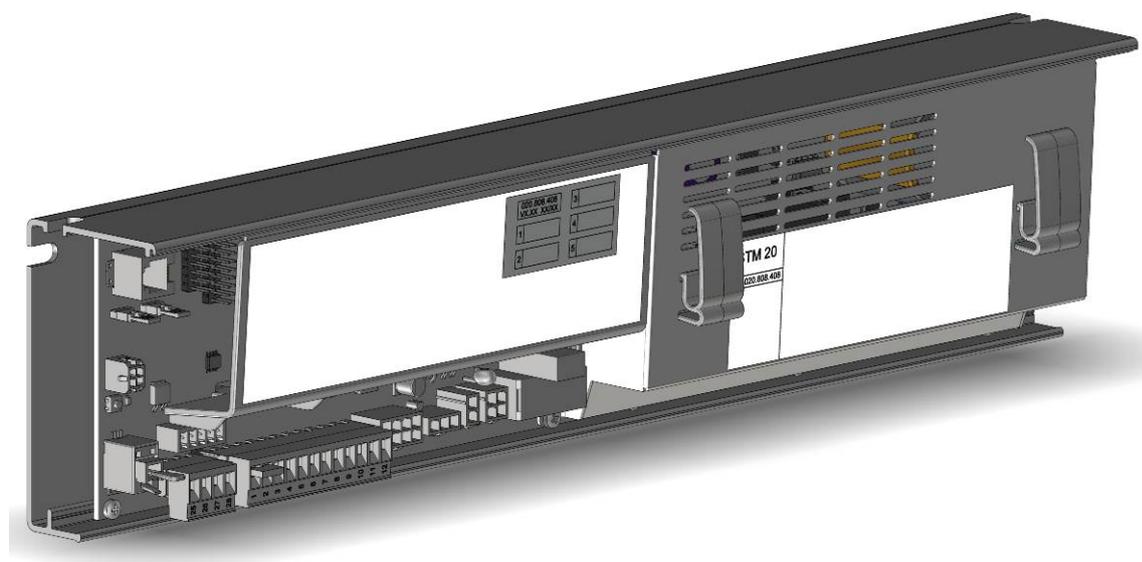


## Control

## Sliding door system 20



© Copyright agtatec AG 2011

**B6**

**Manufacturer**  
agtatec ag  
Allmendstrasse 24  
CH-8320 Fehraltorf

**Service-Hotline**

**Distributor**

Art. Nr. 102-020401135

## Table of contents

<b>1.</b>	<b>General</b> .....	<b>4</b>
1.1.	Document identification .....	4
1.2.	Structure of the documentation .....	4
1.2.1.	Overview of each chapter.....	4
1.3.	Instruction manual .....	5
<b>2.</b>	<b>Control module STM 20</b> .....	<b>6</b>
2.1.	Controlling elements on STM 20 .....	6
2.2.	Type plate STM 20 .....	7
2.3.	Wiring diagram control module STM 20 .....	9
<b>3.</b>	<b>Control module STM 20 RED/DUO</b> .....	<b>11</b>
3.1.	Controlling elements on STM 20 RED/DUO.....	11
3.2.	Applications .....	11
3.2.1.	Escape and rescue routes as RED installation .....	12
3.2.2.	Heavy door leafs as DUO installation.....	12
3.3.	Type plate STM 20 RED/DUO.....	12
3.4.	Wiring diagram control module STM 20 RED/DUO.....	15
3.5.	Components RED/DUO system .....	17
3.5.1.	Overview of the additional components.....	17
<b>4.</b>	<b>Control module STM 21</b> .....	<b>18</b>
4.1.	Controlling elements on STM 21 .....	18
4.2.	Application field of control module STM 21 .....	19
4.2.1.	Typical range of applications.....	19
4.2.2.	Unavailable applications.....	19
4.3.	Type plate STM 21 .....	19
4.4.	Wiring diagram control module STM 21 .....	21
<b>5.</b>	<b>Control module STM 21 RED</b> .....	<b>23</b>
5.1.	Controlling elements on STM 21 RED.....	23
5.2.	Applications .....	23
5.2.1.	Escape and rescue routes as RED installation .....	24
5.3.	Type plate STM 21 RED.....	24
5.4.	Wiring diagram control module STM 21 RED.....	26
5.5.	Components RED system .....	28
5.5.1.	Overview of the additional components.....	28
<b>6.</b>	<b>Control module STM 22 RED/DUO</b> .....	<b>29</b>
6.1.	Controls on STM 22 RED/DUO .....	29

6.2.	Applications .....	30
6.2.1.	Escape and rescue routes as RED installation .....	30
6.2.2.	Heavy door leafs as DUO installation .....	30
6.3.	Type plate STM 22 RED/DUO.....	30
6.4.	Wiring diagram control module STM 22 DUO/RED.....	33
6.5.	Components RED/DUO installations.....	35
6.5.1.	Overview of the additional components.....	35

## Index

<b>A</b>		<b>I</b>	
Application field of control module STM 21 .....	19	Instruction manual .....	5
Applications .....	11, 23, 30	<b>O</b>	
<b>C</b>		Overview of each chapter .....	4
Components RED system.....	28	Overview of the additional components .....	17, 28, 35
Components RED/DUO installations .....	35	<b>S</b>	
Components RED/DUO system .....	17	Structure of the documentation .....	4
Control module STM 20 .....	6	<b>T</b>	
Control module STM 20 RED/DUO .....	11	Type plate STM 20 .....	7
Control module STM 21 .....	18	Type plate STM 20 RED/DUO.....	12
Control module STM 21 RED.....	23	Type plate STM 21 .....	19
Control module STM 22 RED/DUO .....	29	Type plate STM 21 RED .....	24
Controlling elements on STM 20 .....	6	Type plate STM 22 RED/DUO.....	30
Controlling elements on STM 20 RED/DUO.....	11	Typical range of applications.....	19
Controlling elements on STM 21 .....	18	<b>U</b>	
Controlling elements on STM 21 RED .....	23	Unavailable applications.....	19
Controls on STM 22 RED/DUO .....	29	<b>W</b>	
<b>D</b>		Wiring diagram control module STM 20.....	9
Document identification.....	4	Wiring diagram control module STM 20 RED/DUO .....	15
<b>E</b>		Wiring diagram control module STM 21.....	21
Escape and rescue routes as RED installation .....	12, 24, 30	Wiring diagram control module STM 21 RED.....	26
<b>G</b>		Wiring diagram control module STM 22 DUO/RED .....	33
General.....	4		
<b>H</b>			
Heavy door leafs as DUO installation .....	12, 30		

## 1. General

### 1.1. Document identification

Name: B6\_Control\_SYS20\_EN\_V1.2.doc  
Version: V1.2  
Serial no.: 102-020401135

### 1.2. Structure of the documentation

The documentation of the system 20 is divided into different manuals, in order to reduce file size and to simplify the handling.

The structure of the document is as follows (B1 =book 1):

B1\_General  
B2\_Assembly STA  
B3\_Assembly TSA  
B4\_Assembly TOS  
B5\_Options  
**B6\_Control**  
B7\_Commissioning  
B8\_Annex  
B9\_Assembly and Start-Up FTA/FBO

#### 1.2.1. Overview of each chapter

Chapter	Content
B1_General	General Safety instructions Preparations Technical data General plans
B2_Assembly STA	General Installation drive module D-STA/E-STA Installing running gear D-STA/E-STA Installing door leale D-STA/E-STA Installation of the drive unit D-STA/E-STA
B3_Assembly TSA	General Floor tracks / Door leaf guides Profile system D-TSA/E-TSA – Overview Attaching and adjusting carriages Installing slow running plane D-TSA / E-TSA Installing fast running plane D-TSA / E-TSA Attaching drive unit set D-TSA / E-TSA Profile system D-TSA/E-TSA – Overview Installing fast running plane D-TSA / E-TSA

B4_Assembly TOS	General TOS installations – for escape and rescue routes Mounting profile and tracks Mounting and setting the side leaves Locking Electrical connections
B5_Options	General Locking Installation of CO48 Extended function module Battery / Accumulator Operator casing Fanlight Protective screen
<b>B6_Control</b>	<b>General</b> <b>Control module STM 20</b> <b>Control module STM 20 RED / DUO</b> <b>Control module STM 21</b> <b>Control module STM 21 RED</b> <b>Control module STM 22 RED / DUO</b>
B7_Commissioning	General Principles for commissioning The CAN-bus BDE-D Operating unit Operating instructions Easy-Programmer EPC 903 Start-Up Commissioning of systems Parameter explanations
B8_Annex	General Module types cladding height 200 mm Drive module Drawings Article list
B9_Assembly and Start-Up FTA/FBO	General Technical Data Elevation/drawing of header FTA/FBO Installation FTA/FBO 20 Parameter Options

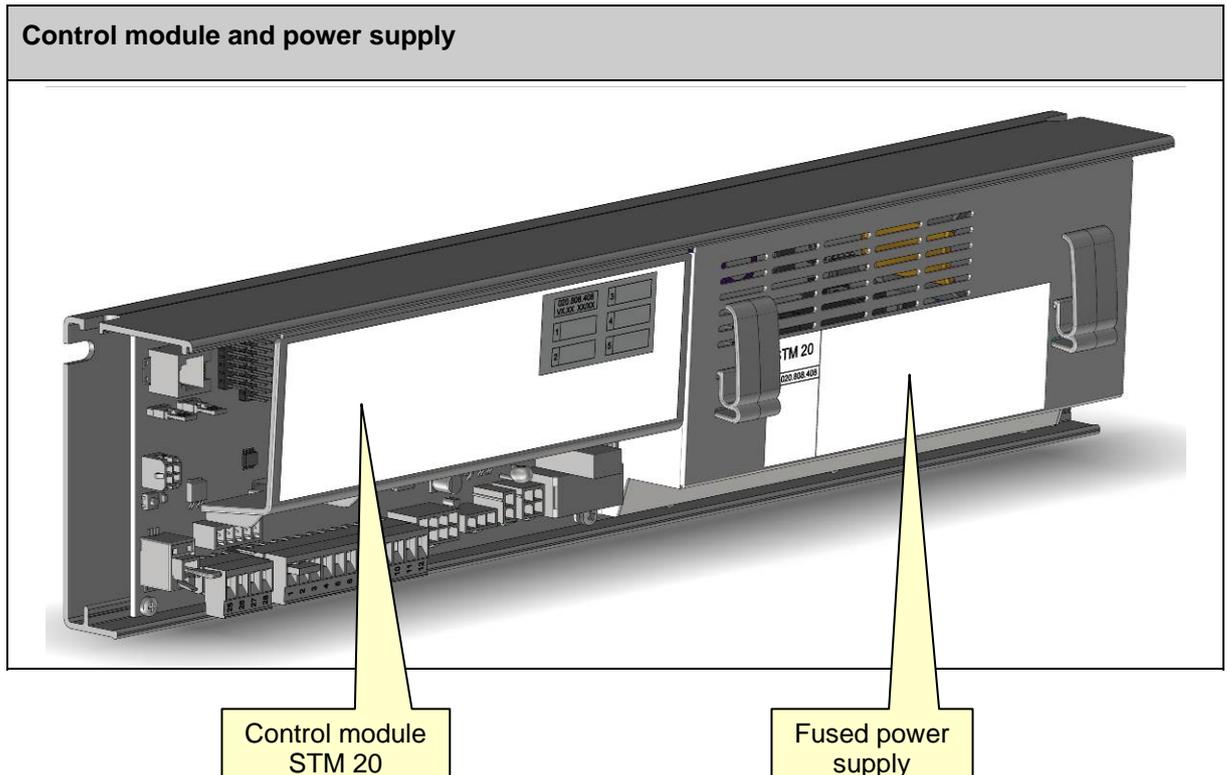
### 1.3. Instruction manual

After the system installation, the instructions have to be stored in an accessible and dry place.

