach**Selectable** y or n

→OpnOnApprch: n

Unit yes / no**Standard value** n**Effective** instantaneously**Description**

The doors are opened on the destination level upon enabling of zone protective device

SHB.

Note: For doors opening on approach a protective circuit SHB is required. In the menu "monitoring of parameter of zone switches" = 1/2 has to be set.

Loading time

Selectable 0 - 900
Unit sec
Standard value 60
Effective instantaneously
Description see page 62

→ Loading Time: 060

Door closing gong

Selectable 0 - 19
Unit sec
Standard value 0
Effective instantaneously
Description

→ DoorClsGong: 00

The gong (VIO No. 144 for door A and 147 for door B) sounds n sec. before doors close.

Blocking signal

Selectable 0 - 255
Unit sec
Standard value 0
Effective instantaneously
Description

→ BlockingSig: 000

If the door is kept open for this time (e.g. by light barrier), the following outputs are set, dependent from the blocked door.
 output blocking signal both doors (VIO No. 1600) → door A or door B blocked
 output blocking signal door A (VIO No. 1601) → door A blocked
 output blocking signal door B (VIO No. 1602) → door B blocked

IDLE TRIP

Selectable (0) Door A
 (1) Door B
 (2) all doors
 (3) no door

Standard value door A
Effective instantaneously

→ Level 01: 03
 ...

Description

If there is a stop on a level where no call has been set, the doors are activated level-selective by parameter IDLE TRIP.

Door timeout

Selectable y or n

→ Doortimeout: y

Unit yes / no
Standard value y
Effective instantaneously

Description

If the parameter is set to 'no', the "Door timeout"- monitoring is deactivated. If the lift is part of a group the parameter should be set to 'yes', so that no group level is blocked (see door timeout page 135).

Shutdown in case of door-lock fault

Selectable y or n
Unit yes / no
Standard value n
Effective instantaneously

→ LckFltDisab: n

Description

If the parameter is set to yes, the lift is disabled after three consecutive door-lock faults. Will not apply to the operating modes fire emergency, firemen service and emergency power.

11.3.6. ENTRANCE SIDE A (B)**Door constellation**

Selectable (0) no door
 (1) manual door
 (2) manual/auto
 (3) automatic without limit switches
 (4) automatic with limit switch "open"
 (5) automatic with limit switch "open" and "closed"
Standard value 0
Effective instantaneously

→ DOOR: 0

Description

By setting the door constellation a standard program for the respective door will be selected and adjusted. The standard programming can be used as a pre-programming, after which only few further programming have to be carried out.

Limit switch OPEN

Selectable y or n
Unit yes / no
Standard value depending on the kind of door set upon putting into operation
Effective instantaneously

→ LimSwitchOpen: n

Description

In case of "y" the door opening motion will be terminated by limit switch OPEN. In case of "n" opening of door will continue till elapse of "run-time open" (see below).

Motor on with door open**Selectable** y or n

→MotorOnOpen: n

Unit yes / no**Standard value** n**Effective** instantaneously**Description**

In case of y the door motor will not be switched off upon reaching the OPEN position.
 Setting for closed-loop controlled doors = y.

Limit switch CLOSED**Selectable** y or n

→LimSwitchClos: n

Unit yes / no**Standard value** dependent from the door type set upon commissioning**Effective** instantaneously**Description**

In case of "y" the door closing motion will be terminated by limit switch CLOSED. In case of "n" opening of door will continue till reaching the car door contact or till elapse of "run-time closing" (see below).

Motor on with door closed**Selectable** y or n

→MotorOnClose: n

Unit yes / no**Standard value** n**Effective** instantaneously**Description**

In case of y the door motor will not be switched off upon reaching the CLOSED position.
 Setting for closed-loop controlled doors = y.

Door open time upon internal call**Selectable** 0 - 19

→OpenTimeInt: 03

Unit sec**Standard value** 3**Effective** instantaneously**Description**

If the door was opened by an internal call, it will remain open for the set period.

Door open time on external call**Selectable** 0 - 19

→OpenTimeExt: 03

Unit sec**Standard value** 3**Effective** instantaneously**Description**

If the door was opened by an external call, it will remain open for the set period.

Door open time in standstill

Selectable 0 - 999

→Time Lv 01: 005

Unit sec

Standard value 5

Effective instantaneously

Description

If no further calls are registered and the door is idle, it will remain open for the period set in this table. With 0 the door remains open permanently.

Limited door opening

Selectable 0 - 9000

→LimDoorOpn: 0000

Unit ms

Standard value 0000

Effective instantaneously

Description

If the control detects a faulty door position prior to starting (car door contacts and/or limit switch CLOSED), it will run open the door up to the time set here and then reclose it instantaneously. With "0" these doors will be closed only without preceding short-time opening.

Door open time after reversal

Selectable 0 - 9

→MinOpenTime: 3

Unit s

Standard value 2

Effective instantaneously

Description

If the door is reversed repeatedly, the new door opening time corresponds with the set value.

Pause upon door reversal

Selectable 0 - 9999

→PauseRevrs: 0500

Unit ms

Standard value 100

Effective instantaneously

Description

Upon change of signals "door closing"/"door opening" and "door opening"/"door closing" this pause becomes effective in order to avoid short circuits by electric arcs in the door contactors or by overcharging of driving mechanism.

Door run-time OPENING

Selectable 0 - 999

→RunTimeOpen: 03

Unit sec

Standard value 3

Effective instantaneously

Description

In case of doors without limit switch OPEN, the termination of door opening is defined by this period. On doors with limit switch OPEN the monitoring of the door-open run-time is set here.

Door run-time CLOSING

Selectable 0 - 999

→RunTimeClos: 30

Unit sec

Standard value 30

Effective instantaneously

Description

In case of doors without limit switch CLOSED the termination of door closing is defined by the car door contact and by this period. On doors with limit switch CLOSED the monitoring of the door-close run-time is set here.

Door motor shutdown in standstill

Selectable 0 - 999

→MotRestOff: 00

Unit sec

Standard value 0

Effective instantaneously

Description

If “no door motor shutdown upon reaching the open or closed position” has been set (see above), the door motor is switched off in rest position of the lift after elapse of the here set period. The shutdown is made in the door-open as well as in the door-closed position. In case of “0” the motor will not be shut down.

Lobby-scan time

Selectable 0 – 9999

→Lobby time:3000

Unit ms

Standard value 0

Effective instantaneously

Description see page 66

Light grid test, execute

Selectable y or n

→LS-Test:n

Unit yes / no

Standard value n

Effective instantaneously

Description see page 63

Light grid fault, disable

Selectable y or n

→Disable:n

Unit	yes / no
Standard value	n
Effective	instantaneously
Description	see page 63

Shutdown on case of door fault

Selectable	0 - 9
Standard value	0
Effective	instantaneously

→WtFltDisabl: 0

Description

The lift is shut down when the number of faults equals parameter **WtFltDisab**. Any normal travel, return action or inspection will cancel the internal fault counter so that only faults occurring consecutively are evaluated. The following door faults will be evaluated: car door contact not open; temperature monitoring of door motors; run-time monitoring upon door closing (limit switch-closed or car door contact). The fault-evaluation for "cardoor contact not opened" is evaluated separately from other faults. The parameter has got no function in operating modes fire emergency, firemen service and emergency power.

Roller door variant

Selectable	0 - 99
Standard value	0
Effective	instantaneously

→RollDoorVar: 00

Description

Variant 0: no roller door available

Variant 1:

The locking magnet (VIO 31 door A, VIO 32 door B) is only switched off when the roller door is fully open. Before closing the roller door, the locking magnet is energized and locks the shaft door.

11.3.7. CONTROL

Control mode

Selectable	(1) single lift control (industrial automatic system) (2) 1-button collective direction independent (3) 1-button collective direction dependent (4) 2-button collective
-------------------	--

→CONTROL MODE: 2

Standard value (2)

Effective instantaneously

Description

Setting of the control mode, whereby control mode 3 and 4 are identical. The menu pointer always points at control mode 4, although control mode 3 has been set.

Double call cancelling

Selectable	y or n
Unit	yes / no
Standard value	n

→DblCallCancel: n

Effective instantaneously

Description

Activation of double call cancelling. With 2-button collective control, the external calls are cancelled independently from the collecting direction, in order to counteract frequent maloperations by passengers.

Enabling the function "Temporary lock up/down calls"

Selectable y or n

→LockCalls: n

Unit yes / no

Standard value n

Effective instantaneously

Description

The activation of the temporary locking of the upward and downward calls in the same floor. With a two button collecting control the up and down call buttons are temporary locked against each other in the same floor, so that always only a single call can be used. The locking time is set in the parameter "LockTime".

Time setting of the function " Temporary lock up/down calls "

Selectable 0 - 99

→LockTime: 00

Unit sec

Standard value 0

Effective instantaneously

Description

The interlocking time of the up and down call buttons in the same floor. See parameter „LockCalls“.

Ongoing travel delay

Selectable 2 - 19

→OngTravelDly: 03

Unit sec

Standard value 3

Effective instantaneously

Description

After arrival at any level, further calls will be processed only after elapse of the ongoing travel delay.

Nudging

Selectable 0 - 240

→Nudging : 000

Unit sec

Standard value 0

Description see page 41

Zero-load calls (number of max. admissible internal calls without car load)

Selectable 0 - 15

→ZeroLdCalls: 00

Unit	internal calls
Standard value	0
Effective	instantaneously
Description	see page 45

FIRE EMERGENCY / 1st – 11th fire emergency level

Selectable	0 – 32	→1.FireEmLvl: 00 ...
Unit	level	
Standard value	0	
Effective	instantaneously	
Description	Setting of levels that are approached in case of fire emergency.	

FIRE EMERGENCY / variant 1

Selectable	y or n	→variant1: n ...
Unit	yes / no	
Standard value	n	
Effective	instantaneously	
Description	see page 50	

FIRE EMERGENCY / Control mode

Selectable	0 - 99	→ControlMode: 0
Standard value	0	
Effective	instantaneously	
Description	If the parameter is set to 1, the target level is changed while travelling depending on the smoke detectors. The change is a maximum of two times.	

FIRE EMERGENCY / Change of level

Selectable	y or n	→LevelChange: n ...
Unit	yes / no	
Standard value	n	
Effective	instantaneously	
Description	If after approach to the fire emergency level a fire is signalled on this level it is indicated here whether the car shall now run to the next fire emergency level (y), or not (n).	

FIRE EMERGENCY / Travel at standstill

Selectable	y or n	→TravAtStandst: y
Unit	yes / no	
Standard value	y	

Effective instantaneously

Description

With the lift at standstill and parameter set to "no" a fire emergency trip will not be performed when fire emergency is detected. The doors are opened permanently and the internal and external control is disengaged.

FIRE EMERGENCY / Door status

Selectable 0 - 9

→Door status: 0

Standard value 0

Effective instantaneously

Description

Determines whether the door remains open in the event of a fire (parameter Door state equals zero) or is closed automatically after a time period (parameter DoorOpenT) (parameter door status equals 1). The closed door can be opened again by the landing call.

FIRE EMERGENCY / DoorOpenT

Selectable 0 – 255

→DoorOpenT: 003

Unit 10 seconds

Standard value 0

Effective instantaneously

Description

Determines how long the door stays open in the event of a fire if the door status parameter is not equal to zero.

FIRE EMERGENCY / FIRST DOOR (Level 01 – 32)

Selectable (0) Door A
(1) Door B
(2) all doors
(3) no door

→Level 01: 02

Standard value 2

Effective instantaneously

Description

Selection of door behaviour in case of fire emergency per each level. Important: When the door is not released the door-open-key will not cause the opening of the door.

FIREMEN / Firemen level

Selectable Level: 01 - 32

→FiremenLevl: 01

Standard value 1

Effective instantaneously

Description

Selection of firemen service level

FIREMEN / Main switch

Selectable y or n

→Main switch: y

Unit yes / no
Standard value y
Effective instantaneously
Description see page 50

FIREMEN / FIRST DOOR (Level 01 – 32)

Selectable (0) Door A
 (1) Door B
 (2) all doors
 (3) no door

→Level 01: 02

Standard value 2
Effective instantaneously
Description

Selection of door behaviour for each level in case of evacuation by firemen

FIREMEN / DEAD MAN CONTROL

Selectable y or n
Unit yes / no
Standard value n
Effective instantaneously
Description see page 50

→DeadManContr1: n

FIREMEN / Door Self Close

Selectable y or n
Unit yes / no
Standard value n
Effective instantaneously
Description see page 50

→DoorSelfClose: n

FIREMEN / Reversing

Selectable y or n
Unit yes / no
Standard value n
Effective instantaneously
Description see page 50

→Reversing: n

FIREMEN / Memorizing Evacuation

Selectable y or n
Unit yes / no
Standard value n
Effective instantaneously
Description see page 50

→MemorizgEvac: n

FIREMEN / Reset Main Level

Selectable y or n
Unit yes / no
Standard value y
Effective instantaneously
Description see page 50

→RestMainLv: j

FIREMEN / One Internal Call

Selectable y or n
Unit yes / no
Standard value y
Effective instantaneously
Description see page 50

→OneInternCall: j

FIREMEN / LEVEL DISABLE

Selectable 0 or 1
Standard value 0
Effective instantaneously
Description see page 50

→01-08: 00000000
...**FIREMEN / Variant**

Selectable 0 - 99
Standard value 0
Effective instantaneously
Description

→Variante: 00

If the parameter is set to 1, the internal commands are only deleted using the delete key. An inside command can only be given with the door closed. Option 1 is mandatory at the fire department Düsseldorf.

EXTERNAL PRIORITY / External priority time

Selectable 0 - 60
Unit sec
Standard value 0
Effective instantaneously
Description see page 42

→ExtPriorTime: 00

EXTERNAL PRIORITY / Waiting Time

Selectable 0 - 255
Unit sec
Standard value 25
Effective instantaneously
Description see page 42

→WaitingTime: 025

EXTERNAL PRIORITY / Multiple acceptance hard external priority**Selectable** y or n**Unit** yes / no**Standard value** n**Effective** instantaneously

→AcceptHdPrior: n

Description

Effective in group operation only. As soon as the lift receives an internal call when it is on the external priority level (with active ext. priority), another ext. priority can be set on this level and the next group lift will be called.

