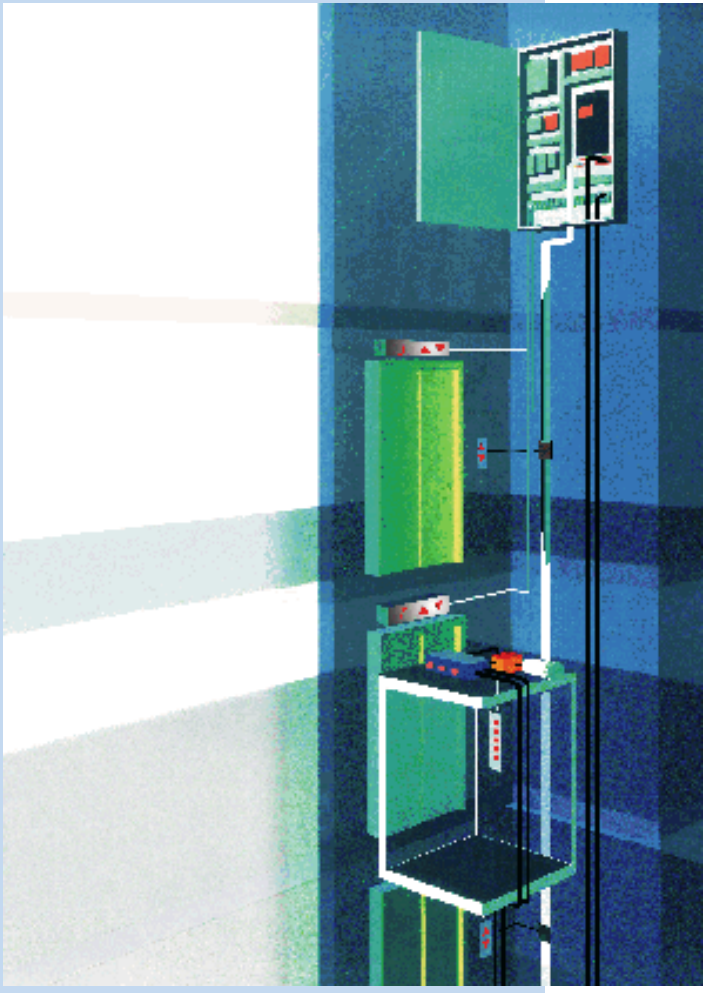
NEW LIFT

NEUE ELEKTRONISCHE WEGE



EST Online Manual

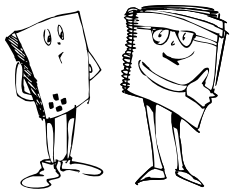
NEW LIFT Know how

We lift you up where you belong.

About this manual

Welcome to NEW LIFT, the innovative lift controller manufacturer. Your decision to purchase one of our quality products opens up completely new electronic horizons.

Our product documentation provides an introduction to your new controller and detailed information on the facilities available to you.



Conventions employed

The manual is structured to enable you to familiarize yourself with the controller step by step in the sequence of the chapters, and to find answers to specific questions with the help of the index.

Points of particular importance are marked as follows:

C A U T I O N

Information marked "CAUTION" relates to a risk of accident which could cause physical injury or damage to property.

THIS INFORMATION MUST BE READ.

N O T E

Information marked "NOTE" relates to working procedures and product characteristics. These points include comments on factual information, explanations of terminology, and tips on making procedures more straightforward.

This Online Manual supports hypertext references to other locations in the book. You can easily select an link by

double-clicking the blue styled text.

Return again with keys „CTRL“ + „–“. Test it now:

1 Overview of the EST

Operation of the menu is also described in the sequence in which the levels are encountered. The individual intermediate menu items are not displayed, e.g.:

MAIN MENU > INFORMATION >
ORIENTATION DRIVE

Menu items can be recognized by the use of CAPITAL LETTERS and the > menu arrow (see “1 Overview of the EST”).

The status of the controller can be read in the operator display, which appears for example as follows:

Program versions

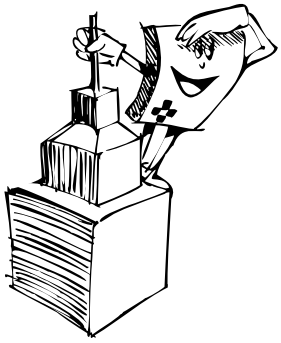
Our products are subject to continual improvement and further development; specifications may therefore differ slightly from those described in the manual. The version of the program loaded can be displayed by the controller (see „4.4 The INFORMATION menu > INFO“), an important item of information which enables you to familiarize yourself with the possible settings.

Unless otherwise indicated, the technical specification of controllers corresponds to that applicable on the date of delivery. We reserve the right to make technical modifications without express notice.

We would be glad to hear constructive suggestions with regard to our controllers and the documentation.

NEW LIFT wishes you the best of success with your new controller.

Content



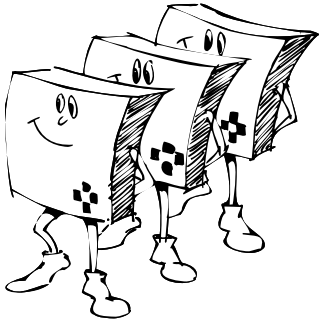
1 Overview of the EST

1.1 An innovative decision

Switchgear in today´s elevator systems is inconceivable without the use of intelligent hardware and software. This teamwork between switchgear and the lift controller is decisive for the time required for installation and maintenance of lift systems.

NEW LIFT provides innovative control technology which can be adapted to the widely varying requirements of different customers and countries. All controllers can be operated from the local display, a laptop computer, or by remote diagnostics via a modem. We place great emphasis on the ease of installation and reliability of our products.

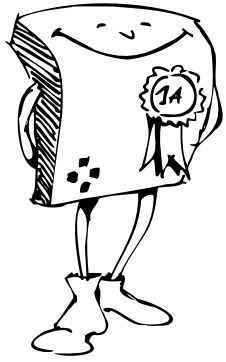
The technical concept of the controller is based on a combination of hardware and software components with clear advantages for long-term use.



- RS 232 interface enables the controller to be fully configured and accessed both locally and by remote data communications; can be used as a group connection.
- Ergonomic operator keypad ensures precise operation; operator guidance, status texts and information provided in plain text in the local language.
- All labour-intensive connections, such as the shaft bus, EWG and trailing cable, are made on plug-in terminal blocks, thereby permitting rapid exchange in the event of repair.
- Up to 16 landings with one-button control, or 11 landings with two-button control.

1.2 EST Product characteristics

The EST controller is designed for use with traction lifts, and with hydraulic lifts utilizing the adjustable fine levelling facility.



The EST controller is suitable for speeds up to 2 m/s.

1.2.1 Compact, safe, compatible

The preselection function, which conforms to EN-TRA-SIA-ÖNORM standards and which drives the drive motor contactors, is integrated into the motherboard. The control cabinet is therefore compact and clearly arranged. An additional plug-in travel program board is required only for installations with closed-loop control.

The controller is supplied with 10 V/ 1 A electronics voltage and 24 V/3 A signal voltage from an external power supply unit. Its standardized signals make the EST compatible with a number of KST subassemblies, resulting in advantages for logistics and compatibility.

1.2.2 Easy operation

The Man-machine interface comprises the LCD screen and five control buttons. All controller states and messages are displayed in plain text: the safety circuit, the controller status, copy signals, drive counter and drive direction, floor status, the next destination floor and the time.

System settings and inputs can be configured flexibly onsite. Help programs and help texts make commissioning and maintenance straightforward.

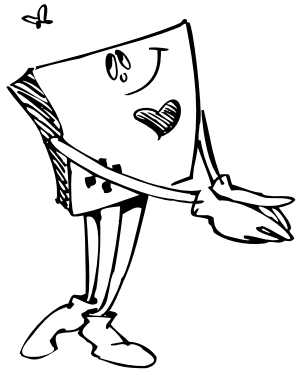
1.2.3 Drive programs

The drive programs are set via the keyboard according to the drive type. An additional drive program board is only required for special drives (regulated drive installations). All available drives can be controlled by means of this technology.

1.2.4 The heart of the controller

The central processing unit of the EST has a clock frequency of 12 MHz and 2 Mbit of memory. To protect them against power failure, an EEPROM is also provided in which all system parameters are written.

The controller is designed for two door drives and 16 landings with one-button control, or 11 landings with direction-sensitive two-button collective control.



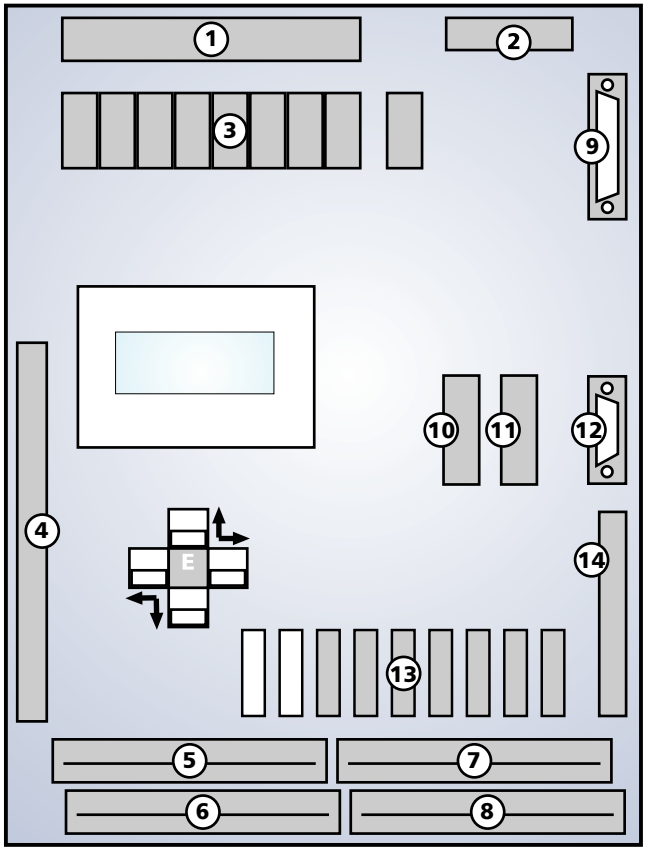
1.2.5 Data exchange made easy

A laptop computer, a PC or a modem can be connected to the serial interface. Up to 4 EST controllers can be networked through a group processor. The group processor has 5 interfaces through which the connected EST controllers and a monitor or modem are accessed.

The full range of configuration and remote diagnostics facilities is then available to the user.

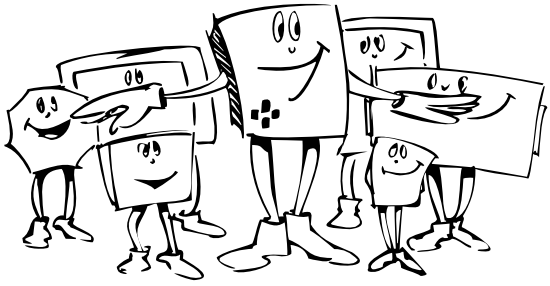
1.3 Technical components

1.3.1 The motherboard



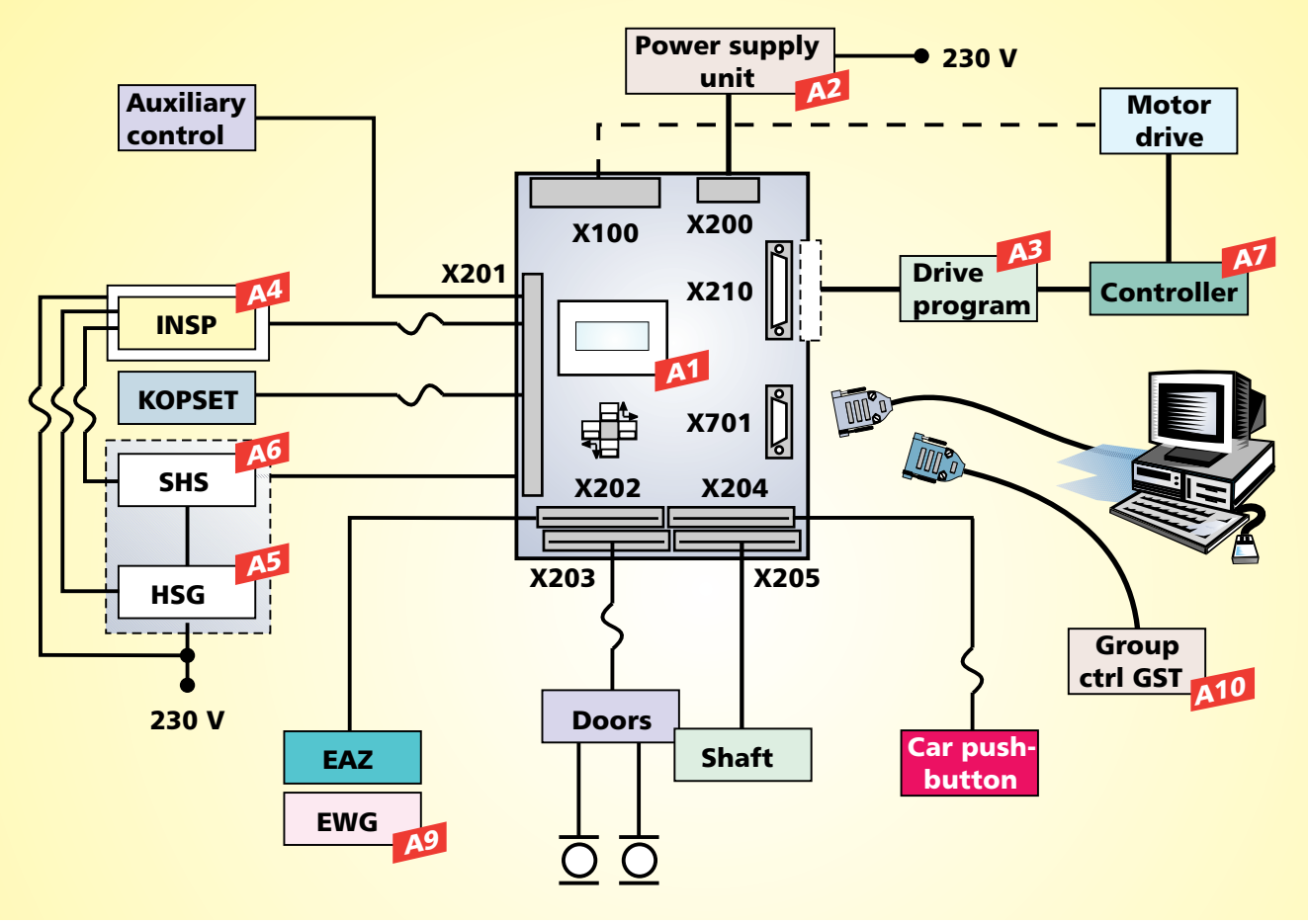
No.		Description
1	X100	Terminal safety circuit
2	X200	Power supply 230 V
3		Pre-selection
4	X201	Copying, inspektion, SHS
5	X202	Floor display
6	X203	Doors
7	X204	Car calls
8	X205	Shaft calls
9	X210	Socket for drive programs
10	IC-16	Configuration EEPROM
11	IC-15	EST program EPROM
12	X701	RS 232 serial connector for connection to PC, modem or GST group prozessor
13		24 V driver
14	X222	Extension

1.3.2 All the components at a glance



Together with the EST controller, NEW LIFT offers a proven peripheral program by means of which the controller can be extended to form a tailor-made system if required:

Assembley	EST accessory	Description	Producer
A1	Controller board	EST	NEW LIFT
A2	Power supply 24 V / 3A, twistable	PCLC243	FEAS
A3	Drive programs ■ Controlled by frequency / voltage ■ Behringer / ELRV	FPx	NEW LIFT
A4	Inspection cabinet with or without terminals	INSP	NEW LIFT
A5	Auxiliary power supply units with battery management (charging and discharging) monitored by regulators for all standard capacities and 6, 12 and 24 volts	HSG	NEW LIFT
A6	Safety circuit according to EN 81/TRA 200, which meets the requirements for advance-operation doors and relevelling	SHS	NEW LIFT
A9	Module supports floor display, gong and departure arrows for the shaft	EWG	NEW LIFT
	Floor display for straightforward integration of decimal and binary inputs; with ASCII character set	EAZ	NEW LIFT
	Pre-assembled magnet sensor console, which simplifies shaft installation	KOPSET	NEW LIFT
A10	autonomous group processor, which combines up to 4 ESTs to form a quattro group; GST includes an additional port for external monitoring or modem	GST	NEW LIFT

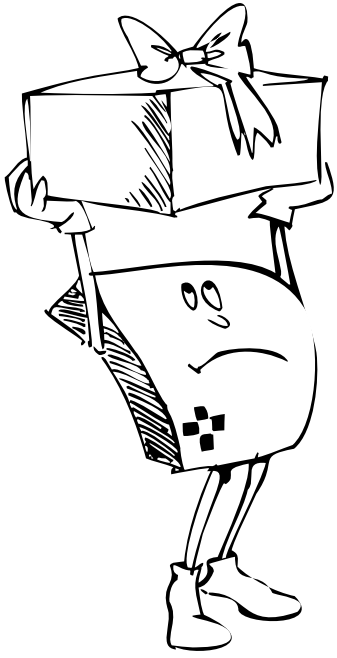

Power supply unit
A2
230 V
Auxiliary control
Motor drive
X100
X200
X201
X210
Drive program
A3
Controller
A7
INSP
A4
A1
KOPSET
X701
SHS
A6
X202
X204
HSG
A5
X203
X205
Group ctrl GST
A10
230 V
Doors
Shaft
Car push-button
EAZ
EWG
A9

2 Fitting and installation

2.1 Scope of delivery

The technical specification of the customer's order forms the basis of the scope of delivery. The electrical data of the equipment to be connected must conform to the controller.

Before faults are assumed in the controller, ensure that suitable electrical equipment has been selected.



NOTE

No liability shall be accepted, either for the equipment itself or for related control functions, if equipment which has not been approved by NEW LIFT is operated with the controller.

The scope of delivery includes:

- Circuit diagrams describing the controller
- Delivery report
- Brief instructions

Notes on the circuit diagrams

Basic knowledge of electrical engineering and knowledge of the operation of lifts are required in order to understand the circuit diagrams supplied. The diagrams conform to DIN standards.

Circuit boards are depicted as locks with the appropriate input and output terminals.

The safety switches to be fitted within the safety circuit are dependent upon the type of lift and the applicable national regulations; it is assumed that the customer is aware of the requisite provision of safety switches. Safety switches shown in the circuit diagram but not required for the installation in question must be bridged at the terminals in the control cabinet as appropriate.

Terminals which are not required remain free. Door drives with final limit switches which are connected directly to the door controller are an exception: the terminals provided in the inspection cabinet for this purpose must be bridged in this case (see "Note to Sheet 1" on the circuit diagram).

2.2 Shaft requirements Magnet copying

This section provides an overview of the necessary shaft switches and shaft copies, the positions of the magnets in relation to the drive speed, and the distance between the shaft magnets and the landings.

2.2.1 Mechanical shaft switches

Mechanical shaft switches are positive-action roller switches operated by a switching cam. The switches themselves are always installed in a fixed position in the shaft following adjustment, whereas the actuators (switching cams) must be fitted to the mobile part of the lift system, specifically the lift car in the case of traction lifts and the yoke of the hydraulic piston in the case of hydraulic lifts.

Shaft switches include emergency limit switches, inspection drive limit switches, and pre-limit switches. Emergency limit switches are used in all cases in traction lifts; inspection and pre-limit switches are used in certain coun-tries only, according to the applicable regulations governing lifts.

At speeds upwards of 1.2 m/s, mechanical pre-limit switches are fitted together with closed-loop speed control as an additional safety feature. The system thereby monitors at the terminal landings whether deceleration is actually initiated (see circuit diagram for each installation).

2.2.2 Commissioning

Operation of the deceleration control must be checked during commissioning, and the sensitivity adjusted. Emergency limit switches, pre-limit switches and inspection drive limit switches must remain actuated during the complete drive from the start of actuation by the switching cam until the buffer is reached, where appropriate.

2.2.3 Shaft copying, general

Lift control systems always require signals to decelerate and align the car. Type EST controllers use bistable proximity switches for this purpose, i.e. one actuating magnet is required to energize and one to de-energize the switch.

FOR FAULT-FREE OPERATION

The distance between the switch and the magnet must not be less than 8 mm or greater than 12 mm as the car passes.

Recommended distance 10 mm.

Offset switches (S33 and S34) are employed at the bottom and top in order to correct the direction and detect the terminal landings.

These switches also serve to initiate deceleration at the terminal landings. Upwards and downwards switches are not therefore required for the terminal landings.

When the magnet has been passed in the drive direction to the terminal landing in question, the associated offset switch remains switched on, and may be switched off again only once the terminal landing has been left again. (Exception: short floor at one of the terminal landings. In this case, the offset switch must be interrupted once during levelling. Note the pulse plan of the controller supplied.)

Magnets for offset and door zones (for levelling or or fine levelling with the door open) must be bolted in place. At 1.2 m/s and above, additional mechanical roller switches are employed for offset in order to ensure automatic deceleration at the terminal landings in the event of a magnet failing to switch.

The OFF/ON control state of each proximity switch is displayed on the display, and enables faults to be traced easily (see “9 Faults and troubleshooting”). Proximity switch checks can be read clearly only during inspection drive at up to 0.8 m/s. At higher speeds, the LCD display is too slow to provide accurate information.

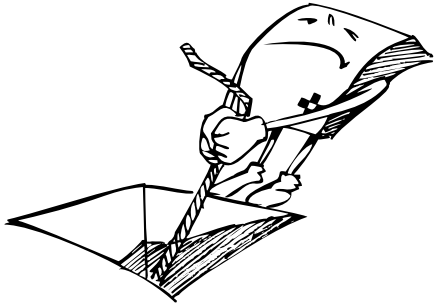
2.2.4 Deceleration distances

The deceleration distances are dependent upon several factors, including the speed and load. The values given below can therefore serve only as **guide values** for the distance from the actuating magnets to the landing..

Speed [m/sec]	Traction lift [m]	Traction lift with closed-loop controll [m]	Hydraulic lift [m]
0,35	0.40	-	0.40
0,45	0.50	-	0.50
0,60	0.60	0.70	0.60
0,80	0.85	0.90	1.10
1,00	1.25	1.20	1.40
1,20	-	1.50	-
1,40	-	2.00	-
1,50	-	2.40	-
1,60	-	2.60	-
1,70	-	3.00	-
1,80	-	3.20	-
2,00	-	4.10	-

REQUISITE ACCURACY

The deceleration distances must be the same at each landing. In installations with closed-loop control, in particular, an accuracy of ±10 mm must be ensured..



2.2.5 Lifts with closed-loop control

For lifts employing closed-loop control, it must be ensured that the magnet actuates the level switch at least 50 mm before the landing. This applies to the level switches in both directions of drive, i.e. for the upwards proximity switch in the UP direction and the downwards proximity switch in the DOWN direction.

Before the closed-loop control is commissioned, the proximity switches must be fitted precisely in position in order to avoid faults during commissioning. The magnets must be corrected again once the control has been adjusted.

Lifts with closed-loop control:
Phase controls (thyristor controllers) are employed here for closed-loop control of lifts. A description of adjustment of the controller has to be lead through corresponding to the controller manufacturer´s instructions.

The following information must be available before the controller can be commissioned and adjusted:

- Intended drive speed
- 4- or 6-pole motor, i.e. synchronous 1000 or 1500 rpm
- Pulse generator or tacho-generator on the motor
- If pulse generator is supplied: number of pulses

The procedures necessary for setting these parameters can be found in the drive controller documentation.

2.2.6 Shaft positioning (selection)

5 (6) tracks are required in the lift shaft for positioning:

- **UP, DOWN**
  Up/down pulses trigger start of initial deceleration for the next landing and provide position monitoring in conjunction with LEVELLING A/B
- **A, B LEVELLING**
  Levelling A/B positions (B only with installations with fine levelling)
- **KO, KU**
  Top correction, bottom correction: initiation of deceleration at the terminal landings

The correction tracks must be bistable, i.e. the signal becomes active when correction is entered and remains active up to LEVEL, and becomes inactive when the correction track is left.

The copy program counts the flanks from the position sensors on each track. The signals are evaluated on the UP, DOWN and ALIGNED tracks. The KO track is evaluated at the same time during upward drive, and the KU track during downward drive.

The counters are initialized during orientation drive, synchronized (see “5.3 Orientation drives”), and stored when the system is switched off. The count is loaded automatically when the system is switched on. The position in the shaft at any time can be calculated exactly by means of the position counter in conjunction with the instantaneous direction count.

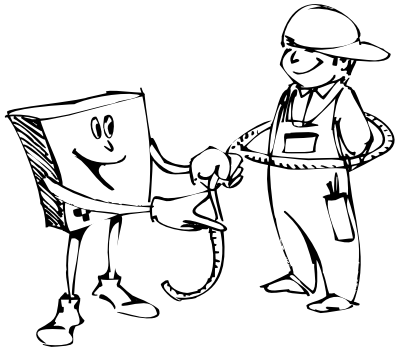
Whereas the KO/KU/UP/DOWN track in the shaft may overlap, the aligned positions must be unambiguous (no UP or DOWN parallel to LEVELLING).

