Maintenance instructions for T80 inclined stair lifts

The work is to be carried out by qualified technical personnel only!

The following work may **only be carried out by qualified personnel**:

Installation
Adjustments and settings
Maintenance work
Fault finding/rectification

Qualified personnel are persons who

- know how the machine works
- have received instruction on how it works
- have read and understood the operating, installation and service manuals
- are aware of the dangers posed by the machine (and also its components)
- know and understand the interrelationships between the mechanical components
- know and understand the interrelationships between the electrical components
- have the appropriate tools/measuring instruments and know how to use them
- have a sufficient understanding of the German or English language respectively

When carrying out any work on the machine, please note:

- Do not allow other persons to access the machine when there is an increased danger potential (covers removed, safety devices disabled etc.).
- Avoid the risk of tripping up due to the open machine, tools lying around, electrical cables etc.
- The potential dangers of the machine may not have been increased after conclusion of the work on the machine
- Parts of the machine that are not yet firmly connected to the building/running rail are to be secured against falling over

The safety instructions in the operating manual are to be observed!!

Original parts and accessories are specially designed for our platform lifts. We expressly draw your attention to the fact that parts and accessories not supplied by us have also not been tested and approved by us. The installation and/or use of such products can therefore, under certain circumstances, negatively affect the constructive specified characteristics of the lift and impair the active and/or passive travelling safety as a result. The manufacturer accepts no liability whatsoever for damage caused by the use of non-original parts and accessories.

Tools / operating resources and auxiliary materials / measuring and testing devices

Torque wrench 110 Nm (10 to 24 mm)
Spanner, open-ended/ring (7 / 8 / 10 / 13 / 14 / 17 / 30 / 40 mm)
Hexagon keys (2 / 3 / 4 /5 /6 mm)
Taper pin punch (4 / 6 mm)
Long nose pliers
Side cutters
Circlip pliers A01, A11
Phillips screwdriver (PH1, PH2)
Flat blade screwdriver (1 x 6 mm / 0.6 x 4.5 mm)

Loctite 243
Cable drum
Lamp
Voltmeter (230 V AC / 30 V DC)
Ammeter 24 V DC min. 1A max. 50A
Ohmmeter

9V block battery (1x)
1.5 V AA battery (2x for each external command unit)
Battery 1.5V AAA (2x for each UHF handheld transmitter)
Battery CR123A Lithium 3,0V (1x for each external command unit with PIN-Pad)

Lubricants:
OKS 469 NLGL 2 plastic and elastomer lubricant (- 40 °C to 150 °C) (further designation: S1)
E-COLL NLGI 2 multi-purpose graphite grease II (- 30 °C to 120 °C) (further designation: S2)
E-COLL NLGI 2 multi-purpose grease I, lithium soaped (- 30 °C to 120 °C) (further designation: S3)
Fina Marson L2 (further designation: S4)
Eurotech Neoval Oil MTO 300 (further designation: S5)
Interflon Fin Grease (Aerosol) multi-purpose grease (- 20 °C to 150 °C) (further designation: S6)
Ultraclean Eurotech (Technical cleaner) (further designation: R1)

Wearing parts / parts that should be carried in case exchange is necessary:
6 V batteries (8 x)
12 V batteries (4 x)
Roller lever switch (1x)
Plunger switch (1x)
Microswitch
Guide rollers incl. bearings (4x)
Command unit on coiled cable with socket (1x)
Battery charger (1x)
Fuses: 6.3 A slow-blow micro-fuse / 2 A blade fuse / 10 A blade fuse / 25 A torpedo fuse

Lubricants, operating materials and cleaning supplies

	T80	Konstanz	LL12	STL300
Rail connections	8*	xxx	xxx	xxx
Rack / pinion	xxx	xxx	9	9
Drive chain	2	2* oder 3**	xxx	2
Drive plastic guide	1**	xxx	xxx	xxx
Drive tabs	1	xxx	xxx	xxx
Drive intermediate blocks	6	xxx	xxx	xxx
Locking bolt	2* oder 3**	2* oder 3**	3	2* oder 3**
Bowden cables	3*	3*	3*	3*
Access flap bearing	2* oder 3**	2* oder 3**	3	2* oder 3**
Arms linkage	2* oder 3**	2* oder 3**	3	2* oder 3**
bearing arrestor	4	4	4	4
cleaning arrestor	7	7	7	7
Bar for bypass switch	2* oder 3**	2* oder 3**	3	2* oder 3**

