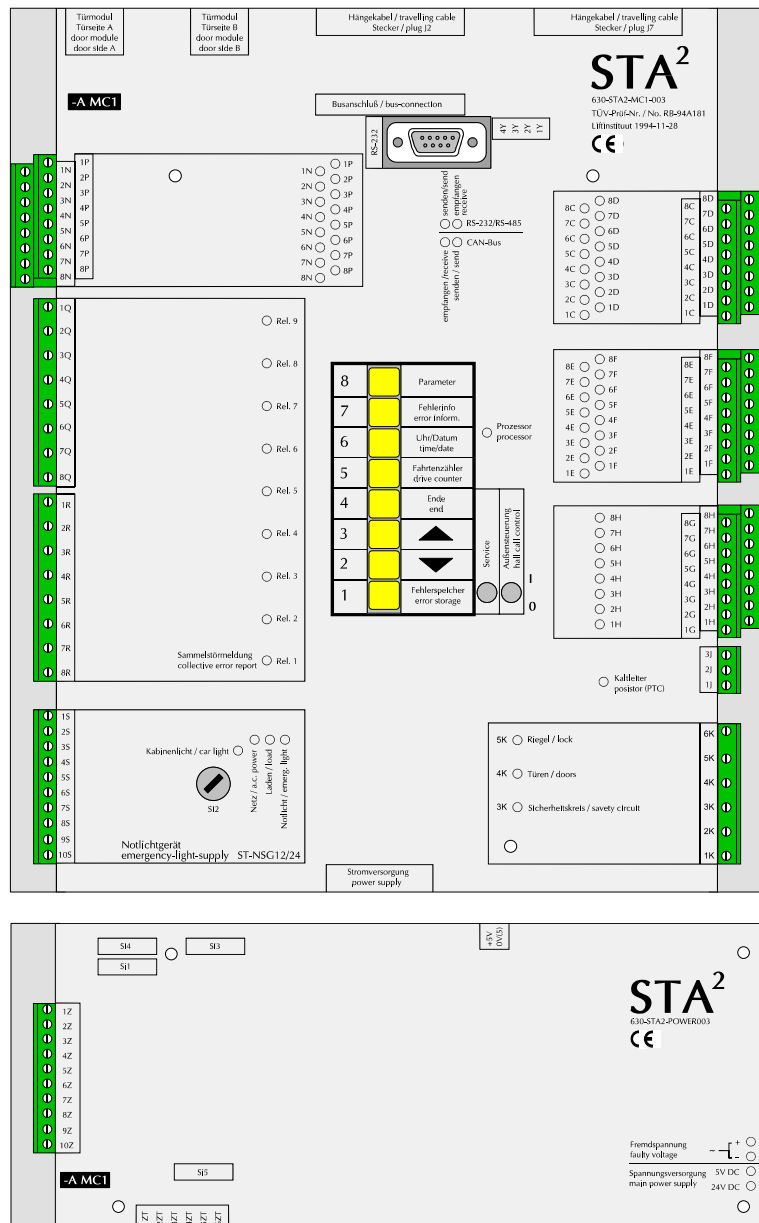


STA²

Operation and Service Manual

Status 26.05.1998



Important Notice:

The data and information in this document were carefully collated. Although everything was done to keep the information up to date and correct at the time of publication. We cannot give our absolute guarantee that all mistakes have been omitted.

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Safety Notice

1.1 Product Liability and Warranty

Strack Steuerungstechnik GmbH declines any legal warranty for current trades, economy or suitability for certain purposes of this product.

Strack Steuerungstechnik GmbH is not liable for mistakes in this product or for indirect or direct damages in connection with delivery, capacity content or usage of this handbook.

Strack Steuerungstechnik GmbH reserves the right to revise this product and to do changes on this product from time to time without further notice.

The operation of this product is not licensed in USA or other countries with similar law.

Otherwise the general terms of sales and deliveries apply to **Strack Steuerungstechnik GmbH**.

1.2 Assembly and Operating Personnel

All chapters of this operation manual contain important information for proper usage of the lift control system. These chapters consult technically qualified personnel, who are especially trained in assembling, repairs, servicing and initiation of lifts which are established according to the appropriate lift guidelines.

Pay attention, that all work is done according to the legal regulations of the factories and works safety. Also note the appropriate accident-prevention regulations as well as the requirement for safety precautions when assembling and maintenance lifts.

There are two persons necessary for assembling (mechanic/assistant)

1.3 Operation Safety

To ensure a faultfree operation of the installation it is important to pay attention to all supplied plans and to notes regarding the electromagnetic compatibility in the operation manual.

1.4 Important Notices

This documentation contains notes that have to be obeyed, to secure life or health. The knowledge and technical conversion of this documentation contents safety notes as well as accident-prevention regulations for the installation area of the lift to demand a safe installation and initiating. This document does not contain all details for all designs of lifts and cannot consider all cases of the construction of the factory, the repairs, maintenance or initiating.



All danger notes are marked with these warning sign.
If the requirements are not obeyed, accidents with bodily injury and damage to property exists.



This sign marks information where special attention should be paid according to the author.

1.5 System Earthing

All voltages (apart from the computer internal voltage 5VDC) are earthed single sided and separately fused to notice faulty shorts to earth, and to prevent an uncontrolled switch-on of the load impedances.

However there is one exception for the purpose of initiating:

Before re-initiating the PE-conductor is not to be connected to clamp 3Z of the electric power „POWER003“, but on clamp 4Z. This ensures that in case of clamp errors while new assembling or changing the electric installations of the lift, the control computer and the plugged-in components will not be destroyed. Should there be an error on the clamp it will be shown by two red luminous lights on the electric power „POWER003“. If there is a faulty voltage on the signal voltage already when requiring to travel, the lift will not travel, but will show the fault by writing „85“ in the display.

**ATTENTION: in this case your life is in danger !!!
This fault has to be removed immediately!**



Only when the fault is removed and the lift is without any faults in all operation regulations, or the two red LED's do not light at any time (or even just one), the PE-conductor may be changed from clamp 4Z to 3Z.

NOTICE:

Induction-voltages from 30 V due to long wires, even without faulty voltage can appear so the LED's will light. In this case the LED's will light evenly bright and weak. To find out whether it is an induction-voltage, you can keep a load resistance of e.g. 1000 Ohm between clamp 4Z and 6Z. Should both LED's turn dark, you can assume that there is an induction-voltage.

**After successful initiating it is necessary to put the PE-conductor from clamp 4Z to clamp 3Z.
With this the system earthing of the signal voltage is effective.**



2 Capacity Content

- ✓ Single lifts up to 16 landings
- ✓ Groups up to 4 lifts and up to 16 landings (communication of control with CAN-Bus)
- ✓ Hydraulics, ropes, all common controlling equipment
- ✓ 1 to 3 automatic doors (max. 2 with selective controls)
- ✓ Shaftcopies with only **3** magnetic switches, floor switches or digital absolute encoders
- ✓ 2nd high speed for lifts with higher nominal speed (ca. 1,3 m/s - 2,0 m/s)
- ✓ near and short landings without extra switches in the shaft.
- ✓ as TRA or EN81, construction and parts checked by TÜV-Köln (Germany) and Liftinstituut Amsterdam (Netherlands)
- ✓ EMC-checked **and CE**-marked
- ✓ microprocessor controlled
- ✓ all inputs and outputs shown by LED's
- ✓ operation method and fault indication displaying with landings, date, time and further information.
- ✓ error storage of the last 69 errors, EEPROM-buffered
- ✓ travel counter 10 digits with starting date
- ✓ easily press button on control computer for commands at any landings
- ✓ Adjustment of all lift parameters possible on the spot (password protection, password changeable)
- ✓ direct control of contactors (construction checked by TÜV and Liftinstituut)
- ✓ direct inquiry of safety circuit (construction checked by TÜV and Liftinstituut)
- ✓ integrated emergency light (switchable to 12VDC or 24VDC)
- ✓ integrated door control
- ✓ pluggable door module with integrated protective motor switch
- ✓ Car control panel optional pluggable (may be included in our delivery)
- ✓ call panels optional pluggable (may be included in our delivery)
- ✓ Magnetic switch console optional pluggable (may be included in our delivery)
- ✓ lift cable optional pluggable (there are wires for additional changes available)
- ✓ Adjusting travel only for one landing on 1 of n - copies (no limit-landing adjustment to top/bottom of the shaft)
- ✓ no separate diagnosis panel necessary

All plug-systems can easily be changed on the spot or measured again with normal tools (spanners) or measuring devices.

3 Control System Installation

3.1 Mechanical Installation

The whole system is built-in in a grey lacquered steel plated wall control cabinet (incl. door speed controlling devices, valve control devices etc.) The system of protection is at least IP54, the interference degree N. The standard control cabinets have turning doors opening around 180 degrees (standard opening to the right) with trihedral rough reamer locks. The standard size in mm is: (w“h“d“) 800“ 800“ 300“ the depth of the door is only 600 mm. Mounting parts like wall fastening brackets are also included in the delivery.

All appliances have a close approach from the front and are exchangeable fitted on the mounting plate. The wiring takes place through the cable pit. The mounting plate is usually fitted on anti-vibration pads for silencing. There are flange plates at the bottom right with pre-imprinted PG-opening installed for the cable input into the control cabinet. Optionally there are already PG-threaded joints installed by the factory.

3.2 Operation Voltage

Electric mains on control system (power)	400V 3P / 50Hz / N / PE / $\pm 10\%$ (optionally other voltage e.g. 500V)
electric mains on the control system (light)	230V / 50Hz / N / PE / $\pm 10\%$
control voltage on the main contactors	230V / 50Hz / N / PE / $\pm 10\%$
signal voltage	24V DC $\pm 20\%$ (calendered, uncontrolled)
emergency light	12V DC or 24V DC reversible
computer internal voltage	5V DC controlled, sustained short circuit save)

The control voltage (24V DC) and the control voltage of the electronics (5VDC) are produced on one power-supply-construction part called „630-STA2-POWER003“ and normally do not need an external transformer!

3.3 Connection Clamps

- Power lines via relevant dimensional series terminal clamps with threaded terminal ends
- Control lines and signal lines on triple-pole unthreaded series terminal clamps made by „Wago“.

All connections for controlling will always be lead via series terminal clamps or in cord set plugs. The clamp panels are horizontally arranged in the control system and tilted to the top at about 45°. This guarantees a very good approach and saves space at the same time.

3.4 Plug-in System

Pluggable lift-cables are usually executed as round cables, whereas 2 cables (18 and 36 leads) will be need. These cables are standard cables and can also be bought directly from cable suppliers. The connection of the power-lift-cables is executed via sub-unit clamps with 400VAC nominal voltage, the signal part via sub-unit clamps with 250 VAC nominal voltage.

The optionally pluggable car control panel and call panels can be pinned-up directly in the car-clamp-box or in the control system.

Magnetic switch consoles can also be optionally pinned-up via series terminal clamps or in the car-clamp-box.

All clamp points on the pinned equipment are easily measurable on the spot and can be changed with normal tools (spanners)! Reserve lines are available.

4 Operation Mode

4.1 Shaft Copying

There are 3 different possibilities designed for shaft copying :

1. *Impulse* - copying with only 3,5 or 6 magnetic switches
2. *1 of n* - copies for further possibilities
3. *Digital shaft copying with absolute encoders* for highest comfort, precise stops and best optic view (glass lifts)

4.1.1 Impulse Copying with only 3, 5 or 6 Magnetic Switches

On lifts without levelling zone monitoring (for automatic flush levelling or travel in with advanced door opening) there are only 5 magnetic switches necessary. On hydraulic lifts you need two additional levelling-zone-switches, all in all 5 switches. On lifts where separate ways are needed for automatic flush levelling and stop flush for a normal travel (speed controlled rope lifts) it is possible to add one further switch (S20), which takes over the stops on a normal travel. In this case there are 6 magnetic switches connected. A car position indicator should be Gray-coded (triggered with +24V).

Disadvantages to 1 of n-copies:

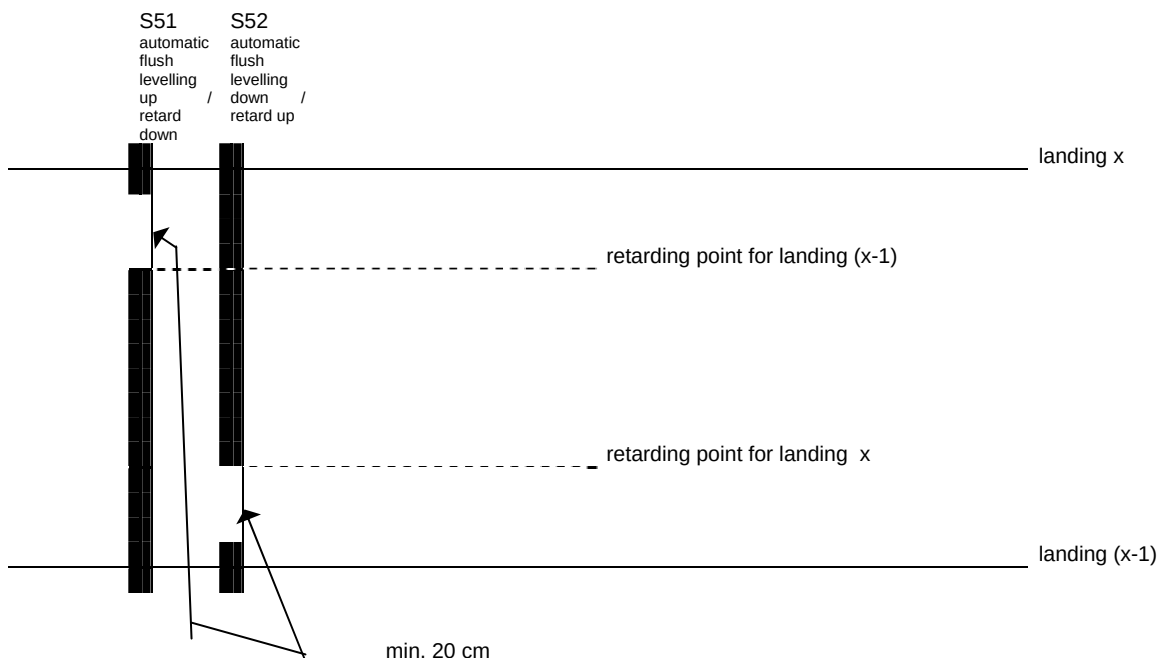
1. Adjusting travel will always be to limit landing
2. No short landings possible (near landings are possible)

Advantages to 1 of n-copies:

1. only 3-6 magnetic switches, with this you can save space in most cases with one magnetic switch board type BN85-5 (may be included in our delivery)
2. cost-effective because of less mounting material.

Important:

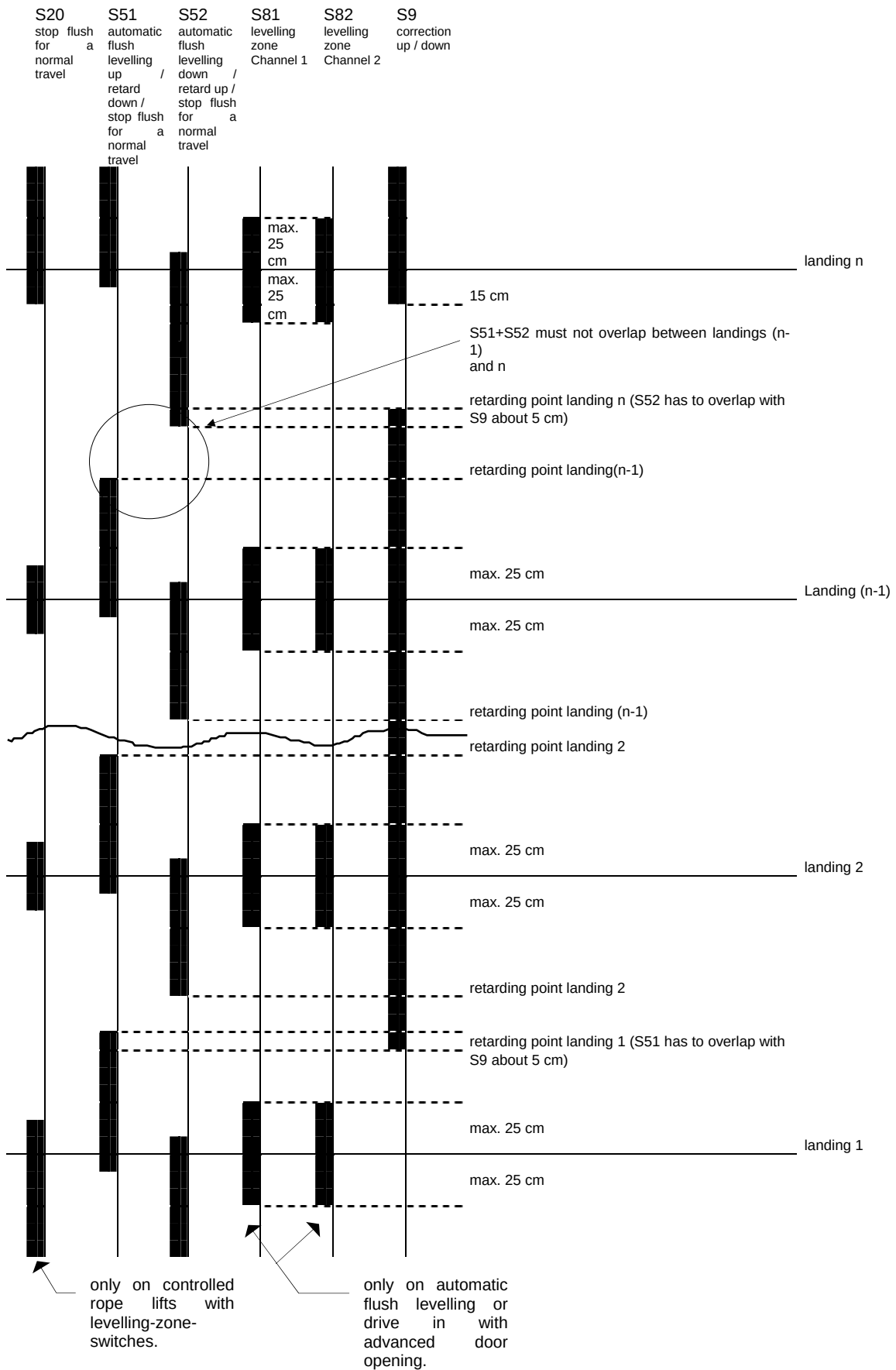
The retarding points between the landings n and n-1 must not overlap. Between all other landings the retarding point may overlap as follows:



ATTENTION:

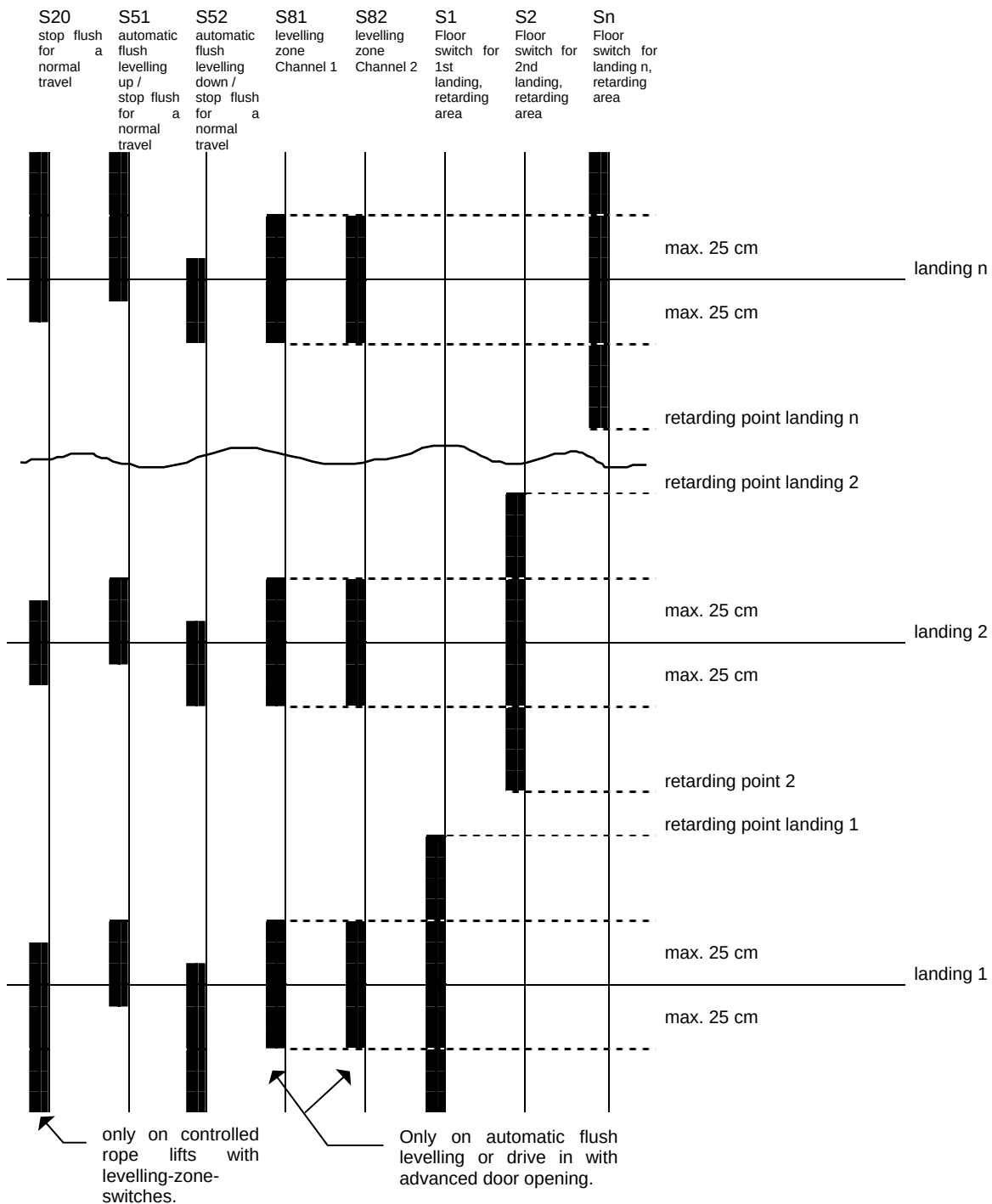
An adjusting travel (parameter 21) has always to be adjusted to the shaft side, where the correction switch S9 is not switched on in the limit landing. The following impulse diagram shows e.g. the adjusting travel downwards (parameter 21=0).





4.1.2 1 of n-Copying

If there are short landings or when only max. one landing should be effective the adjusting travel, 1 of n-copies have to be scheduled.



The retarding points between the landings may himself overlap (also see chapter "Near Landings" and "Short Landings").



4.1.3 Digital Shaft Copying with Absolute Encoders (System FWS/3000)

Digital shaft copying with absolute encoders offers high comfort, precise stops and optic view (e.g. glass lifts). All magnetic switches will be replaced by digital shaft copying (for levelling zone monitoring you have only one magnetic switch). Details for this are described in the separate handbook of the FWS/3000-system.

4.2 Near Landings

Near landings...

are landings that are so far away from each other that the retarding ways of adjoining landings are overlapped, but don't jut out over the relevant adjoining landing. In most cases no further steps have to be taken on near landings.

Car level indicator

For a car level indicator there are Gray- or binary coded outputs always available from the control computer.

4.3 Short Landings

Short landings...

are landings that are so close to each other that the retarding way of adjoining landings are overlapped and jut out over the relevant adjoining landing.

The floor switches of the 1 of n - copy should not be used for steering of a car position indicator, since the area of overlapping the retarding ways of 2 floors will be shown at the same time $\Rightarrow$ use Gray- or binary coded outputs of the control computer.

If there are already short landings on a lift, you have to set 1 of n-copies, the impulse copying is not possible (see chapter shaft copying)

You can set max. 5 short landings in the lift parameter (see parameter 95-99). Additional magnetic switches in the shaft are not needed. These 5 short landings **must not follow each other**, which means short landings 1+2 and 3+4 are permitted, but short landings 1+2 and 2+3 are not permitted.

A travel between short landings effect in a virtual ogival travel even on uncontrolled lifts. This means, travelling between short landings will always start faster and a retarding point will be set in a fixed length of time (see parameter 67). You will get an optimised travel time. The time on all short landings is the same. On speed controlled lifts the separate output 5P for intermediate speed is set.

Floor switch

Both floor switches in the short landing area must also overlap when flush-set in the car, since otherwise you can't use the virtual ogival travel feature.

If the control system will be switched on, switched back to normal operation after inspection or return, or an open safety circuit will be closed, an adjusting travel will also start in the area of short landings, if the car is flush in one of the two short landings. The adjusting travel effects in a pre-defined direction, until the car is traveln out of the area of the short landings.

ATTENTION:

If the short landing is at one of both shaft ends, the adjusting travel has to be set into a different direction (e.g. on short landings 1+2 the adjusting travel direction has to be set upwards).



Car position indicator

A car position indicator cannot be connected normally, which means no code 1 of n, since otherwise the floor switches in the short landing area will overlap as described above. Therefore there are Gray-code outputs available from the control computer.

4.4 Deceleration on Lifts with higher Speed

At faster speed controlled lifts, so that means lifts with speed of approx. 1,3 to 2,0 m/s, travels from floor to floor can made with an intermediate speed and travels to far floors can made with high speed (parameter 05 must be set to "1" for this).

You can use the "1 of n" copy system or the impulse copy system.

At these lifts you need separate deceleration ways for each speed. The deceleration ways for the inter-speed represent the normal switching points of the magnetic switches. This is identical with the erection at "slow" lifts. The deceleration ways for the fast speed, this is the nominal speed of the lift, be created without additional magnetic switches and magnets. One or two additional correction switches merely become needed.

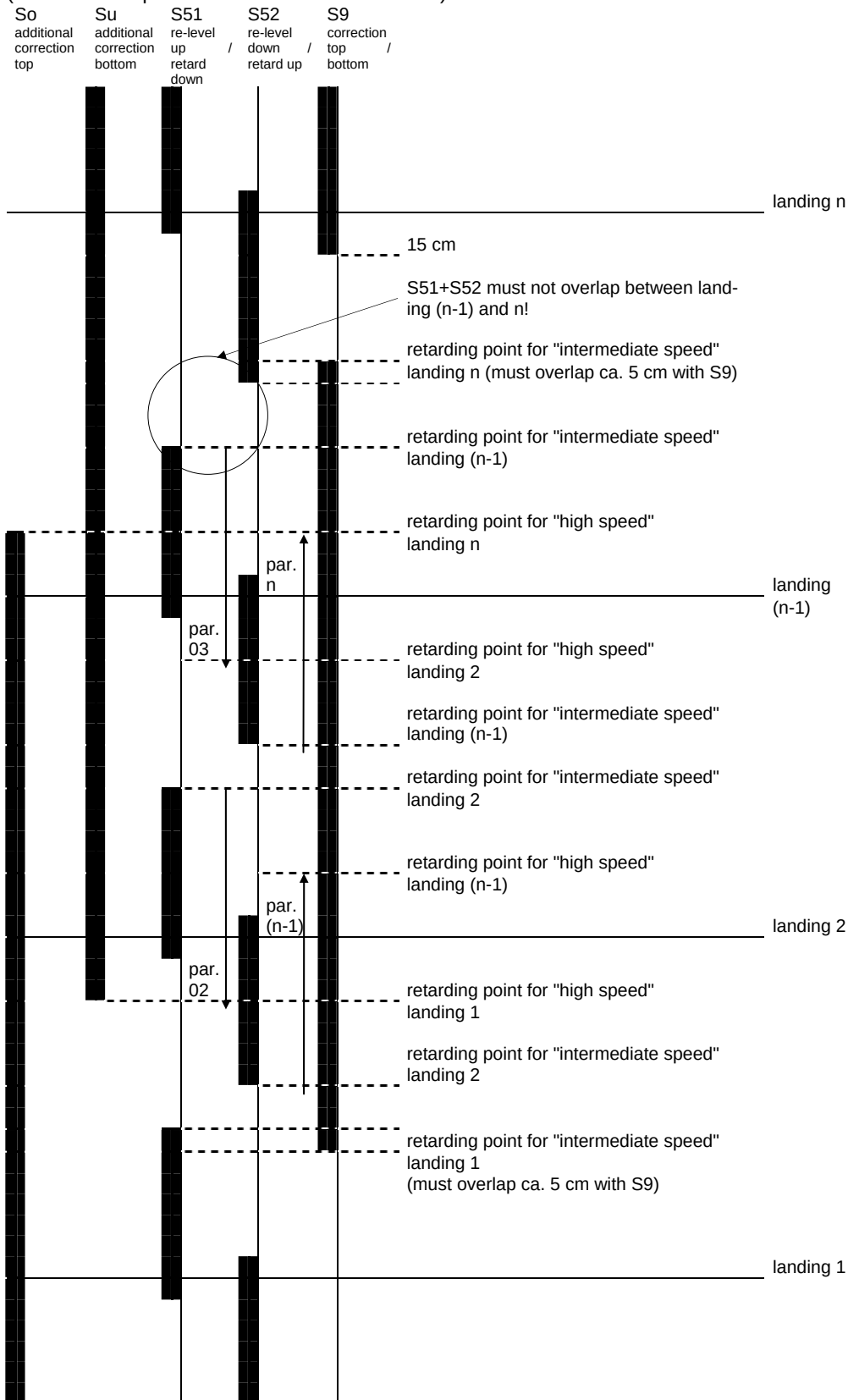
If parameter 05 (**at the end of the parameter list**) has been set to "1" for this you will see 15 new parameters which have the numbers 02 to 16. In case of travel with nominal speed the internal landing in the controller will pre-count into travel direction. I.e. if the control counts e.g. landing 9 in case of travelling upwards, the delay time adjusted in parameter 09 starts running at this point. If this time has occurred the internal stop is increased by one. Shall well want to decelerate in landing 10, the deceleration for landing 10 will start after the delay time adjust in parameter 09.

The time can be adjusted separately for any stop. So you are able to adjust separate deceleration ways for the fast speed in dependence to the respective deceleration ways of the inter-speed.

(See following example and the statement about the parameters in chapter 6.4.1 "Lift Parameter")

Example with the Impulse Copy System

(Zone- and Stop-Switch S20 are not shown here)



4.5 Travel in with Advanced Door Opening

On the retarding point of the aimed landing the lift will retard to the travel-in speed. When it reaches the levelling zone (door-unlocking-area) the doors will be bridged by the safety circuit for monitoring the levelling zone type „SHB100“ (see chapter „Safety circuit type SHB100“) and the doors will open and/or the door-locking-magnet falls off. When reaching the stop-flush-switch (S20 or S51/S52) the lift will finally come to a halt.

4.6 Car Priority / Landing Calls off

To switch on the car priority a key-operated switch in the car has to be turned on. All existing car commands and landing calls will be deleted. If the car priority should be switched on during the travel, and a car command in the same travel direction will not be set immediately, the lift will come to a hold on the next closest landing and will open the doors.

The lift will only react to car commands. On an active car priority with automatic doors, the doors will stay open when resting. During the travel the key has to stay in priority.

When finishing the special travel/-s you can take out the key when in position „Normal travel“.

Remark:

Car priority has got priority to landing priority. Fire brigade control or fire alarm control have priority to car priority.

4.7 Landing Priority / Car Commands off

When the landing priority will be confirmed, all existing internal commands and landing calls will be deleted. If the lift moves away straight from the landing priority stop when requested by an landing priority, it will stop at the next closest landing and will not open the doors.

If the lift moves straight in the direction of the landing priority stop it will go there without stopping anywhere else. When passing the further travel time (parameter 74) an express travel to the landing priority stop will be initiated. In the landing priority stop the lift will open the doors and will wait now for switch-on of the car priority. If no car priority will be done, the doors will be closed after passing by the „landing priority time“ (Parameter 69) and the lift will return to normal operation. On lifts with direct charge both door sides will always open on arrival due to an landing priority. An opening of only one side is possible in special cases (e.g. doors without limit switch or controlled doors).

Remark:

The function is only possible with an additional card EA or on groups. On computer output 5N the message „special travel - please leave the car“ should be displayed. Car priority is prior to landing priority.

Landing priority on single lifts

The acknowledge lamp of the landing calling station from where the landing priority is effected from, will light. A separate acknowledge lamp for the landing priority is not possible. When the car priority will be switched on all still remaining landing priorities will be deleted. To prevent confusion with possible waiting passengers, that put in a landing priority, it is advisable to show a switched-on car priority on the displays in the landing call stations..

Landing priorities of groups

A separate acknowledge lamp does exist for the landing priority. When activating the landing priority the most convenient lift will be chosen. On this lift all car commands and already assigned group-calls will be deleted. The assigned group call will be divided between other group lifts. The computer output 5N on the group selection computer shows additionally to the steering output, which controls the landing priority, an active landing priority.

4.8 Automatic Flush Levelling (Drop Prevention)

The automatic flush levelling event will be effected as well as stopped by the flush-levelling-switches. When the car is flush, both switches (S51 and S52) are switched on. If one of the switches opens, the car will catch up to flush in the relevant direction. The car travels flush until both switches are switched on again. The automatic flush levelling will not be affected by the flush-stop-switch (S20).

If both switches (S51 and S52 are off, there will be no flush levelling).

4.9 Flush Stopping

You can stop in two different ways on a normal travel.

1. with a separate magnetic switch S20 (parameter-No. 14=0)

2. With flush-levelling-switches S51/S52. If both switches are on, the lift will stop. Parameter-No. 14 has to be set to „1“, otherwise the lift will retard but will not stop.

4.10 Door Control System

The door control system is integrated in the lift control system, which means that all necessary door steering switches such as e.g. door limit switches and the connection for the door motor/s are directly connected to the lift controller. You can easily set up all current types of doors with parameters. Door regulation equipment will be steered equipment specified by the computer control. The door-open-contacts such as light barriers and door-open-pushbutton must not be connected on to the door control device but on to the lift control computer.

Remark:

1. If pluggable door modules are used (standard on rotary-current door motors) the jumper onto the mainboard must removed on the relevant door side (J80 for door A / J81 for door B), otherwise a switch-off of the door will not be recognised by the computer.
2. If door contactors are used instead of door modules, the relevant jumper has to be set, otherwise the door will not open.

4.11 Emergency Stop Switch in the Car

If pressing the emergency switch while car is flush, all calls/commands will be deleted. When switching off the emergency stop switch, the lift will go back over to normal travel straight away.

When pressing the emergency stop switch while travelling, the lift will stop immediately, it will delete all calls/commands and the direction pre-choice. When switching off the emergency switch an adjusting travel to the next landing below or above may be effected. When stopping at a „short landing“ an adjusting travel will definitely come into effect. (See chapter adjusting travel).

4.12 Full Load (Display „24“)

On a full load operation landing calls will be taken in constantly and acknowledged but not be traveln to, to empty the cars first before taking more persons or goods. On groups this lift will be taken off the group operation until the further load is ended. All assigned landing calls for this lift will be divided between the other group lifts. The „full load“ will be indicated to the control by the computer input 2D.

Remarks:

This function is only possible with an additional card EA or on groups. The load measurement will only be effected on a standstill just before the start of the lift, so that the dynamic powers during the travel will not lead to wrong measurements.

4.13 Overload (Display „26“)

There is a standard overload contact to be connected on input 1E to prevent an overloaded car. (on hydraulic lifts e.g. max. pressure governs, on rope lifts e.g. overloaded measure contact on the car).

On an overload-steering the start of the lift will be prevented. Automatic doors will open and stay open when overloaded. On groups this lift will be taken off the group operation until overload is over. All assigned landing calls for the lift will be divided between the group lifts. Already set car commands (on single lifts also landing calls) will be saved and to be traveln to when overload steering is cancelled. It is useful, to display an already occurring overload visibly and acoustically inside the car.

Remarks:

The load measurement will only be effected on a standstill, just before the start of a lift, so that the dynamic powers while travelling will not lead to a wrong measurement.

4.14 No Load (Display „27“)

To prevent a mis-operation by passengers, all saved car commands will be deleted when there is no load, if more than the already given amount of commands in parameter 02 is set. The doors will open again and the display will show „27“. The information „No Load“ effects on input 3D normally by a load measure contact at the car, which turns on at a load of approx. 60 kg.

