

# OPERATING MANUAL

## LIFT CONTROLLER SYSTEM DAVID-2001



**Functions**  
**Start-Up Instructions**



**KW Aufzugstechnik GmbH****Lift Controller DAVID-2001**

## **VERSION V105E**

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# 1 System Description

## 1.1 GUARANTEE

By this consumer guarantee KW Aufzugstechnik GmbH guarantees the product to be free from defects in material and workmanship for two (2) years from the time of its original purchase.

### Conditions

This guarantee will not reimburse nor cover damage resulting from adaptations or adjustments which may be made to the product, without the prior written consent of KW Aufzugstechnik GmbH, in order to conform to the national or local technical or safety standards in force in any country other than the ones for which the product was originally designed and manufactured.

This guarantee will not apply if the type or serial number on the product has been altered, deleted or made illegible.

This guarantee covers none of the following:

- Periodic maintenance and repair or replacement of parts due to normal wear and tear;
- Any adaptation or changes to modify the product from its normal purpose as described in the instruction manual, without the prior written consent of KW Aufzugstechnik GmbH;
- Transport costs, home service transport costs and all risks of transport relating directly or indirectly to the guarantee of the product;
- Damage resulting from:
  - o Misuse, including but not limited to (a) failure to use the product for its normal purpose or in accordance with KW Aufzugstechnik GmbH's instructions on the proper use and maintenance, and (b) installation or use of the product in a manner inconsistent with the technical or safety standards in force in the country where it is used and (c) improper or incorrect installation of software.
  - o Repair done by non authorized service stations or dealers, or the customer himself;
  - o Accidents, lightning, water, fire, improper ventilation or any cause beyond the control of KW Aufzugstechnik GmbH;
  - o Defects of the system into which this product is incorporated.

This guarantee does not affect the consumer's statutory rights under applicable national laws in force, nor the consumer's rights against the dealer arising from their sales/purchase contract.

## 1.2 SAFETY CONDITIONS

### IN GENERAL

Running the frequency inverter without casing is forbidden, because of the high voltage in there. If you do running without casing, there could be personal damage.

Only skilled workers can do working at the frequency inverter system GOLIATH-60. It must be consider the following national and local safety conditions and laws: DIN VDE0100 , DIN VDE 0110 , IEC 364, IEC 664.

### USE OF THE FREQUENCY INVERTER GOLIATH-60

The frequency inverters Goliath-60 are devices for the use in elevators. Other using is forbidden without the prior written consent of KW Aufzugstechnik GmbH.

The following laws must be considered, when you are build in the inverter:

- EG-Richtlinie 89/392/EWG (Maschinenrichtlinie) .
- EN 60204.
- Niederspannungsrichtlinie 73/23/EWG
- EMV-Richtlinie (89/336/EWG)
- prEN 50178/DIN VDE 0160.
- EN 60439-1/DIN VDE 0660 Teil 500
- EN 60146/DIN VDE 0558.

### Transport and Mounting

The transport of the frequency inverter must be very carefully organized. Please do not touch electrical parts and terminals. They could be destroyed by the hand voltage of a person!

If you want to connect the frequency inverter, you don't have to open the casing. All terminals are out there. Please pay attention at the place above and under the inverter. It is necessary for cooling.

## **1.3 SERVICE CONDITIONS**

### **ELECTRICAL TERMINALS**

Working at the frequency inverter with power voltage is forbidden.

After switching of the inverter from the power voltage, there is enough dangerous voltage, because of the capacitors. Please do not touch them!

The minimal time after switching off the inverter and opening the casing is 5 minutes. The electrical mounting can do only by skilled workers, which know national laws, like The „VDE-Vorschriften“.

Notices are in the operating manuel for the right EMV-mounting. To make a good EMV-mounting , you must use tek Inputfilter of the GOLIATH-60.

Please take a look on the dimension of the power wires and fuses.

### **POWER VOLTAGE CONDITIONS**

The frequency inverter Goliath-60 needs no neutral wire and is used for the den 4-phase Running. The type of the power voltage is a TT net, or a TT net with earth connect of the neutral wire.

### **RUNNING CONDITIONS**

All elevators with frequency inverters must have safety devices to be enough the national and local law, like the european Law EN81.

The casing of the frequency inverter must be closed. The inputfilter must be used and correctly fixed.



## 1.4 EG-Declaration of Conformity

**Product** Controller for Elevators

**Type** Microprocessor System DAVID-2001/2003

We confirm that the a.m. product complies with the applicable EG-guidelines mentioned below, and that it has been designed and manufactured in accordance with these standards. A operating instruction is issued with each unit. The safety advices must be studied in detail, before operating the unit.

EG-Guideline 89/336 EWG, Electromagnetic Compatibility
DIN Standard EN 50081 Part 1, Electromagnetic Compatibility, Basic Standard Radiation Disturbance in Living-, Business-, and Working Quarters
DIN EN 55011 Standard, High Frequency Interference, Class B Living Quarters
DIN EN 50082 Part 1 und 2, Electromagnetic Compatibility, Basic Standard Resistance against Interference in the Industry
IEC 801-2, corresponding with VDE 0843 Electrostatic Discharge ESD
IEC 804-1, corresponding with prEN 55024 Part 4, Burst-Test with Signal- and Control Cables.
IEC 804-1, corresponding with prEN 55024 Part 4, Burst-Test with AC-Supply Cables.

Eschborn, 01.07.2002



Hans-Werner Walbert

## 1.5 Description Processor Inquiry-Safety Circuit

### Function

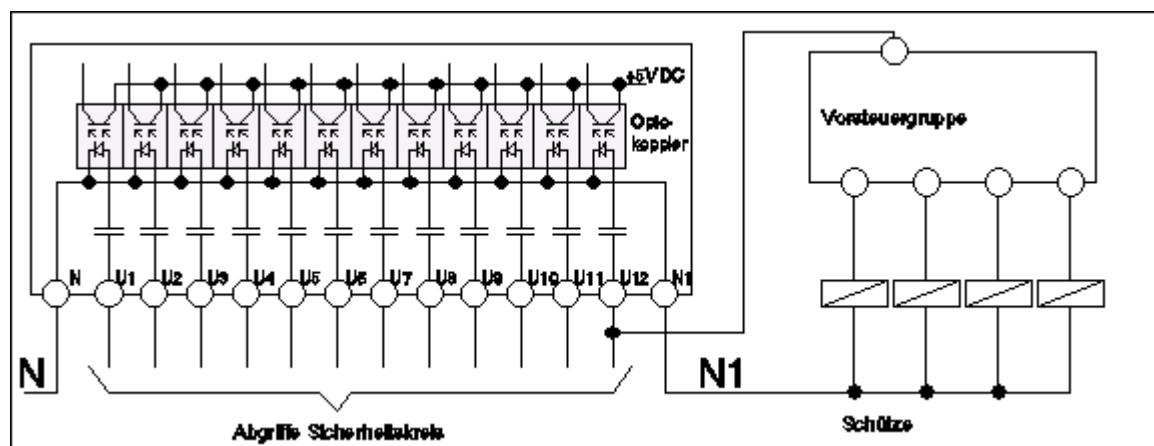
The Central Processing Unit contains a function through which the voltage level in the safety circuit of the elevator system is monitored. The safety circuit voltage is divided through X2 capacitors and resistors and then forwarded to the input of the opto-couplers. Further processing of these signals is executed through the connected electronic circuits, under potential separation.

### Function Test

All safety-relevant contactors must only use the N1-potential as zero potential. For the purpose of testing, the N1-potential can be disconnected. This must cause all safety-relevant contactors to trip.

### Description of Terminal Connections

For the inquiry of voltage levels in the safety circuit, 12 input terminals ( U1 up to U12 ) are available. These terminals are plug-in terminals in the 7,62 mm standard. The N and N1 potential are also connected to these terminals. The wiring diagram shown below represents the actual circuit layout as tested and executed.



Eschborn, 01.07.2002

Hans-Werner Walbert

## 2. Performance Features

### 2.1 Performance Features of the Microprocessorsystems DAVID-2001

The microprocessorsystem DAVID-2001 is a very high flexible controller system for rope- and hydraulic elevators with maximal 32 floors. You can choose a very high number of controller types, like Send-controlling, attendant-controlling, no-collecting, One-button down, one button up & down, Two buttons and the group function with an optional pcb-card.

Fundamentally all door types can be used with this copntroller, like automatic with limitswitch / without limitswitch, or handdoors with or without cardoor by choosing the right parameters.

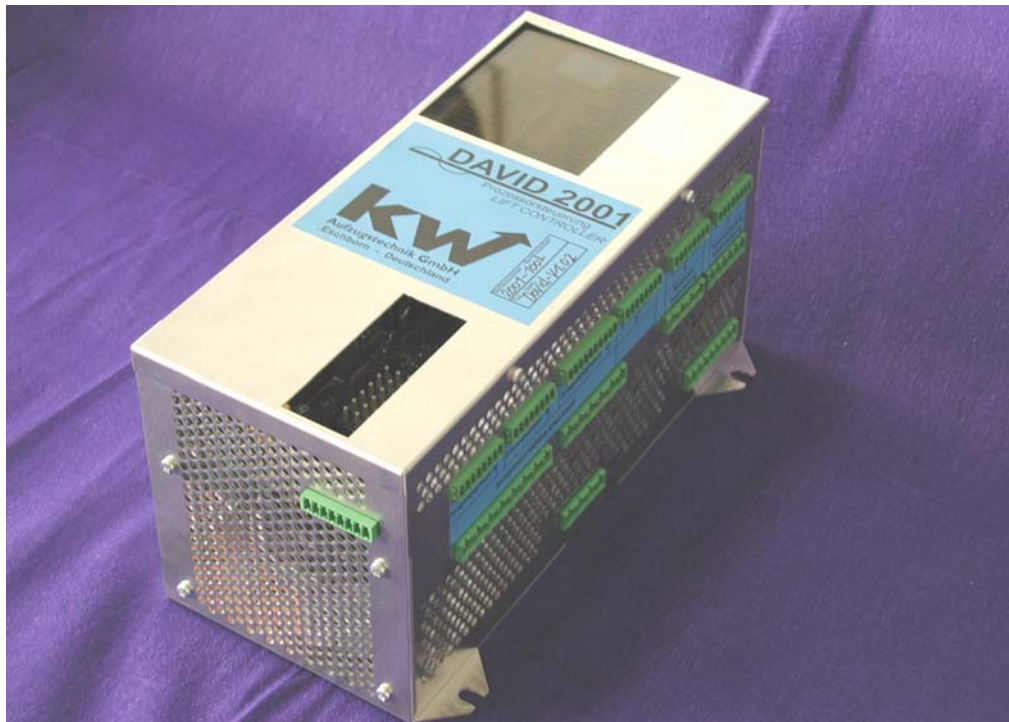
There are 5 systems of shaft copy in the controller software. If you are working only with magnets you can choose between Standard and minimu copy. If you are preferring digital shaft copy systems you have three possibilities like relative- , absolute digital copy and the system which use the pulses of the motor encoder.

For functions, like pre-opening doors or releleveling, you can use our safety-pcb-board. The microprosseor-units in the casing, on the car, in the car panel and in the floor can show the position of the car by car indicators in different codes (1 of N, binär & graycode). For the direction arrows and the hall lantern are also output channels at the units, the gong-function is a stanard-function of the system. You have only to connect a loudspeaker at output-terminals.

The controller have a lot of special functions, like fire evacuation service, emergency power service, fire fighter service,.. in the software.

With the help of the mobil handterminal HPG-60 with LCD-Display and clear sentence working in two langunges, you can make the commissioning and monitoring at the car and perhaps inside the car though the car panel. There is a Event / Fault Log with a dept of 100 entries.

### 2.2 Description of the Centralunit ZR



The central-unit in a full casing of aluminium metal with an integrate power supply of 24V DC 4,5A and a emergency power supply of 12V DC 1,2A. You do not need a optional power supply. The system has the following in- & output channel and interfaces:

Pieces	Type of interface	Use
6	<b>+24V DC Controller voltage with max.4,5A</b>	To supply all the units
4	<b>Emergency power supply outputs</b>	There all in- & outputs like emergency-light, alert, and alert-botton
12	<b>230V AC Inputs of the safety circuit</b>	Exactly monitoring of the safety-circuit-cuts
4	<b>230V AC Inputs</b>	Emergency Power service & Carlight Off
48	<b>+24V DC Inputs</b>	Car calling, ... special functions
1	<b>Encoder Inputs</b>	Connection for the shaft encoder.
40	<b>+24V DC Outputs</b>	Car position,...special functions.
14	<b>Relay-Outputs</b>	Directions arrows, ...spezial functions
1	<b>Wire 16pol AWG28-Interface</b>	To connect the Pre-controller units
1	<b>Seriell Interface 232</b>	To connect the handprogramming unit HPG60 or a Notebook.
2	<b>Shaftbus Interface RJ45</b>	To connect the floor-controllers in the shaft
1	<b>Hanging wire-Interface</b>	All 20 pins of the hanging wire can directly connected on the controller
1	<i>Optional Groupecard GR</i>	<i>Connection to the other groupe-controller.</i>
1	<i>Optional Modemcard MR</i>	<i>Interface for the DFÜ-connection.</i>
1	<i>Optional Absolutencodercard ADK</i>	<i>Connection for the absolutencoder</i>

This standard equipement with the In- and Output Channels allows you to realize an One-button-elevator with 16 floors or an Two-Button-elevator with 11 Floors.

If you have an elevator with more than 16 or 11 floors, you can use our floor-controller-unit to reach 32 floors.

### Indication of the Running System

The multifunctionsindicator on the top side of the casing shows you a lot of typical informations about the running system:

- Actual carposition
- Safety-circuit (red LED -> Open green LED-> closed )
- Monitorfunction about the voltage and running of the ZR- and FKR-controllersystem
- Four LEDs about the emergency supply
- Indication about the speeds and the direction
- Switching position of the shaft copy
- Doorfunctions

### H01- Terminal Description Central Unit

Zero	N	<b>DAVID-2001 ZR Level 1</b>	Akku+	Akku+
Phase uProcessor	L6		Akku -	Akku -
Phase Emergency Powe.	L5			
Erde	PE		103	Alert-Button
			100	Voltage +12V DC
GND	500	Power Supply 24V 4,5A Max.	102	Alert Output
GND	500		500	GND
Controller Voltage +24V	200			
Controller Voltage +24V	200		100	Level Indicator
Controller Voltage +24V	200	Emergency Power supply 12V 1,2 A Max.	100	Voltage +12V DC
Controller Voltage +24V	200		500	GND
Controller Voltage +24V	200		101	Emergency Light
Controller Voltage +24V	200			

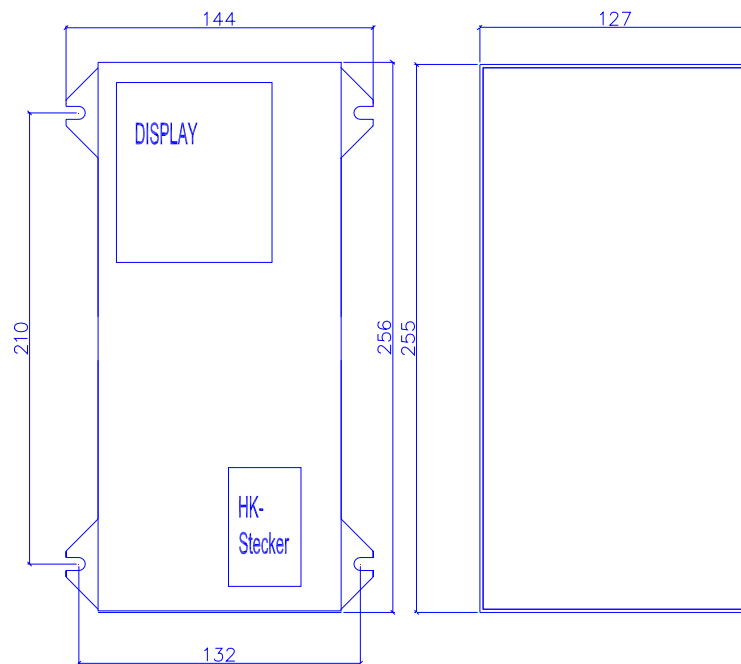
Zero	N	<b>DAVID-2001 ZR Level 2</b>	301c	Relay Alert nc
Safety-Circuit U1	U1		301b	Relay Alert com
Safety-Circuit U2	U2		301a	Relay Alert no
Safety-Circuit U3	U3		302c	Relay Ready nc
Safety-Circuit U4	U4		302b	Relay Ready com
Safety-Circuit U5	U5		302a	Relay Ready no
Safety-Circuit U6	U6			
Safety-Circuit U7	U7		ZR0c	Free Relay R0 nc
			ZR0b	Free Relay R0 com
			ZR0a	Free Relay R0 no
			ZR1c	Free Relay R1 nc
Safety-Circuit U8	U8		ZR1b	Free Relay R1 com
Safety-Circuit U9	U9	ZR1a	Free Relay R1 no	
Safety-Circuit U10	U10			
Safety-Circuit U11	U11	ZR2c	Free Relay R2 nc	
Safety-Circuit U12	U12	ZR2b	Free Relay R2 com	
Zero Conductor	N1	ZR2a	Free Relay R2 no	
		ZR3c	Free Relay R3 nc	
		ZR3b	Free Relay R3 com	
		ZR3a	Free Relay R3 no	
		ZR4c	Free Relay R4 nc	
		ZR4b	Free Relay R4 com	
		ZR4a	Free Relay R4 no	
Emergency Power Evac.	401	ZR5c	Free Relay R5 nc	
Emergency Power Evac	402	ZR5b	Free Relay R5 com	
Emergency Power Evac	404	ZR5a	Free Relay R5 no	
Input 230V AC Car Light	S30			
		ZR6c	Free Relay R6 nc	
		ZR6b	Free Relay R6 com	
		ZR6a	Free Relay R6 no	
		ZR7c	Free Relay R7 nc	
		ZR7b	Free Relay R7 com	
		ZR7a	Free Relay R7 no	
Out of Order no	303a	ZR8c		
Out of Order com	303b	ZR8b	Direction Arrow Up com	
Out of Order nc	303c	ZR8a	Direction Arrow Up no	
		ZR9c		
Car Light com	L5	ZR9b	Direction Arrow Down co	
Car Light nc	L51	ZR9a	Direction Arrow Down no	

	ZH7	Free Hanging w 16	ZH6	Free Hanging w 17	ZH5	Free Hanging w 18	ZH4	Free Hanging w 19	ZH3	Free Hanging w 20	603	Telephone	602	Telephone	60D	Inspectionconductor	
Start Inverter	ZA0															RS232	HPG60
Stop Inverter	ZA1															RS232	HPG60
Ready Inverter	ZA2															RS232	HPG60
Safety-PCB-Board	ZA3																
Overload	ZA4																
Re-Send On/OFF	ZA5																
Re-Send Up	ZA6															200	+24V Controller voltage
Re-Send Down	ZA7															500	GND
																84	Encoder Channel A
Input Monitor Conductor	ZB0															83	Encoder Channel B
Landing Calls OFF	ZB1															PE	Shield
Controller & Light Off	ZB2																
Brake Shoe monitor	ZB3															BZS	Bus-Schirmung Stg-Zen.
Brake monitor	ZB4															BZA	Bus-Channel A Car
Evacuation Service P1	ZB5															BZB	Bus-Channel B Car
Evacuation Service P2	ZB6																
Evacuation Service P2	ZB7															BGS	Bus-Schirmung Schacht
																BGA	Bus-Channel A Shaft
Zone 2	72															BGB	Bus-Channel B Shaft
Zone 1	71																
Releveling	ZC0															BSS	Bus-Shield
Free Output	ZC1															BSA	Bus-Channel A Shaft
Free Output	ZC2															BSB	Bus-Channel B Shaft
Free Output	ZC3																
Free Output	ZC4															500	GND
Free Output	ZC5															ZU1	Up
Free Output	ZC6															ZU2	Down
Free Output	ZC7															ZU3	Vinsp.
																ZU4	Vnach
Landing Call	ZD0															ZU5	Vo
Landing Call	ZD1															ZU6	V1
Landing Call	ZD2															ZU7	V2
Landing Call	ZD3															ZU8	V3
Landing Call	ZD4																
Landing Call	ZD5															500	GND
Landing Call	ZD6															3	Up
Landing Call	ZD7															5	Down
																7	Quick / K5
Landing Call	ZE0															9	Slow / Brake
Landing Call	ZE1															11	Motortemperature
Landing Call	ZE2															200	Controller Voltage +24V
Landing Call	ZE3																
Landing Call	ZE4																
Landing Call	ZE5																
Landing Call	ZE6																
Landing Call	ZE7																
Carposition indicat. 21h	ZF0																
Carposition indicat. 22h	ZF1																
Carposition indicat. 23h	ZF2																
Carposition indicat. 24h	ZF3																
Carposition indicat. 25h	ZF4																
Carposition indicat. 26h	ZF5																
Carposition indicat. 27h	ZF6																
Carposition indicat. 28h	ZF7																

**DAVID-2001  
ZR Level 3**

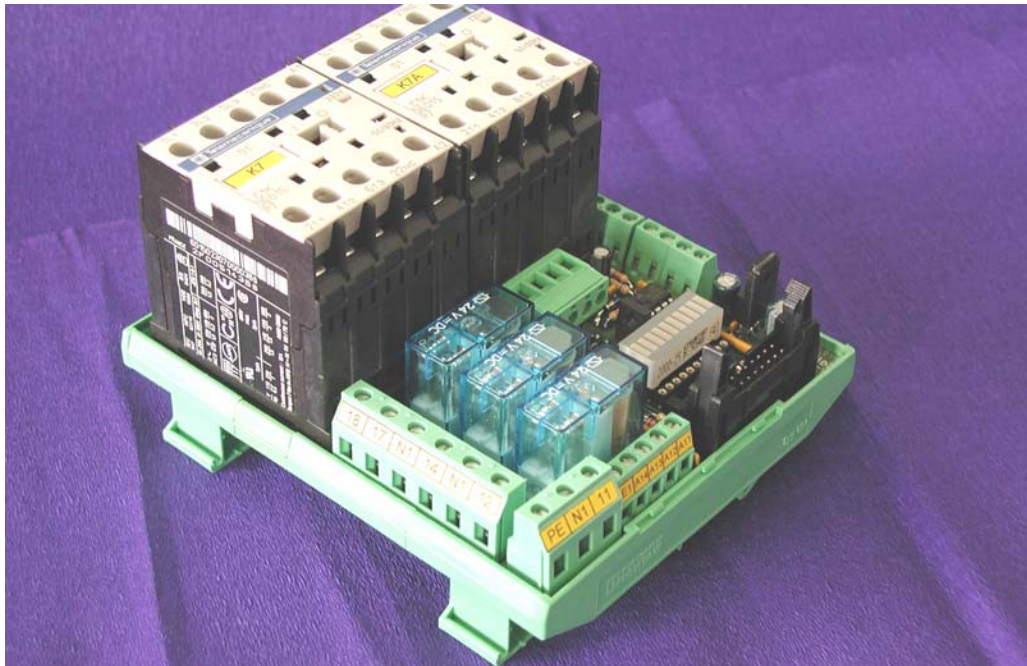
U1	Safety-Circuit U1			11A	11A Brakept. Up
U2	Safety-Circuit U2			11B	11B Brakept. Down
U3	Safety-Circuit U3			12A	12A Level Up
U4	Safety-Circuit U4			12B	12B Level Down
U5	Safety-Circuit U5			13A	13A Correction Top
U6	Safety-Circuit U6			13B	13B Correction Bot
U7	Safety-Circuit U7			71	71 Zone 1
U8	Safety-Circuit U8			72	72 Zone 2
U9	Safety-Circuit U9			Pulses	Pulses
U10	Safety-Circuit U10			Fault	Fault Shaft Copy
U11	Safety-Circuit U11	Up	Direction Up	T1 Open	Door 1 Open
U12	Safety-Circuit U12	Down	Direction Down	T1 Close	Door 1 Close
Run-Z	Run ZR-CPU	V0	Speed V0	T1 Lg	Door 1 Photocell
Spg-Z	Power-ZR-CPU	V1	Speed V1	T1 Rev	Door 1 Revers2
Run-F	Run FKR-CPU	V2	Speed V2	T2 Auf	Door 2 Open
Spg-F	Power-FKR-CPU	V3	Speed V3	T2 Zu	Door 2 Close
U-Spg	NSG- Bad Power.	Vins	Speed Vins	T2 Lg	Door 2 Photocell
Alarm	NSG-Alert	Vnh	Speed Vn	T2 Rev	Door 2 Reverse
Laden	NSG-loading			NH	Releveling
Not	NSG-EmergencyP	Fault	Fault	EoT	Pre-open Door