* indoor

** outdoor

1	OKS 469 NLGL 2 plastic and elastic lubricant (-40°C bis 150°C)
2	E-COLL NLGI 2 graphed multi-purpose grease II (-30°C bis 120°C)
3	E-COLL NLGI 2 multi-purpose grease I lithium saponified
4	Mixture (50/50) aus Nr.3 und Nr.5
5	Eurotech Neoval Oil MTO 300
6	Interflon Fin Grease (Aerosol) transparent multi-purpose grease (-20°C bis 150°C)
7	Ultraclean Eurotech (Techn. cleanser)
8	OKS 2101
9	Ballistol Teflon spray

01/2024

Maintenance plan based on EN 13015	Manufacturer: **LIPPE Lift GmbH** **Weststrasse 48, 32657 Lemgo**		**Location:**	
Page 1 of 5	Designation of the lift: **T80 inclined stair lift**		**Serial no.:**	
Seq. no.	Work to be carried out (by qualified technical personnel only)	Measuring and testing devices, operating and auxiliary materials		Remarks
1.	**Supports**			If present
1.1	*Check firm seating*		A	
1.2	*Examine for corrosion, breakages and deformations*		A	
2.	**Running track**			
2.1	Fastening			
2.1.1	*Examine for corrosion, breakages and deformations*		A	
2.1.2	*Check firm seating*		A	
2.2	Support steelwork: *Examine for corrosion, breakages and deformations*		B	
2.3	Vertical rods: *Examine for corrosion, breakages and deformations*		B	
2.4	Traps			
2.4.1	*Check function*		A	
2.4.2	*Examine for corrosion, breakages and deformations*		A	
2.5	Limit switch curves			
2.5.1	*Examine for corrosion*		A	
2.5.2	*Check position, function and firm seating*		A	
2.6	Unlocking curves		A	
2.6.1	*Examine for corrosion and breakages*		A	Replace plastic if necessary
2.6.2	*Check position, function and firm seating*		A	
2.7	Slot for bypass switch			If present
2.7.1	*Check function*		A	
2.7.2	*Examine for dirt*		A	
2.8	Bypass switch curves			If present
2.8.1	*Examine for corrosion and breakages*		A	
2.8.2	*Check position, function and firm seating*		A	
Intervals: A = once by year B = every 2 years				

Maintenance plan based on EN 13015	Manufacturer: **LIPPE Lift GmbH** **Weststrasse 48, 32657 Lemgo**	**Location:**
Page 2 of 5	Designation of the lift: **T80 inclined stair lift**	**Serial no.:**

Seq. no.	Work to be carried out (by qualified technical personnel only)	Measuring and testing devices, operating and auxiliary materials		Remarks
2.9	Battery charging station			
2.9.1	*Examine for breakages, deformation, corrosion and wear*		A	
2.9.2	*Check contact, function, adjustment and fastening*	Voltmeter / Ammeter	A	Voltage at the battery charging station must be between 25.5 V and 29.5 V
2.10	Running track tube: *Examine for corrosion, breakages and deformations*		B	
3.	**Carriage**			
3.1	Roller set			
3.1.1	*Examine for corrosion, breakages and deformations*		A	
3.1.2	*Examine the fastening of the lower and **upper** roller set*		A	Insert grub screw with Loctite 243 (work very carefully!!)
3.1.3	*Check function, adjustment and play*		A	
3.1.4	*Examine for noises, deformation, wear and dirt*		A	
3.2	Rotating drive			
3.2.1	*Examine for corrosion, breakages, noises, dirt and deformation*	See page 3	A	
3.2.2	*Check adjustment, arrester, firm seating, cotter pins, function and lubrication*	See page 3	A	After cleaning lubricate again!
3.2.3	Main drive chain (duplex)			
3.2.3.1	*Check adjustment, play, lubrication/ re-tension via eccentric bush*	See page 3		
3.3	Controller: *Check firm seating*		B	
3.3.1	Replace battery (for acoustic signals)	9V block battery	A	
3.4	Barriers / arm rests			
3.4.1	*Check adjustment, function, play and lubrication (bearings and linkage).*	See page 3	A	
3.4.2	*Check function and wear of the locking device*		A	
3.4.3	*Examine for corrosion and dirt*		A	

Intervals: A = once per year B = every 2 years

Maintenance plan based on EN 13015	Manufacturer: **LIPPE Lift GmbH** **Weststrasse 48, 32657 Lemgo**	**Location:**
Page 3 of 5	Designation of the lift: **T80 inclined stair lift**	**Serial no.:**

