

# Automatic folding door for escape and rescue routes record 16 FBO

## Manual **E**

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## 2 General, symbols

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This manual is intended for qualified, authorised installers of the record 16 FBO automatic folding door.

The manual describes the correct installation and commissioning procedure.

The product is subject to technical modification. There can therefore be differences between the product and the manual.

Product designation: ***Automatic folding door for escape and rescue routes***

Product name: ***record 16 FBO***

## Symbols

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Various symbols are used in this manual for simplification:



**Note**

Especially useful details concerning installation



**Caution**

Special details indispensable for satisfactory operation of the system



**Danger**

Details for the prevention of damage to persons and material

## 3 Safety instructions

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The record 16 FBO (Break-Out) has been constructed in accordance with the latest state of the art and the recognised technical safety regulations, including limitation of force and speed. If not used as intended, however, danger can arise for users,



Installation, servicing and maintenance work on the record 16 FBO (Break-Out) must only be performed by trained and authorised persons.

### Use for intended purpose

The record 16 FBO folding door operator is constructed exclusively for use in dry rooms and must be installed within or on the inside of buildings.

Any other application or use beyond this purpose shall be considered improper use. The manufacturer cannot accept any liability for damage caused in this way and the risk must be borne by the operator alone.

Use for the intended purpose also includes observation of the operating conditions prescribed by the manufacturer, in addition to regular servicing and maintenance.

Any modifications to the automatic door made by the user shall preclude any liability of the manufacturer for any resultant damage.

### Allgemeine Sicherheits- und Unfallverhütungs-Vorschriften



In principle, no safety devices (sensors) must be dismantled or placed out of service.



No persons or objects must be present in the opening area/path of the folding door, in order to avoid crushing and cutting.



The installation is **not** intended to be disconnected from the mains at night!

## 4 **Technical data & operating conditions**

### **Clear passage widths A**

Clear passage width	A = 900 - 2000 mm
Clear passage height (recommended maximum height)	G = 2500 mm

### **Door weights**

Maximum 4 x 37.5 kg	max. 150 kg
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### **Door movements**

Door opening speed (maximum)	70 cm/sec
Door closing speed (maximum)	50 cm/sec
Door speed after meeting obstruction	ca. 8 cm/sec
Static driving force of door leaf	max. 150 N
Time delay	0 - 20 sec

\* Max. speed is limited by mass (weight) of door (statutory regulation)

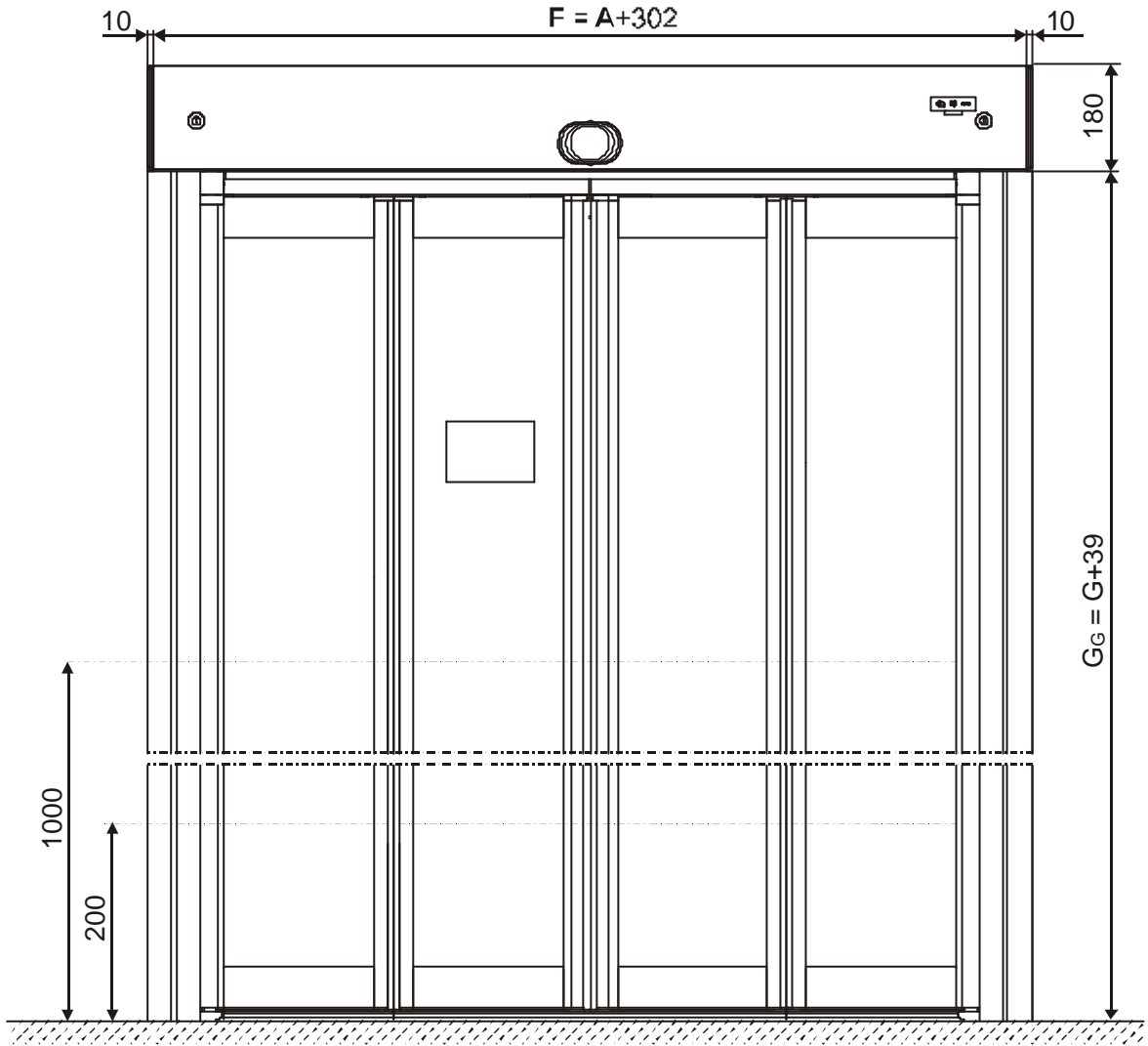
### **Electrical power supply**

Mains voltage (NET 16 / 230 V)	230V, 50/60 Hz
Power consumption	100 W
Standby power consumption	14 W

### **Environmental conditions**

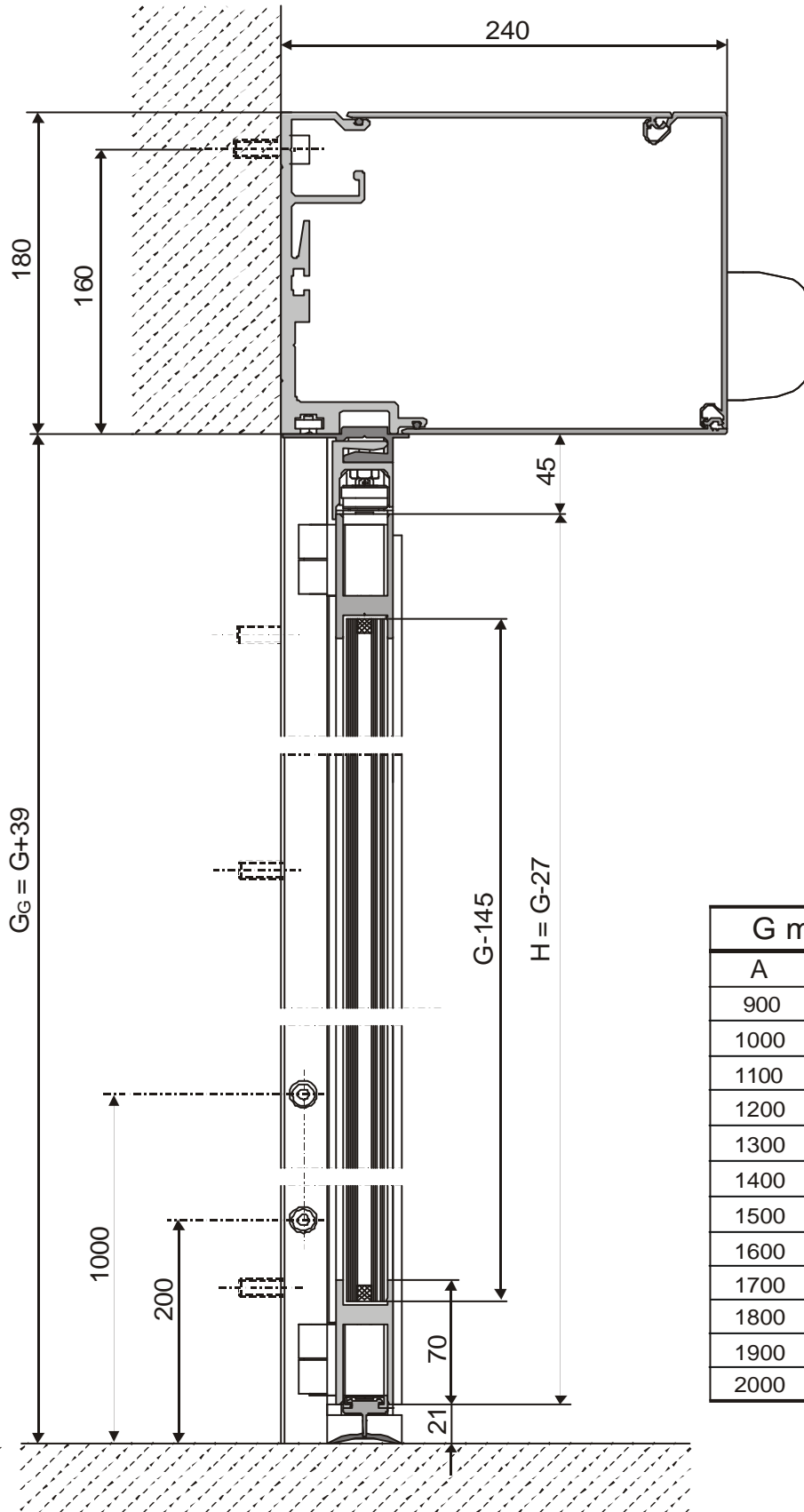
Temperature range	-15° to + 50°C
Humidity range	to 85% rel. humidity, non-thawing