EXTERNAL PRIORITY / Multiple acceptance soft external priority**Selectable** y or n**Unit** yes / no**Standard value** n**Effective** instantaneously

→AcceptSoPrior: n

Description

Effective in group operation only. As soon as the lift receives an internal call when it is on the external priority level (with active ext. priority), another ext. priority can be set on this level and the next group lift will be called.

EXTERNAL PRIORITY / Hard external priority ousting soft external priority**Selectable** y or n**Unit** yes / no**Standard value** n**Effective** instantaneously

→HPriOustgSPri: n

Description

The hard external priority will oust the soft external priority and the transport travel when the parameter is set to yes.

EXTERNAL PRIORITY / Variant**Selectable** 0 - 255**Standard value** 0**Effective** instantaneously

→Variante: 000

Description

If the parameter is set to 1, then the external priority is evaluated as a button and there is no extension of the external delay time with active input. If the input is active after the external priority time, the call is cleared again to exclude any stuck transponder contacts.

SLUICE OPERATION

Selectable (0) Door A
(1) Door B
(2) all doors → no sluice active

Standard value n**Effective** instantaneously

→Level 01: 02

Description see page 41

THERMISTOR / FIRST DOOR

Selectable (0) Door A
(1) Door B
(2) all doors
(3) no door

→Level 01: 02

Standard value 2

Effective instantaneously

Description

Setting of which door shall open after a thermistor fault.

EMERGENCY CALL / Emergency call time

Selectable 0 - 99

→EmCallTime: 03

Unit sec

Standard value 0

Effective instantaneously

Description

This value indicates how long the alarm button shall be pressed to get the alarm call accepted by the control.

EMERGENCY CALL / Emergency call suppression

Selectable y or n

→EmCallTimeSupr:n

Unit yes / no

Standard value n

Effective instantaneously

Description

If the parameter is set to yes and the lift is in motion or the doors are open with no fault registered, the emergency call will be suppressed.

Note: see EN-81-28 4.1.5

EMERGENCY CALL / Emergency call suppression only when both doors are open

Selectable y or n

→BothDoorsOpen:n

Unit yes / no

Standard value n

Effective instantaneously

Description

If the parameter is set to yes, the emergency call suppression is active only when both doors are open. If the parameter is set to no, only one door has to be open to have the emergency call suppression activated.

Car fan overshooting

Selectable 0 - 99

→CarFan: 10

Unit sec

Standard value 0**Effective** instantaneously**Description**

Setting of the period for automatic switching off the car fan after completion of travel.
When 0 has been set the car fan is switched off immediately after completion of the trip.

Light delayed OFF**Selectable** 0 - 9999

→LightDlyOff: 0000

Unit 10 sec**Standard value** 0**Effective** instantaneously**Description**

If the lift is idle (no further call, no priority function active, etc.) the car light is switched off after elapse of the set time. If "0" was set, the light will not be switched off.

Input debouncing time**Selectable** 50 - 200

→InpDebcTime: 050

Unit ms**Standard value** 50**Effective** instantaneously**Description**

Response time of all inputs at the central unit (AZE0-4). The debouncing times of the LON bus-modules are set permanently to 60 ms

Call setting after SHK or light grid fault**Selectable** y or n

→SHKCallSettg:n

Unit yes / no**Standard value** n**Effective** instantaneously**Description**

Available calls are saved and set again after fault acknowledgement.
Note: Calls for both entrance sides will be registered however not acknowledged! Group calls will not be saved.

SHK debouncing**Selectable** 0 bis 16

→SHK Debouncg: 2

Unit 10ms**Standard value** 2**Effective** instantaneously**Description**

If the parameter is set to 0, then there is no quick polling of the safety circuit inputs IS-01 to IS-04, but the normal debounce time applies. If the parameter is set greater than zero, then a quick query of the SHK inputs IS-01 to IS-04 takes place. The debounce is 10ms multiplied by the set value.

If the parameter is set greater than zero, then:

The VIO numbers for the SHK inputs (VIO 25 to 28) may only be parameterized to the inputs IS-01 to IS-04. Duplicate VIO numbers or a parameterization to another input lead to a malfunction in the safety circuit queries.

Start delay

Selectable 0 - 99

Unit sec

Standard value 0

Effective restart

→StartDelay: 00

Description

Start delay after restart. Should be set when the inverter takes more time for the initialization than the SLC4-control and when an SHB is provided.
(speed lower than 0.3 m/s is in line with signal "levelling")
Preventing SHB fault after restart.

Rescue trip

Selectable y or n

Unit yes / no

Standard value n

Effective instantaneously

Description see page 43

→RescueTrip: n

Dwell time output 1

Selectable 0 - 9999

Unit sec

Standard value 0

Effective instantaneously

Description see VIO No.: 1650 page 69

→DwellTme1: 0000

Dwell time output 2

Selectable 0 - 9999

Unit sec

Standard value 0

Effective instantaneously

Description see VIO No.: 1651 page 69

→DwellTme2: 0000

Light grid setting door open time to the time for internal calls

Selectable y or n

Unit yes / no

Standard value n

Effective instantaneously

Description

With door open and light grid input active (VIO Nos: 118/119) the door open time is set

→LSIntrnlTime: n

to the time for internal calls. This function is performed only in normal operation (not with special functions like external priority).

Identification of overload in level zone only

Selectable y or n

→OvrloadOnlyLv: n

Unit yes / no

Standard value n

Effective instantaneously

Description

Overload is interrogated independently from the shaft position prior to any start. If overload shall be interrogated within the level zone only, the parameter can be set to yes. STRACK is setting the parameter always to no, as required by EN-81-1 (1998) 14.2.5. If the parameter is set to yes the liability will be with the user!

Make time for input is switching output 1 to 5

Selectable 0 ... 255

→TimeInOut1: 000

Unit sec

Standard value 0

Effective instantaneously

Description

Normally, the output is set "one-to-one"; the ON-time can be limited by the parameter. This is useful for voice output devices when an output, i.e. internal priority, shall not run permanently. Please observe that with parameterized time the output will remain active until the time has elapsed, even if the input is no longer active! When the parameter is on zero the outputs are working "one-to-one". See also function nos. 380 to 389.

EN 81 variant

Selectable 0 - 9

→EN81 variant: 0

Standard value 0 = EN 81-1/ -2
1 = EN 81-20/ -50

Effective instantaneously

Description

The parameter determines which EN 81 the control software works.

TELESCOPIC APRON /Distance Contact

Selectable 0 ... 9999

→DistContct: 0000

Unit mm

Standard value 0

Effective instantaneously

Description

When retracted, the contact (VIO 207) is closed. The "DistContct" parameter determines the distance to the lowest level at which the contact must be closed. The zero value deactivates the monitoring of the telescopic apron. The contact will be monitored with regard to incorrect positions prior to and during the journey. When the distance to the lowest level is less than the "DistContct" parameter and the contact is not closed, the error message "M-SPECIAL telescopic apron contact error 3" is sent out and the lift is locked. When the distance to the

lowest level is larger than the "DistContct" parameter and the contact is closed, the error message "M-SPECIAL telescopic apron contact error 2" is sent out and the lift is locked. If the lift is started from the lowest level with the contact closed, an inspection takes place during the journey to check whether the contact has opened. In inspection takes place if the distance to the lowest level is larger than the "DistContct" parameter. In the event of an error, the "M-SPECIAL telescopic apron contact error 1" is sent out. The journey to the destination level is stopped and the lift is locked.

Note: The parameter "Variant" must be set to zero.

TELESCOPIC APRON / Distance Speed

Selectable 0 ... 9999

Unit mm

Standard value 0

Effective instantaneously

→DistSpeed: 0000

Description

The optional "DistSpeed" parameter determines the distance to the lowest level at which the intermediate speed is switched on so that the apron does not touch the ground at nominal speed. No further speed change will be carried out if the lift is already in the entry phase. The zero value deactivates the speed reduction.

Note: The parameter "Variant" must be set to zero.

TELESCOPIC APRON / Variant

Selectable 0 ... 9

Standard value 0

Effective instantaneously

→Variant: 0

Description

The optional parameter "Variant" sets the type of telescope aprons and determines the behavior of the control. If the variant is 1 and the contact (VIO 207) is inactive, a ride in the final bottom level with intermediate speed is performed. Deletes adjacent calls and accept no new calls. The lift logs off from the group and waits until the contact is closed again to switch to normal mode.

Note: The parameter "DistContact" and "DistSpeed" must be set to zero.

11.3.8. GROUP

Lift No.

Selectable 1 - 8

Unit lift No.

Standard value 1

Effective instantaneously

Description see page 176

→Lift No. : 1

Active

Selectable y or n

Unit yes / no

Standard value n

Effective instantaneously

Description see page 176

→Active: n

GROUP MASK**Selectable** 00000000 - 11111111

→Group lifts

Standard value 11111111

01-08: 11111111

Effective instantaneously**Description** This mask defines to which sub-group the control shall be assigned.**Call threshold****Selectable** 1 - 15

→CallThreshold: 01

Unit group calls**Standard value** 1**Effective** instantaneously**Description** see page 176**Door timeout****Selectable** 30 - 900

→DoorTimeout: 60

Unit sec**Standard value** 60**Effective** instantaneously**Description** see page 176**Inactive time****Selectable** 30 - 255

→InactivTime: 030

Unit sec**Standard value** 30**Effective** instantaneously**Description** see page 176**Bonus time****Selectable** 0 - 60

→Bonus time: 00

Unit sec**Standard value** 0**Effective** instantaneously**Description** see page 176**No. of bonuses****Selectable** 0 - 31

→QtyBonuses: 00

Unit Level**Standard value** 0**Effective** instantaneously**Description** see page 176

BONUS MASK

Selectable 00000000 – 111111111
Standard value 0
Effective instantaneously
Description see page 176

→ 01-08: 00000000
 09-16: 00000000
 17-24: 00000000
 25-32: 00000000

Timeout

Selectable 3 - 10
Unit sec
Standard value 10
Effective instantaneously
Description see page 176

→ Timeout: 10

TIME PENALTY

Selectable 0 - 99
Unit sec
Standard value 0
Effective instantaneously
Description see page 176

→ Level 01: 00

DOOR LOSS TIME A

Selectable 0 - 60
Unit sec
Standard value 0
Effective instantaneously
Description see page 176

→ Level 01: 60

DOOR LOSS TIME B

Selectable 0 - 60
Unit sec
Standard value 0
Effective instantaneously
Description see page 176

→ Level 01: 60

11.3.9. MONITORING**Zone switches \ Zone switches**

Selectable 0 - 2
Standard value 0
Effective instantaneously
Description

→ Zone switches: 0

Value 0: No safety circuit (SHB) is used for zone monitoring.

Value 1: SHB according to EN 81-1 / -2 and parameter EN 81 variant = 0

Value 2: MULTIBUS-SHB according to EN 81-1 / -2 with parameter EN 81 variant = 0

Value 2: MULTIBUS-SHB according to EN 81-20 with parameter EN 81 variant = 1

Note: At 0, the levelling and early-opening doors will not be activated.

Zone switches \ Zone entrance side A

Selectable (1) no
(2) SHB A
(3) SHB B

ZONE A : 2

Standard value (2)

Effective instantaneously

Description

When in the zone switches menu = y is set, it will be indicated here which safety circuit SHB at the levels with side A entrance shall be enabled. If (2) is set here, SHB A will be activated and interrogated. If here e.g. (3) is set, only one separate SHB B will be activated on this levels.

Zone switches \ Zone entrance side B

Selectable (1) no
(2) SHB A
(3) SHB B

ZONE B : 2

Standard value (2)

Effective instantaneously

Description

When in the zone switches menu = 1/2 is set, it will be indicated here which safety circuit SHB at the levels with side B entrance shall be enabled. If (2) is set here, also on levels with only one entrance side B the SHB A will be activated and interrogated. If here (3) is set, a separate SHB B is activated on these levels (i.e. in case of short floor distances).

Zone switches \ Zone range

Selectable 20 - 250

→Range+/- : 250

Unit mm

Standard value 250

Effective instantaneously

Description

The indication 'Zone range' represents the length of the internal zone range of the control. It should approximately match with the available magnet switches for the zone. The length is identical for entrance sides A and B.

Zone switches \ Speed monitoring

Selectable y or n

→SpeedMonit: n

Unit yes / no

Standard value n

Effective instantaneously

Description

The admissible speed 0.3 m/s for flush levelling and 0,8 m/s for doors opening upon

approach are monitored by the control.

Travel monitoring time

Selectable 4 - 45

Unit sec

Standard value 20

Effective instantaneously

Description see page 55

→TrvlMonTime: 20

Monitoring of external devices

Selectable (1) storing
(2) storing+stopping
(3) storing+stopping+locking
(4) next level stopping
(5) next level stopping and locking

Standard value (1)

Effective instantaneously; when the fault is active, the parameter will be re-evaluated only when the next fault occurs.

Description see page 60

→InCsOfFault: 1

Car light \ Switch-off level

Selectable 0 - 32

Unit level

Standard value 0

Effective instantaneously

Description see page 51

→Shutdown Lv: 00

Car light \ door position

Selectable (1) opening
(2) opening+closing
(3) closed

Standard value 0

Effective instantaneously

Description see page 51

→DOOR STATUS: 2

CAR LIGHT / FIRST DOOR (Level 01 – 32)

Selectable (0) Door A
(1) Door B
(2) all doors
(3) no door

Standard value 2

Effective instantaneously

Description Selection of door behaviour in case of car light failure per each level.

→Level 01: 02

FORCED DECELERATION \ Speed 1..3

Selectable 0 - 10000
Unit speed mm/s
Standard value 0
Effective instantaneously
Description see page 55

→Speed1: 00000

FORCED DECELERATION \ Distance 1..3

Selectable 0 - 25000
Unit mm
Standard value 0
Effective instantaneously
Description see page 55

→Distance1: 00000

FORCED DECELERATION \ Emergency stop

Selectable y or n
Unit yes / no
Standard value no
Effective instantaneously
Description see page 55

→EmergStop: n

Levelling switch

Selectable 0 - 250
Unit mm
Standard value 250
Effective instantaneously
Description see page 68

→LevelSwch: 250

Flush 1

Selectable 10 - 50
Unit mm
Standard value 10
Effective instantaneously

→Flush 1: 10

Description The parameter sets the range in which the doors will open after a normal travel (stopping accuracy). Stops the lift outside this range, the doors remain closed and the lift tries first to flush by relevelevelling function. If the cabin then is flush, the doors are opened. Otherwise, the doors remain closed. If the lift doesn't stop flush three times in a row, the lift is locked by remote shutdown function.