## 2. Control module STM 20

### 2.1. Controlling elements on STM 20

Control module STM 20 works with an active HIGH level. That means that a minimum of +24V is required to activate a function. Safety functions of inputs are activated in case of interruption. 0V is connected to the ground. This connection can be interrupted for test reasons by use of the ground screw, located next to terminal 12. LED 2 (red) comes on.



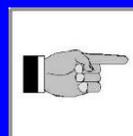
**DANGER**



#### **ELECTRIC SHOCK**

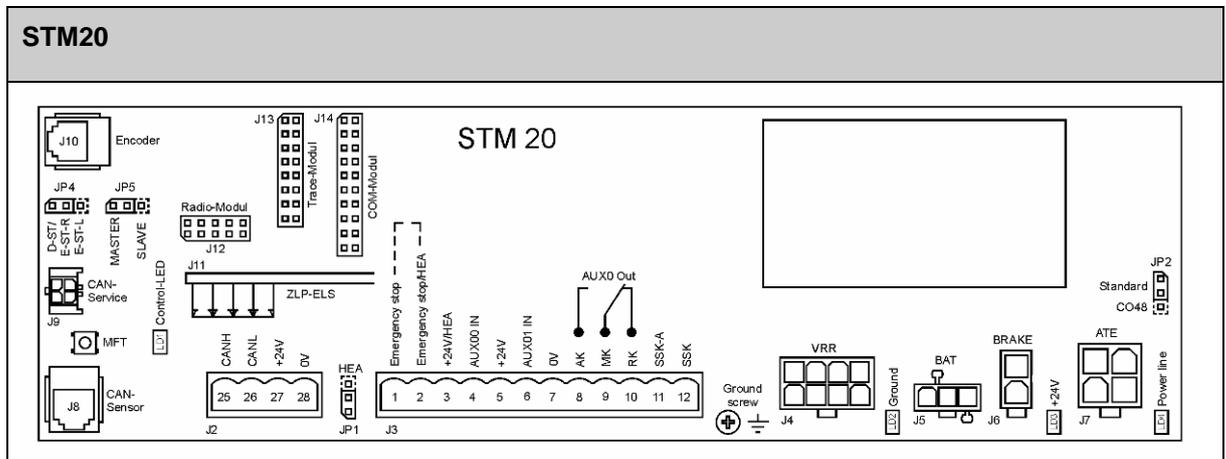
- Electric shock, combustion, death when touching the power supply without protection cover
  - Before opening the metallic cover of the power supply unit, disconnect it from the mains
  - The installation may only be connected to the mains again, **after** the protection cover has been closed again

**NOTE**



The STM 20 control module has been tested after ISO standard 13849-1:2006, category 2 PLc.

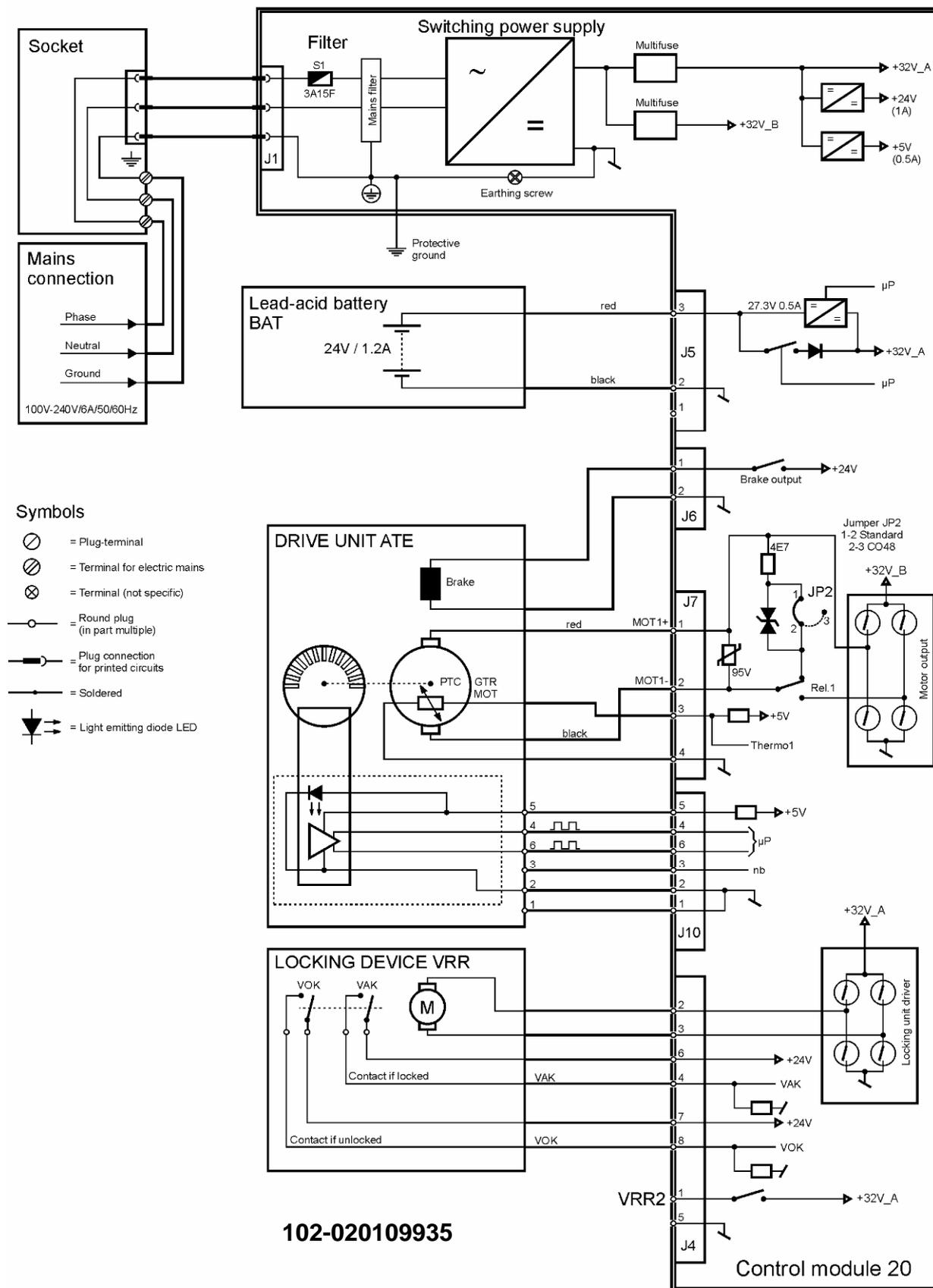
## 2.2. Type plate STM 20

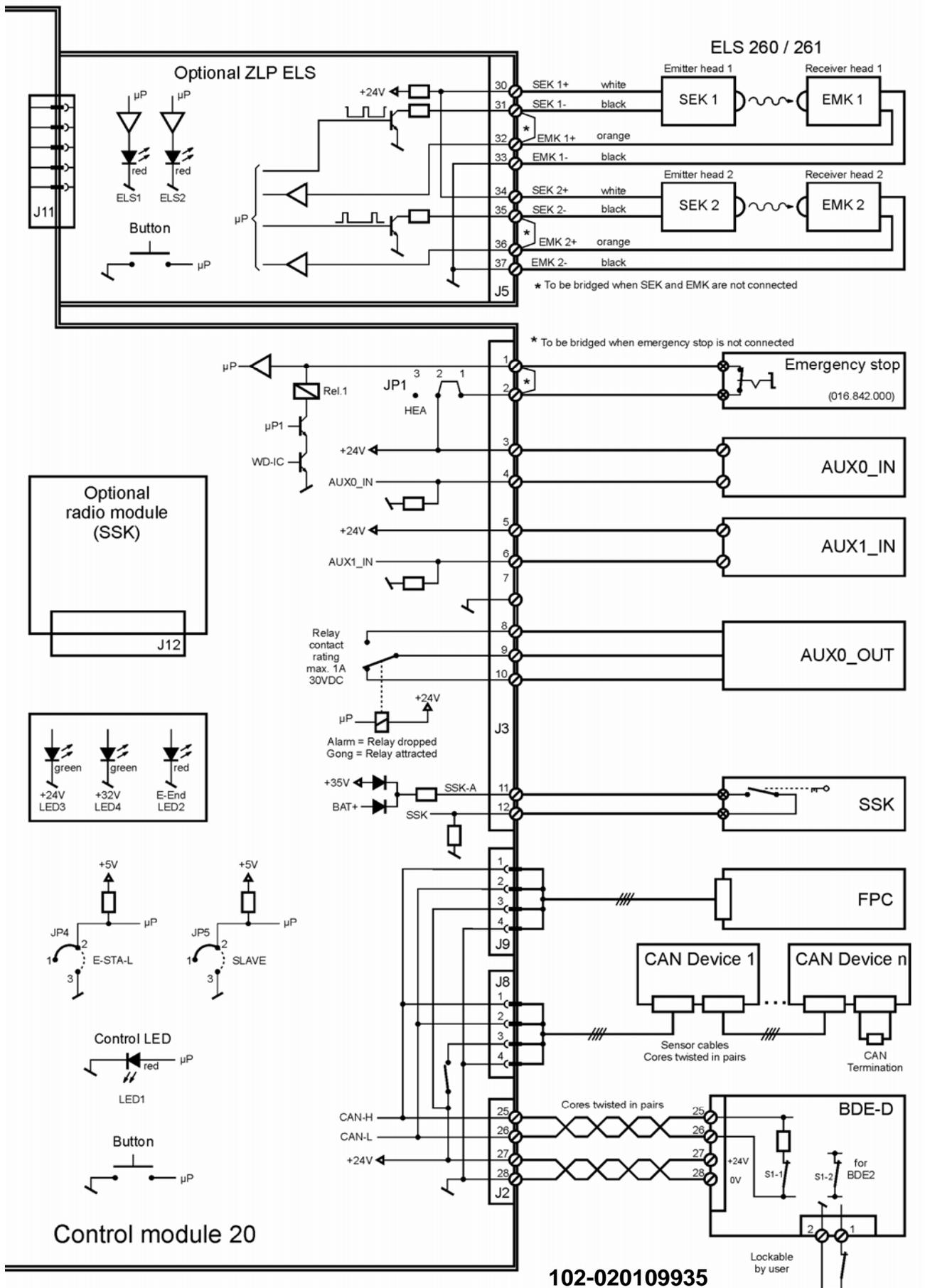


Jumper		Change of function
<b>JP1</b>	Jumper on HEA	Allows emergency stop and HEA to be connected in series: <ul style="list-style-type: none"> <li>HEA → 3-2</li> <li>Emergency stop → 2-1</li> </ul>
<b>JP2</b>	Standard / CO48	Influences motor-driven braking function in case of power failure (weaker with CO48)
<b>JP3</b>	Syst.-conditioned, internal	Not visible – reserved for future applications
<b>JP4</b>	Standard D-ST & EST L	Change plugging to reverse rotational direction (EST-R) – The resetting of the control is required
<b>JP5</b>	Standard master mode	Slave – only in case of two STM 20
Light-emitting diode		Meaning
<b>LD1</b>	Red control-LED	For MF button S1 – blinking, when button is pressed
<b>LD2</b>	Ground – Red control-LED	<ul style="list-style-type: none"> <li>Must light up, if protective earth screw is withdrawn</li> <li>Otherwise grounding is on</li> </ul>
<b>LD3</b>	green + 24 V	<ul style="list-style-type: none"> <li>Is on, if 24 volt circuit is OK</li> <li>Comes off in case of short-circuit in 24 volt</li> </ul>
<b>LD4</b>	green + 32 V	<ul style="list-style-type: none"> <li>Is on, if system connected to mains voltage</li> </ul>
Multifunctional key		Function, after impulses have been given
<b>1 pulse</b>		Releases an opening movement (AKI)
<b>2 pulses</b>		Calibrating ELS
<b>3 pulses</b>		Calibrating door parameters
<b>4 pulses</b>		Entering programming level
<b>5 pulses</b>		<ul style="list-style-type: none"> <li>Battery emergency reaction, as long as system is disconnected from mains</li> <li>Battery test in case of mains connection</li> </ul>
<b>8 pulses</b>		Loads default values of door type selected