Indication



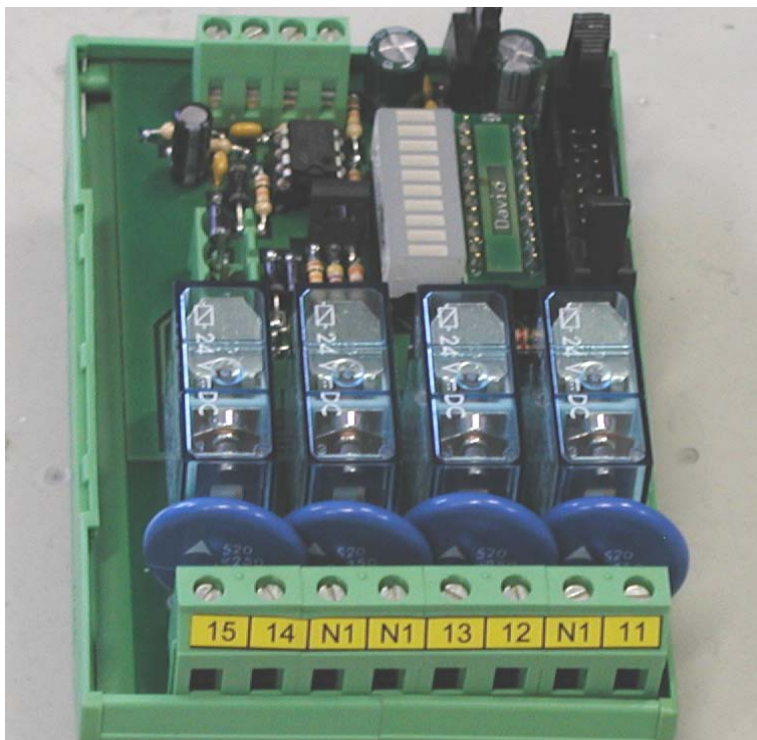
Technical Dimensions

### 2.3 Description Pre-Control Unit Rope Frequency SSF60



The pre-control SSF60 is used for control the main conductors and the brakeconductors for elevators with frequency inverters. There is a temperature-monitoring integrated, which allows to shelter the motor. A 10-LED-Indicator shows you typical values, like Controller voltage, motortemperature and the signals for the conductors. The connection is realized with a 16pol wire.

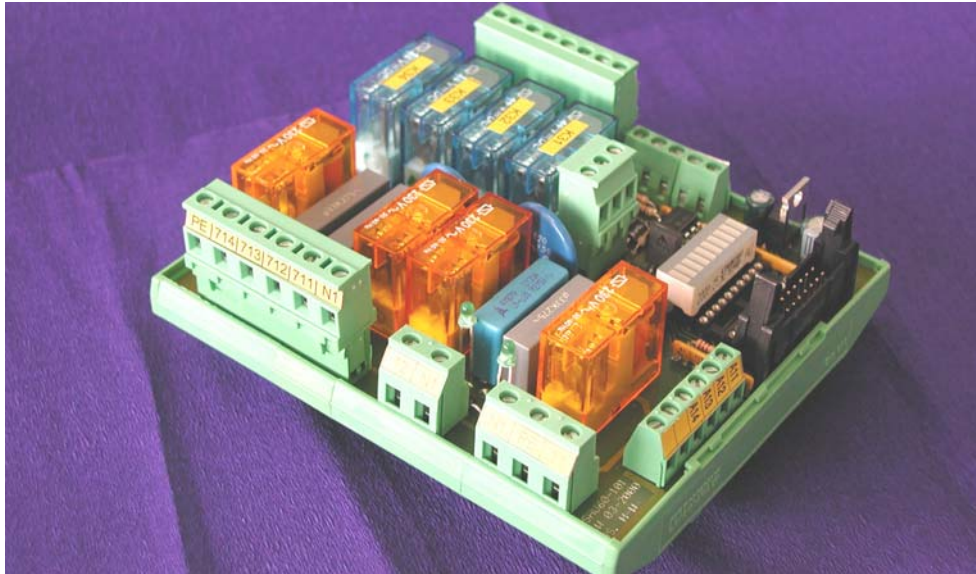
### 2.4 Description Pre-Control Unit Rope Unfrequency SSU60





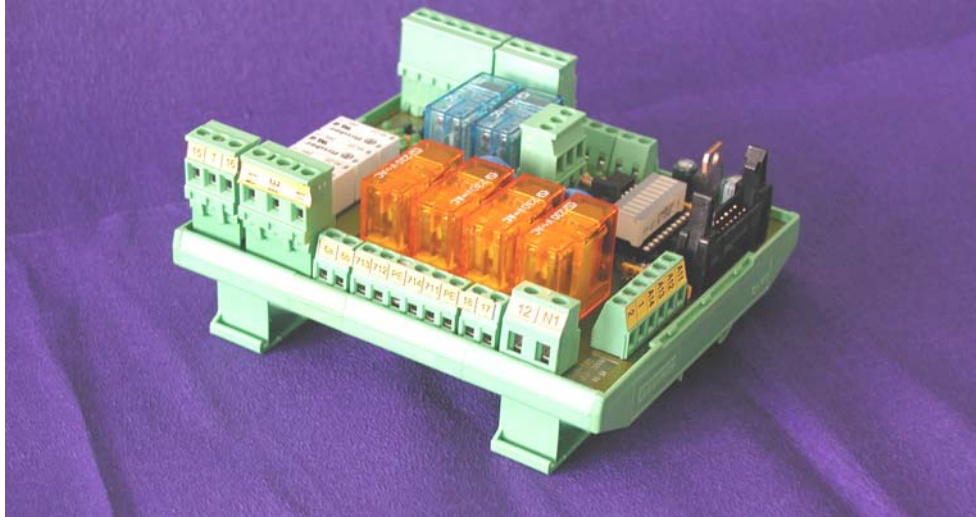
The pre-control SSU60 is used for control the main conductors and the brakeconductors for elevators with two speeds or voltage regulation. There is a temperature-monitoring integrated, which allows to shelter the motor. A 10-LED-Indicator shows you typical values, like Controller voltage, motortemperature and the signals for the conductors. The connection is realized with a 16pol wire.

## 2.5 Description Pre-Control Unit Hydraulik-Unregulation SHU60



The pre-control SHU60 is used for control the main conductor and the valves for unregulated hydraulic elevators. There is a temperature-monitoring integrated, which allows to shelter the motor. A 10-LED-Indicator shows you typical values, like Controller voltage, motortemperature and the signals for the conductor and valves. The connection is realized with a 16pol wire.

## 2.6 Description Pre-Control Unit Hydraulik-Regulation SHG60



The pre-control SHG60 is used for control the main conductor and the valves for regulated hydraulic elevators system of the companies Beringer and Giehl. There is a temperature-monitoring integrated, which allows to shelter the motor. A 10-LED-Indicator shows you typical values, like Controller voltage, motortemperature and the signals for the conductor and valves. The connection is realized with a 16pol wire.

## 2.7 Description Car Controller FKR



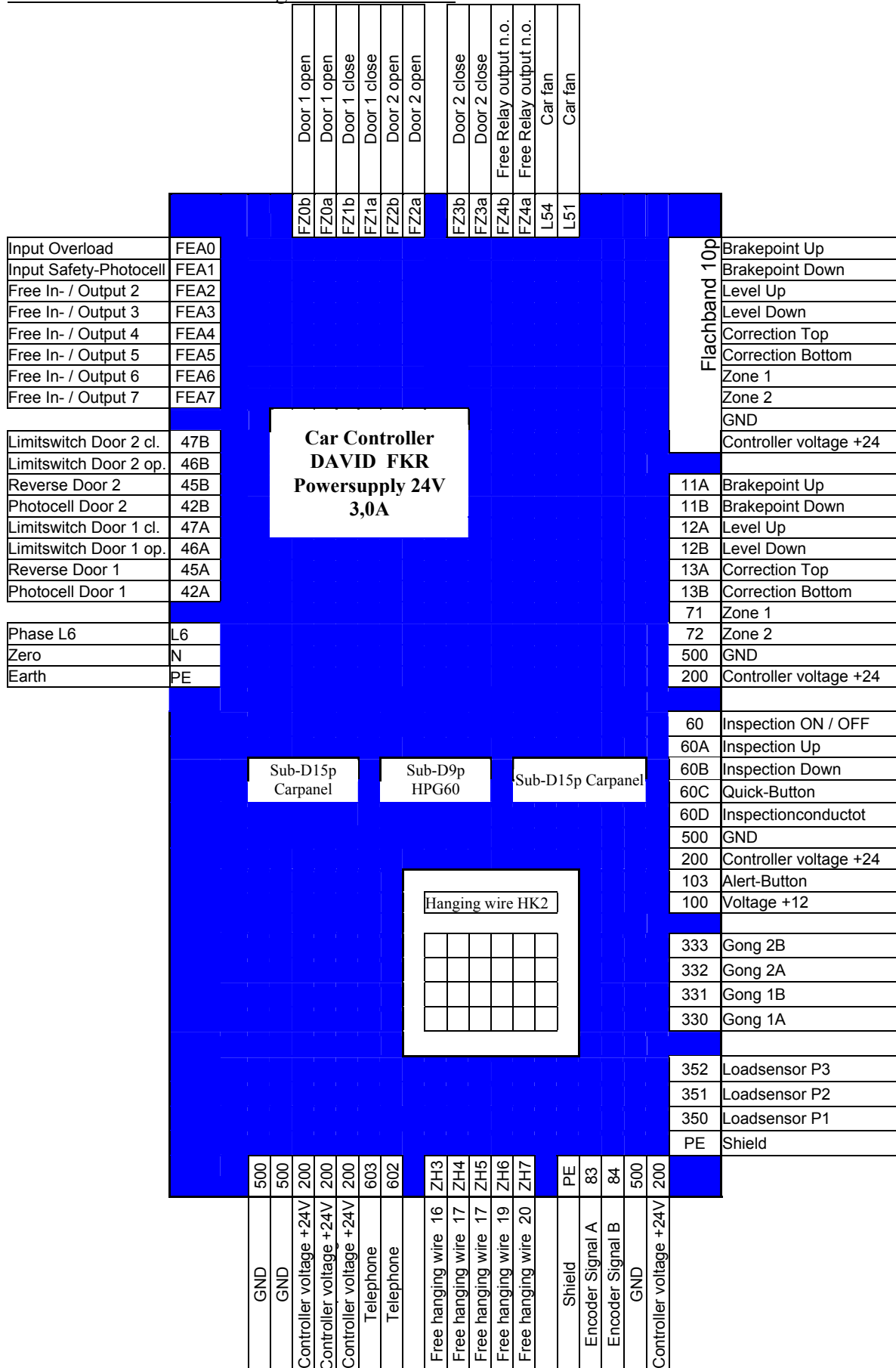
The system has the following in- & output channel and interfaces:

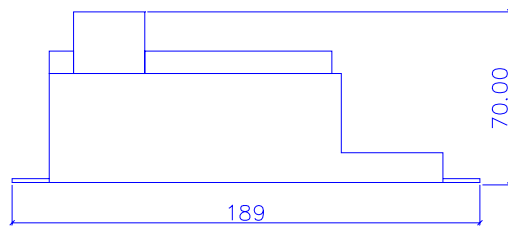
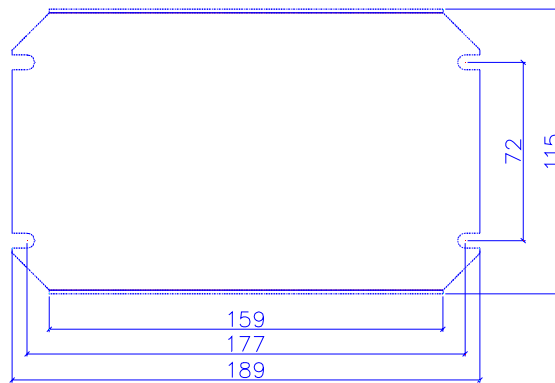
Pieces	Type of interface	Function
3	<b>Controller voltage with max. 3,0A</b>	To supply all the units,
2	<b>Gong outputs</b>	There can be connected two loudspeaker for the gong.
2	<b>Load sensor Inputs</b>	Prepared for the KW-load-sensor.
28	<b>+24V DC Inputs</b>	Door limit-switch and free inputs
1	<b>Encoder Inputs</b>	Connection for the shaft encoder.
8	<b>+24V DC Outputs</b>	Car position,...special functions.
5	<b>Relay Output</b>	For the door-controlling and car-fan.
1	<b>Wire 10 pol. AWG 28</b>	To connect the shaft-copy switches
1	<b>Seriell Interface RS 232</b>	To connect the handprogramming unit HPG60 or a Notebook.
2	<b>Car-calling Interface 15pol D-Sub</b>	To connect the car-calling-controller
1	<b>Hanging-wire Interface</b>	All 20 pins of the hanging wire can directly connected on the controller.

Indication of the following In- & Output channels

- Indication of the Door input channels
- Indication of the shaft copy input channels

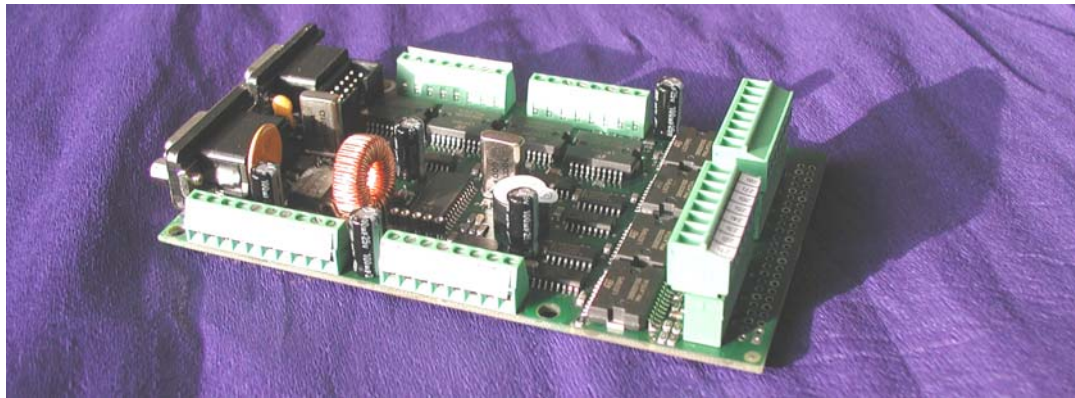
H02- Klemmenbeschreibung Fahrkorbbrechner



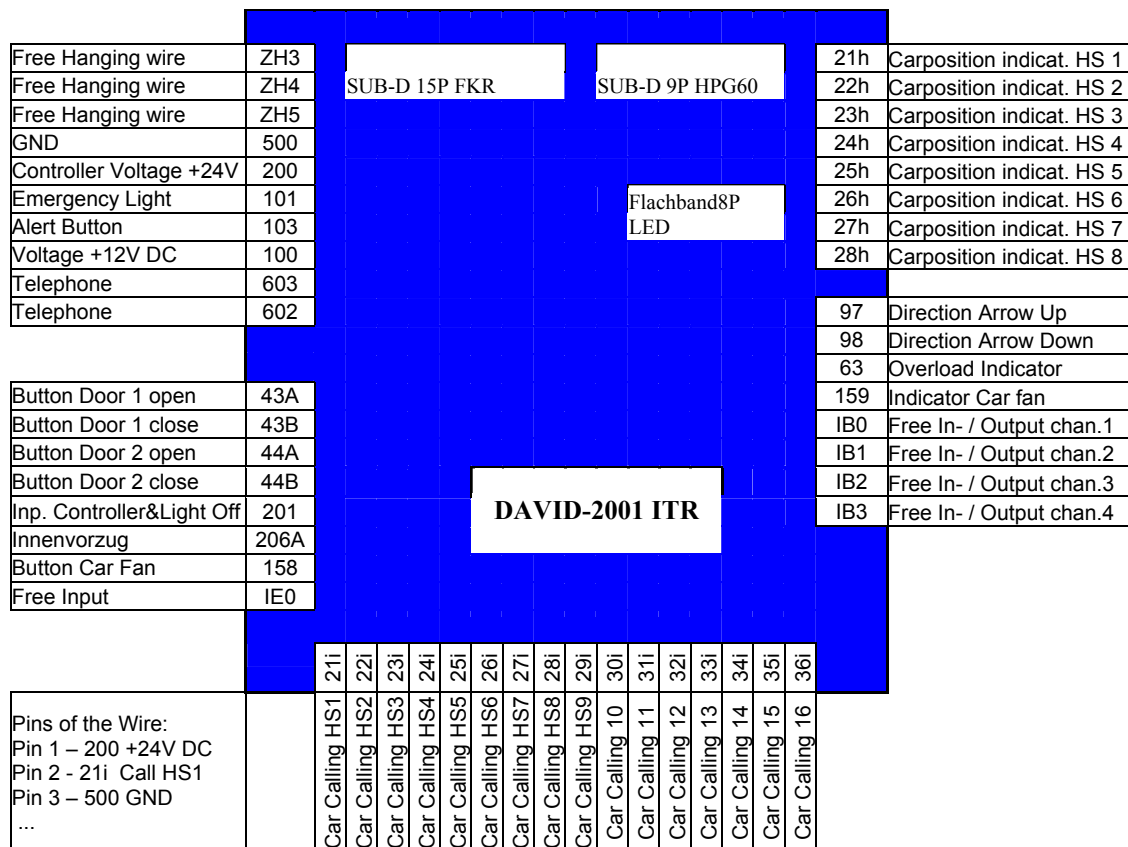


Technical Dimensions of the Car controller Unit FK R

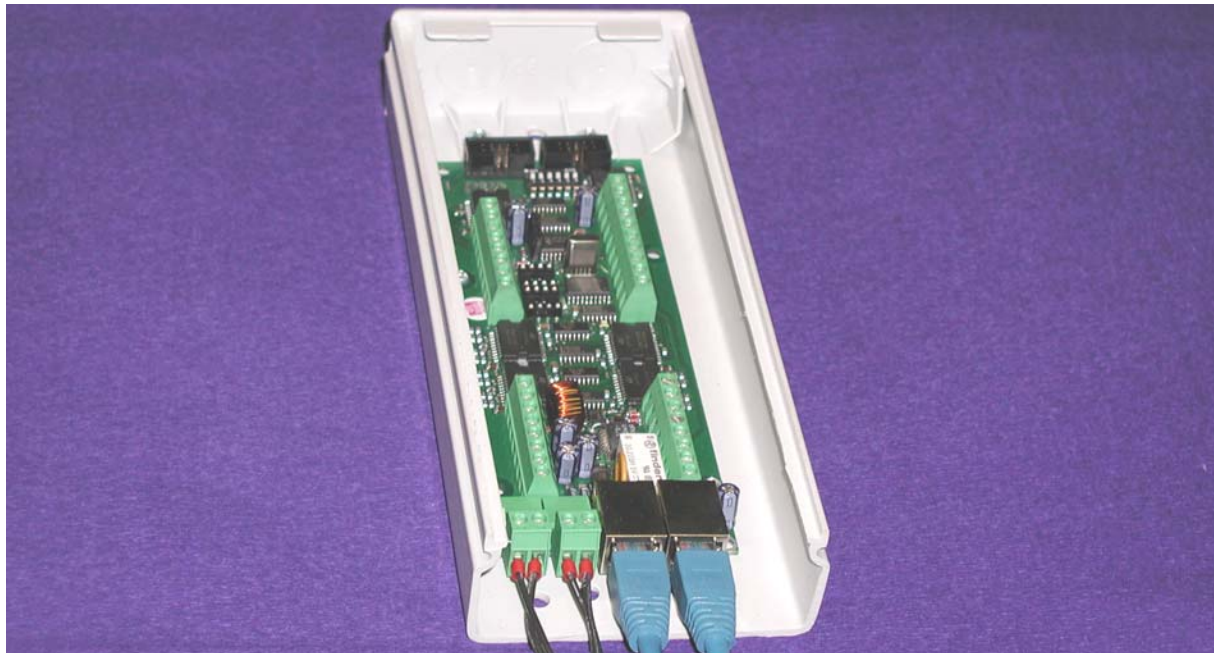
## 2.8 Description of the Car Calling Controller ITR



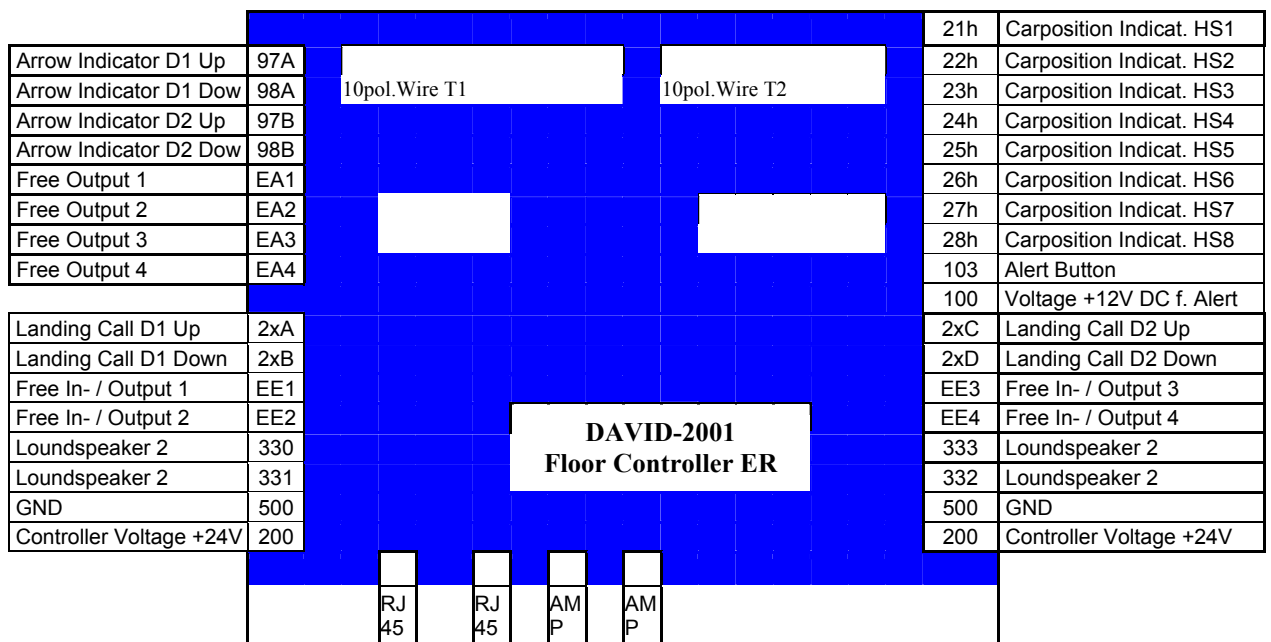
### H03- Description of the car calling Controller



## 2.9 Description Floor Controller ER



### H04- Description of the Terminals



Pinbelegung 10 polig Flachband T1			Pinbelegung 10polig Flachband T2		
Pin 1	Controller Voltage +24V DC	<b>200</b>	Pin 1	Controller Voltage +24V DC	<b>200</b>
Pin 2	Arrow Indicator D1 Up	<b>97A</b>	Pin 2	Arrow Indicator D2 Up	<b>97B</b>
Pin 3	Arrow Indicator D1 Down	<b>98A</b>	Pin 3	Arrow Indicator D2 Down	<b>98B</b>
Pin 4	GND	<b>500</b>	Pin 4	GND	<b>500</b>
Pin 1	Controller Voltage +24V DC	<b>200</b>	Pin 1	Controller Voltage +24V DC	<b>200</b>
Pin 2	Landing Call D1 Down	<b>2xb</b>	Pin 2	Landing Call D2 Down	<b>2xd</b>
Pin 3	GND	<b>500</b>	Pin 3	GND	<b>500</b>
Pin 4	Controller Voltage +24V DC	<b>200</b>	Pin 4	Controller Voltage +24V DC	<b>200</b>
Pin 9	Landing Call D1 Up	<b>2xa</b>	Pin 9	Landing Call D2 Up	<b>2xc</b>
Pin 10	GND	<b>500</b>	Pin 10	GND	<b>500</b>

## 2.10 Description Hanging-Wire EHK 40



The Hanging wire EHK40 is the physical connection between the central-unit-controller and the car-controller. You can use it for elevators with 32 Floors and a height of 100m.