Note:

In the mode fire alarm, fire brigade, emergency evacuation and locked lift the doors are opened within the door zone, regardless of this parameter. If the doors are opened outside the flush range, the overload signal intervals as a warning.

Flush 2

Selectable	10 - 50	→ Flush 2: 20
Unit	mm	
Standard value	20	
Effective	instantaneously	
Description	The parameter sets the range in which the doors will open after load or unload the cabin (relevelling accuracy).	

Note:

In the mode fire alarm, fire brigade, emergency evacuation and locked lift the doors are opened within the door zone, regardless of this parameter. If the doors are opened outside the flush range, the overload signal intervals as a warning.

UCM \ UCM Zone

Selectable	0 - 250	→ UCM Zone: 250
Unit	mm	
Standard value	250	
Effective	instantaneously	
Description	see page 18 "UCM monitoring"	

UCM \ UCM Variant

Selectable	0 - 5	→ (0) UCM-OFF
Standard value	0	(1) UCM-GB2
Effective	instantaneously	(2) UCM-ZB1

Description

0 = UCM-OFF	Control without UCM function
1 = UCM-GB2	Separate SHB as UCM detector for blocking magnet at speed governor (2x SHB)
4 = UCM-GB1	Door zone SHB also as UCM detector for blocking magnet at speed governor (1x SHB)
5 = UCM-GB0	UCM zone switch as UCM detector for blocking magnet at speed governor (without SHB)
2 = UCM-ZB1	Door zone SHB also as UCM detector for certified brake (1x SHB)
3 = UCM-ZB2	Separate SHB as UCM detector for certified brake (2x SHB)
6 = UCM-DSV	certified hydraulic valve system
8 = UCM-iValve	certified hydraulic valve system
11 = UCM-NGV 1	certified hydraulic valve system

see page 18 "UCM monitoring"

UCM \ Y6 delay monitoring

Selectable	0 - 4000	→ Y6DlyMon: 0500
Unit	ms	
Standard value	500	
Effective	instantaneously	
Description	see page 18 "UCM monitoring"	

UCM \ Y6 turn-off after resting time

Selectable 0 - 65535
Unit sec
Standard value 1800
Effective instantaneously
Description see page 18 "UCM monitoring"

→Y6offTme: 1800

UCM \ Y6 test intervall time

Selectable 0 - 24
Unit hours
Standard value 24
Effective instantaneously
Description see page 18 "UCM monitoring"

→Y6TestIv: 24

Safety light grid function monitoring (SLG: 0)

Selectable 0 - 8
Standard value 0
Effective instantaneously
Description

→NONE
 STRACK LTÜ2
 STRACK LTÜ2-STV
 CEDES LI
 CEDES LI STV

The SLC4-control can operate with different types of safety light grids (STRACK LTÜ2 and STRACK LTÜ2-STV) and normal light grids (CEDES).
 If in case of a fault the unlocking magnet shall be held and relevelling shall be prevented, STRACK LTÜ2-STV has to be set.

Note:

The functions "Hold unlocking magnet" and "Disable relevelling" need a STRACK-LTÜ2 and a special wiring. Please contact STRACK LIFT AUTOMATION GmbH.

Note: If STRACK LTÜ2-STV is set, lock magnets of 100%duty cycle have to be used.

MONITORING / Re-levelling permitted in the event of SLG errors

Selectable y or n
Unit yes / no
Standard value n
Effective instantaneously
Description

→AtSLCFailLev: n

The lift carries out a re-levelling although the safety light curtain (SLG) displays an error.
 The standard value is no, meaning that no re-levelling is carried out.

Brake checking time for emergency braking systems

Selectable 0 - 99
Unit sec
Standard value 0
Effective instantaneously
Description see page 77

→BrakeChckT: 00

Disable in case of fault; self test emergency braking system

Selectable y or n
Unit yes / no
Standard value y
Effective instantaneously
Description see page 77

→ EmBr disable: y

Test output for light grid

Selectable 0 - 9999
Unit ms
Standard value 0
Effective instantaneously
Description see page 69
Effective upon next test run
Standard value 0
Effective instantaneously

→ TestOutpT: 0000

Speed monitoring outputs 1- 3

Selectable 0 - 10000
Unit speed mm/s
Standard value 0
Effective instantaneously

→ Speed1 : 00000

Description

Three independent speeds can be parameterised in order to monitor the speed. The associated outputs 1696, 1697 and 1698 become active in the event that the nominal value is exceeded three times. An active output will become inactive once again in the event that the nominal value is not reached for a third time (Hysteresis: nominal value 10% of the nominal value). The query cycle amounts to 100ms.

Monitoring of emergency call device

Selectable (1) Save
 (2) Save + stop
 (3) Remote shutdown + light off
 (4) Fire alarm

→ (1) Save

Standard value (1)

Effective instantaneously

Description

When input VIO 370 or VIO 371 becomes active, the action set in this parameter is executed. The associated error message is dependent on the parameter "Monitoring Emergency Call Devices" in the folder "Lift attendant". If the lift attendant function is active, VIO 370 writes "M-LIFTATTENDANT Fault Emergency Call Device 1" and VIO 371 "M-LIFATTENDANT Fault Emergency Call Device 2" to the stack memory. If the lift attendant function is inactive, VIO 370 writes "F-EXTDEVICEERROR Emergency Call Device 1" and VIO 371 "F-EXTDEVICEERROR Emergency Call Device 2" to the stack.

LIFT ATTENDANT**Description**

The description of the parameters can be found in a separate lift attendant manual.

11.3.10. RELEVELLING**Engagement of relevelling**

Selectable y or n

→ **Active:** y

Unit yes / no

Standard value y

Effective instantaneously

Description

Engagement of relevelling.

Note: If zone switch = n is set in the menu, relevelling is also inactive. Traction lifts releve only with doors just opening or opened.

Start of relevelling upward

Selectable -49 - -0

→ **StartUpw:** -10

Unit mm

Standard value -10

Effective instantaneously

Description

Relevelling upward will start upon exceeding the set value below level position.

Note: With StartUpw and EndUpw a hysteresis can be set. Thus, the relevelling can be adjusted very accurate.

End of relevelling upward

Selectable -49 - -0

→ **EndUpw** : -05

Unit mm

Standard value -5

Effective instantaneously

Description

The lift releve upward till understepping the set value.

Start of relevelling downward

Selectable +49 - +0

→ **StartDwn** : +10

Unit mm

Standard value +10

Effective instantaneously

Description

Relevelling downward starts upon surpassing the set value above level position.

Note: Wit StartDwn and EndDwn a hysteresis can be set. Thus, relevelling can be adjusted very accurate.

End of relevelling downward**Selectable** +49 - +0**→EndDwn : +05****Unit** mm**Standard value** +5**Effective** instantaneously**Description**

The lift relevells downward till understepping the set value.

Relevelling pause**Selectable** 0 - 9**→Pause [sec]: 3****Unit** sec**Standard value** 3**Effective** instantaneously**Description**

Minimum pause between end of travel and first relevelling operation, and between two relevellings

Limitation of relevelling attempts**Selectable** 0 - 99**→Max trials: 20****Unit** number**Standard value** 20**Effective** instantaneously**Description**

Maximum number of relevelling attempts on one level. No limitation when 0 is set.

Limit relevelling attempts in the lowering level**Selectable** 0 - 99**→InLowergLvl: 00****Unit** number**Standard value** 0**Effective** instantaneously**Description**

Maximum number of relevelling attempts in the lowering level. No restriction when set to 0.

Note: Can only be parameterized with drive type hydraulics.

Treatment of the relevelling attempts in the case of surpassing the limit**Selectable** (1) no further releval attempts until next trip
(2) locking**→WITHMAXTRIALS: 1****Standard value** (1)**Effective** instantaneously**Description**

Setting of the reaction upon surpassing the maximum number of relevelling attempts.

Caution at item 2: When the lift is blocked, fire emergency mode, firemen service and

trips with emergency power will no longer be performed. If during these operating modes the number of attempts is surpassed the lift will not be shutdown but relevelling will be disengaged.

Pause to next travel

Selectable 0 - 9
Unit sec
Standard value 3
Effective instantaneously

→ **Pause Travel: 3**

Description

Minimum delay between the relevelling end and the next normal travel.

11.3.11. INDICATORS / GONG

Position indicator, digital

Selectable (1) binary code
 (2) Gray code
 (3) inverse Gray code
 (4) 15-segment

→ **DISPLAYDIGIT: 2**

Standard value (2)

Effective instantaneously

Description

Selection of the driver code for digital position indicators.

Segment display \ UNIT-segments\ Level

Selectable Level: 01 - 32

→ **Level: 01**

Standard value 1

Effective instantaneously

Description

Selection of level

Segment display \ UNIT-segments\ individual engaging of segments

Selectable 0 or 1

→ **111111111111111**

Standard value 0

Effective instantaneously

Description

Free programming of the 15-segments. In standard assignment the sequence runs from the left to the right, hereby the first number corresponds with VIO No. 268 and the last number with VIO No. 287. The standard sequence of segments is a,b,c,d,e,f,g,h,i for 7-segment and 9-segment displays.

Segment display \ TENS-segments \ Level

Selectable level: 01 - 32

→ **Level: 01**

Standard value 1

Effective instantaneously

Description

Selection of level

Segment display \ TENS-segments \ individual engaging of segments

Selectable 0 or 1

→111111111111111

Standard value 0

Effective instantaneously

Description

Free programming of the 15-segments. In standard assignment the sequence runs from the left to the right, hereby corresponds the first number with VIO No. 283 and the last number with VIO No. 297. The standard sequence of segments is a,b,c,d,e,f,g,h,i for 7-segment and 9-segment displays.

Analog display

Selectable (1) 1 of N
(2) adding

→DISPLAYANALG: 1

Standard value (1)

Effective instantaneously

Description

Selection of output format for engaging of analogue position indicators (e.g. individual lamps)

Signals switch-off

Selectable 0 - 9

→SignalsOff: 0

Unit min

Standard value 0

Effective instantaneously

Description

In standstill operation the position indicators will be switched off after the elapse of the set time. Upon a call or the opening of manual doors the indicators are re-activated at once. In case "0" has been set no switching off is performed.

Blinking display

Selectable y or n

→DisplayBlink: n

Unit yes / no

Standard value n

Effective instantaneously

Description

Indicators set to "yes" will blink in blinking intervals as described below (active only during travel). For the following indications the blinking can be activated: ongoing travel indicator, travelling direction indicator, digital position indicator, analogue position indicator.

Blinking interval ON

Selectable 0 - 9
Unit 250 msec
Standard value 2
Effective instantaneously

→BlinkInvOn: 2

Description

Setting of ON-time for all blinking displays.

Blinking interval OFF

Selectable 0 - 9
Unit 250 msec
Standard value 1
Effective instantaneously

→BlinkInvOff: 1

Description

Setting of OFF-time for all blinking displays.

Gong operating time

Selectable 0 - 9
Unit sec
Standard value 5
Effective instantaneously

→GongTime : 5

Description

The pulse period of the landing gong signal can be adapted to mechanical or electronic arrival signalling devices. Upon setting "0" the function will be inactive. The gong will be activated when the lift is in approach to the destination level.

Gong delayed activation

Selectable 0 - 9000
Unit ms
Standard value 1000
Effective instantaneously

→Gong delay: 1000

Description

Time is effective only during travel. Gong activation delayed by set time.

Double arrows activation

Selectable y or n
Unit yes / no
Standard value yes
Effective instantaneously

→Double arrow: y

Description

If no destination is set and the door is opened or reversed, both directions are indicated.

GRAYCODE PARAM / Parameterized Gray-code permanently ON**Selectable** y or n**Unit** yes / no**Standard value** yes**Effective** instantaneously**→ GrayCodePerm: y****Description**

Parameterized Gray-code outputs (2601 to 2606) are displayed permanently, irrespective of the current operating mode.

GRAYCODE PARAM / Gray-code setting for each level**Selectable** 0 or 1**Standard value** 000000XX**Effective** instantaneously**→ Lv 01: 000000XX**

...

Lv 32: 000000XX**Description**

Indication of the Gray-code for each level. Evaluation is performed from left to right. The first character (left) corresponds with output 2601, the second one with output 2602 etc. (see tablet page 164)

11.3.12. PARKING (1 to 5)**Parking time****Selectable** 0 - 900**Unit** sec**Standard value** 0**Effective** instantaneously**→ ParkTime: 000****Description**

After elapse of the set resting time, the lift approaches to the selected parking level. When "0" is set the function will be inactive.

Parking level**Selectable** 0 - 32**Unit** level**Standard value** 0 (automatically)**Effective** instantaneously**→ ParkLevel: 00****Description**

After elapse of the set period the lift approaches to the selected parking level.

Starting level 1/3**Selectable** 0 - 32**Unit** level**Standard value** 0 (all levels)**Effective** instantaneously**→ StartLevel1: 00****Description**

If the actual level is the same as the starting level 1/3 the parking run will be carried out. There are 3 starting levels available, the evaluation corresponding to an OR logic relation. If "0" has been set for all starting levels a parking run out of all levels is initiated.

Doors closed upon parking

Selectable y or n

→DOORS close: n

Unit yes / no

Standard value n

Effective instantaneously

Description

If the parameter is set to "yes" the door is not opened after the parking trip. If the parameter is set to "no", the door will be opened and closed after the parking time.

Light off upon parking

Selectable y or n

→Light off: n

Unit yes / no

Standard value n

Effective instantaneously

Description

Car light during parking.

VIO- function numbers for special conditions

Selectable 333 - 337

→VIO- No. : 000

Unit VIO number

Standard value 0

Effective instantaneously

Description

Only when the quoted input has been set, the parking function will be active. If here, for instance, the VIO number of an internal time switch (VIO No. 333 to 337) is quoted, convenient and time-dependent parking functions will be possible also. With "0" the parking is independent from any input.

11.3.13. REMOTE SHUTDOWN

Setting checklevel

Selectable 0 - 32

→CheckLevel: 00

Unit level

Standard value 0

Effective instantaneously

Description see page 52

Remote shutdown level

Selectable 0 – 32

→RemShDwnLev: 00

Unit	level
Standard value	0
Effective	instantaneously
Description	see page 52

Door status

Selectable	(1) open (2) opening and closing (3) closed
Standard value	(2)
Effective	instantaneously
Description	see page 52

→ DOOR STATUS: 2

FIRST DOOR (Level 01 – 32)

Selectable	(0) Door A (1) Door B (2) all doors (3) no door
-------------------	--

Standard value	2
Effective	instantaneously
Description	

→ Level 01: 02

This setting determines the behaviour of the doors in case of remote shutdown.