<b>9 pulses</b>	Back to factory settings (afterwards an emergency stop or a reset must be actuated within 10 seconds) The function emergency-stop with reset can only be actuated if the INPUT/OUTPUT parameter <b>Emergency-Stop with Reset</b> is active!!
<b>14 pulses</b>	Hardware-Reset will be done after approx 12 sec.
<b>Connector designation</b>	<b>Connections</b>
<b>J1</b>	Mains plug
<b>J2</b>	Terminals 25 - 28 → for BDE-D
<b>J3</b>	Terminals 1 - 12: Functions according to wiring diagram 102-020109934
<b>J4</b>	Locking device
<b>J5</b>	Battery
<b>J6</b>	Motor brake
<b>J7</b>	ATE motor
<b>J8</b>	CAN bus
<b>J9</b>	CAN bus plug for FPC-servicing
<b>J10</b>	Encoder motor
<b>J11</b>	Extra printed circuit board ELS (ZLP ELS)
<b>J12-14</b>	Reserved for future modules

## 2.3. Wiring diagram control module STM 20

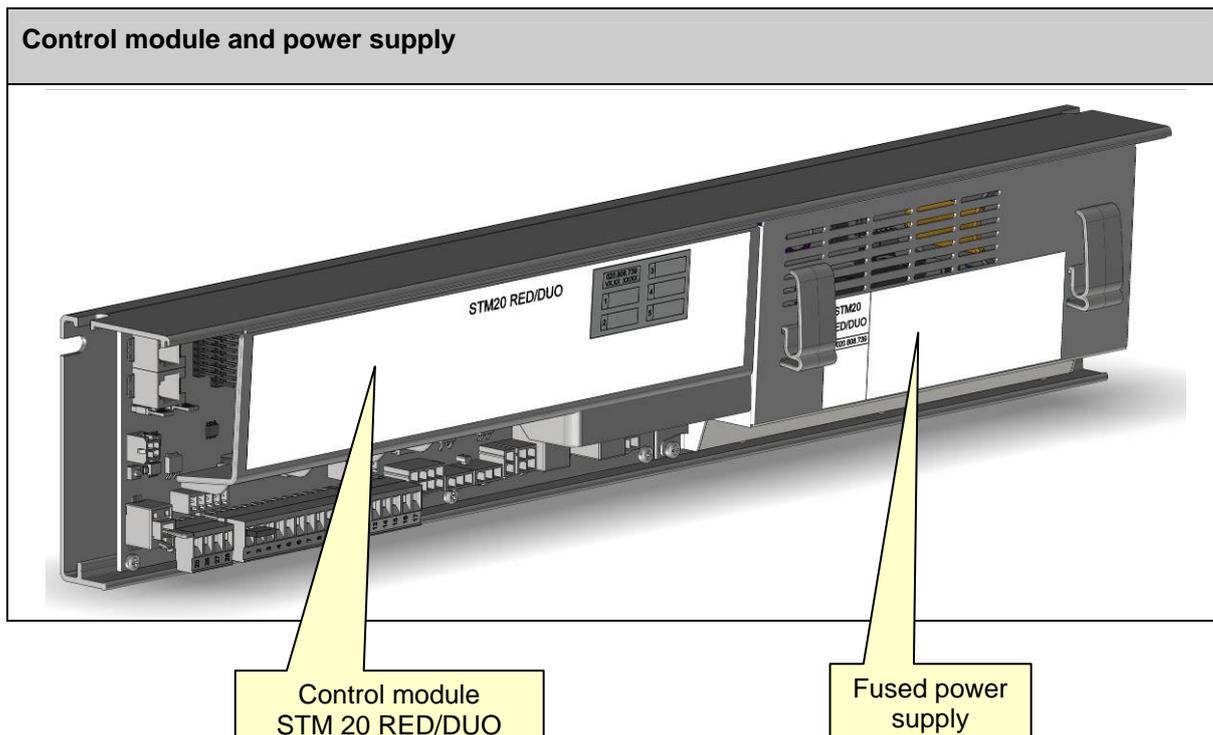




## 3. Control module STM 20 RED/DUO

### 3.1. Controlling elements on STM 20 RED/DUO

Control module STM 20 RED/DUO works with an active HIGH level. That means that a minimum of +24V is required to activate a function. Protective inputs are activated in case of interruption. OV is connected to the ground. This connection can be interrupted for test reasons by use of the ground screw, located next to terminal 12. LED 1 (red) comes on.



**DANGER**



#### ELEKTRIC SHOCK

- Electric shock, combustion, death when touching the power supply without protection cover
  - Before opening the metallic cover of the power supply unit, disconnect it from the mains
  - The installation may only be connected to the mains again, **after** the protection cover has been closed again.

### 3.2. Applications

Control module STM 20 RED/DUO is – according to the software implemented and the appropriate authorization – used for the installations below.

## 3.2.1. Escape and rescue routes as RED installation



Control module STM 20 RED/DUO **with RED software** has been tested according EN 13849-1:2006, **category 3 PLd**.

## 3.2.2. Heavy door leafs as DUO installation

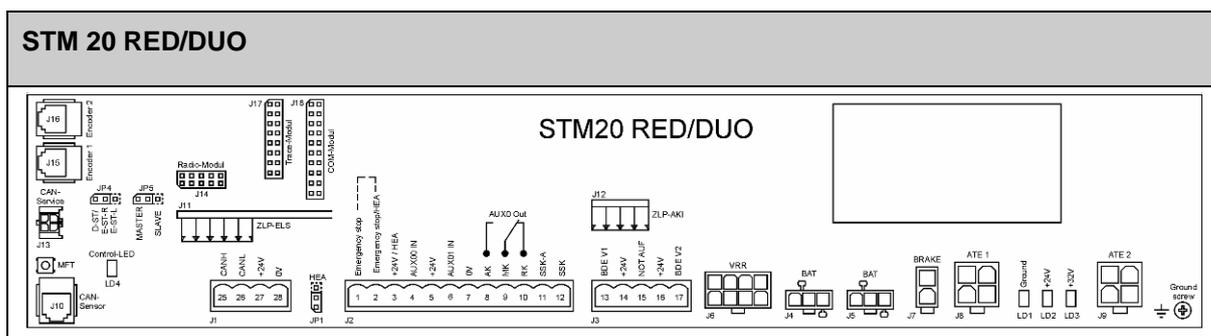


Control module STM 20 RED/DUO **with DUO software** has been tested according EN 13849-1:2006, **category 2 PLc**.



- STM 20 RED/DUO is **usually delivered with a RED software!**
- In the event of applications as DUO-operators (heavy doors), the appropriate DUO-software must be installed on CPU 1 and CPU 2!  
→ FPC flash → manual installation (both CPU's!)

## 3.3. Type plate STM 20 RED/DUO



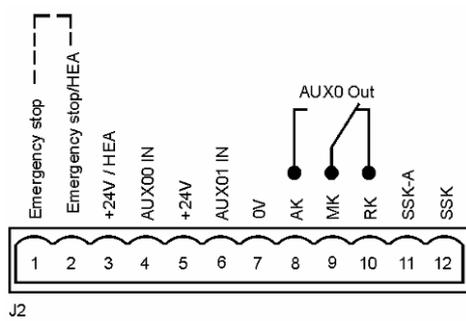
Jumper		Change of function
JP1	Jumper on HEA	Allows emergency stop and HEA to be connected in series <ul style="list-style-type: none"> <li>• HEA → 3-2</li> <li>• Emergency stop → 2-1</li> </ul>
JP2		Not printed
JP3	Syst.-conditioned, internal	Not visible – required for VRR2 (MPV 16)

# Control module STM 20 RED/DUO 3

<b>JP4</b>	<b>On RED and DUO installation</b>	
	D-ST & EST-R	Factory setting
	EST-L	Fixing connecting clamp to <b>upper</b> part of toothed belt - <b>Shunt position remains unchanged !</b>
<b>JP5</b>	Standard Master operation mode	Slave – only in case of two STM 20
<b>Light-emitting diodes</b>		<b>Meaning</b>
<b>LD1</b>	Ground – red control-LED	<ul style="list-style-type: none"> <li>• Ground – must light up, if protective earth screw is withdrawn</li> <li>• Otherwise grounding is on</li> </ul>
<b>LD2</b>	green + 24 V	<ul style="list-style-type: none"> <li>• Is on, if 24 volt circuit OK</li> <li>• Comes off in case of by-pass in 24 volt circuit</li> </ul>
<b>LD3</b>	green + 32 V	<ul style="list-style-type: none"> <li>• Is on, if system connected to mains voltage</li> </ul>
<b>LD4</b>	red control-LED	For MF key S1 – is blinking, if button is pressed
<b>Multifunctional key</b>		<b>Function, after pulses have been given</b>
<b>1 pulse</b>		Releases an opening movement (AKI)
<b>2 pulses</b>		Calibrating ELS
<b>3 pulses</b>		Calibrating door parameters
<b>4 pulses</b>		Entering programming level
<b>5 pulses</b>		<b>RED</b> <ul style="list-style-type: none"> <li>• Redundancy test, if system connected to mains voltage</li> </ul> <b>DUO</b> <ul style="list-style-type: none"> <li>• Battery emergency reaction, as long as system disconnected from mains</li> <li>• Battery test in case of mains connection</li> </ul>
<b>8 pulses</b>		Loads default values of door type selected
<b>9 pulses</b>		Back to factory settings (afterwards emergency stop must be actuated within 10 seconds)
<b>14 pulses</b>		Hardware reset is performed after approx. 12 seconds
<b>Connector designation</b>		<b>Connections</b>
<b>J1</b>		Terminals 25 – 28 → for BDE-D
<b>J2</b>		Terminals 1 – 12: Functions according to wiring diagram 102-020110534
<b>J3</b>		Terminals 13 – 17 (only used with RED applications): With DUO-applications the terminals 13 – 17 are used as additional inputs Functions according to wiring diagram 102-020110534
<b>J4</b>		Battery 1 (used for DUO and RED applications)
<b>J5</b>		Battery 2 (only used for RED applications)
<b>J6</b>		Locking
<b>J7</b>		Motor brake
<b>J8</b>		ATE motor 1 (The DUO-application can be driven with 1 motor only)
<b>J9</b>		ATE motor 2
<b>J10</b>		CAN bus / CAN sensors

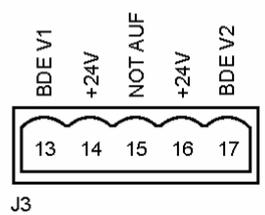
# Control module STM 20 RED/DUO 3

<b>J11</b>	Extra printed circuit board ELS (ZLP-ELS)
<b>J12</b>	Extra printed circuit board AKI (ZLP-AKI)
<b>J13</b>	CAN bus plug for FPC-servicing
<b>J14</b>	Reserved for future modules
<b>J15</b>	Encoder motor 1
<b>J16</b>	Encoder motor 2 (not necessary for DUO-applications)
<b>J17</b>	Reserved for future modules
<b>J18</b>	Reserved for future modules



Emergency stop:

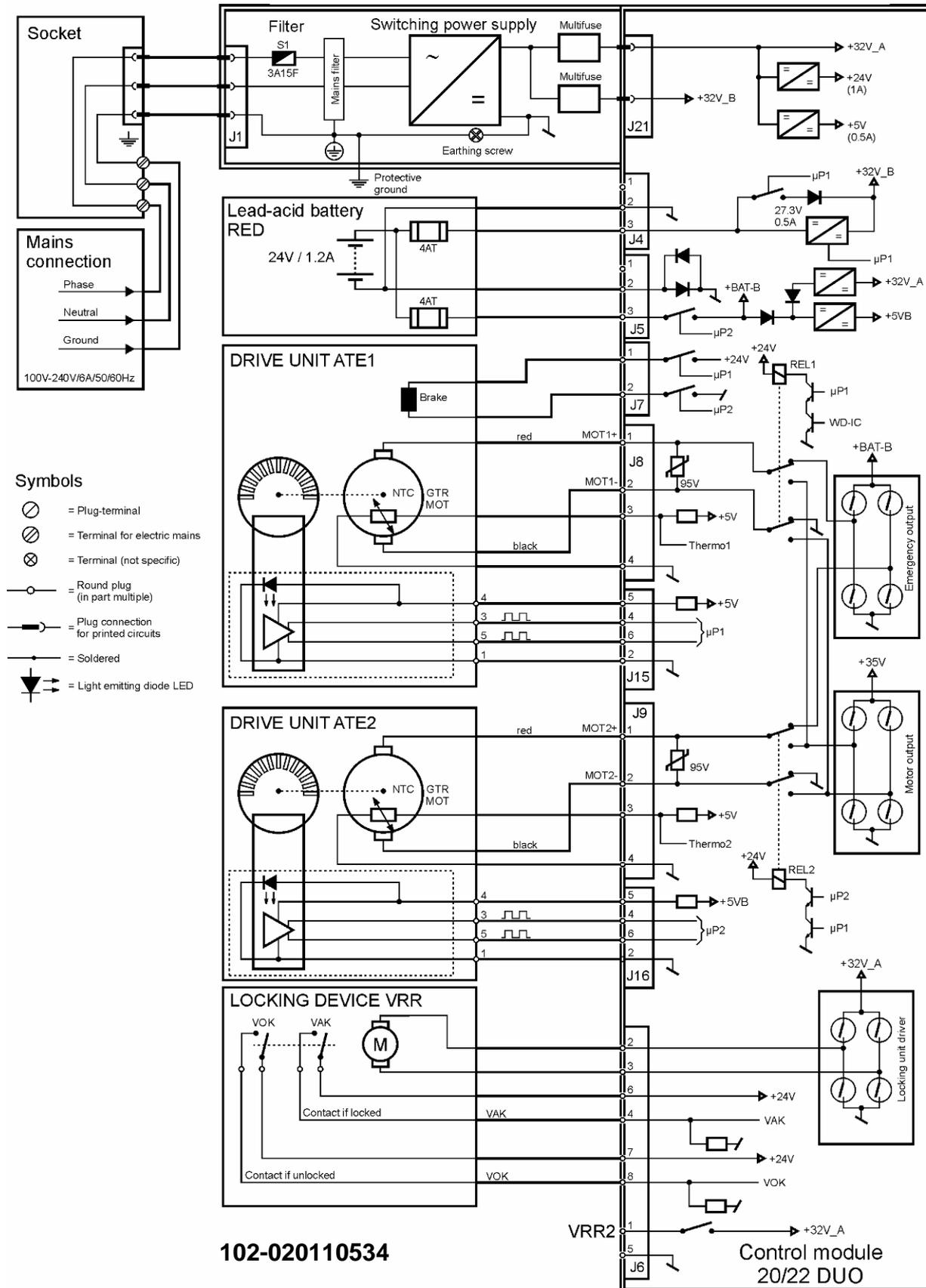
- Cuts the motor off the amplifier
- Door can be moved manually
- Only for DUO-applications
- Inapplicable for RED-applications



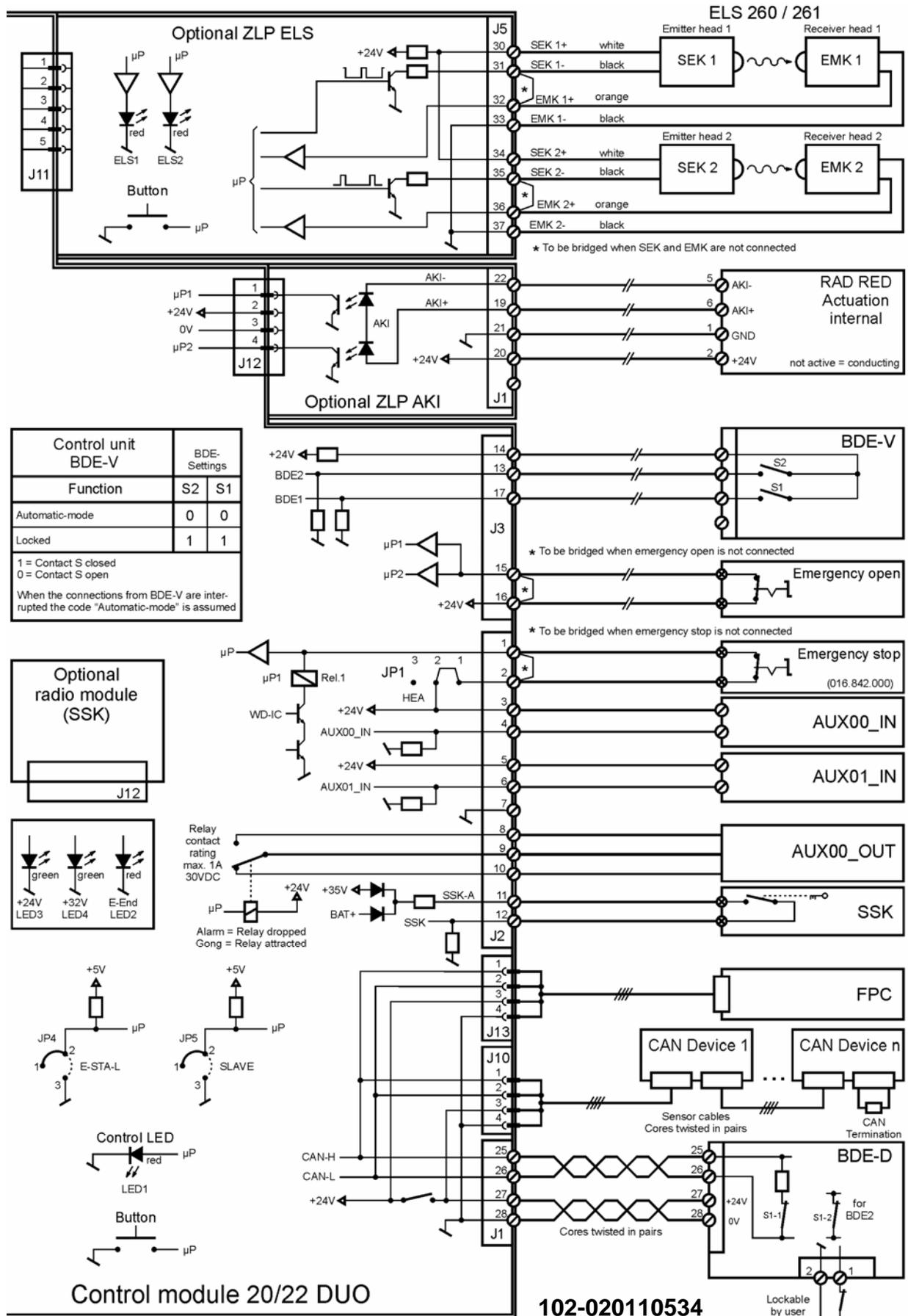
Emergency open:

- Opens the door if not locked
- Only for RED-applications

## 3.4. Wiring diagram control module STM 20 RED/DUO



# Control module STM 20 RED/DUO 3



## 3.5. Components RED/DUO system

<b>MS Power set DUO</b> <ul style="list-style-type: none"> <li>• Control module STM 20 RED/DUO</li> <li>• 2 pc. ATE 20</li> <li>• Socket</li> <li>• Cable and installation material</li> </ul>	<b>102-020808749</b>
<b>BAT 20 RED</b>	<b>102-020808835</b>

In the two above mentioned assembly kits, there are all the necessary components included for a standard complying RED installation.

Mechanically there is no difference between a pure DUO system and a RED system (with certification for escape and rescue routes). On a RED installation there is a special RED-software for CPU1 and CPU2 loaded on the control module STM 20 RED/DUO. This software complies with the standard: EN 13849-1:2006 Category 3 PLd.

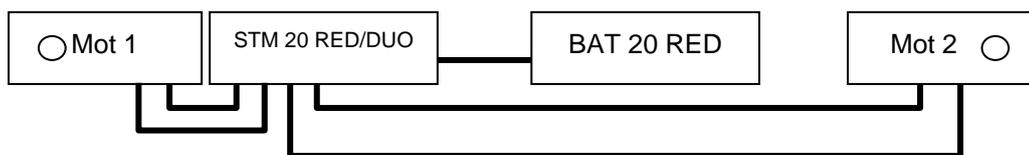


On RED system the Encoder cable must be also connected on the 2<sup>nd</sup> Motor.

### 3.5.1. Overview of the additional components

Basically, the components will mounted and wired analogue to a normal sliding door.

Below we refer to the necessary additional components for a RED system.



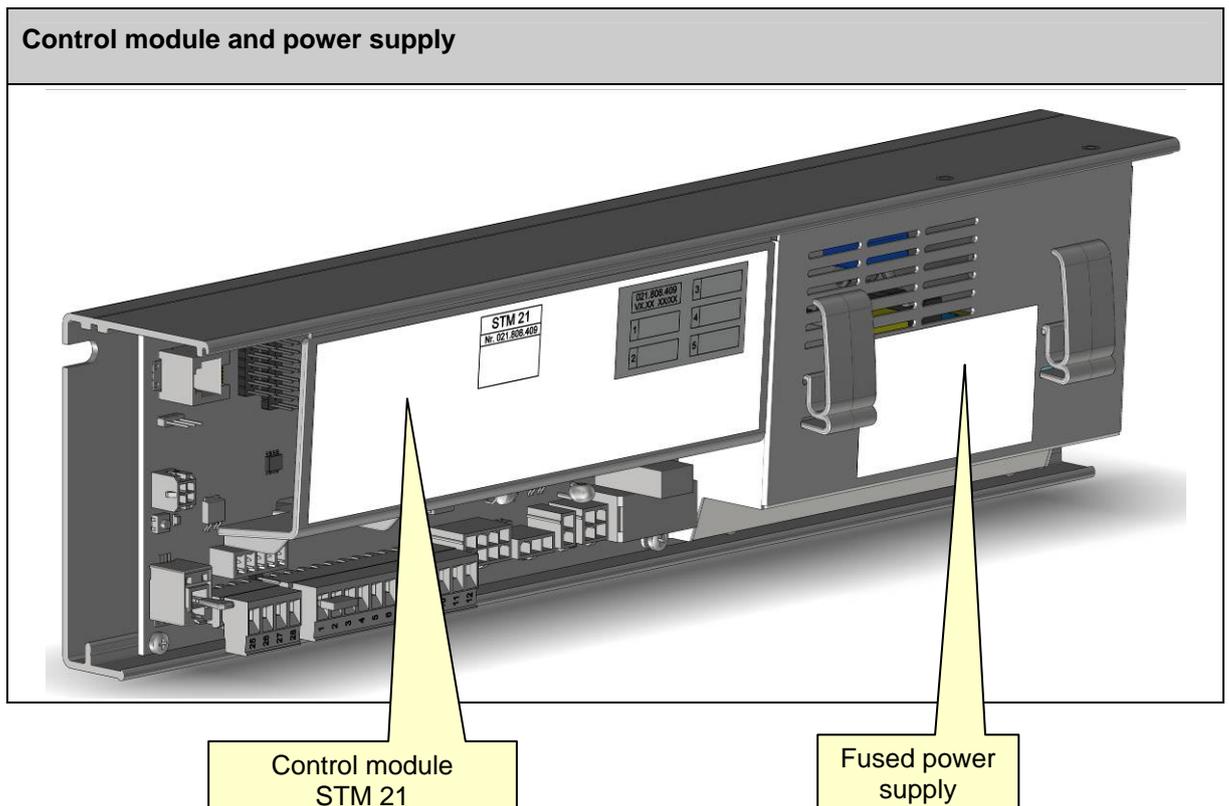
Note that STM 20 RED/DUO will be positioned next to MOT 1 (short Encoder connection cable)

The BDE – V for the night closure must be procured locally. There are 2 closing contacts necessary.