KO levelled and KU levelled are an exception. Unambiguous positions can be calculated from the counts, including with changes in direction in the shaft (e.g. during inspection). Calculation in advance is also possible, and any requisite short floor can therefore be achieved.

N O T E

The majority of copying faults can be attributed to magnet or sensor bounce, or failure to switch. In order to simplify troubleshooting, a troubleshooting line can be called up in the operator display (see “9.6 Systematic troubleshooting”).

3 Operation



3.1 Operating personnel requirements

The manual is intended for skilled personnel specially trained in the installation, repair, maintenance, and in particular commissioning of lift systems installed in accordance with TRA or EN81.

CAUTION

Safe installation and commissioning requires that personnel be familiar with the safety instructions contained in this documentation and with the acci-dent prevention regulations applicable at the site of installation of the lift system, and that they be able apply these instructions and regulations.

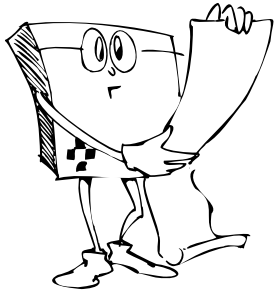
3.2 Basic concepts

The EST program system comprises:

- The read-only program code in the EPROM;
- A configuration in the EEPROM.

Whereas changes to the program necessitate replacement of the EPROM, the system can be adapted to different environments (new door times, for example) on-site from the operator keypad, or from a PC by means of remote data transmission. Settings can be changed as often as necessary and stored in the EEPROM.

They remain stored, even in the event of a power failure, until they are overwritten as required.



In addition to the settings, the controller can be used for a range of functions and measures such as test functions which support maintenance and service, or operational functions which may be required periodically, such as ORIENTATION DRIVE.

All settings and functions are called up from the main menu, and can be protected against accidental or unauthorized access (see “4.7 Protection against unauthorised access”).

3.3 Switching the controller on and off

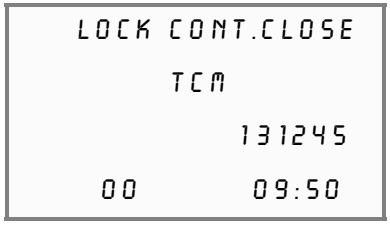
CAUTION

Before switching on, ensure that the controller is connected properly .

When it is switched on, the controller performs a self-test. Check the two LED operating voltage displays during this test:

- 5 V: General operating display. Indicates that the computer is operating.
- 24 V: Computer is operating and has enabled 24 V to the power supply.

The operating status is signalled in the display, e.g.:



3.4 Operator keypad and operator display

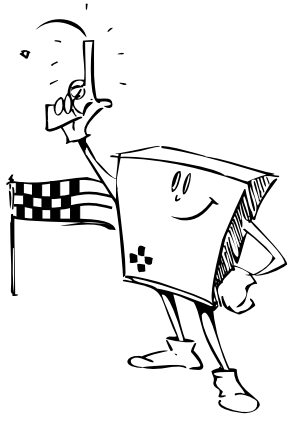
Open the front cover of this manual and refer to the information on the control menu, which provides an overview of the control button functions.

When the controller has been switched on, the main menu is always accessed by

ENTER (middle key).

A help text can be called up for each menu item as follows: Press the ↑ and ↓ keys simultaneously.

Open the back cover and refer to the information on the operator display, which will enable you to recognize the lift and controller states.



3.5 Use of the control menu

All settings of the EST controller are performed using the five control buttons described on the fold-out page.

Perform a setting as follows

- Select the setting
- Set the new value
- Save the new value as appropriate in the permanent EEPROM, so that it is retained in the event of a power failure.

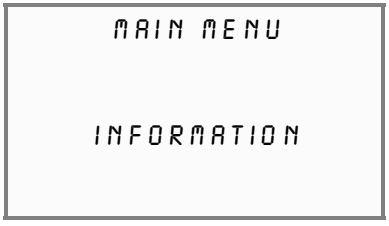
Use of the menu using time and date as an example

Use of the control menu is described below in stages, using TIME and DATE as an example. This setting procedure is suitable for this purpose as it can easily be ascertained whether all steps produce the desired result.

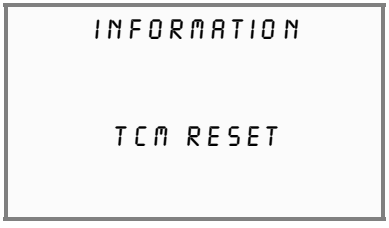
The time is displayed in the bottom left-hand corner of the operator display. It serves as a basis for a number of internal, time-related functions, such as logging of malfunctions. The display is accurate to one minute. The date is not displayed.

Proceed as follows:

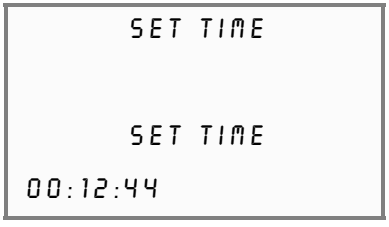
1. Locate the desired function in the menu overview of the fold-out page, and ascertain its menu path.
2. Access to the main menu: Press the **ENTER** key. The main menu appears::



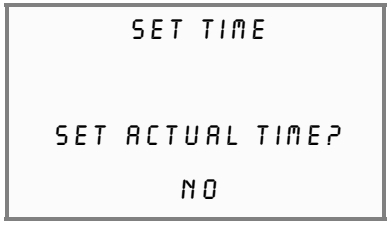
3. Switch to the INFORMATION menu level using the ➲ key. The first item of the INFORMATION MENU (TCM RESET) appears:



4. Press the ➲ key several times to reach the SET TIME function; press then the YES ❨ key for configuration.



5. Position the cursor using the ➲/➲ keys, and set the time by means of the ➲/➲ keys.
6. Complete the setting procedure using the **ENTER** key. The following prompt appears:

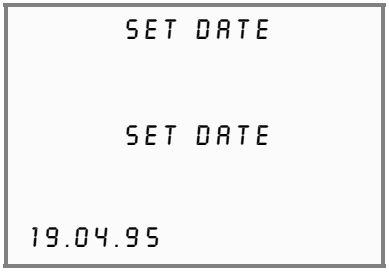


7. Select YES or NO using the ➲/➲ keys.
8. Terminate the setting procedure by means of the ENTER key:
   - The setting is stored permanently by means of YES ➲;
   - The setting procedure is aborted without saving by means of NO ➲.

Setting the DATE

To set the date, proceed in the same way as steps 1 to 4, but use the ➲ key to switch on to the SET DATE function.

This use of the menu is indicated in abbreviated form in each case in the manual:
MAIN MENU > INFORMATION > SET DATE



To set and save the date, proceed in a similar way to steps **5** to **8**, “Setting the time”.

When you have completed these steps, you will be familiar with basic operation of your controller. The procedure for configuring the controller is similar to the above procedure and is described in the next chapter.

4 Configuration and control commands

4.1 Factory settings

The basic configuration is factory-set in accordance with the technical specification of the order. Changes are not normally required in this menu.

Certain settings in this menu cannot be made from the operator keypad, such as “Situation of the doors”. These settings can however be made on-site from a laptop computer by means of the EST Editor program (see “4.8 Configuration by means of the EST EDIT PC configuration program”).

4.2 Configuration requirements

The basic controller settings are stored in the basic configuration. The controller automatically disables the car drive at the beginning of the configuration dialog before these settings are changed.

A condition is however that the car has no drive jobs. If an attempt is made to access the configuration during a drive or with a drive job active, the drive is first allowed to complete.

CAUTION

You are strongly advised to take the controller out of drive mode when the lift is stationary; this can be achieved, for example, by locking landing calls manually. The BASIS CONFIG dialog must not be started until all passengers have left the car.

The status of the installation is always safe when the controller has been taken out of normal drive mode, i.e. when it is in AUXILIARY or INSPECTION mode.

NOTE

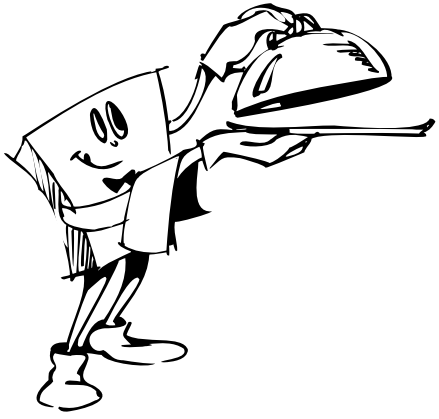
The configuration menu cannot be reached with the controller in EMERGENCY STOP PRIO rity (FIRE) mode.

4.3 Notes on the Reference Section

All items in all controller menus are described sequentially in this chapter in the order in which they are encountered when the menus are paged through. In order to use the references effectively, the user must be familiar with operation of the EST controller (see “3 Operation”).

The Reference Section contains information specific to the menu item stated previously: the start of each description is marked in bold together with the menu marker >, e.g.:

SERVICE > ADJUSTMENTS > START MONITOR



The Reference Section contains information specific to the menu item stated previously: the start of each description is marked in bold together with the menu marker >, e.g.:

> START MONITOR

An explanation of the term is provided in capital letters, e.g.

MONITORING OF CAR MOVEMENT FOLLOWING THE START COMMAND

A comprehensive explanation or particular instruction may then follow. “Setting range” and “Step interval” refer to the range of values which may be entered, e.g.:

- Setting range: 5-10 sec
- Step interval: 1 sec

If the setting range is numeric, the ↑ key increases the value by the step interval, and the ↓ key reduces it by the same interval.

The setting range is indicated together with its units, e.g. sec, m/s, etc. If no unit is given, the value refers to incidences, e.g. frequency of occurrence before a function is triggered.

The references refer to one or more related subjects, e.g.:

- Reference 1: > TCM RESET (referring to a related menu item, as in this case)
- Reference 2: Fault TA-136 Set starting time expired (see “Section”, “Description”)

4.4 The INFORMATION menu

> TCM RESET
RESET OF THE ACTIVATED DRIVE TIME MONITOR

The same effect is achieved by switching the main switch off and back on. TCM RESET is also possible in the TEST menu, for example following a TCM TEST.

The function is executed when any key is pressed.

Reference 1: "7.5 Drive time control monitoring (TCM)"
Reference 2: > TCM TIME

> FAULT DISPLAY
OUTPUT STORED FAULTS

The stored faults are listed in the operator display together with the time, date and floor.

Page through the list using the ⊂/⊃ keys. Return to the standard operator display using the **ENTER** key.

Reference: "9.3 Displayed fault information"

> STORE FAULTS
SAVE THE FAULTS PREMATURELY IN THE EEPROM

The fault log is normally stored in the EEPROM at midnight. This function should be used to secure the fault log immediately before the installation is switched off.

Press the YES 🄈 or NO 🄉 key.

Reference: "9.2.2 Saving faults prior to switching off"

> ORIENTATION
START ORIENTATION DRIVE

Orientation drive compares switching points (signals) installed in the shaft with the controller configuration, and generates shaft information.

YES 🄈 starts orientation drive;
NO 🄉 returns to the standard operator without effect.

Reference 1: "5.3 Orientation drives"
Reference 2: "9 Faults and troubleshooting"
Reference 3:> SHAFT TABLE

> LANDING CALL OFF
DISABLE LANDING BUTTONS

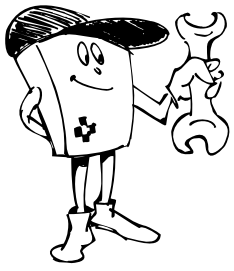
This is one of several means of disabling the landing buttons. When this function is active, the corresponding "Landing call enable" terminal is inactive (see circuit diagram).

The disabled status is indicated by an "x" in line 4, column 10 of the operator display. Switching the main switch OFF/ON re-enables the landing calls.

If the controller is part of a group, this function removes the car from the group.

YES 🄈 disables landing calls
NO 🄉 enables landing calls

Reference: "6.1 Principles of group mode"



> DOOR LOCK
LOCK DOORS

This function is used, for example, during INFORMATION or adjustment work to prevent passengers from entering the car. The controller remains fully operational with the exception of the doors.

CAUTION

Before activating this function, ensure that there are no passengers in the car.

If the doors are locked, the complete operator text is written in small characters as an indication. Switching OFF/ON cancels the door lock.

YES ↑ locks the doors;
NO ↓ enables the doors again.

> SET TIME
RESET SYSTEM CLOCK

The time which can be set in the controller has two functions:
a) Indication that the computer is operational
b) Forming the basis of time-dependent functions

The controller has a software-driven clock with date. The seconds count is generated in the controller processor. The clock cannot therefore continue to run when the controller is switched off. The instantaneous time is stored when the controller is switched off, and the clock begins to run again with this time when the controller is switched back on.

NOTE

The controller time must be reset again following a power failure or deactivation.

Perform settings using the ↑/→/↓/← keys; return to the normal operator display using the **ENTER** key.

Reference: “3.5 Use of the control menu”

> SET DATE
RESET DATE

Use the ↑ key to increase and the ↓ key to reduce the values. Leave the menu using the **ENTER** key.

Reference: “3.5 Use of the control menu”

> STATISTICS
DISPLAY INTERNAL DRIVE STATISTICS

The controller keeps a statistical record of the drive frequency in relation to the floors and the origin of the calls (car buttons, landing buttons and park drive). These statistics form the basis of "statistical park drive".

The statistical record is output in the form of a list showing each floor and the associated journeys.

The ⇦/⇨ keys can be used to page through the list. Return to the standard operator using the **ENTER** key.

Reference: "5.7 Parking"

> SHAFT TABLE
DISPLAY POSITIONING INFORMATION

The shaft signals read in during orientation drive are stored and output in list form. This function is useful for troubleshooting during initial installation, for example for checking whether all shaft signals have been read in (switched) in the correct sequence.

Use the ⇦/⇨ keys to page through the list. Return to the standard operator using the **ENTER** key.

Reference 1: "2.2.3 Shaft copying, general"
Reference 2: "9.7 Systematic troubleshooting of shaft selector faults"

> INFO
DISPLAYS INTERNAL PROGRAM INFORMATION

This display provides information on the current program version and the EEPROM of the specific system.

NEW LIFT therefore reserves the right to modify and not to document the content of this screen in future.

Press any key to return to the standard operator display.

4.5 The CUSTOMER SERVICE menu

■ **ADJUSTMENT**
(see "4.5.1 The SETTING sub-menu")

> AUTOTEST
CALL UP AUTO TEST DRIVE MENU

Places the controller in a mode in which automatic car calls are generated. These calls can be generated according to different criteria.

The calls are generated continually until CALLS OFF is called up in the test drive menu. The controller has normal operating status during the test calls, i.e. "normal" calls are still possible from the car or landings.

> SERVICE INTERVAL
SET SERVICE INTERVAL

The service interval can be specified both in operating hours and in drives. Select the desired interval type in line 3 of the operator display using the ⇨ RIGHT key.

Setting range:0 ... 1000 operating hours
Step interval:1 hour

Setting range:0 ... 65000 drives
Step interval:1000 drives

Use the ⇧ key to increase and the ⇩ key to reduce the values. Leave the menu using the **ENTER** key.

Reference: "7.7 Maintenance intervals"

> COUNTER RESET
CLEAR THE INTERNAL DRIVE COUNTER

Press the YES ⇧ or NO ⇩ key.

> FAULT RESET
CLEAR THE INTERNAL FAULT MEMORY

NOTE
All stored faults that may be required for troubleshooting will be lost.

Press the YES ⓿ or NO ⓿ key.

> STATISTICS RESET
CLEAR THE INTERNAL STATISTICS MEMORY

Press the YES ⓿ or NO ⓿ key.

Reference: "> STATISTICS"

> DEBUG DISPLAY
LINE 2 OF THE OPERATOR DISPLAY BECOMES INFORMATION CHANNEL

The desired information channel can be selected using the ⓿/⓿ keys.

Use the ⓿/➲/⓿/➲ keys to perform settings. Use the **ENTER** key to return to the standard operator display.

Reference: "9.6 Systematic troubleshooting"

NOTE
The following special functions are not available during troubleshooting:
- Call to top floor (⓿ key)
- Call to bottom floor (⓿ key)

4.5.1 The SETTING sub-menu

> SAFETY DEBOUNCE
DELAYS STARTING WHEN THE SAFETY CIRCUIT IS CLOSED FOR THE FIRST TIME

This function prevents a bouncing lock from initiating a motor stop shortly after starting.

Setting range: 0,0 ... 2,5 sec
Step interval: 0,1 sec

Use the ⓿ key to increase and the ⓿ key to reduce the values. Leave the menu using the **ENTER** key.

Reference: Fault TA-140, "Stopping fault caused by door contact/lock"

> DOOR LOCK DELAY
MAXIMUM DELAY FOR DOOR LOCK

If the car door contact is closed and the door lock fails to close within the set time, the door is opened again and a further closing cycle is started. The process is repeated until the door has closed properly, or until the cam/lock fault count has expired.

Setting range: 2,0 ... 4,0 sec
Step interval: 0,1 sec

Use the ⓿ key to increase and the ⓿ key to reduce the values. Leave the menu using the **ENTER** key.

Reference 1: > DOOR LOCK MAX
Reference 2: Fault TA-134, "Lock wait time expired"
Reference 3: Fault TA-135, "Cam/lock fault count expired"

> TCM TIME

DRIVE TIME MONITORING

If the controller fails to receive a positioning signal during a drive within the time set here, drive-time monitoring is activated and the car is stopped, i.e. the next floor must be reached within the time set here.

This status can be cancelled manually only by switching OFF/ON, or from the controller keyboard.

Setting range: 1 ... 45 sec
Step interval: 1 sec

Use the ↑ key to increase and the ↓ key to reduce the values. Leave the menu using the **ENTER** key.

Reference 1: > TCM RESET
Reference 2: "7.5 Drive time control monitoring (TCM)"
Reference 3: Fault TA-137, "Set time expired"

> START MONITOR

CAR MOVEMENT MONITORING FOLLOWING THE START COMMAND

Monitoring begins when the safety circuit is closed. If the car fails to leave the level position within the set time, the car is stopped (level switch switched off within the shaft range).

The shutdown is cancelled by means of the TCM RESET function or by switching OFF/ON.

Setting range: 5 ... 10 sec
Step interval:1 sec

Use the ↑ key to increase and the ↓ key to reduce the values. Leave the menu using the **ENTER** key.

Reference 1: > TCM RESET
Reference 2: Fault TA-136, "Set starting time expired"

> CONTACTOR MON

MONITORS THE CLOSED CIRCUIT OF THE DRIVE CONTACTORS (CONTACTORS STATIONARY)

If a failure occures, TCM releases. Only for export or when constructed according to EN81 (Plan group X100, terminal 113).

Switch the function ACTIVE using the ↑ key, and OFF using the ↓ key.

Reference 1: > TCM RESET
Reference 2: Fault TA-129, "Contactor monitoring fault in rest state"

> STAR/DELTA

STAR/DELTA STARTING (VALVE PILOT CONTROL WITH SOFT STARTING)

☑ Can be set with hydraulic drives only.

Setting range: 0,02 ... 5,0 sec
Step interval: 0,02 sec

Use the ↑ key to increase and the ↓ key to reduce the values. Leave the menu using the **ENTER** key.

> MOTOR OFF DELAY

MOTOR SWITCH OFF POINT DELAYED FOR HYDRAULIC LIFTS

☑ Can be set with hydraulic drives only.

Setting range: 0,02 ... 5,0 sec
Step interval: 0,02 sec

Use the ↑ key to increase and the ↓ key to reduce the values. Leave the menu using the **ENTER** key.

> SPEED CHANGE DLY
DRIVE CONTACTORS CHANGEOVER TIME

Delays the changeover from FAST to SLOW and back on traction lifts without closed-loop control.

Setting range: 0,02 ... 5,0 sec
Step interval: 0,02 sec

Use the ↑ key to increase and the ↓ key to reduce the values. Leave the menu using the **ENTER** key.

> CAM DELAY
DELAYS DROP-OUT OF THE DOOR LOCK CAM BY THE SET TIME WHEN THE LEVEL OR DOOR ZONE SWITCH IS REACHED

☑ Is active and can be set with manual doors only.

Setting range: 0,0 ... 4,0 sec
Step interval: 0,1 sec

Use the ↑ key to increase and the ↓ key to reduce the values. Leave the menu using the **ENTER** key.

Reference: > MANUAL DOORS

> DOOR OPEN DELAY
DELAYS OPENING OF THE CAR DOOR BY THE SET TIME WHEN THE LEVEL OR ZONE SWITCH IS REACHED

Setting range: 0,0 ... 4,0 sec
Step interval: 0,1 sec

Use the ↑ key to increase and the ↓ key to reduce the values. Leave the menu using the **ENTER** key.

> MIN WAIT CAR
MINIMUM WAIT TIME AT THE FLOOR

This time is evaluated as the starting delay when the car lands following a car call. Starting is thereby delayed by at least this duration, even if a command is present.

When this time has elapsed, the car door begins to close if a landing call is present.

Setting range: 0 ... 60 sec
Step interval: 1 sec

Use the ↑ key to increase and the ↓ key to reduce the values. Leave the menu using the **ENTER** key.

> MIN WAIT LANDING
MINIMUM WAIT TIME AT THE FLOOR

This time is evaluated as the starting delay when the car lands following a landing call. Starting is thereby delayed by at least this duration, even if a command is present.

When this time has elapsed, the car door begins to close if a landing call is present.

Setting range: 0 ... 60 sec
Step interval: 1 sec

Use the ↑ key to increase and the ↓ key to reduce the values. Leave the menu using the **ENTER** key.

> LAND CALL ENABLE
LANDING BUTTON ENABLE DELAY FOLLOWING INSP, PRIO

Setting range: 0 ... 30 sec
Step interval: 1 sec

Use the ↑ key to increase and the ↓ key to reduce the values. Leave the menu using the **ENTER** key.

> CAR CALL PRIO

DIRECTION PRIORITY WITH LANDING CALLS

Should the car loose its direction during landing, the drive direction of the calling push-button is assumed for the duration set here. Callers can therefore issue their desired destinations on the car push-button losing the direction to another landing call.

This is an important time for group optimisation. It is measured from the level time.

Recommended setting: one door OPEN/CLOSED cycle.
Setting range: 0 ... 30 sec
Step interval: 1 sec

Use the ↑ key to increase and the ↓ key to reduce the values. Leave the menu using the **ENTER** key.

> FAULT SEND DELAY

SHOULD THE CAR FAIL TO START WITHIN THIS TIME FOLLOWING A COMMAND, A START FAULT IS SIGNALLED TO THE FAULT SIGNALLING OUTPUT

This fault is typically triggered by the failure of a door to close. The car is not shut down, i.e. the car is available again as soon as the fault is cleared.

The time begins running as soon as the command is issued, i.e. possibly with the door open. The function is therefore independent of the START MONITOR setting.

With group configurations, the car is removed from the group at this point at the latest.

Setting range:1 ... 20 min
Step interval:1 min

Use the ↑ key to increase and the ↓ key to reduce the values. Leave the menu using the **ENTER** key.

> CALL HANDOVER

CALL HANDOVER IN GROUP CONFIGURATIONS

☑ Active only when group mode is set.

This time is started as soon as a call is issued by the group processor. If the time expires without the car starting, the car is taken out of the group and the group call passed on to one of the other lifts by the group processor. An error message is not generated.

Setting range: 0 ... 180 sec (40 sec recommended)
Step interval: 1 sec

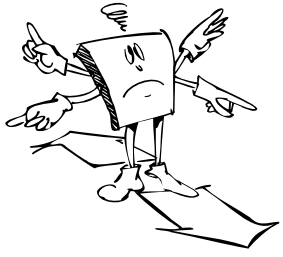
Use the ↑ key to increase and the ↓ key to reduce the values. Leave the menu using the **ENTER** key.

Reference 1: > FAULT SEND DELAY
Reference 2: > GROUP MODE

> ANTI NUISANCE

PREVENTS UNNECESSARY DRIVE IN THE EVENT OF ABUSE OF THE CAR BUTTONS

☑ Possible only on installations with photocell or manual door.



Recognition is achieved by comparison of the photocell breaks or manual door operations with the number of car calls.

Setting range: Bottom landing to top landing:
- Number of floors until the car command is cleared
- Switches the function off

Use the ↑ key to increase and the ↓ key to reduce the values. Leave the menu using the **ENTER** key.

Reference: “7.6 Anti-nuisance”

> PARKING

ACTIVATION OF THE PARKING/HOMING FACILITY

Press the YES ↑ or NO ↓ key.

Reference: “5.7 Parking”

> PARK TIME

TIME UNTIL PARKING (HOMING) IS ACTIVATED

☑ Adjustment is possible only with PARKING activated.

Setting range: 1...15 min
Step interval: 1 min

Use the ↑ key to increase and the ↓ key to reduce the values. Leave the menu using the **ENTER** key.

Reference: “5.7 Parking”

> PARKING FLOOR

SETS DESTINATION LANDING FOR PARKING

Setting range:0 ... top landing

Use the ↑ key to increase and the ↓ key to reduce the values. Leave the menu using the **ENTER** key.