# 5 Elevation / drawing of header



# Elevation / drawing of header

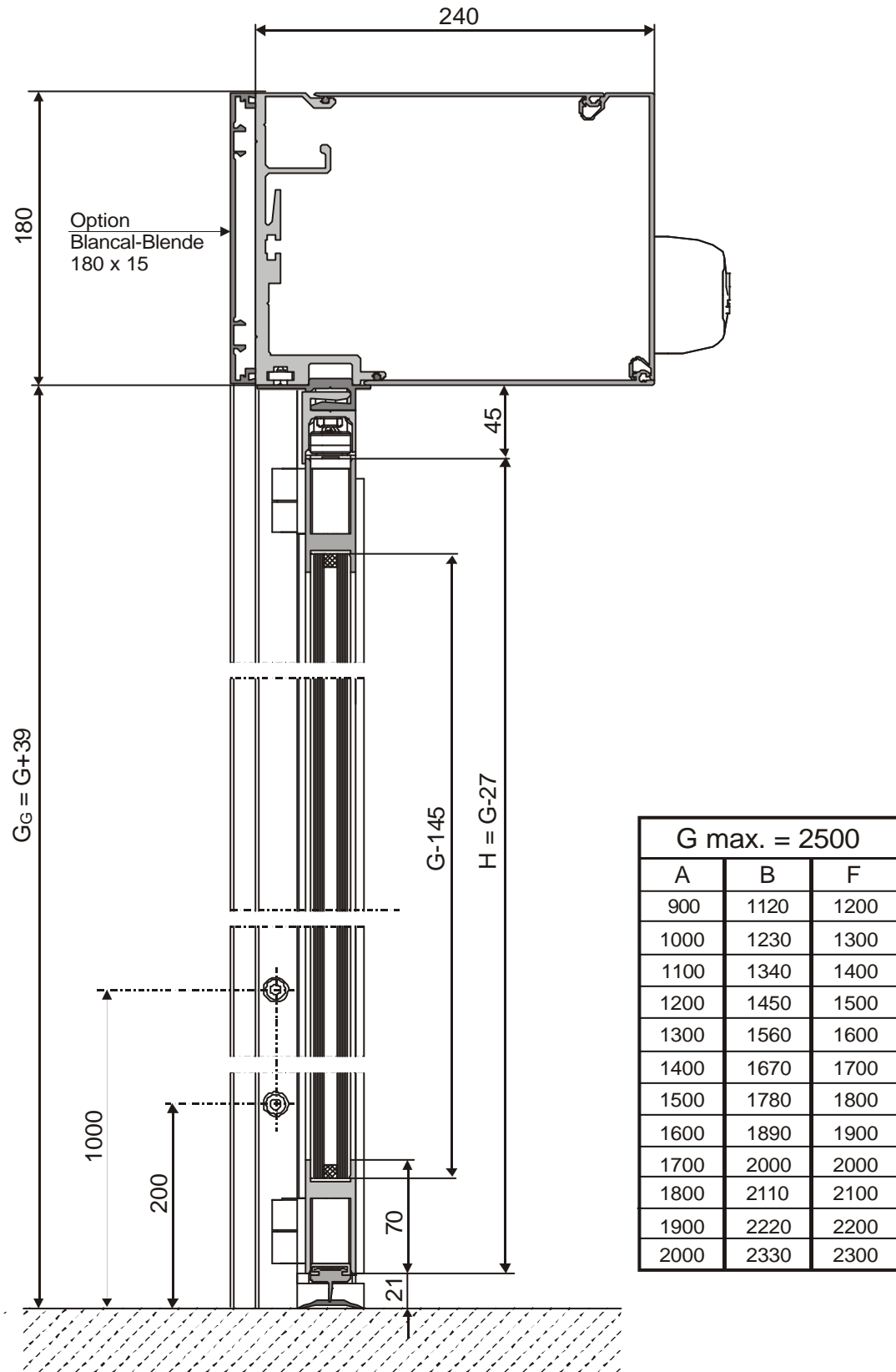
FBO 108 vertical section - lintel mounting



G max. = 2500		
A	B	F
900	1120	1200
1000	1230	1300
1100	1340	1400
1200	1450	1500
1300	1560	1600
1400	1670	1700
1500	1780	1800
1600	1890	1900
1700	2000	2000
1800	2110	2100
1900	2220	2200
2000	2330	2300