Remarks:

This function is only possible with the additional card EA or on groups. The load measurement will only be effected on a standstill just before the start of the lift, so that the dynamic power during the travel will not lead to a wrong measurements. On a switched-off landing control (switched-on car priority) „no load“ is not effective.

4.15 Direction Indicator

The direction indicator in the car effects through two computer outputs. The outputs are transistor outputs with high power capacity (24 VDC max. 750mA). If more power is necessary, relay coupler must be used. The max. complete power complies then with the capacity of the main power supply.

- a) If the lift travels for the first time when called, the relevant direction arrow will show on the start of the lift.
- b) If an unused lift is already at the landing where a command or a direction independent landing call or door open signal was made, both arrows will be switched on. If then the doors start closing, the possible further travel direction are calculated again.
- c) When the lift travels in to the aimed landing, a possible further travel will be calculated on the retarding point with the already received travelling orders. This means the computer notices a possible further travel into the opposite direction the arrow will be turned to. If the computer notices a further travel into the same direction, the arrow stays in that direction.
- d) If the lift retards when no travelling orders are stored in same direction, both arrows are turned on. If then the doors start closing, the possible further travel direction are calculated again.
- e) If there are no calls for further travels, the arrow will be switched off when the doors are closed again.
- f) If the lift retards to an landing call in the opposite direction and if there are no further car commands in the travelling direction, the arrow will turn when travelling in to the landing. If further travelling orders will be given, the preferred direction (further travel direction) will be from the landing call direction where the lift will stop.

Single lifts

On single lifts the direction indicator in the car and possibly in the landings have identical functions. At landings the actual travel direction or the expected further travel direction will also be permanently be displayed. Optionally other functions are possible.

Groups

On group lifts the direction indicator in the car functions the same way as described above. If there are direction arrows on the landings of the lift, you can choose whether the direction arrows function as in the car (connection like on single lifts) or if the function should be similar to a further travel display. When switching as a further travel display the arrow will be switched on when a **enabled** lift of the group will arrive. The possible further travel direction will be calculated the same as described above. The display will stay until the lift will start again from the landing or when on a possible start, no further travel orders are indicated.

4.16 Adjusting Travel (Display „87“)

An adjusting travel effects on 1 of n shaft copies only one landing (**one-landing-adjusting**) the only exception is on lifts with short landings, when an adjusting travel will start in the area of a short landing (see chapter short landings). On impulse shaft copies the limit landings will always be approached, where in the correction switch S9 on flush position of the car is not switched on (see chapter shaft copying).

When by beginning with the normal operation (switch off the inspection, return, operation safety circuit, voltage to be switched on etc.) the controller cannot make out in which landing the car is (none or more than one floor switch (S1 up to S8) switched or S9 switched on, or on lifts with levelling zone monitoring the levelling-zone-information to the computer is not switched on) an adjusting travel will be initiated and the display will show message „87“. However the start for a travel will only begin with an car command or an landing call. The travel direction is independent to the given command/call, always upwards or always downwards depending on parameter 21. During the adjusting travel command, commands/calls can be put in. At the end of an adjusting travel, „87“ will disappear from the display and the appropriate door will open.

4.17 Inspection Operation (Display „21“)

While doing maintenance in the lift shaft, it is possible to do an inspection operation with the inspection control on the car roof.

By turn on the switch S60, the car and landing control will be switched off, all appeared commands deleted and an operational moving of the doors prevented. The computer display will show „21“. The callipers S61 (up) and S62 (down) as well as the callipers S63 (door 1 closed) and S64 (door 1 open) will optionally come into function. Optionally S65 and S66 on two car doors. All callipers are reciprocally locked by software.

The travel speed on an inspection travel can be adjusted with lift parameters. On rotary-current controlled lifts, the inspection travel-speed is to be adjusted on the speed-controller through a special input.

On an inspection travel all doors must be closed, before a travel can be effected. If automatic doors should not be closed, travel by pressing callipers S61 (up) or S62 (down) close doors automatically first, before starting to travel.

Remarks:

If an inspection and return operation are switched on at the same time, the inspection operation is prior.

4.18 Return Operation (Display „22“)

To evacuate locked-in persons or goods the return operation is applicable.

By turn on the switch S70, car and landing operations are switched off, all appeared commands are deleted and an operational moving of the doors will be prevented. The display shows „22“. Calippers S71 (up) and S72 (down) will come into function. All callipers are reciprocally locked by software.

The travel speed on „returns“ is always slow. The flush level of the cabin will still be shown by the display light „flush“ on the control cabinet door of controlling system (if installed).

On a return operation all doors must be closed, before starting to travel. If automatic doors should not be closed, travel by pressing calippers S71 (up) or S72 (down), first close doors automatically, before starting to travel. The return travel can effect unlimited to the limit landings.

Remarks:

If the inspection and return travel are switched at the same time, the inspection travel will be prior.

4.19 Fire Alarm Operation (Display „23“)

A fire alarm message will given to a computer input (see parameter 20).

If the lift is traveling when a fire alarm goes on, all saved commands and calls will be deleted straight away, car and landing controls switched off and the command „fire-alarm-floor“ set. If the travel will already be in the direction to the fire-alarm-floor, it will go to the landing without stopping anywhere else. If it's away from the fire-alarm-floor the next closest landing will be approached. At this landing the lift will not open the doors.

If the doors are already open when responding to the fire alarm, the light barrier will be out of function. Door-open push-button/s and command/call of this landing however will stay in function, to engage hooked-off doors automatically and not to keep the lift quiet. After the doors are discharged all saved commands will be deleted accordingly, car and landing controls will be switched off and the command „fire-alarm floor“ will be set.

At the „fire-alarm floor“ the lift will stop with open doors.

Remarks:

If the light mains supply fails or the car light is switched off, the fire alarm switch is still fully functional, fire alarm operation is prior to car and landing controls.

Functions „inspection, return, adjusting travel, flush levelling“ are still in function and for the time prior the relevant operation.

4.20 Fire Brigade Operation (Display „23“)

There is a key-operated switch on the fire-brigade-entry-floor, with whom the function can be activated. The fire brigade message will given to a computer input (see parameter 20).

If the lift is travelling while using the fire-brigade-key-switch, all saved commands will be deleted straight away, car and landing controls switched off and the command „fire-brigade-entry-floor“ will be set. If, by coincidence, the lift is already heading towards the fire-brigade-entry-floor, it will travel there without any other stops in between. If the lift is travelling away from the fire-brigade-entry-floor, the next closest landing will be approached. On this landing the lift will not open it's doors.

Are the doors already open when responding to the fire-brigade-key-switch the light barrier will be out of function. Door-open-push-button and calls/command of this landing however will stay in function, to engage hooked-off doors automatically and not to keep the lift quiet. After the doors are discharged all saved calls/commands will be deleted accordingly.

Car and landing controls will be switched off and the command „fire-brigade-entry-floor“ will be set.

At the fire-brigade-entry-floor the lift will stop with open doors.

EN 81:

When the fire-brigade-entry-floor is reached and the doors are opened, the car control will automatically go back into operation. During the fire brigade operation all commands will be deleted as soon as it has reached each aimed landing. Therefore only the landings in the first travel direction will be approached. A new command must now be entered.

TRA 200:

The car control will only go back into operation, when the lift is in the fire-brigade-entry-floor and the additional key-operated switch will be switched on in the car. While the fire brigade control is in operation, the commands will not be deleted when meeting the aimed landing. Set travel commands can be deleted in the car through additional switching off-and on of the key-operated switch. A „delete-push-button“ as TRA 200 is therefore not necessary, but can be designed if so wished.

Remarks:

If the light mains supply fails or the car light is switched off, the fire-brigade-switch is still fully functional, fire brigade operation is prior to car and landing controls. Functions „inspection, return, adjusting travel, flush levelling“ are still in function and for the time prior the relevant operation.

4.21 Carlight / Emergency Call / Emergency Light

When the mains supply fails, the standard designed emergency light equipment onto the computer mainboard, will automatically switch on the emergency light in the car and facilitates the emergency call to stay in function. The length of time for the emergency light supply depends on the used accumulator but is at least 1 hour. After that, the accumulator needs approx. 12 hours to get back it's full capacity.

To make an evacuation easier when the mains supply fails, on hydraulic lifts the flush indicator lamp will still be supplied with power. The flush indicator will also be built-in in the controlling system on lifts with two landings as a standard.

When the light mains supply is switched off or fails and while travelling, the lift will go on until the next aimed landing and will open the doors.

You can adjust lifts to stop immediately at a certain landing with parameter 66. If the parameter is set on „0“, no travel to a certain landing will happen. With parameter 46 you can choose if the lift will stay with open or closed doors. The door-open-push-button will stay in function. For safety reasons on hydraulic lifts, the stopping device landings should always be a sinking landing. The car light will only be switched off on output 6P on the control computer if the car reaches the „remote disconnection“ landing (on parameter 66=0 it is the next available aimed landing) and the doors were opened. On special doors the switch-off can already be effected when the door starts to open.

The car light will only be switched back on if the lift is in normal operation which means e.g. if the light will be switched on again while the inspection operation is on, it will only work when the inspection is switched off.

If the light mains supply is back on, the control will go back to normal operation on it's own.

Remarks:

The functions „flush levelling, inspection, return, adjusting travel, park travel, fire brigade operation, fire alarm operation and emergency sinking travel will stay in function.

4.22 Emergency Generator Control

If the mains supply voltage fails, the option „emergency generator control“ included on the controls, will effect an emergency travel to a pre-defined floor.

4.22.1 Emergency Travel influenced by the Computer

When doing an emergency travel influenced by the computer, the control computer and the signal voltage (24VDC) are still in function. If the voltage failed the lift comes to a hold immediately and a contactor (emergency switch-over) will pull. If the safety circuit is closed, the travel will go downwards to the aimed landing, set in the program. The travel can be regarding the emergency power supply, fast or slow. The door will not open if there is not enough emergency power supplied for door movement. If the accumulator, in the control integrated, will be discharged too strongly after a long mains supply failure, the emergency voltage will be switched off.

4.22.2 Emergency Travel not being influenced by the Computer

On an emergency travel without an influence by the computer, the emergency sinking travel landing (normally the bottom landing) will have an additional magnetic switch. If the voltage control contactor will drop

off, an accumulator voltage will then switched on in front of the safety circuit. If the safety circuit is closed an emergency travel to the emergency sinking travel landing will be started by two separate DC-contactors.

Remarks:

If an emergency sinking travel cannot be activated (e.g. because of an open safety circuit) no emergency sinking travel can be effected during an emergency power supply on the control system after approx. 60 min., since the accumulator will then be discharged. On hydraulic lifts and emergency sinking travels without influence of the computer, it is an advantage when the sinking valve has got a voltage (auxiliary winding) as high as the used accumulator voltage for emergency light (normally 12VDC).

4.23 Attendant Operation (Display „25“)

The attendant operation will be activated with a key-operated switch in the car. While attendant operation the message „25“ will show in the computer display. Set landing calls will be saved and acknowledged, but not driven to, just shown in the car. The indication of landing calls can be shown in the car as a constant light or separate lamps or flashing on the command-push-buttons. With car commands the lift attendant can decide which floor should be driven to. If a call „is flashing“ in the car, it will go over to a constant light when putting in the command to this landing. When reaching the floor and the door will open up, the acknowledgement will go off. On an active attendant operation in connection with a double-button-collective control system, a double call deletion will always be effected, since the attendant has no choice for direction.

Remarks:

This function is only possible with an additional card EA or on groups. Car priority is prior, this means on a switched-on car priority and attendant operation, landing calls will only briefly be shown but not saved.

4.24 Lift Groups

On group lifts, landing calls are connected to separate selector computer. The selector is connected to the lift controlling systems by a RS-485 2-wire-bus using the CAN-bus protocol. Each lift control system has an identification number (parameter 63). Through this bus a constant data exchange between selector and lift control system is effected, with whom the best possible lift will get the call. An extra card named „line002“ consists of the interface for the CAN-bus. This card can be plugged onto the computer card „MP00x“.

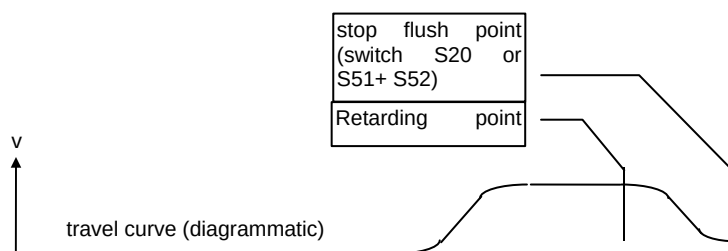
You can build one button- (direction sensitive or -insensitive) or two button groups. The allocation of the group reputations is carried out by means of so-called time priority tables. Every lift sends all 500ms one new status to the selector. The selector calculates the probable times of arrival online from this with all current data for every lift in every stop. From the time priority tables determined so is decided now, which lift can serve every single group reputation at the instant. The data change during the operating permanently by e.g. new car commands in the lifts, new group calls etc.. The time priority tables calculated online fit in himself in seconds fractions. An optimal usage therefore is guaranteed to the group to every time.

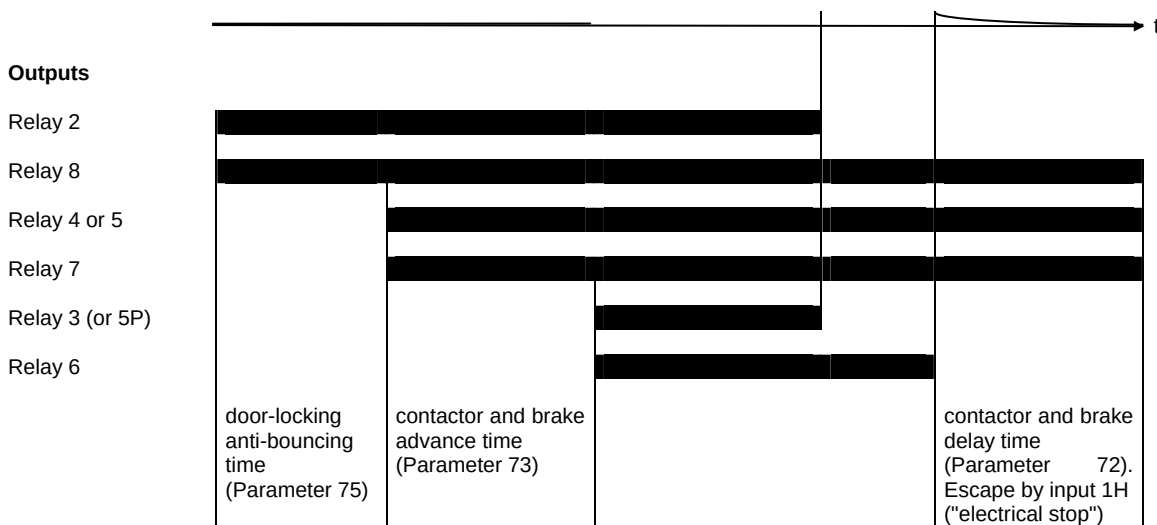
If the lift has malfunctioned or not in normal operation e.g. by switched-on car priority or inspection, it will be taken off the call division (on the selector a enable relay will drop off). If no lift is travelling in normal operation anymore e.g. by chance all lifts travel per car priority, all saved landing calls will be deleted and further will be blocked until at least one lift will get back into normal operation.

If a lift gets blocked by e.g. an object in the light barrier of the car doors, the lift will be taken off the call division for a few seconds after a „blockage time“ and the already assigned calls will be divided again between the other lifts. Landing calls will not be deleted on this.

4.25 Working with Speed Controlling Devices

The switching sequence of the outputs from the control computer shows as follows while travelling (unless an inspection or return) on works with speed controlling devices (see also chapter 4.3 and 4.4):





4.26 Monitoring System for Running Time

The control STA² has an extensive monitoring system for running times. If the control finds a running time error it will switch off the relevant outputs and sets a collective error message (relay 1). The error messages can be deleted by switching on the inspection, return, service or switching-off the control.

Monitoring System for Running Time „Start of Travel“

At start of travelling the travel contactors, valves, set points for speed controller etc. become start of a journey. A time runs away as of this time (10 seconds). Within this time the zone switches or the flush switches must be leaved (dependently on lift parameter 11).

Monitoring System for Running Time „Normal Travel“

On a normal travel the time in which a change of the floor-switches (S1 to S16) or an impulse shaft copy of two switch-on-haunches of switch S51 (travel downwards) or S52 (travel upwards) occur, will be measured.

If the monitor recognize an error, the lift is blocked for further travels, function „adjust“ and „park or sinking travel“ will be out of function. By switching on the inspection, return or service, the self-blockage will be erased. Switching off and on of the control system will also erase the self-blockage.

Monitoring System for Running Time „Travel in“

The time from retarding in the aimed landing until the definite stop will be measured.

If the monitor recognize an error, the lift is blocked for further travels, function „adjust“ and „park or sinking travel“ will be out of function. By switching on the inspection, return or service the self-blockage will be erased. Switching off and on of the control system will also erase the self-blockage.

Monitoring System for Running Time „Automatic Flush Levelling“

The travel time when automatic flush levelling must not be longer than the set time.

If the monitor recognize an error, the lift is blocked for further travels, function „adjust“ and „park or sinking travel“ will be out of function. By switching on the inspection, return or service the self-blockage will be erased. Switching off and on of the control system will also erase the self-blockage.

Monitoring System for Running Time „Adjusting Travel“

If an adjusting travel effects, the set time must not extend the set time from starting to travel up to the definite stopping. On an impulse shaft copy two impulse haunches „following each other“ of switch S51 (travel downwards) and S52 (travel upwards) will be measured.

If the monitor recognize an error, the lift is blocked for further travels, function „adjust“ and „park or sinking travel“ will be out of function. By switching on the inspection, return or service the self-blockage will be erased. Switching off and on of the control system will also erase the self-blockage.

Monitoring System for Running Time „Doors“

The running time (switch-on length of relevant door motors) will be measured. If doors will be set without limit switch (100% duty cycle door motor), only door closing can be monitored, since the information „door is open“ is missing. Door closing will be monitored by testing the door contacts in the safety circuit.