Reference: “5.7 Parking”

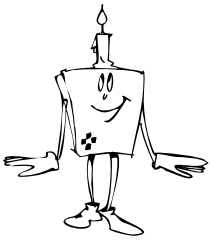
> LIFT-OFF FLOOR

DETERMINES DRIVE DESTINATION OF LIFT OFF DRIVE

The lift OFF function can be initiated by means of the key-operated switch over shaft cable X400 through terminal X238 (active = 24 V GND). The function can also be activated via the serial interface; the NEW LIFT KSTMON program is required in this instance.

Setting range: 0 ... terminal floor

Use the ↑ key to increase and the ↓ key to reduce the number of floors. Leave the menu using the **ENTER** key.



> CAR LIGHT OFF

DEACTIVATION OF THE AUTOMATIC CAR LIGHT RELAY IN THE IN-SPECTION CABINET/ON TERMINAL X259

When the car doors have closed, the time here begins to run. When the time has expired, the relay drops out and the car light circuit is interrupted.

The car light is switched back on:
- When the door or manual door is opened
- When a command is issued from the floor

Setting range: 0 ... 60 sec
Step interval:1 sec

Use the ↑ key to increase and the ↓ key to reduce the values. Leave the menu using the **ENTER** key.

> PHOTOCELL EXTEND

STEADYING OF DOOR REVERSING BEHAVIOUR DURING PASSENGER ENTRY

With photocell extend set, the photocell remains effectively constantly active when interrupted by several people. The door is not reversed during this time.

Setting range: 0,0 ... 10 sec
Step interval: 0,1 sec

Use the ↑ key to increase and the ↓ key to reduce the values. Leave the menu using the **ENTER** key.

Reference: “7.1.3 Photocell extension”

> DOOR TIME

CONTROLS CALL HANDOVER TO THE GROUP

☑ Active only with the group configuration switched on.

If photocells, manual doors or door open buttons are active for longer than the time set here, landing calls are not transmitted to the EST controller.

Setting range:0 ... 300 sec (15 sec empfohlen)
Step interval:1 sec

Use the ↑ key to increase and the ↓ key to reduce the values. Leave the menu using the **ENTER** key.

> DOORREVERSE MAX

NUMBER OF PHOTOCELL INTERRUPTION BEFORE NUDGING COMMENCE

Setting range: 0 ... 20
Step interval: 1

Use the ↑ key to increase and the ↓ key to reduce the values. Leave the menu using the **ENTER** key.

Reference: “7.1.3 Photocell extension”

> DOOR NUDGE.TIME

POSITIVE DOOR CLOSING TIME

When this time has expired, the photocell function is de-activated, thereby initiating positive closing of the door

Setting range: 0 ... 300 sec
Step interval:1 sec
0: De-activates the positive closing function

> DOOR APPROACH

PERMITS LANDING WITH THE DOOR OPEN BY ACTUATION OF THE SAFETY CIRCUIT BYPASS RELAY K113

☑ This function is executed only within valid door zones in the shaft.

Press the YES ↑ or NO ↓ key.

Reference: Fault TA-141, “Relevelling fault time-out”

> DOOR PARK STATE

DOORS OPEN OR CLOSED AT END OF DRIVE

Press the UP ↑ or DOWN ↓ key.

(Also applies to park landing.)

> DOOR CHANGE DELAY

DELAYED DOOR CONTACTOR CHANGEOVER BETWEEN OPEN AND CLOSED, E.G. WITH INTERRUPTION OF PHOTOCELL DURING CLOSIN

Prevents a short-circuit with three-phase door drive, e.g. resulting from arcing.

Setting range: 0,0 ... 1,0 sec
Step interval: 0,1 sec

Use the ↑ key to increase and the ↓ key to reduce the values. Leave the menu using the **ENTER** key.

> REVERS TIME

DOOR OPEN HOLDING TIME FOLLOWING RE-OPENING OWING TO INTERRUPTION OF PHOTOCELL

Setting range: 1 ... 20 sec
Step interval: 1 sec

Use the ↑ key to increase and the ↓ key to reduce the values. Leave the menu using the **ENTER** key.

Reference: > PHOTOCELL EXTEND

> DOOR OPEN TIME

A DOOR LIMIT SWITCH OPERATION IS SIMULATED WHEN THIS TIME HAS EXPIRED, AND THE MOTOR DE-ENERGISED.

Set values only on doors without limit switches; otherwise set to 99 sec.

Setting range: 1,0 ... 99,0 sec
Step interval: 0,1 sec

Use the ↑ key to increase and the ↓ key to reduce the values. Leave the menu using the **ENTER** key.

> OPEN HOLD TIME

WHEN THIS TIME HAS EXPIRED, THE DOOR BEGINS TO CLOSE IF THE BASIC SETTING IS CLOSED

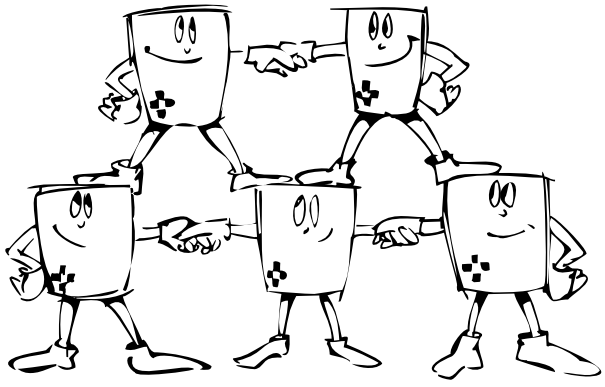
Applies only when a drive command is present. If a command is present, the door is closed as soon as the starting delay has elapsed.

Setting range: 2 ... 99 sec
Step interval: 1 sec

Use the ↑ key to increase and the ↓ key to reduce the values. Leave the menu using the **ENTER** key.

Reference: > MIN WAIT CAR

4.6 The CONFIGURATION menu



■ BASIS CONFIG

(see “4.6.1 The BASIS CONFIG sub-menu”)

> PASSWORD

PROTECTION OF CONTROLLER AGAINST UNAUTHORISED ACCESS

Press the YES ↑ or NO ↓ key.

Reference 1: > MENU LOCK
Reference 2: “4.7 Protection against unauthorised access”

> CALLS

ON/OFF SWITCHING OF PRE-PROGRAMMED CALLS

> MENU LOCK

PROTECTION OF CONTROLLER AGAINST UNAUTHORISED ACCESS

Press the YES ↑ or NO ↓ key.

Reference: “4.7.4 MENU LOCK”

4.6.1 The BASIS CONFIG sub-menu

> DRIVE SYSTEM

CONFIGURATION OF MOTOR TYPE

The following types are available:

NO DRIVE
2-SPEED TRACTION
LOHER DCL
ASC
RST
GIEHL
LEISTRITZ
OILDYNAMIC
1-SPEED TRACTION
BERINGER ELRV
LRV FEINNACHST.
F.UMRICHT..LM.FSV
GIEL-FEINNACHST.
ZETADYN-1DV / 1DF
MICOTROL-330 / 320 / 340
DYNAVERT-L
DYNATRON-S

Select the desired type using the ↑/↓ keys. Leave the menu using the **ENTER** key.

> DOOR TYPE

DOOR TYPE CONFIGURATION

The following types are available:

PROGRAMMABLE, e.g. for special doors
MEILLER SPINDEL
KIEKERT
WITTUR 3201
WITTUR RC24
SEMATIC LMDC2010
SIEMENS AT10
RIEDL RTK
I.G.V.
RATHGEBER PUFFER
AS8081

Select the desired type using the ↑/↓ keys. Leave the menu using the **ENTER** key.

> MANUAL DOORS

DOOR CONFIGURATION WHEN MANUAL SHAFT DOORS ARE FITTED

Press the YES ↑ or NO ↓ key.

Reference: > CAM DELAY

> DOOR DECOUPLING

NUMBER OF FAILED COUPLING CYCLES OF A SPINDLE DOOR BEFORE THE INSTALLATION IS RESET; ALL CALLS ARE CLEARED, BUT THE CAR IS NOT SHUT DOWN

☑ Setting possible only when door type = PROGRAMMABLE. Value 3 is set automatically with other door types.

Setting range: 1 ... 10
0: Deactivate function

Use the ↑ key to increase and the ↓ key to reduce the values. Leave the menu using the **ENTER** key.

Reference:Fault TA-133, “Decoupling counter expired”

> DOOR LIMIT SW

DOOR CONFIGURATION: DOOR WITH LIMIT SWITCH

☑ Setting possible only with PROGRAMMABLE door type.

Press the YES ↑ or NO ↓ key.

> DOOR DEENERGIZED

DOOR CONFIGURATION: DOOR MOTOR DE-ENERGIZED IN REST STATE

☑ Setting possible only with PROGRAMMABLE door type.

Press the YES ↑ or NO ↓ key.

> CAR DOOR BUFFER

ON OLDER DOOR DESIGNS WITH MECHANICAL BUFFER

☑ Setting possible only with PROGRAMMABLE door type.

Press the YES ↑ or NO ↓ key.

> DEPARTURE ARROW

DEPARTURE ARROWS ACTIVE (ILLUMINATED) WITH DOOR CLOSED

Press the YES ↑ or NO ↓ key.

> EMERG STOP FN

CAR CALLS CLEARED FOLLOWING EMERGENCY STOP; AN EMERGENCY STOP IS GENERATED BY ALL SWITCHES IN THE SAFETY CIRCUIT UPSTREAM OF THE DOOR AND LOCK CONTACTS

Press the YES ↑ or NO ↓ key.

> EMERG STOP MAX

NUMBER OF EMERGENCY STOPS BEFORE THE INSTALLATION IS SHUT DOWN; AN EMERGENCY STOP IS GENERATED BY ALL SWITCHES IN THE SAFETY CIRCUIT UPSTREAM OF THE DOOR AND LOCK CONTACTS

The emergency stops must be generated during one drive. Shutdown is cleared by means of the TCM RESET function.

Setting range: 1 ... 10
0: Function off

Use the ↑ key to increase and the ↓ key to reduce the values. Leave the menu using the **ENTER** key.

Reference 1: > TCM RESET
Reference 2: Fault TA-142, “Emergency stop fault count expired”

> DOOR INTERR MAX

NUMBER OF DRIVE INTERRUPTIONS CAUSED BY LOCK/INTERLOCK FAULTS DURING A DRIVE BEFORE THE INSTALLATION IS SHUT DOWN

The shutdown is cancelled by means of the TCM RESET function, or by switching the power supply OFF/ON.

Setting range: 1... 10
0: Function off

Use the ↑ key to increase and the ↓ key to reduce the values. Leave the menu using the **ENTER** key.

Reference 1: > TCM RESET
Reference 2: Fault TA-143, “Stopping fault count expired”

> DOOR LOCK MAX

NUMBER OF DOOR LOCK FAULTS BEFORE CAR AND LANDING CALLS ARE CLEARED

All calls are cancelled, but the car is not shut down. Reasons for the car not being started are for example failure of lock or car door contact to close.

Setting range: 1 ... 10
0: Function off

Use the ↑ key to increase and the ↓ key to reduce the values. Leave the menu using the **ENTER** key.

Reference: Fault TA-135, “Max. number of door lock faults exceeded”

> GROUP MODE

GROUP CONFIGURATION OF LIFTS

Setting range: 1 ... 255
0: No group

Use the ↑ key to increase and the ↓ key to reduce the values. Leave the menu using the **ENTER** key.

Reference: “6 Group mode”

> FIREMAN SERVICE

CONFIGURATION OF FIREMAN SERVICE (FIRE MODE/FIREMAN MODE)

Setting range: 0 ... 255

Use the ↑ key to increase and the ↓ key to reduce the values. Leave the menu using the **ENTER** key.

Reference: “7.4 Fireman service control, fire mode and evacuation”

> FIREMAN FLOOR

DESTINATION OF FIRE MODE DRIVE

The fireman function can read in the destination floor by means of hardware or software. If the software function is used, the destination floor is taken from the setting in this menu item.

The door information is coded in the floor by the addition of the following values to the floor:

+64	For door A
+128	For door B
+192	For doors A+B

In this example, the value 136 has been set for door B for destination floor 8.

Setting range: 0 ... 255

Use the ↑ key to increase and the ↓ key to reduce the values. Leave the menu using the **ENTER** key.

Reference: > FIREMAN SERVICE

> SHORT FLOOR

SPECIFICATION OF SHORT FLOOR MODE

Use the ↑ key to increase and the ↓ key to reduce the values. Leave the menu using the **ENTER** key.

Reference: “5.6 Short floors”

> FLY TIME
LANDING TIME WITH SHORT FLOOR

☑ Adjustment possible only with SHORT FLOOR

Setting range: 0,02 ... 10,0 sec
Step interval: 0,02 sec

Use the ↑ key to increase and the ↓ key to reduce the values. Leave the menu using the **ENTER** key.

Reference: "2.2 Shaft requirements Magnet copying"

> ZONE TIME
DOOR ZONE DELAY ON, AFTER STARTING

Setting range: 0,0 ... 10,0 sec
Step interval: 0,1 sec

Use the ↑ key to increase and the ↓ key to reduce the values. Leave the menu using the **ENTER** key.

> RELEVELLING
FINE LEVELLING OF THE CAR (INCLUDING WITH DOOR OPEN)

☑ Can be set with hydraulic drives with active RELEVELLING only.

Enables exact levelling during relevelling of the exact aligned position.

Setting range: 0,02 ... 2,0 sec
Step interval: 0,02 sec

Use the ↑ key to increase and the ↓ key to reduce the values. Leave the menu using the **ENTER** key.

Reference: "2.2 Shaft requirements Magnet copying"

> RELEVEL STOP
STOP MOTOR AND VALVE OVERRUN TIME WITH DELAY FOLLOWING LEVELLING

☑ Can be set only if RELEVELLING is active.

Permits more accurate levelling when the level position has been reached.

Setting range: 0.02 ... 2.0 sec
Step interval: 0.02 sec

Use the ↑ key to increase and the ↓ key to reduce the values. Leave the menu using the **ENTER** key.

Reference: > RELEVELLING

> DOOR ZONE OFF
DROP-OUT DELAY OF SAFETY CIRCUIT BYPASS RELAY FOLLOWING RELEVELLING

☑ Can be set only if RELEVELLING is active.

Permits more accurate levelling when the level position has been reached.

Setting range: 0,02 ... 2,0 sec
Step interval: 0,02 sec

Use the ↑ key to increase and the ↓ key to reduce the values. Leave the menu using the **ENTER** key.

Reference: > RELEVELLING

> LANGUAGE

OPERATOR DISPLAY SETTING

Setting range:GERMAN, ENGLISH
(other languages on demand)

Use the ↑ key to increase and the ↓ key to reduce the values. Leave the menu using the **ENTER** key.

> SERIAL

SETTING SERIAL INTERFACE

This setting is used for the special configuration, and is pre-set as standard

Setting range: 0 ... 255

Use the ↑ key to increase and the ↓ key to reduce the values. Leave the menu using the **ENTER** key.

Reference: “10.8 Menu CONFIGURATION > BASIS CONFIG > SERIAL”

> SYS1 > ... SYS3 ... > SYS7

FACTORY-STANDARD SETTINGS

These settings are special configurations pre-set in the factory.

Setting range: 0 ... 255

Use the ↑ key to increase and the ↓ key to reduce the values. Leave the menu using the **ENTER** key.

References: “10.3 Menu CONFIGURATION > BASIS CONFIG > SYS1” up to “10.7 Menu CONFIGURATION > BASIS CONFIG > SYS4, SYS6, SYS7”

4.7 Protection against unauthorised access

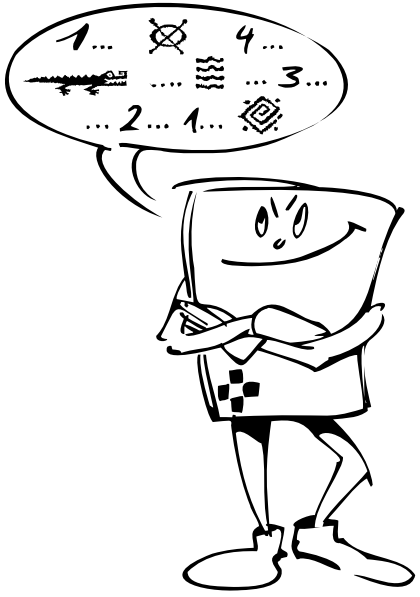
4.7.1 Principles

Access to the menu or the main menu levels can be protected against unintentional or unauthorised access by entry of a four-digit numeric password.

When a password has been set, it is requested when the protected main menu level is opened. This level cannot be accessed if no password or an incorrect password is entered.

Once the protected level has been opened, it remains open until 00.00 (midnight) or until it is closed again by entry of the password.

The controller is supplied set to “0000”. Protection is not active in this case.



4.7.2 Possible passwords

The password always consists of the **first three** digits, which can be selected freely, and **the final** digit, which specifies the level(s) to be protected:

0	No protection
1	Protects CONFIGURATION
2	Protects SERVICE
3	Protects CONFIGURATION and SERVICE
4	Protects INFORMATION
5	Protects CONFIGURATION and INFORMATION
6	Protects INFORMATION and SERVICE
7	Protects CONFIGURATION, SERVICE and INFORMATION
8	No protection
9	Protects CONFIGURATION

Examples of passwords:

- 123**7** consisting of password 123 and protection of all levels;
- 836**6** consisting of password 836 and protection of INFORMATION and SERVICE.

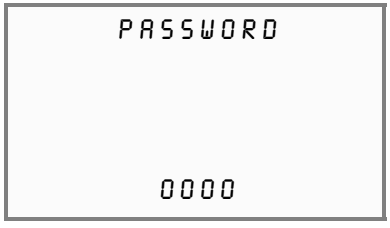
4.7.3 Setting the PASSWORD

KEEP THE PASSWORD IN A SAFE PLACE

Once the password has been set, it may not be possible to access the CONFIGURATION level without entry of the password. The password cannot thereafter be changed or reset.

▶ Call up the following in turn in the main menu:
CONFIGURATION > PASSWORD

The current password appears, e.g.:



0000 means: No password

▶ Write the desired password down.

▶ Using the ➲/➳ keys, position the password over the required digit. Then use the ➚ key to increase and the ➘ key to reduce the values.

▶ Repeat this procedure for all digits until the desired password has been entered.

▶ Leave the menu using the **ENTER** key.

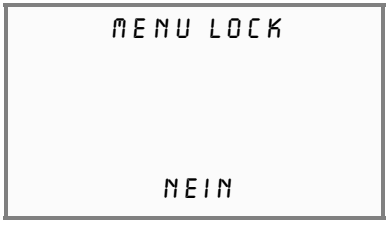
If the subsequent prompt, **"RESET YES/NO"** is acknowledged with the YES ➚ key, the password is saved. Provided the password is not equal to **0000**, it becomes active immediately, and protects the selected level(s).

Keep the password in a safe place, but ensure that it is available to the authorized maintenance personnel.

4.7.4 MENU LOCK

A password must be set before this function can be used. Levels accessed by means of the password remain accessible until 00.00. Protection can be restored in advance by means of the MENU LOCK function.

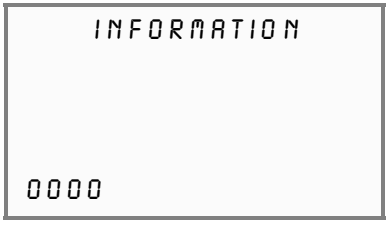
▶ Call up the following in turn in the main menu:
CONFIGURATION > MENU LOCK



▶ Press the YES ➚ or NO ➘ key. Then use the **ENTER** key to save the setting and leave the menu.

4.7.5 Access with the password activated

If a level is protected by a password, the following information is displayed when the level is selected::



The figure "0000" must now be overwritten with the previously set password. The cursor is initially located on the first digit.

▶ Use the ➚ key to increase and the ➘ key to reduce the values. Confirm the password and leave the menu using the **ENTER** key.

4.8 Configuration by means of the EST EDIT PC configuration program

4.8.1 New functions

The EST EDIT configuration program was written to enable you to configure your EST controller on a PC.

This has the following advantages:

- Data files can be processed more clearly directly on the PC screen.
- Configurations already present in the EST can be transferred, processed and saved again.
- Identical data files need only be generated once. They can then be used repeatedly.
- Data files can be stored safely.

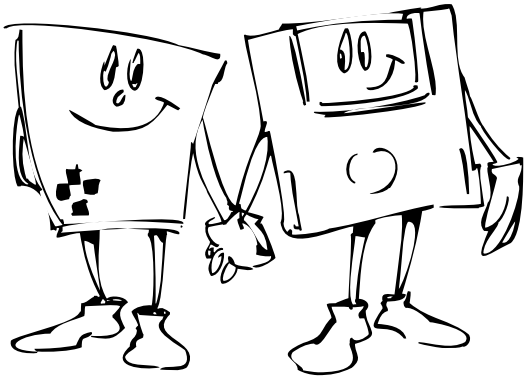
The editor is a DOS program which an be used on virtually any PC or laptop computer.

It is available directly from NEW LIFT on diskette, and may be copied freely by our customers as shareware. A serial data transmission cable is also required; customers may order this cable from NEW LIFT or fabricate it at any time themselves (see “10.16 Serial Cabels”).

4.8.2 Installing EST EDIT

The EST Editor can either be started from the diskette or copied onto the hard disk:

- Switch to the DOS operating system level on the PC.
- Insert the EST Editor diskette.
- Change to the disk drive: C:>A:
- Start installation: A:>install A C



Starting the program from the hard disk

- Start the editor from the hard disk by entering EST EDIT and pressing the Return key.

The editor does not initially require an ONLINE connection to the controller. If you wish to transmit or receive data to or from the EST, however, a serial link must be set up through the COM1 or COM2 interface.

The start help program uses COM2, the standard interface for most PCs.

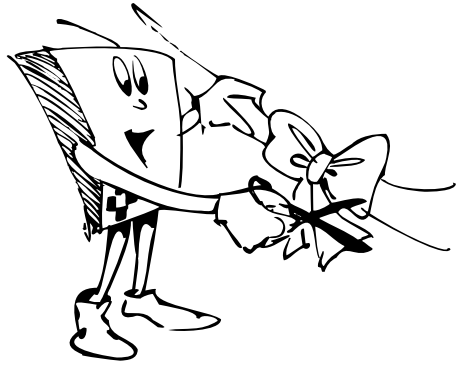
4.8.3 Operation

The EST Editor operation is broadly similar to the MS-DOS shell (refer to the Microsoft MS-DOS user manual and reference) or an SAA operator interface:

- Issue commands using the Alt key, the alphabetic keys A to Z, the cursor keys and the function keys
- Leave menus using the Esc key; call up important information with F1

The program can also be operated by means of a mouse, provided the mouse is installed under DOS.

5 Commissioning and drives



5.1 Preconditions for commissioning

FOR YOUR OWN SAFETY

and in order to avoid unnecessary troubleshooting during commissioning, the following conditions must be met before the first drive is performed:

- **Emergency limit switches fitted, adjusted, and operation tested**
- **Impact buffer fitted**
- **Operational test of inspection drive performed**
- **Operational test performed of all safety circuit switches**
- **Actuating magnets fitted in shaft in accordance with pulse plan**
- **Counterweight balancing performed with 50% load**
- **Ensure that the cabin door blade passes through with sufficient clearance to the interlock defeat mechanism**
- **The car door must be closed**
- **In the case of lifts driving at 1.2 m/s and faster and with closed-loop control, the additional mechanical final limit switches must also be fitted at the terminal landings in order to ensure monitoring of deceleration at the terminal landings.**

5.2 Installation drives

The following points must be checked prior to first drive:

- Rope lengths, undershoot and overshoot
- Stipulated switchgear room height in the shafthead
- Operational test of the safety switches on the car roof
- Adequate deceleration force of the brake
- Shaft access points closed and locked
- Safety catch and speed limiter
- Operational test of the inspection drive pushbutton

CAUTION

- **Operation of the deceleration monitor must be checked and tripping of the monitor set during commissioning. Emergency limit switches, pre-limit switches and inspection limit switches must remain actuated for the complete drive from the beginning of actuation by the cam up to possible impact with the buffer.**
- **An increased risk of accident is always entailed during an installation drive. The local accident prevention regulations must be observed.**
- **Installation drives may be performed only with the inspection drive facilities fitted for the purpose on the car roof.**

NOTE

After an inspection drive, normal operation is only possible following the opening and closing of the safety circuit (fitter steps down from car). If the car is levelled, normal operation is available immedeately.

5.3 Orientation drives

The orientation drive compares the fitted switching points (signals) in the shaft with the configuration of the controller, and generates the internal information table for positioning. The car also measures and records the drive times between all floors.

Should a discrepancy be detected during orientation drive, a fault message is output. Discrepancies include missing or superfluous pulses. In the event of a fault, a question mark appears in column 1, line 4 of the operator display.

An orientation drive is normally required only once, when the controller is started for the very first time. A drive command without a valid orientation drive automatically results in an orientation drive being started.

Proceed as follows to initiate orientation drive:

► In the main menu, call up the following functions in turn: INFORMATION > ORIENTATION DRIVE

”ORIENTATION DRIVE” flashes on the operator display during orientation drive. If the controller subsequently switches automatically to normal mode, orientation drive has been completed successfully.

Malfunctions arising during orientation drive are shown flashing.

NOTE

Orientation drive must be differentiated from correction drive, which always has the next terminal floor as its destination, e.g. following fatal positioning errors.