# Elevation / drawing of header

FBO 108 vertical section - header mounting

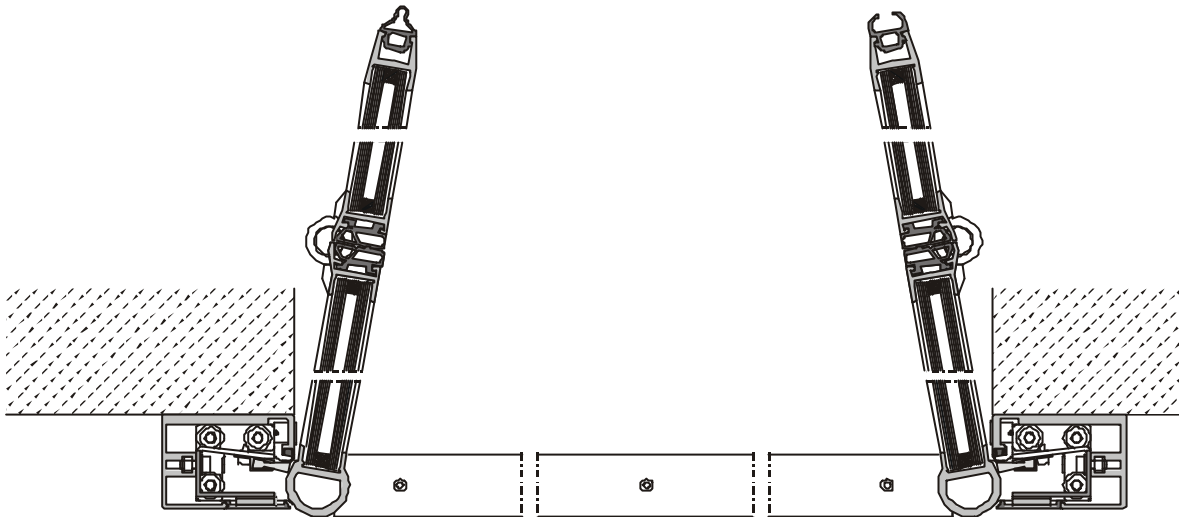




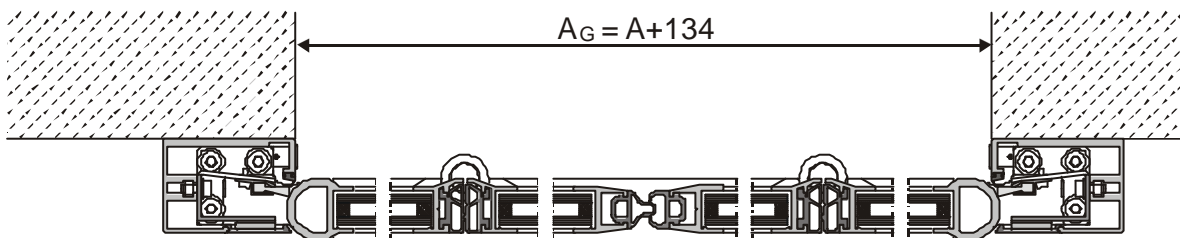
# Position of door leaves

FBO 108 horizontal section - lintel mounting

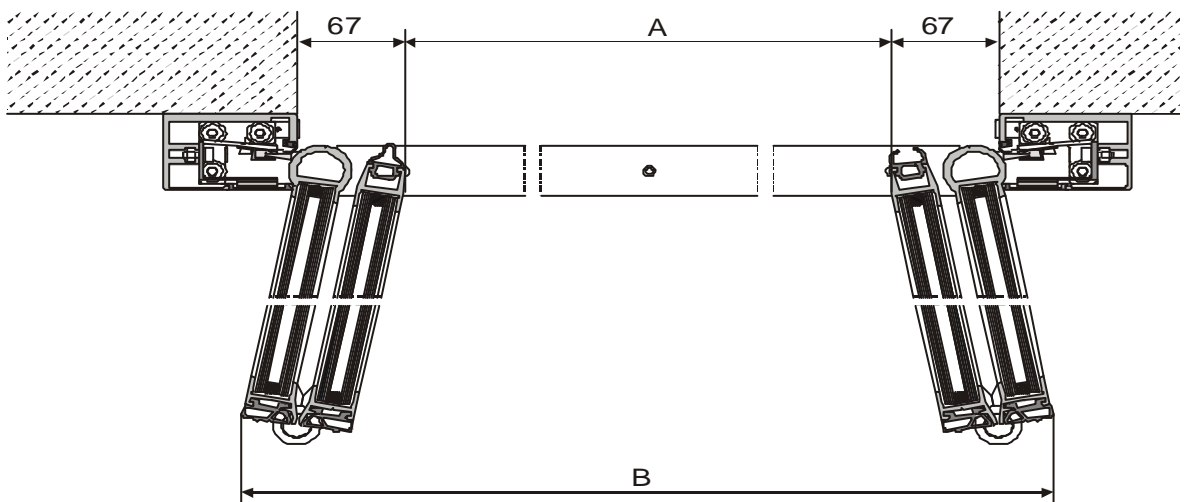
Door leaves opened in escape direction



Door leaves closed



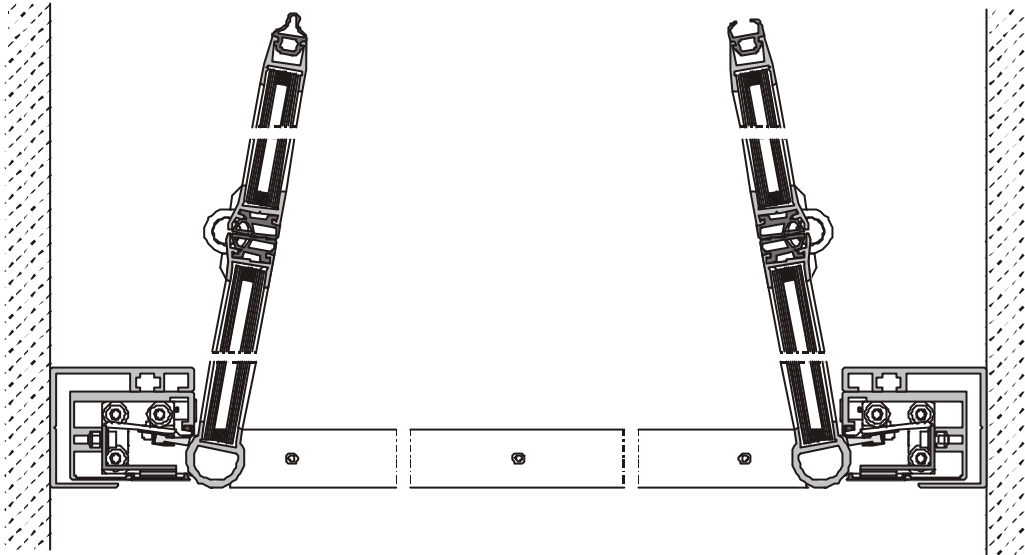
Door leaves open



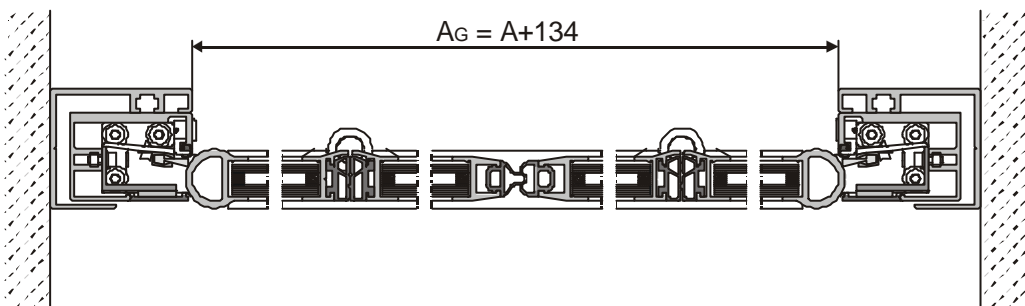
# Position of door leaves

FBO 108 horizontal section - header mounting

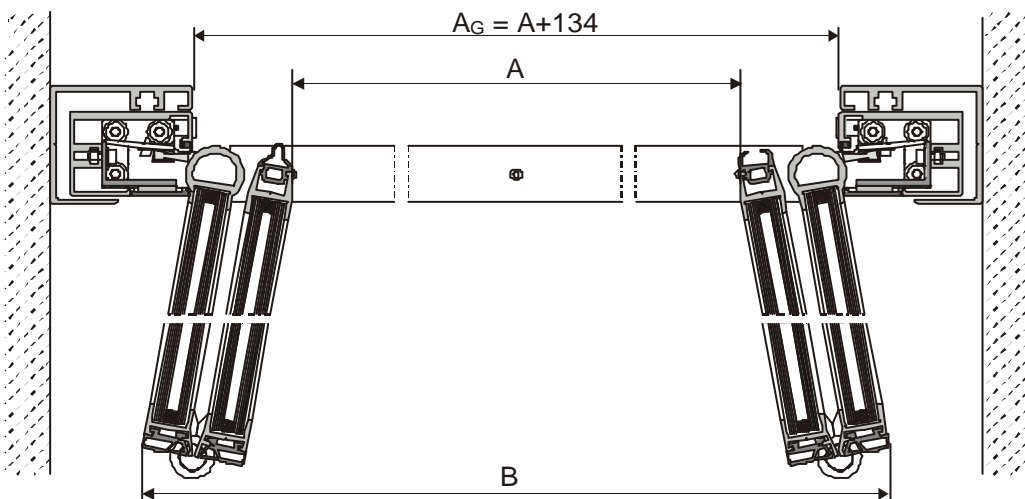
Door leaves opened in escape direction



Door leaves closed



Door leaves open



# 7 Installation instructions

The following procedure is recommended for installation of the record 16 FBO (Break-Out). The installation comprises:

- 7.1. Preliminary work
- 7.2. Alternatives for installation of operator and lateral supports
- 7.3. Installation of door leaves
- 7.4. Installation of control unit, options and casing

## 7.1 Preliminary work

1. Measurement of existing building dimensions  
passage width  $A_G$  ( $A_G = A + 138$ )  
passage height  $G_G$  ( $G_G = G + 39$ )
2. Check of floor level (highest point = starting position for lower edge of lateral support)
3. Clarify possible deficiencies with principal
4. Adjust jig from operator header and secure firmly in position

## 7.2 Alternatives for installation of operator and lateral supports

Version 1: Individual positioning of lateral supports

For **lintel mounting**, proceed **from Step 2**

1. For **header mounting**, first attach the two lateral equalizing profiles. In this one must take care that the distance from the beginning of the notch for the operator support up to the upper edge of the finished floor is equal to  $G$  mm.
2. Mark passage centre ( $A_G : 2$ )
3. Mark position of lateral supports:  
**(Header length  $F - 168\text{mm}$ ) : 2** : transfer this dimension to left and right from passage centre. This position marks the start of the left and right lateral supports. Formula for overlength operators:  
**( $F - \text{overlength (mm)} - 168\text{mm}$ ) : 2**  
Place lateral supports flush with passage width  $A_G$
4. Transfer upper fixing holes of both lateral supports
5. Fix left-hand lateral support at top
6. Place jig in operator mounts of both lateral supports
7. Fit right-hand lateral support
8. Insert jig in floor bearings

# Installation instructions

9. Fix lateral supports at bottom and centre. **They must be aligned 100% vertically.**
10. Screw header to mounts of lateral supports
11. Fix header on to structure. Install break-out sections and accessories. Cover mechanical parts before drilling and then clean thoroughly.