It is always the same pinning. There is no difference in a 2 or a 32 Floor elevator system. The Hanging wire has three shield twisted pairs of wires. With these pairs, you can do the multiprocessor communication, the telephone connection, the encoder channels for the shaft encoder on the top of the car.



White hanging wire pins with black numbers				
Pin-socket	Type	Pin	Function	Destination
1	PE		Schirm=Erde	
2	PE		Schirm=Erde	
3	PE		Schirm=Erde	
4	PE		Schirm=Erde	
5	LT2 - P1	1	Baus Channel B	Intern
9	LT1 - P1	2	Baus Channel A	Intern
6	80 - P2	3	Encoder Channel A	Intern,
10	81 - P2	4	Encoder Channel B	Intern,
7	200 - P3	5	Controller Voltage +24V	Intern
11	500 - P3	6	GND	Intern
8	602 - P4	7	Telephone	Extern
12	603 - P4	8	Telephone	Extern
13	500	9	GND	Intern
14	100	10	Voltage +12V DC	Intern
15	101	11	Emergency Light Car	Intern
16	103	12	Alert Button Car	Intern
17	71	13	Zone 1 71	Extern / Intern
18	72	14	Zone 2 72	Extern / Intern
19	60D	15	Inspection Conductor	Extern
20	RA16	16	free	Extern
21	RA17	17	free	Extern
22	RA18	18	free	Extern
23	RA19	19	free	Extern
24	RA20	20	free	Extern

Black Hanging wire pins with white numbers				
Pin-socket	Type	Pin	Function	Destination
1	3	1	Safety Circuit Safety gear	
5	3A	2	Safety Circuit Inspection	
9	4A	3	Safety Circuit Re-Send	
13	5	4	Safety Circuit Inspection	
17	6	5	Safety Circuit Car Door	
21	6A	6	Safety Circuit Car Door	
22	L20/707	7	Doorengine 230V/ 400V Tür 1	
23	708	8	Doorengine 400V - Door 1	
24	709	9	Doorengine 400V - Door 1	
20	710	10	Doorenginb 400V - Door 2	
16	711	11	Doorengine 400V – Door 2	
12	712	12	Doorengine 400V - Door2	
8	L40	13	Socket 230V AC Car Top 10A	
4	L41	14	Button Shaft Light	
3	L51	15	Car Light 10A	
2	L6	16	Phase uProzessor 10A	
6	N4	17	Zero	
10	715	18	Mech.Locked	
14	716	19	Mech.Locked	
18	PE	PE	Earth	

## 2.11 Description Handprogramming Unit HPG60



The handprogramming unit HPG60 is a universal In- and Output device for the controller- and inverter system. It has 6 Buttons, a four line LCD-Display, a red LED, and also a 9-pol. RS232-Interface.

With the HPG-60 you have a look on all parameters and you can change it. Actual messages are indicate on the display about the happening in the microcontroller system. There is a fault memory, in which is a lot of place for 100 entries. You can give calls and make a RESET about the HPG-60, too.

There are three positions, in which you can connect the HPG-60 in order to communicate microprocessorsystem:

- 1) **Central Unit Controller ZR (Casing)**
- 2) **Car Controller FKR (At the top of the car)**
- 3) **Car Calling Controller ITR ( In the car panel)**

If you have a GOLIATH-60 Frequency Inverter System, you can also have a look on the parameters and actual messages with the same HPG-60 Unit.

### 3. Menu Description

#### Menu- and Parameter structure

A-LIFTPARAMETER				
<b>A1 Lift Type</b>				
A1.1 Type				
A1.2 Lift No.				
A1.3 Controller No.				
A1.4 Place				
A1.5 Time/Date				
A1.6 Language	German, English	English		
A1.7 Display line-1				
A1.8 DisplayLine-2				
A1.9 Software Version	V1.33 or higher			
<b>A2 Controller</b>				
A2.1 Type of Drive	Hydraulic-Not Regulated			
	Hydraulic-Regulated			
	Hydraulik-Variable Frequency			
	Rope-2 Speeds			
	Rope-Variable Voltage			
	Rope-Variable Frequency		X	
A2.2-Type of Controller	Send-Controlling			
	Attendant-Controlling			
	No Collecting			
	One Button Down		X	
	One Button Up & Down			
	Two Buttons			
	Pre-Selection-Controlling			
A2.3 Group	Yes, No	No		
A2.4 No. of Lifts	2 to 8 Lifts	2		
A2.5 Group No.	1 to 8	1		
<b>A3 Shaft</b>				
A3.1 No. Of Floors	2 to 32	2		
A3.2 Main-Floor	1 to 32	2		
A3.3 Lowest-Floors	1,2,3,4,5,6,7,8	1		
A3.4 Door-Sides	1 or 2	1		
A3.5 Shaft-Copy	Standard-Copy	X		
	Relativ-Copy			
	Absolut-Copy			
	Motor-Copy			
	Minimum-Copy			
<b>B CONTROLLERPARAMETER</b>				
<b>B1 Doorparameter</b>				
<b>B10 Doors in General</b>				
Type Of Door	Selectiv			
	Automatic w.Limit SW		X	
	Automatic no Limit SW			
	Handdoor w. Cardoor w. Limit SW			
	Handdoor w. Cardoor no Limit SW			
	Handdoor without Cardoor			
	No Door			
Doorengine active	Always / Standby Out	Always		
Door Control	ZR or FKR	ZR		
Shaftdoor Waiting	0,1 to 2,0 Sec	0,8		
Cardoor Waiting	0,1 to 2,0 Sec	0,8		
Later Door Opening	0,1 to 2,0 Sec	0,5		
Limited Door Opening	No, Yes, 1,0 to 10 Sec	6,0		
Door Open Time Out	No, Yes 1,0 to 60 Sec	13,0		
Door Close Time Out	No, Yes 1,0 to 60 Sec	10,0		
Further Travel Delay Car Call	Selectiv, General 1,0 to 20	7,0		
Further Travel Delay Landing Call	Selectiv, General 1,0 to 20	9,0		
Door Open Trigger	No, Yes	No		
Door Reverse Time out	Selectiv, Generell 50 bis 1000 ms	500 ms		

Doorengine Standby out	Selectiv, Generell 1 bis 60 Sek.	10,0	
Door Parking Level	Open, Close, Selective	open	
Door Standby Level	Open, Close, Selective	open	
Door Ready Level	Selectiv, Offen, Geschlossen 1 bis 60	close 15	
Door Control Inspection	Yes, No	Yes	
Button Door Open Function	Together, Selectiv	Together	
Door Holdtime Function	No, Yes 1,0 to 60 Sec	No	
Button Door Close Function	Together, Selectiv	Together	
Button Door Close Reaction	0,0 to 5,0 Sec	1,0	
Door Control Attempts	1 to 10	3	
Door Open Time	1 to 60 sec	2,0	
<b>B11 Table of Entrance</b>			
		Door-1 Door-2	Door-1 Door-2
Floor-01	Existing Yes or No	...../.....	...../.....
Floor-02	Existing Yes or No	...../.....	...../.....
Floor-03	Existing Yes or No	...../.....	...../.....
Floor-04	Existing Yes or No	...../.....	...../.....
Floor-05	Existing Yes or No	...../.....	...../.....
Floor-06	Existing Yes or No	...../.....	...../.....
Floor-07	Existing Yes or No	...../.....	...../.....
Floor-08	Existing Yes or No	...../.....	...../.....
Floor-09	Existing Yes or No	...../.....	...../.....
Floor-10	Existing Yes or No	...../.....	...../.....
Floor-11	Existing Yes or No	...../.....	...../.....
Floor-12	Existing Yes or No	...../.....	...../.....
Floor-13	Existing Yes or No	...../.....	...../.....
Floor-14	Existing Yes or No	...../.....	...../.....
Floor-15	Existing Yes or No	...../.....	...../.....
Floor-16	Existing Yes or No	...../.....	...../.....
<b>B12 Safety Photocell</b>			
Safety-Photocell	No, Yes	No	
Photocell-Monitor	No, Yes 0,0 to 180,0 Sec	60 Sek.	
<b>B13 Door Nudging</b>			
Nudging Function	No, Yes 0,0 to 180,0 Sec	No	
<b>B14 Entrance Monitor</b>			
Entrance Monitor	No, Yes 1,0 to 20 Sec	No	
0,0 to 2,0 Sec	0,0 to 10,0 Sec		
<b>B15 Locked</b>			
Mech.Locked Waiting	0,0 to 2,0 Sec	0,5	
Mech.Locked Time ON	0,0 to 5,0 Sec	0	
Mech.Locked Time OFF	0,0 to 5,0 Sec	0	
<b>B16 Safety PCB</b>			
Pre-Opening Doors	No, Yes	No	
<b>B16 Releveling</b>			
Releveling	No, Yes	No	
No Releveling Way	5 to 50 mm	5 mm	
max. Releveling Way	10 to 250 mm	100 mm	
Time Limit	3 to 25 Sec	20	
Attempt Limit	5 to 25	20	
Limit at Level 1	No Limit, Limit	No Limit	
Overload	Releveling, No Releveling	Releveling	
Fault Handling	Block, Go Down & Block	Go Down&Block	
<b>B2-Call Options</b>			
<b>B21 Car Calls</b>			
Door Reverse Car Call	Off, On	Off	
Selective Car Calls	No, Yes	No	
Car Call Limit Group	2 to max. Floors	6	
<b>B22 Landing Calls</b>			
Door Reverse Landing Call	Off, On	Off	
Modul	ZR, ER	ZR	
Second call easing	No, Yes	No	
<b>B23 Car Priority</b>			
Input Channel ITR 206A	ITR, Input 206A	206A	
Landing Call Handling	Clear, Save	clear	

<b>B24 Landing Priority</b>			
Modul	ZR, ER	ER	
No. Of Car Calls	1,2,3	1	
Time to Push	1 to 30 sec	15	
Reaction	clear, save	clear	
<b>B25 Group</b>			
Door Fault after	10,0 to 60,0 Sec	60 Sec.	
<b>B3-Drive</b>			
<b>B30 Hydraulic Not Regulated</b>			
Start	Softstart / Stern-Dreieck	Soft	
Stern-Dreieck-Reverse Time	100 to 4000 ms.	2000	
Direction Up Delayed On	No, Yes -1 to 300 ms.	100	
Direction Up Delayed Off	No, Yes -1 to 2000 ms.	400	
Start with Door Controlling	No, Yes -1 to 3 sek verzögert	No	
Inspection Speed	Slow, Quick	Slow	
Time to Go Down	1 to 15 Minutes	10 Min.	
Fault Handling	No, Interrupt, Block, Block & Go Down	Int.&Block	
<b>B31 Hydraulic Regulated</b>			
Start	Softstart / Stern-Dreieck	Soft	
Stern-Dreieck-Reverse Time	100 to 4000 ms.	2000	
Direction Up Delayed On	No, Yes -1 to 300 ms.	100	
Direction Up Delayed Off	No, Yes -1 to 2000 ms.	400	
Start with Door Controlling	No, Yes -1 to 3 sek verzögert	No	
Inspection Speed	Slow, Quick, Vinsp	Vinsp.	
Time to Go Down	1 to 15 Minutes	10 Min.	
Fault Handling	No, Interrupt, Block, Block & Go Down	Int.&Block	
<b>B32 Hydraulic Variable Frequency</b>			
V0 Delayed Off	No, Yes -1 to 300 ms.	nein	
Main Conductor Delayed Off	No, Yes -1 to 2000 ms.	600	
Direction Delayed Off	No, Yes -1 to 300 ms.	No	
Releveling Speed	Vn, V0	Vn	
Inspektion Speed	Vo, Vinsp.	Vinsp.	
Time to Go Down	1 to 15 Minutes	15 Min.	
Fault Handling	Interrupt, Block, Block1.Att., Block2.Att.&Go D	Int.&Block	
<b>B33 Rope 2 Speeds</b>			
Motorventilation	No, Yes - 1 to 600 sec	Nein	
Motorventilation Output	ZR, Output ZC7	ZR-ZC7	
Direction Contactor Delayed On	No, Yes-10 to 300 ms.	100	
Inspection Speed	Slow, Quick	Slow	
Reverse Time out	No, Yes, - 1 to 100 ms.	No	
<b>B34 Rope Variable Voltage</b>			
Motorventilation	No, Yes-1 to 600 sek.	No	
Motorventilation Output	ZR, Output ZC7	ZR-ZC7	
Direction Conductor Delayed On	no, Yes -10 to 300 ms.	100	
Main Contactor Delayed Off	No, Yes -10 to 2000 ms.	600	
Brake Contactor Delayed On	No, Yes -10 to 2000 ms.	No	
Brake Contactor Delayed Off	No, Yes -10 to 2000 ms.	No	
Releveling Speed	Vn, V0	V0	
Fault Handling	Interrupt, Block, Block1.Att., Block2.Att.	Interrupt	
<b>B35 Rope Variable Frequency</b>			
Motorventilation	No, Yes -1 to 600 sek.	No	
Motorventilation Output	ZR, Output ZC7	ZR-ZC7	
V0 Delayed Off	No, Yes -10 to 3000 ms.	No	
Main Contactor Delayed Off	No, Yes -10 to 3000 ms.	400	
Direction Delayed Off	No, Yes -10 to 3000 ms.	600	
Releveling Speed	Vn, V0	Vn	
Fault Handling	Interrupt, Block, Block1.Att., Block2.Att.	Interrupt	
<b>B4-Shaft Copy</b>			
<b>B41 Standart Copy</b>			
Pulse Buffer Delay	10 bis 50 ms	50 ms	
Correction Travel to	Bottom, Highest Floor	Bottom	

<b>B42 Relativ Copy</b>			
Pulse Buffer Delay	10 bis 50 ms	2 ms	
Correction Travel to	Bottom, Top	Bottom	
Distance Pre Limit Switch-Zone Bottom	To Measure in mm		
Decelation at Speed V0->0	Distance in mm	100	
Decelation at Speed V1	Distance in mm	500	
Decelation at Speed V2	Distance in mm	1000	
Decelation at Speed V3	Distance in mm	1500	
Learn Drive with	V1,V2,V3	V1	
Encoder Terminal At	ZR or FKR	FKR	
Learn Drive activate	No, Yes	no	
Level Compensation	Value in mm	mm	
Floor Level	From Level 01 to 32		
<b>B43 Absolut Copy</b>			
Pulse Buffer Delay	10 bis 50 ms	2 ms	
Correction Travel to	Bottom, Top	Bottom	
Distance Pre Limit Switch-Zone Bottom	To Measure in mm		
Decelation at Speed V0->0	Distance in mm	100	
Decelation at Speed V1	Distance in mm	500	
Decelation at Speed V2	Distance in mm	1000	
Decelation at Speed V3	Distance in mm	1500	
Learn Drive with	V1,V2,V3	V1	
Encoder Terminal At	ZR or FKR	FKR	
Learn Drive activate	No, Yes	No	
Floor Level	From Level 01 to 32		
<b>B43 Motor Copy</b>			
Pulse Buffer Delay	10 bis 50 ms	2 ms	
Correction Travel to	Bottom, Top	Bottom	
Distance Pre Limit Switch-Zone Bottom	To Measure in mm		
Decelation at Speed V0->0	Distance in mm	100	
Decelation at Speed V1	Distance in mm	500	
Decelation at Speed V2	Distance in mm	1000	
Decelation at Speed V3	Distance in mm	1500	
Learn Drive with	V1,V2,V3	V1	
Encoder Terminal At	ZR or FKR	FKR	
Learn Drive activate	No, Yes	No	
Level Compensation	Value in mm	mm	
Floor Level	From Level 01 to 32		
<b>B44 Minimum Copy</b>			
Pulse Buffer Delay	10 bis 50 ms	50 ms	
Correction Travel to	Bottom, Highest Floor	Bottom	
<b>B45 R&amp;S Copy</b>			
Pulse Buffer Delay	10 bis 50 ms	50 ms	
Correction Travel to	Bottom, Highest Floor	Bottom	
<b>B5-Indicator</b>			
<b>B501 Car Indicators</b>			
Car ITR	1 to N, Binär, Cray-Code	1 to N	
Central Unit ZR	2 to N, Binär, Cray-Code		
Floorl Unit ER	3 to N, Binär, Cray-Code	ZR-ZF	
Output Inspection/Re-Send	No, Flashing, Permanently	No	
Output Special Travel	No, Flashing, Permanently	Flashing	
Output Fault Handling	No, Flashing, Permanently	No	
<b>B502 Car Arrows</b>			
Arrows	Direction, Latern, Direction & Latern,	Direction	
Switch off after Time	No, Yes 1 to 60 sec.	No	
Switch off Door close	No, Yes	Yes	
Output Inspection/Re-Send	No, Flashing, Permanently	Permanently	
Output Special Travel	No, Flashing, Permanently	Permanently	
<b>B503 Floor Indicators</b>			
Arrows	Direction, Latern, Direction & Latern,	Direction	
Switch off after Time	No, Yes 1 to 60 sec.	No	

Switch off Door close	No, Yes	Yes	
Output Inspection/Re-Send	No, Flashing, Permanently	Permanently	
Output Special Travel	No, Flashing, Permanently	Permanently	
<b>B504 Gong at the Car</b>			
Gong at the Car	Yes, No	No	
Car Call Up	No, One Pulse, Two Pulse, Three Pulse	No	
Car Call Down	No, One Pulse, Two Pulse, Three Pulse	No	
Landing Call Up	No, One Pulse, Two Pulse, Three Pulse	One Pulse	
Landing Call Down	No, One Pulse, Two Pulse, Three Pulse	Two Pulse	
Priority Call Up	No, One Pulse, Two Pulse, Three Pulse	No	
Priority Call Down	No, One Pulse, Two Pulse, Three Pulse	No	
Fire Fighter Function	No, One Pulse, Two Pulse, Three Pulse	No	
Special Travel	No, One Pulse, Two Pulse, Three Pulse	No	
Volume	1 to 15	7	
Terrible	1 to 15	7	
<b>B505 Gong at the Floor</b>			
Gong at the Floor	Yes, No	No	
Car Call Up	No, One Pulse, Two Pulse, Three Pulse	No	
Car Call Down	No, One Pulse, Two Pulse, Three Pulse	No	
Landing Call Up	No, One Pulse, Two Pulse, Three Pulse	One Pulse	
Landing Call Down	No, One Pulse, Two Pulse, Three Pulse	Two Pulse	
Priority Call Up	No, One Pulse, Two Pulse, Three Pulse	No	
Priority Call Down	No, One Pulse, Two Pulse, Three Pulse	No	
Fire Fighter Function	No, One Pulse, Two Pulse, Three Pulse	No	
Special Travel	No, One Pulse, Two Pulse, Three Pulse	No	
Volume	1 to 15	7	
Terrible	1 to 15	7	
<b>B6 Functions</b>			
<b>B600 Monitor Functions</b>			
Contacteur Monitor	On / Off	Yes	
Car Light Monitor	On / Off	Off	
Start Time Monitor	0 to 20 Sec	20	
Journey Time Monitor	0 to 45 Sec	40	
Decelartion Time Monitor	0 to 20 Sec	20	
Stop Time Monitor	0 to 10 Sec	10	
Fault Handling	Stop & Block, Stop & Clear	Stop&Clear	
Brake Fault Monitor	No, Yes - Input Zxx	No	
Brake Open Monitot	No, Yes - Input Zxx	No	
Temperature Monitor	No, Yes - 30 bis 70°C	No	
<b>B601 Inspection Travel</b>			
Inspection Stop	Active, Deactive For One travel	Active	
Start Blocked	Yes, No	No	
<b>B602 Emergency Unit</b>			
Alert Push Button Delay	0 to 5 Sec	3	
<b>B603 Car Fan</b>			
Start Of Fan	Push Button, Travel-Start	Travel	
Fan Delay	0 to 600 Sek.	120	
<b>B604 Load Mearement</b>			
Load Sensor KW	Yes, No	No	
Zero Load	Activate for Load-Measurement		
Over Load	Activate for Load-Measurement		
Full Load	in Percent of Overload (150%)		
Load	in Percent of Overload (150%)		
Konservative Inputs	Yes, No		
Overload Input ZR, FKR	ZR, FKR, Input Fexx		
Fullload Input ZR, FKR	ZR, FKR, Input Fexx		
Load Input ZR, FKR	ZR, FKR, Input Fexx		
Zeroload Input ZR, FKR	ZR, FKR, Input Fexx		
<b>B605 Standby Travel</b>			
Input Car Light OFF ZR	ZR, Input ZExx		
Input Car Light OFF FKR	FKR, Input FExx		
Next Floor	Yes, No - Floor 1 to 32	Yes	
Door	Open, Close	Open	

<b>B606 Parking Travel</b>			
Parking Travel	No, Yes	No	
Parking Level	Floor 1 to max. Floor		
Start Parking Travel	1 to 15 Min.		
Door	Open, Close	Open	
<b>B607 Floor Blocking</b>			
Door Blocking	No, Yes -	No	
Dyn.Door Blocking	No, Yes -	No	
<b>B608 Car Light</b>			
Car Light Off	No, Yes	No	
Time Delay	0 to 600 Sec	60	
<b>B609 Emergency Power service</b>			
Emergency Power Service	No, Yes	No	
Emergency Power Level	Next, 1 to 32	1	
Emergency Power Input	E401	E401	
Entrance Open	1, 2, 1+2	1	
Next Lift Following	No, Yes	No	
Input Emergency Power Service	E402	E402	
Output Emergency Power Level reached	E403	E403	
<b>B610 Emergency Fire Service</b>			
Fire Evacuation Service	No, Yes-1, Yes-2, Yes-3, dynamic	No	
1. Fire Evacuation Level Priority 1	1 to 32	2	
Input ZR	ZR-ZB5	ZR-ZB5	
Entrance Open	1, 2, 1+2	1	
2. Fire Evacuation Level Priority 1	1 to 32	2	
Input ZR	ZR-ZB6	ZR-ZB6	
Entrance Open	1, 2, 1+2	1	
3. Fire Evacuation Level Priority 1	1 to 32	3	
Input ZR	ZR-ZB7	ZR-ZB7	
Entrance Open	1, 2, 1+2	1	
Output Fire Evacuation Level reached	ZR-ZC7	ZR-ZC7	
Fire Senors Inputs	No, Yes	No	
Input ZR	ZR-xx		
<b>B611 Fire Fighter service</b>			
Firefighter Tr.	no/yes	no	
Firefighterfloor	1..max.floor	1	
Input	not inverted/inverted	not inverted	
Firefighter Tr.	german/english model	german model	
<b>B612 Rescue Travel</b>			
Rescue Travel Landing Call	No, Yes	No	
Landing Call Level 1	1 bis 32	1	
Open Door Side	1, 2, 1+2	1	
Input ZR	Zexx		
Level To Send	0, 1 to 32	2	
Open Door Side	1, 2, 1+2	1	
Level To Re-Send	0, 1 to 32	2	
Delay Time	10 to 300 Sec	10	
<b>B613 Attandet Travel</b>			
Attandent Travel	No, Yes	No	
Input ITR	ITR-xx		
Indicates of The Landing Calls	ITR-xx	1	
<b>C-DIAGNOSE</b>			
<b>C0-Controller-RESET</b>			
<b>C1-See / Give Calls</b>			
<b>C2-In- &amp; Output Signals</b>			
<b>C3-Event / Fault Log</b>			
<b>D-Information</b>			
<b>D1-In- &amp; Output</b>			
<b>D2-Trip-Counter</b>			
<b>D3-Runningtime Counter</b>			



## 4.0 Function Description

### A0 General working with the HPG 60



The Hand-held Programming Unit HPG-60 is the universal programming tool for the entire control system. It is equipped with 6 keys, a four-lined LCD-display, one red LED, and a 9-pole RS232-Interface. Through the HPG-60, all parameters can be displayed and changed. Current actions of the control system are displayed through permanent status indicators. The accumulated fault events can be read out from the fault memory. Inquiries can also be initiated through this unit. The HPG-60 can communicate with the Microprocessor System in three places:

- 1) through the CPU ZR ZR **(located in the switch cabinet)**
- 2) through the Car-Mounted Control Unit FKR **(located on top of the cabin)**
- 3) through the Car Panel ITR **(located in the cabin)**

The serial cable which is supplied with the unit, has to be connected with the 9-pole interface socket of the HPG-60, and the corresponding socket of the CPU, the FKR, or the ITR. If the access authorization of the HPG-60 is accepted by the CPU, the display will show „A1 Anlagedaten“.