If speed controlled doors will be set (Parameter 39), the monitoring of the running time independent to the set value parameter 92 will automatically be set on 1000 seconds. All running times are monitored separately from

each other. If the monitor recognize an error, the function „automatic flush levelling“ will stay in operation. All car commands and landing calls will be deleted. There will be no self-blocking. On new order inputs the control will automatically go back to normal operation and will try to move the doors again.

4.27 Collective Error Message

There is a standard relay output for a collective error message (rel.1 on computer mainboard) (Potential free change-over contact 230V 5A ohmic).

The collective error message will be set on error with error codes 72, 74, 83, 84, 85, 88, 89, 90, 91, 92, 93, 94, 97, 98 and 99 (see chapter „Display of Operation Modes and Error Codes“).

5 Componentry

5.1 The Emergency Light Equipment

The emergency light equipment ST-NSG12/24 is a component of the mainboard „HP 003“ of the control computer MC 1. Only the accumulator for emergency call/light has to be installed in the control cabinet. On special request there are other emergency light equipment usable.

Technical Data ST-NSG12/24:

Accumulator

Accumulator voltage 12V:

Protection accumulator 1A inert (Si2 on mainboard HP003)
Accumulator charging power max. 300mA, charging power nom. 14,4V

Total discharging security:

While accumulator operation switch off emergency light when accum. voltage reaches 11,1V.

When the mains supply returns, the charger has to load the accum. back to a voltage of 12,0V before a new emergency light operation is possible again. The voltage on the emergency light is accumulator voltage minus 1,7 V.

(depending on the power consumption of the emergency lamp).

Accumulator voltage 24V:

Protection accum. 1A inert (Si2 on mainboard HP003)
Accum. charging power max. 170mA, charging power nom. 28,8V

Total discharge security:

While accum. operation switch off emergency light when accum. voltage reaches 21,0V

When mains supply returns, the charger has to load the accum. back to a voltage of 22,0V before a new emergency light operation is possible again.

The voltage on the emergency light is accum. voltage minus 1,7V (depending on the power consumption of the emergency lamp).

Power unit

Primary protection:

Short circuit-and overload protection with posistor (PTC)

Display functions with LED's

- mains supply available
- charging
- emergency light operation

Regulations

assembly and function as TRA and EN81

The switch-over between 12V and 24V emergency light/call voltage effect via 4 jumpers on the mainboard „HP003“ of the control computer MC1. The jumpers are at the bottom left next to the connection cable to the main power supply unit board „POWER 003“ and have to be set as follows:

on 12V accum.



on 24V accum.



(see chapter „Carlight/emergency call/emergency light“ and configuration of clamps emergency light equipment)

5.2 Savety Circuit Type SHB100

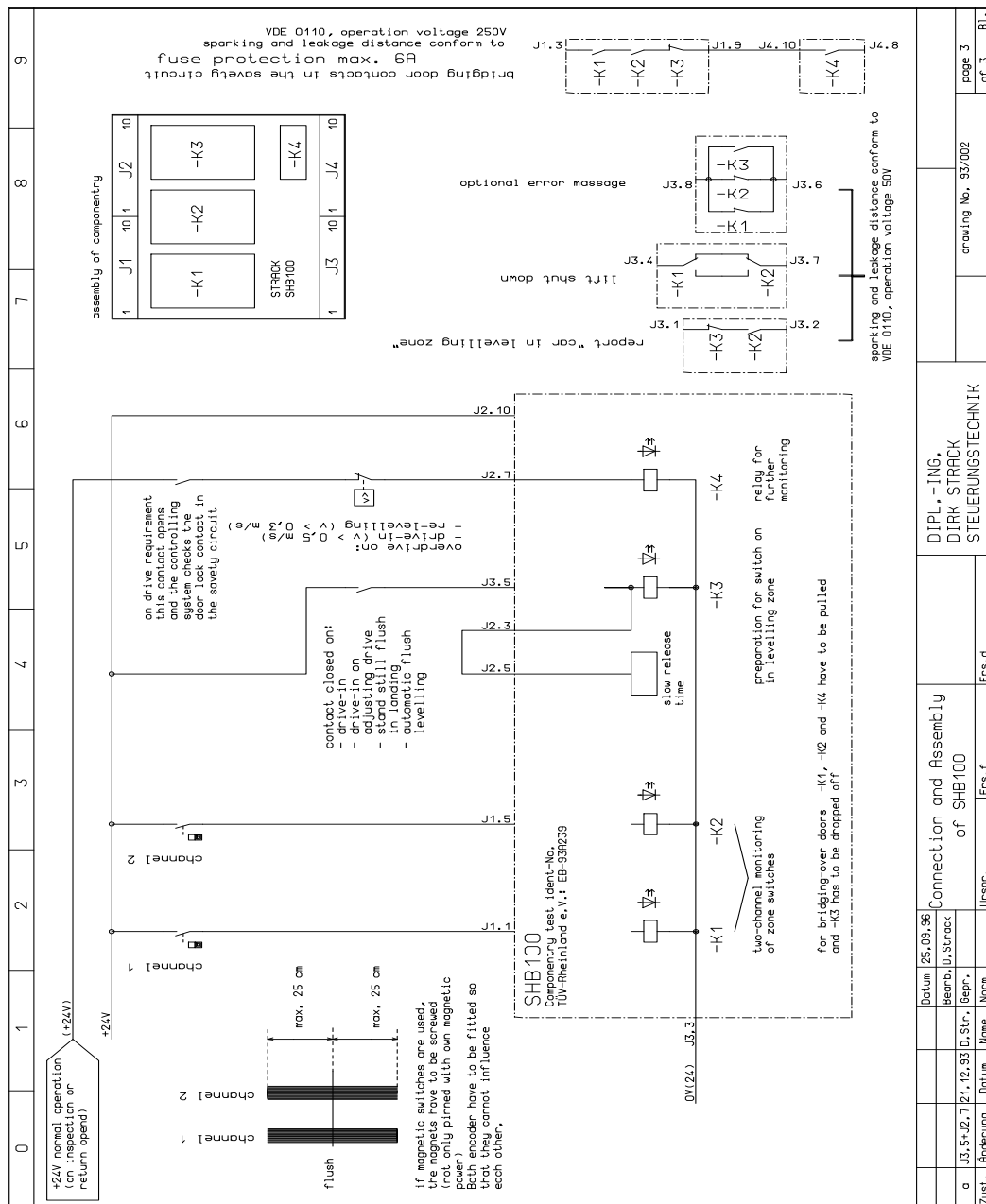
5.2.1 General Information

The savety circuit SHB100 is used for monitoring the levelling zone and evaluates 2 signals independent from each other (channel 1 and channel 2) for even switching. Both signals can be produced e.g. by either

magnetic switches or initiators. When both channels are switched, and the circuit does not show any error internally, an output will be switched with which safety equipment (e.g. door contacts) may be bridged. Other outputs of circuit SHB100 are used for realising faulty movements and as connection for overriding controls.

The component is fitted in a semi monologue case out of poliamite 6.6 and can be snapped on to all common mounting rails. All connections are pluggable by using plug adapter connectors and for connection of leads appropriate up to 2,5 mm².

5.2.2 Connection Scheme



5.2.3 Regulations for Function Test

Testing of channel 1

1. Lift is flush, channel 1 and 2 are closed
2. Lay bridge between clamps J1.1 and J2.10 (error simulation of switches on channel 1)
3. send lift to the next landing
4. there must be no bridging-over of the safety circuit with component SHB100 when travelling in and on standstill of the lift

5. next travel is blocked (the control displays error „85“)
6. remove bridge
7. switch on and off the service-switch at control computer or switch the hole control system off and on
8. next travel is normal

Testing of channel 2

1. lift is flush, Channel1 and 2 are closed
2. lay bridge between clamps J1.5 and J2.10 (error simulation on switches on channel 1)
3. send the lift to the next landing
4. The travel will interrupt 10 seconds after start. The control computer displays „97“, because input 7C at the computer had not switched off. If the car should reach the zone area of the next landing within the 10 seconds, there must be no bridging-over of the safety circuit with component SHB 100 when travelling in and on standstill of the lift.
5. remove bridge
6. switch on and off the service-switch at control computer or switch the hole control system off and on
7. next travel is normal (possible the lift will start an adjusting travel while displaying „87“)

5.2.4 Looking at Errors

relays -K1 to -K3				state of operation on the lift	safety output J1.3 - J1.9 switched-on
Nr.	-K1	-K2	-K3		
1	0	0	0	lift is outside the levelling zone while travelling fast	no
2	0	0	1	lift retards and is not in the levelling zone	no
3	0	1	0	error	no
4	0	1	1	error	no
5	1	0	0	error	no
6	1	0	1	error	no
7	1	1	0	lift had redarded and is now inside the levelling zone	yes
8	1	1	1	error	no

5.2.5 Technical Data

voltage	24V DC $\pm 10\%$
total current consumption max.	122 mA
current consumption on single inputs max.	34 mA
max. fuse protection of safety circuit of the lift when using SHB100	6A
output resistance	ca. 30m Ω per contact
permitted operational load of outputs	150W / 1000 VA (ohmic)
system of protection for relays	IP 67
sparkling and leakage distance	VDE 0110, operation voltage 50 V
sparkling and leakage distance of outputs for connection to safety circuit of lift	VDE 0110, operation voltage 250 V
ambient temperature	-25 to +65 °C
system of protection	the component must be in a case with at least IP33 built in (e.g. closed control cabinet).

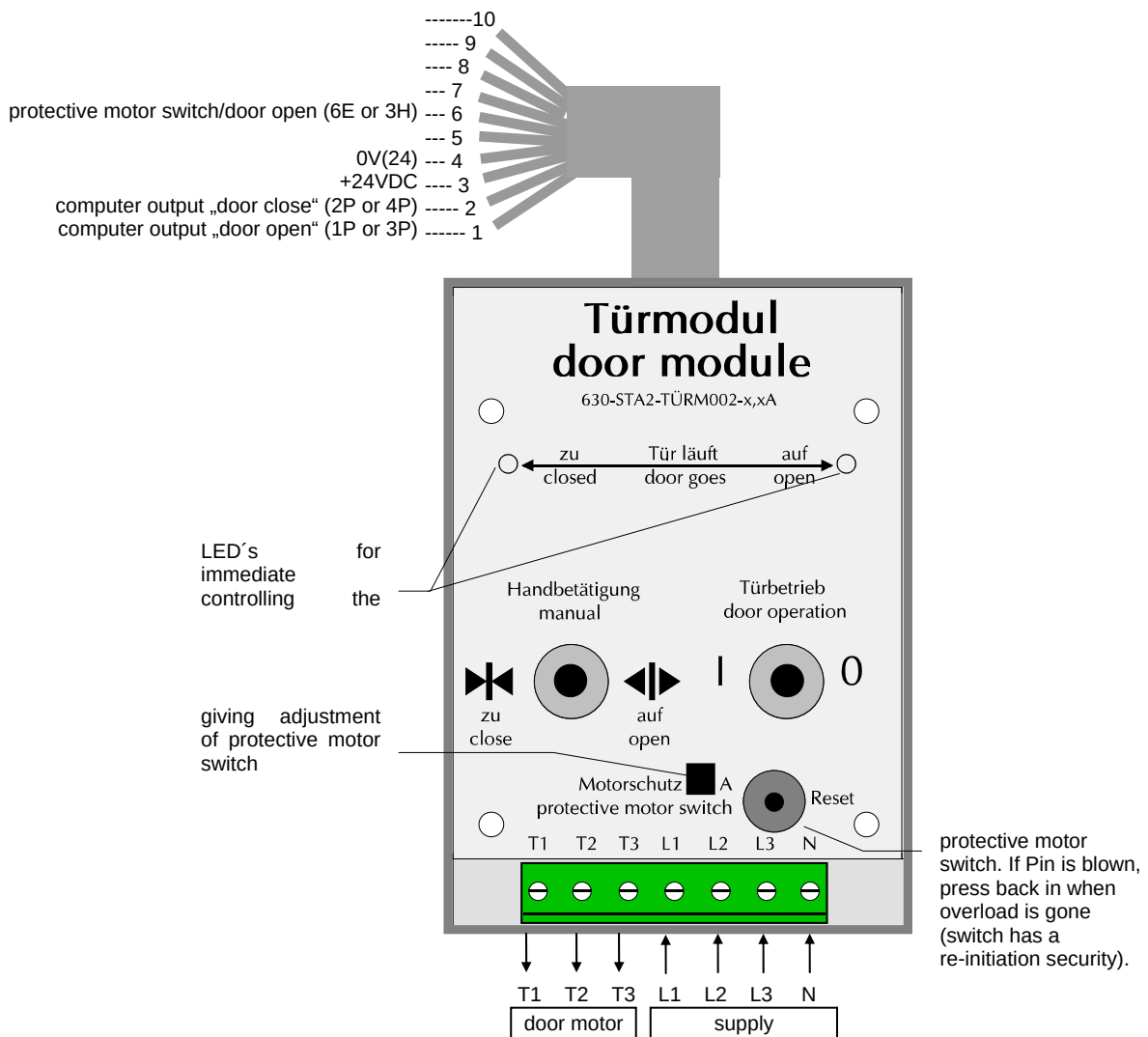
5.3 Door Module

The door module is a substitute for conventional door contactors and protective motor switches. This means, to control a 3-phased door motor (400V/3P/50Hz) you only have to pin a door module over a flat strip cable on the control computer MC1. The main supply for door motors as well as the motor itself will be clamped on the plug with clamp 1 to 10 (T1 to N). The usage of door modules guarantees a considerable space and cost advantage. Following functions are joined on the door module:

1. relay door open
2. relay door closed
3. engine security through bi-metallic protective motor switch (one phased monitoring, all phased switch-off)
4. manual operation of door (computer control is prior!). On doors without final limit switch, the control computer has to be set into operational mode, where the doors are not constantly under voltage e.g. inspection, return or service.
5. switching on/off of door motor. A switched off door is reported to the computer MC1, so that the door is not controlled up, e.g. when arriving at the landing. A switched off door module signalsises this by disconnecting the input „final limit switch door open“ (input 6E or 3H).
6. over-voltage security on door motor clamps 5, 6 and 7 with three varistors in star shaped circuit.

When using a door module, the belonging jumper on the mainboard „HP003“ of the computer MC1 must not be plugged. The jumper is directly underneath the flat strip cable connection. If „normal“ door contactors were wired instead of a door module, the jumper has to be plugged. Otherwise the doorside of doors with final limit switches will not run open.

It is possible e.g. to use a door module for door side A and door contactors for door side B. But in practise this should not mean anything.



6 System Control Computer MC1

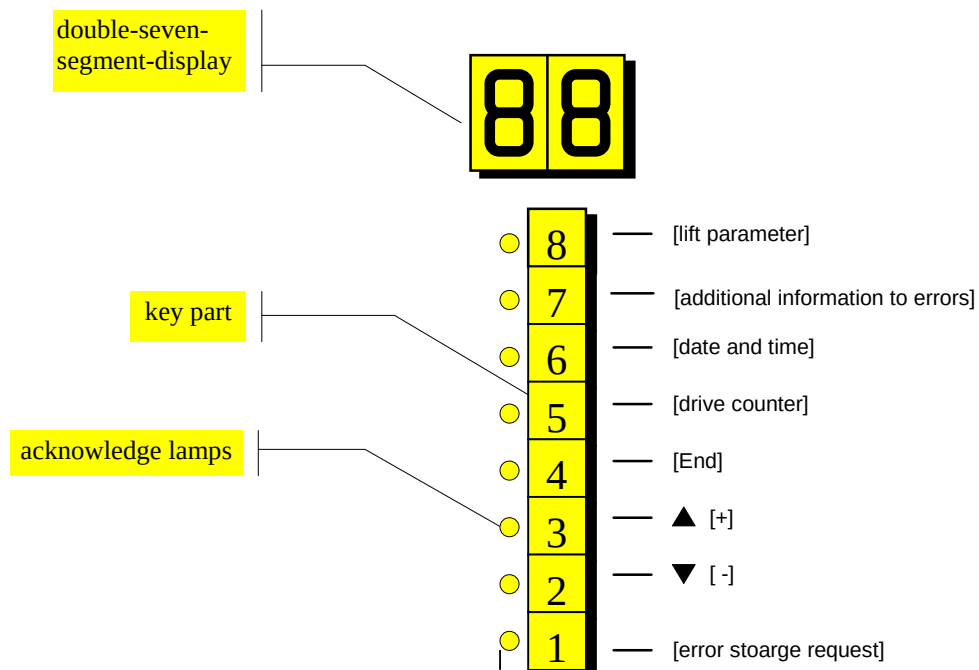
6.1 Keys and Display

All inputs are made with the key part (8 keys). As a display, a double-seven-segment-display will be used.

While normal operation commands can be set with those keys, without laying wire-bridges.

While service operation lift parameters, integrated clock, travel counter as well as EEprom-lined stack-fault-message storage are accessible via keys and display:

Therefore no additional hand terminal or laptop-PC's for all functions are necessary.