If short floor is configured according to the shaft, a measuring drive is performed when the orientation drive has been completed (see “5.6.5 Measuring drive with short floor”).

Reference:“5.6.6 The shaft table”

5.4 Normal drives

An orientation drive must always be initiated by the controller as the first drive. Only when orientation drive has been completed properly and without malfunctions may further normal and test drives be initiated from the machine room or the pushbuttons on the car and landing panels.

NOTE TO FIRST DRIVE

The door should be prevented from opening during the first drive by switching off the door drive.

Reference 1: “5.5.3 Lock doors”
Reference 2: 4.4 The INFORMATION menu > DOOR LOCK

5.5 Test drives

Test drives are used for the performance of inspections by the licensing authorities, or for commissioning the lift.

In contrast to normal drives, for which call commands are issued from the landing or car panels, test drives are always initiated from the controller. Calls are issued from a test drive menu which is called up on the operator display.

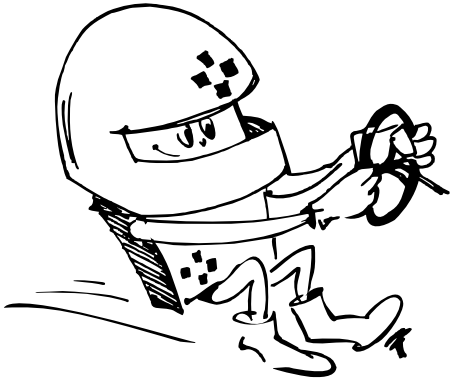
The menu operates parallel to normal operation of the controller. When the menu is activated, test drives can also be performed concurrent with normal drives.

The following test drive types are possible:

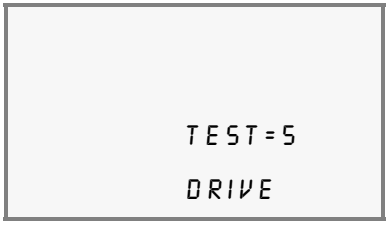
- DRIVE: Standard test drive sets car call in the target floor
- TCM: Test drive with activation of test time monitoring (TCM) after approx. 3 seconds
- FINAL LIMIT SWITCH: Test drive to final limit switches

In addition, the door(s) can be locked with all test drive types. Locking is cancelled automatically when the test drive menu is left.

The menu display encompasses columns 10 to 16 and lines 3 and 4. All other information on the operator display remains displayed.



The test drive menu appears directly in the operator display and is started by means of the ➲ key:



TEST=5	Signals destination floor 5
DRIVE	Signals “DRIVE” test type

The test drive menu flashes during the display to signal test mode.

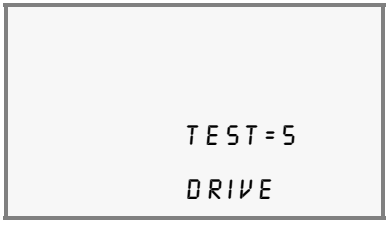
5.5.1 Initiating test drives

The following inputs can be made whilst the test drive menu is flashing:

- ▶ Select the test drive type using the ➲/➲ keys: DRIVE; TCM; LIMIT SW; DOOR; OFF
- ▶ Enter the destination floor using the 🡅/🡇 keys
- ▶ Initiate test drive using the **ENTER** key

The different test drive types are then displayed.

5.5.2 Standard test drive



Drives can be initiated from the machine room with this drive type. The drive is initiated as a car call and is identical to a normal drive.

Further test drives can be initiated whilst the drive is in progress. These are stored, acknowledged and executed as car calls.

5.5.3 Lock doors

To lock out undesired passengers, the doors can be locked prior to execution of the test drive:

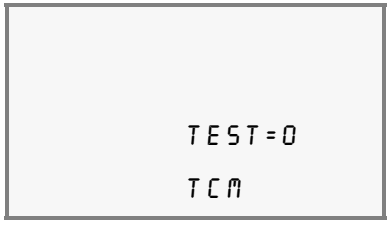
- Press the ↑ key: lock doors
- Press the ↓ key: enable doors

Line 1 is then displayed **small** during the test drive to signal that the doors are locked.

Any test drive type desired can be selected concurrent with this function; the “LOCK DOORS” function remains active.

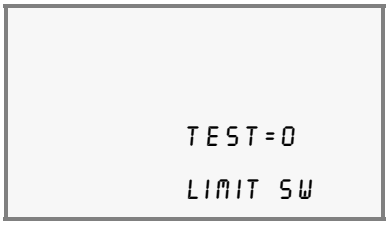
The doors are enabled again automatically when the test drive menu is left.

5.5.4 Testing TCM drive time monitoring



For this function, a drive destination is selected and initiated as for a standard test drive. The internal TCM time is overwritten with approx. 3 secs for this test. This results in a TCM monitoring error being triggered and the car being shut down when the time has expired. When drive time monitoring has been initiated (TCM flashes), resetting is possible immediately by pressing the **ENTER** key.

5.5.5 Testing the shaft final limit switches



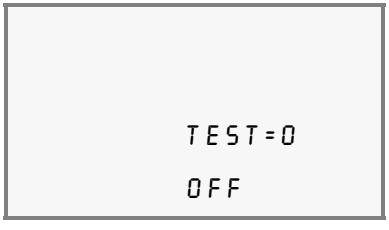
The destination of this drive is the topmost or bottommost floor. The controller executes a normal drive until the car is in the level position, at which point it ignores the level position and moves the car at slow speed to the final limit switch.

During final limit switch test drive:

- The ↑ key sets the KO floor (topmost floor)
- The ↓ key sets the KU floor (bottommost floor)

During the final limit switch test drive, the **ENTER** key must be pressed **as soon as the function is initiated** and held down until the car has reached the final limit switch position (dead man function).!

5.5.6 Leaving the test drive menu



The test drive menu can be left in test drive type OFF by pressing the **ENTER** key.

5.6 Short floors

If the interval between two floors is too small to bring the car to a halt owing to the speed V2 and the required deceleration distance, the landing magnet for the destination floor must be set back by the requisite distance.

This means for example that the DOWN landing magnet for floor 1 is located between floors 2 and 3, and that there is no longer a DOWN magnet between floors 2 and 1. In this case, the interval between 1 and 2 is a short floor.

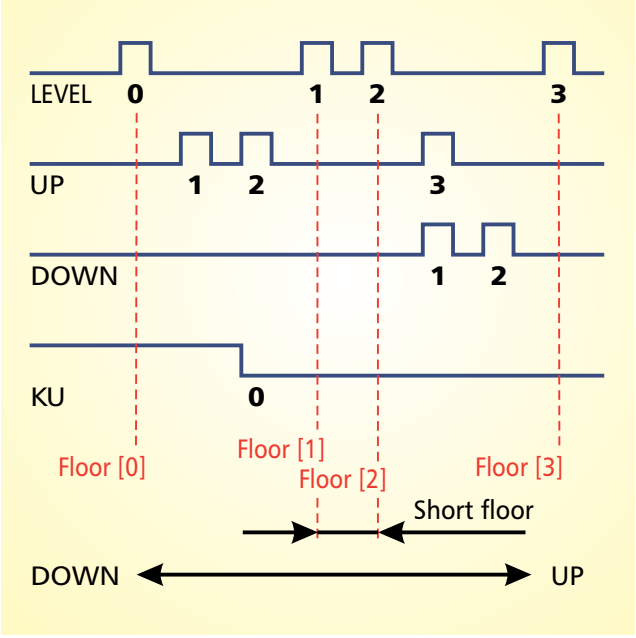


FIG: SHORT FLOOR IN THE SHAFT

5.6.1 Short floors at terminal landings KO/KU

For a short floor at the KU terminal landing, the landing magnet for floor 1 would have to be placed below the LEVEL position of floor 0. This is of course impossible; a short floor drive must therefore be performed from floor 0 to floor 1 and vice-versa.

▶ In this case, the landing position for floor 0 (KU track) must be placed before floor 1.

The requirements for:

- BISTABLE KU track and
- Unambiguity of the LEVEL position

mean that the KU track for the LEVEL [1] position must be broken.

▶ In this case, three magnets, from the top downwards: NORTH - SOUTH - NORTH required for correction at the bottom:

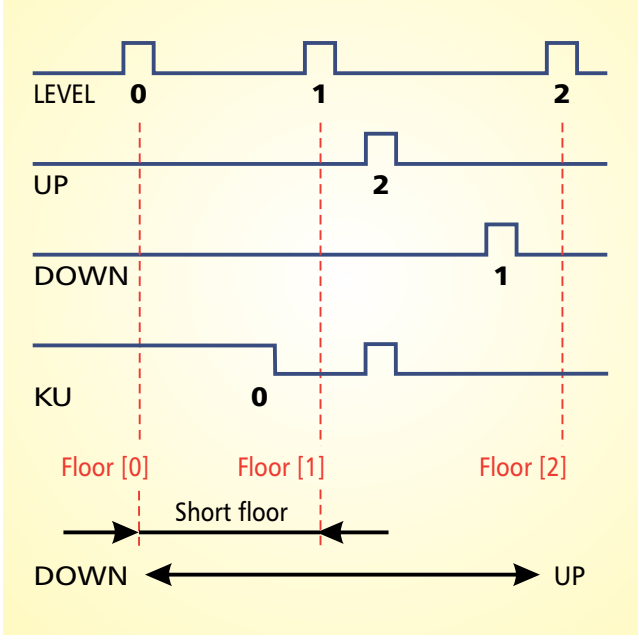


FIG.: SHORT FLOOR AT KU

BISTABLE EXPLANATION

The proximity switch is switched on in the UP direction by the south pole of a magnet and switched off on the same track in the DOWN direction by the north pole of a second magnet.

This principle also applies to the top floor (KO short floor).

5.6.2 Short floor at any floor

During short floor drives, the car starts with speed V1 and switches to speed V0 at the deceleration point V0 (applies only to installations with closed-loop control). In this case, the first UP position is assigned to floor 2.

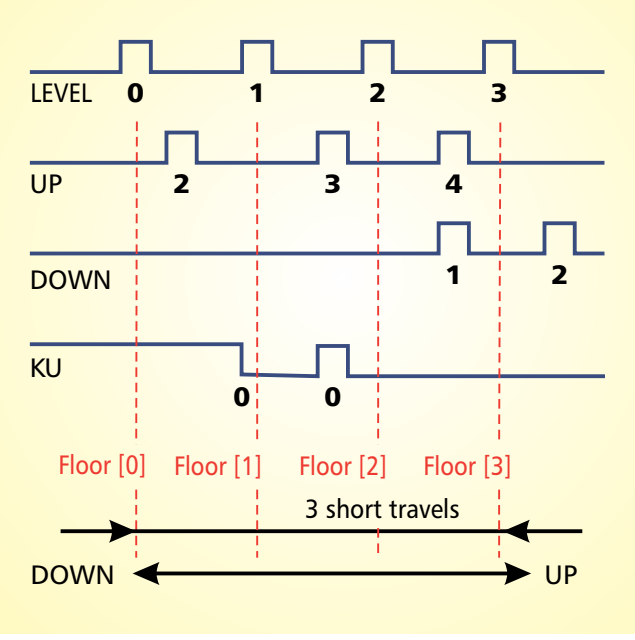


FIG.: SHORT FLOOR AT ALL FLOORS

The deceleration point is determined by the time interval to the LEVEL stop and will be stored as FLY TIME. Proceed as follows:

► Call up the following in turn from the main menu: CONFIGURATION > BASIS CONFIG > FLY TIME

► Use the ↑ key to increase and the ↓ key to decrease the time values [msec]. Leave the menu using the **ENTER** key.

NOTE

No additional magnet track is required for switching off the intermediate speed V1.

5.6.3 Automatic zone suppression This function is available only if the function “PRE-OPENING DOORS” has been selected (see “> DOOR APPROACH”). This function is illustrated by the following example:

A short floor drive is performed from floor 1 to floor 2. The UP landing magnets for floor 1 and 2 are therefore both ahead of floor 1.

During a drive from 0 to 2, floor 1 is therefore crossed during landing, in the process of which the door zone of floor 1 is detected.

The zone up to floor 1 must be suppressed automatically in this instance in order to prevent the door from opening at floor 1.
A prerequisite for this is a zone gap between floor 1 and floor 2, as shown in the diagram.

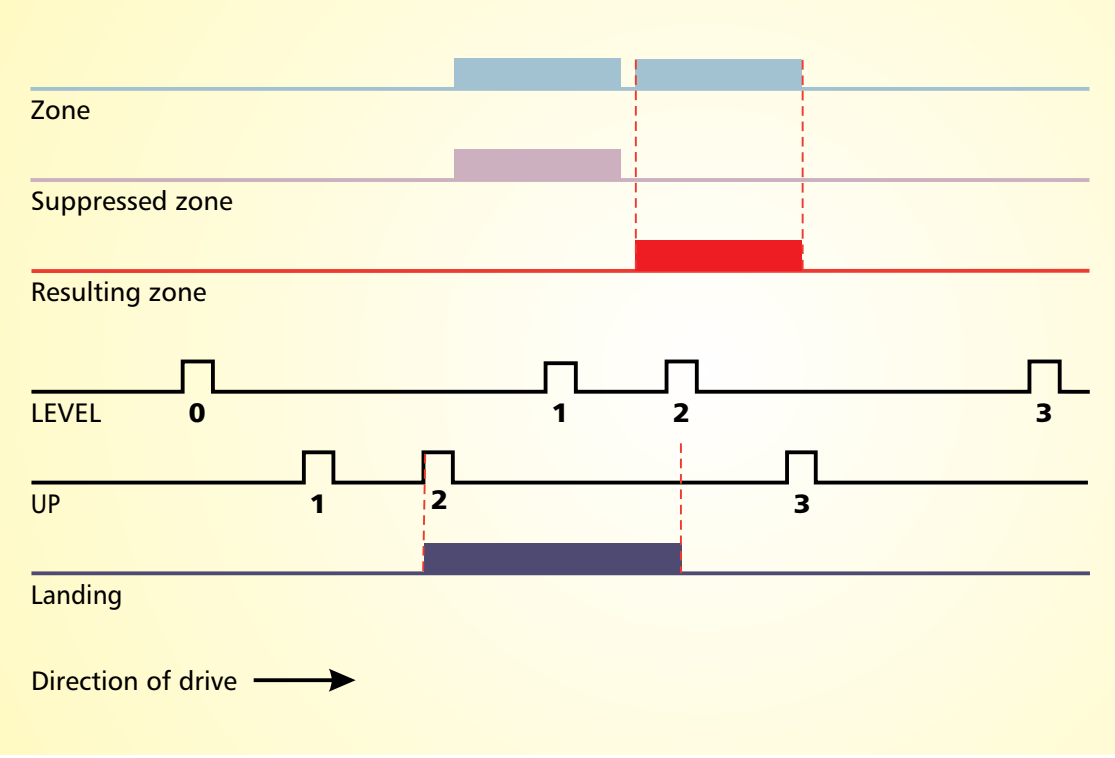
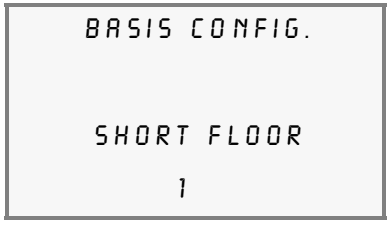


FIG.: SUPPRESSED ZONE

5.6.4 Configuring short floors

To configure short floors, proceed as follows:

► Call up the following in turn from the main menu:
CONFIGURATION > BASIS CONFIG > SHORT FLOOR



► Select one of the following settings::

0	No short floor
1	Short floor(s) in the shaft
2	Short floor in KU
3	Short floor in the shaft + KU
4	Short floor in KO
5	Short floors in the shaft + KO
6	Short floors KU + KO
7	Short floors only

“Shaft” is synonymous with “somewhere in the shaft, at least once”;
KU = Bottom correction (bottommost floor)
KO = Top correction (topmost floor)

► Use the ↑ key to increase and the ↓ key to reduce the values. Leave the menu using the **ENTER** key.

5.6.5 Measuring drive with short floor

If a short floor is configured, the time behaviour of the car at speed V1 is automatically measured following the orientation drive. The car drives at speed V1 between the next two floors for this purpose (the car is accelerated after LEVEL and landed on the next possible floor).

Since the measured V2 times are available from the orientation drive, the time interval from starting at V1 to changeover to V0 can be calculated at a later stage for a short floor.

This applies to any floor with the exception of KU and KO. If short floors are set for these floors, additional measurement drives are performed automatically.

If the drive system settings are re-adjusted, a new orientation drive must also be performed.

“MEASURING DRIVE” flashes on the operator display during the measuring drive(s).

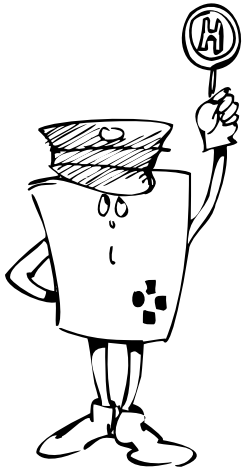
The measuring drives are performed at V2 on installations without closed-loop control (without V1).

5.6.6 The shaft table

The shaft table shows the information stored during orientation drive, namely the UP/DOWN magnets and whether they are present between the LEVELLING magnets.

The exact positions are not saved, nor are the relationships between the UP/DOWN magnets to each other, which are essential for the positioning program.

To display the shaft table, proceed as follows:



▶ Call up the following points in turn from the main menu:: INFORMATION > SHAFT TABLE

Line 2 of the operator display indicates the shaft section.

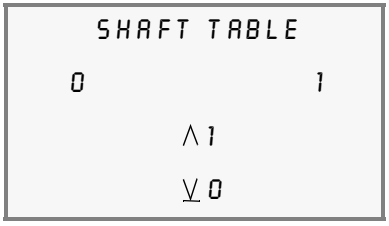
Line 3 indicates the UP and KO magnets in this shaft section.

Line 4 indicates the DOWN and KU magnets in this shaft section.

▶ Press the ⮌/⮊ keys to move the shaft portion by one floor in each case. An overview is displayed of the mag-nets present in the shaft and the resulting conclusions.

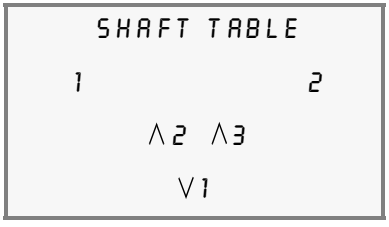
Examples

1)



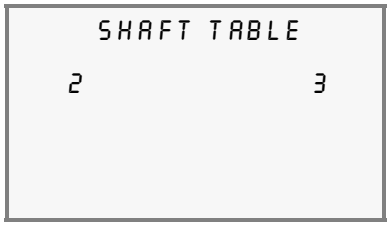
Line 2: Between floors 0 and 1
Line 3: UP magnet for floor 1
Line 4: KU magnet for floor 0

2)



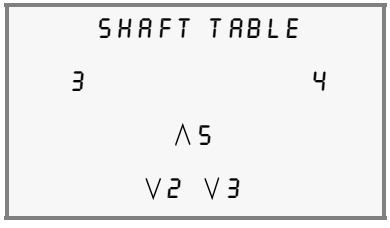
Line 2: Between floors 1 and 2
Line 3: UP magnet for floors 2 and 3
Line 4: DOWN magnet for floor 1

3)



Line 2: Between floors 2 and 3
Line 3: No UP magnet, Short floor
Line 4: No DOWN magnet, Short floor

4)



Line 2: Between floors 3 and 4
Line 3: UP magnet for floor 5
Line 4: DOWN magnets for floors 2 and 3

Conclusion:

Short floor between floors 2 and 3. Two UP magnets and one DOWN magnet between floors 1 and 2; no magnets between floors 2 and 3 (short floor), and two DOWN magnets and one UP magnet between floors 3 and 4.

5.7 Parking

The controller supports automatically activated parking to a parking floor (normally downwards) in accordance with TRA 265.51 .

The PARKING FLOOR and the PARK TIME to activation of parking can be set in steps of 1 to 15 minutes.

If the parking floor is a landing which actually exists in the system and the settings described above are employed, this is described as standard parking.

If the parking floor setting is greater than the topmost system floor, statistical parking is activated.

Time-driven parking can only be programmed in the factory. In this instance, the car drives to different preset parking floors during preset times.

If the controller is configured in a group and statistical parking is preselectedt (see “5.7.4 Statistical parking floor”), the car drives to a parking floor determined by the group controller on an hourly basis .

5.7.1 During parking

The operator display indicates “PARK/HOMING” during parking. The door is actuated according to the set door park state when the car lands on the parking floor.

Parking operations can be aborted at any time by new drive commands. The car drives to the new destination floor by the shortest route, and the direction display is switched in.

REVERSING STOP

If the new command is in the opposite direction to the parking direction, the car lands on the next possible floor. The door remains closed and the car drives to the floor from which the call originated.

5.7.2 Activating parking

A number of settings must be performed:

- Switch on PARKING

▶ Call up the following in turn from the main menu:
SERVICE > ADJUSTMENTS > PARKING

▶ Set PARKING to ACTIVE using the ↑ key. Leave the menu using the **ENTER** key.

and

- PARKING FLOOR

▶ Call up the following functions in turn from the main menu:
SERVICE > ADJUSTMENTS > PARKING FLOOR

▶ Increase the floor value to floor “n” using the ↑ key; reduce the floor value using the ↓ key. Leave the menu using the **ENTER** key.

and

- PARK TIME

▶ Call up the following in turn from the main menu:
SERVICE > ADJUSTMENTS > PARK TIME

▶ Using the ↑/↓ keys, set the time to parking in minutes. Leave the menu using the **ENTER** key.

5.7.3 Restarting the internal Park timer

Follow the procedure below to reset the park timer to zero:

- Terminate drive
- Switch the controller OFF/ON
- Switch the priority controller OFF (auxiliary mode, inspection mode, fireman service mode, fire mode)

Car relevelling movements do not restart the park timer. The park timer is held when the priority controller (auxiliary mode, inspection mode, fireman service mode, fire mode) is switched on.

5.7.4 Statistical parking floor

The controller records landing data in a statistics memory with each landing. The parking floor can be established from these statistics. The car then selects as the parking floor the floor from which landing calls are most frequently received.

The function becomes active when

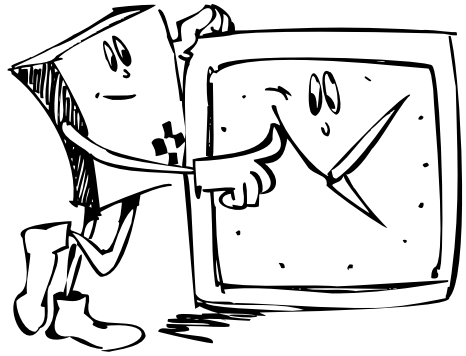
- the set PARKING FLOOR is greater than the highest floor in the system; floor 255 is a suitable value in this instance.
- PARK/HOMING is active and the time, PARK TIME has expired.

The statistical selection of the parking floor can be switched to parking on a specific programmed floor by selecting an existing floor.

5.7.5 Time-triggered parking floor

This menu setting can only be configured in the EST Editor. The function is of use only in conjunction with the real-time clock.

If parking/homing is ACTIVE and the PARK TIME has expired, the car drives to the set parking floor.



The parking floor driveled to is either

a) The parking floor determined by statistical evaluation
b) The parking floor assigned for a specific time
c) The single parking floor previously implemented

Parking/homing according to condition b) or c) is not performed if statistical parking floor is set.

For condition b), Time-triggered parking floor" to be effective, it must be:

1. Programmed in the EST Editor
2. Switched on (> CONFIGURATION > BASIS CONFIG > SYS1 + 8)

If the time condition set for a specific parking floor is not fulfilled, the car drives to the "basic" parking floor (condition c). A specific time is defined for a specific parking floor as follows:

"Parking floor: Day(s), Hour(s)"

One or more days, for example the entire week, may selected for the day. Any interval or several intervals, in steps of one hour, may selected for the hour; the limit is 24 hours.

Examples:

08-10 hours, 12-14 hours, 17-22 hours

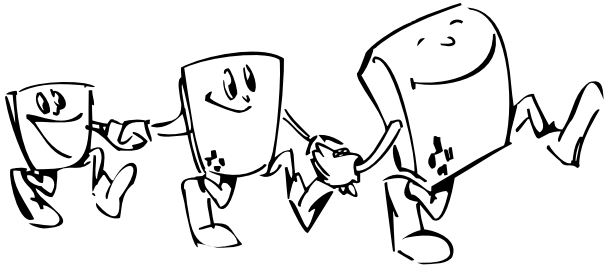
Up to five parking floors can be determined simultaneously. The EST Editor is used for programming.

6 Group mode

6.1 Principles of group mode

Group control is undertakten by the GST group processor. Each GST has a serial connection to the EST (interface X701). Calls from landing buttons are presented to all EST controllers in parallel, but are only transmitted from one EST to the GST. This EST has the designation MASTER (MST), all other ESTs are SLAVES (SLV). The promotion to master is selected by the GST on a random basis and can change depending on a situation, e.g. when the master EST is switched to inspection mode.

Each controller processes its car calls normally, but transmits its status continuously to the GST and receives selected landing calls from the GST.



The status of a EST comprises its car calls, its position in the shaft, its direction, and its status (inspection etc.). The GST compares the landing calls from all EST controllers, and decides at the last possible moment which car is to receive the call.