## 4. Control module STM 21

### 4.1. Controlling elements on STM 21

Control module STM 21 works with an active HIGH level. That means that a minimum of +24V is required to activate a function. Protective inputs are activated in case of interruption. OV is connected to the ground. This connection can be interrupted for test reasons by use of the ground screw, located next to terminal 12. LED 2 (red) comes on.



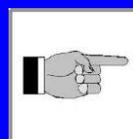
#### DANGER



#### ELECTRIC SHOCK

- Electric shock, combustion, death if touching the power supply without protection cover
  - Before opening the metallic cover of the power supply unit, disconnect it from the mains
  - The installation may only be connected to the mains again, **after** the protection cover has been closed again

#### NOTE



The STM 21 control module has been tested after ISO standard 13849-1:2006, category 2 PLc.

## 4.2. Application field of control module STM 21



Control module STM 21 is exclusively used in combination with a weaker drive unit featuring restricted functional requirements and limited door weight.

### 4.2.1. Typical range of applications

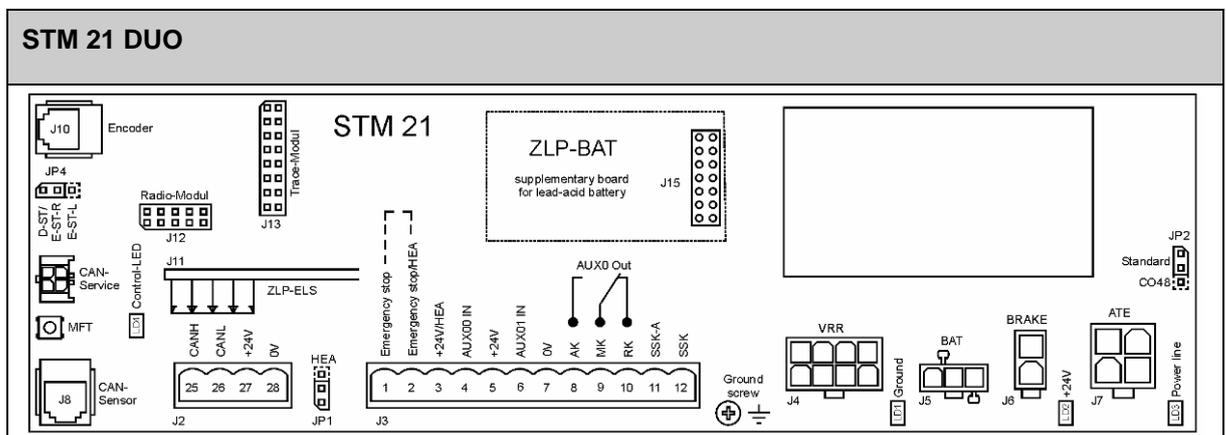
- Low-cost door installations with limited possibilities of upgradability
- Inside and outside applications

### 4.2.2. Unavailable applications

The following applications are **not** available with control module STM 21:

- No RED installation (redundant for escape and rescue routes)
- No DUO installation (heavy doors)
- No TOS installation (sliding/swivelling doors)
- No MPV (multipoint locking device)
- No FEM1 application (interlock function)

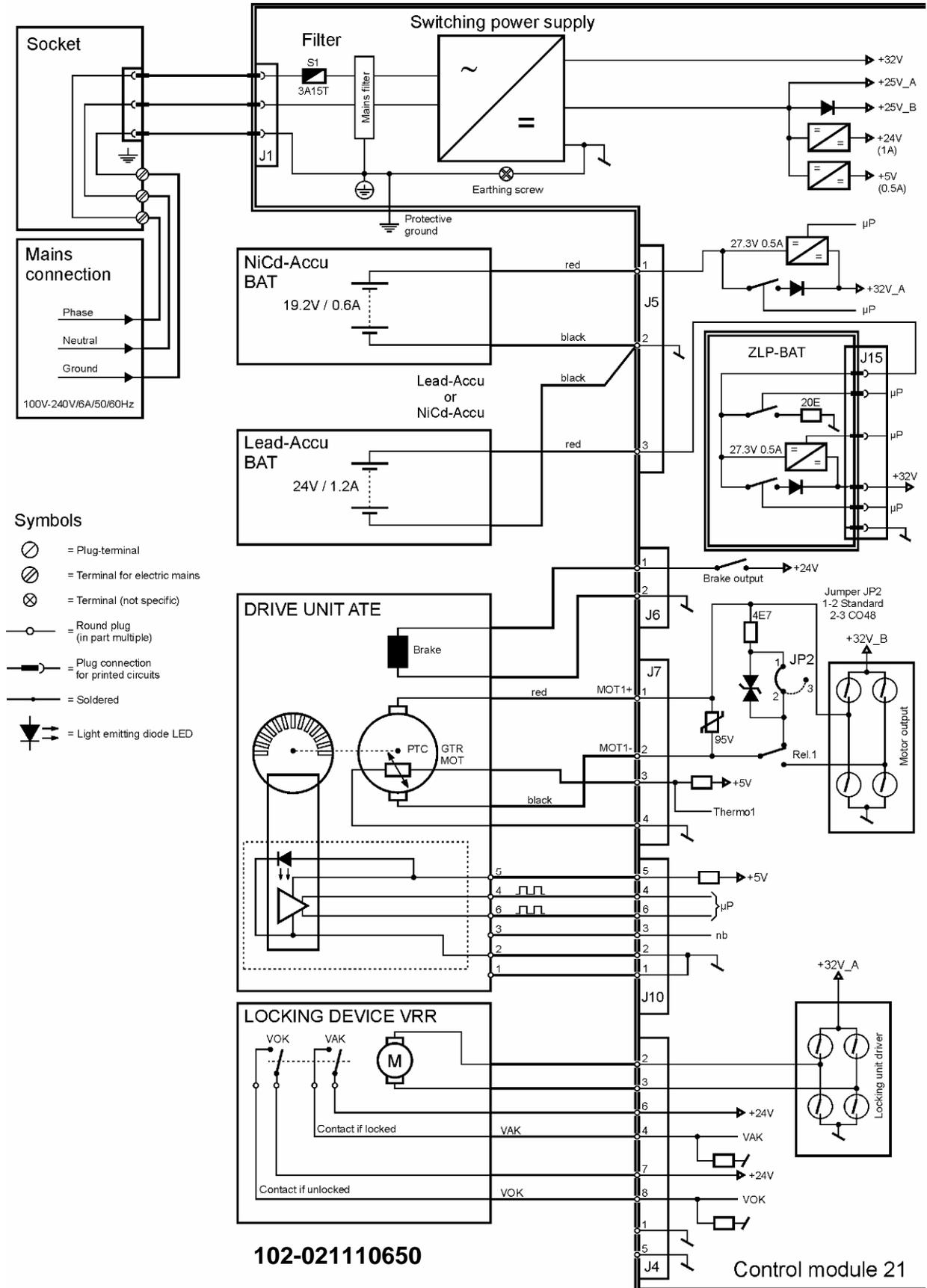
## 4.3. Type plate STM 21



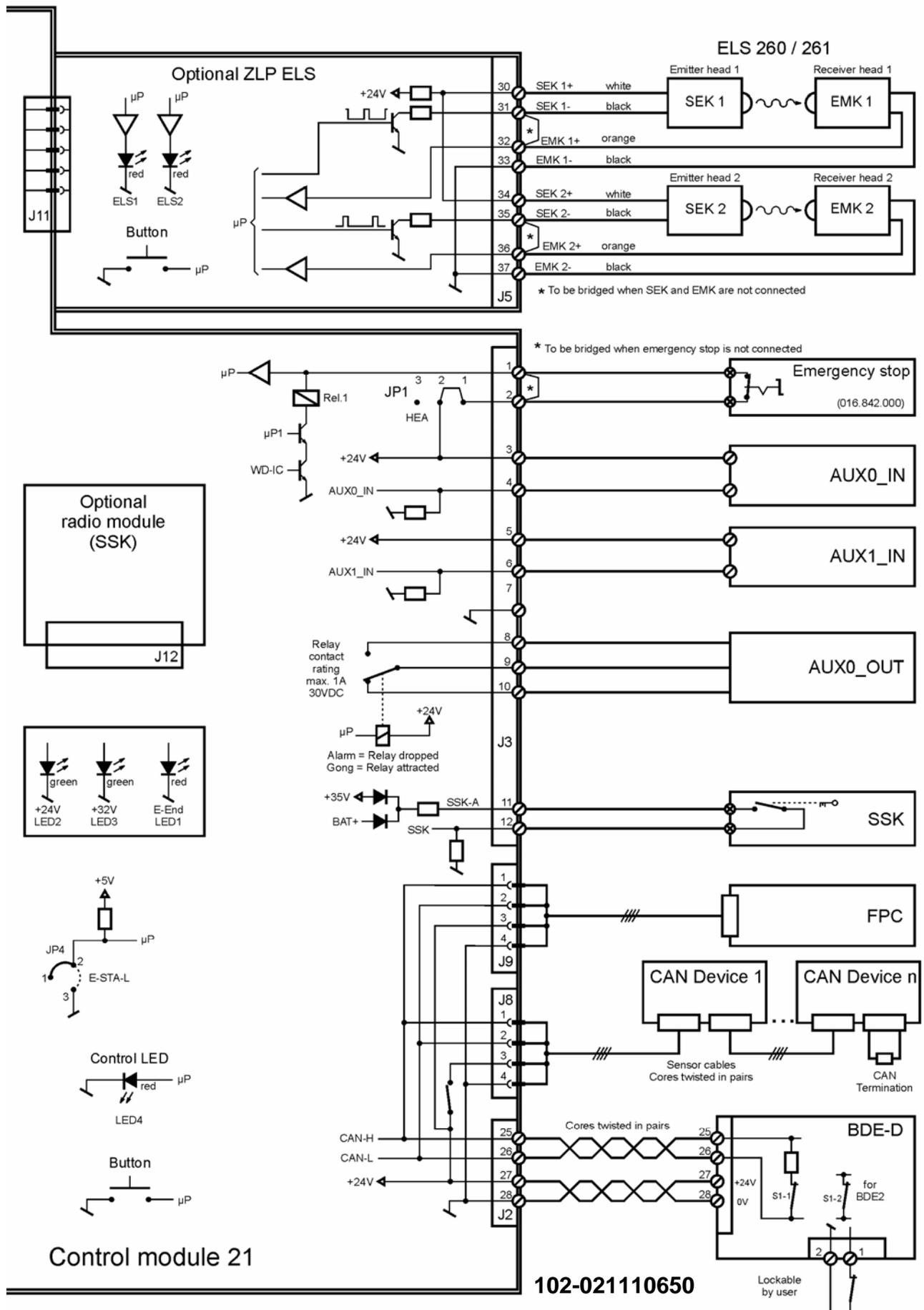
Jumper	Change of function
<b>JP1</b> Jumper on HEA	Allows emergency stop and HEA to be connected in series:: <ul style="list-style-type: none"> <li>• HEA → 3-2</li> <li>• Emergency stop → 2-1</li> </ul>
<b>JP2</b> Standard / CO48	Influences motor-driven braking function in case of power failure (weaker with CO48)
<b>JP3</b> Syst.-conditioned, internal	Not visible – reserved for future applications