11.3.14. TIME SWITCHES (VIO No. 333 to 337)

Starting time 1

Selectable	00:00:00 to 23:59:59
Unit	hh:mm:ss
Standard value	00:00:00
Effective	instantaneously
Description	Setting of starting time in [hour:minute:second] for the time switch.

→ Start1 00:00:00

End time 1

Selectable	00:00:00 to 23:59:59
Unit	hh:mm:ss
Standard value	00:00:00
Effective	instantaneously

Description

Setting of end time in [hour:minute:second], at which the time switch shall be switched off.

→ End1 00:00:00

Starting time 2

Selectable	00:00:00 to 23:59:59
Unit	hh:mm:ss

→ Start2 00:00:00

Standard value 00:00:00**Effective** instantaneously**Description**

Setting of a second starting time in [hours:minutes:seconds], at which the time switch shall be switched on again (e.g. Start1-End1 for the morning-break and Start2-End2 for the lunch-break).

End time 2**Selectable** 00:00:00 to 23:59:59**→End2** 00:00:00**Unit** hh:mm:ss**Standard value** 00:00:00**Effective** instantaneously**Description**

Setting of a second end time in [hours:minutes:seconds], at which the time switch shall be switched off again.

Day**Selectable** 0 to 31**→Day:** 00**Unit** dd**Standard value** 0**Effective** instantaneously**Description**

If for a day other than 0 has been set, every month on this day the time switch will switch on within the set Start1-End1 and Start2-End2 times. Hereby the days of the week remain unconsidered.

Day of the week**Selectable** 0000000 to 1111111**→Sun-Sat:** 1111111**Unit** Sun Mon Tue Wed Thu Fri Sat**Standard value** 1111111**Effective** instantaneously**Description**

Setting of the days of week, on which the time switch may be switched on within the Start1-End1 and Start2-End2 times.

Months**Selectable** 000000000000 to 111111111111**→M:** 111111111111**Unit** Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec**Standard value** 111111111111**Effective** instantaneously**Description**

Setting of the months at which the time switch may be switched on.

11.3.15. EMERGENCY POWER

External evacuation control

Selectable y or n
Unit yes / no
Standard value n
Effective instantaneously
Description see page 53

→ExtEvac: n

Emergency power evacuation level

Selectable 1 - 32
Unit level
Standard value 1
Effective instantaneously
Description see page 53

→EmrgPowLev: 01

Door status

Selectable (1) open
(2) opening and closing
(3) closed
Standard value (1)
Effective instantaneously
Description see page 53

→DOOR STATUS: 2

Release for emergency power operation

Selectable y or n
Unit yes / no
Standard value n
Effective instantaneously
Description see page 53

→Release: n

Load-dependent evacuation travel

Selectable y or n
Unit yes / no
Standard value n
Effective instantaneously
Description see table1, page 54

→LoadDependent: n

Maximum number of lifts in emergency power operation

Selectable 0 - 8
Unit lifts
Standard value 0

→MaxLifts : 0

Effective instantaneously

Description

Number of lifts running at the same time. Applies to emergency power evacuation and operation, see page 53

Upwards travel with hydraulic lift

Selectable y oder n

→UpWithHydr: n

Unit jes / no

Standard value n

Effective instantaneously

Description see page 54

Emergency power switch on waiting period

Selectable 5 - 60

→SwOnWaitingT: 00

Unit seconds

Standard value 30

Effective instantaneously

Description

Waiting period before the emergency power function is carried out. Within this period the information of all lifts in the emergency power bus system are exchanged.

FIRST DOOR (Level 01 – 32)

Selectable (0) Door A
(1) Door B
(2) all doors
(3) no door

→Level 01: 02

Standard value 2

Effective instantaneously

Description

Here, the behaviour of the doors during emergency power operation is set.

11.3.16. SHAFT MAPPING

SHAFT MAPPING \ ENTRANCE SIDE A/B

Selectable (000000xx) – no entrance
(100000xx) – only one entrance on side B
(11xxxxxx) – all group calls active
(101000xx) – only upward group calls active
(100100xx) – only downward group calls active
(100010xx) – only direction independent group calls active
(100001xx) – only ext. priority group calls active
(110000xx) – last two entries are not active at the time being.

→Lv 01: 11000000

Standard value 10000000

Effective after leaving the sub-menu

Description

With the entrances for each level the shaft mapping is set. Doors will open only there

where an entrance is set in the shaft mapping. Entries 2 to 6 apply only for group operation. Entries 3 to 6 can also be activated simultaneously. If, for example, a lift has to serve all upward calls and external group priority calls 10100100 will be set. The down calls or direction independent calls will not be acknowledged by this lift! If entry 2 is active, the entries 3 to 6 will not be evaluated.

11.3.17. ENCODING

Encoder type

Selectable

- (1) DISK-1
- (2) DISK-2
- (3) DISK-3
- (4) DISK-4(Ex)
- (5) DISK-5
- (6) LASER
- (7) MAGNET TAPE
- (10) DISK-10
- (11) DISK-10 Ex

→ **ENCODERTYPE: 2**

Standard value 2

Effective instantaneously

Description

By quoting the template "encoding" a standard programming of the encoding parameters (absolute encoder) will be selected and set. The standard programming can be used as pre-programming, after which only a few further programming are to be carried out.

TEACHING TRAVEL / TEACHING START

Description

After all VIO-assignments, encoding and type of control have been set (already set by STRACK LIFT AUTOMATION GmbH) the level positions are here communicated to the control.

→ **TEACHING START**

Bottom level

Selectable 0 - 32

Effective instantaneously

→ **BottomLevel: 01**

Description

The value will be set automatically after teaching travel. For group operation see on page 178.

Top level

Selectable 0 - 32

Effective instantaneously

→ **TopLevel: 08**

Description

The value will be set automatically after teaching travel. For group operation see on page 178.

Correction of levelled position

Selectable 0 - 9999
Unit mm
Standard value 1000
Effective instantaneously

→ INDIVID IN MM
 ALL SAME
 PROP. FROM ABOVE
 PROP. FROM BELOW
 INDIV. ABSOLUTE

Description

The altitude of the levels can be changed in different ways. After shifting the levelled position all deceleration distances etc. remain set. The new level positions will be approached instantaneously and correctly. See also page 179

Absolute encoder \ Resolution

Selectable 0 - 29999
Unit steps / m
Standard value depending on the set encoding (DISK-x)
Effective after teaching travel

→ Resolution: 15368

Description

Resolution of the encoder in steps per meter. Difference between two encoder values in case of a completed lift travelling distance of 1m.

Absolute encoder \ Data capacity

Selectable 20 - 25
Unit Bit
Standard value 20
Effective after reset

→ DataCapacity: 20

Description

No. of data bits of the encoder.

Absolute encoder \ min. Vt

Selectable 0 - 1000
Unit mm/s
Standard value 20
Effective after reset

→ MinVt : 20

Description

If this speed will be understepped, the lift is in standstill and the run-time check will become effective.

Absolute encoder \ max. Vt

Selectable 10 - 9999
Unit mm/s
Standard value 5000
Effective after reset

→ MaxVt : 5000

Description

Here, the nominal speed must be entered. Maximum speed, upon which the absolute values of the encoder may be changing. In case of larger differences an encoder fault will be assumed (encoder fault, overspeed of the lift ...).

Absolute encoder \ Surpassing of the range of values**Selectable** 0 - 3000**Unit** mm**Standard value** 1000**Effective** after reset**→ValRange: 1000****Description**

Maximum admissible surpassing of the top or bottom level. The entry is adjusting the range of valid encoder values. Values beyond the defined range will be considered as faults.

Encoder replacement**Description**

See on page 181

replace and run
to the 1st level

>> Wait for <<
>> TeachKey <<

11.3.18. RDT CONTROL STATION**BAUD RATE**

Selectable (1) 4800 BAUD
(2) 9600 BAUD
(3) 19200 BAUD
(4) 38400 BAUD

Standard value 2**Effective** instantaneously**→BAUDRATE: 2****Description**

The value defines the transmission speed.

TIMEOUT**Selectable** 0 – 99**Unit** min**Standard value** 15**Effective** instantaneously**→TIMEOUT: 15****Description**

Maximum time between two valid telegrams before the connection is disabled.
With 0 the Timeout is disabled.

Repetition of messages**Selectable** 0 - 9**Standard value** 2**Effective** instantaneously**→MessageRpt: 2**

Description

No. of repetitions made upon sending the messages by LIFTnet® without acknowledgement. When the number of message repetitions is completed they will be transferred again with the next fault only. The faults will not be lost!

Time for repetition of messages

Selectable 10 - 45

Standard value 10

Effective instantaneously

→ **TimeMesRpt: 2**

Description

Interval between two transfers of a message. See repetition of messages.

Send message log

Selectable y or n

Unit yes / no

Standard value n

Effective instantaneously

→ **MessagesSend: n**

Description

When the parameter is set to yes, new logins to the LIFTnet-Station are transferred to the login and selection folders in accordance with the settings.

Allow LIFTnet multiple logins

Selectable y or n

Unit yes / no

Standard value n

Effective instantaneously

→ **Multiplelogin: n**

Description

Multiple LIFTnet logins are permitted when the parameter is set to yes.

Destination call variant

Selectable 0 - 99

Standard value 0

Effective instantaneously

→ **DestCallVar: 0**

Description

The value zero deactivates the destination call connection.

For the Schindler port connection, the parameter must be set to 1. The port connection requires a MULTIBUS Coupler variant C.

Modem

Selectable (0) direct connection
(1) serial interface; modem connection
(2) integrated modem

Standard value 0

Effective instantaneously

→ **Modem: 0**

Description

By this setting it is decided whether the connection between the control and LIFTnet shall be established by an external modem, an internal modem or by direct connection

INIT

Selectable 10 characters from the following set:
! " \$ % & / () = ? < > , ; . : _ - + / * , 0 - 9 , A - Z , a - z

→ **Init: AT&F&D0X3**

Standard value AT&F&D0X3

Effective instantaneously

Description

Init string for the used modem.

Modem = 0:

When direct connected (without modem), the init parameter is not evaluated.

Modem = 1:

When connected to the modem through the serial interface, the init string must be used as written in the modem manual. Usually this init string works: AT&F&D0X3

When connected to the STRACK GSM modem, the init string AT&FE0;S0=0;+CSNS=4;+CRC=0 must be used.

Modem = 2:

When the build-in modem, the init string AT&F&D0X3 must be used.

Modem dialling pause

Selectable 10 – 99

Unit sec

Standard value 30

Effective instantaneously

Description Interval between two dialling attempts.

→ **ModemDialPse: 30**

MESSAGE 1 - 2

Selectable Dialling mode:
(0) linear processing of telephone numbers registered in the dialling list before the next dialling is initiated.

(1) linear processing of telephone numbers registered in the dialling list; in case of an unsuccessful attempt the next dialling is proceeded until the number of dialling attempts has been reached.

Dialling: 00000000 – 11111111

Valence from left to right

Where the bits 1 to 4 enable the selection to a LIFTnet PC and the bits 5 to 8 enable a SMS message.

Standard value 00000000

Effective instantaneously

Description see above

→ **DialMode 0**
Diallg: 0000000

DIALLING 1 – 8

Selectable telephone number
Dial attempts 1 - 99

→ **TNr:**
DialAttempts: 00

Effective instantaneously

Description

Setting of the telephone numbers and the number of dialling attempts per each number.

11.4. SYSTEM**11.4.1. USER****Logout**

Effective instantaneously

→ **Logout**

Description

Manual logout of a user. After this logout again a password can be entered.

Logout delay

Selectable 0 - 99

→ **LogoutDelay: 06**

Unit min

Standard value 6

Effective upon next login

Description

If during the set period the menu is no longer used, an automatic logout of the user is performed.

User name Level x

Selectable 10 characters out of the following set:
! " \$ % & / () = ? < > , ; . : _ - + / * , 0 - 9 , A - Z , a - z

→ **Name: LiftAttn**

Standard value according to the level: lift attendant, fitter, technician,
putting into operation

Effective instantaneously

Description

Name of the respective user

Password Level x

Selectable 0000 - 9999

→ **Password: 0010**

Standard value according to the level: 0010, 0020, 0030

Effective instantaneously

Description

Password of the respective user

11.4.2. LON BUS CONFIGURATION

ID

Selectable no

Standard value -

Effective instantaneously

→ ID : FFFFFFFF

Description

By the calling of the function the LON bus communication processor (Neuron) on the control computer AZE0 will be new initialized. Each Neuron processor has a worldwide unique identification number (ID). The number of the processor installed on the control computer AZE0 will be displayed.

No. of attempts of bus module test

Selectable 0 - 255

Standard value 5

Effective instantaneously

→ NoTrialTest: 5

Description

The bus modules are successively tested within a cycle of 10 s. They have to give a "sign of life" in the form of a report. If any module does no longer react after elapse of the set number, an entry into the fault memory will be made.

No. of repetitions with module programming

Selectable 0 - 15

Standard value 3

Effective instantaneously

→ NoTrialProg: 2

Description

Upon putting into operation and upon changes at the VIO assignment of a bus module, this will be re-programmed. In case of bad bus conductors it may however happen, that the programming might not be complete. A fault signal will appear directly on the display. By this parameter the number of trials for the re-programming can be increased.

No. of repetitions for confirmed transactions

Selectable 0 - 15

Standard value 2

Effective instantaneously

→ NoTrialConf: 2

Description

A LON bus data telegram for inputs/outputs setting/cancelling (except group calls) will be confirmed upon sending. That means, the receiver has to report to the sender whether he has received the telegram correctly or not. If within some milliseconds no positive confirmation of the receiver is following the same telegram will be sent again. Here, it can be set how many repetitions the sender shall carry out. A small value reduces the bus-load, a higher value increases the reliability of transmission.

No. of repetitions for unconfirmed transactions**Selectable** 0 - 15

→ NoTrialUncf: 2

Standard value 2**Effective** instantaneously**Description**

A LON bus data telegram for group calls setting/cancelling will not be confirmed upon sending. That means, the receiver does not report to the sender whether he has received the telegram correctly or not. Here, it can be set how many repetitions the sender shall carry out to ensure that the receiver will get it. A small value reduces the bus-load, a higher value increases the reliability of transmission.