The six keys are separated in two groups. The four red keys are working as a two-axis control, i.e. the upper and the lower key are used to scroll through the menu. There are eight main menus, between which you can change by using the keys „left arrow“ and „right arrow“. The right and the left red buttons will select the individual parameters. The values of the parameters appear on the right side.

The yellow keys are used if parameters are to be changed. The upper yellow key will increase the parameter value, through the lower yellow key the parameter value is reduced. After adjustment, the parameter value will flash on the display. The right, red key (ENTER) must be pressed to store the new setting. In case that the new value is to be disregarded, the left red key must be pressed (ESCAPE). The current key allocation is displayed on the fourth line of the display. Parameters can only be changed in standstill condition, and only if no command has been entered. Mistakes are indicated by flashing of the display.

The display is composed as follows:

1. Zeile	MENUE	e.g.	B10 Door General
2. Zeile	Menue Element	Parameter Value	e.g. Shaft Door Bounce Suppression 100 ms
3. Zeile	Status	Mode	„Regular Operation“
4. Zeile	Error Messages		Error 41: Operating Time Surveillance

Switching between menus A up to C and menu D is done by simultaneous pressing of the right red button, and the two yellow buttons.

## A- Liftparameter

## A1- Lift type

**Parameter: A1.1 Type**

There is a place of 20 characters to put in the name of the type or the company. The whole character-set is 95 characters.

**Parameter: A1.2 Lift Number**

There is a place of 20 characters to put in the lift number. The whole character-set is 95 characters

**Parameter: A1.3 Controller Number**

There is a place of 20 characters to put in the controller-number. The whole character-set is 95 characters.

**Parameter: A1.4 Place**

There is a place of 20 characters to put in the name of the place. The whole character-set is 95 characters.

**Parameter: A1.5 Time / Date**

You must use the form **xx:xx:xx = time & yy.yy.yyyy = Date** to put in the time and the date.

**Parameter: A1.6 Language**

There are two languages, **German and Englisch**. The standart is German

**Parameter: A1.7 & A1.8 - Displayline 1 and 2**

There is a place of 20 characters in every line to put in the name of the Building, or the company. These two lines are visible at the start on the HPG-60. The whole character-set is 95 characters.

**Parameter: A1.9 Software Version**

In this menu menu the software version will be shown.

## A2- Controller

**Parameter: A2.1 Type of Drive**

In this parameter, you have to choose the type of drive:

- **Hydraulic-Not regulated**
- **Hydraulic- regulated**
- **Hydraulic-Variable Frequency**
- **Rope- 2 Speeds**
- **Rope- Variable Voltage**
- **Rope- Variable Frequency**

**Parameter: A2.2 Type of Controller**

In this parameter, you have to choose the type of controller:

- **Send-Controlling**
- **Attendant-Controlling**
- **No Collecting**
- **One Button Down**
- **One Button Up & Down**
- **Two Buttons**
- **Pre-Selection-Controlling**

**Parameter: A2.3 Group**

In this parameter, you can activate the Group-drive.

**Parameter: A2.4 No. Of Lifts**

In this parameter, you can put in the numbers of the lifts in the group. The maximum number is 8.

**Parameter: A2.5 Group No.**

Each lift in the group has its own number. You can give the lift a number between 1 and 8.

**A3- Shaft****Parameter: A3.1 No. of Floors**

In this parameter, you can put in the value, how many floors the elevator has. The maximum is eight floors.

**Parameter: A3.2 Main Floor**

In this parameter, you can put in the value, of the main floor.

**Parameter: A3.3 Lowest Floor**

If you have a group with a different number of floors., you must put in the number of the floor, which is the lowest floor of the elevator.

**Parameter: A3.4 Door Sides**

In this parameter, you can put in the value, how many door sides the elevator has. The maximum is two door sides.

**Parameter: A3.5 Shaft-Copy**

In this parameter, you have to choose the type of shaft-copies:

- **Standart-Copy**
- **Relativ-Copy**
- **Absolut-Copy**
- **Motor-Copy**
- **Minimum-Copy**
- **R&S-Copy**

## B1- Doorparameter

### Description of the in- and outputchannels of the door-function

terminal mark	location	hardware	function
X11/701	FKR	24V DC relay output	<b>Door control wire door 1 open</b> -This output controls the door control on the cabin. This output is locked with each other by software.
X11/702	FKR	24V DC relay output	<b>Door control wire door 1 close</b> -This output controls the door control on the cabin. This output is locked with each other by software.
X11/704	FKR	24V DC relay output	<b>Door control wire door 2 open</b> -This output controls the door control on the cabin. This output is locked with each other by software.
X11/705	FKR	24V DC relay output	<b>Door control wire door 2 close</b> -This output controls the door control on the cabin. This output is locked with each other by software to the output 40B.
42A resp. 42B	FKR	24V DC Input	<b>Photocell input door 1 resp. door 2</b> +24 V DC applied to this input means that the photocell is blocked and a person or an item is within the traverse path of the door 1 or 2. 0 V DC indicates, that the traverse path of door 1 or 2 is free. Evaluation of the photocell input only within the door zone , resp. levelling contact when the door is open, resp. partly open. (functional model closing contact NO) Reaction: reverse of the door motion for door open.
43A resp. 43B	ITR	24V DC Input	<b>Push-button door open input door 1 resp.2</b> +24 V DC applied to this input means that the push button door 1 or the push button door 2 was operated to open and the passenger requires a door motion to open. (functional model closing contact NO) Reaction: reverse of the door motion for door open.
44A resp. 44B	ITR	24V DC Input	<b>Push-button door close input door 1 resp.2</b> +24 V DC applied to this input means that the push button door 1 or the push button door 2 was operated to close and the passenger requires a door motion to close. (functional model closing contact NO) response delay time of the door motion for closing is adjustable.
45A resp. 45B	FKR	24V DC Input	<b>Door reserve input door 1 resp. 2</b> +24V DC applied to this input means, that the door force limit switch is enabled and a person or an item is within the traverse path of door 1 or door 2 and in contact with the door. 0V DC indicates, that the traverse path of door 1 resp. 2 is free. (functional model closing contact NO) Reaction: reverse of the door motion for door open.
46A resp. 46B	FKR	24V DC Input	<b>Door limit switch open Input door 1 resp. door 2</b> 0V DC applied to this input means, that the door is in the open final position which means the door is complete opened. (functional model opening contact NC) Reaction: Switch off of the door control wire door 1 open resp. door 2 open.
47A resp. 47B	FKR	24V DC Input	<b>Door limit switch close Input door 1 resp. door 2</b> 0V DC applied to this input means, that the door is in the close final position which means the door is complete closed. (functional model opening contact NC) Reaction: Switch off of the door control wire door 1 close resp. door 2 close.
U10	ZR	230V AC Input	<b>Landing door input safety circuit signal U 10</b> 230V on this input means, that all landing doors of the elevator are electrically closed.
U11	ZR	230V AC Input	<b>Cabin door input safety circuit signal U11</b> 230V on this input means, that all cabin doors of the elevator are electrically closed.
U12	ZR	230V AC Input	<b>Instantaneous switch input safety circuit signal U12</b> 230V on this input means, that the locker magnet is enabled and all landing doors are locked. 0V AC means, that the locker magnet is disabled and the landing door of the present level is not locked and therefore to be opened resp. open.

### Remarks

For the software used in this system, the term „Automatic Door“ refers to a telescopic shaft door in connection with a telescopic cabin door, which are jointly operated by an electric system.

The technical execution of the Automatic Door allows a wide variety of options, from uncontrolled 400 Volt AC drive to spindle- and electronically controlled door drives.

### Parameter: Type of Door

In this parameter you can choose the type of the door. The following door types are in the software:

- **No Door**
- **Handdoor no Cardoor**
- **Hand/Cardoor with Endswitch**
- **Hand/Cardoor without Endswitch**
- **Automaticdoor with Endswitch**
- **Automaticdoor without Endswitch**

This description is basically valid for both, automatic doors without limit switch, and those with limit switch. It must, however, be noted that the door commands Open & Close remain valid in the respective end positions!

However, some door motors are not for 100 % duty cycle. In that case, the parameter „Doorengine Standby out“ must be activated.

After stop of the cabin at the landing and opening/closing of the doors in standby mode, the door motor must be switched off after a pre-programmed period.

Please note that the door motor must also be switched off if the cabin should stop with closed doors between landings, as it has to be anticipated in case of a technical fault.

### Parameter: Door engine active

At this parameter, you can choose two values, namely „**always**“ and „**standby off**“. The door-engines, which have no switch-on-time of 100%, you must choose the value „**standby off**“.

### Parameter: Shaftdoor waiting

The use of this parameter is to have a delay-time for the shaft-door-contacts in the safety-circuit. When the time is over, there is an interpretation, if the door is open or closed. If you have old doorcontacts in the safety circuit of the shaftdoor, you must set the time high. The best way is always to use new contacts. The standard value is 0,5 seconds.

### Parameter: Cardoor waiting

The use of this parameter is to have a delay-time for the car-door-contacts in the safety-circuit. When the time is over, there is an interpretation, if the door is open or closed. If you have old doorcontacts in the safety circuit of the cardoor, you must set the time high. The best way is always to use new contacts. The standard value is 0,5 seconds.

### Parameter: Later Door opening

The start of opening the door has a delay-time. The standard value is 0,5 seconds.

Parameter: Door open timeout

In this time, the door must be open. If this attempt is not successful, the door will be closed. Depending on the number of door attempts, the door would be open and closed until the door is open, or the number of attempts is reached. The standard time for the timeout is 13,0 seconds.

Parameter: Door close timeout

In this time, the door must be closed. If this attempt is not successful, the door will be open. Depending on the number of door attempts, the door would be open and closed until the door is closed, or the number of attempts is reached. The standard time for the timeout is 13,0 seconds.

Parameter: Time of travel delay with car call

If you drive into the destination floor with car call and there are a lot of other car calls in the system, the delay-time of the start to the next floor depends on the value of this parameter. The standard value is 7,0 seconds.

Parameter: Time of travel delay with landing call

If you drive into the destination floor with landing call and there are a lot of other landing calls in the system, the delay-time of the start to the next floor depends on the value of this parameter. The standard value is 9,0 seconds.

Parameter: Door reverse delay

If the door is in motion to close and should be reversed, this means it should be open, then you need a delay time to prevent a mechanical damage of the door. The standard value is 0,5 seconds.

Parameter: Doorengine standby off

If there would be chosen the value „always“ in the parameter „Doorengine active“, so you can choose in this parameter a time in which the doorengine will be switched off, when the car is standing in the floor with closed doors.

Parameter: Door Ready level

If there are no car- or landing-calls in the system, so the car is in the ready level for future calls. Now you can choose, if you want that the car doors are open or closed. The standard value is open.

Parameter: Button Door close reaction

At this parameter you can choose the delay-time, when the push-button Door-close is active.

Parameter: Doormonitor Attempts

At this parameter you can choose how many attempts you can make to close or open the door, before there would be shown a door-fault. The standard value is 3 attempts.

Parameter: Door open time

If you have a car-door without endswitches, you can choose in this parameter the time, when the ZR-Unit shows you that the door is open. Please measure the time, which the doors need to open.

## **B11 Table of entrance**

Standard system execution is for 8 stops with the option to mount doors on both sides. Through the optional extension module, also 12 stops are feasible. The actual number of access doors can be programmed into the menu „Table of Entrance“ , which is opened by entering „2“ under point A9 „Door-Sides“ of the Lift Parameter menu. For each level, there two entrances prepared. Now, you can choose, which door is really existing.

## **B12- Safety-Photocell**

### Parameter: Safety Photocell

Bei einer Aufzugsanlage mit Schachtür ohne Fahrkorbtür kann der Eingang „Sicherheitslichtgitter“ aktiviert werden. Im Stillstand bzw. bei der Normalfahrt, d.h. die Strahlen des Sicherheitslichtgitters sind nicht unterbrochen, werden Innen- und Außenrufe akzeptiert und abgearbeitet.

Tritt aber während der Fahrt eine Unterbrechung der Strahlen des Sicherheitslichtgitters auf, so wird der Eingang Sicherheitslichtgitter am FKR deaktiviert. Dadurch werden alle Rufe gelöscht.

Eine Weiterfahrt ist nur durch Innenrufgabe möglich. Eine Außenrufgabe ist nicht möglich.

### Parameter: Photocell-Monitor

Bei diesem Parameter kann eine Zeit eingestellt werden, die zur Anwendung kommt, wenn die Photozelle dauerhaft blockiert ist. Nach Verstreichen der eingestellten Zeit wird die Photozelle missachtet und die Tür kann geschlossen werden, falls ein Befehl zur Anfahrt der Parkhaltestelle oder das Kommando zur Abschaltung der Steuerung und des Kabinenlichtes vorliegt.

## **B13 Door Nudging**

### Parameter: Nudging

Bei diesem Parameter kann eine Zeit eingestellt werden, die zur Anwendung kommt, wenn die Photozelle dauerhaft blockiert ist. Ähnlich der Funktion „Photozellenüberwachung“ ist diese Funktion aber für den Normalbetrieb gedacht. Nach verstreichen der eingestellten Zeit wird die Photozelle missachtet und die Tür kann geschlossen werden, falls ein Innen- oder Aussenruf vorliegt.

## **B14 Entrance Monitor**

### Parameter: Entrance Monitor

**Diese Funktion ist zur Zeit noch nicht verfügbar!**

Ein Aktivieren dieses Parameters schaltet die Funktion und die Eingänge der Vorraumüberwachung ein.

### Parameter: Time after Start

Bei diesem Parameter kann eine Zeit eingestellt werden, die zur Anwendung kommt, wenn die Tür sich schließt. Nach der eingestellten Zeit wird ein Ausgang geschaltet, die z.B. für einen Alarmgeber oder zum Abschalten der Vorfeldüberwachung dienen kann.

## **B15 Locked**

### Parameter: Locked Waiting

Bei diesem Parameter lässt sich die Entprellzeit des Riegelmagneten einstellen, d.h. gewisse Kontaktschwierigkeiten beim Sperrmittelschalter können so ausgeglichen werden, ohne dass es zu einer Fehlermeldung kommt. Der Wert der Werkseinstellung beträgt 500 ms.

### Parameter: Mech-Locked Time On

Dieser Parameter ermöglicht es, den Riegelmagnet verzögert einzuschalten. Bei der Werkseinstellung ist keine Verzögerung eingestellt.

### Parameter: Mech-Locked Time Off

Bei diesem Parameter lässt sich eine Ausschaltverzögerung des Riegelmagneten realisieren. Dies ist z.B. nötig, bei der Verwendung von Horizontaltüren.

Bei der Werkseinstellung ist keine Verzögerung eingestellt.

## **B16 Safety PCB**

### Parameter: Pre-Opening Doors

Ist in der Steuerung eine Sicherheitsschaltung verdrahtet und sind die Voraussetzungen von der Schachtkopierung gegeben, so kann in diesem Parameter eine Einfahrt mit offener Tür eingeschalten werden.

Befindet sich der Fahrkorb in der Einfahrt in die Etage, und hat er den Zonenbereich erreicht, so kann die Tür geöffnet werden, wenn die Freigabe der Regelung ( $V < 0,3$  m/s) vorhanden ist.

## **B17 Releveling**

### Parameter: Releveling

Ist in der Steuerung eine Sicherheitsschaltung verdrahtet und sind die Voraussetzungen von der Schachtkopierung gegeben, so kann in diesem Parameter die Funktion der Nachholung eingeschalten werden.

Abhängig von der gewählten Schachtkopierung kann dies digital über die Eingabe der Millimeterwerte erfolgen oder bei Magnetkopierungen über die Länge und Lage des Bündigbereiches.

### Parameter: No. Releveling Way

Diese Einstellung ist nur bei der digitalen Schachtkopierung nötig. Bei der Standard-, bzw. Minimalen-Kopierung ist die Länge des Toleranzbereiches abhängig von der Überlappung des Bündigbereiches 12A und 12B.

Die Werkseinstellung bei diesem Parameter beträgt 5mm. Der Toleranzbereich erstreckt sich daher 2,5mm oberhalb und 2,5mm unterhalb der Bündiglinie.

Der exakte Wert für die jeweilige Anlage ist abhängig von der Seildehnung und der Art der Nutzung der Aufzugsanlage.

### Parameter: Max. Releveling Way

Diese Einstellung ist nur bei der digitalen Schachtkopierung nötig. Bei der Standard-, bzw. Minimalen-Kopierung ist die Länge des Nachholweges abhängig von der Länge des Bündigbereiches 12A bzw. 12B. Die Länge der beiden Bündigbereiche **muß kürzer** sein als der Zonenbereich.

Die Werkseinstellung bei diesem Parameter beträgt 100mm. Dies ist der Nachholweg für **eine Richtung**.

Die Einstellung ist so zu treffen, daß der gesamte Nachholweg ( z.B. 100mm + 100 mm) geringer ist, als die Zonenlänge, die wiederum kürzer ist als die Schwertlänge der Tür!

### Parameter: Time Limit

Der Parameter der Zeitbegrenzung ist für einen Nachholvorgang entscheidend. Die Werkseinstellung beträgt 20 Sekunden. Wird in dieser Zeitspanne der Nachholvorgang nicht erfolgreich zu Ende gebracht, so wird dieser abgebrochen und es liegt eine Störung vor.



Parameter: Attempt Limit

Bei diesem Parameter kann die Anzahl der Versuche bei der Nachregulierung begrenzt werden, um so z.B. das Hydraulikaggregat vor Überhitzung zu schützen. Der Wert der Werkseinstellung beträgt 20 Versuche.

Parameter: Limit at Level 1

Befindet sich der Fahrkorb in der Absenkeebene (Hydraulikanlage), so kann bei diesem Parameter eingestellt werden, ob die Zahl der Nachholversuche begrenzt wird, wie im vorhergehenden Parameter vorgegeben, oder ob keine Begrenzung gilt.

Parameter: Overload

Bei Diesem Parameter kann eineingestellt werden, ob bei Überlast die Funktion der Nachholung aktiv ist. Der Wert der Werkseinstellung ist die aktive Nachholung, wie sie auch dem derzeitigen Stand der EN81 entspricht.

Parameter: Fault Handling

Tritt bei der Nachregulierung ein Fehler auf, so sind folgende Reaktionen einstellbar:

- **Absenken + Sperren;** Diese Einstellung ist bei hydraulischen Aufzugsanlagen zu treffen. Falls die Anlage gesperrt wird, sollte der Fahrkorb sich in der untersten Haltestelle befinden, um ein unkontrolliertes Absinken zu verhindern.
- **Sofort Sperren;** Diese Einstellung kann bei Seil-Aufzugsanlagen eingestellt werden
- **Nächste Ebene + Sperren;** Diese Einstellung kann bei Seil-Aufzugsanlagen eingestellt werden.

## **B2 Call Options**

### **B21 Car Calls**

Parameter: Door reverse at Car Call

With activation of this function, the closing of the door will be reversed if the control button in the car is pushed at the current landing, i.e. the door stops and reopens..

Parameter: Selektive Car Calls

**This funktion is at this time no available!**

Parameter: Car Call Limit Group

Here you can put the number of car call, which are the limit to accept no landing call..

### **B22 Landing Calls**

Parameter: Door reverse at Landing Call

With activation of this function, the closing of the door will be reversed if the landing button is pushed at the current landing, i.e. the door stops and reopens.

**Parameter: Modul**

You have two devices to switch on your landing calls:

- 1) At the central-unit ZR
- 2) At the floorcontroller ER

**Parameter: Second call erasing**

Bei der Einstellung 2KS kann durch Fehlbedienungen beide Rufe, d.h. Auf- und Ab-Ruf gegeben werden, obwohl nur ein Fahrtwunsch vorhanden ist. Dadurch kommt es zu unnötigen Fahrbewegungen der Aufzugsanlage. Ist der Parameter Gegenruflöschung 2KS aktiv, so wird der zweite Ruf, der innerhalb einer kurzen Zeitspanne gegeben wird, unterdrückt. Bei der Werkseinstellung ist diese Funktion auf Ausgeschalten.

**B23- Car Priority****Parameter: Car Call handling**

The standart value at the car priority calls is to erase the landing calls.