<b>JP4</b>	Standard D-ST & EST L	Re-plugging for monitoring devices EST R – subsequently reboot of control necessary
<b>Light-emitting diode</b>		<b>Meaning</b>
<b>LD1</b>	Red control-LED	For multifunctional key S1 – blinks when key is pressed
<b>LD2</b>	Red	<ul style="list-style-type: none"> <li>• Change plugging to reverse rotational direction (EST-R)</li> <li>• Then resetting STM 20 is required</li> </ul>
<b>LD3</b>	Green + 24 V	<ul style="list-style-type: none"> <li>• Is on, if 24 volt circuit OK</li> <li>• Comes off in case of by-pass in 24 volt circuit</li> </ul>
<b>LD4</b>	Green + 32 V	<ul style="list-style-type: none"> <li>• Is on, if system connected to mains voltage</li> </ul>
<b>Multifunctional key</b>		<b>Function, after impulses have been given</b>
<b>1 puls</b>		Activates an opening function (AKI)
<b>2 puls</b>		Calibrating ELS
<b>3 puls</b>		Calibrating door parameters
<b>4 puls</b>		Entering programming level
<b>5 puls</b>		<ul style="list-style-type: none"> <li>• Battery emergency reaction, as long as system is disconnected from mains</li> <li>• Battery test in case of mains connection</li> </ul>
<b>8 puls</b>		Loads default values of door type selected
<b>9 puls</b>		Back to factory settings (afterwards an emergency stop or a reset must be actuated within 10 seconds) The function emergency-stop with reset can only be actuated if the INPUT/OUTPUT parameter <b>Emergency-Stop with Reset</b> is active!!
<b>14 puls</b>		Hardware reset is performed within ca. 12 seconds
<b>Connector designation</b>		<b>Connections</b>
<b>J1</b>		Mains plug
<b>J2</b>		Terminals 25 – 28 → für BDE-D
<b>J3</b>		Terminals 1 - 12: Functions according to wiring diagram 021.110.649_D
<b>J4</b>		Locking device
<b>J5</b>		Battery
<b>J6</b>		Motor brake
<b>J7</b>		ATE Motor
<b>J8</b>		CAN-bus
<b>J9</b>		CAN bus plug for FPC-servicing
<b>J10</b>		Encoder motor
<b>J11</b>		Extra printed circuit board ELS (ZLP-ELS)
<b>J12 - 13</b>		Reserved for future modules
<b>J15</b>		Extra printed circuit board BAT (ZLP-BAT) for lead-acid battery

## 4.4. Wiring diagram control module STM 21



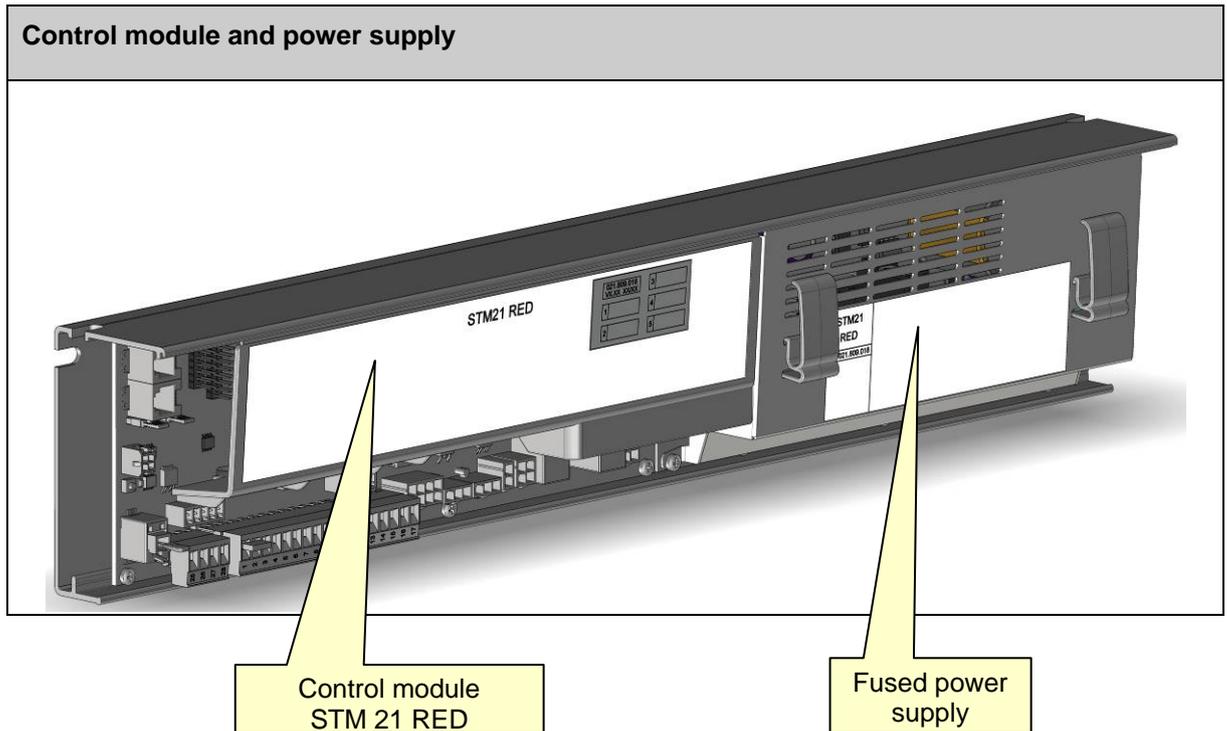
# Control module STM 21 4



## 5. Control module STM 21 RED

### 5.1. Controlling elements on STM 21 RED

Control module STM 21 RED works with an active HIGH level. That means that a minimum of +24V is required to activate a function. Protective inputs are activated in case of interruption. OV is connected to the ground. This connection can be interrupted for test reasons by use of the ground screw, located next to terminal 12. LED 1 (red) comes on.



**DANGER**



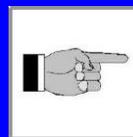
#### ELEKTRIC SHOCK

- Electric shock, combustion, death when touching the power supply without protection cover
  - Before opening the metallic cover of the power supply unit, disconnect it from the mains
  - The installation may only be connected to the mains again, **after** the protection cover has been closed again.

### 5.2. Applications

Control module STM 21 RED is – according to the software implemented and the appropriate authorization – used for the installations below.

**NOTE**



The installations with the control module STM 21 RED work with a reduced functionality

## 5.2.1. Escape and rescue routes as RED installation



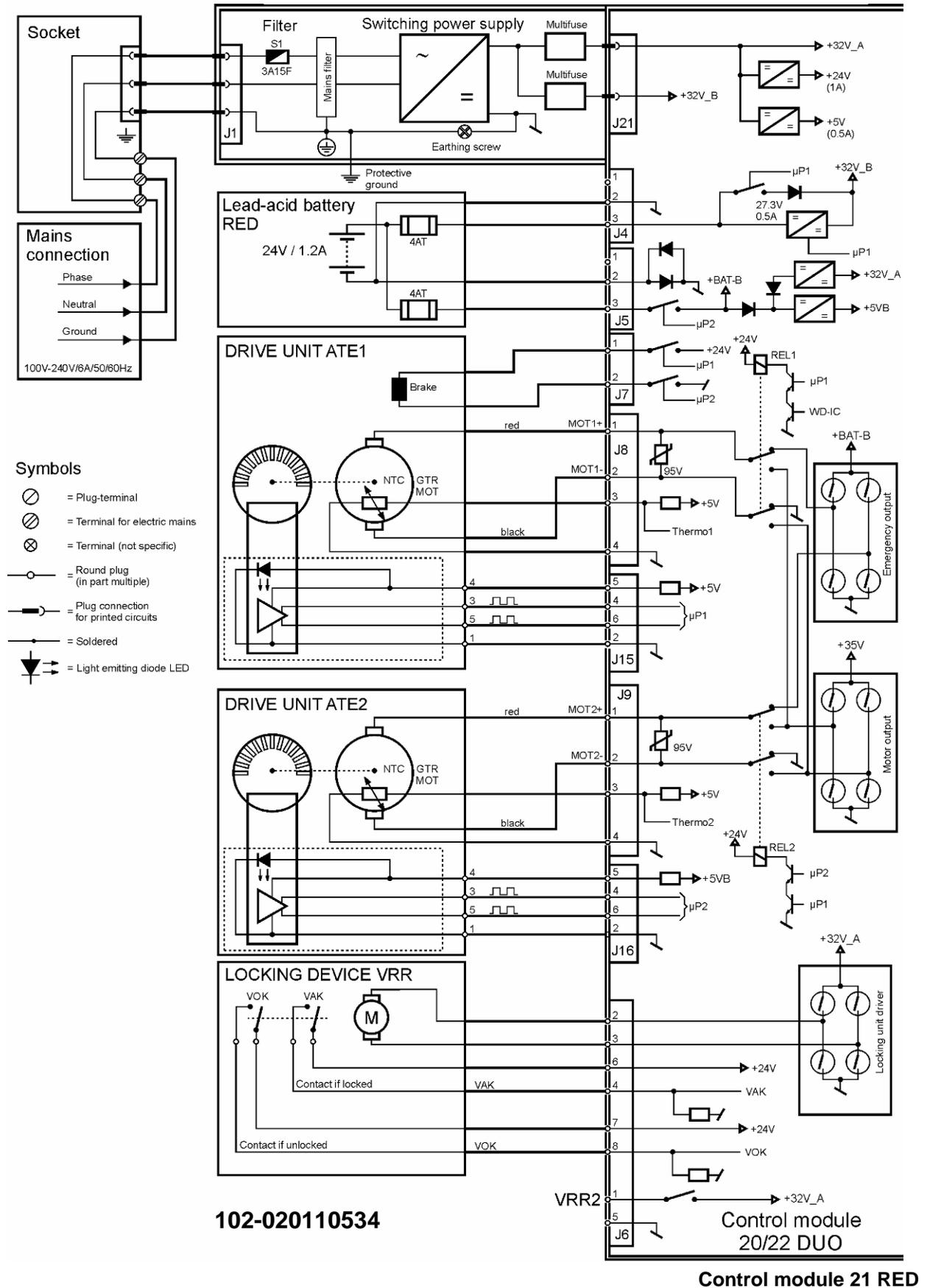
Control module STM 21 RED **with RED software** has been tested according EN 13849-1:2006, **category 3 PLd**.