Seq. no.	Work to be carried out (by qualified technical personnel only)	Measuring and testing devices, operating and auxiliary materials		Remarks
3.5	Contact floor (carry out only with the floor folded up)			
3.5.1	*Examine for deformation and dirt*		A	
3.5.2	*Check function, fastening and play*		A	
3.6	Internal controller			
3.6.1	*Check function, fastening,*		A	
3.6.2	*Examine for breakages and missing labelling*		A	
3.7	External controller			
3.7.1	*Check function, fastening*		A	
3.7.2	*Examine for breakages and missing labelling*		A	
3.7.3	Replace battery	2x 1.5 V AA	A	
3.8	Motor: *Check fastening*		A	
3.9	All switches			
3.9.1	*Examine for breakages, wear and dirt*		A	
3.9.2	*Check function, adjustment, fastening and play*		A	
3.10	Main breaker			
3.10.1	*Examine for breakages, wear and dirt*		B	
3.10.2	*Check function and fastening*		A	
3.11	Worm gear: *Examine for breakages and leaks*		B	
3.12	Rear panel: *Check fastening*		B	
3.13	Batteries (6 V and/or 12 V)			
3.13.1	*Examine for corrosion and dirt*		B	
3.13.2	*Check firm seating, function and voltage*	Voltmeter	A	The voltage of each individual battery: min. 6.3 V (12.3 V). Difference between the individual batteries max. 0.2 V (only replace complete blocks!)

Intervals: A = once per year B = every 2 years

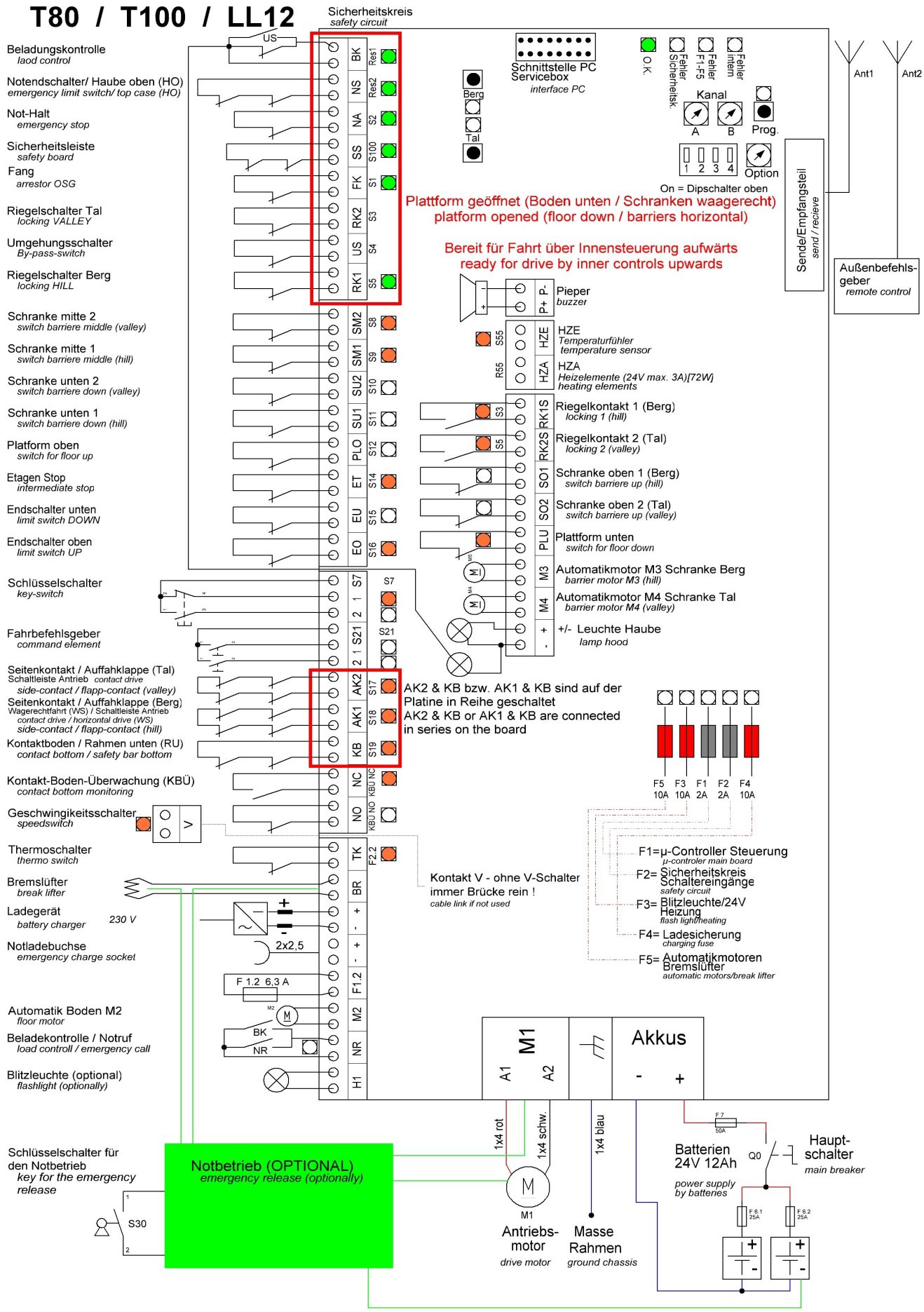
Maintenance plan	Manufacturer: **LIPPE Lift GmbH**	**Location:**