11.4.3. SLC4 INTERNAL**Display / Text**

Selectable 16 characters from the following set:
! " \$ % & / () = ? < > , ; : _ - + / * , 0 - 9 , A - Z , a - z

→ Text: STRACK GmbH

Standard value STRACK GmbH**Effective** instantaneously**Description**

Settings made by the control manufacturer. The text is displayed in the status image line 2 of the display.

Reset special functions**Description**

The special functions transferred by LIFTnet® will be reset after a safety interrogation in the control.

→ RESET SPECFUNCT

Reset encoder fault**Description**

All encoder fault counters are reset to 0.
(see Information/Monitor/Encoder)

→ RESET ENCODFLT

Reset memorizing counter**Description**

The memorizing counter 1 and 2 of the control will be reset after a security query.

→ RESET MEMOCNT

Reset Lock**Description**

see page 18 "UCM monitoring" or VIO 16.

→ RESET LOCK

ZÜS-Inspection / Run time monitoring up**Description**

→ RuningTimeUp

The control sets a call in the top level. The determination of the speed is switched off so that the control triggers a running error after 4 seconds. The "MONITORING/TravelContrZ" parameter is set to 4 seconds during the function test and is set to the previous value after the function is completed. Only a slow speed is set so that it is certain that the run-time error will be triggered.

ZÜS-Inspection / Run time monitoring down

Description

The control sets a call in the bottom level. The determination of the speed is switched off so that the control triggers a running error after 4 seconds. The "MONITORING/TravelContrZ" parameter is set to 4 seconds during the function test and is set to the previous value after the function is completed. Only a slow speed is set so that it is certain that the run-time error will be triggered.

→RuningTimeDn

ZÜS-Inspection / Limit switch up

Description

The lift must be travelled to the top level before the function is triggered. The lift then travels slowly to the top limit switch.

→LimitSwitUp

ZÜS-Inspection / Limit switch down

Description

The lift must be travelled to the bottom level before the function is triggered. The lift then travels slowly to the bottom limit switch.

→LimitSwitDn

ZÜS-Inspection / travel into the buffer up

Description

The controller sets a call to the top level. The deceleration point and the leveling point are deactivated, so that the lift travels quickly into the upper buffer (buffer of the counter weight). With DCP 4 systems malfunction may occur in exceptional cases. In this case, in the folder ENCODING \ LEVELCORRECTION \ INDIVID IN MM, the end level at the top can be moved upwards by 3000mm. After the test, the level movement must be reversed.

→LimitSwitUp

ZÜS-Inspection / travel into the buffer down

Description

The controller sets a call to the bottom level. The deceleration point and the leveling point are deactivated, so that the lift travels quickly into the bottom buffer. With DCP 4 systems malfunction may occur in exceptional cases. In this case, in the folder ENCODING \ LEVELCORRECTION \ INDIVID IN MM, the end level at the bottom can be moved downwards by 3000mm. After the test, the level movement must be reversed.

→LimitSwitDn

ZÜS-Inspection / UCM without drive

Description

see page 18 "UCM monitoring"

→UCM with drive

ZÜS-Inspection / UCM with drive

Description see page 18 "UCM monitoring"

→UCM without drv

Data saving**Description**

Manual data saving. All data set hitherto will be written into the flash memory.

Note: Normally not necessary, as upon leaving the menu returning to the status image in the display all data are saved automatically.

→Data saving

Disable lift attendant functions**Description**

The lift attendant functions are temporarily deactivated for commissioning or maintenance of the lift (maximum 12 hours).

→LIFTATTD OFF

Enable lift attendant functions**Description**

The lift attendant functions are activated.

→LIFTATTD ON

Enable lift attendant test „emergency call“**Description**

Turns on the lift attendant test "emergency call" for the certification of the lift attendant functions. The service LED flashes while the test is on.

→TESTEMYCALL ON

Disable lift attendant test „emergency call“**Description**

Turns off the lift attendant test "emergency call". The service LED stops flashing.

→TESTEMYCALL OFF

Enable cyclic lift attendant test**Description**

Performs a cyclic lift attendant test without having to change the lift attendant timer.

→TEST LIFTATTD

12. BINARY AND GRAY CODE TABLE

Level	Binary	Gray
	E D C B A	E D C B A
31	1 1 1 1 1	1 0 0 0 0
30	1 1 1 1 0	1 0 0 0 1
29	1 1 1 0 1	1 0 0 1 1
28	1 1 1 0 0	1 0 0 1 0
27	1 1 0 1 1	1 0 1 1 0
26	1 1 0 1 0	1 0 1 1 1
25	1 1 0 0 1	1 0 1 0 1
24	1 1 0 0 0	1 0 1 0 0
23	1 0 1 1 1	1 1 1 0 0
22	1 0 1 1 0	1 1 1 0 1
21	1 0 1 0 1	1 1 1 1 1
20	1 0 1 0 0	1 1 1 1 0
19	1 0 0 1 1	1 1 0 1 0
18	1 0 0 1 0	1 1 0 1 1
17	1 0 0 0 1	1 1 0 0 1
16	1 0 0 0 0	1 1 0 0 0
15	0 1 1 1 1	0 1 0 0 0
14	0 1 1 1 0	0 1 0 0 1
13	0 1 1 0 1	0 1 0 1 1
12	0 1 1 0 0	0 1 0 1 0
11	0 1 0 1 1	0 1 1 1 0
10	0 1 0 1 0	0 1 1 1 1
9	0 1 0 0 1	0 1 1 0 1
8	0 1 0 0 0	0 1 1 0 0
7	0 0 1 1 1	0 0 1 0 0
6	0 0 1 1 0	0 0 1 0 1
5	0 0 1 0 1	0 0 1 1 1
4	0 0 1 0 0	0 0 1 1 0
3	0 0 0 1 1	0 0 0 1 0
2	0 0 0 1 0	0 0 0 1 1
1	0 0 0 0 1	0 0 0 0 1
0	0 0 0 0 0	0 0 0 0 0

IV. PUTTING INTO OPERATION

1. THE VERY FIRST INSTALLATION RUN

If you don't want to carry out an installation run, go on to section 2.

If you have a ready parameterized control and would you like to use it for the erection of the landing doors, continue as described below:

Caution: Inspection trips of that kind are hazardous! At this point we can only give an advise. This description shall not represent a request to carry out an installation run. The control manufacturer has to decline any responsibility for bodily injuries or material damages resulting herefrom.

ATTENTION: The installation run is without any travel limitation in the terminal landings.



1. Connect as many safety circuit related devices as possible, as per circuit diagram (this applies particularly to emergency stop switches). Bridge the remaining plotted safety circuit contacts so, that all safety circuit interrogations of the control computer will be getting voltage (VIO-functions +0025 to +0028).
2. Connect the driving unit completely according to the circuit diagram. In case of frequency inverters also the brake resistor (if any) must be connected.
3. Connect the tacho, if there is any provided.
4. Connect the forced motor ventilation, if there is any provided.
5. Do **not** bridge the termistor input, if there is any provided. Connect the thermistor of your driving unit correctly, since, as particularly in the case of installation runs the machine might be loaded inadvertently.
6. If pluggable travelling cables have been supplied, do connect them.
7. Switch on the inspection mode or leave the inspection input open (VIO-function -0060).
8. For upward or downward travelling you may use the inspection switches. In case that these are not yet provided, connect two keys having one closing contact each to both inspection inputs (VIO-functions +0061 and +0062).
9. If door limit switches are plotted, the door-open condition must not be signalled to the control computer via these inputs. If, for example, for the door-closed limit switch an opening contact is provided, leave the input open.

If no teaching travel has been carried out as yet (also not earlier in connection with a test of the control), you do not need to connect the encoder (DISK). An installation run is possible without encoder. If you have connected the encoder, ensure that it will function correctly. Otherwise you cannot carry out the run. If the lift will not be moving, this might be caused by an already carried out teaching travel. In this case activate another a new teaching travel in menu

SETTING\ENCODING\TEACHING TRAVEL.

You will see the following on the display:

<< TeachTrvl <<
G: 0 Lv: 0

After that press 3 times the key [ESC]. Now you have cancelled all probable level positions.

2. BASIC SETTINGS

If you do not carry out a **first** commissioning of the control (at the manufacturer's of the control), then you may skip this paragraph and go directly to section "**Teaching travel**" below.

At least now you should read chapter Virtual inputs/outputs VIO.

2.1. Encoding

Select in menu `SETTINGS\ENCODING\EncoderType` the digital shaft encoding system that you are going to use, e.g. "(1) DISK-1"

2.2. Entrance A,B

Select in menu `SETTINGS\DOOR A(B)\DOORCONST` the type of door for the respective entrance side.

2.3. Shaft mapping

Select in menu `SETTINGS\SHAFT MAPPING\ENTRANCE A/B` the position of the entrance sides or the group functions. The shaft map can be adjusted for each level as per demand. The figures of the 8-digit number means:

x	x	x	x	x	x	x	x
Entrance available	All group calls allowed	Only group calls upward allowed	Only group calls downward allowed	Only direction independent group calls allowed	Only external priority group call allowed	not allowed at the time being	not allowed at the time being

"0" = no "1" = yes

Examples (to be set separately for door A and B):

10000000 – entrance at the level available, however no group operation.

11000000 – entrance available. Control working in group operation, all group calls are allowed on this level.

10000100 – entrance available. On this level only the group external priority is allowed.

2.4. More basic settings

In menu `SETTINGS` you may carry out further basic settings resp. correct pre-settings. Select the points of the menu one after the other, e.g.

CONTROL

GROUP (for the time being, deactivate by menu level `SETTINGS\GROUP\Active:n`)

DRIVE BASICALLY (enter the deceleration distances (see also section "Deceleration paths"). First set here a longer distance, so that your lift can stop reliably. Lateron you may shorten the distance.

MONITORING

RELEVELLING (for the time being, deactivate by menu level

`SETTINGS\RELEVELLING\Engaging: n`)

...

3. VIO ASSIGNMENT

If you do not carry out a first commissioning of the control (at the manufacturer of the control), then you may skip this paragraph and go directly to section "Teaching travel" farther below.

The VIO-functions are needed for the modification or extension of the control functions. Herewith you may assign control functions to any inputs or outputs (terminals). In this case it is unimportant whether this terminals are located on the central unit, the supplementary cards or on a bus module.

3.1. VIO-assignments to AZE0 or AZE1-4

Select a functional unit in menu `SETTINGS\VIO-ASSIGNMENT`, e.g. "AZE0".

You may see all inputs/outputs that are provided on this functional unit (VIO-designations). Please read chapter II.

At the back of the VIO-designations are the VIO-function numbers and a mathematical sign, e.g. "-0060".

Now you can assign a VIO-function (e.g. input inspection) to an input/output. By the mathematical sign you choose, whether the function "inspection" shall be active with voltage at the input (maker) or with open input (breaker).

A "*" -symbol at the back of the function number will inform you, that the input is just active.

Example:

In the display the following appears:

<pre> IDC-0.1 :-0060* IDC-0.2 :+0062 </pre>

1st Line.

To input "IDC-0.1" (input 24VDC on functional unit 0, no. 1) the function 0060 (inspection on/off) has been assigned. The "-" means that inspection is switched on if the input is LOW (breaker in the inspection panel). The "*" indicates that function "0060" is just active (inspection switch is ON, which means no voltage on IDC-0.1).

2nd Line.

To input "IDC-0.2" (input 24VDC on functional unit 0, no. 2) the function 0062 (key inspection down) has been assigned. The "+" means that inspection travel DOWN has been activated if the input is HIGH (maker on the key for inspection down).

3.2. VIO-assignments at the bus-modules

Select a bus-module in menu `SETTINGS\VIO-ASSIGNMENT`, e.g. "BUS-MODULE 1".

In the display the following appears:

<pre> →ID:000000000000 Definition: 0 </pre>

ID is a worldwide unequivocal identification of a LON bus-module.

If you want to install a new module or replace an already available one, you will have two convenient possibilities:

1. Press key [CR] while the arrow points at ID → the ID-No. will blink. Press the service key at the bus-module. The bus-module signals its ID to the control computer, which will appear immediately on the display.
2. Press key [CR] while the arrow points at ID → the ID-No. will blink. Press again key [CR] → the number stops blinking – now you can enter the ID-No. by hand.

By means of the **definition** you are giving the logical association of the modul.

(0) **LIFT M. A – BUS:** "lift module" on the lift bus (module will be served by this control only)

(3) **(3) GROUP M. G – BUS:** "group module" on the group bus (with lift groups only). The bus module may be assigned only to group inputs/outputs, like group calls up - down, group external priority calls etc.

VIO-functions assigning / viewing:

Read section 3.1. The procedure with the bus-modules is almost the same.

At the bus-modules, the display of the available input/output terminals is a bit different as here any terminal can be an input or an output as well.

The VIO-list looks as follows:

```
→IO 1.E: -0000
   IO 1.A: +0000
```

Both lines indicate IO 1 (terminal 1), ".I" is the terminal as an input, ".O" is the terminal as an output. If you want to use the terminal as an input, enter the desired input function into "IO 1.I", would you like to use it as an output, enter the function „IO 1.O“. Do you want to connect a call with acknowledging lamp, enter in "IO 1.I" the call input function (e.g. +3001) and in "IO 1.O" the call acknowledging function (e.g. +3041).

With key [↓] you will get to further inputs/outputs of the bus-module.

Assignment of the changed VIO numbers or of the new bus-module:

The assignment is made automatically. Upon leaving the sub-menu (press key [ESC] once) there will appear

```
Module assignmt
Please wait
```

4. TEACHING TRAVEL

After having connected all peripheral equipment to the control, also the digital shaft encoding feature DISK and the teaching key in the car connection, you can start the teaching travel.

Switch on the service operation in the shortcut menu, so that after completion of the teaching travel the external calls remain locked-out and the automatic doors remain closed for the time being.

After having connected all peripheral equipment to the control including the digital shaft encoding feature DISK and the teaching key in the car terminal box, you can start the teaching travel.

Disconnect the toggle switch "landing calls" at the central unit (old version of control computer) resp. switch on the service operation in the shortcut menu, so that after completion of the teaching travel the external calls remain locked-out and the automatic doors remain closed for the time being.

Normally, you do not need to change the parameters `BottomLvl` and `TopLevel` in case of individual lifts and group lifts with identical shaft map. They will be set automatically by the control after completion of the teaching travel. The use of the parameters is described on page 178.