## Supplementary work on header mounting

12. Shorten the casing delivered with excess length of 20 mm to the required length.
13. If it is included in the scope of delivery, **shorten** the optional cladding on the side of the **operator** to the required length and clip it in.

Version 1: Pre-assemble operator and lateral supports and mark and fasten on site (only possible with lintel mounting)

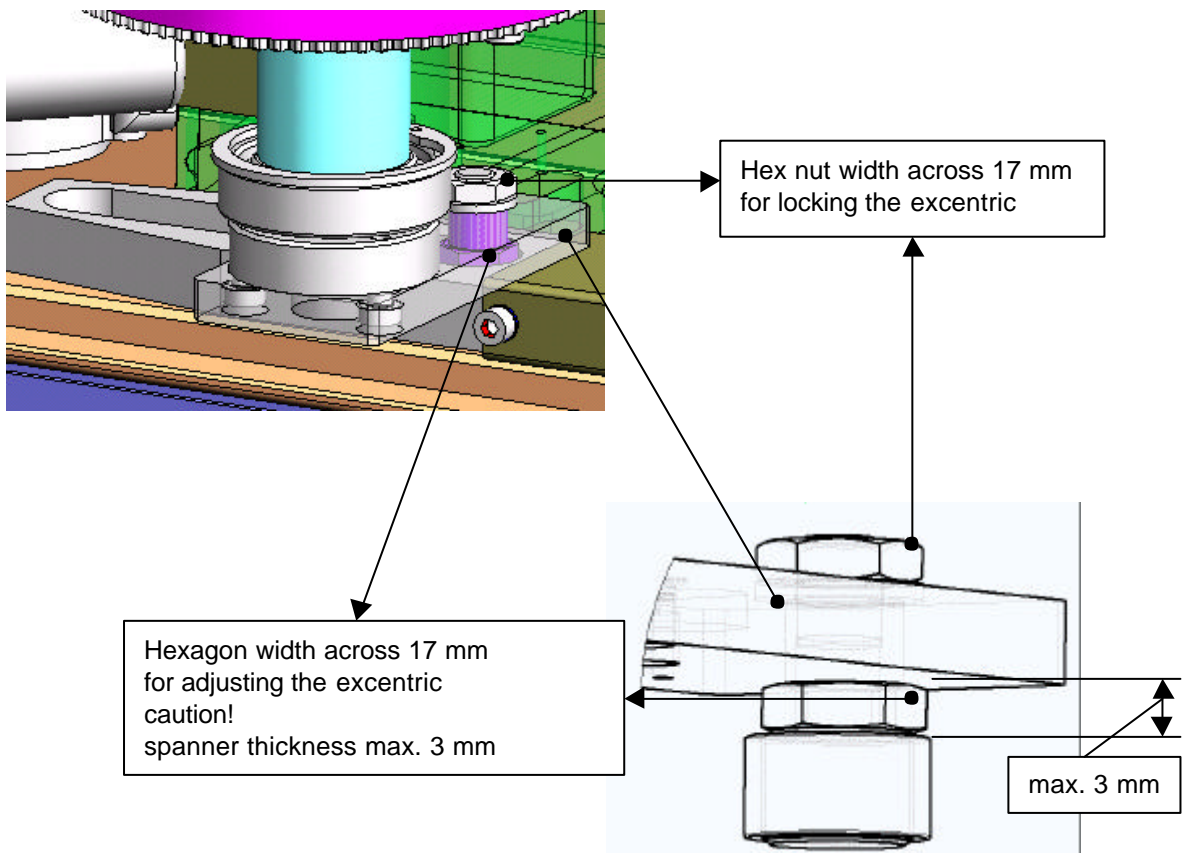
1. Mark passage centre ( $A_G : 2$ )
2. Mark position of lateral supports:  
**(Header length  $F - 168\text{mm}$ ) : 2** : transfer this dimension to left and right from passage centre. This position marks the start of the left and right lateral supports. Formula for overlength operators:  
**( $F - \text{overlength (mm)} - 168\text{mm}$ ) : 2**  
Set lateral supports flush with passage width  $A_G$
3. Transfer upper fixing holes of both lateral supports
4. Fix left-hand lateral support at top
5. Fit right-hand lateral support at top
6. Insert jig in floor bearings
7. Fix lateral supports at bottom and centre. **They must be aligned 100% vertically.**
8. Fix header on to structure. Install break-out sections and accessories. Cover mechanical parts for drilling and then clean thoroughly.

## 7.3 Installation of door leaves

1. Clean and degrease floor bearings
2. Remove guide roller from both door leaves
3. Insert door leaves in floor bearing and bolt onto swivel arm. Observe designations left (L) and right (R).
4. Fix semicircular rail to floor
5. Refit guide rollers of centre door leaves
6. Re-adjust door leaf height by setting the bearing bolt on the swivel arm. The bearings of the break-out arm must be tensioned, i.e. tightened to the axial bearing stop (tighten locknut).

# Installation instructions

7. Check setting and function of ball catches on break-out arm
8. Check VRR box and engagement of VRR bolt
9. Spray rubber parts with silicone spray
10. Adjusting the door leaves:  
If the door leaves do not close correctly at the closing edge, this can be corrected by adjusting an excentric at each pair of leaves according to the sketch below.  
Adjustment of the door leaves must be carried out with the doors closed.



## 7.4 Installation of control unit, options and casing

1. Connect BDE and actuating devices according to data sheet and schematic diagram
2. Install optional extras
3. Commissioning of door according to chapter 8
4. Fitting of casing:
  - clip casing together in correct sequence
  - place casing on operator

# 8 Commissioning & final work

## 8.1 Preparation

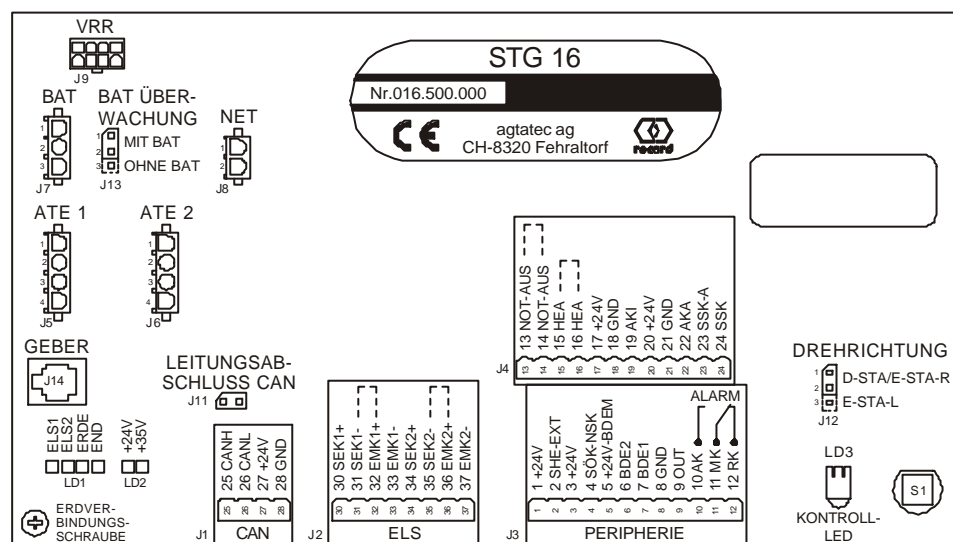


Read safety instructions (chapter 3) and observe!