**B24- Landing Priority****Parameter: Modul**

You have two devices to switch on your landing priority calls:

- 1) At the central-unit ZR
- 2) At the floorcontroller ER

**Parameter: Time To Push**

You have a time limit to put in your priority call at the car call panel. The standart value is 15 seconds.

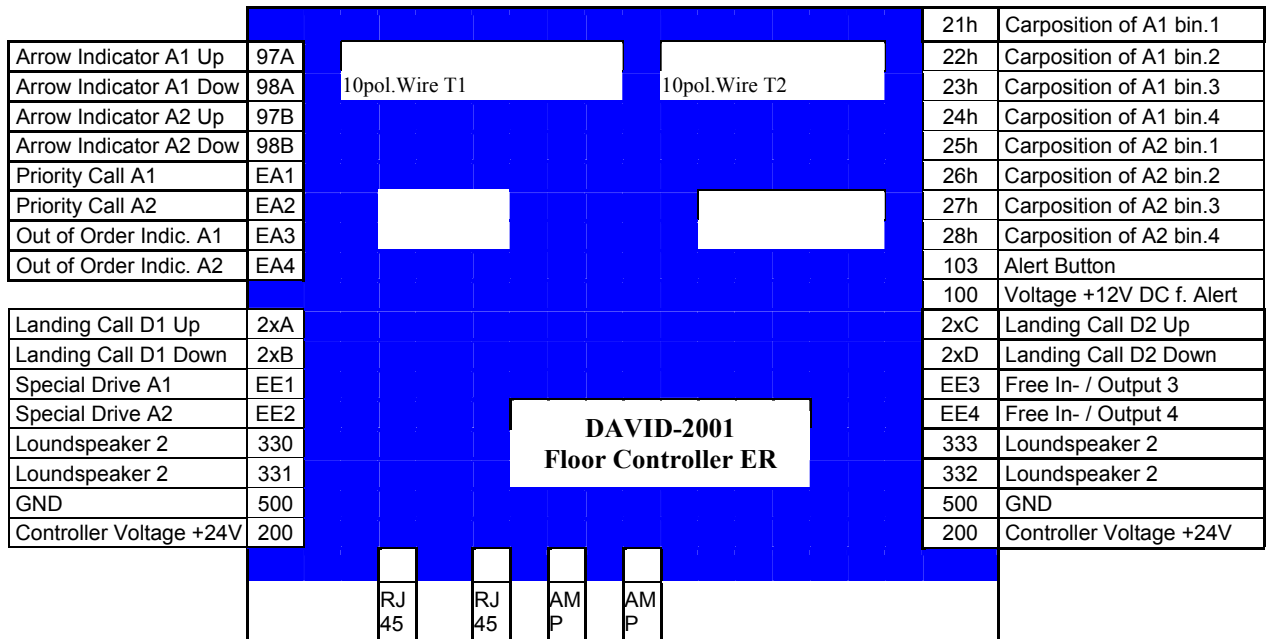
**Parameter: Landing Call handling**

The standart value at the car priority calls is to erase the landing calls.

**B25- Group****Parameter: Door Fault after**

If you have a lot of door problems, in this parameter , you can put in a time, after which the elevator accept no landing calls. The other elevator can drive in the floor and can overtake the landing call. If the problem is solved, the elevator is a member of the group.

A1 = Group-elevator No.1 A2 = Group-elevator No.2

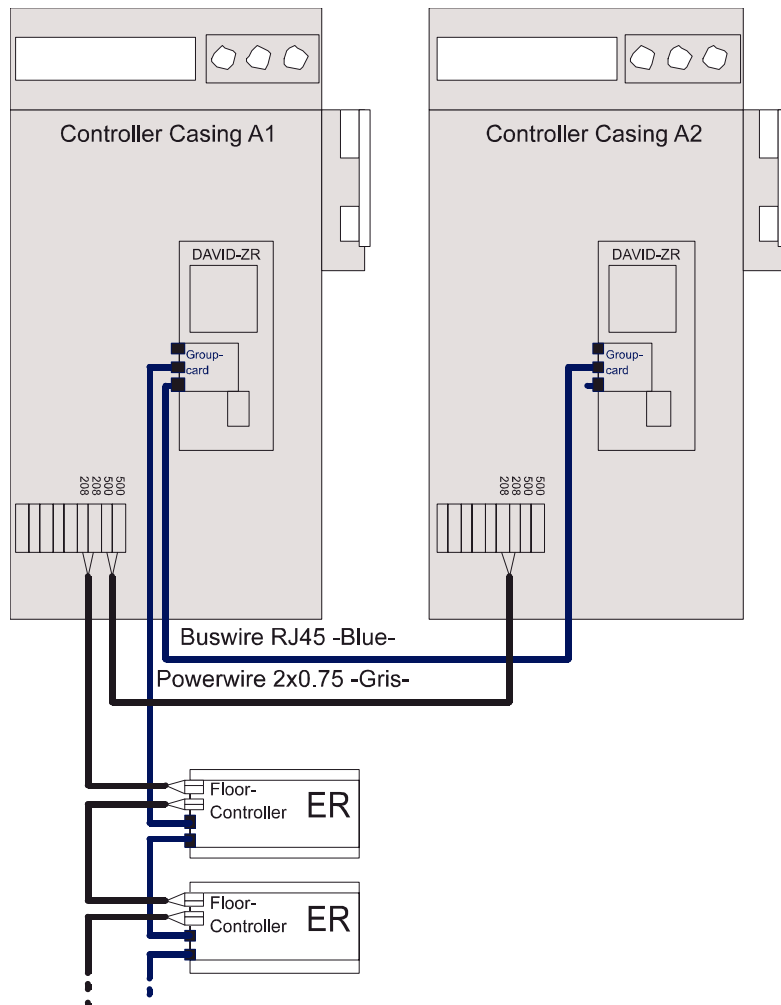


Each Floorcontroller needs his own number:

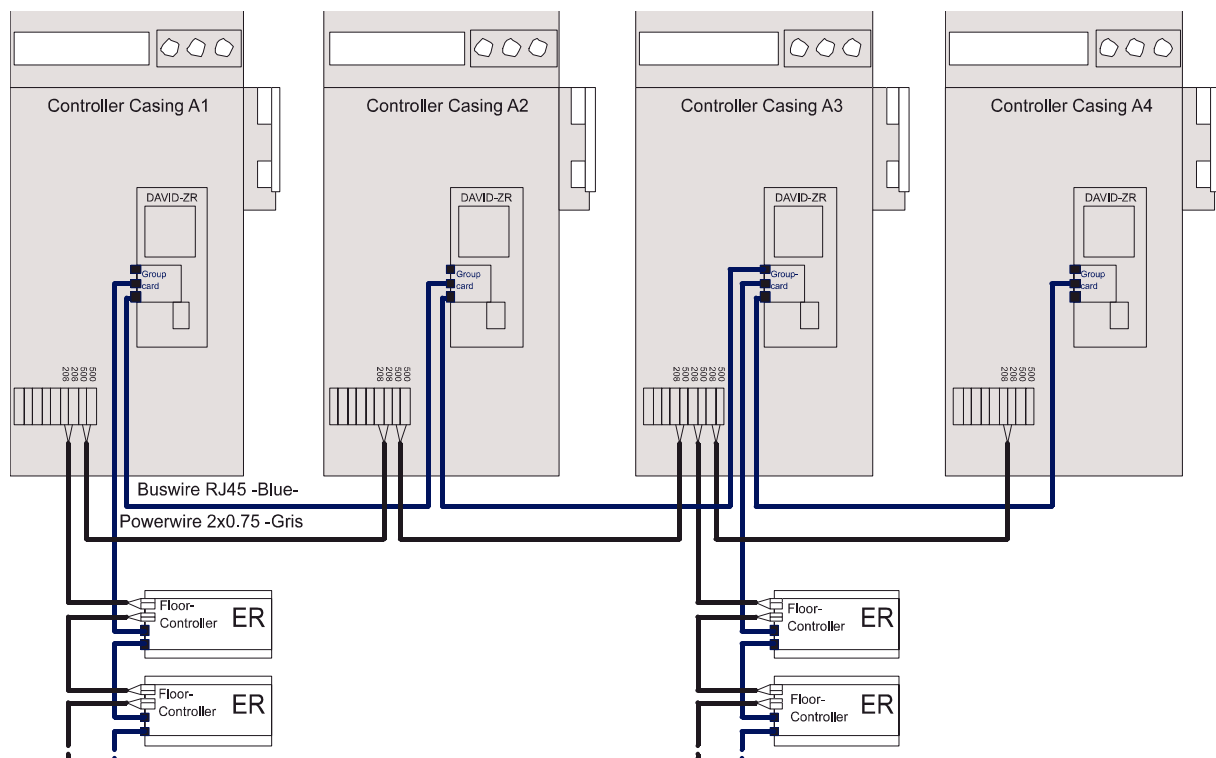
<b>Adress Floorcontroller 1. Groupbus ( For two elevators)</b>			
Floor	Number / Dil-switches	Floor	Number / Dil-switches
1	000000	9	001000
2	000001	10	001001
3	000010	11	001010
4	000011	12	001011
5	000100	13	001100
6	000101	14	001101
7	000110	15	001110
8	000111	16	001111

<b>Adress Floorcontroller 2. Groupbus ( For two elevators)</b>			
Etage	Number / Dil-switches	Etage	Number / Dil-switches
1	010000	9	011000
2	010001	10	011001
3	010010	11	011010
4	010011	12	011011
5	010100	13	011100
6	010101	14	011101
7	010110	15	011110
8	010111	16	011111

Elevator group with two members ( duplex )



Elevator group with four members ( quato )



## B3 Drive

### B30-32 Hydraulic – Description

#### 1.0 General

Hydraulikaufzugsanlagen werden grundsätzlich in zwei Kategorien der Kraftübertragung eingeteilt:

- A) Direkte Hydraulikanlagen – Der Fahrkorb ist in direkter Verbindung mit dem Hydraulikkolben.
- B) Indirekte Hydraulikaufzugsanlagen – Der Fahrkorb ist über Seile mit dem Hydraulikkolben verbunden. Hier gelten beide Sicherheitsanforderungen, für Hydraulik und Seil.

Beim Hydraulikaggregat werden zur Zeit drei verschiedene Regelungsprinzipien verfolgt:

- A) Ungeregelte Aggregate mit Drei- bzw. Vier-Ventilköpfen. Die Ventilspannung beträgt heutzutage hauptsächlich 230V AC. Nur in Ausnahmefällen, bzw. Altanlagen werden Ventilspannungen mit 205V DC benutzt. Zu 95% kommen Vierventilköpfe zum Einsatz mit folgenden Ventilen – Schnell-Auf – Schnell-Ab – Langsam-Auf – Langsam-Ab. Bei KW kommen nur Softstartgeräte zum Einsatz. Der Direktanlauf wird in der Software nicht berücksichtigt. Als Vorsteuerleiterplatte kommt die SHU60 zum Einsatz.
- B) Geregelter Aggregate mit Zwei-Ventilköpfen, die elektronisch über die Öldurchflussmenge geregelt werden (Beringer LRV und Giehl Elektronik). Das Auf-Ventil, wie auch das Ab-Ventil sind 30V bzw. 24V DC Ventile die in Ihrem Öffnungsdurchmesser variiert werden können. Die Spannungen werden von den Elektronikarten der Hersteller geliefert. Bei KW kommen nur Softstartgeräte zum Einsatz. Der Direktanlauf wird in der Software nicht berücksichtigt. Als Vorsteuerleiterplatte kommt die SHG60 zum Einsatz.
- C) Geregelter Aggregate ohne Regelventile, aber mit einer frequenzgeregelten Pumpe (Beringer). Als Frequenzumrichter kommt bevorzugt der Umrichter der Fa. Dietz zum Einsatz. Zur Zeit sind noch keine Erfahrungswerte vorhanden. Als Vorsteuerleiterplatte kommt die SSF60 zum Einsatz.

#### 2.0 Schützensteuerung und Fahrtafel

Grundsätzlich genügen der Hydraulikaufzugssteuerung drei Vorsteuersignale, da mit den Richtungen auch die langsame Geschwindigkeit  $V_0$  herausgegeben wird.

Bez.	Vorsteuerung	Hydraulik	Seil Frequenz Geregelt	Seil Ungeregelt
<b>5</b>	<b>K31</b>	<b>K11C Auf-Schütz</b>	K3 Fahrtschütz	K1 Auf-Schütz
<b>3</b>	<b>K32</b>	<b>AB-Schütz</b>	K3 Fahrtschütz	K2 Ab-Schütz
<b>7</b>	<b>K33</b>	<b>Schnell-Schütz</b>	K5 Netzschütz	K3 Schnell-Schütz
<b>9</b>	<b>K34</b>	<b>Umschaltung S-D</b>	K7-Bremsschütz	K4 Langsam-Schütz

Tabelle: Vergleich der Vorsteuerung bei verschiedenen Antriebsarten

Bez.	Fahrbefehle	Hydraulik	Seil Frequenz Geregelt
<b>AB</b>		<b>Richtung AB</b>	Richtung AB
<b>AUF</b>		<b>Richtung AUF</b>	Richtung AUF
<b>Vins</b>		<b>Geschwindigkeit Vins</b>	Geschwindigkeit Vins
<b>Vn</b>		<b>Umschaltung Stern/Dreieck</b>	Geschwindigkeit Vna
<b>V0</b>		<b>Geschwindigkeit V0</b>	Geschwindigkeit V0
<b>V1</b>			Geschwindigkeit V1
<b>V2</b>		<b>Geschwindigkeit V2</b>	Geschwindigkeit V2
<b>V3</b>		<b>Fahrt K73</b>	Geschwindigkeit V3

Tabelle: Vergleich der Fahrbefehle bei verschiedenen Antriebsarten

Der zeitliche Ablauf einer Normalfahrt:

- 1) Die Tür läuft zu und ist verriegelt. Die Steuerung gibt auf die **Vorsteuergruppe Auf** und **Schnell** heraus. Zeitlichverzögert wird ebenfalls der **Fahrbehl Auf** herausgegeben, so dass erst jetzt die Thyristoren des Softstartgerätes aktiviert werden, um ein leistungsloses Schalten des Schützes zu gewährleisten. Nachdem das Softstartgerät hochgelaufen ist und die Ventilfeigabe erfolgt ist (K34 ist aktiviert worden), setzt sich der Fahrkorb in Bewegung.
- 2) Bei Erreichen des Verzögerungspunktes wird der Vorsteuerbefehl Schnell weggenommen. Jetzt ist nur noch das Ventil Langsam AUF aktiv.
- 3) Nachdem das Bündigsignal aktiv ist, wird angehalten und der Fahrbehl AUF weggenommen. Die Ventilfeigabe wird sofort weggenommen. Das Ventil Langsam-Auf wird geschlossen. Nach 400ms schaltet das Softstartgerät die Thyristoren ab und jetzt wird der Vorsteuerbefehl AUF weggenommen.

Inspektions- und Rückholbetrieb

Bei Hydraulikanlagen wird die Geschwindigkeit für den Inspektions- und Rückholbetrieb in den Parametern eingestellt.

- A) Bei langsamen, unregelmäßigen Hydraulikern bis 0,4m/s wird als Inspektionsgeschwindigkeit V2 eingestellt.
- B) Bei schnellen, unregelmäßigen Hydraulikern über 0,4m/s wird als Inspektionsgeschwindigkeit V0 eingestellt. Im Inspektionskasten wird der Eingang 60C ausgewertet (Schnelltaste). Wird die Schnelltaste gedrückt, so wird zusätzlich der Vorsteuerausgang Schnell gesetzt. Werden die Vorendschalter 13A oder 13B aktiv, so wird der Vorsteuerausgang Schnell deaktiviert, um den Inspektionsstop zu gewährleisten!
- C) Bei geregelten Hydraulikanlagen wird die Geschwindigkeit für den Inspektions- und Rückholbetrieb in den Parametern auf Vins eingestellt. An der Elektronikkarte des Hydraulikaggregats kann so die gewünschte Geschwindigkeit eingestellt werden.

Absenkefahrt zur untersten Haltestelle

Der Hydraulikaufzug muss nach spätestens 15 Minuten zur untersten Haltestelle absenken. Die Zeit ist einstellbar durch die Parameter.

Notenschaltervereinbarung EN81-2

Befindet sich der direkte Hydraulikaufzug im Notenschalter Oben ( es gibt beim Hydrauliker nur diesen!) oder befindet sich der indirekte Hydraulikaufzug im Hubbegrenzungsschalter ( Gleicher U-Eingang wie Notend!), und kommt er wieder frei ( Öldruck sinkt ab!), so ist er unverzüglich in die unterste Haltestelle zu fahren ( Displaymeldung „Notabsenkung“) und zu verriegeln (Displaymeldung „Gesperrt-Notend“)

Temperaturüberwachung

Bei Hydraulikern wird immer in die unterste Ebene abgesenkt und die Anlage gesperrt.

### **3.0 Sicherheitsschaltung**

Die Sicherheitsschaltung ist eine bauart-geprüfte Schaltung, die die „Einfahrt mit offener Tür“ und die „Nachholung mit offener Tür“ ermöglicht. In unserer Steuerung kommt die Sicherheitsschaltung von REKOBAS zum Einsatz.

Im Sicherheitskreis wird die Schaltung zwischen U9 (Inspektionssteuerung) und U10 (Schachttür) eingebettet. Im Fehlerfall wird zwischen diesen beiden Klemmen der Sicherheitskreis geöffnet (Rekoba Klemmen E und U).

Zusätzlich wird die Sicherheitskreisspannung über den Fahrtschütz, bzw. AUF- und AB-Schütz geführt (Rekoba Klemmen R1 und R2). Der **Ausgang V3** Fahrt wird immer bei Auf- oder Abwärtsfahrt aktiv. Damit wird ein 24V DC Schütz geschaltet, der den Sicherheitskreis nach Verlassen der Zone geschlossen hält.

Die Sicherheitsschaltung wird durch folgende Kriterien aktiv geschaltet:

- A) Die beiden Zonensignale S71 und S72 liegen an
- B) Die Steuerung gibt ein +24V DC Signal aus (**Ausgang ZC0**), wenn die Ziel-Zone erreicht wird (Einfahrt mit offener Tür), bzw. in der Haltestelle Nachholen wollen (Eingang Rekoba S). Bei geregelten Seilzugsanlagen befindet sich im Signalweg **Klemme ZC0** und Rekoba (Klemme S) das Freigaberelais der Frequenzregelung für die Einfahrt mit offener Tür. Dieser Ausgang wird nach Verlassen der Haltestelle gelöscht. Bei Einschalten des Inspektions- oder Rückholsteuerung wird der **Ausgang ZC0** deaktiviert, um eine Nachholung in dieser Betriebsart zu verhindern.

Die Sicherheitsschaltung besitzt einen potentialfreien Schließerausgang um mitzuteilen, wann die Türen geöffnet werden können (Klemme F1 und F2). Schaltungstechnisch wird dies in unserer Steuerung so realisiert, dass ein +24V DC Signal am **Eingang ZA3** bedeutet, dass die Tür geöffnet werden kann.

#### 4.0 Nachholung

Die Geschwindigkeit zum Nachregulieren bei Hydraulikanlagen mit „Ventilen“, d.h. keine frequenzgeregelten Aggregate mit einer Pumpwirkung in beide Richtungen, ist die Geschwindigkeit  $V_0$ .

Die Nachregulierung tritt immer im „Stand By“ in der Haltestelle in Aktion. Da diese Aktion meistens mit offener Tür erfolgt, ist eine Sicherheitsschaltung erforderlich, die die Türüberbrückung übernimmt, so dass die 230V AC im Sicherheitskreis zur Verfügung stehen. Grundkriterien für diesen Vorgang sind:

- A) Die Sicherheitsschaltung hat sich nicht gesperrt, das heißt sie hat den Sicherheitskreis zwischen Inspektionsteuerung und Schachttür nicht geöffnet. (U10 hat Spannung).
- B) Die Nachholung erfolgt innerhalb der Zone ( S71 und S72 – Redundanz – TÜV). Verlässt der Fahrkorb beim Nachholen die Zone hat dies eine Sperrung durch die Sicherheitsschaltung zur Folge (Sicherheitskreis zwischen Inspektionsteuerung und Schachttür wird geöffnet). Die Steuerung sollte diesen Vorgang mitprotokollieren und sich ebenfalls verriegeln.
- C) Erlischt in der Haltestelle ein Zonensignal, so erfolgt ebenfalls eine Sperrung der Sicherheitsschaltung. Reaktion wie unter B beschrieben.
- D) Die Nachholung erfolgt mit langsamer Geschwindigkeit ( $V_0$ ).

Anhand der Standardkopierung soll der Vorgang der Nachholung erklärt werden.

Die beiden Bündigschalter 12A und 12B leiten den Nachholvorgang ein. Steht der Aufzug bündig in der Haltestelle so sind beide aktiv. Der Bereich, in der sich beide Signale überlappen, sollte mindestens 40mm betragen. Wird dies nicht eingehalten, kann es zu einem permanenten Nachholen kommen.

Sinkt der Fahrkorb durch Druckverlust ab, so verschwindet ein Bündigsignal und der Fahrkorb muss nach oben nachgeholt werden, bis wieder beide Bündigsignale anliegen. Natürlich kann sich der Fahrkorb auch nach oben bewegen, z.B. nach dem Ausladen einer schweren Ladung. Dann erfolgt eine Absenkung nach unten, wiederum bis zum Erreichen der beiden Bündigsignale.

Bei digitaler Schachtkopierung muss der Nachholbereich in mm angegeben werden. Um den Bündigpunkt herum muss ein Toleranzfenster aufgebaut werden ( 5 mm ).

Um die Pumpe vor Zerstörung durch ständiges Nachholen zu schützen, muss die Zahl der Nachholversuche, wie auch die Zeitdauer begrenzt werden. Die Zahl der Versuche sollte auf 20 Stück und Zeitdauer auf 20 Sekunden begrenzt werden.

Wird eines der beiden Kriterien überschritten, soll der Fahrkorb abgesenkt werden und die Anlage gesperrt werden. In der untersten Ebene soll die Option bestehen, dass die Zahl der Versuche nicht begrenzt wird.

Der Überlastfall hat im Normalbetrieb die Folge, dass der Fahrkorb keine Normalfahrten durchführt, d.h. die Türen bleiben offen. Die Nachholung mit Überlast ist durch Parameterwahl ein und ausschaltbar sein. Defaultwert auf EIN.

## B33- Rope 2 Speeds

### Contactor switching

In general you need four signals for switching.

Bez.	Pre-switching		Rope Variable Frequency	Rope 2 Speeds
5	K31		K3 Main contactor	K1 Up contactor
3	K32		K3 Main contactor	K2 Down Contactor
7	K33		K5 Main contactor	K3 Quick contactor
9	K34		K7 Brake contactor	K4 Slow contactor

### 1.0 Drive

Die Fahrt beginnt mit der Ansteuerung des Schnell-Schützes K3 zum Bestromen der schnellen Wicklung. Zeitverzögert wird der Auf- oder Ab-Schütz aktiviert. Die Verzögerungszeit ist im Menü einstellbar. Als Standardwert ist 100ms zu wählen.

Wird der Verzögerungspunkt erreicht, so fällt der Schnell-Schütz ab, und der Langsam-Schütz wird aktiviert. Beim Erreichen des Bündigsignals werden beide Schütze abgeschalten.