Seq. no.	Work to be carried out (by qualified technical personnel only)	Measuring and testing devices, operating and auxiliary materials		Remarks
3.14	Battery charger			
3.14.1	*Examine for breakages and dirt*		A	
3.14.2	*Check function and fastening*		A	
3.15	Charging fuse			
3.15.1	*Examine for breakages and dirt*		A	
3.15.2	*Check function and fastening*		A	
3.16	Charging brushes			
3.16.1	*Examine for breakages, deformation and wear*		A	
3.16.2	*Check function, adjustment and fastening*		A	
3.17	- Empty -			
3.18	Ramp			
3.18.1	*Examine for corrosion, deformation and dirt*		A	
3.18.2	*Check fastening, adjustment (folded up and down), function and lubrication*	See page 3	A	Readjust via eccentric if necessary; readjust tension spring if necessary; angle when folded up at least 45°
3.19	Safety board			If present
3.19.1	*Examine for deformation and corrosion*		A	
3.19.2	*Check function, adjustment and play*		A	
3.20	Side ramp			If present
3.20.1	*Examine for deformation, corrosion, wear and dirt*		A	
3.20.2	*Check function, fastening and lubrication*	See page 3	A	
3.21	Automatic gearbox			If present
3.21.1	*Examine for breakages, deformation and wear*		A	
3.21.2	*Check chain elongation, function, fastening and cotter pins*		A	
3.22	Couplings			If present
3.22.1	*Examine for breakages, deformations, noises and wear*		A	
3.22.2	*Check function, adjustment and cotter pins*		A	

Intervals: A = once per year B = every 2 years

Maintenance plan based on EN 13015	Manufacturer: **LIPPE Lift GmbH** **Weststrasse 48, 32657 Lemgo**		**Location:**
Page 5 of 5	Designation of the lift: **T80 inclined stair lift**		**Serial no.:**

Seq. no.	Work to be carried out (by qualified technical personnel only)	Measuring and testing devices, operating and auxiliary materials		Remarks
3.23	Folding seat / safety belt			If present
3.23.1	*Examine for breakages, tears and deformation*		A	
3.23.2	*Check function and fastening*		A	
3.24	Unlocking cams			
3.24.1	*Examine for deformation and dirt*		A	
3.24.2	*Check function, adjustment and lubrication*	See page 3	A	
3.25	Emergency unlocking device: *Check function and marking*		A	
3.26	Hand wheel: *Check fastening and labelling*		A	
3.27	Emergency call: *Check function*		A	Check batteries if present (9V)
3.28	Changeover switch for driving uphill/downhill			
3.28.1	*Check adjustment, function and fastening*		A	
3.29	Side contact switch			
3.29.1	*Check function, adjustment and play*		A	
3.30	Contact switch, rear cover			If present
3.30.1	*Check function, adjustment and play*		A	
3.31	Contact switch, underside of frame			
3.31.1	*Check function, adjustment and play*		A	
3.32	Contact switch, top side hood			
3.32.1	*Check function, adjustment and play*		A	
3.33	Sensitive surface beside drive			
3.33.1	*Check function, adjustment and play*		A	
3.34	Overload protection			
3.34.1	*Check function, adjustment and play*		A	
3.35	Electrical emergency lowering			
3.35.1	*Check function*		A	
4.	**Others**			
4.1	Test drive: *Check all functions and driving behaviour*		A	
4.2	Labelling (stickers, warning notices etc.): complete		A	*Possibly not supplemented at customer's request?*
			Intervals:	A = once per year B = every 2 years