The group supports the parking floor of the car with the aid of a simultaneous statistics function:

If PARK DRIVE is active in the main menu
SERVICE > ADJUSTMENTS > PARK DRIVE

the PARKING FLOOR is set to 255, and the set PARK TIME (1 to 15 minutes) has expired, the group signals to the car the floor from which landing calls are most frequently received. This function is performed independently for all cars.

Should a EST fail (fault, external event, etc.), the remaining ESTs receive all calls, a new master will be assigned automatically – no calls are lost. If group communication is lost permanently, each EST independently receives a proportion of the landing calls after a brief interval, according to the preset group mode.

6.2 Group mode adjustment

The group programs always become active when the set GROUP MODE is greater than 0. The group mode is a number between 0 and 255, in which three functions are encoded:

A Response to landing call enable in the event of a group fault (e.g. communication), (fault: Rd-150)

B Issuing of landing call priority to the ESTs

The numbers of the selected functions A and B must be added together to produce the setting.

Function A

Response to landing buttons in the event of a group fault:

Number	Key	Type
1	Landing call enable for (0, 2, 4,...)	duplex
2	Landing call enable for (1, 3, 5,...)	duplex
3	Always without enable	duplex
4	Always with enable	duplex
5	Landing call enable for (0, 3, 6,...)	triplex
6	Landing call enable for (1, 4, 7,...)	triplex
7	Landing call enable for (2, 5, 8,...)	triplex
8	Reserved	-
9	Landing call enable for (0, 4, 8,...)	quattro
10	Landing call enable for (1, 5, 9,...)	quattro
11	Landing call enable for (2, 6, 10,...)	quattro
12	Landing call enable for (3, 7, 11,...)	quattro

Function B

Specification for assignment of priority landing call to the EST:

Number	Key
16	1st priority landing call receiver
32	2nd priority landing call receiver

Note: The “2nd priority landing call receiver” receives the priority call when the 1st landing call receiver is inactive (e.g. inspection etc.).

6.2.1 Setting the call handover time

Should problems be encountered on a EST which prevent further drives (e.g. door lock fault), the call is retrieved from this EST at the latest after “CALL HANDOVER” seconds, and handed over to the next EST.

The time to re-issuing can be set:

► Call up the following in turn from the main menu:
SERVICE > ADJUSTMENTS > CALL HANDOVER

The setting is between 10 and 180 seconds (recommended: 40 seconds).

► Use the ↑ key to increase and the ↓ key to reduce the values. Leave the menu using the **ENTER** key.

6.2.2 Setting the door time

Observed are:

- Interrupted photocell,
- the active door OPEN button and
- the open manual door

If these times are longer than the set DOOR TIME, the call is retrieved by this EST after “DOOR TIME” seconds, and issued to the next EST.

The time to re-issuing can be set:

► Call up the following in turn from the main menu:
SERVICE > ADJUSTMENTS > DOOR TIME

The setting is between 0 and 300 seconds (recommended: 15 seconds).

► Use the ↑ key to increase and the ↓ key to reduce the values. Leave the menu using the **ENTER** key.

6.2.3 Floor offset

☑ This setting can be configured with the EST Editor only.

Shafts of different lengths can be combined to form a group configuration. The offset is the distance between the shorter shaft and floor [0] of the longer shaft.

Conditions

1. All shorter shafts must be **complete sub-set** of the longest shaft.
2. The offset of the shorter shaft to the longer shaft must **not exceed 7** floors.
3. The shorter shaft must always be SLAVE in the group; this must be taken into account with the setting “1st priority landing call receiver” (Group No. +16).

Normalization

The distance to the shorter shaft can be displayed in normalized form in the operator display of the affected EST.

EST begins counting with the offset instead of “0”.

Valid configuration example:

Display	Not normalized	Normalized	Offset	SLV
EST-A	0123456789	0123456789	0	
EST-B	01234567	12345678	1	X

Unvalid configuration example:

Display	Not normalized
EST-A	012345678
EST-B	012345678

6.3 The group operator display

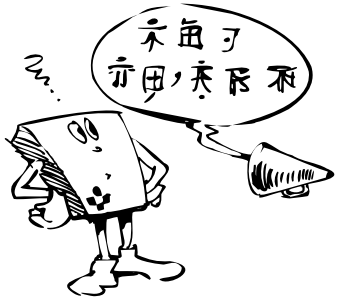
The EST displays its group status by means of a code letter in line 4, column 1 of the operator display.

Value	Key
w	Waiting: EST waits for group connection (switch on)
M	Master: EST with landing call acknowledgement
m	Single master drives without group controller, other ESTs are out of the group (inspection etc.)
S	Slave: EST without landing call acknowledgement
p	Pending: EST wishes to leave group (inspection etc.)
X	Exit: EST has left the group
#	EST / GROUP link broken
@	Brief intermediate status

6.4 Group faults

The following three faults indicate a problem in the link between the EST and group processor:

RD-130 Unknown group command
RD-150 Group communication interruption
RD-151 Unanticipated master -> slave exchange



In the event of a permanent group fault, the landing calls without group processor are issued according to the set group mode.

6.4.1 The group processor

The link to each EST comprises a serial line.

The status of each line is displayed by an LED on the group processor:

- LED lit continuously: connection to EST present
- LED flashing: fault or disconnection on corresponding line

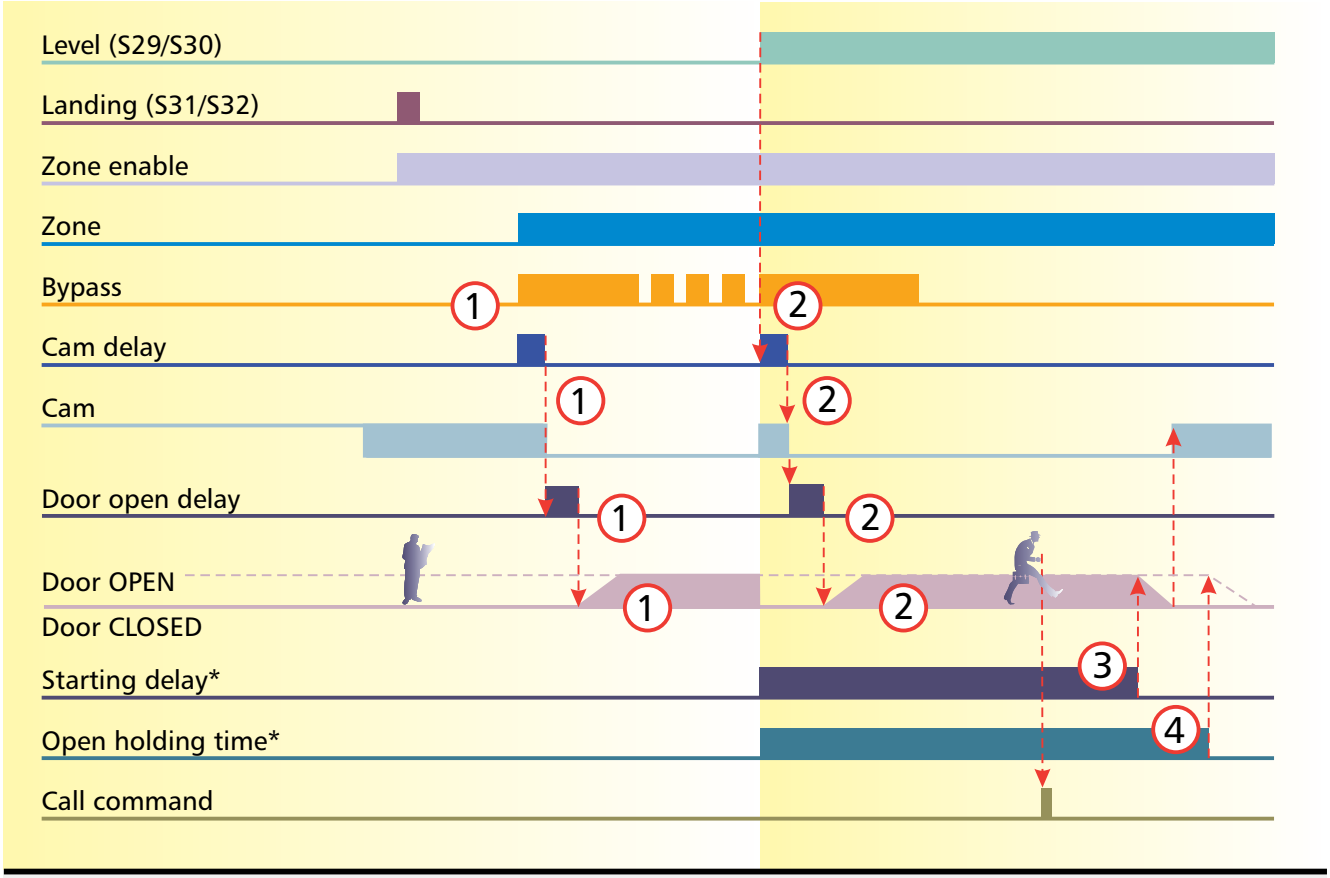
If a durable fault occurs, the group prozessor should be restarted with the RESET key; landing calls may be lost.

A PC program can display the group processes schematically via the integral serial interface (group monitor GS MON).

7 Further functions

7.1 Adjusting the doors

7.1.1 Door times diagrams



1 Opens during approach
2 Opens when level
3 Car starts when command is issued and starting delay time has expired
4 Doors close when open holding time has expired

* Configurable Menu point in ADJUSTMENTS submenu

FIG.: GENERAL DOOR TIMES

7.1.2 Reversing time

On doors without limit switch, the door moves to the OPEN position only if the reversing time is sufficiently long.

On doors with limit switches, the door always moves as far as the limit switch, but does not close until the reversing time has expired.

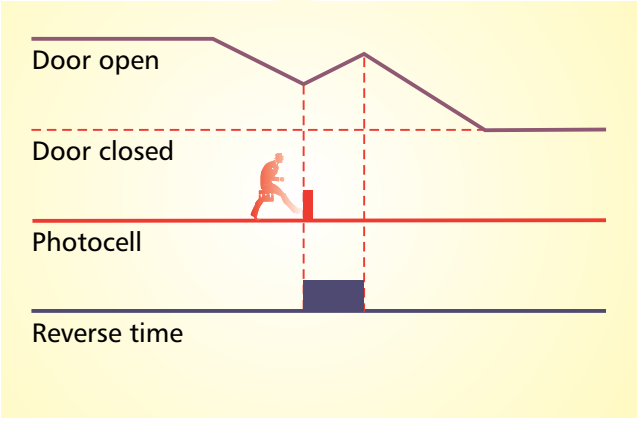
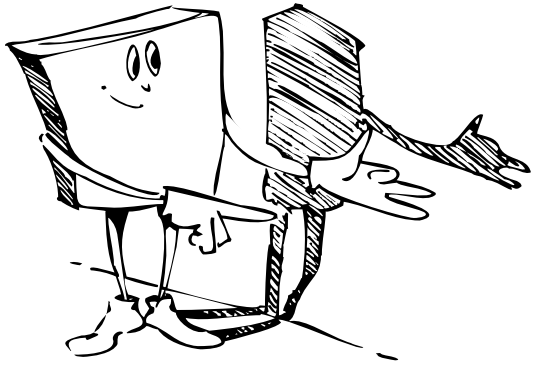


FIG: DOOR REVERSING TIME

▶ Call up the following in turn from the main menu: SERVICE > ADJUSTMENTS > REVERS TIME

▶ Set the reversing time in seconds using the ↑/↓ keys.

▶ Save the setting by pressing the **ENTER** key.



7.1.3 Photocell extension

In order to hold the door in reversing mode as passengers are entering the car, a photocell extension time is set. Activation of the photocell is extended artificially for this time so that it remains active when passed through by several passengers, and the doors do not reverse.

This time does not extend the REVERSE TIME, i.e. the door is not kept open for an excessive time. Accordingly, the REVERSE TIME can be set shorter. We recommend that the magnitude of the REVERSE TIME be selected equal to the DOOR OPEN DELAY (up to 4 seconds).

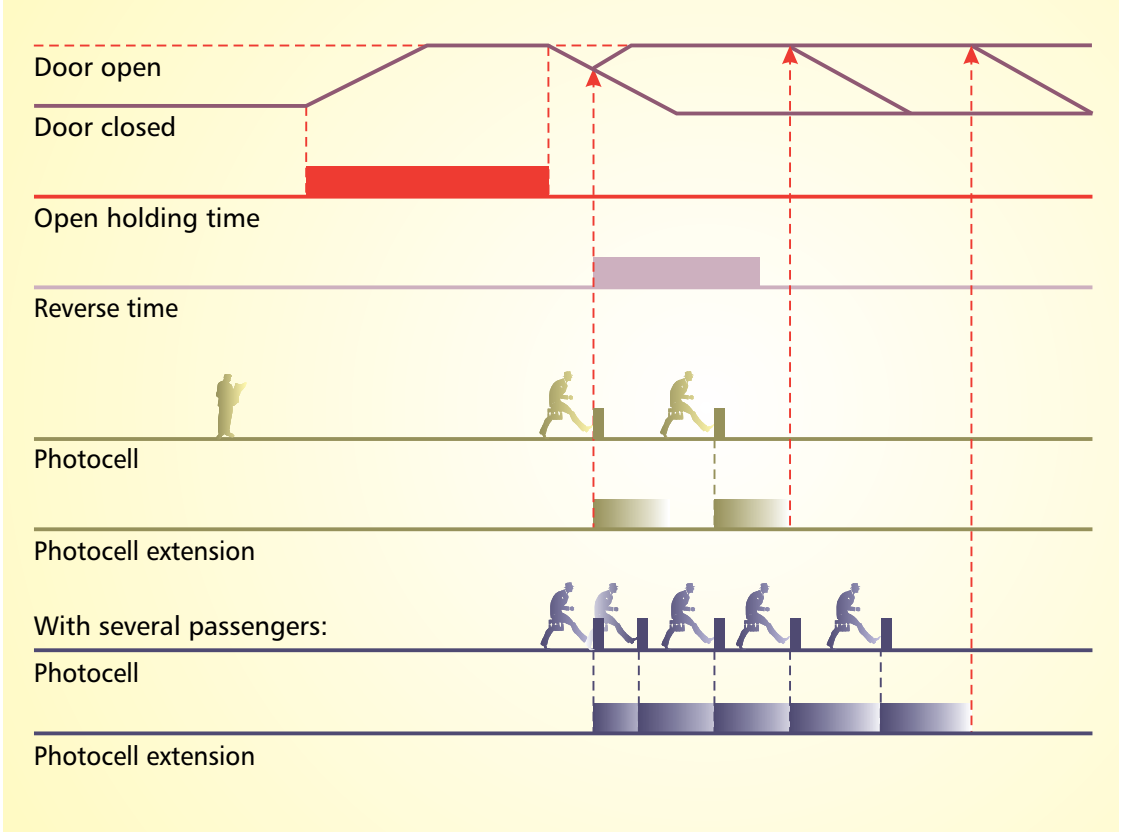
There is only one time for all doors. To set the photocell extension, proceed as follows:

► Call up the following in turn from the main menu:
SERVICE > ADJUSTMENTS > PHOTOCELL EXTEND

► Using the ⓿/⓿ keys, extend the extension time in seconds. We recommend that this time be set to approx. 3 seconds, or a little longer if the lift is used by older or disabled persons (the value 0 cancels this time).

► Save the setting by pressing the **ENTER** key.

FIG.: PHOTOCELLS



Only interruptions which last longer than the time set here cause a closing/reversing operation and initiate the reversing time.

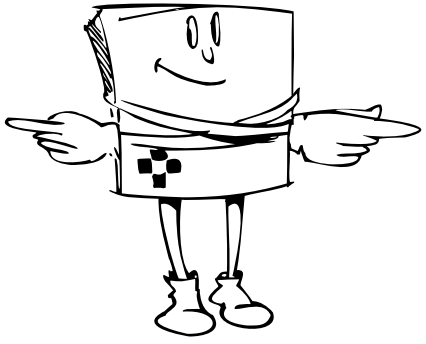
7.2 Direction reservation

Extension of the car direction by the CAR CALL PRIO time. During this time, a passenger can enter the car and issue a car call without another potential passenger on another floor calling the car.

The direction reservation is noted as the car lands. The direction reservation time begins from the level point.

NOTE

In groups, the CAR CALL PRIO should always be greater than the STARTING DELAY.



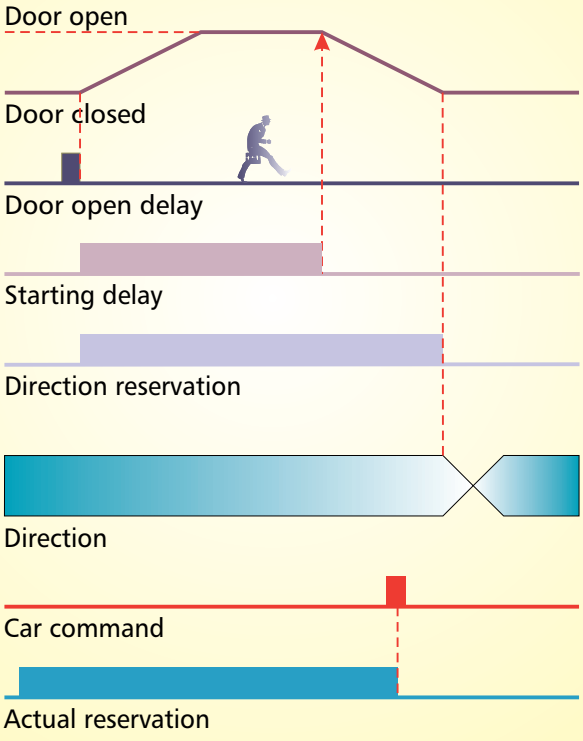


FIG.: DIRECTION RESERVATION FOR CAR COMMANDS

▶ Call up the following in turn from the main menu: SERVICE > ADJUSTMENTS > CAR CALL PRIO

▶ Set the direction priority in seconds using the ↑/↓ keys.

▶ Confirm the setting by pressing the **ENTER** key.

7.3 Door test during inspection

According to the mode selected, the door(s) can be moved to OPEN or CLOSED for test purposes. The OPEN and CLOSE door buttons must be used for this purpose.

The test cannot be performed if an inspection drive command has been issued. An inspection drive command has priority, and automatically closes the door(s). During the test mode the reversation is switched off.

▶ Setting:

SYS 2	+4

7.4 Fireman service control, fire mode and evacuation

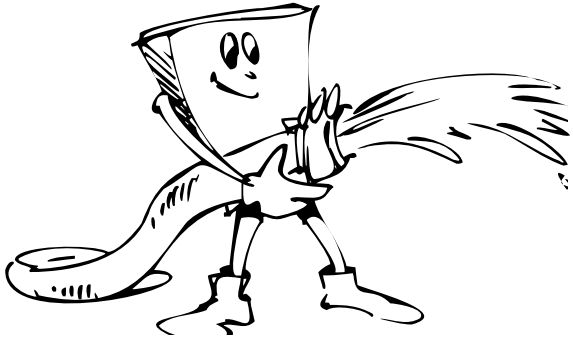
The system supports an evacuation drive to the main floor, and a fireman service control. Whereas the sole task of evacuation drive is to bring the car to a preset main floor and park it there with the doors open, the fireman service control permits operation of the car using the car buttons. A fireman service key-operated switch must be operated in the car for this purpose.

All characteristics described below are transmitted to the controller via the menu. The main floor can be determined in two ways:

A In the landing button shaft cable (this method enables an evacuation switch to be connected in theory on each floor)

B By EST Editor

Which of the two methods is used is determined by the FIREMAN MODE described below.



7.4.1 Setting in the menu

All evacuation/fireman settings can be set by combination of the following parameters:

Value	Function
0	Main floor is identical to FIREMAN FLOOR
1	Main floor is coded in shaft cable
2	Nicht belegt
4	Evacuation from X255 + MAIN FLOOR
8	Reserved
16	Evacuation automatically becomes fireman drive
32	Fireman standard = Hong Kong (otherwise Switzerland, TRA200)
64	Door in main floor OPEN (otherwise CLOSED)
128	Fireman service drive can be switched off on main floor only

Setting example: The number 97 is composed of the following partial values:

1	Fireman standard = Hong Kong
32	Main floor is coded in shaft cable
64	Door on main floor OPEN (otherwise CLOSED)

To carry out the setting, proceed as follows:

▶ Call up the following in turn from the main menu: CONFIGURATION > BASIS CONFIG > FIREMAN SERVICE

▶ Use the ↑ key to increase and the ↓ key to reduce the values. Leave the menu using the **ENTER** key.

7.4.2 Fire mode control (evacuation)

When the fire mode is activated by shaft signal X255 (fire mode key-operated switch), the “fire mode drive” operating mode is set in the controller. All other priority controls with the exception of inspection control and auxiliary control are overridden.

The operator display of the controller signals this condition by flashing “FIRE MODE”. Photocells are deactivated; the controller no longer acknowledges calls, and calls which have already been acknowledged are cancelled.

Affected functions

- Landing and car buttons are locked
- Overload and full load recognition is deactivated
- Any photocells, sensor strips, etc. are deactivated

Drive to the main access point

The car drives by the shortest route to the main access point and remains there with the doors open.

If the car is at that point driving away from the main access point, it lands on the next possible floor with the doors closed, then drives to the main access point by the shortest route.

If the car is at that point driving in the direction of the main access point, the drive is extended or shortened so that the car lands at the main access point.

The controller reverts to normal mode when fire mode priority is switched off.

7.4.3 Fireman service mode: Swiss standard (TRA200, SIA 370/10)

When the fireman key-operated switch at the main floor is operated, the car drives directly to the main floor and remains there with the doors unlocked and open (TRA266.52). The car and landing buttons are locked (see also “Fire mode control”).

When the fireman key-operated switch in the car is operated, the controller is set to FIREMAN MODE. All other priority controls, with the exception of inspection and auxiliary, are rendered ineffective (TRA 266.55). At the same time, further drive commands can be issued from the car.

If fireman mode is switched on without prior evacuation to the main access point, the instantaneous floor is entered as the main access point.

The operator display of the controller flashes “FIREMAN MODE” in this status.

Affected functions

- Landing and car buttons are locked
- Overload and full load recognition is overridden
- Any photocells, sensor strips, etc. are deactivated
- Priority controls with the exception of inspection and auxiliary control become inactive

Türmodus

- The “CLOSE DOOR” pushbutton is inactive
- The “OPEN DOOR” pushbutton is inactive

Car buttons

The car buttons are enabled for commands; the first car button pressed activates a drive command.

If the fireman switch is switched ON/OFF, the car command is cleared (TRA 266.52(2)). If the switch is switched ON/OFF during drive, the car command is cleared and the car lands on the next possible floor. A safety circuit interruption during drive does not clear the car command.

Eine Sicherheitskreis-Unterbrechung während der Fahrt löscht das Innen-Kommando nicht!

N O T E

Car commands can only be issued if the fireman key-operated switch is switched on.

Switching off fireman mode

If partial value 128 is active in the “FIREMAN MODE” setting, the “FIREMAN MODE” can only be switched off at the main floor. Operation of the fireman key-operated switch in all other positions only has the effect of clearing any car commands; the operating mode is retained.

7.4.4 Fireman service mode, Hong Kong standard mode

When the fireman key-operated switch in the car is operated, FIREMAN MODE is set.

When the fireman switch is operated for the FIRST TIME at a point other than the main floor, an evacuation drive is performed to the main floor (as described for “7.4.2 Fire mode control (evacuation)”).

The operator display of the controller flashes “FIREMAN MODE” in this status.

Affected functions

- Landing and car buttons are locked
- Overload and full load recognition is overridden
- Any photocells, sensor strips, etc. are deactivated

On the main floor:

- Door basic setting during landing: as programmed

On other floors:

- Door basic setting during landing CLOSED

Door control

The car buttons and the CLOSE DOOR and OPEN DOOR buttons are active as described below:

- In the car status DOOR OPEN
  The CLOSE DOOR pushbutton closes the door, provided it remains pressed. The door opens when the button is released. The door remains closed if the CLOSE limit switch is active.

  All car buttons have the same function as the CLOSE DOOR button. No drive commands are accepted from the car buttons.

- In the car status DOOR CLOSED
  The car buttons are enabled for commands: the first car button pressed initiates a drive command.

  The OPEN DOOR button opens the door, provided it remains pressed. The door closes when the button is released. The door remains open if the OPEN limit switch

is active, or if the DOOR OPEN TIME has expired on doors without limit switch.

- In the cars status DRIVE
  Further car commands can be issued to shorten the drive. All acknowledgements and commands are cleared upon landing.

  If the fireman switch is pressed again, all car commands are cleared and the car lands on the next possible floor.

Switching off the fireman drive

The “Fireman mode” can be configured such that it can be switched off only on the main floor. In all other positions, operation of the fireman key-operated switch only has the effect of clearing any car commands: the operating mode remains unaffected.

A drive can however be performed only with the signal active (key).