6.2 Display of Operation Modes and Error Codes of Lift Controller

Operation Modes

	service / main menu	24	full load
01-16	normal operation / indication of car position	25	attendant operation
21	inspection operation	26	overload
22	return operation	27	no load
23	fire alarm / fire brigade operation		

Error Codes, which will be stored in EEPROM

20	main menu activated (switch SF at the computer was switched on)	
21	inspection operation activated	
22	return operation operation activated	
23	fire alarm / fire brigade operation activated	
40	error storage cleared by operator	
69	lift locked by input 8E	
70	New start (by voltage off and back on or reset of the computer)	
71	input 8C didn't switch off on previous travel. Control computer monitors input while travelling. If it will not switch away, the computer blocks the following travels.	
72	Data error in EEprom → lift specified parameter can partially be lost (possible e.g. on defect control computer or very extreme noises on signal or mains supply cables).	
73	while flush re-levelling the switches S51,S52 or the levelling zone switches S81/S82 had gone wrong	<i>meaning of the further information to this error:</i> 01 input 7C had switched off (e.g. S81,S82) at re-levelling up 02 re-levelling switch down (S52) had switched off at re-levelling up 05 input 7C had switched off (e.g. S81,S82) at re-levelling down 06 re-levelling switch up (S51) had switched off at re-levelling down
74	final limit switch open at the top of a hydraulic lift (only EN81) The error status can only be cleared by switch off and on of controlling system	<i>meaning of the further information to this error:</i> 01 at travel down 02 at travel up 03 at adjusting travel 04 at travel into aimed landing down 05 at travel into aimed landing up 06 at re-levelling down 07 at re-levelling up
75	error message of a connected piece of equipment at input 7E (e.g. speed controller of digital shaft copy system FWS/3000)	<i>meaning of the further information to this error:</i> 01 at travel down 02 at travel up 03 at adjusting travel 04 at travel into aimed landing down 05 at travel into aimed landing up 06 at re-levelling down 07 at re-levelling up
77	Safety circuit between the inputs 4K and 5K is opened while travelling. Possible cause is an error of door-locking-contact while travelling.	<i>meaning of the further information to this error:</i> 01 at travel down 02 at travel up 03 at adjusting travel 04 at travel into aimed landing down 05 at travel into aimed landing up
78	When flush stop in the aimed landing, the levelling zone monitoring component (SHB100) did not switched on. Possible cause is a dropped magnet for levelling-zone-switch channel 1 (S81).	
79	Monitoring running time when door B opens	
80	Monitoring running time when door B closes	
81	Safety circuit between the inputs 4K and 5K could not closed before starting to normal travel. Possible cause is an error of door-locking-contact before starting to travel.	
82	Safety circuit between the inputs 3K and 4K is opened while travelling. Possible cause is an error of car door contact while travelling.	<i>Meaning of the further information to this error:</i> 01 at travel down 02 at travel up 03 at adjusting travel 04 at travel into aimed landing down 05 at travel into aimed landing up
83	A higher floor switch was switched than landings are available.	
84	Posistor responds (note green LED on mainboard). (It is also possible, that the 24VDC-supply is off. See the green LED on the main power supply, please.)	
85	Starting regulations were not fulfilled. Possible causes: 1. other source of voltage on signal voltage (note LED on main power supply card „POWER003“)	

	2. input 8C was not switched when wanting to start	
86	The door cannot open, since flush signal is missing (input 1C or inputs 4C/5C) or a report „levelling zone“ (input7C) on the computer did not arrive.	
87	Levelling zone switch S81/S82 or floor switch S1 to S16 are incorrect (see chapter „Adjusting Travel“), also possible is an error on SHB100	
88	1. car light off 2. lift was switched off by remote disconnection (e.g. key-operated switch in landings or porter)	
89	Monitoring running time when automatic flush levelling upwards	
90	Monitoring running time when automatic flush levelling downwards	
91	Monitoring running time when normal travelling upwards	
92	Monitoring running time when normal travelling downwards	
93	Monitoring running time on adjusting travel	
94	Monitoring running time when travelling in to a landing	
95	Monitoring running time when door A opens	
96	Monitoring running time when door A closes	
97	Monitoring running time when start of normal travel. The zone switches S81/S82 or the flush switches S51/S52 are not left after 10 seconds at switch on of travel conductors.	<i>meaning of the further information to this error:</i> 01 at starting travel down 02 at starting travel up
98	Input 3K (normally unswitched safety circuit) open (e.g. final limit switch, speed-limitation, emergency stop, but also e.g. error message of speed controlling device or of digital shaft copy system FWS/3000). On hydraulic lifts according to EN81 an opened final limit switch on the top of the shaft will be report separately by error 74	<i>meaning of the further information to this error:</i> 01 at travel down 02 at travel up 03 at adjusting travel 04 at travel into aimed landing down 05 at travel into aimed landing up 06 at re-levelling down 07 at re-levelling up
99	Internal error (possible e.g. on broken control computers or on very extreme noises on signal/net leads)	

6.3 Display of Operation Modes and Codes of Group Selector

Operation Modes

	service / main menu
01- 04	normal operation, indication of the lifts allowed in the group currently

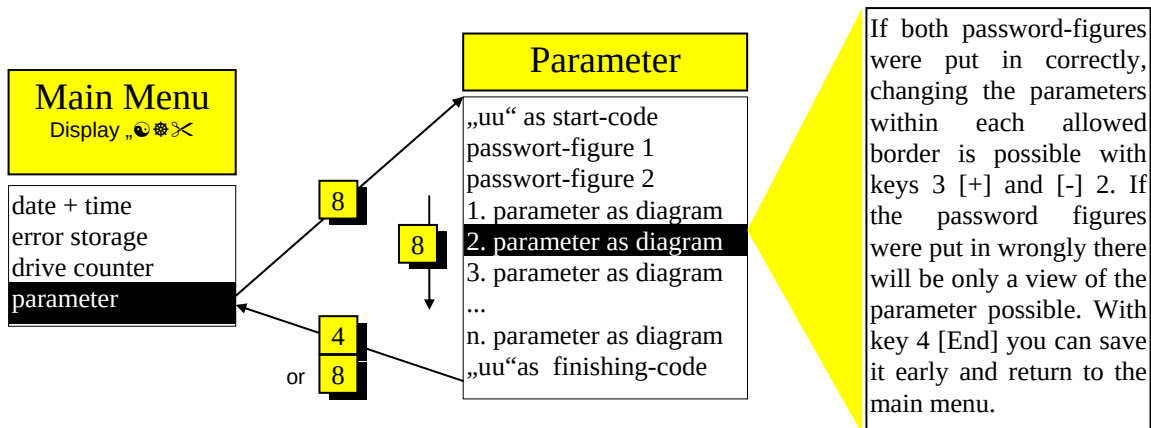
Operating Reports

70	Restart (by tension turned off and on again or reset of the computer)
72	Data errors in the EEprom (lift parameters have partly gone lost (possible e.g. at faulty control computer or at extreme disturbances on signal-/ mains power lines).
81	Lift 1 became blocked more than the „movement control time“ adjusted in parameter 60 and was taken out by the selector for the „blockage time“ adjusted in parameters 65. Possible cause: Light barrier of the lift door interrupted for a long time or frequent behind each other (also see parameters 60+65 of the group selector below).
82	As report 81, however for lift 2
83	As report 81, however for lift 3
84	As report 81, however for lift 4

6.4 Parameters (System depending Adjustments)

Note:

To carry out the following functions, the switch „service“ has to be switched on. Make sure that all persons left the lift, because the lift will stop immediately.



By pressing key 8 all parameters can be shown or changed. „uu“ will show in the display as a code sign to advise that the parameter menu is activated. All parameters are secured by passwords against changing (two digit code numbers following each other). If one of the code numbers was put in wrongly it will only show parameters, when both codes were put in correctly you can also change them.

Attention:

Be very careful when changing parameters, especially with parameters which set the type of lift (e.g. parameter 10, „rope lift yes/no“)! The computer will set wrong outputs on rash changes. **(THIS CAN CAUSE SHORT CIRCUITS !!!)** After changes on parameters, **before the first test travel**, you could pull plugs Q and R as a precaution, to test the right reaction of the output relays after given a command.



Note:

Changed parameters will not be saved immediately in the storage for constant values (EEPROM). Only after running down the parameter list or key 4 [End] was pressed, all parameters will be written in the EEPROM automatically and recognised as new ones (it takes approx. 5 sec.) You don't have to switch-off and on the control again.



All parameters are shown in two digit decimals and can be called up one after another by repeated pressing of key 8. The following order has to run through completely, that means that „uu“ will show in the display at the end. An early stopping of the parameter input and saving of the set parameters is possible by pressing key 4 [End].

When keeping the key pressed, the number of the actual parameter will show (see diagram), when letting go it will show the set value of this parameter.

1. press key 8 and let go, parameter menu is activated, „uu“ will show in the display
2. keep key 8 pressed, „u1“ will be shown in the display (codenumber (password)1), let go of key
3. by pressing key 2 or 3 ([-] or [+]) the first password can be set
4. keep key 8 pressed, „u2“ will be shown in the display („codenumber (password)2“), let go of key
5. by pressing key 2 or 3 ([-] or [+]) the second password can be set
6. if both passwords are correct, you can change the parameters that follow

7. keep key 8 pressed, „02“ will be shown in the display (parameter „amount of max. allowed car commands on no load“, let go of key
8. when pressing keys 2 or 3 ([-] or [+]) you can now set parameter „02“ as in the range shown in the diagram below, that means 0 to 6
9. now keep key 8 pressed again, the next parameter will show ...and so on...

Not all parameters will be shown, only the useful ones, that means parameter 12 „speed controlling device“ will not be shown, if you set an hydraulic lift with parameter 10 just before.

10. At the end of the parameter a „uu“ will show again as finishing code when key 8 was kept pressed.
11. when letting go of key 8 all parameter are saved (it takes approx. 5 sec.). After saving you are back in the main menu. The display will show  , the parameters were taken over.

You can get an early storage of the parameters as well when you press key 4 [End], e.g. only a few parameters were changed.

6.4.1 Lift Parameter

Number	Name	min. Value	max. Value	Unit	Short Description	Factory settings
Special Parameters						
02	amount of max. allowed car commands on no load	0	6	landing	If the input „no load“ (3D) switched on before starting to travel, all commands will be deleted if more commands are given than shown here. 0 = function no load impossible	
03	extern error message connected devices	0	1	1=yes	"1", if a speed controller, digital shaft copy system type FWS/3000 or other pieces of equipment are installed in the control. The error reports of the devices are connected to input 7E.	
04	shuttle traffic	0	1	1=yes	On "1" the shuttle traffic will be effected. The car travels to each landing automatically. This is favourable for testing lift installation or while installation of lift groups.	
05	intermediate speed	0	1	1=yes	Only on speed controlled lifts: "0" only the input "high speed" (v3) of speed controller will be set "1" Possible on lifts with impuls- or 1/n-copy-system: On lifts with higher speed the parameter could be set to "1". In this case a travel from one floor to the next is carried out with an intermediate speed, and a far travel with high speed. The delay times must be set in the parameters 02-16 at the end of this parameter list (see chapter 4.4 "Deceleration on Lifts with higher Speed").	
General Parameters						
10	rope lift	0	1	1=yes	1 = rope lift / 0 = hydraulic lift	
11	levelling zone monitoring	0	1	1=yes	1 = lift with safety circuit for bridging over door for automatic flush levelling or „travel in with advanced door opening“	
12	speed controlling device	0	1	1=yes	Only for rope lift: the lift consists of a speed controlling device e.g. frequency converter	
13	code output for level indicator	0	1		"0" Gray-code "1" binary code	
14	stopping via re-levelling	0	1	1=yes	You will also flush stop on a normal	

	switches				travel on „1“ via the re-leveling switches S51 and S52. On „0“ you will stop on a normal travel via one separate (or two connect in series) „flush stopping switches“ S20.	
15	Impuls shaft copy with 3 to 6 magnetic switches	0	1	1=yes	The impuls shaft copying is activated on „1“. 1 of n - copies is activated on „0“ (see chapter „Shaft Copying“)	
20	fire alarm operation / fire brigade operation	0	2		reaction on input 1D: "0" the fire brigade operation is set as EN81 "1" "fire-alarm-travel" will be effected and the lift will stand still with opened doors on the "fire-alarm-floor" "2" the fire brigade operation is set as TRA200.	
21	adjusting travel upwards	0	1	1=yes	One landing up an adjusting travel (correction travel) will be effected, otherwise one landing down. (ATTENTION: when using a short landing see chapter „Adjusting Travel“). On impuls shaft copying the adjusting travel is going to the top or bottom landing	
30	quick inspection travel	0	1	1=yes	inspection travel speed	
31	quick adjusting travel	0	1	1=yes	adjusting travel speed	
32	posistor sets the lift to a standstill	0	1	1=yes	Lift will stand still when a posistor-travelmotor-monitoring (PTC) is effected.	
33	<u>output 7P</u> "0" „out of order“-indicator "1" power up impulse "2" enable safety circuit for zone-monitoring on door side B	0	3		Use of output 7P: "0" as „out of order“-indicator "1" an impulse is carried out at the output with an impulse length of a second after switching on or reset "2" on near or short landings the zone areas can overlap. To prevent bridging the wrong door while travel into the aimed landing, you must connect two safety circuits for zone-monitoring. The controller then always enables the right safety circuit.	
34	<u>output 4N</u> "0" automatic cabine fan or occupied-indicator "1" automatic traction machine fan	0	2		Use of output 4N: "0" automatic control of the cabine fan depending on a travel (see also parameter 77). "1" automatic control of the traction machine fan depending on a travel (see also parameter 77).	
35	<u>output 1N</u> "0" level indicator binary- or Gray-code bit 3 "1" gong	0	1		use of output 1N: "0" on lifts with more than 8 landings you can use the output for binary- or Gray-code level indicator (bit3). "1" when travelling into the aimed landing, an impulse at the retarding point on the output will effect with a length of 5 sec. to the headed gong on the car (or outside in the landings by wiring	

					with floor information)	
36	car light off while stand still	0	1	1=yes	During the resting period of the lift (no further travel orders, no opening of manual shaft doors) an automatic switching-off of the car light will effect by output 6P after a set „light-off-time“ (parameter 78), see also parameter 37. Additionally the output 5P will switch on for further use and compatibility to older software-versions.	
37	at each landing (corresponding parameter 36) to	0	1	1=yes	if „light-off while stand still“ is set (parameter 36), „1“ means a light switch off at each landing, a „0“ means only while park- or sinking travel-landing.	
Doors						
38	automatic doors	0	1	1=yes	1 = automatic doors available 0 = only manual doors available	
39	speed controlled doors	0	1	1=yes	On speed controlled doors with door regulating equipment	
40	car doors without final limit switches	0	1	1=yes	1. manual shaft doors and automatic car border doors without final limit switches in both door positions 2. automatic car- and shaft doors (e.g. old models by companies Radgeber or Schindler) 3. speed controlled doors, where the door final limit switches not be connected to the lift control computer	
41	door open while stand still	0	1	1=yes	If no further travel commands appear, the automatic doors stay opened (see also parameter 47+48)	
42	car border door	0	1	1=yes	„1“ on shaft-manual doors and automatic doors as car border.	
43	not used	0	1	-		
44	doors not open after park travel	0	1	1=yes	The controller not opens the doors at the end of a park travel	
45	collective door opening	0	1	1=yes	„1“ if, on lifts with direct charge (both door sides in a landing), the doors should open up together when travelling in to the landing. An additional circuit is necessary on a selective opening.	
46	stand still with opened doors when car light is off	0	1	1=yes	„1“ if the doors should stay opened when the car light is switched off (even when using a key-operated switch for remote disconnection, the doors will stay open)	
47	doors open while stand still in this floor	0	16		Here you can set one floor, in which the doors remain open while lift stand still (on parameter 41=„1“ the doors remain open in every floor).	
48	doors open while stand still in this floor	0	16		Choice of a second floor, function identical with parameter 47	
50	advanced door opening	0	1	1=yes	Automatic doors will be opened (early) in the automatic levelling zone (door-unlocking-area) when travelling into the aimed landing. This is only possible in combine with a safety circuit for monitoring the levelling zone „SHB100“	

General Parameters						
61	parking landing	0	16	0 =off	Park- or sinking travel landing, on „0“ there will be no park-or sinking travel	
62	fire-alarm- or fire-brigade-entry-floor	1	16		Fire-alarm-floor or fire-brigade-entry-floor	
63	lift-No. in the group	0	4		„0“ on single lift, „1“ to „4“ lift identification numbers (see description „Lift Groups“)	
64	double landing call deletion	0	1	1=yes	On a dual-button-collective control an independent direction landing call deletion can be set, to prevent operational mistakes by lift users. On groups, „1“ has to be set here on principal.	
65	additional cards "EA..."	10	13		"10" Up to 8 landings no additional card connected. On more than 9 landings only EA003/Kdo9-16 connected. "11" Additional card EA002 or EA003/Ruf1-8 connected (only on lifts up to 8 landings allowed). "12" Additional cards EA003/Ruf1-16 and EA003/Kdo9-16 connected. "13" Additional cards EA003/Ruf1-8, EA003/Ruf9-16 and EA003/Kdo9-16 connected. On group lifts a „10“ must be set here. The control type of the lift group is set at the group selector by parameter 16. (see page 50 "Additional Cards")	
66	remote-switch-off-landing	0	16	0 =off	On remote switching off, or failure of the car lights, an immediate travel to this landing will be effected (see also parameter 46).	
Times						
67	fast travel time between short landings	0	50	100 ms	On travels between short landings the floor switches (1/N-shaft-copying) doesn't change. The best retarding point in this case can be set with this time (see also parameter 95-99). If you adjust "0", the lift will start with slow speed to the next short landing.	
68	anti-bouncing time	3	6	10ms	anti-bouncing time of all inputs of the control computer	
69	landing priority time	0	99	sec.	Waiting time with „door open“ on arrival at the landing selection stop. In this time the landing priority should be set by the passenger.	
70	Pump-after-running time (Valve-after-running time)	0	20	100 ms	Only for hydraulic lifts: When flush stopping at the aimed landing: 1) the valves will be closed. Pump runs down the „pump-after-running-time“. 2) at first the pump will be switched off. The valves close delayed around the „pump-after-running-time“.	
71	Star-time	0	3	sec.	On star-delta starting the length of the run of star	
72	drive contactors and	0	3	sec.	Only sensible on rope lifts:	

	brake after-running time				Delayed falls off of brake and drive contactors opposite to the set value when stopping („electrical stop“), also see input 1H and chapter „Speed Controlled Operation“	
73	contactor and brake pre-run time	0	10	100 ms	(e.g. 5 $\Rightarrow$ 500 ms) Only sensible on rope lifts: Delayed switch-on of speed set values opposite to drive contactors and direction set values (also see chapter „Speed Controlled Operation“)	
74	continuous travel time	3	20	sec.	Minimum waiting time on the floor	
75	delayed start to travel	1	20	100 ms	(e.g. 5 $\Rightarrow$ 500 ms) Delay-time between pulling door locking magnet (or closing doors) and enquiring the door locking contacts (door locking anti-bouncing). On speed controlled works also see chapter „Speed Controlled Operation“.	
76	flush levelling locking time	1	5	sec.	Minimum time between flush stop and starting flush levelling or between two flush levellings. ($\Rightarrow$ time of the mechanical sliding of the car when stopping will be considered, drive contactors will also be spared)	
77	fan delay time	0	99	10 sec.	(e.g. 5 $\Rightarrow$ 50 sec.) (here you can set a delay time of output 4N after normal travel, see also parameter 34). At normal travel the fan is working. At the end of travel the time (parameter 77) starts running. At the end of time output 4N switches on and the fan stops. If you use the output 4N for controlling of occupied-indicators, the time must be set to "0".	
78	light-off time	0	99	10 sec.	(e.g. 5 $\Rightarrow$ 50 sec.) see Parameter 36	
79	parking time	0	15	min.	Park travel or sinking travel, 0 is approx. 5 sec. after doors closed	
Door times						
80	door open time	0	99	sec.	Normal door open time after opening the doors. On doors with more than one door side, the time for all door sides are the same (also see parameter 85)	
81	door motor pause time	1	20	100 ms	(e.g. 5 $\Rightarrow$ 500 ms) e.g. door will only be stopped during closing and be re-opened after the door motor pause time (sensible e.g. on heavy doors)	
82	door contact time	2	10	100 ms	(e.g. 5 $\Rightarrow$ 500 ms) Computer waiting time between door final limit switch „close“ and enquiry of the car door contact. If the door contact should not be closed after closing the doors, a further command or call will cause a further automatic opening and closing of the doors. ($\Rightarrow$ new closing test)	