Attention!

With teaching travel the travelling distance is not restricted. Do not run the lift beyond the level positions of the top and bottom landings.

Activate the teaching travel in menu `SETTINGS\ENCODING\TEACHING TRAVEL\TEACHING TRAVEL START`.

On the display you will find the following:

```
<< TeachTrvl <<
G:      0 Lv: 0
```

Value "G:" this is your completed travelling distance in "standardized encoder values" (at the time being still "0"). This value corresponds with about the travelling distance in mm, however during teaching travel in case of a counter overflow of the encoder the "G"-value may show a big jump in value. This is without any meaning. "-" or "+" in front of this value is also irrelevant. The sign shows only the direction of installation of the encoder having been chosen. by you
Value "Lv:" shows the number of teached level positions (at the time being still "0").

Under teaching travel condition automatic doors may not automatically close. Close the doors by hand.

Run the lift with inspection mode to **lowest** level. **You must not run the lift 100% level!** Unlevel positions can be corrected easily at the end of putting into operation.

Give one short push to the teaching key. You will see the flashing acknowledgement signal on the key.

Run the lift upward by inspection mode. After leaving the levelling zone (50 mm), the teaching key lamp will extinguish.

Run the lift to the second landing above (approximately level) and press again the key. You again will see the acknowledging light.

Run the lift to the next landing above, and so on.

After you have signalled the highest level position to the control by pressing your key, you can again drive downward. Set the car between two landings, switch off the inspection mode and leave the shaft. Go to the control.

Your display now looks similar to this one:

```
<< TeachTrvl <<
G:   -9153 Lv: 4
```

Value "Lv:" has to correspond with the number of levels. If not, you have made a mistake. Either you have not taught all level positions or you have set too many. In this case the teaching travel has to be carried out again (from level 1 till top).

Press 1x one key on the central unit, e.g. "CR". For your own control you will be informed now about the minimum and maximum landing distances of your lift. If these correspond approximately with the lift, leave the menu by pressing the "ESC"-key three times

Now, in the top line of the display the actual level should be found and the relative distance of the car to the level point of this floor.

```
03+0853 00000000
ReadyFrTrv
```

The teaching travel is completed.

Set an internal call to any level (no terminal landing, if possible). The lift should run now in normal travel mode directly to this level.

5. FINE LEVELLING

After completing the teaching travel the car does not yet stop exactly on level, which is not necessary anyway.

Disengage the relevelling mode that possibly might be activated.

SETTINGS\RELEVELLING\Engaging = „n“

At first, set the deceleration distances.

You can adapt the deceleration distances of the control by means of the parameters:

SETTINGS\DRIVE BASICALLY\DeclUp (or Dn)

If your lift control is provided with a speed controller, you should here adjust it, too. In case that the **speed controller** is provided with **speed-arc correction**, you have to **engage** this function. The speed controller should at any time immediately follow the lift control (setpoint speed values).

SETTINGS\DRIVE BASICALLY\xxx

Speed controllers often have the characteristic that they do not follow the lift control when the control wants to decelerate while it is in the phase of acceleration. For instance, they complete at first their "rounding" one and two, and only then start decelerating. In order to avoid surprises (on short distance, the lift does not decelerate in time and will overtravel the level positions), you should run tests by approaching each individual level out of many positions. If you have short level distances or a high-speed lift, set also the parameters of section "III.1.1 Automatic deceleration paths".

If your deceleration distances are o.k., start now with stopping on level.

```
02+0000 00000000
ReadyFrTrv
```

Now, this value in the display is of importance. It shows the position of the car in relation to the previously taught level position in millimetres. **This does not yet correspond with the actual level**

position! When approaching any level you should come to stop so, that the value is as close as possible to "0000". With a quality speed controller it is possible to stop always at "0000" millimetre. In installations with speed-controller you may proceed as usual (car loading during the adjustment, empirical values for accurate stopping, middling between level stopping in upward and downward direction, ...)

The stopping distances of the control (with old controls "level switches" or "stop switches") can be adapted by the following parameters:

SETTINGS\DRIVE BASICALLY\DistLevUp (stopping in upward travelling)

SETTINGS\DRIVE BASICALLY\DistLevDn (stopping in downward travelling)

If a speed controller is used, the contactors for travelling and braking should drop only at a motor speed of approx. ZERO ("electric stopping"). This can be set by the following parameters:

SETTINGS\DRIVE x\TrDiDelOff

SETTINGS\DRIVE x\BrakeDlOff (wird meistens nicht verwendet)

The deceleration times are discontinued by input "end of contactor overshoot time" (VIO-function 0084).

If despite setting of the above mentioned times brake and travelling contactor will be dropping undelayed, the reason might be the wrong polarity of the input. Modify -0084 into +0084 or vice versa.

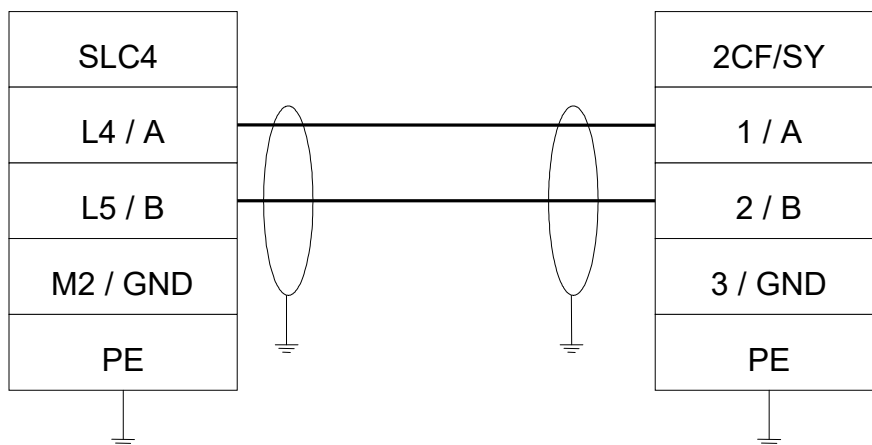
5.1. DCP connection

The SLC4 control as of software version 3.xx supports DCP 3 and DCP 4. In general, the DCP 4 control should be set. The absolute value device required for this is supplied as standard with our control.

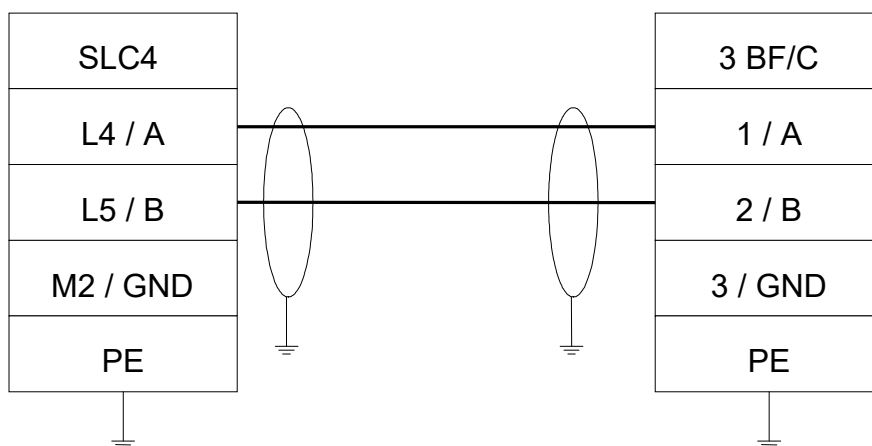
The advantages over DCP 3 are:

- Lower wiring effort
- The inverter can be operated and parameterised from the control
- Simplified start-up; it is no longer required to set the braking distances
- Suitable speed selection via the inverter and problem-free approach of short stops
- Direct approach with completely flush stop (even in the event of varying load conditions)
- Exact re-levelling
- Error messages from the inverter are written into the SLC4 stack memory in real-time

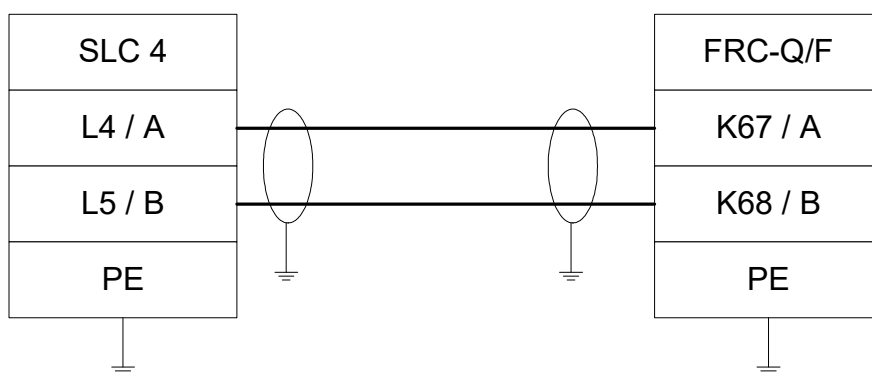
Connection to Ziehl-Abegg 2CF/SY terminal strip RS485:



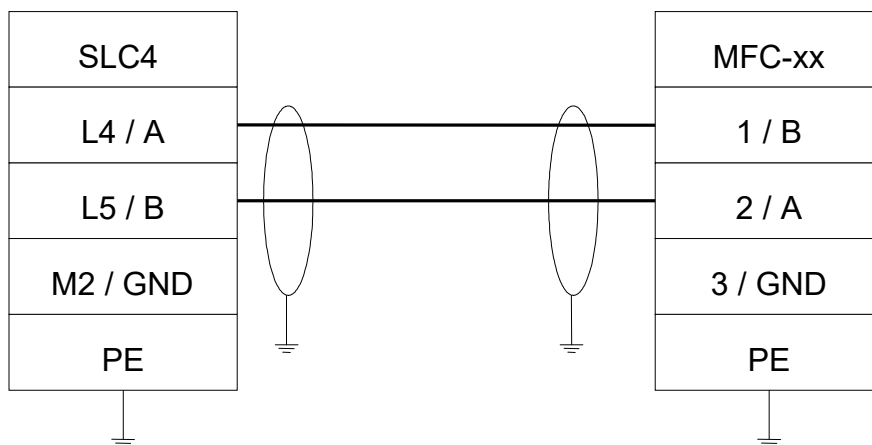
Connection to Ziehl-Abegg 3 BF/C terminal strip RS485:



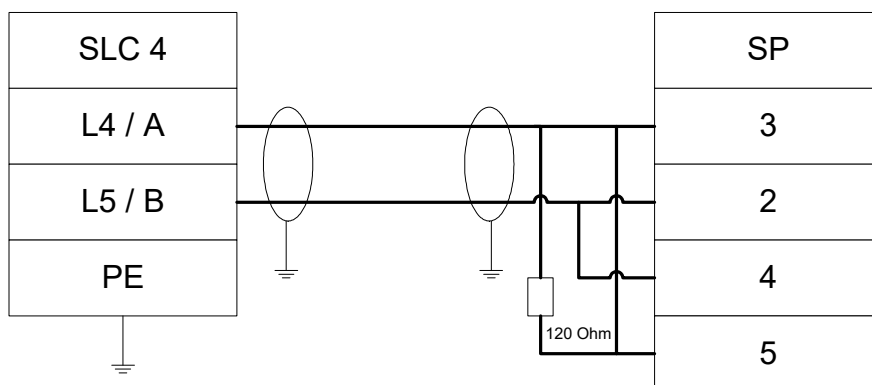
Connection to RST FRC-Q/F:



Connection to LiftEquip MFC-xx or Thyssen CPI-xx:



Connection to Control Techniques Unidrive SP:



Overview table of the supported functions:

	DCP 3	DCP 4	Remote Control	Stack memory
Ziehl-Abegg 2 CF/SY	X	X	X	X
Ziehl-Abegg 3 BF/C	X	X	X	X
RST FRC-Q/F	X	X	X	--
MFC-xx	X	--	--	--
Control Techniques Unidrive SP	X	X	X	X

Overview table of the key assignment for remote parameter configuration:

SLC4	ESC	Down	Up	CR	Minus+ Plus	ESC+ Minus	CR+ Plus	CR+ Minus	ESC+ Plus
Ziehl-Abegg 2 CF/SY	ESC	Down	Up	i	Exit Menü	X	X	X	X
Ziehl-Abegg 3 BF/C	ESC	Down	Up	CR	Info	X	X	Char. left	Char. right
RST FRC-Q/F	C	Down/Right	Up/Left	E	X	Down 1 line	Up 1 line	Char. left	Char. right
Control Techniques Unidrive SP	Left	Down	Up	Right	M	Down 1 line	Up 1 line	X	X

The remote parameter configuration is stopped by pressing the [ESC] + [CR] keys. The shortcut [ESC]+[CR] is simulated in the LIFTnet software by clicking the button ESC while holding down ALT.

5.2. Parameter settings for DCP 4

In folder SETTINGS/DRIVE BASICALLY:

- DistV4 = 200 / DeclUp = 200 / - DeclDown = 200
- DistV3 = 0 / DeclUpV3 = 0 / DeclDnV3 = 0
- DistV2 = 0 / DeclUpV2 = 0 / DeclDnV2 = 0
- DistV1 = 0 / DeclUpV1 = 0 / DeclDnV1 = 0
- DistLevUp = 1/ DistLevDn = 1
- InspFast: n

In folder SETTINGS/DRIVE 3:

- TrDirDlyOn = 0
- SpeedDlyOn = 0
- BrakeDlyOn = 0
- TrDiDlyOff = 4000
- BrkeDlyOff = 0
- CntctrDeclA = 0

In folder SETTINGS/DRIVE 3/DCP:

- DCP: 4
- RelevRemDist: y
- DCPDc1Dis: 0
- RemainDistT: 0
- DCPTimer: 1650

In folder SETTINGS/MONITORING

- TrvlMonTime = 4

In folder ENCODING\ABSOLUTE ENCODER:

- MinVt = 5
- MaxVt = nominal speed + 30% of the nominal speed

5.3. Parameter settings for DCP 3

In folder SETTINGS\DRIVE 3\DCP:

- DCP: 3
- RelevRemDist: n
- DCPDc1Dis: 0

- RemainDistT: 0
- DCPTimer: 1650

The distance parameters must be set in the same manner as for the parallel wiring.

5.4. Information menu

The information menu, which can be found under INFORMATION\MONITOR\DCP, displays the current status of the DCP connection and helps you to diagnose errors.