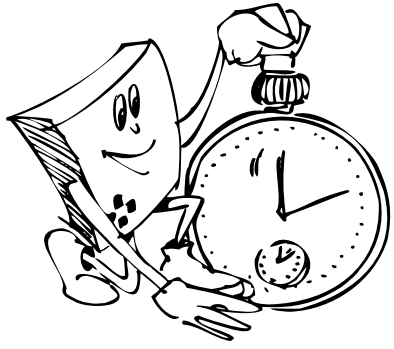
7.5 Drive time control monitoring (TCM)

The controller supports drive time control monitoring according to TRA 262.621(1). When the motor is started, the presence of the positioning signals is monitored. Each new positioning signal restarts the drive time control monitoring with the full monitoring time.

When the car is started, the next positioning signal must reach it within the set drive time. If this time elapses, the motor triggers an emergency stop, and the controller is locked for normal drives. This status is displayed by “TCM” flashing on the operator display of the controller.

N O T E

A TCM is activated when the START MONITOR monitoring time expires (to EN 81).



7.5.1 Configuring the TCM

The time required for activation of the TCM can be adjusted. Any time setting greater than 0 seconds switches the function on. The presetting is 45 seconds.

▶ Call up the following in turn from the main menu:
SERVICE > ADJUSTMENTS > TCM TIME

▶ Use the ↑ key to increase and the ↓ key to reduce the values. Leave the menu using the **ENTER** key.

7.5.2 Resetting the TCM

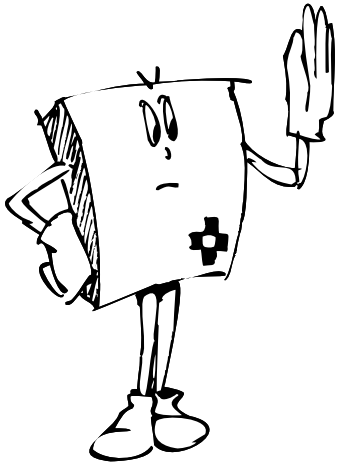
When shut down by the TCM, the installation can be reactivated by one of the following procedures:

▶ Call up the following in turn from the main menu:
MAINTENANCE > TCM RESET

▶ Press the YES ↑ key.

- or switch the controller OFF/ON
- or switch the auxiliary switch ON/OFF
- or switch the inspection switch ON/OFF

7.6 Anti-nuisance



The car can be protected against use of the car buttons for nuisance drives. The active photocell and manual doors are taken into account for this function.

If the car has received a drive command from an internal pushbutton and the photocell or manual doors are not activated following the “nth” stop at the latest, the remaining car commands are cleared when the car starts, and the start is aborted. The function does not appear on the operator display.

Switching anti-nuisance On/Off

The number of drives “n” without activation of the photocells which causes tripping of the TCM can be adjusted. The function is active when “n” is greater than 0.

▶ Call up the following in turn from the main menu:
SERVICE > ADJUSTMENTS > ANTI NUISANCE

▶ Use the ↑ key to increase and the ↓ key to reduce the values. Leave the menu using the **ENTER** key.

The function is inactive when “n” is set as 0.

7.7 Maintenance intervals

The system supports monitoring of maintenance intervals based on the motor's drive counter and operating hours counter.

When the interval limit (drive operations/hours) is reached, the operator display flashes. The display continues to flash until it is reset by entry of a new interval.

If the system is equipped with a modem, the event can be signalled automatically.

Other control functions are not affected by this setting.

7.7.1 Activation of maintenance intervals

The function is activated when the intervals are set.

▶ Call up the following in turn from the main menu:
SERVICE > SERVICE INTERVAL >
OPERATING HOURS

or
SERVICE > SERVICE INTERVAL >
DRIVE COUNTER

The service interval can be specified both in operating hours and in drives.
▶ Select the desired interval type in line 3 of the operator display using the ➲ RIGHT key.

Setting range: 0 ... 1000 Betriebsstunden
Step interval: 1 hour

Setting range: 0 ... 65000 drives
Step interval: 1000 drives

Use the ➚ key to increase and the ➘ key to reduce the values. Leave the menu using the **ENTER** key.

The interval begins with the current count of the drive or operating hours.

7.7.2 Deactivation of maintenance intervals

The function is deactivated when the intervals are reset (interval = 0). Both intervals must be set to 0.

▶ Call up the following in turn from the main menu:
SERVICE >
SERVICE INTERVAL >
OPERATING HOURS

▶ and
SERVICE >
SERVICE INTERVAL >
DRIVE COUNTER

7.7.3 Resetting flashing indicator, starting new interval

Monitoring is restarted (and flashing reset) when a new interval is entered.

8 Technical Data

8.1 ECONOMY CONTROLLER EST

8.1.1 Safety circuit voltage

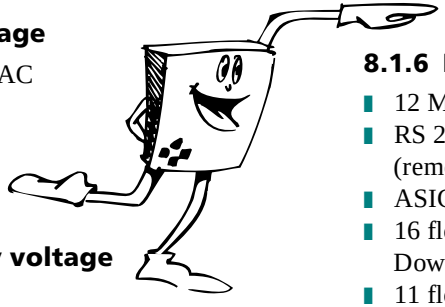
230 V AC - 115 V AC - 48 V AC

8.1.2 Signal voltage

24 V DC

8.1.3 Electronics supply voltage

10 or 24 V DC



- Modular construction, all modules conform to B.S.
- LED displays for preselection relays and 5 V and 24 V power supply

8.1.4 Man-machine interface

The safety circuit, states and messages, selection signals, drive direction, landing status and destination floor, drive counter and time are displayed on a super-twisted four-line LCD display with 16 characters per line. User-guidance is provided in plain text in German or English through five control buttons.

Further languages are available upon request. Help texts are displayable on-screen. Help programs are provided for rapid commissioning and diagnostics. All settings can be configured on-site.

8.1.5 Basic design

All functions for operation in accordance with EN/TRA/SIA/ÖNORM standards are provided as standard for rope and hydraulic control.

8.1.6 Features

- 12 MHz CMOS microprocessor
- RS 232 interface for laptop computer, PC or modem (remote data communications)
- ASICS for CPU Connection
- 16 floors Pushbutton, Collective Stop or Collective Down control
- 11 floors with two-button collective control
- Acknowledge output for each call
- Outputs for floor display (HEX, GRAY or discreate up to eight floors)
- 14 drive types, selectable by software
- Short drive as desired
- Overlapping stopping distances as desired
- All inputs/outputs electronically fused
- Fire service and fire mode control
- System Off as desired
- Overload and full load settings
- Freely programmable homing drive
- Automatic car light
- Fault memory with up to 100 entries in chronological order, with floor status
- Fault signalling via RS 232 interface or freely programmable output
- All inputs/outputs electronically fused and designed for fault diagnostics
- Statistical park drive according to landing call frequency
- No orientation drive necessary upon restoration of power supply

8.1.7 Options

- Door drive A for all standard floors, through-loading and opening alternate sides
- Door drive B for all standard floors
- I/O extension up to 32 floos/single button or 22 floors/ two button (in preparation)
- Module EWG for floor position indication, landing display, departure arrows, landing gong
- Group controller GST for duplex, triplex or quattro
- Commissioning and diagnostics programs
- Modem interfacing and remote diagnostics

8.1.7 Dimensions EST

313 x 233 x 30 mm

8.1.9 Drive programs

EST plug-in modules

- FP-REGE for rope drives with three-phase control
- FP-FU for rope drives with frequency control
- FP-BERI for Beringer hydraulic ELRV

9 Faults and troubleshooting

9.1 Basic concepts

Any events deviating from the anticipated events are considered below as faults. A fault may be recognized easily, for example when a door fails to close within the specified time.

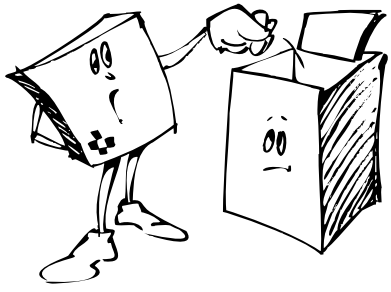
Troubleshooting is considerably more difficult when an event involving an unexpected floor arises, which could point to a major mains supply interference.

Faults are displayed flashing in line 2 of the operator display for approximately three seconds, and are then transferred to a fault memory. The last 100 faults are always retained in this memory. When the memory is full, the earliest fault entered is cleared from the memory and overwritten by the latest fault.

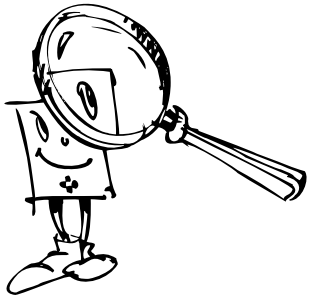
9.2 The fault memory

The fault memory is a volatile memory (RAM), the content of which is lost when the power supply is switched off. In order for faults to be stored over longer periods (up to 100 faults), the entire contents of this memory are written to a non-volatile memory each day at midnight.

When the system is switched on, the fault memory is loaded from the non-volatile memory and restored to the condition which it was in when it was switched off.



9.2.1 Displaying the fault memory



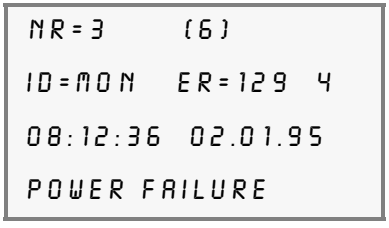
The recorded faults can be paged through in the operator display.

Each fault is displayed with its own characteristics.

▶ Call up the following in turn from the main menu:
INFORMATION > FAULT DISPLAY

▶ Use the ➲ key to display the next fault and the ➲ key to display the previous fault. Return to the normal operator display using the **ENTER** key.

Example:



Content

Fault 3	(of 6 recorded faults)
Cause of fault	MON (see Section B3)
Fault number	129 on floor 4
Time of occurrence	08:12:36
Day of occurrence	02.01.1995
Short description	POWER FAILURE

9.2.2 Saving faults prior to switching off

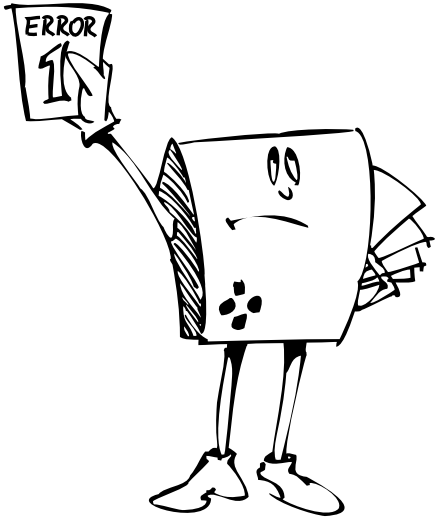
In order to save fault information which would be lost if the installation were to be switched off, the contents of the fault memory can be written manually to the non-volatile background memory.

▶ Call up the following in turn from the main menu:
INFORMATION > STORE FAULTS
▶ Press the YES key.
▶ Activate storing by pressing the **ENTER** key.

9.2.3 Clearing the fault memory

The fault memory can be cleared at any time.

▶ Call up the following functions in the main menu:
SERVICE > FAULT RESET
▶ Press the YES key.
▶ Activate resetting by pressing the **ENTER** key.



9.3 Displayed fault information

Each fault is stored and displayed with four items of information:

- Fault number
- Program module
- Date and time
- Additional info

9.3.1 Fault numbers

Fault numbers have values between 128 and 255. The values 0 to 127 are reserved for internal events. These internal events, which are for information purposes only (e.g. change of priorities), can be written to the fault memory. These events can be recognized by having fault numbers lower than 128.

The numbers 128 to 191 fall into the category of “non-fatal” faults and 182 to 255 into that of “fatal” faults. The latter are always caused by major faults in the system. They are identified as faults when the program status and the data are considered suspect. A program restart is performed in this case.

Faults of this kind are entered in the fault memory, but are not included in its normal display. As part of long-term statistics, however, they may provide the manufacturer (or the operator performing troubleshooting) with an indication of the source of electrical faults. These faults are displayed when > SYS1 contains the partial value “1”.

A system restart may cause calls to be lost, and in ex-treme cases the car to be stopped. The software stops the car however only when LEVEL.

9.3.2 Program module

The program module indicates the location of the detected fault:

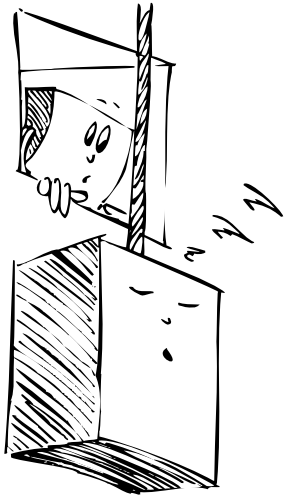
MON	Operating system
IP	Call acquisition
RD	Call processing
KB	Car
TA	Door and drive

9.3.2 Date and time

The date and time functions enable the point in time at which events occur to be determined.

9.3.3 Additional info

This information indicates the floor on which the fault occurred. Other information is also provided, such as the internal number of the pushbutton in the case of an overload or short-circuit on the landing pushbuttons..



9.4 Detailed fault information

9.4.1 Operating system faults

MON-ERROR, key

128	Warm start of computer (NMI) following fault
129	Power failure or power supply fault: OFF/ON
130	Fault in save function of EEPROM
131	24 V failure
132	24 V measured (following MON ERROR 131)
141	Checksum fault on external program
142	Checksum-Fehler von externem Programm
143	Run-time fault on external program
150	Ring buffer overflow
151	Data transfer initialization fault

N O T E

All remaining MON-ERRORs are internal faults which only occur in the event of a major malfunction. Please contact the manufacturer if these errors often occur..

192-255	Internal failure

9.4.2 Faults in call acquisition

IP-ERROR, key

160	Short circuit on call acknowledge lamp.
161	No response to short-circuit test on landing call acknowledge lamp. Possible overload on landing call accept lamp.

N O T E

The IP-ERROR faults shown below are internal faults which only occur in the event of a major malfunction. Please contact the manufacturer if these errors often occur.

192-255	Internal failure

9.4.3 Faults in call processing

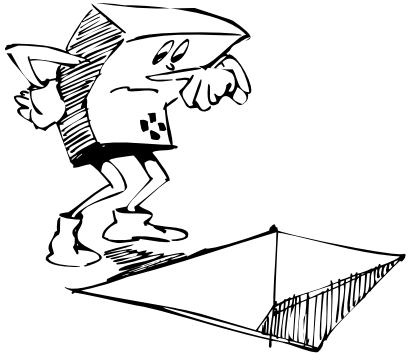
RD-ERROR, key

128	Door fault while landing (may be a problem following an emergency stop)
129	Hardware fireman address not readable (may be incorrectly configured)
130	Group transfer unknown (fault on the line, or incorrect group version)
131	Group: no send buffer available
134	Destination floor greater than KO (top) floor
135*	Car does not accept message (may be a problem following an emergency stop in the landing zone)
136	Emergency stop ON in limit switch mode
137	Emergency L.S. mode
138	Emergency stop OFF
150	Group communication break
151	Group: unexpected change of mst/slv
152	Get ring buffer (group)
153	Put ring buffer (group)
154	Group: illogical door command

N O T E

All subsequent RD-ERRORs are internal faults which only occur in the event of a major malfunction. Please contact the manufacturer if these errors often occur.

192-255	Internal failure



9.4.4 Shaft selector and relevelling faults

KB-ERROR, key

130	Irreparable positioning fault
140	Start: drive
141	Shaft initialization suspect
144	Door lock fault
148	Evacuation switched on

The orientation drive faults 150 to 158 are evaluated according to the set KO floor and the short floor setting.

150	Orientation drive: too many LEVEL signals
151	Orientation drive: too few LEVEL signals
152	Orientation drive: too many UP signals
153	Orientation drive: too few UP signals
154	Orientation drive: too many DOWN signals
155	Orientation drive: too few DOWN signals
158	Orientation drive: unknown fault

160	Invalid car destination
161	Initialization error (orientation)
167	Orientation order during orientation drive
168	Unexpected motor movement
169	No measuring drive possible if KO < 4
170	Unexpected movement out of LEVEL or ZONE
171	Short floor fault
172	Short floor fault
173	Zone fault (ON)
174	Zone fault (OFF)
175	LEVEL COUNTER not odd (can be corrected)
176	LEVEL COUNTER not odd (can be corrected)
177	Counter not found, CORRECTION requested
178	Counter contradiction
179	No UP/DOWN change (slipped?), CORRECTION requested
180	Counter bounce, positioning operation negated
181	KO safety violation (possible only with short floor drive to KO)
182	Between floors: UP counter out of valid range
183	KU safety violation (possible only with short floor drive to KU)
184	Between floors: DOWN counter out of valid range
185	LEVEL counter out of valid range, sets EMERG. STOP, stops on next floor
192	CORRECTION performed, system restarted

N O T E

The KB-ERRORs below are internal faults which only occur in the event of a major malfunction. Please contact the manufacturer if these errors often occur.

193 - 255	Internal failure

9.4.5 Door and drive faults

TA-ERROR, key

129	Contactor monitoring fault in rest state
130	Door monitoring time - door A not closed
131	Door monitoring time - door B not closed
133	Door decoupling counter expired
134	Retiring cam timeout
135	Retiring cam failer counter expired
136	Starting problem - lubu timeout TCM
137	Drive run-time monitoring: TCM timeout without movement of motor
138	Unexpected landing in KO/KU (shaft selection problem)
139	Unexpected landing (shaft selector problem)
140	Stop during motion (open door contact/lock contact)
141	Lift out of level or zone; relevelling fault timeout; : motor stopped
142	Emergency stop counter expired
143	Stop during motion counter expired
144	Decoupling fault - door A
145	Decoupling fault - door B
149	Relevelling fault (bypass time) timeout
150	Unexpected levelling interrupt (shaft selection problem)
151	Unexpected landing interrupt (shaft selection problem)
154	Drive abort due to door contact/lock contact
160	Photocell reversing counter timeout expired
170	Motor problem: brake not opened (LM-FSV)
171	Motor problem: brake not closed (LM-FSV)
172	FORCED STOP ON via terminal X231
173	FORCED STOP OFF via terminal X231

N O T E

All TA-ERRORs below are internal faults which only occur in the event of a major malfunction. Please contact the manufacturer if these errors often occur.

147, 148	Internal failure
152, 153	Internal failure
192 - 255	Internal failure

9.5 Events

An event logging can be switched on in addition to the fault logging.

This is achieved by setting bit 6 in the menu CONFIGURATION > BASIS CONFIG. > SYS2 (adding value 64).

Events are thus also written into the fault memory. They are distinguished from faults by having numbers smaller than 128.

9.6 Systematic troubleshooting

NEW LIFT controller provide a special troubleshooting line which appears in line 2 of the operator display and which is continually refreshed. This line is displayed when the following functions are called up in turn from the main menu:

- SERVICE > DEBUG DISPLAY
- Press the YES ↑ key.
- Start troubleshooting by pressing the **ENTER** key.

You can now switch between troubleshooting lines: use the ↑ key to switch to the next line and the ↓ key to switch back to the previous line.

A restart or a panic error leading to a restart clears the troubleshooting line.

NOTE

In normal mode, the ↑/↓ keys are assigned to test drive to the top or bottom floor; these functions are not available again until troubleshooting has been switched off.

9.6.1 Filling the troubleshooting line

The troubleshooting line is filled by a selectable information channel. The display format used for these line depends on the information channel selected.

There are two main groups:

1. Data channels external to the EST (ports)
2. Data channels within the EST (variables, buffers)

9.6.2 Internal data

Internal data channels provide information only to users with special training. At present, approximately 25 internal information channels are programmed.

The list will be extended and adapted as required, and is shown below.

Internal Information	Format (Line 2)
Debug RAM monitor	xxxx: xx xxxx
rd shift status	RD=xxxxxxxx---->
kb shift status	KB=xxxxxxxx---->
ta shift status	TA=xxxxxxxx---->
status	RD KB TA
Doors	A: B:
Door status (A B C)	TZUST xx xx xx
Group command	GRP= cmd-floor-rqst
Group	R_K_O xx xx xx
Group, last illegal.code	ERDAT xx xx xx xx xx
dd_register	DD_RE xx xx xx xx xx
moc, mocx	MOC=xx xx
BGN load	20/100 xxxx xxxx
Drive program signals	FP= 0 1 L S DOWN UP
Positioning signals	KOP= xxxxxxxx<----
Positioning counters	CNT=LEV-UP-DOWN
Door message	rtur:xxxxxxxxxx
Car V0 n Level	KBV0= counter
MiBrEtage	MB=counter
drive-command	ANTR=xxxxxxxx
start-blocked	STBL=xxxtxxxxx
Car call enable	KBFR=01
LM-FSV drive state	SA4Status=xx

9.6.3 External data (ports)

Each port has eight separate information bits and is uniquely identifiable by an address.

Formatting: D2=XXXXXXXX

The left-hand X represents bit 7, the right-hand X bit 0.

The assignments of the ports and bits and the status (0 active/1 active) can be ascertained by trained personnel with the aid of the port assignment list.

Bit 7 on port D2 for example is the lock contact in the safety circuit..

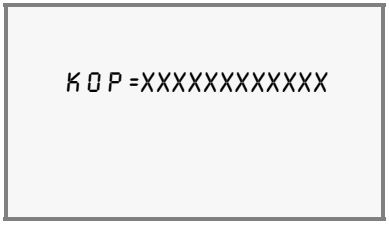
9.7 Systematic troubleshooting of shaft selector faults

A shaft selector fault can be detected as such as soon as magnet is overshot. The controller supports troubleshooting on the positioning signals and internal counters.

Call up the following in turn in the main menu:
▶ Im Hauptmenü nacheinander aufrufen:
SERVICE > DEBUG DISPLAY
▶ Press the YES key.
▶ Start troubleshooting by pressing the **ENTER** key.

The following information appears in the operator display:

9.7.1 Positioning signals



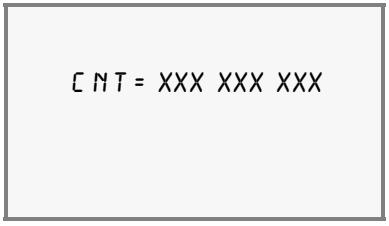
The last six positioning signals are stored in the controller, which enables an initial check to be made for bouncing or missing signals. Each signal comprises two digits: the most recent signal appears at the right-hand end of the line:
KOP = xxxxxxxxxxXX,

The oldest signal appears at the left-hand end of the line:
KOP = XXxxxxxxxxxx

9.7.2 Displayed copy signals:

00	No signal
01	KU
02	KO
04	UP
08	LEVEL A
10	DOWN
14	UP+DOWN
20	LEVEL B
28	LEVEL A+B in the shaft
29	LEVEL on bottom floor (KU)
2A	LEVEL on top floor (KO)

9.7.3 Internal positioning counter



The positioning counters display the flank numbers on each track. This forms the basis of internal slection. Three counters are provided, i.e. LEVEL, UP, DOWN; the counters are also displayed in this sequence.

The KO counter is mixed with the UP counter and the KU counter with the DOWN counter. Should a magnet be overshot, the count behaviour can be read off:

- A properly read magnet increases or decreases the count by two (flanks).
- If no magnet is active, the count must be even (0, 2, 4, 6, ...)
- If a magnet is active, the count must be odd (1, 3, 5, 7,....)

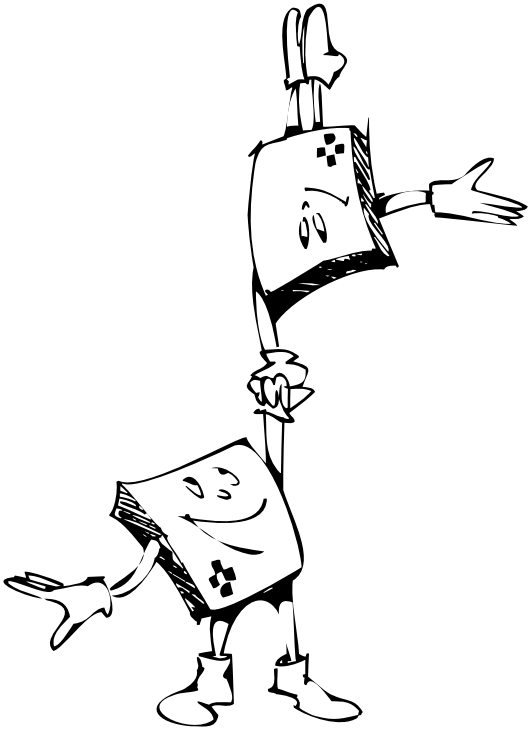
The signal value contains the associated floor:

- Odd level signal: (n-1) / 2
  Even level signal: n / 2
- Odd up signal: (n+1) / 2
  Even up signal: n / 2
- Odd down signal: (n-1) / 2
  Even down signal: n / 2

10 Extended configuration for advanced users

CAUTION

This menu is intended for trained personnel only.



10.1 Debug mode

A hidden debug menu (for advanced troubleshooting) is implemented in the controller. The debug menu contains functions for monitoring internal procedures. The menu is started when the keys ⮌/⮊/ **ENTER** are pressed simultaneously.

10.1.1 Cold start

Restarts the system (as following fatal error).

10.1.2 RES EVENTS

Reset internal logging.

10.1.3 STOP EVENTS

Stop internal logging.

10.1.4 EVENTS

Display internal logging in coded form.

10.1.5 Debug RAM display

Any desired RAM address can be set here (four-digit HEX). The contents of the following five bytes are displayed in the debug/ports display.