83	door opening time door A	1	10	sec.	Time from beginning until end of door opening event of doorside A. Only effective on doors where no final limit switches are led to the control computer	
84	door opening time door B	1	10	sec.	as parameter 83 for doorside B	
85	door open time after reversing	0	door open time parameter 80)	sec.	Door open time after reversing (with new command or call in actual landing, light barrier, door open push-button etc.). On lifts with more than one door side, the time for all door sides is the same. The time can sensibly not be set longer than the normal door open time (see parameter 80).	
86	door start up opening delay time	0	10	100 ms	When stopping in the landing the door start up opening after this delay time. This is important for an automatic door with additional door locking magnet. Only when the lock unlocks the shaft door, the door will start to open up. The time for two door sides is the same.	
87	switch off time for door motor	0	99	sec.	On doors without final limit switches the door motor will be switched off after that time while lift stand still 0 = no switching off	
88	flush levelling stop delay time upwards	0	20	100 ms	The activated flush levelling operation upwards will be stopped delayed after this time ("simulated hysteresis") "0" = no delay	
89	flush levelling stop delay time downwards	0	20	100 ms	The activated flush levelling operation downwards will be stopped delayed after this time ("simulated hysteresis") "0" = no delay	
Monitoring running Time						
90	running time control „travel in“	20	90	sec.	In aimed landing the time from retarded point up to the flush stop will be measured.	
91	running time control „adjusting travel“	20	90	sec.	At 1 of N-copy-systems the running time between start and end of adjust travel will be measured. At impulse-copy-system the time between two impulses of S51 or S52 will be measured.	
92	running time control doors	20	90	sec.	On two or three automatic doorsides for all doors the same.	
93	running time control „normal travel“	20	90	sec.	At 1 of N-copy-system the time of switch-change of floor switches will be measured. At impulse-copy-system the time between two impulses of S51 or S52 will be measured.	
94	door-lock disturbance time	20	90	sec.	Monitoring the door-locking contact of a travel.	
Shaft diagram						
95	1. short landing	0	15	land- ing	On a short landing the bottom one of both landings must be written in, this means out of 2 and 3, „2“ must be written in. (Only possible on 1/N-shaft-copying) „0“ = off	

96	2. short landing	0	15	land- ing	as parameter 95 for a 2 nd short landing	
97	3. short landing	0	15	land- ing	as parameter 95 for a 3 rd short landing	
98	3. short landing	0	15	land- ing	as parameter 95 for a 4 th short landing	
99	3. short landing	0	15	land- ing	as parameter 95 for a 5 th short landing	
1_	access landing 1 side A	0	1	1=yes	landings with no entry side will be ignored by the control. With this you can therefore cancel landings. Attention: Should in the following parameters adjusted more than 8 landings, the additional card EA003/Kdo9-16 becomes required automatically. If this isn't attached, unchecked driving orders follow.	
2_	access 2. landing side A	0	1	1=yes	"	
3_	access 3. landing side A	0	1	1=yes	"	
4_	access 4. landing side A	0	1	1=yes	"	
5_	access 5. landing side A	0	1	1=yes	"	
6_	access 6. landing side A	0	1	1=yes	"	
7_	access 7. landing side A	0	1	1=yes	"	
8_	access 8. landing side A	0	1	1=yes	"	
9_	access 9. landing side A	0	1	1=yes	"	
10	access 10. landing side A	0	1	1=yes	"	
11	access 11. landing side A	0	1	1=yes	"	
12	access 12. landing side A	0	1	1=yes	"	
13	access 13. landing side A	0	1	1=yes	"	
14	access 14. landing side A	0	1	1=yes	"	
15	access 15. landing side A	0	1	1=yes	"	
16	access 16. landing side A	0	1	1=yes	"	
_1	access 1. landing side B	0	1	1=yes	"	
_2	access 2. landing side B	0	1	1=yes	"	
_3	access 3. landing side B	0	1	1=yes	"	
_4	access 4. landing side B	0	1	1=yes	"	
_5	access 5. landing side B	0	1	1=yes	"	
_6	access 6. landing side B	0	1	1=yes	"	
_7	access 7. landing side B	0	1	1=yes	"	
_8	access 8. landing side B	0	1	1=yes	"	
_9	access 9. landing side B	0	1	1=yes	"	
10	access 10. landing side B	0	1	1=yes	"	
11	access 11. landing side B	0	1	1=yes	"	
12	access 12. landing side B	0	1	1=yes	"	
13	access 13. landing side B	0	1	1=yes	"	
14	access 14. landing side B	0	1	1=yes	"	
15	access 15. landing side B	0	1	1=yes	"	
16	access 16. landing side B	0	1	1=yes	"	
02	Only for higher speed lifts: delay time for deceleration point of pre-count landing	0	50	100 ms	If parameter 05 (at the beginning of this parameter list) is set to "1", the delay time for the pre-count internal landing can be set here (see chapter 4.4 "Deceleration on Lifts with higher Speed") Parameter 02: Travel upwards: --- Travel downwards: Time starts at beginning of landing 2. At the end of this time the control changes the internal landing to 1.	
03	"	0	50	100	" Parameter 03:	

				ms	UP: Time starts at beginning of landing 2. At the end of this time the control changes the internal landing to 3. DOWN: Time starts at beginning of landing 3. At the end of this time the control changes the internal landing to 2. (This is the same time like in up-direction, because the floor distance is the same.)	
04	"	0	50	100 ms	"Parameter 04: UP: landing 3 to landing 4 DOWN: landing 4 to landing 3	
05	"	0	50	100 ms	"Parameter 05: UP: landing 4 to landing 5 DOWN: landing 5 to landing 4	
06	"	0	50	100 ms	"Parameter 06: UP: landing 5 to landing 6 DOWN: landing 6 to landing 5	
07	"	0	50	100 ms	"Parameter 07: UP: landing 6 to landing 7 DOWN: landing 7 to landing 6	
08	"	0	50	100 ms	"Parameter 08: UP: landing 7 to landing 8 DOWN: landing 8 to landing 7	
09	"	0	50	100 ms	"Parameter 09: UP: landing 8 to landing 9 DOWN: landing 9 to landing 8	
10	"	0	50	100 ms	"Parameter 10: UP: landing 9 to landing 10 DOWN: landing 10 to landing 9	
11	"	0	50	100 ms	"Parameter 11: UP: landing 10 to landing 11 DOWN: landing 11 to landing 10	
12	"	0	50	100 ms	"Parameter 12: UP: landing 11 to landing 12 DOWN: landing 12 to landing 11	
13	"	0	50	100 ms	"Parameter 13: UP: landing 12 to landing 13 DOWN: landing 13 to landing 12	
14	"	0	50	100 ms	"Parameter 14: UP: landing 13 to landing 14 DOWN: landing 14 to landing 13	
15	"	0	50	100 ms	"Parameter 15: UP: landing 14 to landing 15 DOWN: landing 15 to landing 14	
16	"	0	50	100 ms	"Parameter 16: UP: landing 15 to landing 16 DOWN: landing 16 to landing 15	
change password						
u1	password 1	xx	xx		The password is only changeable if the correct actual password has been adjusted before. If the actual parameter was adjusted wrong, parameter u1 and u2 are not visible.	
u2	password 2	xx	xx		"	

6.4.2 Parameter of Group Selector

Number	Name	min. Value	max. Value	Unit	Short Description	factory setting
General Parameters						
16	Additional cards "EA..." of group selector	10	15		"10" One button group control direction insensitive (one additional card EA003/Ruf1-16 connected). "11" One button group control direction insensitive incl. landing priority calls in floors 9 to 16 (an additional card EA003/Kdo9-16 and EA003/Ruf1-16 connected). "12" One button group control down collective (one additional card EA003/Ruf1-16 connected). "13" One button group control down collective incl. landing priority calls in floors 9 to 16 (two additional cards connected: EA003/Kdo9-16 and EA003/Ruf1-16). "14" Two button group control direction sensitive (lifts up to 8 landings one card EA002 or EA003/Ruf1-8 connected) (lifts with more than 9 landings two additional cards connected: EA003/Ruf1-8 and EA003/Ruf9-16). "15" Two button group control direction sensitive incl. landing priority calls in floors 9 to 16 (three additional cards connected: EA003/Ruf1-8, EA003/Ruf9-16 and EA003/Kdo9-16). (see also page 44 "Additional Cards")	
20	double call deletion	0	1	1=yes	Here you can set an independent direction landing call deletion to prevent operational mistakes by lift users.	
25	parking landing for group	0	16		Unused and enabled lifts in the group can send into a groups-parking landing. This parking landing is independently of the lift-internal parking landings. If a lift himself however is in his "own" parking landing, he isn't send into the groups-parking landing of the selector. "0" = off (see also parameter 61)	
27	max. number of parking lifts in the groups-parking landing	1	4		The number of the just not used lifts, which shall park in the groups-parking landing, can be set here.	
31	stop loss time lift 1	1	10	t / t	The average relationship must be investigated and indicated here between travelling-time of one to the next landing and residence time in	

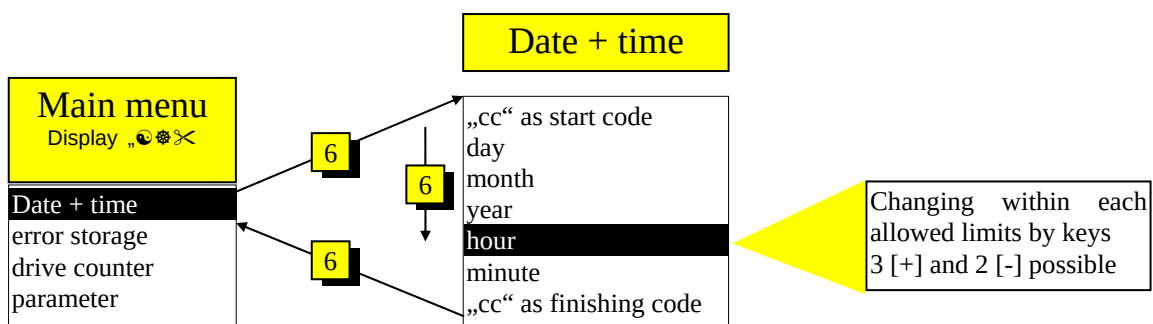
					the floors. (Very important for an effective group expiry!) Example: Average travelling-time between landings is 5 seconds, average esidence time in a floor is 20 seconds (lift retards, door open, door close, lift accelerates) $\Rightarrow 20/5 = 4$ ("4" must be set in parameter 31)	
32	stop loss time lift 2	1	10	t / t	as parameter 31, however for lift 2 (the results of the parameters 31 to 34 are same at most groups)	
33	stop loss time lift 3	1	10	t / t	as parameter 31, however for lift 3	
34	stop loss time lift 4	1	10	t / t	as parameter 31, however for lift 4	
Times						
60	movement control time	3	18	10 sec.	(e.g. „5“ $\Rightarrow$ 50 sec.) If the lift does not move after a call until „movement control time“ (e.g. by keeping the doors opened) it will be taken off of the group for the set „blockage time“ in parameter 65 (enable relay drops off). The assigned calls will be divided between the other lifts.	
61	group parking time	0	15	min.	parking travel time (see also parameter 25) Should have adjusted the lifts in addition an own parking landing (see lift parameter No. 61 and 79), must the parking time for the groups be clearly more shorter, as that one of the lifts.	
65	blockage time	1	99	sec.	see Parameter 60	
change password						
u1	password 1	xx	xx		The password is only changeable if the correct actual password has been adjusted before. If the actual parameter was adjusted wrong, parameter u1 and u2 are not visible.	
u2	password 2	xx	xx			

6.5 Date and Time

The control computer is in charge of a real time clock, which informs it about the actual date and time. Leap years are considered, but not summer or winter time. On the computer card of the control computer there is a battery (3V-round cell) which is only used for permanent current supply of the clock. The clock will stay 5 years typically in function on a **permanent current free control**. On normal operation of the lift, the battery will last typically for 10 years.

NOTE:

To do the following functions you have to switch on the „service“ switch on the control computer. Make sure that all passengers have left the lift because the lift will stop immediately.



1. press key 6, display will show „cc“ as start code
2. press key 6, date and time will be shown, you may now change date with keys [+] (3) and [-] (2) within the possible allowed limits
3. press key 6, month will be shown, changes possible
4. press key 6, year will be shown, changes possible
5. press key 6, hour will be shown, changes possible
6. press key 6, minute will be shown, changes possible
7. press key 6, display will show „cc“ again as finishing code
8. press key 6, ☺☹☺☹ will show in the display (switch „service“ is still on). You are back in the main menu.

6.6 Error Storage

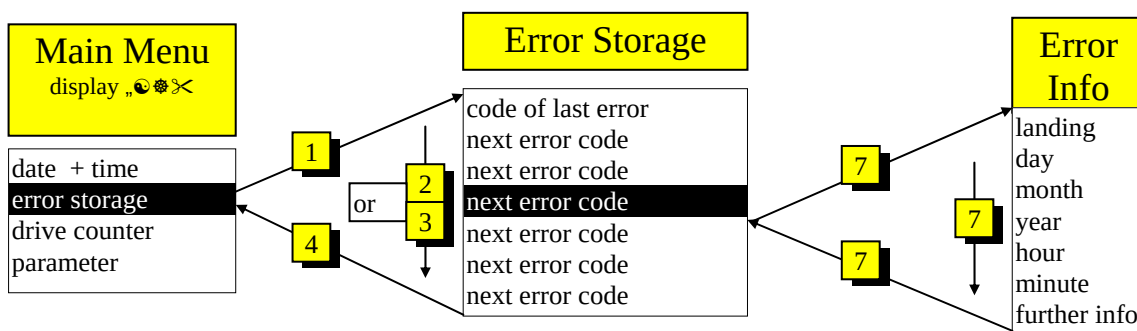
NOTE:

To do the following functions you have to switch on the „service“ switch on the control computer. Make sure that all passengers have left the lift because the lift will stop immediately.



The control computer MC1 has an EEprom-buffered error storage, which saves the last 69 occurred error messages. The storage is laid out as a ring buffer, this means when 69 errors occurred, the oldest error will be written over. This ensures that always the last errors will be shown, even when storage deletion was forgotten after repairs on the lift.

All errors will be saved and displayed with landing, date, time and further information.



6.6.1 Read Error Storage

1. The display must show ☺☺☺ for „Service switched on“
2. Press key 1 (retrieve errors); the last saved error code will appear. NOTE: If no errors are saved you will not be able to call this function. When pressing „1“ the display will show „☺☺☺“.
3. You can question the error code with keys [+] 3 and [-] 2. If you keep the key pressed [+] or [-], the error number will display. If you let go the affiliated error code will be displayed.
4. If the landing, where the error appeared or date, time and further information of the respective error is of interest, you can call it by pressing key 7 several times. The sequence here is: landing, day, month, year, hour, minute, further information (error code). If the error code appears again in the display, you can go to the next error with [+] and [-]. NOTE: The landing-No. is the absolute number of floors that means the bottom landing is 01, the second landing is 02 etc.
5. When finishing the questioning key 4 [end] **MUST** be pressed. „☺☺☺“ will show in the display again (switch „Service“ is still on). You are back in the main menu.

NOTE:

- The function „read error code“ can only be finished by pressing key 4. Switching-off the „service“ switch **is not enough**.
- If key 7 was pressed to get the information landing, date, time and further information for a specific error, you will have to finish (until error code will be shown in display again). Only after this you can jump back to the main menu by pressing key 4

6.6.2 Clear Error Storage

You can clear the error storage by pressing key 1 and 8 at the same time. The display will show „00“. The clearing time takes 1 second, after that „☺☺☺“ will show for „main menu“. Now you cannot call up any error with key 1, because the storage is empty. The computer will not react to key 1.

NOTE:

Before clearing an error storage, mode „read error storage“ has to be activated first by pressing key 1.