1. Interrupt power supply with main switch or power plug
2. Leave door leaves open approx. 1 m
3. Check wiring according to general schematic diagram AS.E.108.001

## 8.2 Checking settings

1. Position jumpers for the required function (see 9.1 “Controls on STG”)
2. Check external jumpers for auxiliary units not connected, such as EMERGENCY STOP, HEA, ELS 1, ELS 2



## 8.3 Switching on power supply and calibration run

1. Switch on power supply
2. Check the configuration:
  - if function “folding door <1500mm” (for  $A \leq 1500\text{mm}$ ) or “folding door >1500mm” (for  $A \geq 1500\text{mm}$ ) on programming level 5 is selected
  - if the folding door is equipped with an Break-Out locking unit “double locking” must be selected on programming level 4
3.  A calibration run is performed automatically when switching on the supply voltage for the first time or following a hardware reset (see status messages) the door is braking for test during calibration the weight of door leaves
4. The door parameters are determined during the first 3 – 4 opening cycles

# Commissioning



The door must be obstructed in any way during the calibration run




In the event of uncontrolled door motion, interrupt the power supply immediately and disconnect battery

## 8.4 Checking LED's on the STG


Check LED's 1.....7 according to the table on page 13

## 8.5 Checking BDE functions and actuating devices

### BDE position

1. Door must open and remain open
2. Check movement characteristics
3. Door cannot be moved by hand when open
4. Manual operation is obtained by pressing  again and the door can be moved freely


### BDE position

1. Door must close
2. Check movement characteristics
3. Check locking if present (see page 17 for status message for wrong behaviour)  
In case of a failed locking device, on position "locked" the door always must open 10 to 20 cm.  
Check the correct function and configuration by particular disconnecting one locking device (Jumper J2 and J3 on double locking device 2xVRR16).
4. Pressing  initiates an SSK opening
5. SSK must release (if present)
6. AKI and AKA must not operate

### BDE position

1. AKI and SSK must operate
2. AKA must not be triggered when door is closed

### BDE position

1. AKI, AKA and SSK must operate
2. Check reduced opening width
3. Press  : door opens to reduced width

# Commissioning

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## 8.6 Programming door speeds and hold-open times

These functions are described on page 16

## 8.7 Configuration of specific customer settings

The possibilities are described in application information 16.802

All modifications must be entered on the configuration sheet (situated in the drive)

## 8.8 Checking safety

1. BDE position ✱
2. Open door (e.g. with AKI)
3. Cover a photocell (ELS) while closing. Door must re-open
4. The same check must be performed if a 2<sup>nd</sup> ELS or another safety device is present

## 8.9 Check automatic reverse

1. Obstruct door while closing → door must reverse. When the door next closes it moves at creep speed past the obstruction point.
2. Obstruct the door while opening → door stops for hold-open time and closes. When the door next opens it moves at creep speed past the obstruction point.
3. Obstruct the door while opening until the “Break-Out” mechanism unlocks. When the door next closes the “Break-Out” mechanism must lock automatically.



# Commissioning

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## 8.10 Checking BAT functions

Status 13 must be indicated on the BDE-E when removing the battery connection J7. If not indicated, jumper J13 is not at position 1 – 2 (see page 9)

## 8.11 Handing over to customer

1. Commissioning has been performed correctly according to this list
2. The system should be handed over to the customer



3. The functions and safety instructions must be explained with reference to the operating instructions
4. The customer should be given a copy of the operating instructions

# 9 Operating instructions

## 9.1 Controls on STG 16

### General:

The STG 16 operates with active HIGH level, i.e. a +24 V level must be applied to activate a function. Safety inputs are activated during interruptions. The signal ground (0 V) is connected to protective earth. This connection can be removed for test purposes with the earthing screw at bottom left.

### Jumpers:

- J11: (left) For CAN line termination (see AN1)
- J12: (right) Direction of rotation:  
jumper at position 1-2 for **D-STA** or **E-STA-R, 16 FTA, 16 FBO**  
(factory setting)  
jumper at position 2-3 for **E-STA-L**
- J13: (top) Battery monitoring:  
jumper at position 1-2 for systems **with** battery (factory setting)  
jumper at position 2-3 for systems **without** battery

### LED's (left to right):

- LED 1: (red) Photocell 1: lights when obstruction present
- LED 2: (red) Photocell 2: lights when obstruction present
- LED 3: (red) Ground: must light when earthing screw removed (bottom left).  
Otherwise an earth connection is present
- LED 4: (red)
- LED 5: (green) +24V: lights when mains or battery voltage present  
**Caution:** in the event of a power failure processor reset only takes place 1 sec. after this LED extinguishes
- LED 6: (green) +35 V: off for power failure
- LED 7: (red) Large control LED right for push-button operation

### Key:

This multifunction key has several functions. The selection of function is made with the aid of the neighbouring control LED according to the following table:

#### Release key while:

- 1<sup>st</sup> light pulse on LED 7
- 2<sup>nd</sup> light pulse on LED 7
- 3<sup>rd</sup> light pulse on LED 7
- 4<sup>th</sup> light pulse on LED 7
- 5<sup>th</sup> light pulse on LED 7
- 6<sup>th</sup> light pulse on LED 7
- 8<sup>th</sup> light pulse on LED 7

Press key approx. 13 seconds

#### Function:

- AKI
- Learn ELS
- Learn door parameters
- Configuration mode on
- BAT emergency reaction if no mains present
- Factory setting for redundancy module
- Factory setting of programming and configurations
- Hardware reset (new control start)

# Operating instructions

## 9.2 Functions of electronic BDE-E









### General:

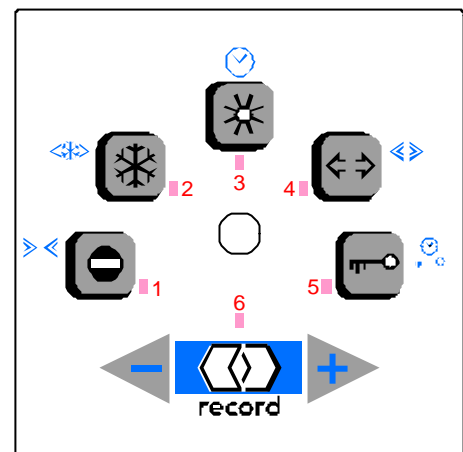
The electronic control unit BDE-E is a convenient input and output unit. It contains several virtual control levels. The normal level (1<sup>st</sup> level) contains the standard modes of operation.




All LED's light in sequence during the first few seconds after switching on the power supply (run light) and the last operating mode is then displayed.

### 1<sup>st</sup> level (operating modes)


#### Key functions:


-  One-way operation
-  Winter mode
-  Automatic mode
-  Continuously open
-  Locked
-  Programming
-  Programming increment down
-  Programming increment up







A LED indication is assigned to every key, with the exception of the two keys  and . The  LED is off in this level.




If the  key is pressed again in the „locked“ status, an SSK opening takes place

If the  key is pressed again in the „continuously open“ status, manual operation takes place

If the  key is pressed for approx. 5 secs. the control is restarted. The programmed data remain stored.

### 2<sup>nd</sup> level (control lock)

Entry to this level with key sequence:     
The  LED lights. The BDE is blocked.

Exit from this level with key sequence:     
This releases operation again.

# Operating instructions

## 3<sup>rd</sup> level (programming level)

Entry to this level with key sequence:



The  LED flashes slowly






Selection of following menus by key operation

The value is displayed while the key remains pressed

The **value display** takes place proportionately in max. 40 increments

Divided in 5 LED's from left to right, with each LED divided into 8 increments. The range from 0% to 100% is thereby covered.

Example: 75% winter opening



LED's    fully lit (corresponding to 3 times 8 increments)  
LED  has an on/off ratio of 6/2 (corresponding to 6 increments)  
LED  remains off. Therefore total 30 increments, i.e. 75%.

### Menu functions:

	Function	Range	Step width	Factory setting
➤➤	Closing speed	3 - 50 cm/s	1,25 cm/s	40 cm/s
⏪⏩	Winter opening width *	20 cm - 100%	approx. 1 cm steps	62,5%
🕒	Door hold-open time	0 - 20 s	0,5 s	1 s
🔑	Door hold-open time SSK	0 - 20 s	0,5 s	10 s
⏪⏩	Opening speed	3 - 70 cm/s	1,75 cm/s	50 cm/s

\* on „continuously open“ the door follows the ONLINE winter opening width

### **Setting:**

Following menu selection (the LED of the menu selected lights) the value can be changed by pressing the  or  keys several times

The current value is continuously displayed while this key is pressed

At the highest range limit the setting returns to the lowest value and vice-versa

The value is reset to the factory setting by pressing the  and  keys simultaneously

Exit from this level is made by pressing the  key briefly or if no operation is made for 3 minutes





# Operating instructions

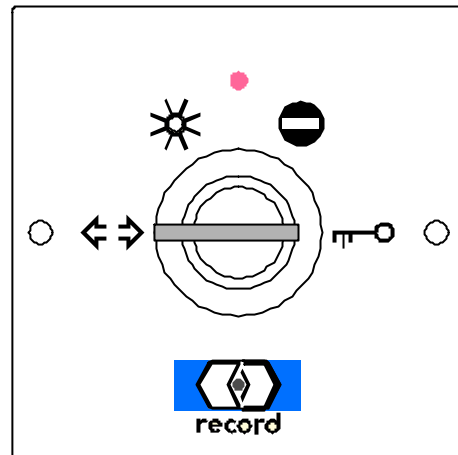
## 9.3 Functions of mechanical BDE-M

### General:

The mechanical control unit BDE-M is a simple input unit with a keyswitch. The key can be withdrawn at any position. Winter operation is possible if required.