Init: 2A 03.29 02.06.09 4 DE	The initialisation telegram is sent after every restart and is the first indication for a functioning DCP connection. An empty window indicates connection problems or incorrect parameter settings. The wiring and the parameter settings must be inspected before the first journeys can be carried out.
Output : 34690 Input : 34660	The input and output telegrams are counted here. These counters should constantly count upwards. If this is not the case, there is a connection problem or a hardware error. No telegrams are being received from the inverter if the input counter remains on zero. No telegrams are being sent if the output counter remains on zero.
Err: 00000 00000 CRC: 00001 00000	"Err" line: Hardware or time errors are displayed here. Errors may occur during the restart phase. These errors can be ignored provided that no further errors occur in normal operation. "CRC" Line: The error checksums are logged here. A constant counting of the values indicates EMC problems. In such a case, the wiring and the shielding are to be inspected. The inverter errors are displayed on the left and the SLC4 errors are displayed on the right.
Master 00000000 Slave 10001000	The Master (SLC4) and the Slave (inverter) command bytes are displayed here. It is to be taken into account that a telegram cycle amounts to 15ms. Therefore, only "static" byte exchanges that are constant for a longer period of time can be displayed here. The order of the bytes runs from left to right (Bit0 → Bit7).
Master actDistan +00000	The current remaining path during a journey.
Slave DeclDistan +32767	The specified braking distance of the inverter.
Slave Status 2/3 1110000000100001	The I7 telegram is sent before each journey in order to determine the framework conditions. The control unit transfers path to the inverter and the inverter sends the braking distance back together with the minimum path for the selected journey type. Journey type "F" refers to a long distance trip with nominal speed and "K" refers to a short trip with intermediate speed. The destination level is not changed during a short trip.

A restart of the control unit is required in order to activate the DCP-4 control. Execute multiple test journeys. In doing so, this distance value located on the display should amount to 0 mm (± 5 mm). If this is the case, you can now execute the levelling correction.

6. LEVELLING CORRECTION



It would not be useful to carry out a levelling correction in case that the lift does not always stop on level, according to the display. By the levelling correction you will not get the more accurate stopping values, you only shift here whole levels.

If your deceleration distances are correct and if stopping is level according to the display, you can now, as the last step, shift the previously taught inaccurate level positions, so that the lift will be stopping level not only as per display but also in reality. By means of the levelling correction you will be shifting the whole level higher or lower, incl. the distances for deceleration, stopping, and relevelling. Re-engage the service operation, take a folding meter and a notebook, approach all levels in normal travel and measure the inaccuratenesses. In case of controlled or of accurately stopping lifts you have to approach each landing only once in a direction. In case of inaccurate stopping lifts you should do this once in downward and once in upward direction. Take the mean of the two measured values on each landing.

Example:

In downward travel on level 05 the car was standing 40 mm too low, in upward travel it was standing 30 mm too low. Write down: "Level 05: 35 mm too low"
Go back again to the control into the menu

SETTINGS\ENCODING\LEVELCORRECTION\INDIVID IN MM.

Now you will be requested to set a correction value for each level. Automatically, at first the lowest level will be inquired, then the second level, and so on.

Example 1:

For the lowest level you have noted (01), that the car stands 55 mm too low. You will enter:

CORRECTN IN MM:
Lv: 01 +0000 mm

Example 2:

For the second level you have noted (02), that the car stands 109 mm too high. You will enter:

CORRECTN IN MM:
Lv: 01 +0055 mm

CORRECTN IN MM:
Lv: 02 -0109 mm

Approach all landings and check again the level positioning. Should there still be any inaccuratenesses, repeat the procedure

Now you can reactivate the possibly provided relevelling mode.

7. FORCED DECELERATION

The forced deceleration factory settings must be inspected. 80% of the nominal speed should be set as the value for speed 1 and 50% of the deceleration path should be set as the value for distance 1. The values are dependent upon the driving cycles and must therefore be adjusted to the real conditions of the system. A more detailed description can be found in the Deceleration Control Circuit Chapter on page 55

8. RELEVELLING

With SLC4 in combine with DISK you have the chance to releve very exactly. The relevelling distances are to be set in menu SETTINGS\RELEVELLING. For upward and downward you have to set the starting value and the end value. So you can adjust a very accurate hysteresis in mm, thus getting, in case of drive-controlled lifts with a good regulation resp. with a sufficiently slow relevelling speed, a relevelling accuracy of zero millimetre.

		Example
SETTINGS\RELEVELLING\StartUpw	In case of exceeding this value relevelling upward will be started	-08
SETTINGS\RELEVELLING\StartUpw	In case of exceeding this value relevelling upward will be started	-03
SETTINGS\RELEVELLING\StartUpw	In case of exceeding this value relevelling upward will be started	+08
SETTINGS\RELEVELLING\StartUpw	In case of exceeding this value relevelling upward will be started	+03

9. ZÜS TESTING

The control software supports you during the following tests:

- Run time monitoring up
- Run time monitoring down
- Limit switch up
- Limit switch down
- Traction capability
- UCM testing

These menu items can be found in the SYSTEM/SLC4-INTERNAL/ZÜS INSPECTION folder. Further information can be found in the description on page 161.

10. GROUP

All group calls are connected to LON bus-modules. The bus distributes the group calls to all controls. On each control which shall receive this group call (normally all of them), this module must be configured.

10.1. VIO-assignments of group calls

Read at first on page 167.

- Group modules do have always the definition 3.
- The modules **may be only** occupied with group calls (applies also to group external priority), as e.g. with the VIO numbers 2081-2112, 2121-2152, 3001-3031, 3041-3071. The respective VIO numbers are marked as "groups" in the table on page 60.
- A group call **must be** registered in each control at the same input/output of the same bus-module number.

10.2. Parameterizing of the group

Regarding the control principle of the lift groups see page 38.

Parameter `LiftNo` (see page 134):

Identification number of the lift within the group. No lifts with identical numbers may occur in one group.

Parameter `Aktive` (see page 134):

Upon setting `y` the lift is a member of the group. It will send and receive group data via the LON bus.

Parameter `Callthresh` (see page 135):

Indicates the number of calls that must be set to get the lift to react to a group call. This is reasonable e.g. in case of a couple of old lifts. If you set, for example, for lift 1 the call threshold = 1 (new lift design) and lift 2 the call threshold = 4 (old lift design), the old lift 2 will only run if many calls (≥ 4) are to be processed. Therefore its mechanical system would be "handled with kid gloves". If lift 1 is not available, lift 2 will even run even with only one group set. In standstill, group calls on the actual level will be always processed. External priority calls are processed independently from the call threshold.

Parameter `DoorTimeout` (see page 135):

The parameter is provided, that a blocked (but not faulty) lift will not hamper the group permanently. It gives the time in seconds from which on, owing to a blocked door (e.g. light barrier active) a lift goes off the group operation. The duration of the period will be set by parameter `InactivTime` (s. next paragraph).

Parameter `InactivTime` (see page 135):

Indicates the time, for how long a lift will be taken out of the group if the lift is blocked (s. preceding parameter `DoorTimeout`).

Parameter `BonusTime` (see page 135):

Parameter `BonusTime` (see page 135):

Should be set in special cases only (standard value is 0). If a lift has got a destination level it receives a "travelling time bonus" for the following levels (see `QtyBonuses` in next paragraph) in travelling direction if the destination level is set in the 'Bonustime Mask' (see `BonusTimeMask` in the following paragraph). By raising the bonus time it may be avoided that in the case of calls following each other tightly in chronological and spatial sequence, several lifts will start toward this area. If no direction is available (destination level = 0), the bonus time will not be considered in the group travelling-time table.

Remark: Naturally, a set bonus time also causes that this lift will have priority within the above described landing range that is adjacent to the respective destination level, as this one communicates the real travelling time to the other group lifts but minus the bonus time. In case that the users that are waiting in front of the lift can observe the lifts (glass shaft or position indicators in the landings), irritations may occur owing to occasional (presumably wrong) passing by of a lift.

Parameter `BonusTime Mask` (see page 135):

If in `BonusTime Mask` no levels are set, no bonus time will be considered in the table of travel-times of the group (see preceding parameter `BonusTime`)

Parameter `QtyBonuses` (see page 135):

(see preceding parameter `BonusTime`)

Parameter `Timeout` (see page 136):

Indicates the time in seconds which the lift needs to find out that a group lift has been shutdown or that the bus connection to the other group lifts has been interrupted.

Parameter `TM_PENLTY` (see page 136):

Should be set in special cases only (standard value is 0). By parameter `TM_PENLTY` for each level a separate "travel time malus" can be entered. If a lift shall serve a level only when other lifts are just unable to do it, this will be realized by means of a time penalty for these levels. This setting, for example, is reasonable in case of groups with different shaft maps. Example: Lifts 1+4 can approach level 10, lifts 2+3 can not. The users entering on level 2 normally want to go to 10. → Set a time penalty of e.g. 10s for lifts 2+3, for level 2. Now lift 2 or 3 will be coming only, if lift 2 or 3 can reach on level 2 faster by more than 10s, than lifts 1+4.

Remark: In case that the users that are waiting in front of the lift (in this case on level 2) can observe the lifts (glass shaft or position indicators in the landings), irritations may occur owing to occasional (presumably wrong) passing by of a lift.

Parameter `DOORLOSSTIMEA/B` (see page 136):

The door loss times on each level are calculated by means of the average during the last 51 stops on the respective level ("door loss time" = resting period on the landing in normal operating mode and more calls being registered, caused by door run-times, door open time, for entering and leaving by passengers ...). As the door loss time can the maximum considered door loss time can be set. If the door is blocked by 5 minutes by, e.g. the light barrier, only the set maximum door loss time for these levels will be considered. With 0 the door loss time for these levels is always 0 seconds (reasonable only with special controls).

10.3. What else is to be considered with groups?

The group levels must be indicated (see section 2.3, page 166).

10.4. Application of parameters BottomLvl and TopLevel

Parameter SETTINGS\ENCODING\TEACHING TRAVEL\EndLvl...

Example: no. of taught levels in the group shaft map

Group levels	Lift 1	Lift 2	Lift 3
8	8		7
7	7	7	6
6	6	6	5
5	5	5	4
4	4	4	3
3	3	3	2
2	2	2	1
1	1	1	

The shaft map of the group has got 8 levels, but not all lifts have the same shaft map.

Lift 1 has been taught levels 1 - 8, lift 2 has been taught levels 1 - 7 and lift 3 has been taught levels 2 - 8.

In the following table the different settings for BottomLevel and TopLevel and the shaft map have been put opposite. It is assumed that all lifts have got only door A, and all modes of group calls are allowed for all lifts.

Group levels	Lift 1	Lift 2	Lift 3
BottomLvl	1	1	2
TopLevel	8	7	8
8	11000000	00000000	11000000
7	11000000	11000000	11000000
6	11000000	11000000	11000000
5	11000000	11000000	11000000
4	11000000	11000000	11000000
3	11000000	11000000	11000000
2	11000000	11000000	11000000
1	11000000	11000000	00000000

The settings of all level-related VIO numbers (group calls, internal calls, position indicators, ongoing travel direction arrow, ...) always refer to the **group levels**, that means, e.g., for lift 3, the internal call from entrance side A in the second group level is VIO No. 0482 and 0522.

V. MAINTENANCE

1. SAFETY INSTRUCTIONS

The control equipment shall be used in technically perfect condition only. Especially malfunctions that may be affecting the safety are to be settled immediately. Keep all documentations supplied along with the equipment like manuals and electrical diagrams at the site permanently ready at hand. Keep the documentations always up-to-date. This applies particularly in the case of subsequent alterations on the control equipment. Observe all instructions regarding safety and hazards available at the equipment and keep them in legible condition.



If during operating or storage time of the control equipment changes of environmental conditions occur, like temperature, humidity or explosion-endangered atmosphere, the manufacturer of the control must be informed in order to adapt the control equipment to the changed conditions.

Spareparts must comply with the technical requirements fixed by the manufacturer. This is always granted if original spare parts are used. In case of modifications on the control equipment, for example, if products of other suppliers are used, additional hazards may come up that will exclude any warranty of the manufacturer for damages resulting therefrom.

2. GENERAL MAINTENANCE INTERVALS

The control equipment has been designed and constructed in such a way that it functions largely fault-free and needs only low maintenance. It will be sufficient if the control is checked and maintained in the same intervals as the other parts of the lift installation.

Functions, that are relevant for the safety of the lift, which however do not represent safety circuits in the classical sense, must be checked at the latest upon each repeated examination by the expert. Examples for such functions are:

- Monitoring of the travelling contactors (VIO No. 23) as per description on page 38
- Recognition of an SHB fault as per table in section II.11 page 17
- Testing the UCM functions acc. description on page 20
- Recognition of overload 110% as per description page 45
- Functioning of the emergency light resp. of the recharging device and the batteries in the control as per description page 15.
The lead-acid batteries should be replaced every 2 years.
- The battery for the clock module has a life-time of about 2.5 years with control switched off. With control switched on it will be about 5 years. After this period of time the battery should be replaced in order to secure the correct functioning of the clock.
- Upon **each maintenance action**, the lens and the reflector of the Laser (DISK-6) shall be cleaned with a soft, dry cloth.

3. RECORDING INTERVALS

At the control computer you may set several maintenance intervals, depending on operating time, travelling time or number of travels, door movements side A, door movements side B or interlock faults. Reaching of the limiting values will be recorded in the stack memory and can additionally be signalled to a LIFTnet central control station by data remote transfer (see separate description of LIFTnet). The intervals are set by the following parameters:

INFORMATION\STATISTICS\OPERATING TIME\MessgIv

INFORMATION\STATISTICS\TRAVEL TM\MessgIv

INFORMATION\STATISTICS\TRAVEL TM\MessgIv INFORMATION\STATISTICS\DOOR CYCLES\MessgIv

INFORMATION\COUNTMEMORY\F-INTERLOCK\MessgIv

4. SETTLING OF BUILDING

New erected buildings may be subject to shrinking, caused by drying out of the concrete. As the digital shaft encoding system Disk works without reference switches there may occur inaccuracies in case of a remarkable settling of the building (within the first half year after completion). This will have its effect only in **very high buildings!**

If there is a **machine room on top** (encoder in the shaft headroom), out-of-level situations will result that will be steadily increasing from the highest to the lowest level. If this is the case, please measure the inaccuracy on the lowest level, i.e. where the difference is biggest.

Set the correction value in mm in the menu `SETTINGS\ENCODING\LEVELCORRECTION\PROP.FROM BELOW`.