6.7 Travel Counter

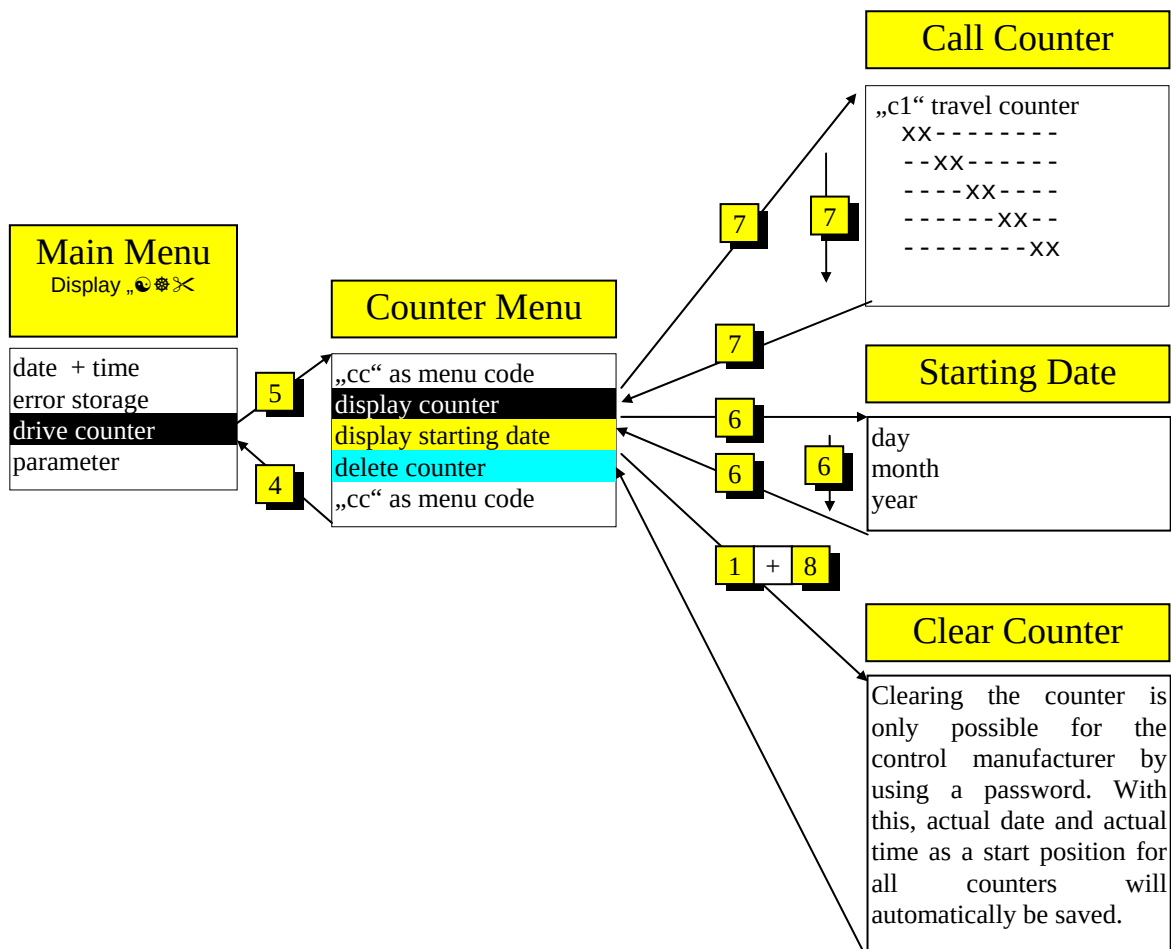
NOTE:

To do the following functions you have to switch on the service „service“ switch on the control computer. Make sure that all passengers have left the lift because the lift will stop immediately.



The control has got an integrated travel counter. Movements of the lift car will be taped.

NOTE: To secure the EEPROM in the control computer, the actual counter position will be copied into the EEPROM only every 6 hours. That means, if the control was switched off and on in between operation, the travels since the last transfer of dates to the EEPROM are lost.



6.7.1 Calling the Counter

By pressing key 5 the counter can be displayed. „cc“ will appear in the display as a code sign that the menu is activated.

The counter is showing 10 digits and can be called up by pressing key 7 a few times. NOTE: The following sequence has to be run through completely, that means until „cc“ is shown as a code sign again in the display. Aborting it before is not possible.

Displayed sequence:

c1 (travel counter on)

xx	(place 10 and 9)	place	10	9	8	7	6	5	4	3	2	1
xx	(place 8 and 7)	number	x	x	x	x	x	x	x	x	x	x
xx	(place 6 and 5)											
xx	(place 4 and 3)											
xx	(place 2 and 1)											
cc												

Starting date of counter

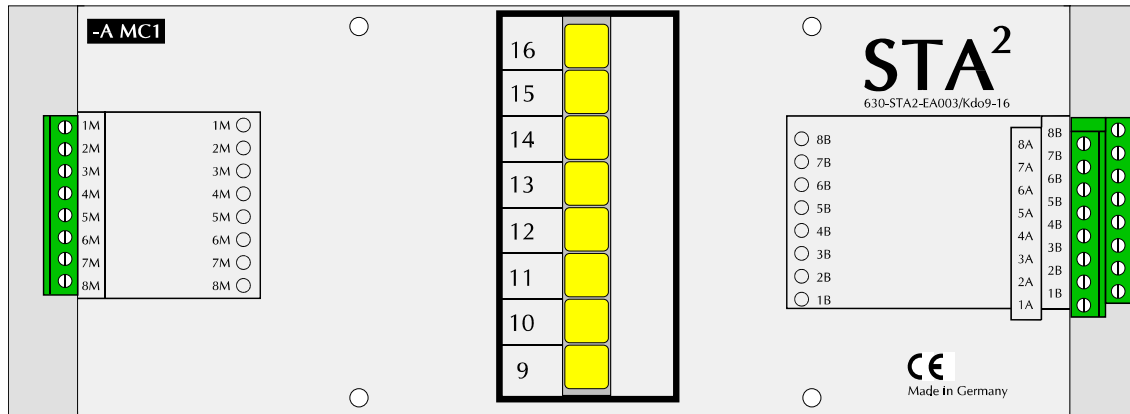
If „cc“ is back in the display, you can call the starting date for the counter by pressing key 6 a few times.

Sequence: day - month - year- („cc“).

6.7.2 Clearing the Counter

Setting back the counter is only possible for the control manufacturer, by using a password. When clearing, the actual date will be written in the storage, which can be called up later with the counter (this is a display of starting date for the counter).

6.8 Additional Card EA003/Kdo9-16



The coverage of clamps is described further down.

Single lift

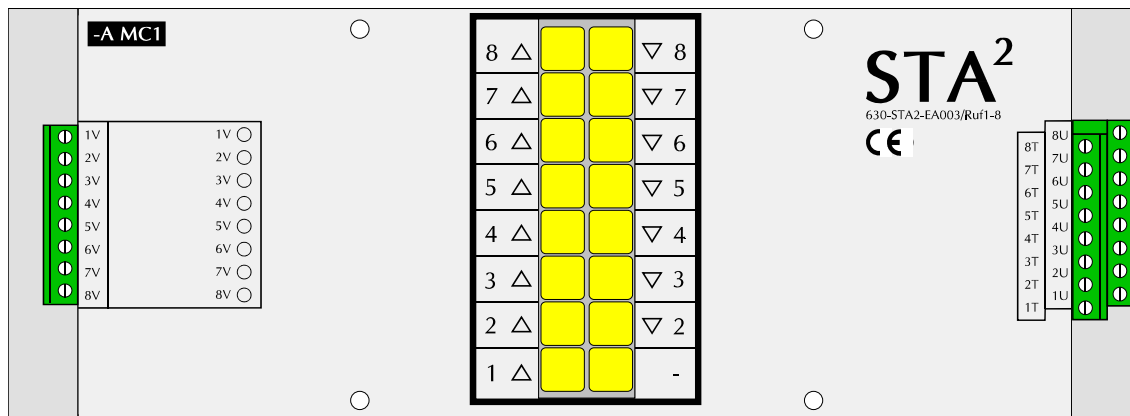
The additional card „EA003/Kdo9-16“ is used as an expansion of inputs and outputs for car commands 9-16 and floor switches 9-16. The additional keys are for direct input of car commands with acknowledge-LED's.

Group lift

On group lifts consisting of group landing priority calls 9 to 16 the additional card „EA003/Kdo9-16“ will be connected to the control computer of the group selector. The additional keys are for direct input of the priority landing calls with acknowledge LED's.

If landing priority calls in landings 1-8 are needed, these mustn't connect at the additional card, but to the in-/outputs 1G to 8G of the group selector.

6.9 Additional Card EA003/Ruf1-8



The coverage of clamps is described further down.

Single lift

The additional card „EA003/Ruf1-8“ is used as an expansion of inputs and outputs for landing calls and landing priorities. You will always need the additional card when landing calls and car commands are to be treated separately by the control computer. This is the case on control types such as dual-button-full-collectives, one-button-down-collectives, one-button-up-collectives, full load, no load and attendant operation.

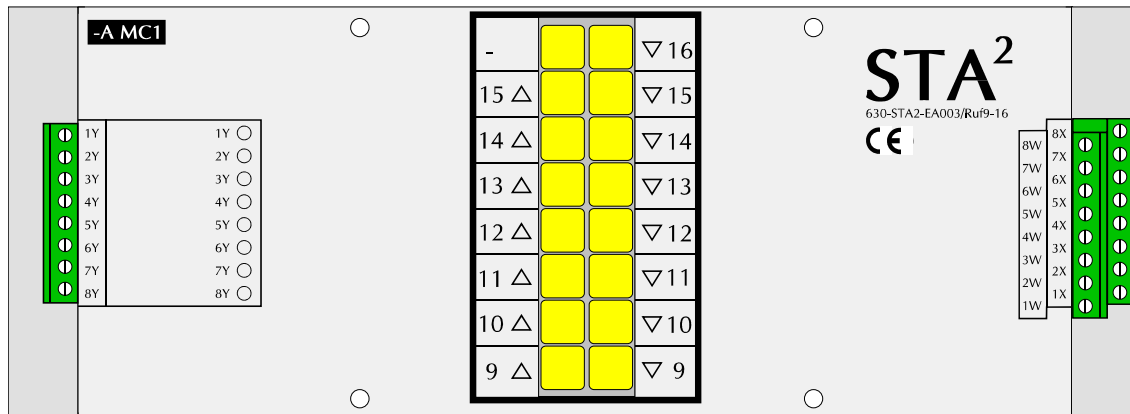
The additional keys are for direct input of landing calls with acknowledge-LED's.

Group lift

On group lifts up to 8 landings and two call push buttons in the landings the additional card „EA003/Ruf1-8“ will be connected to the control computer of the group collector. In this case group landing calls will be connected there. The additional keys are for direct input of group landing calls with acknowledge-LED's.

If landing priorities are needed, do not connect them to this card, but on the inputs/outputs 1G to 8G of the control computer.

6.10 Additional Card EA003/Ruf9-16



The coverage of clamps is described further down.

Single lift

The additional card „EA003/Ruf9-16“ is used as an expansion of inputs and outputs for landing calls and landing priorities on single lifts consisting of more than 8 landings. You will always need the additional card when landing calls and car commands are to be treated separately by the control computer. This is the case on control types such as dual-button-full-collectives, full load, no load and attendant operation (for only one button in landing call stations see additional card „EA003/Ruf1-16“).

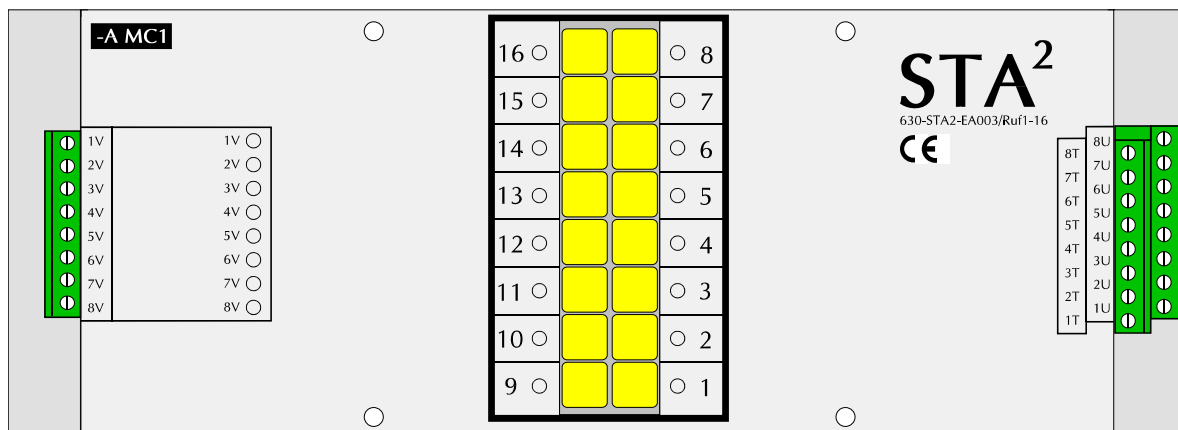
The additional keys are for direct input of landing calls with acknowledge-LED's.

Group lift

On group lifts consisting of more than 8 landings and two call push buttons in the landings (full-collective) the additional card „EA003/Ruf9-16“ will be connected additionally to card „EA003/Ruf1-8“ to the control computer of the group selector. In this case group landing calls 9 to 16 will be connected there. The additional keys are for direct input of group landing calls 9 to 16 with acknowledge-LED's.

If landing priorities 9 to 16 are needed, do not connect them to this card, but on the inputs/outputs 1A to 8A of the additional card „EA003/Kdo9-16“.

6.11 Additional Card EA003/Ruf1-16



The coverage of clamps is described further down.

Single lift

The additional card „EA003/Ruf1-16“ is used as an expansion of inputs and outputs for landing calls and landing priorities. You will always need the additional card when landing calls and car commands are to be treated separately by the control computer. This is the case on control types such as one-button-down-collectives, one-button-up-collectives, full load, no load and attendant operation.

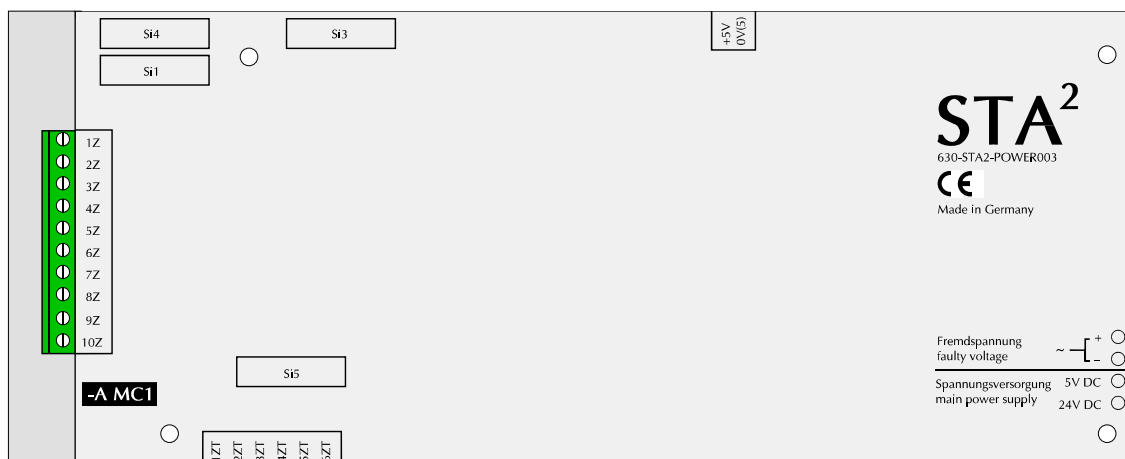
The additional keys are for direct input of landing calls with acknowledge-LED's.

Group lift

On group lifts consisting of only one call button in the landings (collective or down-collective) the additional card „EA003/Ruf1-16“ will be connected to the control computer of the group selector. In this case group landing calls 1 to 16 will be connected there. The additional keys are for direct input of group landing calls 1 to 16 with acknowledge-LED's.

If landing priorities 9 to 16 are needed, do not connect them to this card, but on the inputs/outputs 1A to 8A of the additional card „EA003/Kdo9-16“.

6.12 Main Power Supply POWER003



The coverage of clamps is described further down.

The main power supply contains the production of computer internal voltages (5VDC), the production of signal voltages of the lift (24VDC) and monitoring circuit for identity of faulty voltage and display. (see also chapter „Savety Notes / System Earthing“)

The maximum output current of the signal voltage is 2A. If you need a higher power capacity of the signal voltage in the control, you may connect a 2nd. transformer **(only the same type as used on the board!)** to the clamps 1ZT to 6ZT.