### Parameter Motorventilation

Here you can activate the motor ventilation and put in the time. The standart value is off.

### Parameter Motorventilation Output

Here you can put in the output-channel for the motor ventilation.

### Parameter Direction contactor delay On

Zeitverzögert wird der Auf- oder Ab-Schütz aktiviert. Die Verzögerungszeit ist im Menü einstellbar. Als Standardwert ist 100ms zu wählen.

### Parameter Inspection Speed

In this parameter you can put in the speed for inspection. You can chosse quick or slow.

### Parameter Reverse Time Out

Die Umschaltpause zwischen der Umschaltung von dem Schnell-Schütz auf den Langsam-Schütz ist einstellbar. Die Werkseinstellung sieht keine Pause vor.



## B34- Rope- Variable Voltage

### Contactor switching

In general you need four signals for switching.

Bez.	Pre-switching	Rope Variable Frequency	Rope Variable Voltage
5	K31	K3 Main contactor	K1 Up contactor
3	K32	K3 Main contactor	K2 Down Contactor
7	K33	K5 Main contactor	K5 Main contactor
9	K34	K7 Brake contactor	K7 Brake contactor

Type	Rope Variable Frequency	Rope Variable Voltage
Up	Direction Up	Direction Up
Down	Direction Down	Direction Down
Vins	Speed Vins	Speed Vins
Vn	Speed Vn	Speed Vn
V0	Speed V0	Speed V0
V1	Speed V1	Speed V1
V2	Speed V2	Speed V2
V3	Speed V3	Speed V3

### Parameter Motorventilation

Here you can activate the motor ventilation and put in the time. The standart value is off.

### Parameter Motorventilation Output

Here you can put in the output-channel for the motor ventilation.

### Parameter Direction Contactor Delay On

Zeitverzögert wird der Auf- oder Ab-Schütz aktiviert. Die Verzögerungszeit ist im Menü einstellbar. Als Standardwert ist 100ms zu wählen.

### Parameter Main Contactors Delay Off

Um ein ruckfreies Anhalten zu gewährleisten, können die Richtungsschütze und der Netzschütz verzögert abgeschaltet werden. Der Standardwert liegt bei 600 ms.

### Parameter Brake Contactors Delay On

Ein Wegdrehen des Fahrkorbes beim Anfahren mit ungünstigen Lastverhältnissen kann verhindert werden.

### Parameter Brake Contactors delay off

Ein Ruck beim Anhalten des Fahrkorbes kann verhindert werden, da die Regelung mehr Zeit bekommt mit Gleichspannung den Fahrkorb sanfter zur Drehzahl 0 abzubremesen.

### Parameter Releveling Speed

In this parameter you can put in the speed for releveling. You can chosse VN or V0.

### Parameter Fault Handling

In this parameter you can choose the reaction of the controller, if there is a fault in the inverter-part.

- A) „**Interrupt**“ – If there is a fault in the inverter, the drive-orders and the calls will be erased. If there is a new call, the controller tries again to start.
- B) „**Block**“ – If there is a fault in the inverter, the drive-orders and the calls will be erased. The controller is blocked. Only a RESET-signal can turn on the controller.
- C) „**Block at 2.Fault**“ – If there are two faults in a series in the inverter, the drive-orders and the calls will be erased. The controller is blocked. Only a RESET-signal can turn on the controller.
- D) „**Block at 3.Fault**“ – If there are three faults in a series in the inverter, the drive-orders and the calls will be erased. The controller is blocked. Only a RESET-signal can turn on the controller.

### **B35- Rope Variable Frequency** Contactor switching

In general you need four signals for switching.

Bez.	Pre-switching	Rope Variable Frequency	Rope Variable Voltage
5	K31	K3 Main condactor	K1 Up contactor
3	K32	K3 Main condactor	K2 Down Contactor
7	K33	K5 Main condactor	K5 Main contactor
9	K34	K7 Brake condactor	K7 Brake contactor

Type	Rope Variable Frequency	Rope Variable Voltage
Up	Direction Up	Direction Up
Down	Direction Down	Direction Down
Vins	Speed Vins	Speed Vins
Vn	Speed Vn	Speed Vn
V0	Speed V0	Speed V0
V1	Speed V1	Speed V1
V2	Speed V2	Speed V2
V3	Speed V3	Speed V3

### Parameter Motorventilation

Here you can activate the motor ventilation and put in the time. The standard value is off.

### Parameter Motorventilation Output

Here you can put in the output-channel for the motor ventilation.

### Parameter V0 Delay Off

Der Parameter beinhaltet die Möglichkeit, die Geschwindigkeit V0 verzögert abzuschalten. Die Standardeinstellung steht auf nein.

### Parameter Direction Delay Off

Zeitverzögert wird die Wegnahme der Fahrtrichtung, um einruckfreies Anhalten zu gewährleisten. Die Verzögerungszeit ist im Menü einstellbar. Als Standardwert sind 2500ms hinterlegt.

### Parameter Main Contactor Delay Off

Die Fahrschütze müssen verzögert abgeschaltet werden, um den Fahrkorb Drehzahl 0 zu halten, bis der Bremsschutz abfällt. Als Standardwert sind 2500ms hinterlegt.

### Parameter Releveling Speed

In this parameter you can put in the speed for releveling. You can choose VN or V0.

### Parameter Fault Handling

In this parameter you can choose the reaction of the controller, if there is a fault in the inverter-part.

- E) **„Interrupt“** – If there is a fault in the inverter, the drive-orders and the calls will be erased. If there is a new call, the controller tries again to start.
- F) **„Block“** – If there is a fault in the inverter, the drive-orders and the calls will be erased. The controller is blocked. Only a RESET-signal can turn on the controller.
- G) **„Block at 2.Fault“** – If there are two faults in a series in the inverter, the drive-orders and the calls will be erased. The controller is blocked. Only a RESET-signal can turn on the controller.
- H) **„Block at 3.Fault“** – If there are three faults in a series in the inverter, the drive-orders and the calls will be erased. The controller is blocked. Only a RESET-signal can turn on the controller.

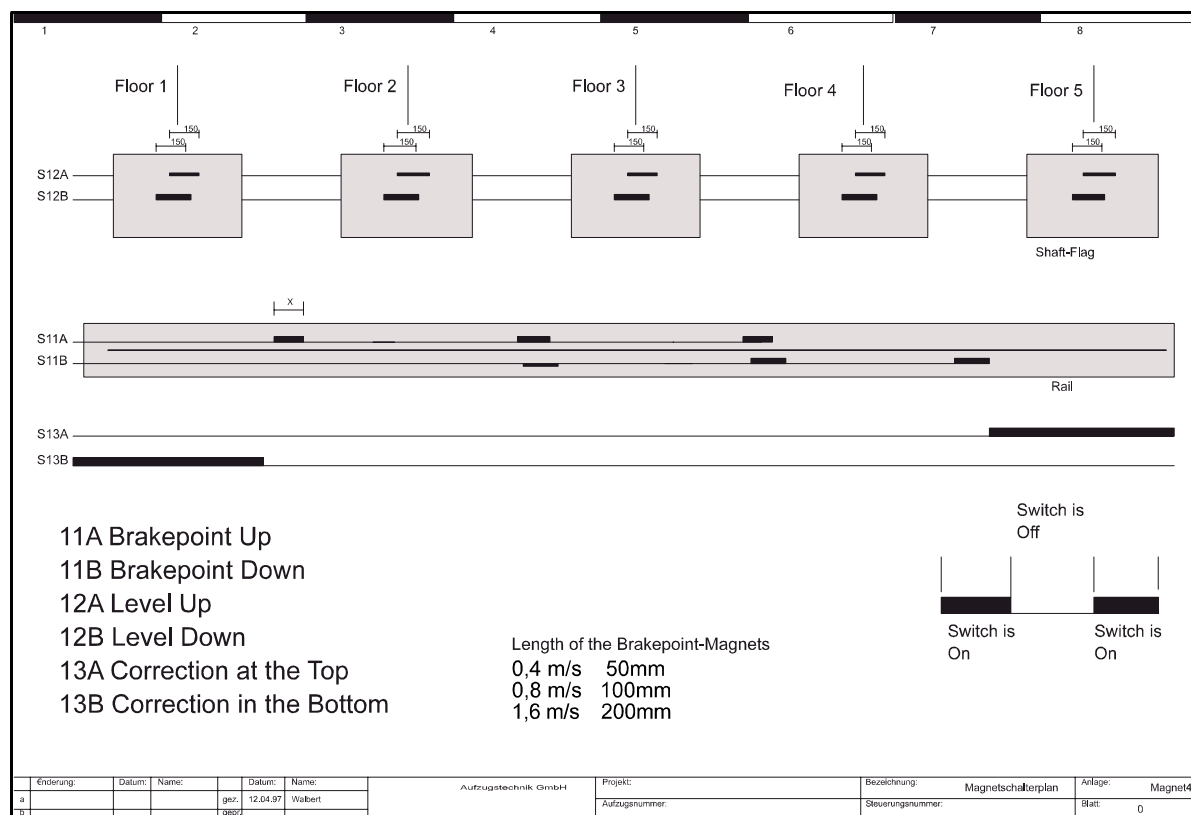
# B4 Shaft-Copy B41 Standart-Copy

## 1.0 General

The standart-copy is a shaft-copy method, which needs six switches in the shaft.

- S11A Brakepoint Up**
- S11B Brakepoint Down**
- S12A Level Up**
- S12B Level Down**
- S13A Correctionswitch Top**
- S13B Correctionswitch Bottom**

All magnet-switches are biposition-switches with the corresponding round-magnet. For the pinning of the magnets you must use the elevator-rail and shaft-flags.



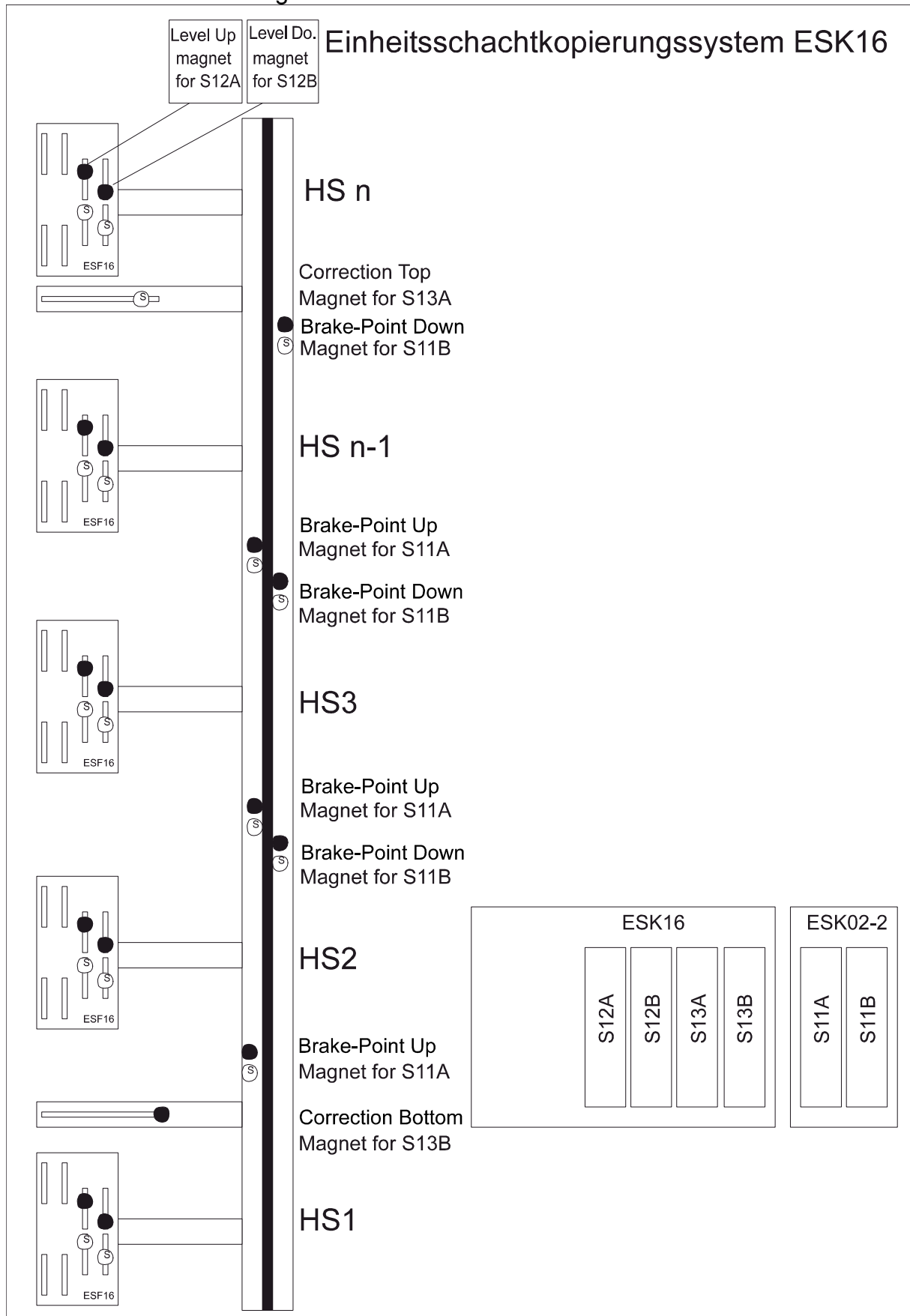
## 2.0 Leveling

The leveling depends on the direction. With rope-elevators without pre-opening the door the stopping in direction up is with the magnet-switch 12B, and in direction down with the magnet-switch 12A.

## 3.0 Brakepoints and Correction

The magnet switches 11A and 11B are the brake-switches to drive into the destination floor. If you are driving from the second floor to the first floor you doesn't need a brake magnet! You are braking with the correction switch 13B.

The same story is the drive to the last floor. You are braking with the correction switch 13B.



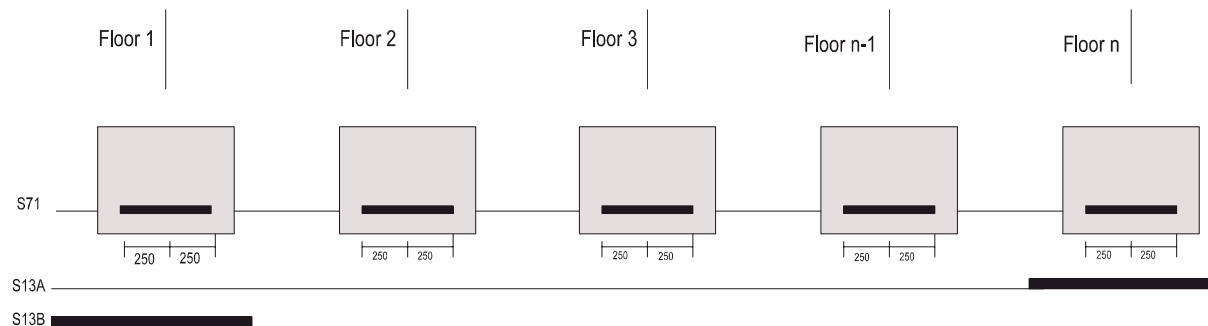
## B42 Relative-Copy

### 4.0 General

The relative-copy is a digital shaft-copy method, which only needs three switches in the shaft.

**S72 Zone 1**  
**S13A Correctionswitch Top**  
**S13B Correctionswitch Bottom**

All magnet-switches are bipoosition-switches with the corresponding round-magnet. For the pinning of the magnets you must use the elevator-rail. The pulses for the shaft-copy are coming from a decoder.

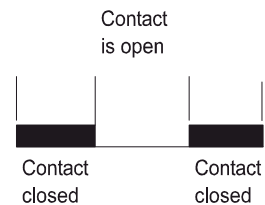


This is a schematic drawing!

The zone switch S71, and both correction switch S13A & 13B will be realized by bipoosition magnetswitches.

**S71 Zone**  
**S13A Correctionswitch Top**  
**S13B Correctionswitch Bottom**

The position of the car would be recognized with a digital shaft copy. The length of the shaft would be counted with the help of the resolver. Deceleration points and the plain level would be define by a Learning Travel. Mistakes by wrong pulses could be corrigate by the correction switch top and bottom ( 13A and 13B).



### 5.0 Releveling

After the learn-drive the middle of the Zone-way is the value of the floor-level. This can be corrigate by the parameter "Leveling" for each floor. A change of the position of the zone-magnets is forbidden. A very concret description is in the chapter **103-Activation of the digital shaft presentation**.

### 6.0 Deceleration and Correctionswitches

The deceleration for the drive into the destination-floor will be managed by the digital shaft-copy. The correction switches are used only for synchronize the shaft-copy-system and for a safe deceleration in the end-floors in a emergency-situation, like a failure in the digital shaft-copy. A change of the position of the correctionswitches-magnets is forbidden. A very concret description is in the chapter **103-Activation of the digital shaft presentation**.

Corretion top for S13A	Corretion Bottom for S13B
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## EinheitsSchachtKopierungs-system ESK16

The new unionshaft copysystem ESK16 is the answer to realize different Shaft-copysystems like digitalcopy, standard-copy or minimumcopy with the same standardelements like the connecting bridge SFH16 and the flag ESF16. Very important is the exact position of the flag and the right putting of the magnets.

The north-magnet is always on the top of the flag

The counterpart of the magnets are the magnetpanel ESK02. The magnetswitches are mounted on a n angle iron. The distance to the magnets can be variable choose. The distance for the right electrical switching should be between 10 and 15mm. You can control the right placement at the LED on the top of the magnetswitch.

ESK02

ESK02

The electrical connection can be made by the PVC-wire in the FKR-casing at the terminals of X11.

Version:	Date:	Name:	Date:	Name:	Type:
a			gez. 30.07.02	Walbert	Installation Shaftcopy
b			gepr.		

**Parameter: Pulse Buffer Delay**

There is a pulse buffer-delay-time between 2 and 150ms. Its depends on the type of magnets, you are using. The KW-magnets only needs a delay-time of 2ms.

**Parameter: Distance Preendswitch (Correctionswitch bottom) - Zoneswitch**

In this parameter will be put in the distance in mm between the middle of the correctionswitch-magnet and the middle of the highest zone-magnet. This value must absolut exactly measured. He is very important for the exact function of the digital shaft-copy.

**Parameter: Deceleration Speed V0 -> 0**

This parameter is the brake-way from the drive-in speed V0 to the stop (0). The value comes automatically by the learn drive. Nevertheless the value can be change per hand.

**Parameter: Deceleration at V1**

This parameter is the brake-way from the speed V1 to the drive-in speed V0. This value depends on the speed V1 and the deceleration in the inverter. The standart value is 500 mm.

**Parameter: Deceleration at V2**

This parameter is the brake-way from the speed V2 to the drive-in speed V0. This value depends on the speed V2 and the deceleration in the inverter. The standart value is 1000 mm.

**Parameter: Deceleration at V3**

This parameter is the brake-way from the speed V3 to the drive-in speed V0. This value depends on the speed V3 and the deceleration in the inverter. The standart value is 1500 mm.

**Parameter: Learn Drive with**

For the learn drive you can choose three speeds like, V1, V2, and V3. If you have a drive with a short distance, you should chosse speed V1. The standart value is speed V1.

**Parameter: Learn Drive active**

If the electrical installation is ok and the software-parameters like number of floors,..., is put in, the learn-drive can be startet. The car should be in a position between the first and second floor, but it must stand above the correctionswitch bottom. Then the learn-drive should be startet. A very concret description is in the chapter **I03-Activation of the digital shaft presentation**.

**Parameter: Leveling Competition**

After a successful learn-drive and right putting of the deceleration-values of the speeds, the level for the second floor will be put in. At first the second level will be drive in from the first floor and the value of the un-level will be noticed. The next time the second level will be drive in from the third floor and the difference of both un-levels will be put into this parameter. For all other floors you only have to drive-in in one direction.

**Parameter: Leveling-Floor-XX**



After a learn-drive, you must put in this parameter in the level-values for each floor. Here you can corrigate unlevels for every floor.

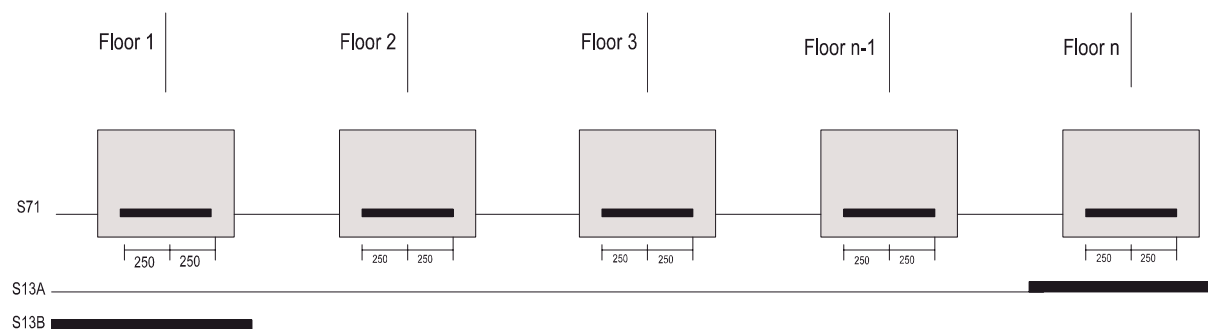
## B44 Motor-Copy

### 8.0 General

The motor-copy is a digital shaft-copy method, which only needs three switches in the shaft.

- S72 Zone 1**
- S13A Correctionswitch Top**
- S13B Correctionswitch Bottom**

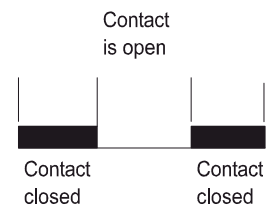
All magnet-switches are bipoosition-switches with the corresponding round-magnet. For the pinning of the magnets you must use the elevator-rail. The pulses for the shaft-copy are coming from the resolver of the motor.



This is a schematic drawing!

The zone switch S71, and both correction switch S13A & 13B will be realized by bipoosition magnetswitches.  
 S71 Zone  
 S13A Correctionswitch Top  
 S13B Correctionswitch Bottom

The position of the car would be recognized with a digital shaft copy. The length of the shaft would be counted with the help of the resolver. Decelerationpoints and the plainlevel would be define by a Learning Travel. Mistakes by wrong pulses could be corrigate by the correction switch top and bottom ( 13A and 13B).



### 9.0 Releveling

After the learn-drive the middle of the Zone-way is the value of the floor-level. This can be corrigate by the parameter "Leveling" for each floor. A change of the position of the zone-magnets is forbidden. A very concret description is in the chapter **I03-Activation of the digital shaft presentation**.

### 10.0 Deceleration and Correctionswitches

The deceleration for the drive into the destination-floor will be managed by the digital shaft-copy. The correction switches are used only for synchronize the shaft-copy-system and for a safe deceleration in the end-floors in a emergency-situation, like a failure in the digital shaft-copy. A change of the position of the correctionswitches-magnets is forbidden. A very concret description is in the chapter **I03-Activation of the digital shaft presentation**.

Corretion top for S13A	Corretion Bottom for S13B
------------------------	---------------------------

Zone S71

## EinheitsSchachtKopierungssystem ESK16

Correction Top Magnet for S13A

Correction Bottom Magnet for S13B

The new unionshaft copysystem ESK16 is the answer to realize different Shaft-copysystems like digitalcopy, standard-copy or minimumcopy with the same standardelements like the connecting bridge SFH16 and the flag ESF16. Very important is the exact position of the flag and the right putting of the magnets.