T80 / T100 / LL12
Sicherheitskreis
safety circuit
Beladungskontrolle
laod control
Notendschalter/ Haube oben (HO)
emergency limit switch/ top case (HO)
Not-Halt
emergency stop
Sicherheitsleiste
safety board
Fang
arrestor OSG
Riegelschalter Tal
locking VALLEY
Umgehungsschalter
By-pass-switch
Riegelschalter Berg
locking HILL
Schranke mitte 2
switch barriere middle (valley)
Schranke mitte 1
switch barriere middle (hill)
Schranke unten 2
switch barriere down (valley)
Schranke unten 1
switch barriere down (hill)
Platform oben
switch for floor up
Etagen Stop
intermediate stop
Endschalter unten
limit switch DOWN
Endschalter oben
limit switch UP
Schlüsselschalter
key-switch
Fahrbefehlsgeber
command element
Seitenkontakt / Auffahklappe (Tal)
Schaltleiste Antrieb contact drive
side-contact / flapp-contact (valley)
Seitenkontakt / Auffahklappe (Berg)
Wagerechtfahrt (WS) / Schaltleiste Antrieb
contact drive / horizontal drive (WS)
side-contact / flapp-contact (hill)
Kontaktboden / Rahmen unten (RU)
contact bottom / safety bar bottom
Kontakt-Boden-Überwachung (KBÜ)
contact bottom monitoring
Geschwingikeitsschalter
speedswitch
Thermoschalter
thermo switch
Bremslüfter
break lifter
Ladegerät
battery charger
230 V
Notladebuchse
emergency charge socket
Automatik Boden M2
floor motor
Beladekontrolle / Notruf
load controll / emergency call
Blitzleuchte (optional)
flashlight (optionally)
Schlüsselschalter für den Notbetrieb
key for the emergency release
S30
Notbetrieb (OPTIONAL)
emergency release (optionally)
Schnittstelle PC Servicebox
interface PC
Berg
Tal
O.K.
Fehler Sicherheitsk.
Fehler F1-F5
Fehler intern
Kanal
A
B
Prog.
Option
On = Dipschalter oben
Plattform geöffnet (Boden unten / Schranken waagerecht)
platform opened (floor down / barriers horizontal)
Bereit für Fahrt über Innensteuerung aufwärts
ready for drive by inner controls upwards
Ant1
Ant2
Sende/Empfangsteil
send / recieve
Außenbefehls-geber
remote control
Pieper
buzzer
HZE
Temperaturfühler
temperature sensor
HZA
Heizelemente (24V max. 3A)[72W]
heating elements
Riegelkontakt 1 (Berg)
locking 1 (hill)
Riegelkontakt 2 (Tal)
locking 2 (valley)
Schranke oben 1 (Berg)
switch barriere up (hill)
Schranke oben 2 (Tal)
switch barriere up (valley)
Plattform unten
switch for floor down
Automatikmotor M3 Schranke Berg
barrier motor M3 (hill)
Automatikmotor M4 Schranke Tal
barrier motor M4 (valley)
+/- Leuchte Haube
lamp hood
AK2 & KB bzw. AK1 & KB sind auf der Platine in Reihe geschaltet
AK2 & KB or AK1 & KB are connected in series on the board
F5 10A
F3 10A
F1 2A
F2 2A
F4 10A
F1=µ-Controller Steuerung
µ-controler main board
F2= Sicherheitskreis Schaltereingänge
safety circuit
F3= Blitzleuchte/24V Heizung
flash light/heating
F4= Ladesicherung
charging fuse
F5= Automatikmotoren Bremslüfter
automatic motors/break lifter
Kontakt V - ohne V-Schalter immer Brücke rein !
cable link if not used
2x2,5
F 1.2 6,3 A
M1
A1
A2
Akkus
1x4 rot
1x4 schw.
1x4 blau
Antriebs-motor
drive motor
Masse Rahmen
ground chassis
Batterien 24V 12Ah
power supply by batteries
Q0
Haupt-schalter
main breaker