## 5.3. Type plate STM 21 RED

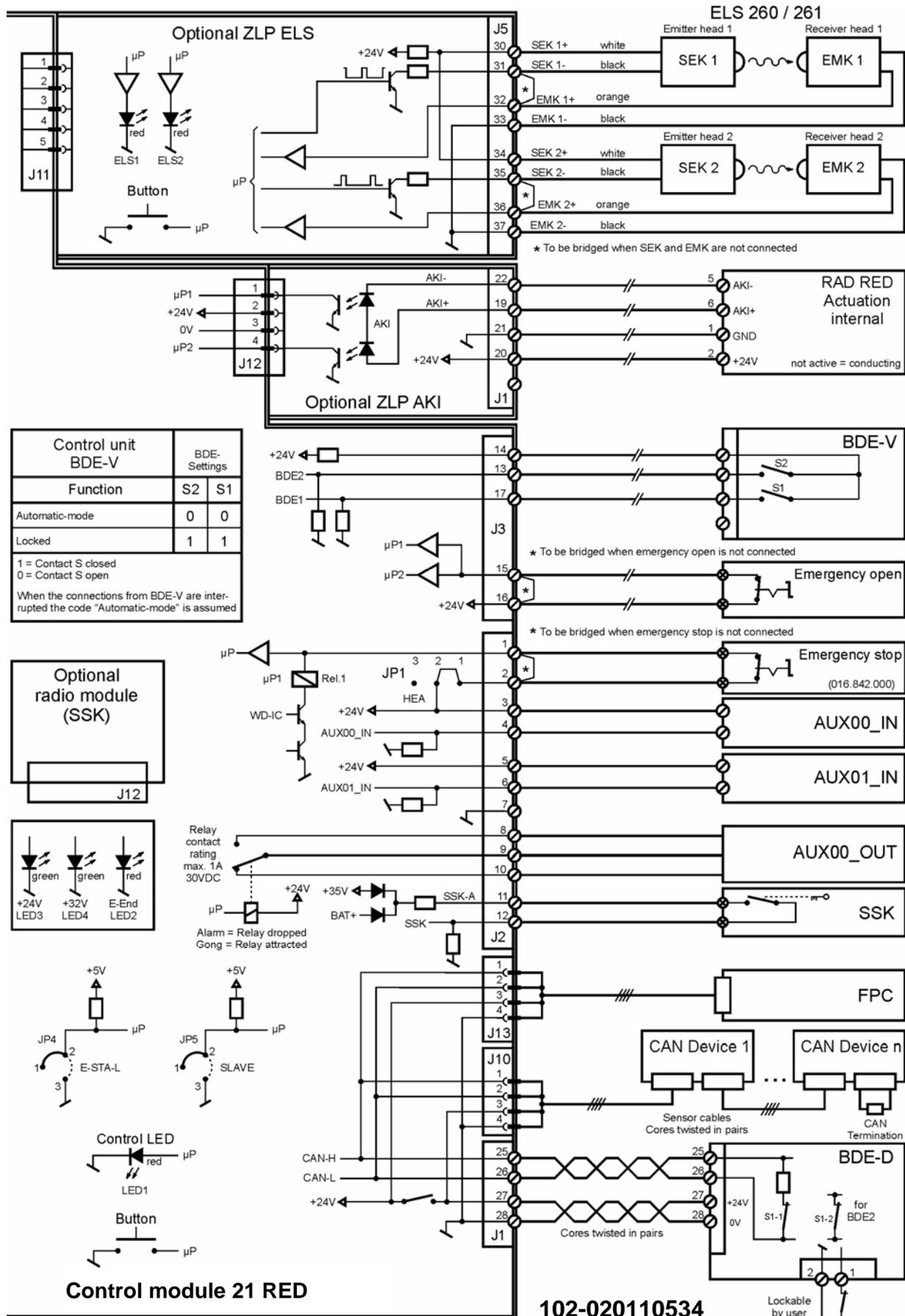
Jumper		Change of function
JP1	Jumper on HEA	Allows emergency stop and HEA to be connected in series <ul style="list-style-type: none"> <li>HEA → 3-2</li> <li>Emergency stop → 2-1</li> </ul>
JP2		Not printed
JP3	Syst.-conditioned, internal	Not visible – required for VRR2 (MPV 16)
JP4	<b>On RED and DUO installation</b>	
	D-ST & EST-R	Factory setting
	EST-L	Fixing connecting clamp to <b>upper</b> part of toothed belt - <b>Shunt position remains unchanged !</b>
JP5	Standard Master operation mode	Slave – only in case of two STM 20
Light-emitting diodes		Meaning
LD1	Ground – red control-LED	<ul style="list-style-type: none"> <li>Ground – must light up, if protective earth screw is withdrawn</li> <li>Otherwise grounding is on</li> </ul>
LD2	green + 24 V	<ul style="list-style-type: none"> <li>Is on, if 24 volt circuit OK</li> <li>Comes off in case of by-pass in 24 volt circuit</li> </ul>
LD3	green + 32 V	<ul style="list-style-type: none"> <li>Is on, if system connected to mains voltage</li> </ul>
LD4	red control-LED	For MF key S1 – is blinking, if button is pressed

Multifunctional key	Function, after pulses have been given
<b>1 pulse</b>	Releases an opening movement (AKI)
<b>2 pulses</b>	Calibrating ELS
<b>3 pulses</b>	Calibrating door parameters
<b>4 pulses</b>	Entering programming level
<b>5 pulses</b>	<b>RED</b> <ul style="list-style-type: none"> <li>• Redundancy test, if system connected to mains voltage</li> </ul> <b>DUO</b> <ul style="list-style-type: none"> <li>• Battery emergency reaction, as long as system disconnected from mains</li> <li>• Battery test in case of mains connection</li> </ul>
<b>8 pulses</b>	Loads default values of door type selected
<b>9 pulses</b>	Back to factory settings (afterwards emergency stop must be actuated within 10 seconds)
<b>14 pulses</b>	Hardware reset is performed after approx. 12 seconds
Connector designation	Connections
<b>J1</b>	Terminals 25 – 28 → for BDE-D
<b>J2</b>	Terminals 1 – 12: Functions according to wiring diagram 102-020110534
<b>J3</b>	Terminals 13 – 17 (only used with RED applications): Functions according to wiring diagram 102-020110534
<b>J4</b>	Battery 1 (used for DUO and RED applications)
<b>J5</b>	Battery 2 (only used for RED applications)
<b>J6</b>	Locking
<b>J7</b>	Motor brake
<b>J8</b>	ATE motor 1
<b>J9</b>	ATE motor 2
<b>J10</b>	CAN bus / CAN sensors
<b>J11</b>	Extra printed circuit board ELS (ZLP-ELS)
<b>J12</b>	Extra printed circuit board AKI (ZLP-AKI)
<b>J13</b>	CAN bus plug for FPC-servicing
<b>J14</b>	Reserved for future modules
<b>J15</b>	Encoder motor 1
<b>J16</b>	Encoder motor 2
<b>J17</b>	Reserved for future modules
<b>J18</b>	Reserved for future modules

## 5.4. Wiring diagram control module STM 21 RED



# Control module STM 21 RED 5



## 5.5. Components RED system

<b>MS Power set STM 21 RED</b> <ul style="list-style-type: none"> <li>• Control module STM 21 RED</li> <li>• 1 pc. ATE 21 (Linux)</li> <li>• 1 pc. ATE 21</li> <li>• Socket</li> <li>• Cable and installation material</li> </ul>	<b>102-021808964</b>
<b>BAT 20 RED</b>	<b>102-020808835</b>

In the two above mentioned assembly kits, there are all the necessary components included for a standard complying RED installation.

Mechanically there is no difference between a pure DUO system and a RED system (with certification for escape and rescue routes). On a RED installation there is a special RED-software for CPU1 and CPU2 loaded on the control module STM 21 RED. This software complies with the standard: EN 13849-1:2006 Category 3 PLd.

### NOTE

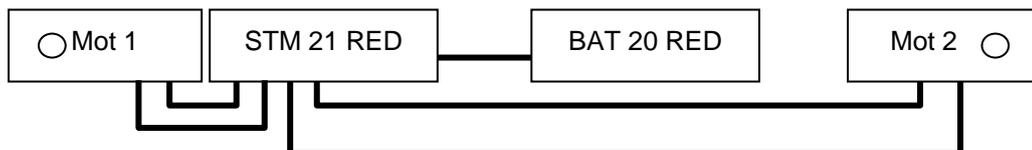


On RED system the Encoder cable must be also connected on the 2<sup>nd</sup> Motor.

### 5.5.1. Overview of the additional components

Basically, the components will be mounted and wired analogue to a normal sliding door.

Below we refer to the necessary additional components for a RED system.



### NOTE



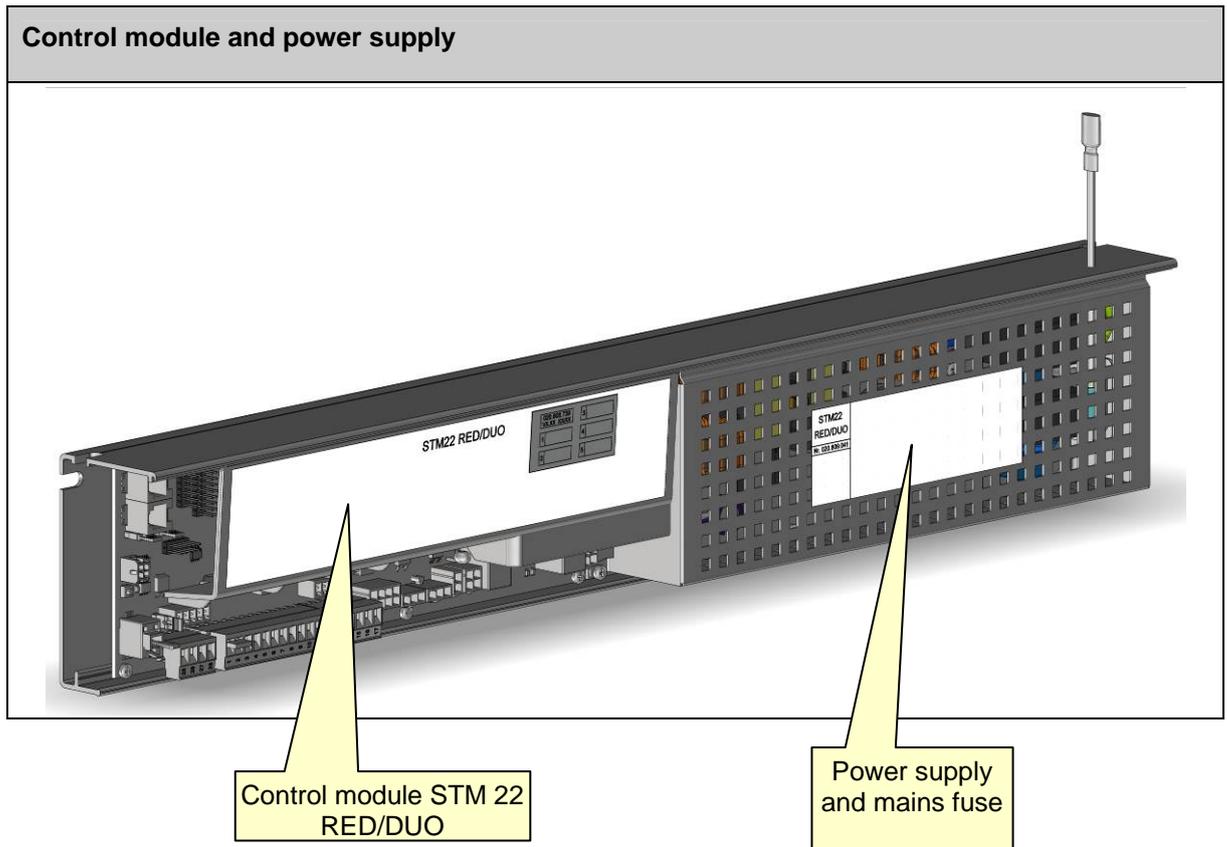
Note that STM 21 RED will be positioned next to MOT 1 (short Encoder connection cable)

The BDE – V for the night closure must be procured locally. There are 2 closing contacts necessary.

## 6. Control module STM 22 RED/DUO

### 6.1. Controls on STM 22 RED/DUO

The control module STM 22 RED/DUO works with an active HIGH level. To activate the function +24V must be present. Safety inputs will be activated by an interruption. The basic signal 0V is connected to the protective earth. This compound could be separated with ground screw for testing – LED1 (red) light.



**DANGER**



#### **ELECTRIC SHOCK**

- Electrical shock, burns, death if you touch the power supply without protective cover.
  - Before removing the metal cover disconnect the drive from the main.
  - Installation only reconnects to the network after the protection cover is closed.

## 6.2. Applications

The control module STM 22 RED/DUO will be – depending on the implemented software and corresponding admissions – used for the following installations.