The north-magnet is always on the top of the flag

The counterpart of the magnets are the magnetpanel ESK02. The magnetswitches are mounted on a n angle iron. The distance to the magnets can be variable choose. The distance for the right electrical switching should be between 10 and 15mm. You can control the right placement at the LED on the top of the magnetswitch.

S13A S13B

S71

ESK02                      ESK02

The electrical connection can be made by the PVC-wire in the FKR-casing at the terminals of X11.

Version:	Date:	Name:	Date:	Name:	Type:
a			gez. 30.07.02	Walbert	Installation Shaftcopy
b			gepr.		page 1 of 1

**Parameter: Pulse Buffer Delay**

There is a pulse buffer-delay-time between 2 and 150ms. Its depends on the type of magnets, you are using. The KW-magnets only needs a delay-time of 2ms.

**Parameter: Distance Preendswitch (Correctionswitch bottom) - Zoneswitch**

In this parameter will be put in the distance in mm between the middle of the correctionswitch-magnet and the middle of the highest zone-magnet. This value must absolut exactly measured. He is very important for the exact function of the digital shaft-copy.

**Parameter: Deceleration Speed V0 -> 0**

This parameter is the brake-way from the drive-in speed V0 to the stop (0). The value comes automatically by the learn drive. Nevertheless the value can be change per hand.

**Parameter: Deceleration at V1**

This parameter is the brake-way from the speed V1 to the drive-in speed V0. This value depends on the speed V1 and the deceleration in the inverter. The standart value is 500 mm.

**Parameter: Deceleration at V2**

This parameter is the brake-way from the speed V2 to the drive-in speed V0. This value depends on the speed V2 and the deceleration in the inverter. The standart value is 1000 mm.

**Parameter: Deceleration at V3**

This parameter is the brake-way from the speed V3 to the drive-in speed V0. This value depends on the speed V3 and the deceleration in the inverter. The standart value is 1500 mm.

**Parameter: Learn Drive with**

For the learn drive you can choose three speeds like, V1, V2, and V3. If you have a drive with a short distance, you should chosse speed V1. The standart value is speed V1.

**Parameter: Learn Drive active**

If the electrical installation is ok and the software-parameters like number of floors,..., is put in, the learn-drive can be startet. The car should be in a position between the first and second floor, but it must stand above the correctionswitch bottom. Then the learn-drive should be startet. A very concret description is in the chapter **I03-Activation of the digital shaft presentation**.

**Parameter: Leveling Competition**

After a successful learn-drive and right putting of the deceleration-values of the speeds, the level for the second floor will be put in. At first the second level will be drive in from the first floor and the value of the un-level will be noticed. The next time the second level will be drive in from the third floor and the difference of both un-levels will be put into this parameter. For all other floors you only have to drive-in in one direction.

**Parameter: Leveling-Floor-XX**

After a learn-drive, you must put in this parameter in the level-values for each floor. Here you can corrigate unlevels for every floor.

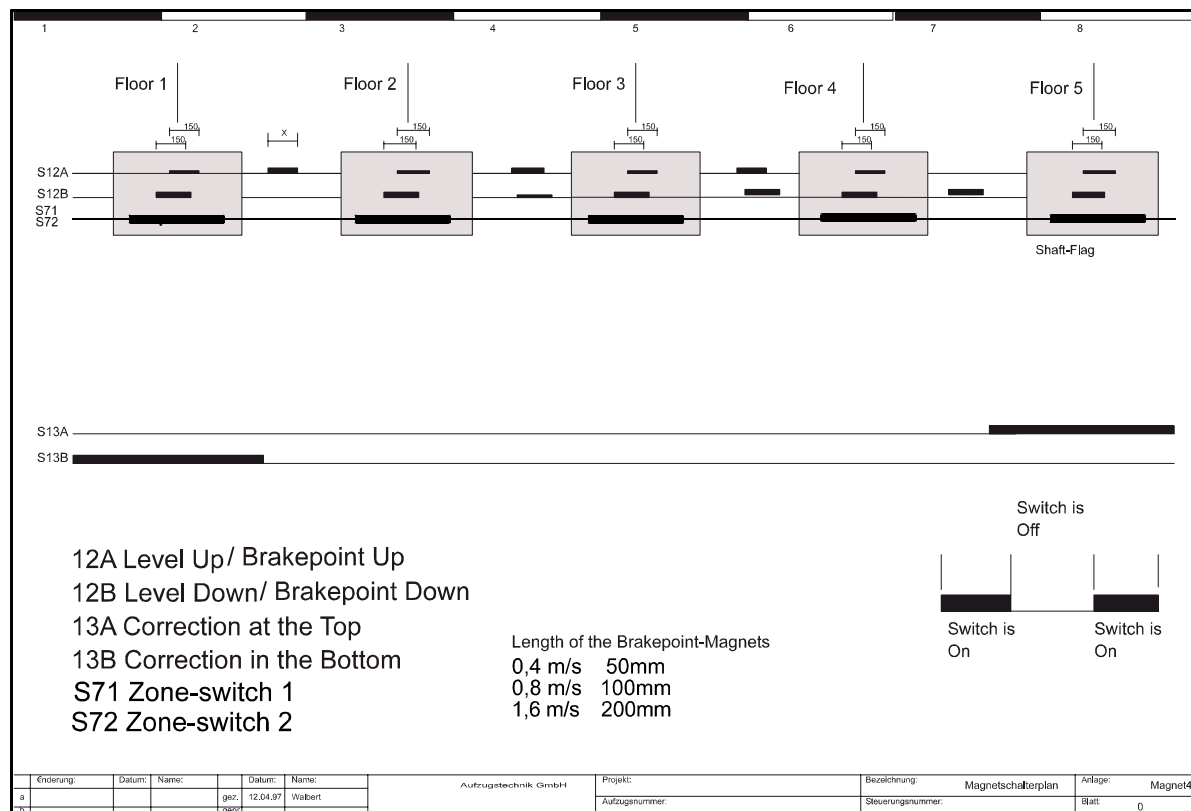
# B45 Minimum-Copy

## 12.0 General

The standart-copy is a shaft-copy method, which needs six switches in the shaft.

- S71 Zone 1**
- S72 Zone 2**
- S12A Level Up / Brakepoint Up**
- S12B Level Down / Brakepoint Down**
- S13A Correctionswitch Top**
- S13B Correctionswitch Bottom**

All magnet-switches are biposition-switches with the corresponding round-magnet. For the pinning of the magnets you must use the elevator-rail or shaft-flags.



## 13.0 Leveling

The leveling depends on the direction. With rope-elevators without pre-opening the door the stopping in direction up is with the magnet-switch 12B, and in direction down with the magnet-switch 12A.

## 14.0 Brakepoints and Correction

The magnet switches 12A and 12B are also the brake-switches to drive into the destination floor. If you are driving from the second floor to the first floor you doesn't need a brake magnet! You are braking with the correction switch 13B.

The same story is the drive to the last floor. You are braking with the correction switch 13B.

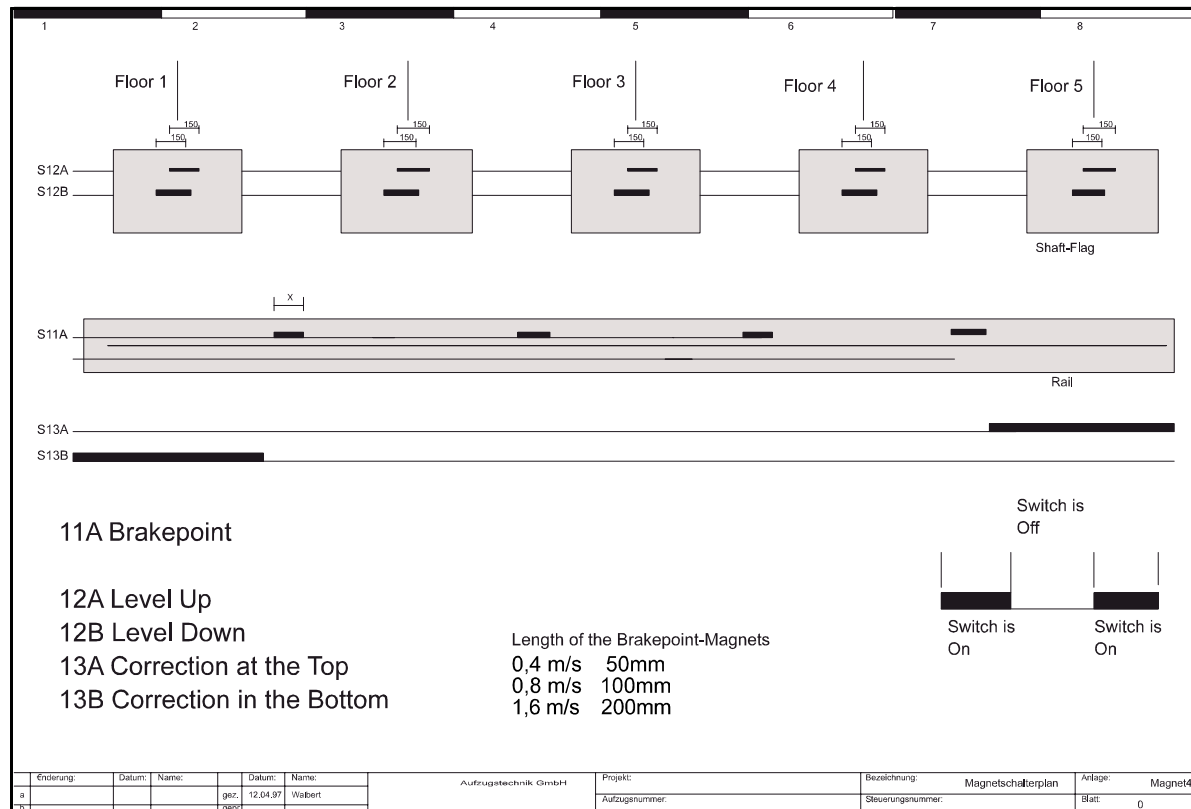
# B46 R&S-Copy

## 15.0 General

The standart-copy is a shaft-copy method, which needs six switches in the shaft.

- S11A Brakepoint**
- S12A Level Up**
- S12B Level Down**
- S13A Correctionswitch Top**
- S13B Correctionswitch Bottom**

All magnet-switches are biposition-switches with the corresponding round-magnet. For the pinning of the magnets you must use the elevator-rail or shaft-flags.



## 16.0 Leveling

The leveling depends on the direction. With rope-elevators without pre-opening the door the stopping in direction up is with the magnet-switch 12B, and in direction down with the magnet-switch 12A.

## 17.0 Brakepoints and Correction

The magnet switch 11A is the brake-switches to drive into the destination floor. If you are driving from the second floor to the first floor you doesn't need a brake magnet! You are braking with the correction switch 13B.

The same story is the drive to the last floor. You are braking with the correction switch 13B.

## B5 Indicate

### B501 Car Indicators

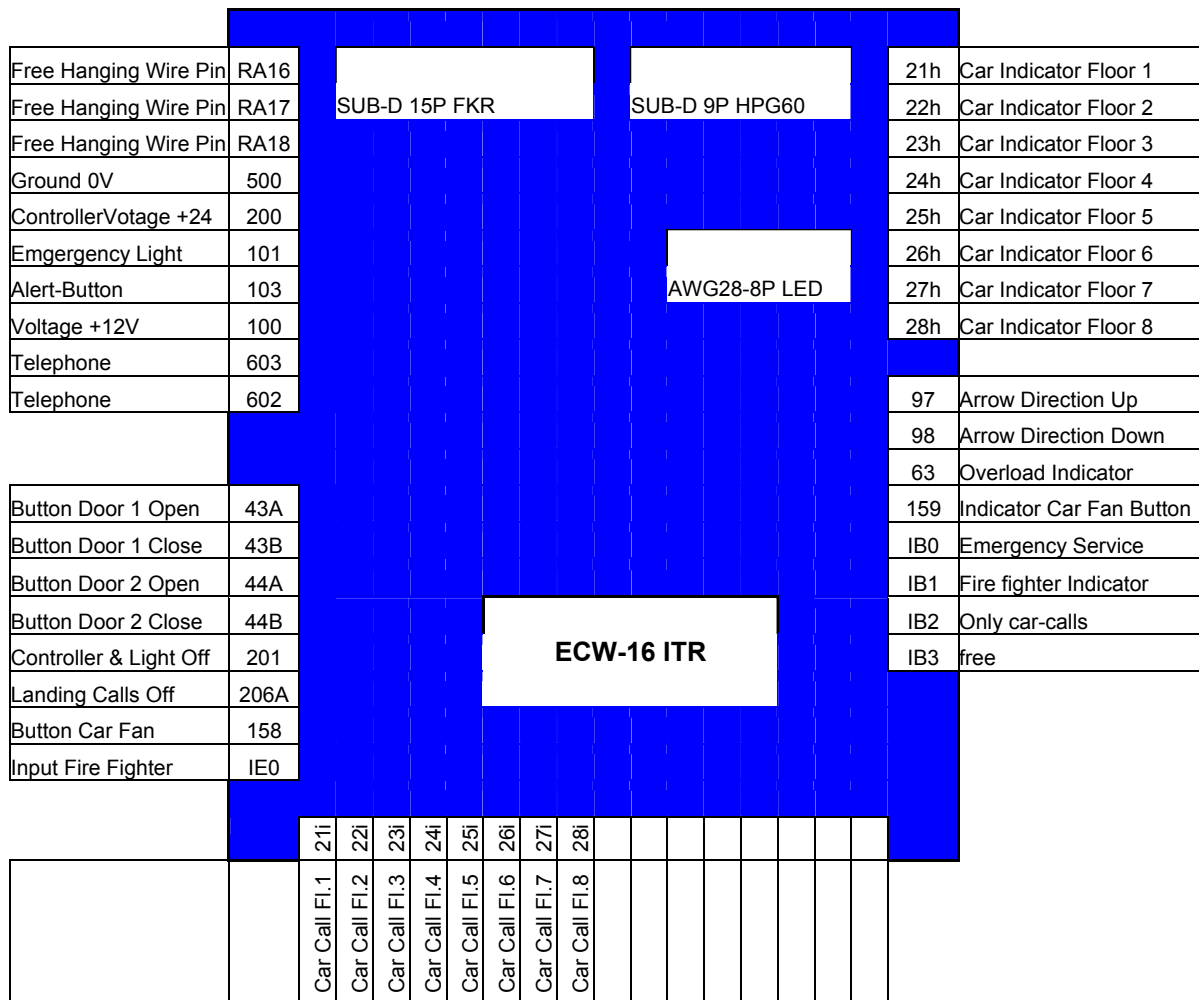
The car-position of the elevator has two output-devices, namely ZR and ITR. In both of the following parameters you can choose the output of the car-position:

- A) Parameter Car indicate ZR
- B) Parameter Car indicate ITR

There are always 8 output-channels on both of the two units. You can choose the following codes to show the car-position:

- 1 of N-Code
- Binär-Code
- Binär-0-Code
- Graycode

The output-channels at the centralunit ZR are 21h to 28h of the terminal Z18. The output-channels at the carpanelunit ITR are 21h to 28h.



### 1.0 1 of n Code

The 1 of N code has always one output-channel for one floor indication. Is the car in the first floor so channel 21h is active (+24V DC).

## 2.0 Binarycode

In the binarycode, the floors are a combination of some outputchannels. Active channels have a "1". This means that there is a +24V DC level.

Haltestelle	25h	24h	23h	22h	21h
1. Floor	0	0	0	0	1
2. Floor	0	0	0	1	0
3. Floor	0	0	0	1	1
4. Floor	0	0	1	0	0
5. Floor	0	0	1	0	1
6. Floor	0	0	1	1	0
7. Floor	0	0	1	1	1
8. Floor	0	1	0	0	0
9. Floor	0	1	0	0	1
10. Floor	0	1	0	1	0
11. Floor	0	1	0	1	1
12. Floor	0	1	1	0	0
13. Floor	0	1	1	0	1
14. Floor	0	1	1	1	0
15. Floor	0	1	1	1	1
16. Floor	1	0	0	0	0

## 3.0 Binarycode 0

In the binarycode, the floors are a combination of some outputchannels. Active channels have a "1". This means that there is a +24V DC level.

Haltestelle	25h	24h	23h	22h	21h
1. Floor	0	0	0	0	0
2. Floor	0	0	0	0	1
3. Floor	0	0	0	1	0
4. Floor	0	0	0	1	1
5. Floor	0	0	1	0	0
6. Floor	0	0	1	0	1
7. Floor	0	0	1	1	0
8. Floor	0	0	1	1	1
9. Floor	0	1	0	0	0
10. Floor	0	1	0	0	1
11. Floor	0	1	0	1	0
12. Floor	0	1	0	1	1
13. Floor	0	1	1	0	0
14. Floor	0	1	1	0	1
15. Floor	0	1	1	1	0
16. Floor	0	1	1	1	1
1. Floor	1	0	0	0	0

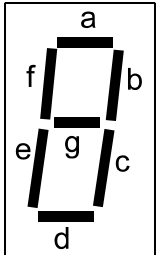
## 4.0 Graycode

In the graycode, the floors are a combination of some outputchannels. Active channels have a "1". This means that there is a +24V DC level.

Haltestelle	25h	24h	23h	22h	21h
1. Floor	0	0	0	0	1
2. Floor	0	0	0	1	1
3. Floor	0	0	0	1	0
4. Floor	0	0	1	1	0
5. Floor	0	0	1	1	1
6. Floor	0	0	1	0	1
7. Floor	0	0	1	0	0
8. Floor	0	1	1	0	0
9. Floor	0	1	1	0	1
10. Floor	0	1	1	1	1
11. Floor	0	1	1	1	0
12. Floor	0	1	0	1	0
13. Floor	0	1	0	1	1
14. Floor	0	1	0	0	1
15. Floor	0	1	0	0	0
16. Floor	1	1	0	0	0

### 5.0 7-Digits-Indicator

In the 7-Digits-code, the floors are a combination of some outputchannels. Active channels have a "1". This means that there is a +24V DC level.

Ausgabe		
21h	Segment a	
22h	Segment b	
23h	Segment c	
24h	Segment d	
25h	Segment e	
26h	Segment f	
27h	Segment g	

### **B502 Car Arrows**

#### Parameter Arrows

The output-channel of the car-arrows are at the carpanel-unit ITR. Here you can choose the following type of arrows:

- A) Only direction arrow
- B) Direction arrow and move-on arrows
- C) Only move-on arrows

#### Parameter Switch Off After Time

After activation of this parameter, the Car arrows are switched off after a special time. The standard value is off.

#### Parameter Switch Off After Door close

After activation of this parameter, the floor arrows are switched off after the door close. The standard value is off.

#### Parameter Output Inspection / Re-Send

You can choose three indication:

- A) No indication
- B) Flashing
- C) Permanently

#### Parameter Output Special Travel

You can choose three indication:

- A) No indication
- B) Flashing
- Permanently



## **B503 Floor Indicators**

### **Parameter Arrows**

The output-channel of the floor-arrows are at the central-unit ZR. Here you can choose the following type of arrows:

- A) Only direction arrow
- B) Direction arrow and move-on arrows
- C) Only move-on arrows

### **Parameter Switch Off After Time**

After activation of this parameter, the floor arrows are switched off after a special time. The standard value is off.

### **Parameter Switch Off After Door close**

After activation of this parameter, the floor arrows are switched off after the door close. The standard value is off.

### **Parameter Output Inspection / Re-Send**

You can choose three indication:

- D) No indication
- E) Flashing
- F) Permanently

### **Parameter Output Special Travel**

You can choose three indication:

- C) No indication
- D) Flashing
- E) Permanently

## **B504 Gong at the Car**

## **B505 Gong at the Floor**

## **B600 Monitor-Functions**

### **Parameter: Contactor Monitor**

Is the contactor-monitor active, the main- and brake contactors will be controlled on two ways:

a) At the start of the travel, after a call, the main- and brake contactors will be controlled, if they switch on. If they do not switch on after a delay-time, which is in the parameter „**Start Time Monitor**“, this means input-channel 357 has a high-level, the car stopped immediately.

b) After a travel, the main- and brake contactors will be also controlled, if they have switched off. If they do not switch off, the car is blocked for the next travel.

If the system is blocked, you can only turn on the system, when you switch off / on the centralunit ZR or activate the parameter **C1 „Controller-RESET“**.

If the special-mode “inspection-drive” or “re-send-drive” active, the monitor functions are not active.

### **Parameter: Carlight Monitor**

If the fuse of the carlight is falling out or the light of the car is going out, this means the electrical power is sinking under 40W, then the car stops in the next floor and it will be blocked with open doors, until the light is going on.

If the special-mode “inspection-drive” or “re-send-drive” active, the monitor functions are not active.

### **Parameter: Start Time Monitor**

At the start of the travel, after a call, the main- and brake contactors will be controlled, if they switch on. If they do not switch on after a delay-time, which is in the parameter „**Start Time Monitor**“, this means input-channel 357 has a high-level, the car stopped immediately.

If the special-mode “inspection-drive” or “re-send-drive” active, the monitor functions are not active.

### **Parameter: Journey Time Monitor**

If in the time, which you can put in in this parameter, no pulses are coming from the digital shaft-copy or there is no calculate brake-point of the floors on the way, the system will be blocked.

If the special-mode “inspection-drive” or “re-send-drive” active, the monitor functions are not active.

### **Parameter: Deceleration Time Monitor**

If in the time, which you can put in in this parameter, no zone-switch is coming from the destination-floor, the system will be blocked.

If the special-mode “inspection-drive” or “re-send-drive” active, the monitor functions are not active.

### **Parameter Stop Time Monitor**

If in the time, which you can put in in this parameter, no stopping is coming after the zone-switch of the destination-floor, the system will be blocked.

If the special-mode “inspection-drive” or “re-send-drive” active, the monitor functions are not active.

### **Parameter: Fault Handling**

In this parameter there are two possibilities for the fault handling:

- a. Stop and block – This means, if the system is blocked, you can only turn on the system, when you switch off / on the centralunit ZR or activate the parameter **C1 „Controller-RESET“**.
- b. Stop and delete calls – this means, after stopping and clear the calls, you can give new calls and system tries to start.

**Parameter: Brake Shoe Monitor**

If the input-channel of this function is active, then the car stops in the next floor, until the problem is solved.

**Parameter: Brake Open Monitor activate**

In this parameter can activate an input-channel. The motion of the brake will be controlled. If the brake is closed, the voltage at the input-channel must be +24V DC. Now, when the brake opens there must be after a short delay-time a voltage of 0V DC.

**Parameter: Brake Open Monitor Reaction**

In this parameter there are two possibilities for the fault handling:

- a. Stop and block – This means, if the system is blocked, you can only turn on the system, when you switch off / on the centralunit ZR or activate the parameter **C1** „**Controller-RESET**“.
- b. Stop and delete calls – this means, after stopping and clear the calls, you can give new calls and the system try to start.

**Parameter: Brake Open Monitor Input**

The input-channel can be switched up between the reaction as high active or low active.

**Parameter: Temperature Monitor**

The central-unit ZR has a temperature-sensor in the casing. You can activate the sensor and choose a temperature limit. If the temperature is rising above the limit, the controller stops the motion of the car.