Legende Dokumentation
Circuit board

Mainboard	Connectors	Anschluß	Connection
RES1	(leer) BK	Beladungskontrolle	*weight-control*
RES2	NS	Not-Stopp	*emergency limit switch*
S2	NA	NOT-HALT	*emergency off*
S100	SS	Sicherheitsleiste (optional)	*switch for safetyboard (optionally)*
S1	FK	Fangschalter	*switch at arrestor OSG*
S3	RK2	Riegelschalter TAL	*switch for locking (valley)*
S4	US	Umgehungsschalter	*by-pass-switch*
S5	RK1	Riegelschalter BERG	*switch for locking (hill)*
S8	SM2	Schranke TAL Mitte	*switch for barrier (valley) middle*
S9	SM1	Schranke BERG Mitte	*switch for barrier (hill) middle*
S10	SU2	Schranke TAL Unten	*switch for barrier (valley) down*
S11	SU1	Schranke BERG Unten	*switch for barrier (hill) down*
S12	PLO	Plattformboden Oben	*floor switch, floor UP (optionally)*
S14	ET	Etagenschalter	*switch for intermediate stop (optionally)*
S15	EU	Endschalter Unten	*limit switch DOWN*
S16	EO	Endschalter Oben	*limit switch UP*
S7	S7 / 1 / 2	Schlüsselschalter an Lift	*key switch at carriage*
S21	S21 / 1 / 2	Befehlsgeber an Lift	*somand element at carriage*
S17	AK2	Auffahrklappe TAL	*switch for ramp (valley)*
S18	AK1	Auffahrklappe BERG	*switch for ramp (hill)*
S19	KB	Kontaktboden (Serie)	*switch for contact bottom (series)*
KBÜ NC	NC	Kontaktbodenüberwachung (optional)	*switch for contact bottom monitoring (optionally)*
KBÜ NO	NO	Kontaktbodenüberwachung (optional)	*switch for contact bottom monitoring (optionally)*
V	V	Geschwindigkeit (optional)	*switch for speed (optionally)*
F2.2	TK	Thermokontakt M1	*thermo switch drive motor*
Y1	BR	Bremslüfter M1	*brake lifter*
1X20	+ / -	Ladegerät	*battery charger*
1X30	+ / -	Notladebuchse	*emergency battery charging socket*
F1.2	F1.2	Ladesicherung 6,3A	*short circuit - charge contacts*
M2	M2	Automatikmotor Boden (optional)	*automatic motor (optionally)*
S50	NR	Notruftaster (optional)	*emergency call switch (optionally)*
H1	H1	Blitzleuchte (optional)	*flash light (optionally)*
Pieper	P+ P-	Pieper	*buzzer*
Heizung (72/73)	HZE	Fühler Heizung	*temperature sensor*
Heizung (74/75)	HZA	Heizelemente	*heating elements*
(76/77)	RK1S	Riegelschalter BERG (Schliesser)	*switch for locking (hill)*
(78/79)	RK2S	Riegelschalter TAL (Schliesser)	*switch for locking (valley)*
(80/81)	SO1	Schranke BERG oben	*switch for barrier (hill) up*
(82/83)	SO2	Schranke TAL oben	*switch for barrier (valley) up*
(84/85)	PLU	Plattformboden unten	*floor switch, floor down*
M3 (86/87)	M3	Automatikmotor Schranke BERG	*automatic motor barrier (hill)*
M4 (88/89)	M4	Automatikmotor Schranke TAL	*automatic motor barrier (valley)*
24V	+ -	24V	*24 V*
M1 (A1 / A2)	A1 / A2	Antriebsmotor	*drive motor*
AKKU 24V	AKKU + -	Akkus 24V 9Ah	*power supply by batteries*
Rahmen Masse	GND	Masse Rahmen	*ground chassis*

zusätzliche, nicht in der Steuerung aufgeführten Schalter und Sicherungen			
additional switches and fuse, not mentioned on the control board			
	Q0	Hauptschalter	*main breaker*
	F4	Ladesicherung extern	*external charging fuse*
	F6.1/F6.2	Sicherungen Akku´s	*accumulator fuses*
	F7	Hauptsicherung	*main fuse*
	SK1	Seitenkontakt BERG	*side contact (hill)*
	SK2	Seitenkontakt TAL	*side contact (valley)*
	SLA1	Schalterleiste Antrieb BERG	*Contact drive (hill)*
	SLA2	Schalterleiste Antrieb TAL	*Contact drive (valley)*
	RU 1/2	Kontakt Rahmen Unterseite	*contact frame bottom side*
	HO	Kontakt Haube oben	*contact hood top*
	S30	Notbetrieb (optional)	*emergency release (optionally)*