10.1.6 Debug task info

Status 1-Status 2-Status 3 of the tasks RD/KB/TA/IP/ED can be selected here. The status is displayed in line 3, column 6 et seq, and continually updated.

TA AND DOOR MESSAGES ARE CODED

RD	Status: special status - emergency stop status
KB	Status: zone status - KMode
TA	Status: message (TA) message (door 1) message (door 2)
ED	- - - -

10.1.7 EEPROM directory

Internal system function with information function; displays the EEPROM ADDRESS assignment.

Index, date, length, content

00 01.04.92	0008	eedDIR
01 xx.xx.xx	0030	eedSYSPERM
02 xx.xx.xx	1040	eedSYSMOD1
03 xx.xx.xx	1040	eedSYSMOD2
04 xx.xx.xx	0230	eedSHAFT
05 xx.xx.xx	0706	eedPANIC
06 xx.xx.xx	2000	eedMODEM (in preparation)
07 xx.xx.xx	0688	eedSTAT statistik (in preparation)
08 xx.xx.xx	0000	EST-ID
09 xx.xx.xx	0000	EST-TEL-NUM
10	3428	
11	0001	

10.1.8 EEPROM clear

Used to initialize a new EEPROM device after insertion into the EST.

Places part of the EEPROM's SysMod memory in a defined status (SERIAL, ...).

NOTE

This function has to be activated with brandnew EEPROMs. After activating EEPROM clear the EST Editor will be required to complete the EST configuration.

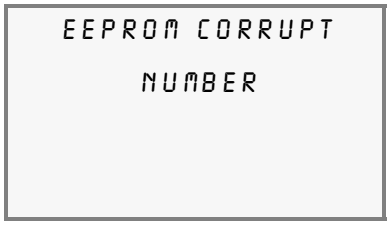
10.1.9 Park drive

Sets the parking/homing timer immediately to 0; parking is thereby initiated immediately.

No other activities.

10.2 System start messages

A)



beSYSTEM	1
beEEWRITE	2
beEESYSMOD1	4
beEESYSMOD2	8
beEESYSPERM	16
beEPROM	32
beVERSION	64

New EEPROMs generally display “76”.

- Displays damaged areas in the EEPROM
- The number displayed is the sum number [i]

B)

Clock ticks only (serial interface must be in order), debug is available:

- Probably defective EEPROM (but valid checksum)

▶ Replace EEPROM.

10.3 Menu CONFIGURATION > BASIS CONFIG > SYS1

The SYS mode comprises eight different settings. A number between 0 and 255 is determined as the result. If different settings are selected, the individual values must be added together.

1 = Bit 0	Display all faults
2 = Bit 1	Operator display can be switched to CALLS by means of the ↻ key; CALLS are displayed in lines 2, 3, 4 right-justified together with the UP/DOWN/car symbols
4 = Bit 2	If TIME-TRIGGERED PARKING is set: > INFORMATION > DATE extended to WEEKDAY (1=So, 2=Mo, 3=Tu, 4=We, 5=Th, 6=Fr, 7=Sa)
8 = Bit 3	> Switch on TIME-TRIGGERED PARKING
16 = Bit 4	Abort drive following door contact/lock contact fault in level (fault TA-154)
32 = Bit 5	Power on: Evaluation of the direction saved at “Power off“ permitted
64 = Bit 6	Car light OFF only with lift Off (otherwise always)
128 = Bit 7	Manual door does not switch on car light (lift Off active)

10.4 Menu CONFIGURATION > BASIS CONFIG > SYS2

1 = Bit 0	Reserved
2 = Bit 1	Reserved
4 = Bit 2	Door test permitted during inspection; Open door/ close door buttons activate dead man’s door
8 = Bit 3	Lock car call + landing call enable in the event of zone fault
16 = Bit 4	Switch on Swiss standard fine levelling (relay drive)
32 = Bit 5	Copying II-b (UP/DOWN permitted in LEVEL A or LEVEL B)
64 = Bit 6	Priority events into fault memory
128 = Bit 7	Activation of group time out with Manual door / Photo cell/ Door close button relates to > ADJUSTMENTS > DOOR TIME

N O T E

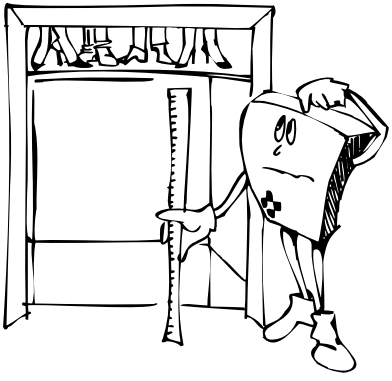
Bit 6 Save Priority events:
01 = Moc-1 Priority landing call
02 = Moc-2 Priority car call
....
07 = Moc-7 INSPECTION
00 = Moc-x reset PRIORITY OFF

10.5 Menu CONFIGURATION > BASIS CONFIG > SYS3

1 = Bit 0	Reserved
2 = Bit 1	Reserved
4 = Bit 2	Latch shaft signals (display)
8 = Bit 3	Editing of short floor time allowed
16 = Bit 4	Correction drive permitted after fault

System test with selection emulation without pushbuttons when S5 = ON is valid

32 = Bit 5	Reserved
64 = Bit 6	Reserved
128 = Bit 7	Reserved



10.6 Menu CONFIGURATION > BASIS CONFIG > SYS5

1 = Bit 0	Park drive not dependent upon landing push-button enable
2 = Bit 1	Reserved
4 = Bit 2	Reserved
8 = Bit 3	In/out calls: Programming enable
16 = Bit 4	In/out calls: existing calls will be canceled
32 = Bit 5	Reserved
64 = Bit 6	Permanent zone without zone gap
128 = Bit 7	Do SysMod not check!

10.7 Menu CONFIGURATION > BASIS CONFIG > SYS4, SYS6, SYS7

These settings are reserved.

10.8 Menu CONFIGURATION > BASIS CONFIG > SERIAL

The serial ports X701of the EST are set here. The setting partial values can be found in the first column. Summation of all partial values produces the SERIAL setting value.

The settings are bit-oriented according to the following pattern:

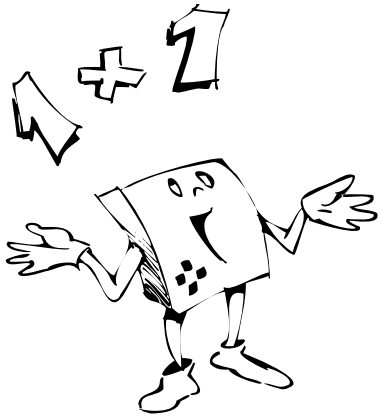
Bit 1, 0 Protocol on serial interface X701

0 = No bit	00	NLF (normal)
1 = Bit 0	01	NLF (fast)
2 = Bit 1	10	NEWCOM
3 = Bit 1+0	11	No protocol

Bit 7 - 4 NEWCOM Baudrate

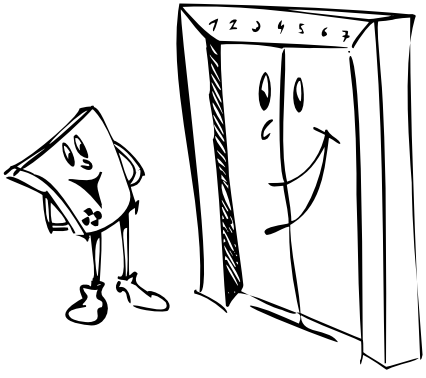
0 = no Bit	0000	Reserved
16 = Bit 4	0001	9600
32 = Bit 5	0010	4800
48 = Bit 5+4	0011	2400

Factory pre-set: setting 1



10.9 Menu CONFIGURATION > BASIS CONFIG > DOOR TYPE

Door type	Features	Reverse actuation delay
PROGRAMMABLE	ADJUSTABLE	Adjustable
MEILLER SPINDEL	LIMIT SWITCH + DECOUPLING FACILITY	0,2 sec
KIEKERT FALTTÜRE	DE-ENERGIZED	0,2 sec
WITTUR	LIMIT SWITCH + DECOUPLING FACILITY	0,2 sec
SEMATIC LMDC2010	LIMIT SWITCH	0 sec
SIEMENS AT10		0 sec
RIEDL RTK	BUFFER	0,2 sec
I.G.V.	LIMIT SWITCH	0,2 sec
RATHGEBER PUFFER	BUFFER	0,2 sec
AS8081	BUFFER	0,2 sec



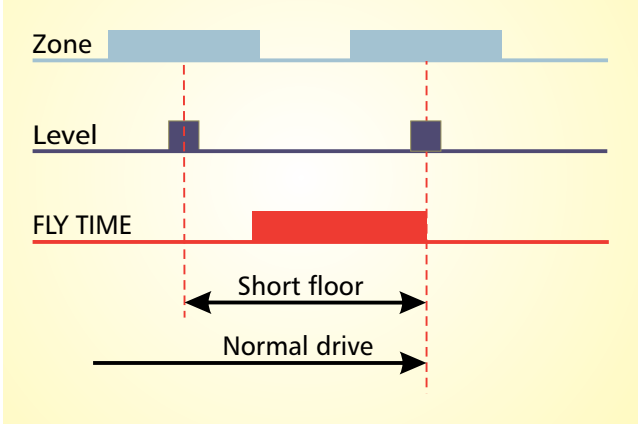
10.10 Menu CONFIGURATION > BASIS CONFIG > SHORT FLOOR

Shaft type setting for short floors.
“NONE” is “no short floor”.

SHORT FLOOR	Setting
NONE	0
SHAFT	1
BOTTOM FLOOR	2
SHAFT + BOTTOM FLOOR	3
TOP FLOOR	4
SHAFT + TOP FLOOR	5
BOTTOM + TOP FLOOR	6
ALL FLOORS	7

NOTE

Zone problems during landing on a short floor with a normal drive:
- The zone of the first floor must be overshot.
- The zone of the second floor is recognized by the requisite zone gap.



NOTE

Always perform the following setting in the main menu: CONFIGURATION > BASIS CONFIG > FLY TIME (V0 to level stop)

10.11 Menu CONFIGURATION > BASIS CONFIG > FIREMAN SERVICE

The fireman service mode comprises eight different settings, producing a number between 0 and 255. If different settings are selected, the individual values must be added together.

CAUTION

Settings 1 and 4 are contradictory and are not therefore permitted together.

Value	Key
0	Main landing is identical to fireman floor (*) 0: No diode required in shaft cable
1	Main landing is coded in shaft cable (normal case: diode in shaft cable)
2	Reserved
4	Fire mode from X255
8	Reserved
16	Fire mode automatically becomes fireman service mode. An additional fireman switch is not required in this case.
32	Door mode is HONG KONG (otherwise Switzerland)
64	Door on main landing OPEN (otherwise CLOSED)

Value	Key
128	Fireman service mode: can be switched off on main landing only

NOTE(*) TO VALUE 0

With fire mode in a group, the fireman floor should preferably be taken from the software (value 1, do not fit diode).

Hong Kong standard: 128+64+32+16+1 = 241

(240 without DIODE).

10.12 Menu CONFIGURATION > BASIS CONFIG > FIREMAN FLOOR

If bit 0 (value=1) has not been set in FIREMAN SERVICE mode, the fireman floor is not determined by the hardware by means of the landing button bus and fitting of a diode, but from the FIREMAN FLOOR variables described below:

Principle: Fireman floor + code for the door which is to be used in the event of a fire.

Code key: Bits 7, 6 are evaluated for the door setting on the fireman floor:

0 = No bit	00	All doors are opened unconditionally
64 = Bit 6	01	Door A is opened
128 = Bit 7	10	Door B is opened
192 = Bit 7+6	11	Doors A+B are opened

The remaining bits 0 ... 5 indicate the floor.

The FIREMAN FLOOR setting is also evaluated if fire mode is activated by a hardware line (X255) and no diode is fitted.

10.13 Extended fault signals

New displays and fault signals of II-a positioning.

10.13.1 Terminology

1. COUNTER PROBLEM

Locks the UP/DOWN counters between the floors; is reset when the counters are re-loaded in LEVEL.

2. FREEZE

Copy counters are frozen when SYS3 [4] is set (SYS3 += 16)

Starts correction drive
--> after approx. 20 secs. or with -->next call

If SYS1[5] is set (SYS1 += 32), FREEZE is set after power on if a direction was active at power off.

3. EMERGENCY STOP

Stop at next LEVEL (see KB-185 on the right side)

New position displays: “INSTANTANEOUS FLOOR”

[?O]FREEZE following fault, correction drive required

[??]FREEZE + COUNTER PROBLEM

[xx]COUNTER PROBLEM

[EE]Absolute stop at next LEVEL

[WS]Reverse stop (fire mode, prio, ...)

10.13.2 Additional Error Messages for II-a Positioning

KB-No.	Cause	Action
175	Levelling counter not ODD when level	Levelling counter reconstructed using last direction
176	Counter problem while levelling	Levelling counter reconstructed using UP/DOWN counters
177	Corrective action following KB-No. 176 not possible	FREEZE cond.
178	Counter descrepancy	FREEZE cond.
179	Slipped beyond LEVEL without motor	FREEZE cond.
180	Levelling counter bouncing detected.	Counters corrected
181	KO-safety error (slipped above KO)	COUNTER PROBLEM cond.
182	Up counter outside limit	COUNTER PROBLEM cond.
183	KU-safety error (slipped below KU)	COUNTER PROBLEM cond.
184	Down counter outside limit	COUNTER PROBLEM cond.
185	Counter outside KO or KU limit	EMERGENCY STOP COUNTER PROBLEM cond.
192	Correction drive executed (after FREEZE)	SYSTEM-INIT

10.14 Terminal Connections

10.14.1 Terminal Connections 230 V-signals X100

101	Neutral input
102	SHSP door lock/ lock contact
103	K101 Contact cam
104	SHTK Door contact
105	Drive contact input
106	K102 Contact
107	K103 Contact
108	K104 contact
109	SHDT Manual door
110	SHNH Emergency stop
111	K10S Contact (Up)
112	K106 Contact (Down)
113	SUE Contactor-monitoring Input
114	Neutral output
115	K107 contact (fast)
116	K108 contact bypass

10.14.2 Terminal Connections 24 V-Signals X200

201	9 V ... 24 V Input Electronics Supply
202	5 V GND Input
203	24 V Enable
204	+24 V Input
205	24 V GND Input
206	24 V GND
207	+24 V GND
208	+24 V
209	+24 V
210	Inspection Limit Switch DOWN+24 V

10.14.3 Terminal Connections 24 V-Signals X201

211	Auxiliary Control UP
212	Auxiliary Control DOWN
213	Inspection UP
214	Inspection DOWN
215	Inspection FAST
216	+24 V Insp./Auxiliary Control
217	+24 V Pre-selection relay
218	Inspection Input
219	Auxiliary Control Input
220	24 GND*
221	KOP AA*
222	KOP BB*
223	KOP UP*
224	KOP AB*
225	KOP KO*
226	KOP KU*
227	ZONE Message*
228	ZOFR Zone Enable
229	REI4* Reserve Input
230	REI3* Reserve Input
231	REI2* STOP
232	RES1* 24SENS NC
233	BRON Brake magnetized by FU
234	24 GND

* Zero active

10.14.4 Terminal Connections 24 V-Signals X202

235	24 GND
236	ÜL* Overload
237	FIRE* Fire Mode
238	FERN* Lift Off
239	PRIN* Prio Car
240	STOE* Fault message
241	RES-1* Output
242	ABRI* Direction Display AB
243	ETAO Floor Display 0
244	ETA1* Floor Display 1
245	ETA2* Floor Display 2
246	ETA3' Floor Display 3
247	ETA4* Floor Display 4
248	ETA5* Floor Display 5 (WEIAUF)
249	ETA6* Floor Display 6 (WEIAB)
250	ETA7* Floor Display 7 (GONG)
251	+24 V
252	+24 V

10.14.5 Terminal Connections 24 V-Signals X203

253	24 GND
254	VL* Full Load
255	BRAF* Fireman
256	ADAU* Landing Calls off
257	PRAU* Prio Landing
258	+24 V
259	KALI* Cabin Light
260	AURI* Direction Display UP
261A	Door OPEN Relay A*
262A	Door CLOSED Relay A*
263	TA-AUF Doorlatch OPEN
264	TA-LS Door Photocell
265	TA-ZU Doorlatch CLOSED
266B	Door OPEN Relay B*
267B	Door CLOSED Relay B*
266	TB-AUF Doorlatch OPEN
269	TB-LS Door Photocell
270	TH-ZU Doorlatch CLOSED

10.14.6 Terminal Connections Calls up to 11 floors

	One-button	Two-button
300	IDR00* Car Call 00	
301	IDR01* Car Call 01	
302	IDR02* Car Call 02	
303	IDR03* Car Call 03	
304	IDR04* Car Call 04	
305	IDR05* Car Call 05	
306	IDR06* Car Call 06	
307	IDR07* Car Call 07	
308	IDR08* Car Call 08	
309	IDR09* Car Call 09	
310	IDR10* Car Call 10	
311	IDR11* Car Call 11	(UP-08)
312	IDR12* Car Call 12	(UP-09)
313	IDR13* Car Call 13	(DOWN-08)
314	lDR14* Car Call 14	(DOWN-09)
315	lDR15* Car Call 15	(DOWN-10)
400	ADROO* Landing Call 00	(NC)
401	ADR01* Landing Call 01	(DOWN-01)
402	ADR02* Landing Call 02	(DOWN-02)
403	ADR03* Landing Call 03	(DOWN-03)
404	ADR04* Landing Call 04	(DOWN-04)
405	ADR05* Landing Call 05	(DOWN-05)
406	ADR06* Landing Call 06	(DOWN-06)
407	ADR07* Landing Call 07	(DOWN-07)
408	ADR08* Landing Call 08	(UP-00)
409	ADR09* Landing Call 09	(UP-01)
410	ADR10* Landing Call 10	(UP-02)
411	ADR11* Landing Call 11	(UP-03)
412	ADR12* Landing Call 12	(UP-04)
413	ADR13* Landing Call 13	(UP-05)
414	ADR14* Landing Call 14	(UP-06)
415	ADR15* Landing Call 15	(UP-07)

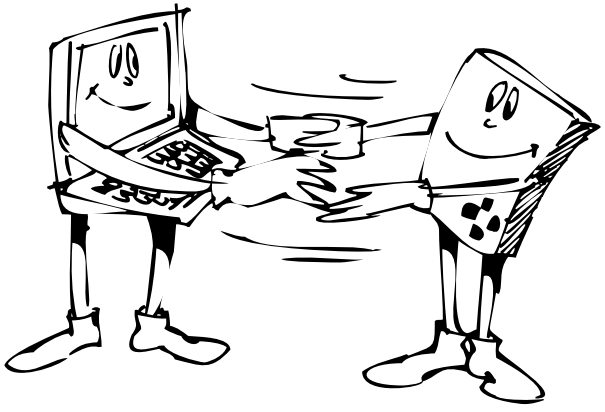
10.15 Connector Pin Assignment

10.15.1 Pin Assignment Drive Program Connector X210
25-way D-SUB

01	+24 V Pre-selection
02	24 V GND
03	Reserved
04	KOUP
05	UMFP
06	TUFP
07	INRU
08	V0
09	V1
10	V2
11	AB FP 5 V
12	UP FP 5 V
13	+5 V
14	+24 V
15	24 V GND
16	5 V GND
17	5 V GND
18	5 V GND
19	5 V GND
20	5 V GND
21	5 V GND
22	5 V GND
23	5 V GND
24	5 V GND
25	+5 V

10.15.2 Connector RS-232 serial X701 9-way D-SUB

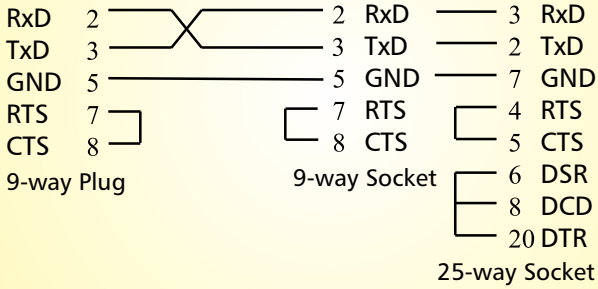
01	DCD (NC)
02	RxD RS-232 Rx-Input
03	TxD RS-232 Tx-Output
04	DTR (NC)
05	GND RS-232
06	DSR (-12 V)
07	RTS RS-232 Output
08	CTS RS-232 Input
09	RI (NC)



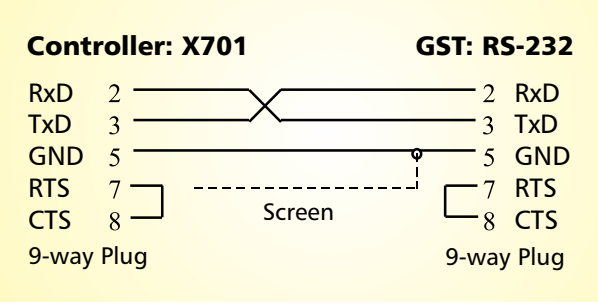
10.16 Serial Cabels

10.16.1 Cabel EST <--> PC

GST <--> PC



10.16.2 Cabel EST<--> EST Group (GST)



10.17 Expansions

10.17.1 Pin Assignment Expansion Connector EWG X401
16-way D-SUB

01	24 V GND
02	+24 V
03	AURI*
04	GOTR
05	WRAU
06	ETH4*
07	ETH2*
08	ETH0*
09	24 V GND
10	+24 V
11	ABRI*
12	WRAB
13	ETH5*
14	ETH3*
15	ETH1*
16	ETH2* (cross-keying protection)

10.18 Pin Assignment Drive Program X710 (VVVF) 25-way D-SUB

01	Motor Overheat (X219-STOP)
02	V > 0.3 (X514-SHS)
03	Reserved
04	Reserved
05	Reserved
06	Reserved
07	20 -COM (FSV)
08	Direction UP (RUP)
09	Motor Temperature (FSV)
10	V > 0.3 (FSV)
11	V Landing
12	V3
13	+COM (FSV)
14	Motor Overheat (24 V GND)
15	Zone Enable (X231-ZOFR)
16	Reserved
17	Reserved
18	Reserved
19	24 V GND
20	Reserved
21	Controller Enable (REFR)
22	Brakes ON(BRON) (FSV)
23	V Auxiliary
24	V Inspection
25	V2 Intermediate Speed

10.19 Legend

10.19.1 Components

A1	Electronics
A2	Power supply
A3	Drive program
A4	Inspection cabinet
A5	Auxiliary power supply unit
A6	Safety circuit
A7	Three-phase regulation

10.19.2 Fuses

F1	Main fuse
F2	Main fuse
F3	Main fuse
F4	Control circuit fuse
F5	Main fuse Controller
F6	Door motor "A"
F7	Door motor "B"
F8	Magnetic brake back-up fuse for abnormal voltages
F9	Magnetic cam back-up fuse for abnormal voltages
F10	Primary fuse landing magnet
F11	Brake motor and cam motor
F12	Emergency energy evacuation
F13	Shaft and machine room lighting
F14	Fuse for separately driven 3-phase fan
F20	PTC thermistor motor protection
F21	Netzteil Primärsicherung
F22	24 V/DC power supply primary fuse
F30	Fuse for out of order sign
F40	Single-phasing and phase sequence unit

10.19.3 Overview

KI....K99	Contactors and relays in the control cabinet
K100...K199	EST-S7 pre-selection relay
K200...K299	Contactors and relays of the safety circuit
K300...K399	Contactor and relay additions

K1	Contactor Up
K2	Contactor Down
K3	Contactor Fast
K4	Contactor Slow
K6	Contactor cam action
K7	Contactor brake action
K8	Contactor door A Closed
K9	Contactor door A Open
K10	Contactor door B Close
K11	Contactor door B Open
K12	Inspection contactor
K13	Contactor for cabin fan
K14	Contactor for separately driven 3-phase cabin fan
K15	Contactor auxialary control
K16	Contactor safety photocell conversion
K20	Motor contactor "Star"
K21	Motor contactor "Delta"
K40	Emergency energy evacuation
K50	Second contactor for drop protection/ emergency energy
K100	Pre-selection relay drive program
K101	Pre-selection relay drive program
K102	Pre-selection relay drive program
K103	Pre-selection relay drive program
K104	Pre-selection relay drive program
K105	Pre-selection relay drive program
K106	Pre-selection relay cam
K107	Pre-selection relay travel time / contactor control
K108	Pre-selection relay door A Closed
K109	Pre-selection relay door A Open
K110	Pre-selection relay door B Closed
K111	Pre-selection relay door B Open
K113	Pre-selection relay door bypass
K114 - K120	Pre-selection relays drive program
K200	Evaluation safety circuit "A"
K201	Evaluation safety circuit "B"
K202	Evaluation safety circuit "C"
K203	Fault signalling relay safety circuit
K204	Start relay safety circuit

K300	Relay off (Control cabinet)
K301	Cabin light OUT relay (Inspection board)
K302	Cabin light OUT relay (Control cabinet)
K303	Cabin light control relay
K304	Emergency call relay
K305	230 V/AC light relay

Q1	Protective motor door A
Q2	Protective motor door B
Q3	Protective motor Fast
Q4	Protective motor Slow
Q5	Protective motor externally fan
Q6	Protective motor correction unit