## B601 Inspection Travel

## B602 Emergency unit

## B603 Car Fan

### 1.0 Description of the In-& Output channels

Terminal	Pos.	Hardware	Function
L54	FKR	230V AC	Phase 230V AC to supply the car fan
158	ITR	24V DC Input	Input push-button car fan; A level of +24V DC means that the car fan is startet.
159	ITR	24V DC Output	If there is a level of +24V DC, is this the indicator for the running car fan.

#### Parameter: Start of Fan

To activate the car fan, there are two possibilities:

- A) „**Push-button**“ – If you use the push-button of the car fan, the relay switch off and the car fan will be startet. The car fan is running, until the delay time is over, or there is a second push on the button of the car fan.
- B) „**Travel**“ – If you choose this value, the car fan starts automaticly at the start of a travel. The fan switch off after the delay time.

#### Parameter: Fan Delay

In this parameter, you put in the delay-time of the car fan.

## B604 Load Measurement

## B605 Standby Travel

#### Parameter: Standby Travel

In this parameter, you can activate the standby travel. To use the standby-travel, you must put a +24V DC voltage at the input channel.

#### Parameter: Floor

The floor of the standby-travel is freely chosen. The standart value is “next floor”.

#### Parameter: Door

Here you can choose, if the doors are open or closed in the standby travel floor.

## B606 – Parking Travel

### **Parameter: Parking travel**

In this parameter you can activate the parking travel. If there are no calls and after a delay-time the car drive into the parking-travel-floor.

### **Parameter: Floor**

The floor of the parking-travel is freely chosen. The standart value is the first floor.

### **Parameter: Park after**

In this parameter you can put in the delay-time. If there are no calls and after this delay-time the car drive into the parking-travel-floor.

### **Parameter: Door**

Here you can choose, if the doors are open or closed in the parking travel floor.

## B607 – Floor Blocking

## B608- Carlight

### **Parameter: Automatic Off**

In general you can switch off the carlight, if the car is standing in the floor and has no calls or the car is in the parking travel floor. In this parameter you can activate this funktion.

### **Parameter: Delay**

In this parameter you can put in the delay-time. After this time, and there are no calls, the carlight will be switched off. You can put in a time from 1 to 600 seconds. The standart value is 60 seconds.

## B609– Emergency Power Service

### General

Is the function of the emergency power service active, the signal of the input-channel 401 will be controlled. A 230V AC level means that there is a normal drive, but when there is a 0V AC level, then we have the emergency power service. The car is driving in the emergency power service floor and all car- and landing-calls are cleared. The car is standing with open doors in this floor. If the 230 AC level on the input-channel 401 is coming back, the car is back in normal drive.

### Parameter: Emergency Power Service

In this parameter you can activate the function of the emergency power service.

### Parameter: Floor

The floor of the emergency power service is freely chosen. The standart value is the first floor.

### Parameter: Piezo Buzzer

If you activate this parameters the piezo buzzer of the carpanel-unit ITR can switch on, if there is an emergency power service travel.

### Parameter: Input

The input-channel E1 can be switched up between the reaction as high active or low active.

## B610 – Emergency Fire Service

### General

Is the function of the emergency fire service active, the signal of the input-channel E2 will be controlled. A +24V DC level means that there is a normal drive, but when there is a 0V DC level, then we have the emergency fire service. The car is driving in the emergency fire service floor and all car- and landing-calls are cleared. The car is standing with open doors in this floor. If the +24V DC level on the input-channel E2 is coming back, the car is back in normal drive.

### Parameter: Emergency Fire Service

In this parameter, you can activate the function of the emergency fire service.

### Parameter: Floor

The floor of the emergency fire service is freely chosen. The standart value is the second floor.

### Parameter: Piezo Buzzer

If you activate this parameters the piezo buzzer of the carpanel-unit ITR can switch on, if there is an emergency fire service travel.

### Parameter: Input

The input-channel E2 can be switched up between the reaction as high active or low active.

## **B611 Firefighter Travel**

### **Parameter: Firefighter travel**

In this parameter you can activate the function of the firefighter travel.

### **Parameter: Firefighter floor**

If the key-switch of the firefighter travel function ( Input-channel E2) is switched on, the following happened:

- A) The car is immediately driving to the firefighter floor. The floor is freely chosen. The standard value is the first floor.
- B) The photocell input-channel is not active.
- C) The indicator „EVACUATION“ is switched on.
- D) The piezo buzzer is switched on.
- E) If the car is in the firefighter floor, it remains with open doors. The car- and landing-call are not active.

### **Firefighter travel in the car**

If the key-switch of the firefighter travel function in the car ( Input-channel IE0) is switched on, the following happened:

- A) The indicator „EVACUATION“ is switched off.
- B) The indicator „FIREFIGHTER TRAVEL“ is switched on.
- C) You can give car-calls freely.
- D) The push-buttons „DOOR OPEN“ and „DOOR CLOSE“ are activated.
- E) The fireman can start a travel by putting in car-calls. If the key-switch is turn off for a short period, all car-calls are cleared.
- F) If he reached the destination floor, the door remains closed. To open the door, he must use the push-button DOOR-OPEN. To close the door, he must use the push-Button DOOR-CLOSE.
- G) If he gives a new car-call, the door close automatically.
- H) If the key-switch is turn off, the car drives to the firefighter floor.

### **Parameter: Input**

The input-channel E2 at the central-unit ZR and input-channel IE0 at the carpanel-unit ITR can be switched up between the reaction as high active or low active.

### **Parameter: Firefighter Travel german / english Model**

The british model has only the push-button DOOR-OPEN in use. In the destination floor, the door will be open with the push-button DOOR-OPEN. If the fireman interrupt the use of the push-button, the door is automatically closing.

## I01-Commissioning the digital shaft copy

### General

Here is listed the normal process to get a successful learning travel:

- A) Checking the connections of the signals.
- B) Checking the software-settings and inputting the slowdown distance of the correction switch at the bottom.
- C) Activating the learning travel.
- D) Setting the speeds and the slowdown distances.
- E) Measuring the floor level differences.
- F) Optional: Settings for re-leveling.

### 1.0 Checking the connections of the signals and the setting of the correction switch

- All safety switches in the safety-circuit must be connected.
- The digital encoder must be mounted rightly. You can connect him on the car or at the speedlimiter. The inputs are prepared at the central Controller, as at the car controller. The wires must be connected as in the following list:

Digital Encoder	Controller	Description
U <sub>B</sub> or U <sub>Ver</sub>	Terminal 200	Controller voltage +24V DC
GND or Masse	Terminal 500	Controller Ground 0V
Channel A	Terminal 83	Pulse Channel A
Channel B	Terminal 84	Pulse Channel B

- The Zone switches S71 and S72 ( Only for EoT & Nachregulierung ), bzw. S71 must be mounted rightly. The length of the zone must be symmetric to the floor level with a maximum length of 250mm in both directions. If you prepare the the floor level exactly, you don't have to do much work to make the floor level correction.
- The correction switches 13A and 13B are mounting on the maximum slowdown way. The right function of the correction switches at the top and bottom must be checked before you are making the learning travel. You should do this by doing a inspecting drive. If you are driving on the correction switch, the car must be reduce the speed to the run-in value!
- In the list below, there are a few values for your information. But the values in real life can be different. Please check the deceleration values in your inverter.

Slowdown distance at 0,8 m/s <sup>2</sup> Deceleration	Maximum Drive speed
<b>800 mm</b>	0,50 m/s
<b>1000 mm</b>	0,63 m/s
<b>1200 mm</b>	1,00 m/s
<b>1800 mm</b>	1,20 m/s
<b>2300 mm</b>	1,60 m/s
<b>3000 mm</b>	2,00 m/s

The slowdown distance could be higher, as in normal drive-working, because the correction switches would be overbridged and the lift controller put the brake-point. The correction switches are the synchronisation-points for the lift controller and doesn't change after successful learning travel!

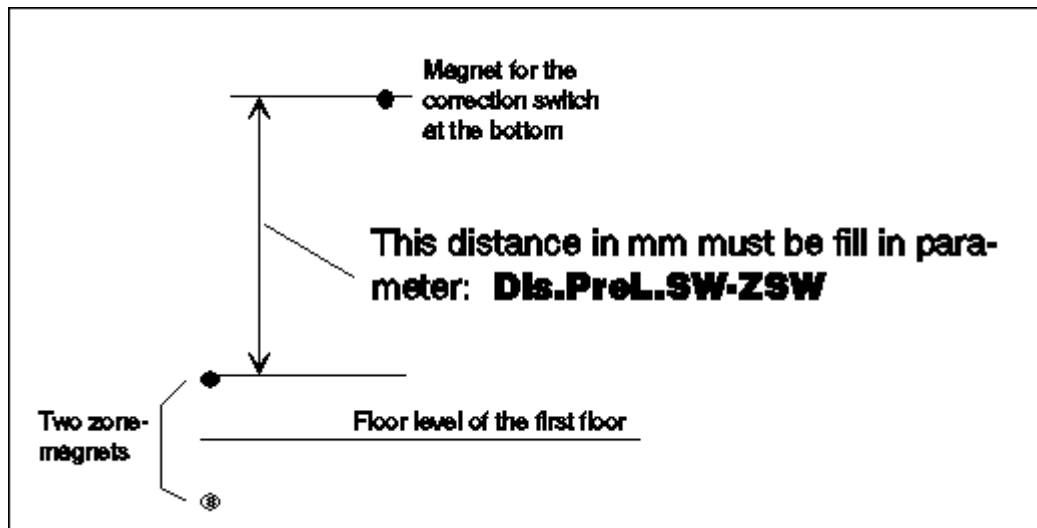


## 1.0 Checking the software-settings and inputting the slowdown of the correction switch at the bottom

Before you start the learning travel, you must check the project (Number of Floors, Tye of copy,.. ). Please check your inverter, if the slowdown distance is enough .

In the menu B42-Relativ-Copy you can fill in the following parameter „**Distance Pre Limit Switch-Zone Switch Bottom**“( in short **Dis.Pre.SW-ZSW** ) the exactly value in mm.

**It is very important!**



You must measure the distance between the middle of the two magnets. This distance is needed for calulate pulses in mm.

## 3.0 Activating the learning travel.

- A) At first you must choose the learning speed in the menu **LEARN DRIVE WITH**. There are three speeds like V1, V2 and V3 to choose. Please notice, that very old elevator-motors cannot travel the whole shaft with speed V1 ( Slow ) -> temperature!
- B) Please put the car with inspection- or re-send-drive **above** the beginning of the correction switch of the bottom. In the operation panel of the floor-unit you should switch off the landing control switch. Then you must switch the inspection- and re-send-drive operation off. Now you must activate the learning travel at the parameter **LEARN DRIVE ACTIVATE**.

### There three automatic drive-periods:

**1.Period:** The elevator-car drives down with a slowly speed in the zone of the zone of the first floor. The zone would be run complete in the whole length receive the information of the position of the zone. There would be no safety switch in there of the zone.

**2.Period:** After that the car is driving up to the highest floor and the lift controller can learn all zones of the floors and the slow down way of the correction switch at the top.

**3.Period:** At the end the car is driving down to the loweset floor. On the way down, the lift controller learns the zone of the floors a second time.

If the learning travel was sucessful, in the display of the handprograming-unit HPG60 is a message shown.

The slowdown way for the speed V3 was automatically received with the value of the correction switches. The slowdown way of the speed V0->0 was also received.

In the **floor level** list you see the receives floor level values for each floor. All values are fill into the list in mm. Floor no. 1 has the lowest value and the highest floor has the biggest value.

### **A learning travel must be done, if you are changing the Door-zone or the correction switches!**

If you make e new learning travel, the new values would be fill into the list, when the third period has a sucessful ending.

### **1.0 Settig the speeds and the slowdown distances**

If you only want to use the V3 speed at your elevator, you can give some calls to check the slowdown drive in the floors.

But if you want to drive with V1 or/and V2, you must fill in the slowdown ways for these speeds.

Please pay attention: **Slowdown way V1 < Slowdown way V2 < Slowdown way V3**

**The parameter decelation V0=>0 and the decelation V3 must always have an value higher than zero!**

### **2.0 Mearuring the floor level differences**

After that you have check the car in his slowdown drive and it doesn't drive over the floor level, you can measure the floor differences. You can do this drive inside the car, when you are put your handprograming-unit HPG60 in the D-Sub-socket on the pcb of the car operating panel.

Now you must test, if the car stops from both directions an the same position. At first you must drive into the second floor from the first floor and then from the third floor into the second floor. Now compare the stop-points. If you have a difference, please put it in mm into the parameter „**B5-Leveling Compensation**“. And now, you corrigate the levels of the floors.

From this place your can measure the difference and give into the system. You can start this process in the first floor. Please choose the parameter **Floor Level**. **If you are pushing the negative or positive** button on the righth, you can change the value and corrigate the unleveling.

**Is the car to high in the floor, you must corrigate the value by pushing the negative button.**  
**Is the car to low in the floor, you must corrigate the value by pushing the positive button.**  
**Automaticly the floor level value would be corrigate.**

Now you are driving to the 2.floor. Please choose the the floor leveling value from this floor. Please fill in the difference, like you done it in the first floor. After you have correct all floor level values, the elevator is ready for normal drives.

### **3.0 Settings for re-leveling**

Before you activate the re-leveling, you must change the following parametersettings at the menu B17 re-leveling:

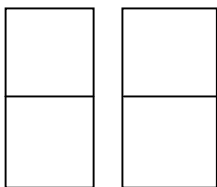
- 1) In the parameter **max. releveling way** you should put the setting about the lenght of the leleveling. The value should be shorter than half of the door-zone.
- 2) In the parameter **no releveling way** you put the start-point for the begin of the re-leveling. The standard values should be higher than 10mm, because rope vibrations could start re-leveling.

If you have put the right settings in the menu fot the releveling, you can activate this function.

## **5.0 – DIAGNOSIS**

### 5.1 Diagnose of errors using the display of the central processor

- The central processor „ZR“ incorporated a multi-functional display, that offers the following:
- A two-digit matrix display shows the actual floor. The definition is, that the lowest stop is floor 1, counting up to floor n.
  - The safety circuit could be detected by twelve 230V AC inputs. The state of these inputs are visualised by a green and a red LED each. The red LED lights up for an open safety circuit contact, while a closed contact is represented by a lighted green LED.
  - Four additional LEDs visualise the operative mode of the ZR and the FKR.
  - The condition of the integrated emergency power supply is shown by 4 LEDs:
    - i. Undervoltage detection of the accumulator
    - ii. Function and activation of the alert button.
    - iii. Functional condition of the emergency power supply – normal operation and charging of the accumulator.
    - iv. Functional condition of the emergency power supply – loss of input lines and accumulator powered system
  - Display of the travel direction and the selected speeds
  - Central Error LED – the LED lights up for any error occurred during operation. The error could be read-back using the manual programming device out of the error register
  - Display of the signals from the shaft representation (Deceleration points, levelled points, pre – end switches, zones and pulses) This signals are also generated by the digital shaft representation, thus the speed curves of the actual travel could be easily monitored.
  - The door signals and commands are shown for two door installations in the cabin (door – open, door – close, photocell and reverse input)
  - For the cabin being in re-adjust mode or run-in with open door, this is also displayed by LEDs.

U1	Safety circuit U1			11A	11A Brake Up
U2	Safety circuit U2			11B	11B Brake Down
U3	Safety circuit U3			12A	12A Level Up
U4	Safety circuit U4			12B	12B Level Down
U5	Safety circuit U5			13A	13A Correct Top
U6	Safety circuit U6				13B Correct Bottom
U7	Safety circuit U7			71	71 Zone 1
U8	Safety circuit U8			72	72 Zone 2
U9	Safety circuit U9			Pulses	Pulses
U10	Safety circuit U10			Fault	Fault shaft Copy
U11	Safety circuit U11	Up	Direction Up	T1 Auf	Door 1 Open
U12	Safety circuit U12	Down	Direction Down	T1 Zu	Door 1 Close
Run-Z	Run ZR	V0	Speed V0	T1 Lg	
Spg-Z		V1	Speed V1	T1 Rev	Door 1 Reverse
Run-F	Run FKR	V2	Speed V2	T2 Auf	Door 2 Open
Spg-F	Voltage FKR	V3	Speed V3		Door 2 Close
U-Spg	NSG-Bad voltage.	Vins	Speed Vins	T2 Lg	Door 2 Photocell
Alert	NSG-Alert	Vnh	Speed Vh	T2 Rev	Door 2 Reverse
Load	NSG-Load			NH	Relevelling
Not	NSG-Emer.Power	Fault	Fault	EoT	Run-In open door

## 5.2- Event / Fault Log

In this menu you find the event / fault log. The fault log has a depth of 100 faults. The newest fault is always on the top. In the menu C30 you have the possibility to clear the whole fault log. The fault log is in the Akku-RAM of the clock-IC and safe against interrupts of the power supply.

## 5.3- Car Calls

In the menu **Car Calls** it is possible to give car-calls. With the help of the two right push-buttons and the enter-push-button on the HPG-60, you can put in car-calls into the system. You can put in the HPG-60 into the central-unit ZR, car-controller FKR and the Carpanel ITR. Then you have the possibility , to give calls from different places.

## 5.4- Controller-RESET

In this parameter, you can make a reset for the whole system. If the system is blocked, you can only turn on the system, when you switch off / on the centralunit ZR or activate the parameter „**Controller-RESET**“.

## 5.5- Trip Counter

In this menu is the trip counter. There are four counter in use:

- All trips ( not to erase )
- Tripcounter ( you can erase )
- Tripcounter UP ( you can erase )
- Tripcounter Down ( you can erase )

## Run Time Counter

In this menu is run time counter. There are three counter in use:

- Mainpowercounter ( not to erase )
- Travelttime couter ( not to erase )
- Travelttime couter ( you can erase )

**F01 Error messages - description Controller**

Code-No.	Error entry	Description
00	<b>Phase cabin light/Emergency power supply</b>	The power line for the cabin light resp. the emergency power supply is missing. Either circuit breaker F5 is activated or L2 of the main power connection is missing.
02	<b>Safety Circuit U1 Safety Circuit voltage</b>	Safety Circuit power is missing. Either circuit breaker F7 is activated or L1 of the main power connection is missing.
03	<b>Safety Circuit U2 – emergency stop</b>	The emergency stop has been activated and thus the safety circuit was opened.
04	<b>Safety Circuit U3 – shaft door – control strain weight</b>	The shaft door has been opened or the contact of the control strain weight was activated, which opens the safety circuit.
05	<b>Safety Circuit U4 – maintenance door – rope loose</b>	The maintenance door has been opened or the contact of the rope loose switch was activated, which opens the safety circuit.
06	<b>Safety Circuit U5 – speed limiter</b>	The contact of the speed limiter has been activated, which opens the safety circuit.
07	<b>Safety Circuit U6 – emergency stop TOP - BOTTOM</b>	The emergency stop switch Top or Bottom has been activated, which opens the safety circuit.
08	<b>Safety Circuit U7 – buffer cabin – counterweight</b>	One of the buffer contacts has been activated and opened the safety circuit.
09	<b>Safety Circuit U8 – catch cabin</b>	The catch contact on the cabin has been activated, which opens the safety circuit..
10	<b>Safety Circuit U9 – rope loose, hatchway, emergency stop cabin</b>	The contact of the rope loose contact cabin, the hatchway contact or the emergency stop cabin has been activated and opened the safety circuit.
11	<b>Safety Circuit U10 – shaft door</b>	One of the shaft doors has been opened during travel, which opens the safety circuit.
12	<b>Safety Circuit U11 – cabin door</b>	One of the cabin doors has been opened during the travel, which opens the safety loop.
13	<b>Safety Circuit U12 – locking device contact</b>	One locking device contact has opened during travel and opened the safety circuit.
14	<b>Voltage central processor</b>	The ZKR's +24V DC power supply is in overload conditions, resp. shorted in the system.
15	<b>Voltage emergency power supply</b>	The emergency power supply's +24V DC power supply is in overload conditions, resp. shorted in the system.
16	<b>Voltage cabin processor</b>	The FKR's +24V DC power supply is in overload conditions, resp. shorted in the system.
17	<b>Voltage accumulators</b>	Undervoltage condition accumulators
18	<b>Carlight damage</b>	The carlight in the cabin is out of order
20	<b>Pre- end switch Top and Bottom activated - locking</b>	Both pre- end switches are activated. Either one of both switches is defect or one is mounted incorrectly. The installation is locked.
41	<b>Regulation Fault</b>	The regulation ( inverter) has a problem
45	<b>Motor temperature</b>	The PTC of the engine has activated. Reaction according configuration.
46	<b>Start Time Monitor</b>	The configured delay for the Start Time Monitor has elapsed. After a configured number of trials, the installation is locked.
47	<b>Journey Time Monitor</b>	The configured delay for the Journey Time

		Monitor has elapsed. Reaction according configuration.
48	<b>Deceleration Time Monitor</b>	The configured delay for the Deceleration Time Monitor has elapsed. Reaction according configuration.
49	<b>Stop Time Monitor</b>	The configured delay for the Stop Time Monitor has elapsed. Reaction according configuration.
50	<b>Contactator monitor</b>	The monitor for the main and brake relay has been activated. Reaction according configuration.
51	<b>Brake opening monitor</b>	The brake activation monitor has been activated. Reaction according configuration.
52	<b>Brake shoe monitor</b>	The monitor for the brake wear has been activated. Reaction according configuration.
53	<b>Contactator Stop</b>	The monitor for the main and brake relay has been activated. Reaction according configuration.
54	<b>Contactator Travel</b>	The monitor for the main and brake relay has been activated. Reaction according configuration.
60	<b>Door Monitor – Door opening</b>	The door could not be opened within the configured time.
61	<b>Door Monitor – Door Closing</b>	The door could not be closed within the configured time.
62	<b>Photocell door 1 active</b>	The door 1 could not be closed, because the photocell is blocked.
63	<b>Photocell door 2 active</b>	The door 2 could not be closed, because the photocell is blocked.
64	<b>Reverse-contact door 1 active</b>	The door 1 could not be closed, because the reverse-contact is active.
65	<b>Reverse-contact door 2 active</b>	The door 2 could not be closed, because the reverse-contact is active.
66	<b>Both endswitches door 1 active</b>	Either the end switches of the door 1 are not connected or one of the switches is defect.
67	<b>Both endswitches door 2 active</b>	Either the end switches of the door 2 are not connected or one of the switches is defect.
80	<b>Communication I/O ZR</b>	There is no communication in the ZR-Unit.
81	<b>Communication I/O FKR</b>	There is no communication to car-unit FTR. Is the hanging-wire ok or damaged?
82	<b>Communication I/O ITR</b>	There is no communication to carpanel-unit ITR. Is the D-sun 15p wire ok or damaged?
84	<b>DSK No Pulses</b>	There are no pulses from the digital shaft-copy. Is the resolver-wire on the right place?
85	<b>DSK Floor number</b>	The learn-drive had give a different number of floors. Please check the number of floors in the parameter and control the zone-switch S71 on his function.
86	<b>Correction –D.ZONE</b>	There is a difference between the counter of the digital shaft-copy and the position of the Zone. The counter was corrigate.
87	<b>Correction –Pre.Switch Bottom</b>	There is a difference between the counter of the digital shaft-copy and the position of the Pre-switch bottom. The counter was corrigate.
88	<b>Correction – Pre.Switch Top</b>	There is a difference between the counter of the digital shaft-copy and the position of the Pre-switch top. The counter was corrigate.
90	<b>Watchdog-Reset</b>	Internal reset – damage in the hardware