### Modes of operation:

-  One-way operation (or winter)
-  Automatic mode
-  Continuously open
-  Locked



### Operating indication

The LED lights when mains or battery voltage is present

### Reset key

This hidden key is operated with a paper clip approx. 25 mm long. A small hole is provided for this purpose at the centre of the record logo.

If this key is pressed for approx. 5 seconds, the control unit starts completely new. The programmed data remain stored.

# 10 Status and fault signals

## Status level (display only)

In the event of irregularity change is made automatically from the operating mode level to the status level. Change is then made approx. every 5 seconds between status and operating mode level. No status display is given in the remaining levels. Characteristic of the status level are 2 or more rapidly flashing LED's of total 6 LED's. This permits a maximum of 58 different status numbers to be output. A status with „W“ is a warning, which is not followed by switching of the fault output relay. The status is deleted in various ways according to the detailed description (resetting).

LED's on BDE-E:

1 ⊗ 32	2 ⊗ 16	3 ⊗ 8	4 ⊗ 4	5 ⊗ 2	6 ⊗ 1	LED no status	Remarks
				x	x	03	AKI sensor active longer than 60 s
			x			04W	Manual operation
			x		x	05	AKA sensor active longer than 60 s
			x	x		06	Unlocking error
		x			x	09	Battery fuse blown
		x		x		10	Locking error; door not closed
		x	x			12	Battery defective (voltage too low)
		x	x	x		14	Locking n/o contact defective
	x		x			20 *	Door leaf interception error
	x	x		x		26	Overload at FEM outputs
	x	x	x		x	29	TOS is not locked in the "locking" mode
	x	x	x	x		30	TOS is locked in the "automatic" mode
	x	x	x	x	x	31	EMERGENCY STOP button operated
x					x	33	Error ELS 1
x				x		34	Error ELS 2
x			x		x	37	Wrong motor current
x			x	x		38	Excess temperature motor 1
x			x	x	x	39	Overload on +24 V supply
x		x				40	Excess temperature motor 2
x		x			x	41	Motor 1 - thermal sensor defective
x		x		x		42	Motor 2 - thermal sensor defective
x		x		x	x	43	Incremental generator defective
x		x	x			44W	Motor current time product high
x		x	x		x	45	Motor current time product too high
x		x	x	x		46	Control unit defective

\* These status numbers only exist in CO48 systems

# Status and fault signals

## Status level (continued)

LED' on BDE-E:

1 ⊗ 32	2 ⊗ 16	3 ⊗ 8	4 ⊗ 4	5 ⊗ 2	6 ⊗ 1	LED no status	Remarks
x		x	x	x	x	47	Ext. safety active longer than 60 s
x	x					48	NSK or SÖK active
x	x				x	49 *	Alarm CO48 Ventouse
x	x			x		50	Control unit CPU2 is faulty
x	x		x	x		54W	Calibration run
x	x		x	x	x	55	Power failure
x	x	x		x		58	FEM connection interrupted
x	x	x		x	x	59	ELS sensor active longer than 60 s
x	x	x	x			60	Parameter memory defective (EEPROM)
x	x	x	x		x	61	SSK - sensor active longer than 60 s
x	x	x	x	x		62	BDE has no priority

## Detail description of status indications

### General:

A status can usually be deleted by pressing the key for 5 s (= reset). This produces a new start in the control unit.

If, however, the cause of the fault has not been eliminated, the status message will appear again if the fault occurs again.

The causes of faults are listed with decreasing probability in the following list. The fault may be suspected with the least probability in the STG at the end of the faults.

Status 03: AKI sensor active longer than 60 s  
Automatic resetting, provided in order, or by service fitter

Status 04: Manual control

Status 05: AKA sensor active longer than 60 s  
Automatic resetting, provided in order, or by service fitter

Status 06: Unlocking fault  
Possibly lock jammed  
Reset by service fitter

# Status and fault signals

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Status 09:	Battery fuse blown Jumper J13 possibly missing if no battery present Fuse possibly defective or cable interrupted Reset by service fitter
Status 10:	Locking fault Possibly obstruction in door Automatic resetting provided door is closed and locking possible
Status 12:	Battery defective (voltage too low) Battery exchanged by service fitter Automatic resetting
Status 14:	Locking n/o contact defective VAK contact possibly wrongly adjusted or interrupted Reset by service fitter
Status 20	Door leaf interception error Buffers (end stops) are possibly adjusted the wrong way Possible wire break at the magnet Reset by pressing the program key "record" for 5 sec.
Status 26	Overload at FEM outputs Reset by service fitter Remove overload and generate reset with STG key
Status 29	TOS is not locked in the "locked" mode Automatic reset if ok or service fitter
Status 30	TOS is locked in the "automatic" mode Automatic reset if ok or service fitter
Status 31:	EMERGENCY STOP operated Reset by resetting EMERGENCY STOP key
Status 33:	Fault ELS 1 during ELS learning cycle Door possibly too wide or ELS sensor dirty ELS cable or ELS head possibly defective Reset by cleaning or service fitter
Status 34:	Fault ELS 2 see status 33
Status 37:	Defective motor current STG or ATE defective Reset by service fitter
Status 38:	Excess temperature motor 1 Manual control effective Door leaves possibly too heavy or there is too much friction Reset by motor cooling or by service fitter



# Status and fault signals

- Status 39: Overload on +24 V supply  
Possibly too many external units connected  
Reset by service fitter
- Status 40: Excess temperature motor 2  
see status 38
- Status 41: Motor 1 - thermal sensor defective  
Motor possibly not connected  
Sensor in motor possibly defective or cable broken in sensor lead  
Reset by service fitter
- Status 42: Motor 2 - thermal sensor defective  
see status 41
- Status 43: Incremental generator defective  
Generator cable possibly not connected or cable broken in lead  
Motor possibly blocked  
Reset by service fitter
- Status 44: Motor current time product high  
Possibly too much traffic or door leaves too heavy  
Minimum hold-open time extended to approx. 4 s  
Automatic resetting by cooling
- Status 45: Motor current time product too high  
Possibly too much traffic with door leaves too heavy  
Hold-open time extended to approx. 20 s  
Automatic resetting by cooling
- Status 46: Control unit defective  
Includes the following individual faults:  
EPROM, RAM, Watchdog, I<sub>max</sub>, I<sub>maxT</sub>, difference on SHE-EXT  
Reset by service fitter
- Status 47: External safety sensor active longer than 60 s  
Automatic resetting, if in order, or by service fitter
- Status 48: Emergency fail close contact or emergency opening contact active  
(interrupted)  
Automatic resetting if contact recloses
- Status 49: Alarm CO48 Ventouse  
Interruption sandow switch or interruption at the switch  
Close Ventouse, tighten sandow or adjust switch  
Reset is carried out automatically
- Status 50: Control unit CPU2 is faulty  
Reset by service fitter