Fuses			
Name	Function	Value	Release Quality
Si 1	fuse protection of 24VDC primary sided	2,0	inert
Si 2	(see mainboard)		
Si 3	fuse protection of 24VDC secondary sided	3,15	inert
Si 4	fuse protection of 5VDC primary sided	3,15	inert
Si 5	fuse protection of optional tranformer secondary sided	3,15	inert

6.13 Connection Clamps

6.13.1 Mainboard HP003

Clamp	Type <i>I = Input O = Output I/O = coupled in- /output NSG = Emergency light equipment</i>	Name / Function	Short Description	Volt-age
1C	I	stop flush	Stop flush when travelling into the aimed landing. You can also stop flush via 4C+5C (see chapter „Normal Travel“ and lift parameter 14)	24V DC
2C	I	inspection	inspection switched-on on input switched off	24V DC
3C	I	return	return switched-on on input switched off	24V DC
4C	I	automatic flush levelling up		24V DC
5C	I	automatic flush levelling down		24V DC
6C	I	final limit switch on the top (only hydraulic lift according to EN81)	if the safety circuit will open, the controller takes notice of an opened final limit switch, if at the same time input 6C will switched on. Car commands and landing calls will be blocked.	24V DC
7C	I	levelling zone	With built-in safety circuit SHB100 for monitoring the levelling zone, a report on the computer in the levelling zone is effected (also see description „Adjusting Travel“).	24V DC
8C	I	starting chain	Before starting the lift, this input has to be switched on. While travelling, the input has to be switched off, otherwise the lift will turn into a self-blockage on the next travel.	24V DC
1D	I	fire brigade / fire alarm	see also lift parameter 62	24V DC
2D	I	full load	see chapter „full load“	24V DC
3D	I	no load	see chapter „no load“ and parameter 02	24V DC
4D	I	landing calls off / car priority		24V DC
5D	I	calipper return down		24V DC
6D	I	calipper return up		24V DC
7D	I	calipper inspection down		24V DC
8D	I	calipper inspection up		24V DC
1E	I	overload	see chapter „Overload“	24V DC
2E	I	calipper door A close on inspection		24V DC
3E	I	calipper door A open on inspection		24V DC
4E	I	reverse door A	light barrier, door-open-push-button etc.	24V DC
5E	I	final limit switch door A close		24V DC
6E	I	final limit switch door A open		24V DC
7E	I	error message of connected devices	If a speed controller, digital shaft copy system FWS/3000 or other devices are installed in the control cabinet, the error outputs of these devices will be connected on this input. In normal operation the input must be high (also see description of lift parameter 03).	24V DC
8E	I			24V DC
1F	I	On 1/N-shaft-copy- system ⇒ floor switch S1	1/N-shaft-copy-system: While travelling, the floor switches can overlap, but not when car is in flush position, see also	24V DC

		On impuls-shaft-copy-system ⇒ correction switch S9	chapter „Short Landings“.	
2F	I	floor switch S2	„	24V DC
3F	I	floor switch S3	„	24V DC
4F	I	floor switch S4	„	24V DC
5F	I	floor switch S5	„	24V DC
6F	I	floor switch S6	„	24V DC
7F	I	floor switch S7	„	24V DC
8F	I	floor switch S8	„	24V DC
1G	I/O	call/command landing 1	On one-button-collective control (simplex), car commands as well as landing calls will be connected to plug G.	24V DC
2G	I/O	call/command landg. 2	„	24V DC
3G	I/O	call/command landg. 3	„	24V DC
4G	I/O	call/command landg. 4	„	24V DC
5G	I/O	call/command landg. 5	„	24V DC
6G	I/O	call/command landg. 6	„	24V DC
7G	I/O	call/command landg. 7	„	24V DC
8G	I/O	call/command landg. 8	„	24V DC
1H	I	let drive contactors falls off on flush stop	(only sensible on speed controlling devices) On „electrical stopping“ of the speed controlling device the set values will be switched off when reaching the flush-stop-switch (S20 or S51/S52), the drive contactors still stay switched on depending of parameter 72. The drive contactors drop off, when the time is over or input 1H was switched on (via output on speed controlling device (see also chapter „Working with Speed Controlling Devices“))	24V DC
2H	I	door close push-button	interrupts the door-open-time on automatic doors	24V DC
3H	I	final limit switch door B open		24V DC
4H	I	reverse door B	Light barrier, door-open-push-button etc.	24V DC
5H	I	calipper door B open on inspection		24V DC
6H	I	final limit switch door B close		24V DC
7H	I	attendant operation		24V DC
8H	I	calipper door B close on inspection		24V DC
1J	I	posistor (PTC)		
2J	I	posistor (PTC)		
3J	O	landing calls	only on control computer without additional card EA003/Ruf1-8	24V DC
1K		N	arriving zero lead of mains supply	SHKr. 230V 50Hz
2K		N	departing zero lead of mains supply (option)	SHKr. 230V 50Hz
3K	I	savety circuit	Monitoring the operational unswitched savety circuit (e.g. final limit switch, emergency stop, safety catch contact etc.)	SHKr. 230V 50Hz
4K	I	doors	monitoring the door contacts in the savety circuit	SHKr. 230V 50Hz
5K	I	door-locks	monitoring the door-locking contacts in the savety circuit	SHKr. 230V 50Hz

6K		NF	Departing zero lead for drive contactors, valves, brake etc., which are connected to the safety circuit. The course of the zero lead must not be changed.	SHKr. 230V 50Hz
1N	O	1. gong 2. car position indicator binary-/Gray-code bit 3	1. impulse of approx. 5 seconds on the retarding point in the aimed landing 2. possibility for e.g. connection of a car position indicator, encoding with binary-/Gray-code (bit3) (see parameter 13 and 35)	24V DC
2N	O	direction indicator down		24V DC
3N	O	direction indicator up		24V DC
4N	O	engaged indicator	Is also used to controlling an automatic car fan (see parameter 13)	24V DC
5N	O	indicator „landing priority active“	If an landing priority is used, the output is switched on. If the landing priority stop is reached and the maximum waiting time is over or while the car priority is switched on, the output will be switched off again.	24V DC
6N	O	car position indicator binary-/Gray-code	possibility e.g. to connect a car position indicator, encoding in binary-/Gray-code (bit 2)	24V DC
7N	O	car position indicator binary-/Gray-code	bit 1	24V DC
8N	O	car position indicator binary-/Gray-code	bit 0	24V DC
1P	O	door A open		24V DC
2P	O	door A close		24V DC
3P	O	door B open		24V DC
4P	O	door B close		24V DC
5P	O	intermediate speed for speed controlling device	1. Speed controlled rope lifts with 1/n-copy system: While travelling between short landings a separate input of the speed controller "intermediate speed" is set. In this case the deceleration point is controlled by parameter 67 (see also parameter 95-99). 2. Speed controlled rope lifts with impuls- or 1/n-copy system: On lifts with higher speed output 5P operates as "intermediate speed" while travelling from one floor to the next. (see chapter 4.4 "Deceleration on Lifts with higher Speed")	24V DC
6P	O	switch-off car light	If the car light will be switched off (in the control or by remote control e.g. by key-operated switch in the landing call station), the control will possibly switch off the light delayedly (see chapter „Car Light / Emergency Call / Emergency Light“)	24V DC
7P	O	1. power up impulse 2. „out of order“ indicator 3. enable zone-safety-circuit at door side B	1. impulse of 1 sec. length after power up 2. „out of order“ indicator, output switched on = normal operation 3. On near or short landings the zone areas can overlap. To prevent bridging the wrong door while travel into the aimed landing, you must connect two safety circuits for zone-monitoring. The controller then always enables the right safety circuit. Output relais 2 controls the zone at side A, output 7P controls the zone at side B. (see parameter 33).	24V DC
1Q	O	rel. 9 make contact	on hydraulic, valve or pump-running after when	

			flush stopping on rope-controlled : Set value „automatic flush levelling“	
2Q	O	rel. 9 make contact	„	
3Q	O	rel. 8 make contact	door-locking magnet	
4Q	O	rel. 8 make contact	„	
5Q	O	rel. 7 make contact	hydraulic: delta rope: brake	
6Q	O	joining of Rel. 3 to 7		
7Q	O	rel. 6 make contact	hydraulic: star rope: slow	
8Q	O	rel. 5 make contact	up	
1R	O	rel. 4 make contact	down	
2R	O	rel. 3 make contact	fast	
3R	O	n.c.		
4R	O	rel. 2 break contact	On lifts with safety circuit SHB100 for monitoring the levelling zone, the bridging-over of the doors will be cancelled with Rel. 2 to test if the door-locking contacts are closed before starting to travel.	
5R	O	rel. 2 break contact	„	
6R	O	rel. 1 joining	collective error report	
7R	O	rel. 1 make contact	„	
8R	O	rel. 1 break contact	„	
1S	NSG	L1L	Phase of light mains supply	230V / 50Hz
2S	NSG	NL	zero lead of light mains supply	230V / 50Hz
3S	NSG	input car light	connection to phase of car light-system	230V / 50Hz
4S	NSG	0V (of emergency light voltage)		12/24V DC
5S	NSG	0V (of accumulator)		12/24V DC
6S	NSG	(+) (of accumulator)		12/24V DC
7S	NSG	switch of emergency light voltage	If clamp 7S are not closed to 10S, the emergency light/call voltage is switched off.	12/24V DC
8S	NSG	(+) of emergency light- lamp		12/24V DC
9S	NSG	main (+) (of emergency light voltage)	for emergency call/bell and telephone	12/24V DC
10S	NSG	switch of emergency light voltage	If clamp 7S are not closed to 10S, the emergency light/call voltage is switched off.	12/24V DC

6.13.2 Additional Card EA003/Kdo9-16

Clamp	Type I = Input O = Output I/O = coupled in- /output	Name / Function	Short Description	Volt- age
1A	I/O	car command landing 9	only lift controller	24V DC
	I/O	landing priority 9	only group selector	24V DC
2A	I/O	car command landing 10	only lift controller	24V DC
	I/O	landing priority 10	only group selector	24V DC
3A	I/O	car command landing 11	only lift controller	24V DC
	I/O	landing priority 11	only group selector	24V DC
4A	I/O	car command landing 12	only lift controller	24V DC
	I/O	landing priority 12	only group selector	24V DC
5A	I/O	car command landing 13	only lift controller	24V DC
	I/O	landing priority 13	only group selector	24V DC
6A	I/O	car command landing 14	only lift controller	24V DC

	I/O	landing priority 14	only group selector	24V DC
7A	I/O	car command landing 15	only lift controller	24V DC
	I/O	landing priority 15	only group selector	24V DC
8A	I/O	car command landing 16	only lift controller	24V DC
	I/O	landing priority 16	only group selector	24V DC
1B	O			24V DC
2B	O			24V DC
3B	O			24V DC
4B	O			24V DC
5B	O			24V DC
6B	O			24V DC
7B	O	level indicator with binary-/Gray-code bit 4	only lift controller	24V DC
8B	O	level indicator with binary-/Gray-code bit 3	only lift controller	24V DC
1M	I	floor switch landing 9	only lift controller on 1 of n-copy system	24V DC
2M	I	floor switch landing 10	only lift controller on 1 of n-copy system	24V DC
3M	I	floor switch landing 11	only lift controller on 1 of n-copy system	24V DC
4M	I	floor switch landing 12	only lift controller on 1 of n-copy system	24V DC
5M	I	floor switch landing 13	only lift controller on 1 of n-copy system	24V DC
6M	I	floor switch landing 14	only lift controller on 1 of n-copy system	24V DC
7M	I	floor switch landing 15	only lift controller on 1 of n-copy system	24V DC
8M	I	floor switch landing 16	only lift controller on 1 of n-copy system	24V DC

6.13.3 Additional Card EA003/Ruf1-8

Clamp	Type I = Input O = Output I/O = coupled in- /output	Name / Function	Short Description	Volt-age
1T	I/O	landing call 1 up		24V DC
2T	I/O	landing call 2 up		24V DC
3T	I/O	landing call 3 up		24V DC
4T	I/O	landing call 4 up		24V DC
5T	I/O	landing call 5 up		24V DC
6T	I/O	landing call 6 up		24V DC
7T	I/O	landing call 7 up		24V DC
8T	I/O	landing call 8 up		24V DC
1U	I/O			24V DC
2U	I/O	landing call 2 down		24V DC
3U	I/O	landing call 3 down		24V DC
4U	I/O	landing call 4 down		24V DC
5U	I/O	landing call 5 down		24V DC
6U	I/O	landing call 6 down		24V DC
7U	I/O	landing call 7 down		24V DC
8U	I/O	landing call 8 down		24V DC
1V	I	landing priority 1	only lift controller on single lifts	24V DC
2V	I	landing priority 2	only lift controller on single lifts	24V DC
3V	I	landing priority 3	only lift controller on single lifts	24V DC
4V	I	landing priority 4	only lift controller on single lifts	24V DC
5V	I	landing priority 5	only lift controller on single lifts	24V DC
6V	I	landing priority 6	only lift controller on single lifts	24V DC
7V	I	landing priority 7	only lift controller on single lifts	24V DC
8V	I	landing priority 8	only lift controller on single lifts	24V DC

6.13.4 Additional Card EA003/Ruf9-16

Clamp	Type I = Input O = Output I/O = coupled in- /output	Name / Function	Short Description	Volt-age
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1W	I/O	landing call 9 up		24V DC
2W	I/O	landing call 10 up		24V DC
3W	I/O	landing call 11 up		24V DC
4W	I/O	landing call 12 up		24V DC
5W	I/O	landing call 13 up		24V DC
6W	I/O	landing call 14 up		24V DC
7W	I/O	landing call 15 up		24V DC
8W	I/O			24V DC
1X	I/O	landing call 9 down		24V DC
2X	I/O	landing call 10 down		24V DC
3X	I/O	landing call 11 down		24V DC
4X	I/O	landing call 12 down		24V DC
5X	I/O	landing call 13 down		24V DC
6X	I/O	landing call 14 down		24V DC
7X	I/O	landing call 15 down		24V DC
8X	I/O	landing call 16 down		24V DC
1Y	I	landing priority 9	only lift controller on single lifts	24V DC
2Y	I	landing priority 10	only lift controller on single lifts	24V DC
3Y	I	landing priority 11	only lift controller on single lifts	24V DC
4Y	I	landing priority 12	only lift controller on single lifts	24V DC
5Y	I	landing priority 13	only lift controller on single lifts	24V DC
6Y	I	landing priority 14	only lift controller on single lifts	24V DC
7Y	I	landing priority 15	only lift controller on single lifts	24V DC
8Y	I	landing priority 16	only lift controller on single lifts	24V DC

6.13.5 Additional Card EA003/Ruf1-16

Clamp	Type I = Input O = Output I/O = coupled in- /output	Name / Function	Short Description	Volt-age
1T	I/O	landing call 9	collective or down-collective depending on parameter	24V DC
2T	I/O	landing call 10		24V DC
3T	I/O	landing call 11		24V DC
4T	I/O	landing call 12		24V DC
5T	I/O	landing call 13		24V DC
6T	I/O	landing call 14		24V DC
7T	I/O	landing call 15		24V DC
8T	I/O	landing call 16		24V DC
1U	I/O	landing call 1	collective or down-collective depending of parameter	24V DC
2U	I/O	landing call 2		24V DC
3U	I/O	landing call 3		24V DC
4U	I/O	landing call 4		24V DC
5U	I/O	landing call 5		24V DC
6U	I/O	landing call 6		24V DC
7U	I/O	landing call 7		24V DC
8U	I/O	landing call 8		24V DC
1V	I	landing priority 1	only lift controller on single lifts	24V DC
2V	I	landing priority 2	only lift controller on single lifts	24V DC
3V	I	landing priority 3	only lift controller on single lifts	24V DC
4V	I	landing priority 4	only lift controller on single lifts	24V DC
5V	I	landing priority 5	only lift controller on single lifts	24V DC
6V	I	landing priority 6	only lift controller on single lifts	24V DC
7V	I	landing priority 7	only lift controller on single lifts	24V DC
8V	I	landing priority 8	only lift controller on single lifts	24V DC

6.13.6 Main Power Supply POWER003

Clamp	Type <i>I = Input O = Output I/O = coupled in- /output</i>	Name / Function	Short Description	Volt-age
1Z	I	L	phase of mains supply	230V / 50Hz
2Z	I	N	zero lead of mains supply	230V / 50Hz
3Z	I	PE (system earthing)	A system earthing of 24V signal-voltage will be arranged over this input. Clamps 3Z and 6Z are bridged on the main power supply board.	230V / 50Hz
4Z	I	PE (initiation)	For initiation purposes, the PE-conductor should not be connected to clamp 3Z but on to 4Z. This guarantees, that installation errors while new assembling or changing the electronic installation of the lift, the control computer and connected components will not be destroyed (you must read chapter „Savety Notes / Initiation“).	230V / 50Hz
5Z	O	+ 24V DC	positive pole of signal voltage (max. 2A)	24V DC
6Z	O	0V(24)	negative pole of signal voltage	24V DC
7Z				
8Z				
9Z				
10Z				
1ZT	O	P (optional transformer)	If you need a higher power capacity (up to 4A) of the signal voltage in the control, you may connect a 2nd. transformer (only the same type as used on the POWER003-board)	
2ZT	O	N (optional transformer)		
3ZT	I	19VAC (optional transformer)	optional transformer secondary winding 1	
4ZT	I	19VAC (optional transformer)	optional transformer secondary winding 1	
5ZT	I	19VAC (optional transformer)	optional transformer secondary winding 2	
6ZT	I	19VAC (optional transformer)	optional transformer secondary winding 2	

7 Electromagnetic Compatibility (EMC)

7.1 Connection and Assembly Regulations

To obey the essential safety regulations of EMC (law for electromagnetic amicability of equipment), following connection and assembly suggestions should be considered:



1. Connect the control as described in the delivered circuit diagram. If RC-, varistor or semi-conductors (e.g. recovery diodes) are shown in the diagram, they should be build in.
2. If certain cables (e.g. shielded) are specified by the manufacturer or drawn in the sequential diagrams, they have to be used.
3. Shields have to be bared as short as possible. If possible do not twist together the shield-braiding, but clamp it, if possible, wide sheeted on „earth“. Do not extend shields!
4. To minimise induction voltages by parallel conducted leads, seize the cables so that the conductors, which belong to various voltage areas, are also placed in separate cables. For example: motor supply for door-motor (400V3P50Hz) into cable 1 and final limit switch and light barrier output (24VDC) into cable 2.
5. Point 4 should be considered especially for lift cables.
6. The assembly regulations of the manufacturer of speed controlling devices etc. are to be considered.
7. On lifts with frequency converters you have to execute motor leads as shielded cables (do not use cables with so called „steelwire support braidings“) which are earthed both sided. The posistor supply also has to be shielded and earthed both sided. Please consider point 3 carefully!
8. All signal cables have to be placed separately to the motor leads (advisable distance at least 20 cm).
9. Please avoid current loops, e.g. if clamp 202 (0V(24)) is clamped on to lift cable 2 and 3 each in the control as well as in the car top control box, a huge current loop exists, in which for example the current to the door-locking magnet (placed in lift cable 1) is coupled well and contributes for instabilisation of lift control system.
10. On belated changes of the lift installation, the above mentioned steps even on new incoming componentries are to be obeyed.

7.2 EG-Attestation of Conformity

EC-Attestation of Conformity Regarding the EU-EMC-Regulations „EMC RL 89/336/EEG“

We herewith declare that the following described equipment correspond to the appropriate, essential safety regulations of above mentioned guidelines on basis of their conception and componentry as well as the design put into circulation by us, under obedience of our connection and assembly regulations. If changes are made to this appliance without our permission, this attestation loses its validity.

type identification:

STA²-MC1-002(-003) (incl. expansions STA²-EA002,
STA²-EA003/x and STA²-TÜRM002-x,xA)
STA²-POWER002-Top, STA²-POWER003

short description:

control computer (incl. expansion cards and main power supply)
version 002 or 003 for lift controlling system STA²

used harmonising standard specifications: EN 50081-1
EN 50082-2

used standard specifications: prEN 12015
prEN 12016



This declaration will be submitted responsible for the manufacturer
Strack Steuerungstechnik GmbH
on
1/1/1996
by
Dipl.-Ing. Dirk Strack, Managing Director

A handwritten signature in black ink, appearing to be 'DS', is written over a horizontal line.

Remark:

Above mentioned products made by Strack are exclusive for constructing into lifts or assembling with other lift parts. The initiation or putting it into circulation within the European Community is only allowed if the conformity of the final product corresponds with the appropriate harmonising regulations of the EG.

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