If the **machine room is below** (encoder in the shaft pit), level inaccuracies may arise that will continuously grow bigger from the lowest up to the highest level. If this is the case, please measure the inaccuracy at the top level, where the deviation from the correct position is biggest.

Enter in menu `SETTINGS\ENCODING\LEVELCORRECTION\PROP.FROM ABOVE` the correction value in mm.

Leave the menu

Approach every level and check the levelled position.

5. TOOTHED BELT OF THE DISK-SYSTEM

The tensioning of the spring should be checked once a year. It must comply exactly with the length indicated in the separate installation instruction of the DISK-systems!

Spring tension in mm (measured without eye!)	DISK-1	DISK-2	DISK-3	DISK-4	DISK-10 DISK-10-W DISK-10A DISK-10A-W DISK-10-Ex
Encoder in shaft headroom	500	340	340	340	280
Encoder in shaft pit	550	370	Not possible	370	280

6. ENCODER EXCHANGE WITH DISK-SYSTEMS

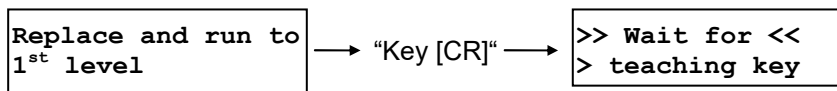
In case that the absolute encoder for the digital shaft encoding has suffered a damage, it can be exchanged. As, however, a new encoder never is set to the same values as the replaced one, and in order to avoid a new teaching travel with subsequent individual correction of levelling after exchange of the encoder, we have provided the function "encoder exchange". If the encoder is defective you can run the lift in the inspection or return mode.



Before activating the encoder exchange in the menu, run the lift with inspection mode flush to the first landing in level position.

Now carry out the encoder exchange in the menu. The way to menu level "encoder exchange" is described in chapter 3 (Menu Images).

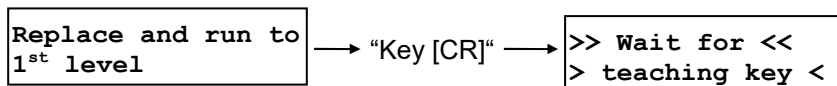
In the display you will see the following:



Now do not press the teaching key on the car but replace the encoder.

Do not work under voltage, cut off the control upon disconnecting and connecting!

When the exchange of the encoder has been completed call (again) the menu level SETTINGS\ENCODING\ENCODREPLACE. On the display you will see (again) the following:



Run the lift to the lowest landing in about level position.

Press the teaching key on the car. The levelled positions in the levels will now be calculated for the new encoder. Leave the menu by repeated pressing of key [ESC].

After that run the lift with normal operation mode to the second level. Measure the out-of-level situation. Run again to lowest level. Here also measure the out-of-level situation. If necessary, take the mean of the two measured values.

Go to the control, into menu SETTINGS\ENCODING\LEVELCORRECTION\ALL SAME

```

CORRECTING VAL
all: +0000 mm
  
```

Enter the correction value in millimetre.

Example 1:

You have noted that the car was standing 55 mm too low in average. You enter:

```

CORRECTING VAL
all: +0055 mm
  
```

Example 2:

You have noted that the car was standing 109 mm too high in average. You enter:

```

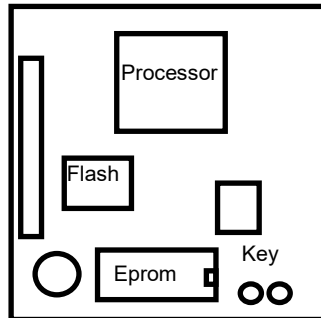
CORRECTING VAL
all: -0109 mm
  
```

Approach all landings and check the levelling accuracy. If the work has been carried out correctly the levelling should be o.k. anywhere.

7. EXCHANGE OF THE CONTROL SOFTWARE

Exchange may be carried out in agreement with STRACK LIFT AUTOMATION only.

Processor board



Replace the EPROM:



Software starting with version V3.00 is not compatible with versions < V3.00, as the control computers have a different data structure. Software version 3.00 only works with PIC Version 1.26 (PIC processor on the mainboard).



Attention:

If a more recent program version has been applied, the old one may **by no means** be re-installed, as the data structure probably has been changed by the new version! If it is necessary anyway, consultation with STRACK LIFT AUTOMATION is required at any rate.

Upon exchanging an Eprom proceed as follows:

1. Disconnect the control completely
2. Remove the coverplate of the -AZE0
3. Remove the old Eprom by means of a pair of Eprom-tongs or another comparable tool
4. Insert the new Eprom with its nose to the righthand side (in direction of the nose of socket)
5. Check whether the Eprom is sitting completely in the socket and no pins have been snapped off
6. Refix the coverplate
7. Reconnect the control
8. Applicable from version V1.58:
If the message "insert Eprom type 512k" appears on the display, a type with x is to be inserted.
If the message "insert Eprom type 256k" appears on the display, a type without x is to be inserted.
9. Check the time of the clock

Replace the Flash:

Exchange may be carried out in agreement with **STRACK LIFT AUTOMATION** only.

The exchange has to be carried out by means of a pair of special tongs, otherwise the dangerous destroying of the socket or the Flash is possible. In this case the computer will be destroyed!

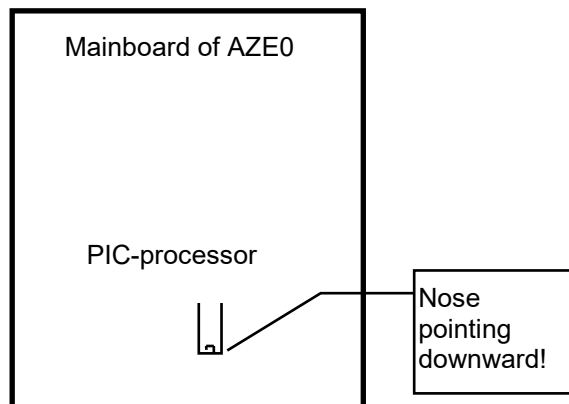


Upon exchanging a Flash proceed as follows:

1. Disconnect the control completely
2. Remove the coverplate and the display board
3. Remove the old Flash by means of a pair of special tongs for PLCC casing sockets (available from STRACK LIFT AUTOMATION)
4. Insert the new Flash
5. Check whether the Flash is sitting completely in the socket
6. Refix the coverplate. When plugging the boards, make sure that they are in the correct position. If the boards are inserted in the wrong position, the control computer can be destroyed when it is switched on. All screws must be used.
7. Reconnect the control

Replace the PIC processor:

Exchange may be carried out in agreement with **STRACK LIFT AUTOMATION** only.



Upon replacing the PIC processors on the mainboard proceed as follows:

1. Disconnect the control completely
2. Remove the coverplate, display board and the computer board
3. Remove the old processor by means of a pair of special-tongs or another comparable tool
4. Insert the new processor with its nose (nick) pointing downward
5. Check whether the processor is sitting completely in the socket and no pins are snapped off
6. Refix computer board, display board and coverplate. Strictly observe the correct seat when plugging the computer boards together. In case of an offset upon plugging of the boards the control computer might be damaged when being engaged. Also care for the correct positioning of the 10 mm long distance bolts on the computer board. Wrong positioned bolts will damage the display board when being engaged.
7. Reconnect the control

Check of version number:

The version of the PIC processor can be inquired in the menu starting from control software V1.90, as soon as a teaching travel is provided.

Menu level `INFORMATION\CONTROL\PicVersion: 1.xx.`

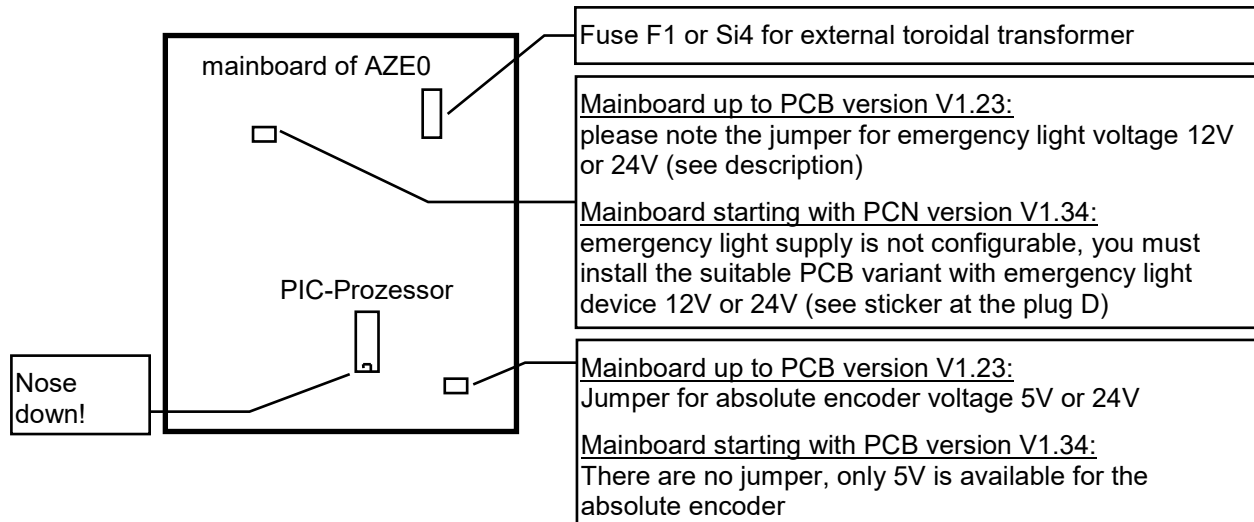
Replace the processor board:

Exchange may be carried out in agreement with **STRACK LIFT AUTOMATION** only.

Upon replacing the processor board on the mainboard proceed as follows:

1. Disconnect the control completely
2. Remove the coverplate, the display board and the processor board
3. Insert the parameter save from the old processor board into the new processor board (s. replacement of a Flash)
4. Refix computer board, display board and coverplate. Strictly observe the correct seat when plugging the computer boards together. In case of an offset upon plugging of the boards the control computer might be damaged when being engaged. Also care for the correct positioning of the 10 mm long distance bolts on the computer board. Wrong positioned bolts will damage the display board when being engaged.
5. Reconnect the control
6. Carry out a reinitialisation of the LON bus communication processor (Neuron) on the processor board (see page 160).
7. All control modules (ULON) have to be reassigned (see VIO-assignment at Bus-modules page 167)

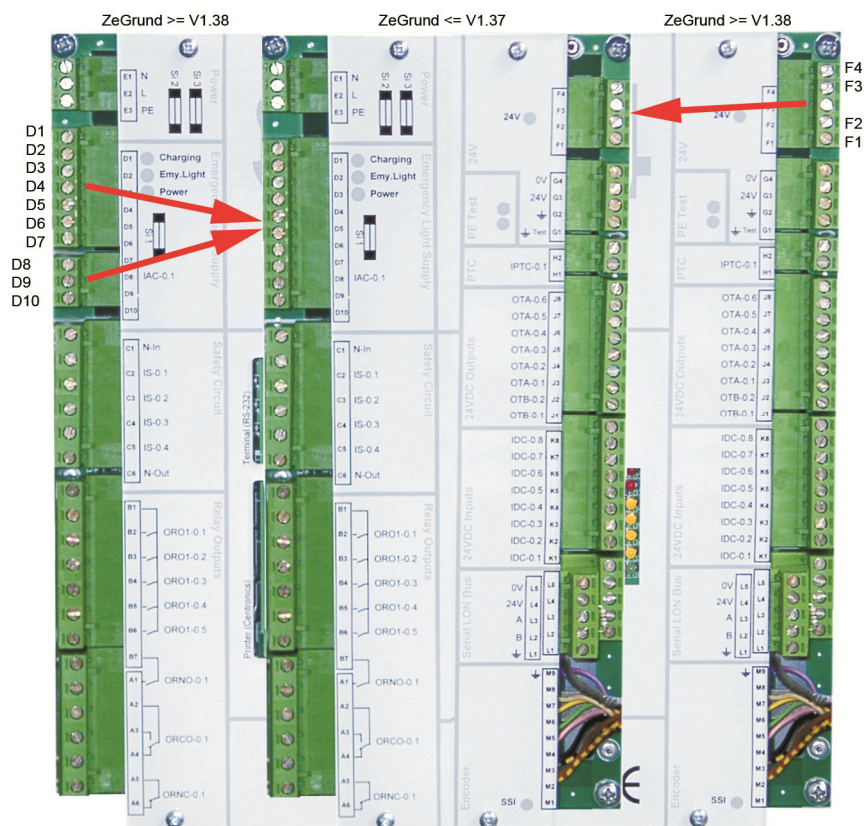
Replace the mainboard:



Control computer **SLC4** may be operated with all mainboard versions.

Control computer **SLC4-20** must be provided only with a mainboard version ≥ 1.38 .

From **mainboard V1.38** the 10-pin D1-10 plug is subdivided into 3 and 7 poles and the F1-4 plug has 5 instead of 4 poles. The individual wires need to be changed, the middle pole of the new F-plug remains free.



Upon replacing the processor board on the mainboard proceed as follows:

1. Disconnect the control completely
2. Remove the coverplate, the display board and the processor board

3. A programmed PIC processor is placed on the old mainboard. Exchange mainboards are delivered usually without this processor. At exchange of the mainboard the processor must be put into the new PCB from the old PCB.
4. See jumper setting: 12V accu 24V accu for emergency light (see draft)

5. Notice the jumper position for the power supply of the absolute encoder DISK-... down on the right on the mainboard up to version V1.23. The jumper position must match with the previous jumper position! Mainboards after V1.34 deliver only 5V for the absolute encoder.
6. If you have an older lift control up to number 03/xxxx (you find the number on the mounting plate of the control, in the cabinet door or in the drawings) a 24V voltage could be connected at the terminals L4/L5 (down on the right). Please disconnect the wires.
7. The protector F1 or Si4 must be removed, if the control has a separate 24V supply (so no external toroidal transformer is attached at the terminals F1 to F4).
8. From mainboard V1.38 the D and F plugs are changed (see picture above).
9. Refix processor board, display board and coverplate. Strictly observe the correct seat when plugging the computer boards together. In case of an offset upon plugging of the boards the control computer might be damaged when being engaged. Also care for the correct positioning of the 10 mm long distance bolts on the computer board. Wrong positioned bolts will damage the display board when being engaged.
10. Reconnect the control