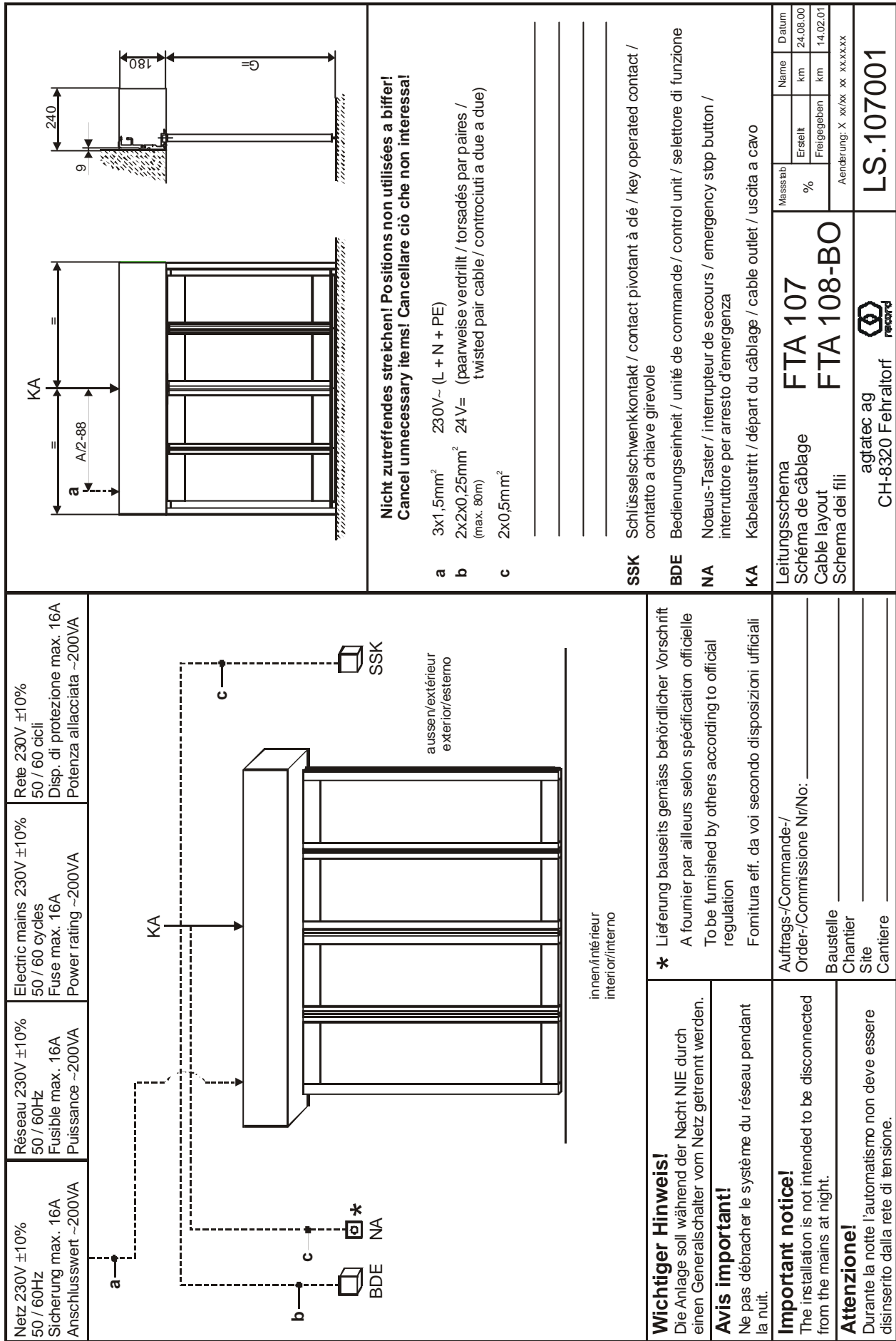
# Status and fault signals

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Status 54:	Calibration run Wait until door is closed Automatic resetting after completion of 3 openings
Status 55:	Power failure Battery operation if battery present Automatic resetting when power restored
Status 58	FEM connection interrupted The connection did exist but is now interrupted Check the cable, FEM may also be faulty
Status 59:	ELS sensor active longer than 60 s Automatic resetting, if in order, or by service fitter
Status 60:	Parameter memory defective (EEPROM) Change control unit Reset by service fitter
Status 61:	SSK sensor active longer than 60 s Automatic resetting, if in order, or by service fitter
Status 62:	BDE has no priority, since higher-level signal present (e.g. time switch) Automatic resetting by releasing BDE key

# 11 Abbreviations

A	A	Width of passage	N	NET	Power supply
	AKA	Actuating contact „outside“		NSK	Emergency fail close contact
	AKI	Actuating contact „inside“			
	AMP	Lamp	O	OUT	Output
	APA	actuating switch for pharmacies		OVA	Optical lock indicator
	APD	Pushbutton for pharmacies	R	RAD-A	Radar „outside“
	APR	locking bar for pharmacies		RAD-I	Radar „inside“
	APS	safety device for pharmacies		RED	Redundant module
	AS	Connection or general schematic diagram	S	SAA	interlock control “exit actuation blocked”
	ATE	Drive unit		SAG	Control unit
	ATM	Drive module		S-AUS	Interlock control
B	BAT	Battery-pack		SEA	Interlock control “entrance actuation blocked”
	BDE	Control unit		SEK	Transmitter head
	BDE-E	Control unit electronic		SHE	Safety element, external
	BDE-M	Control unit mechanical		SÖK	Emergency opening contact
	BDE-R	Control unit redundant		SPS	Stored program control SPC
	BS	BDE with lock		SSA	Slidebar operator
C	CAN-H	Serial interface		SSK	Key-operated contact
	CAN-L	Serial interface		STA	Sliding door drive
	CO48	special standard in France		STD	Socket
	CPU	microprocessor		STG	Control unit
D	D-STA	Double sliding door drive		STM	Control module
	DUO	heavy door operator		STP	Control p.c.b.
E	EEPROM	parameter storage		SUR-A	Time switch contact “exit mode”
	ELS	Light barrier		SUR-V	Time switch contact “locking mode”
	EMK	Receiver head	T	THS	Thermostatic switch
	EPROM	program storage		TOS	Break-out system
	ES	Electrical connection diagram		TOWA	Two-way traffic
	E-STA	Single sliding door drive		TOZ	Door hold-open time
	E-STA-L	Single sliding door drive left		TSA	Telescopic sliding door operator
	E-STA-R	Single sliding door drive right		TÜV	Industrial inspectorate
F	F	Length of header	U	UMR	Guide pulley
	FEM	Extended functions module		µP	Microprocessor
	FIRST	redundant operator	V	VAK	Lock indicating contact
G	G	Height of passage		VAL	Locking alarm
	GTR	Gearbox		VL	Wiring list
H	HEA	Manual unlocking „from outside“		VRR	Locking device
	HEI	Manual unlocking „from inside“	Z	ZLP	Supplementary printed circuit board
	HES	Manual unlocking switch			
K	KA	Cable exit			
L	LED	Light-emitting diode			
	LS	Wiring diagram			
M	MOT	Motor			
	MP	General installation plan			



Netz 230V ±10%  
50 / 60Hz  
Sicherung max. 16A  
Anschlusswert ~200VA

Réseau 230V ±10%  
50 / 60Hz  
Fusible max. 16A  
Puissance ~200VA

Electric mains 230V ±10%  
50 / 60 cycles  
Fuse max. 16A  
Power rating ~200VA

Rete 230V ±10%  
50 / 60 cicli  
Disp. di protezione max. 16A  
Potenza allacciata ~200VA

**Nicht zutreffendes streichen! Positions non utilisées a biffer!**  
**Cancel unnecessary items! Cancellare ciò che non interessa!**

**a** 3x1,5mm<sup>2</sup> 230V~ (L + N + PE)  
**b** 2x2x0,25mm<sup>2</sup> 24V= (pairweise verdreht / torsadés par paires / twisted pair cable / controciuti a due a due)  
**c** 2x0,5mm<sup>2</sup>

**SSK** Schlüsselschwenkkontakt / contact pivotant à clé / key operated contact / contatto a chiave girevole

**BDE** Bedienungseinheit / unité de commande / control unit / selettore di funzione

**NA** Notaus-Taster / interrupteur de secours / emergency stop button / interruttore per arresto d'emergenza

**KA** Kabelaustritt / départ du câblage / cable outlet / uscita a cavo

**Wichtiger Hinweis!**  
Die Anlage soll während der Nacht NIE durch einen Generalschalter vom Netz getrennt werden.

**Avis important!**  
Ne pas débrancher le système du réseau pendant la nuit.

**Important notice!**  
The installation is not intended to be disconnected from the mains at night.

**Attenzione!**  
Durante la notte l'automatismo non deve essere disinserito dalla rete di tensione.

**\*** Lieferung bauseits gemäss behördlicher Vorschrift  
A fournir par ailleurs selon spécification officielle  
To be furnished by others according to official regulation  
Fornitura eff. da voi secondo disposizioni ufficiali