### 6.2.1. Escape and rescue routes as RED installation



The STM 22 RED/DUO control module **with RED Software** complies with EN 13849-1:2006, **Category 3 PLd**.

### 6.2.2. Heavy door leafs as DUO installation

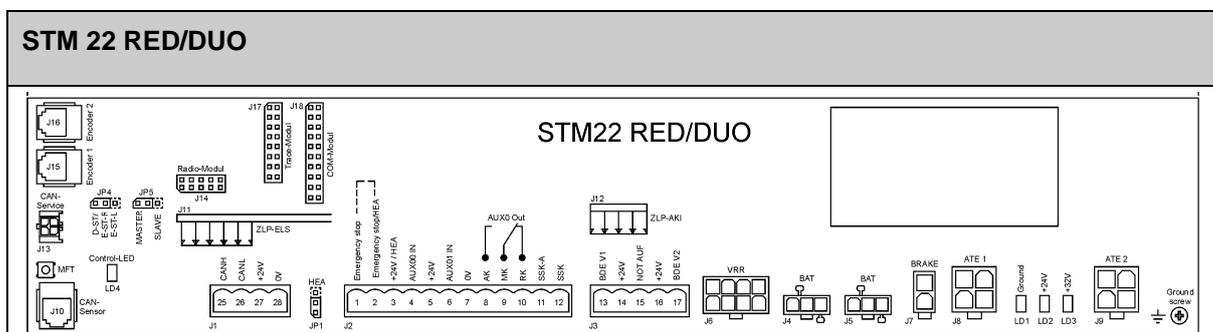


The STM 22 RED/DUO control module **with RED Software** complies with EN 13849-1:2006, **Category 2 PLc**.



- The STM 22 RED/DUO is usually delivered **with RED software**!
- For applications as DUO drive (heavy doors) the corresponding DUO software on CPU1 and CPU2 need to be installed!  
→ FPC menu Flash-programmer → update manual (both CPU's!)

## 6.3. Type plate STM 22 RED/DUO

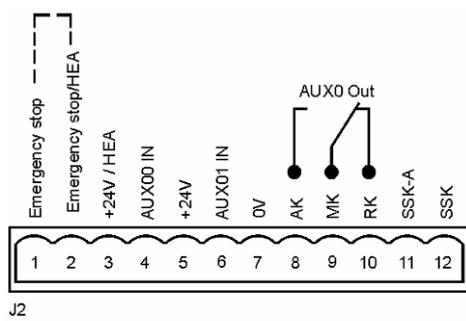


# Control module STM 22 RED/DUO 6

Jumper		Change of function
JP1	Jumper on HEA	Allows emergency stop and HEA to be connected in series:: <ul style="list-style-type: none"> <li>• HEA → 3-2</li> <li>• Emergency stop → 2-1</li> </ul>
JP2		Not equipped
JP3	Syst.-conditioned, internal	Not visible – reserved for future applications
JP4	<b>If used as RED+DUO-installation</b>	
	D-ST & EST-R	Factory setting
	EST-L	Mounting of the belt clamp at the <b>upper belt torsion – the jumper-position remains unchanged!</b>
JP5	Standard master mode	Slave – only used with two STM 20
Light-emitting diode		Meaning
LD1	Ground – Red control-LED	<ul style="list-style-type: none"> <li>• Must light with distant ground screw</li> <li>• Otherwise, there is ground present</li> </ul>
LD2	green + 24 V	<ul style="list-style-type: none"> <li>• Is on, if 24 volt circuit OK</li> <li>• Comes off in case of by-pass in 24 volt circuit</li> </ul>
LD3	green + 32 V	<ul style="list-style-type: none"> <li>• Is on, if system connected to mains voltage</li> </ul>
LD4	Red control-LED	For multifunctional key S1 – blinks when key is pressed
Multi function key		Function, after impulses have been given
1 puls		Triggering the opening movement (AKI)
2 puls		Calibrating ELS
3 puls		Calibrating door parameters
4 puls		Entering programming level
5 puls		<b>RED</b> <ul style="list-style-type: none"> <li>• Redundancy test with existing mains power</li> </ul> <b>DUO</b> <ul style="list-style-type: none"> <li>• Battery emergency reaction, if no mains power available</li> <li>• Battery test with existing mains power</li> </ul>
8 puls		Loads default values of door type selected
9 puls		Back to factory settings (afterwards an emergency stop or a reset must be actuated within 10 seconds) The function emergency-stop with reset can only be actuated if the INPUT/OUTPUT parameter <b>Emergency-Stop with Reset</b> is active!!
14 puls		Hardware reset is performed within ca. 12 seconds
Connector designation		Connections
J1		Terminals 25 – 28 → for BDE-D
J2		Terminals 1 - 12: Functions according to wiring diagram 102-020110533
J3		Terminals 13 – 17 (only used with RED applications): With DUO-applications the terminals 13 – 17 are used as additional inputs Functions according to wiring diagram 102-020110534
J4		Battery 1 (use for DUO- and RED-applications)

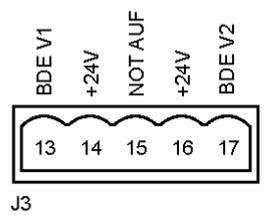
# Control module STM 22 RED/DUO 6

<b>J5</b>	Battery 2 (just use for RED-applications)
<b>J6</b>	Locking
<b>J7</b>	Motor brake
<b>J8</b>	ATE motor 1 (The DUO-application can be driven with 1 motor only)
<b>J9</b>	ATE Motor 2
<b>J10</b>	CAN-Bus / CAN Sensors
<b>J11</b>	Additional printed circuit board ELS (ZLP-ELS)
<b>J12</b>	Additional printed circuit board AKI (ZLP AKI)
<b>J13</b>	CAN-Bus service plug for FPC
<b>J14</b>	Reserved for future modules
<b>J15</b>	Encoder Motor 1
<b>J16</b>	Encoder motor 2 (not necessary for DUO-applications)
<b>J17</b>	Reserved for future modules
<b>J18</b>	Reserved for future modules



Emergency stop:

- Cuts the motor off the amplifier
- Door can be moved manually
- Only for DUO-applications
- Inapplicable for RED-applications

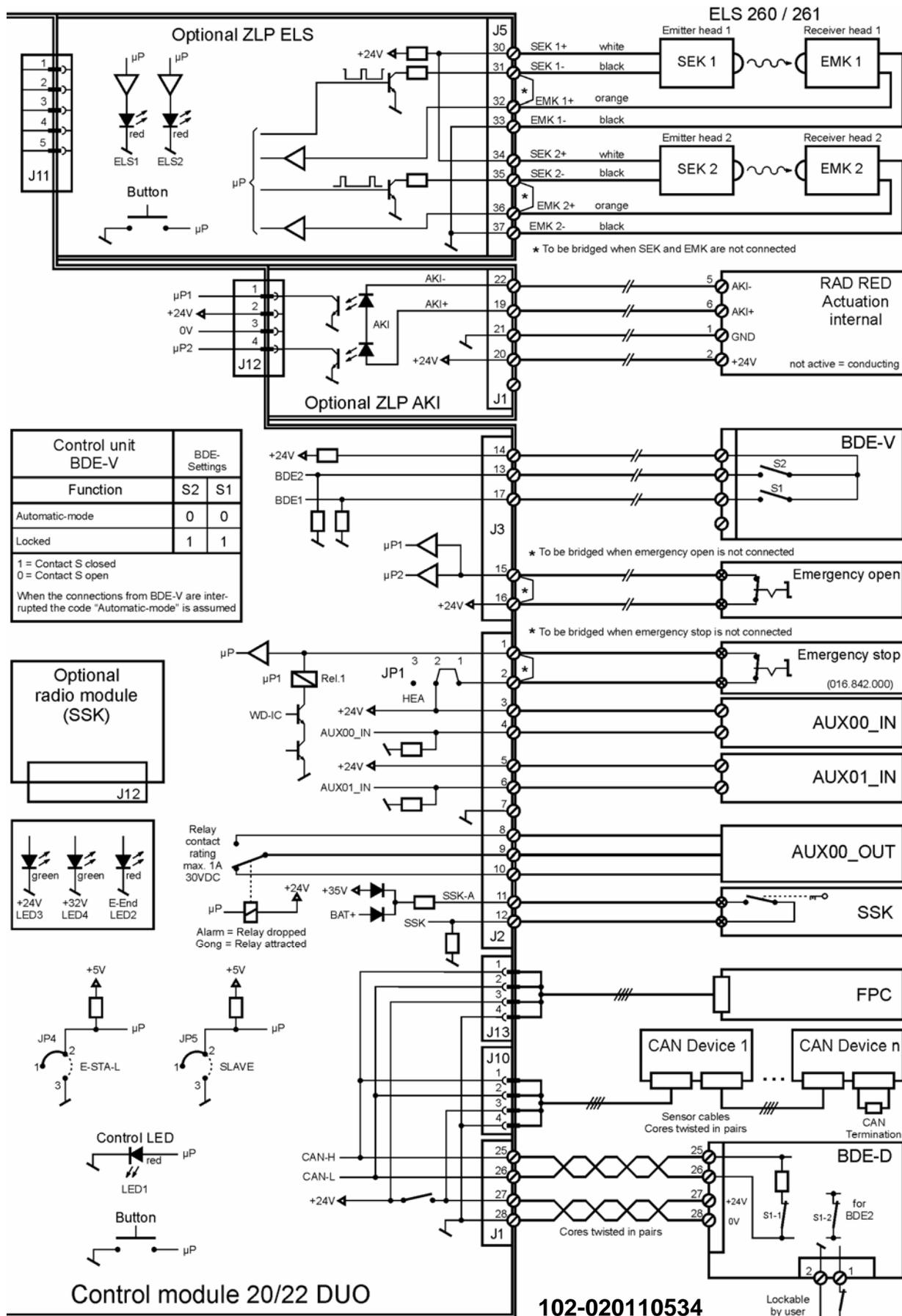


Emergency open:

- Opens the door if not locked
- Only for RED-applications



# Control module STM 22 RED/DUO 6



## 6.5. Components RED/DUO installations

<b>MS Power set STM22 RED/DUO</b> <ul style="list-style-type: none"><li>• Control module STM 22 RED/DUO</li><li>• 2 pc. ATE</li><li>• Cable and installation material</li></ul>	<b>102-020401204</b>
<b>BAT 20 RED</b>	<b>102-020808835</b>

Basically, all the components for a RED-system installation are included in both above listed assembly kits.

Mechanically there is no difference between a pure DUO system and a RED system (with certification for escape and rescue routes). On a RED installation, a special RED-software for CPU1 and CPU2 is installed on the control module STM 22 RED/DUO. This software complies with the standards: EN 13849-1:2006 Category 3 PLd.

### NOTE

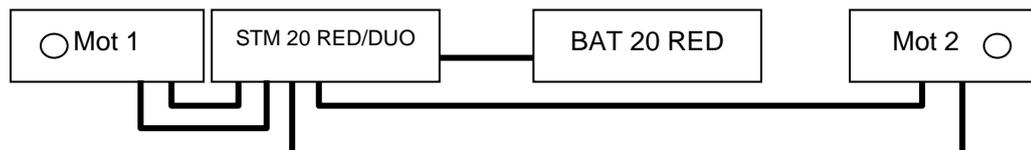


On RED system the Encoder cable must be also connected on the 2. Motor.

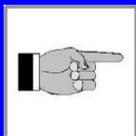
### 6.5.1. Overview of the additional components

Basically, the components will be mounted and wired analogue to a normal sliding door.

Below we refer to the necessary additional components for a RED installation.



### NOTE



Note that STM 22 RED/DUO will be positioned next to MOT 1 (short Encoder connection cable)

The BDE – V for the night closure must be supplied locally. There are 2 closing contacts necessary.