SH	Main switch 3-PH
SHE	Main energy final limit switch
S1	Safety circuit rope rocker switch
S2	Safety circuit regulator slack rope switch / regulator tension weight
S3	Safety circuit speed limit switch
S4	Safety circuit buffer switch
S5	Safety circuit emergency limit switch above
S6	Safety circuit emergency limit switch below
S7	Safety circuit terminal switch
S8	Safety circuit threshold switch or tension weight switch
S9	Safety circuit emergency brake switch inspection
S10	Safety circuit emergency brake switch car
S11	Safety circuit manual door switch
S12	Safety circuit car door switch
S13	Safety circuit door lock/ lock contact switch
S14	Controller/ Car light On/Off
S15	Inspection On/Off
S16	Inspection button Up
S17	Inspection button Down
S18	Inspection button Fast
S19	Inspection final limit switch Up
S20	Inspection final limit switch Down
S21	Auxialary control On/Off
S22	Auxialary control button Up
S23	Auxialary control button Down
S24	Emergency button
S25	Landing controll On/Off
S26	Out of action indicator
S27	Zone switch A
S28	Zone switch B
S29	Level switch A
S30	Level switch B
S31	Pulse switch Up
S32	Pulse switch Down
S33	Correction switch below
S34	Correction switch above
S35	Full load
S36	Minimum load
S37	Overload
S38	Landing control On/Off car
S39	Priority key switch Car (car partition door bypass)
S40	Fireman key switch
S41	Car button floor 0
S42	Car button floor 1
S43	Car button floor 2
S44	Car button floor 3
S45	Car button floor 4
S46	Car button floor 5
S47	Car button floor 6
S48	Car button floor 7
S50	Door B final limit switch Up
S51	Door B final limit switch Closed
S52	Door B car door button Closed
S53	Door B car door button Up
S54	Door B car door stop button
S55	Door B car door flyback button
S56	Door B car door photocell
S57	Door A final limit switch Up
S58	Door A final limit switch Closed
S59	Door A car button Closed
S60	Door A car button Up
S61	Door A car door photocell
S62	Door A car door flyback button
S63	Door A car door stop button
S64	Fire key switch
S65	Lift off key switch
S66	Priority key switch landing
S70	Shaft lighting On/Off
S71	Car fan On/Off

S72	Overpressure switch
S73	Pipe break fuse
S74	Comissioning switch after pipe break fuse releasing
S75	Underpressure switch
S76	Oil sensor
S77	Emergency out shaft pit
S78	Sink protection control
S79	Hand actuated drop protection
S8O - S96	Landing button
S100	Car partition door
S101	Regulator remote actuation or contact control landing magnet
S102	Photocell conversion
S103	Pit contact
S104	Fine adjustment Up
S105	Fine adjustment Down
S106	Centring
S107	Centring
S108	Fine adjustment final limit switch above
S109	Fine adjustment final limit switch below

T1	Control power transformer
T2	Power transformer out of action indicator
T3	Power transformer power supply
T6	Power transformer cam action
T7	Power transformer brake action
T8	Power transformer landing magnet
T9	Power transformer door motor

V1	Valve rectifier Up
V2	Valve rectifier Down
V3	Valve rectifier Fast
V4	Valve rectifier Slow
V6	Rectifier for cam magnet
V7	Rectifier for brake magnet
V8	Rectifier for landing magnet
V12	Rectifier for open lowering valve correction unit
V13	Rectifier for lifting valve correction unit

Y1	Valve Up
Y2	Valve Down
Y3	Valve Fast Up
Y4	Valve Fast Down
Y6	Cam magnet
Y7	Brake magnet
Y8	Magnet for drop protection
Y9	Magnet for regulator remote actuation
Y10	Landing magnet
Y11	Emergency energy dropping valve
Y12	Lowering valve correction unit
Y13	Lifting valve correction unit

11 General installation instructions

11.1 EMC requirements on the installation of controllers

Compulsory CE marking came into effect on 1 January. By applying the CE symbol, manufacturers indicate that their products conform to the requirements of the EC guidelines. The basis of the EC guideline is the legislation governing electromagnetic compatibility.

According to the legislation governing EMC, all electrical and electronic products sold within the European internal market must meet the basic requirements of protection as specified in the EC's guidelines concerning EMC.

Lift controllers are among the products which may cause electromagnetic interference and which are therefore subject to this legislation.

NEW LIFT controllers supplied since 01.01.1996 as complete systems with control cabinet and preassembled cables already meet the EC guideline, and can be assembled and installed directly.

Where NEW LIFT controllers are purchased as components and subsequently fitted in manufacturer's own systems, the measures described below must be performed in order to ensure the requisite electromagnetic compatibility (EMC).

11.2 Components required

You can select the components required for installation in accordance with your own electrical requirements, or obtain them directly from NEW LIFT as an installation kit (please enquire for part numbers).

A mains filter (Siemens B8411-A-A30/A60 or similar), cable clamps and fittings will be required.

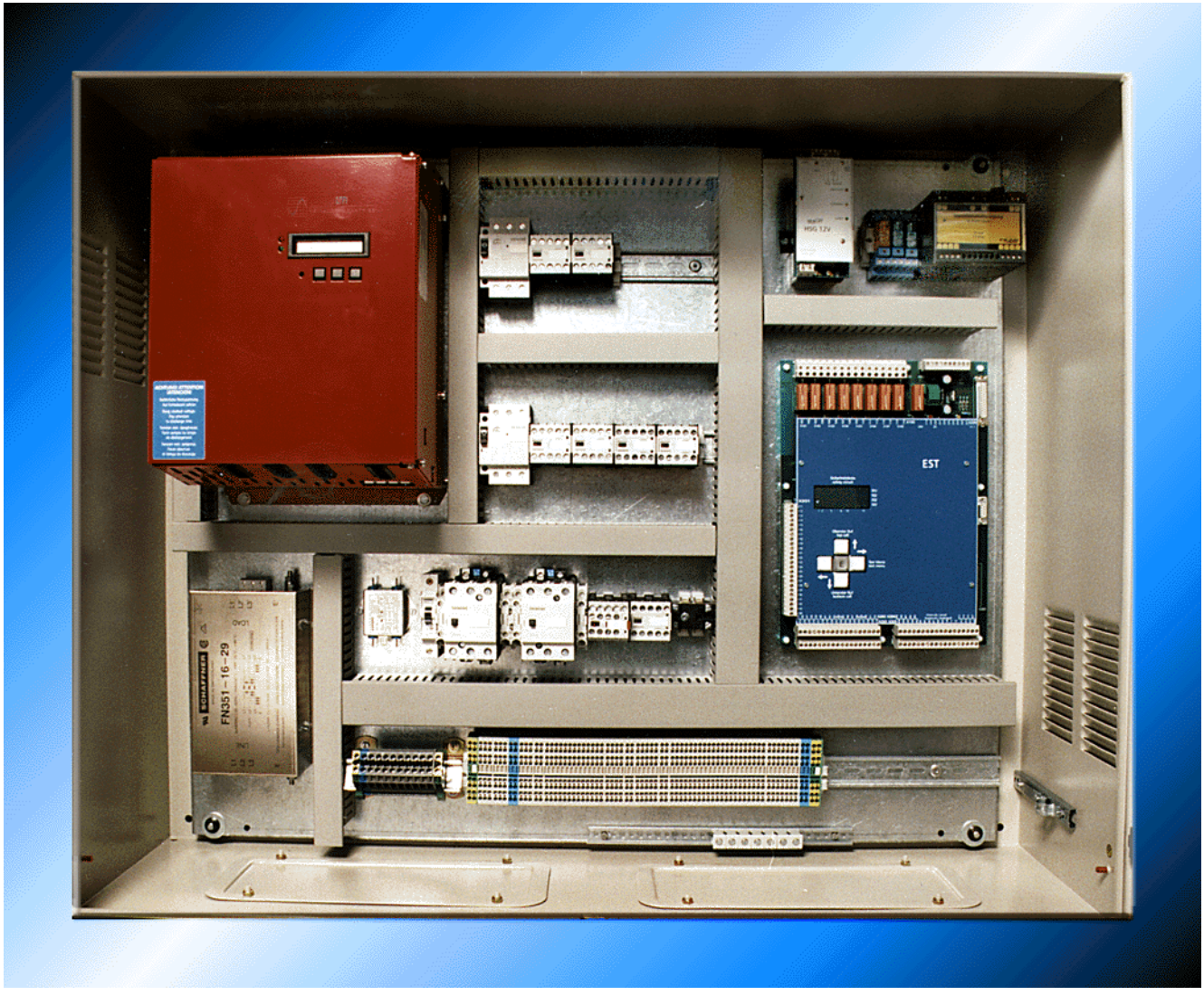
11.3 Control cabinet overview

11.3.1 EST
Design type A:

**Hydraulics,
Star/Delta,
2 automatic
car doors**

11.3.2 EST Design type B: Hydraulics, Softswitch, else like Design type A

11.3.3 EST Design type C: Rope, Frequency regulated, 2 automatic car doors

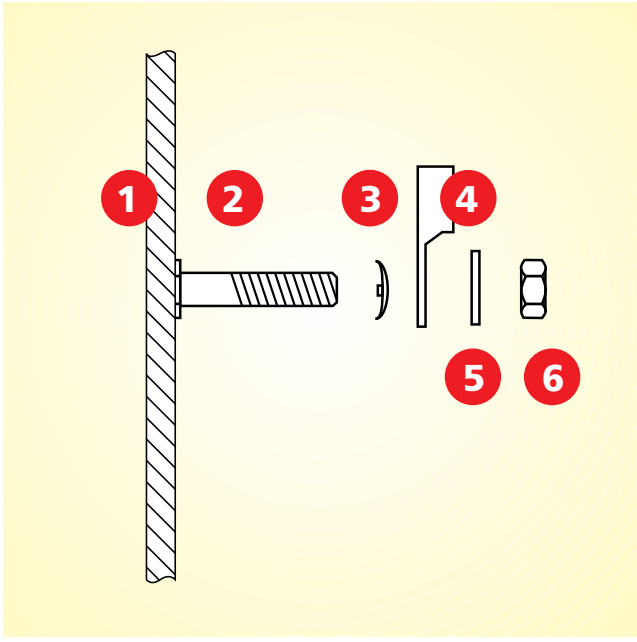


11.4 Fitting the EST controller in the control cabinet

N O T E

The rating of the components must be selected according to the current loading of the installation as a whole, in consideration of the latest issue of the relevant national standards.

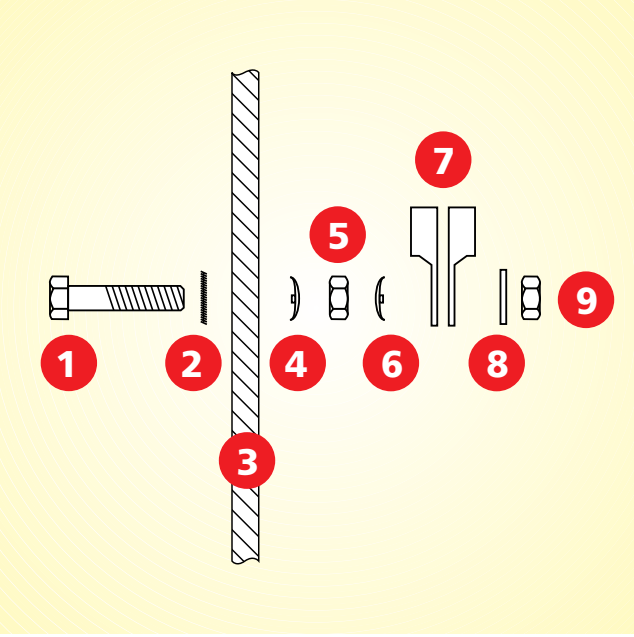
- Main circuit terminals one standard rating higher than the primary circuit wiring must be selected. The supply conductors often require a larger cross-section owing to their length (voltage drop).
- Overvoltage limiters (varistors, RC elements) must be fitted for all contactor and relay coils.
- All components must be fitted to a galvanized mounting plate.
- The mains filter must be fitted onto the mounting plate with a sound, large-area electrical connection.
- The door to the switchgear cabinet and the housing must be connected by means of an earthing strip (cross-section 16 mm^2)..



FITTING ARRANGEMENT OF THE HOUSING/DOOR PROTECTIVE CONDUCTOR CONNECTION

1	Switchgear cabinet panel / door
2	M6 welding stud
3	Contact washer
4	Cable lug
5	Washer
6	Nut

- The mounting plate must be connected to the housing by a sound electrical connection, ensuring RF continuity.



FITTING ARRANGEMENT OF THE MOUNTING PLATE/REAR HOUSING PANEL PROTECTIVE CONDUCTOR CONNECTION

1	M6 screw
2	Rear housing panel
3	Contact washer
4	Nut
5	Plain washers
6	Mounting plate
7	Nut with contact surface

- Avoid crossing data and control lines with main circuit lines wherever possible.
- Fit the mains filter to the control circuit fuse F4 with as short a link as possible.
- Do not use toothed lock washers when fitting the components, so as not to impair RF continuity.
- Where practicable, the layout of the control cabinet should be planned such that the control board is some distance from the main contactors/controllers. The distance should be as great as possible in order to prevent the influence of RF radiation.

- The EST board is secured by means of nine M4 spacer bolts with external thread at each end, between the mounting plate and the spacer bolts, and acorn nuts.

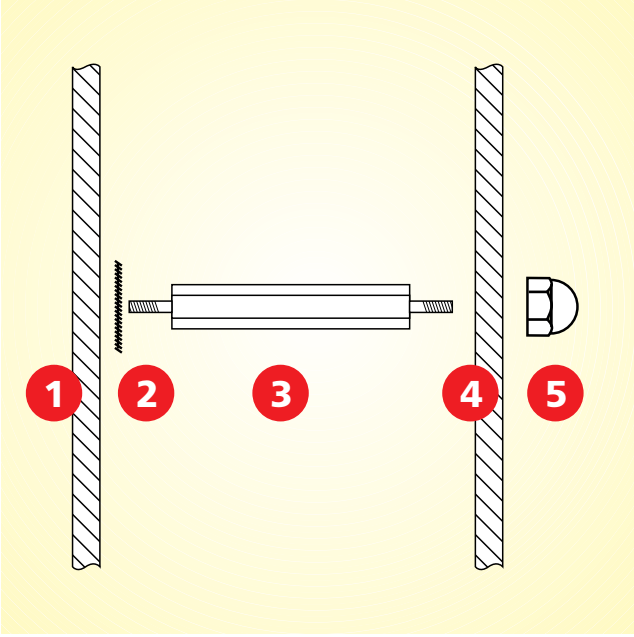


DIAGRAM OF FITTING ARRANGEMENT FOR EST CONTROL BOARD

1	Mounting plate
2	Spacer bolt, 2x M4x15
3	EST control board
4	PVC acorn nut

- All assembly drawings must be observed in order to ensure that the PE/earth connections ensure RF continuity and meet the relevant national standards.

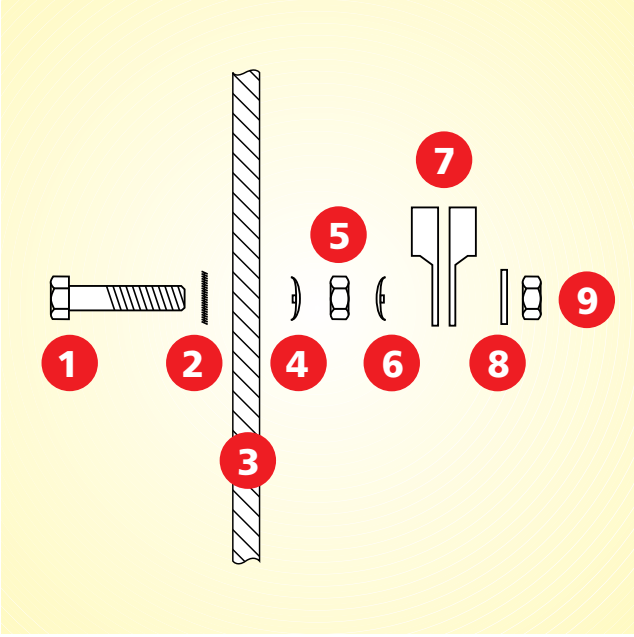
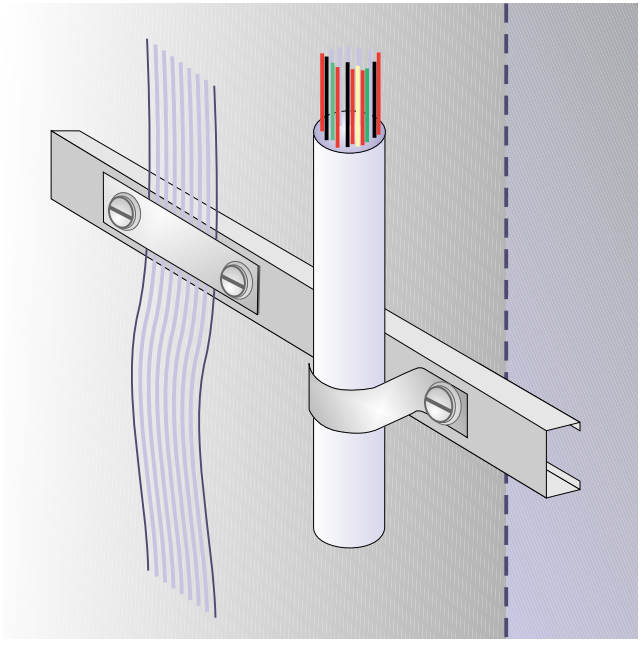


DIAGRAM OF PROTECTIVE CONDUCTOR CONNECTION ON MOUNTING PLATEE

1	M6 screw
2	Spring lock washer
3	Mounting plate
4, 6	Contact washer
5	Nut
7	Cable lugs
8	Washer
9	Nut



TOP HAT RAIL FOR GUIDING FLAT BELT AND SHAFT CABLE IN THE CONTROL CABINET

Colour coding for control cabinet voltages

Yellow/green	Protective conductor
Black	400 V AC motor circuit
Brown	230 V AC (safety circuit, contactor actuation)
Blue	Neutral
Green	AC voltage < 60 V
White	Potential-free contacts
Pink	24 V signals
Red	+ 24 V DC
Violet	24 V GND
White/red	+ DC voltage > 60 V
White/blue	– DC voltage > 60 V
Brown/red	+ DC voltage for electronics
Brown/blue	– DC voltage for electronics

Proceed as follows during installation:

1. Connect the network filter to fuse F4 with as short a link as possible.
2. Connect the lines (motor line, travelling cable) to the mounting plate using an electrically conductive cable clamp in each case (see assembly diagram)

N O T E

Reconnect the lines again each time they are disconnected.

11.5 Assembly of the hydraulic EST controller

- K12 inspection contactor
- HSG 12 V (optional: 6 V or 24 V)
- Z1 mains filter
- 24 V power supply
- F4 control circuit fuse
- F20 PTC thermistor motor protection
- A6 protective circuit
- Switch for car lighting
- Terminals for main and control circuit
- Fittings, top-hat rail, cable duct

Door drive according to version

- 400 V three-phase
- Closed-loop control

Depending on operating mode (closed or open-loop control)

- VSB soft starter (selection of types)
  – Supplied by NEW LIFT –
- Star-delta main contactors (for one or two speeds)

The following options can be fitted according to customer requirements:

- Main switch
- Main fuses
- Bypass switches in the event of pipe breakage
- Remote actuation button for the speed limiter
- Unwired contacts for intercom system

11.6 Assembly of the traction EST controller

- K12 inspection contactor
- HSG 12 V (optional: 6 V or 24 V)
- Z1 mains filter
- 24 V power supply
- F4 controller fuse
- F20 PTC thermistor motor protection
- A6 safety circuit (optional with advance-operation doors; readjustment function)
- Switch for car lighting
- Terminals for main and control circuit
- Fittings, top-hat rail, cable duct

Door actuation according to version

- 400 V three-phase
- Closed-loop control

Depending on operating mode (closed or open-loop control)

- Thyristor regulator, frequency converter – Supplied by the lift manufacturer –
- Star-delta main contactor (for one or two speeds)

The following options can be fitted according to customer requirements:

- Main switch
- Main fuses
- Bypass switches for auxiliary control
- Remote actuation button for the speed limiter
- Unwired contacts for intercom system

NEW LIFT
NEUE ELEKTRONISCHE WEGE

EST Operator Menu

E Menu-Entry, Menu-Selection/Exit, accept setting, store selected values

Move into Sub-Menu, Status Entry eg., YES Selection, increase values

Next Menu-Entry Selection/ Return

Status-Entry eg., NO Selection, decrease values

Info

Special Functions

All Functions that can be performed immediatly without Menu entering

Car call to Top Floor

Enter Test-Menu

Car call to Bottom floor

Switch between Travel-Counter and Operating-Hour Counter Displays

Main-Menu Display

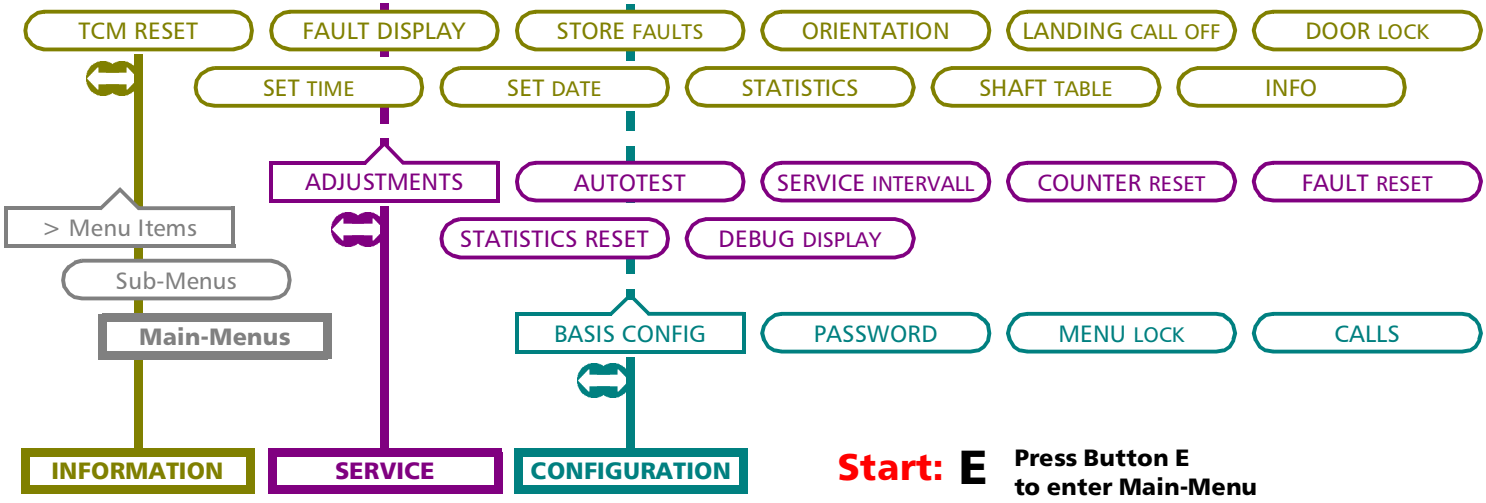
Sub-Menu Display

Menu Item Selection in both directions in all Menu Levels

> SAFETY DEBOUNCE > DOOR LOCK DELAY > TCM TIME
> START MONITOR > CONTACTOR MON > STAR/DELTA
> MOTOR OFF DELAY > SPEED CHANGE DLY > CAM DELAY
> DOOR OPEN DELAY > MAN.DOOR DEBOUNCE
> MIN WAIT CAR > MIN WAIT LANDING > LAND CALL ENABLE
> CAR CALL PRIO > FAULT SEND DELAY > CALL HANDOVER
> ANTI NUISANCE > PARKING > PARK TIME > PARKING FLOOR
> LIFT-OFF FLOOR > CAR LIGHT OFF > PHOTOCELL EXTEND
> DOOR TIME > DOOR REVERSE MAX > DOOR NUDGE.TIME
> DOOR APPROACH > DOOR PARK STATE
> DOOR CHANGE DELAY > REVERS TIME > DOOR OPEN TIME
> OPEN HOLD TIME >

> DRIVE SYSTEM > DOOR TYPE > MANUAL DOORS
> DOOR DECOUPLING > DOOR LIMIT SW
> DOOR DEENERGIZED > CAR DOOR BUFFER
> DEPARTURE ARROW > EMERG STOP FN > EMERG STOP MAX
> DOOR INTERR MAX > DOOR LOCK MAX > GROUP MODE
> FIREMAN SERVICE > FIREMAN FLOOR > SHORT FLOOR
> FLY-TIME > ZONE TIME > RELEVELLING > RELEVEL STOP
> DOOR ZONE OFF > LANGUAGE > SERIAL > SYS1 > SYS2
> SYS3 > SYS4 > SYS5 > SYS6 > SYS7 >

Grey Menu Items
appear only, when the equipment is so configured.



Start: E Press Button E to enter Main-Menu

Contents Index

Index

Klick pages to come to the referenced index point.

Return again with keys „CTRL“ + „–“.

A

C

D

E

F

G

H

L

M

O

P

R

S

T

Z