Auftrags-/Commande-/  
Order-/Commissione Nr/Nr/No: \_\_\_\_\_

Baustelle  
Chantier  
Site  
Cantiere

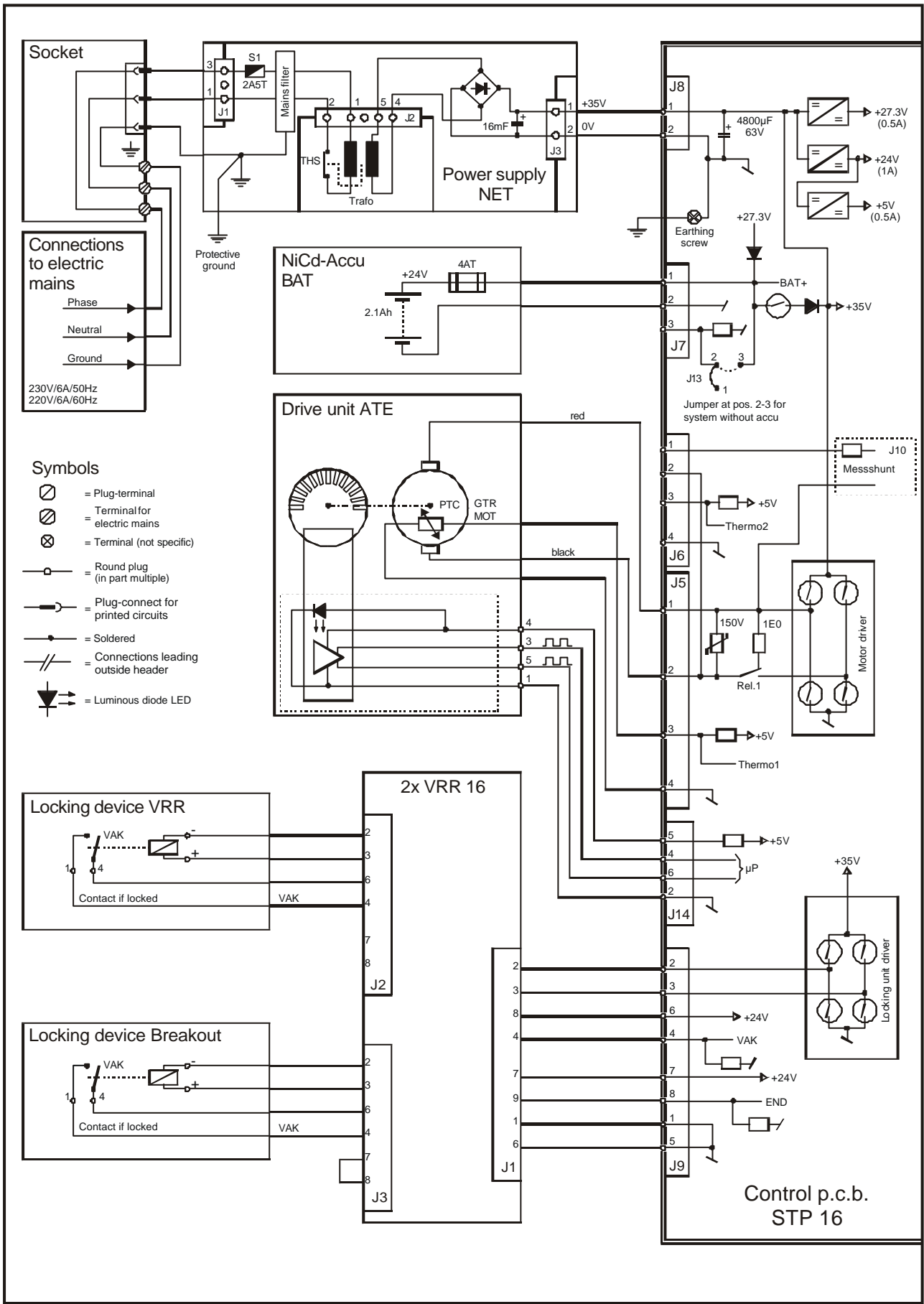
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	Freigegeben	14.02.01
Änderung: X xx/xx xx xx.xx.xx		

Leitungsschema  
Schéma de câblage  
Cable layout  
Schema dei fili

**FTA 107**  
**FTA 108-BO**

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CH-8320 Fehraltorf

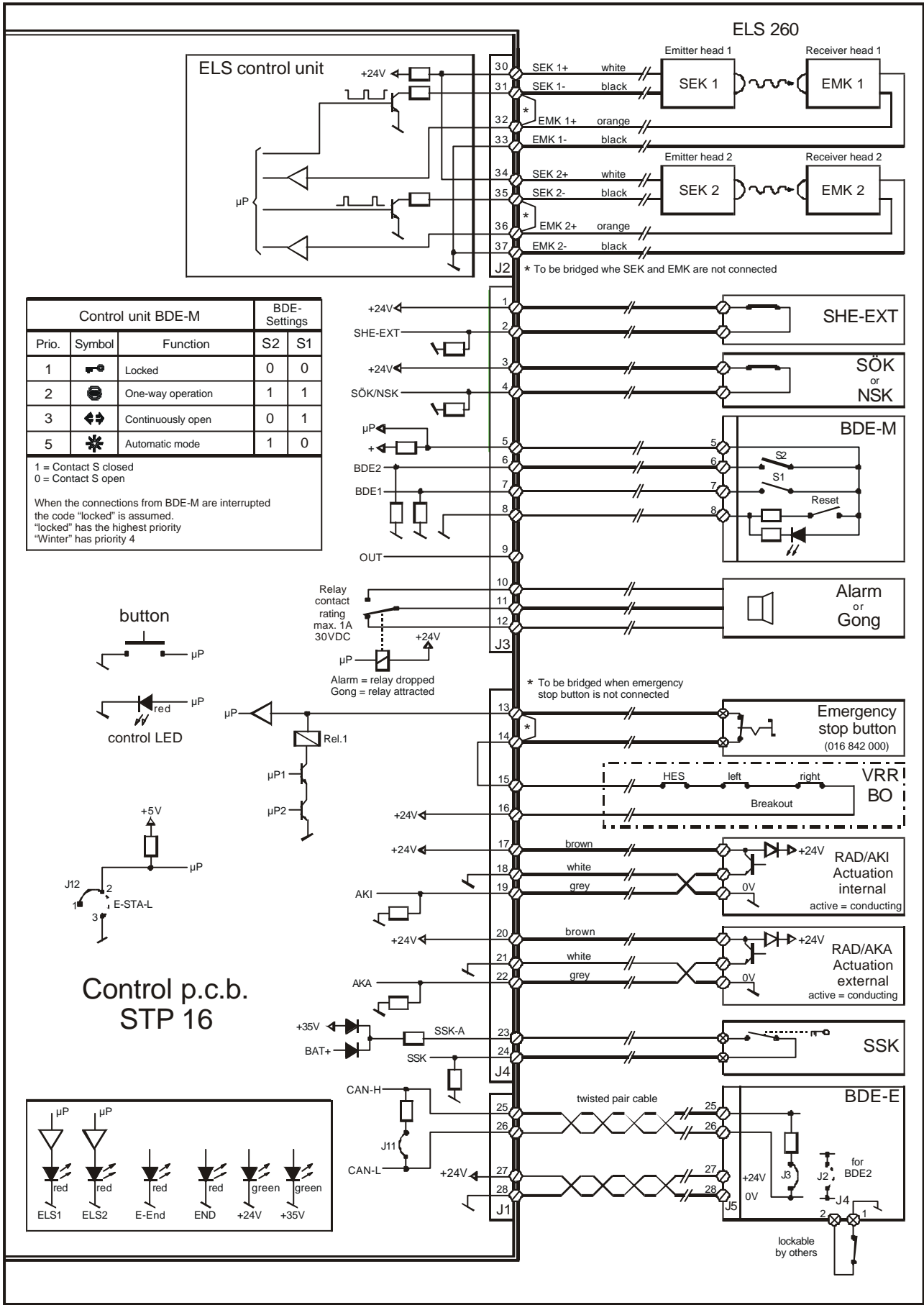
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agtatec ag  
CH-8320 Fehraltorf



Gezeichnet	km	12.03.99	Art.-Nr: 16.812	Sheet 1 of 2	x xx/xx xx xx.xx.xx
Geprüft	khz	12.03.99	<b>AS.E.108.001</b>		
Freigegeben	km	14.12.00			



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CH-8320 Fehraltorf



Gezeichnet	km	12.03.99	Art.-Nr: 16.812	Sheet 2 of 2	x xx/xx xx xx.xx.xx
Geprüft	khz	12.03.99	AS.E.108.001		
Freigegeben	km	14.12.00			

AS.E.108.001

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