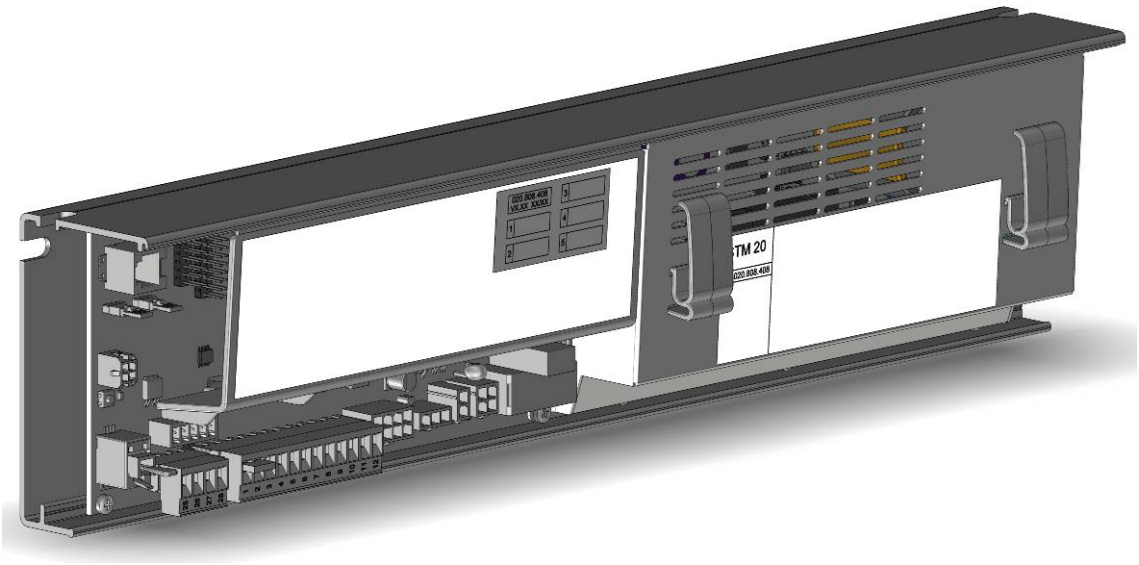
Control

Sliding door system 20



B6

Manufacturer
agtatec ag
Allmendstrasse 24
CH-8320 Fehraltorf

Service-Hotline

Distributer

Art. Nr. 102-020401135

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1. General

1.1. Document identification

Name: B6_Control_SYS20_EN_V1.3.doc

Version: V1.3

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
B6_Control	**General**
	Control module STM 20
	Control module STM 20 RED / DUO
	Control module STM 21
	Control module STM 21 RED
	Control module STM 22 RED / DUO
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

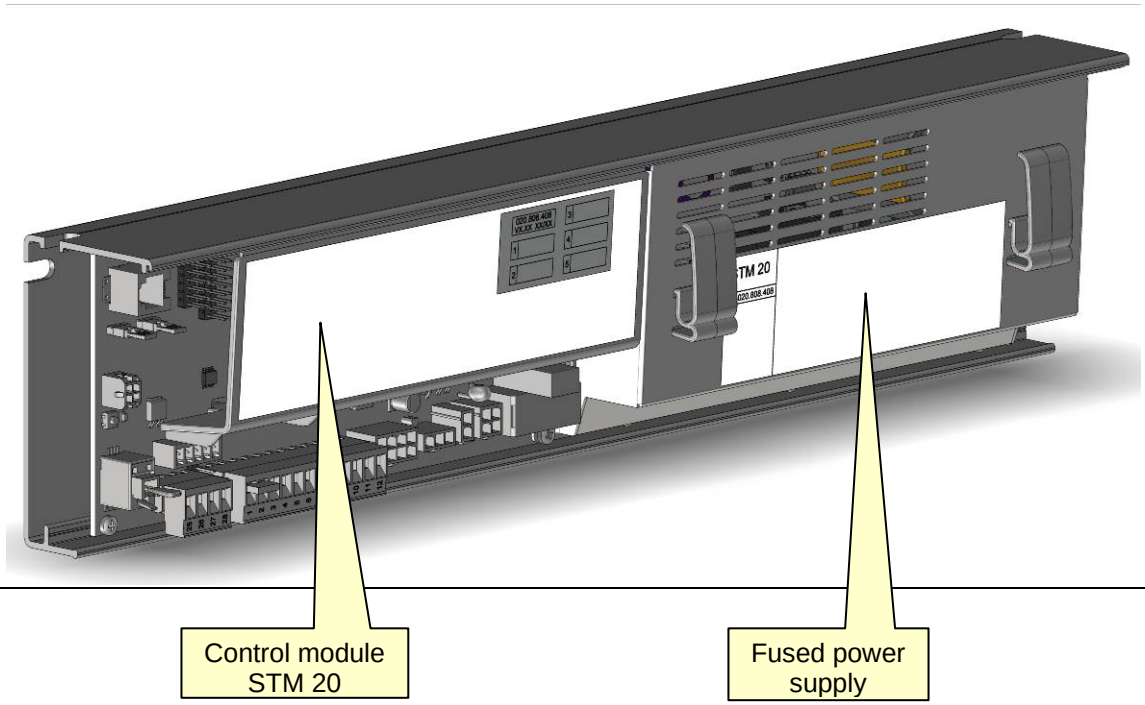
After the system installation, the instructions have to be stored in an accessible and dry place.

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.

Control module and power supply

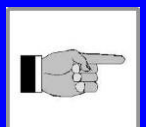


DANGER

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

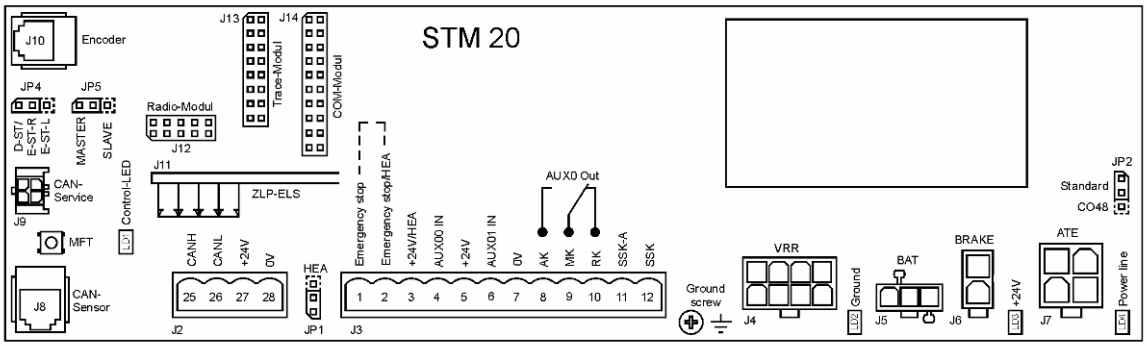
NOTE



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

2.2. Type plate STM 20

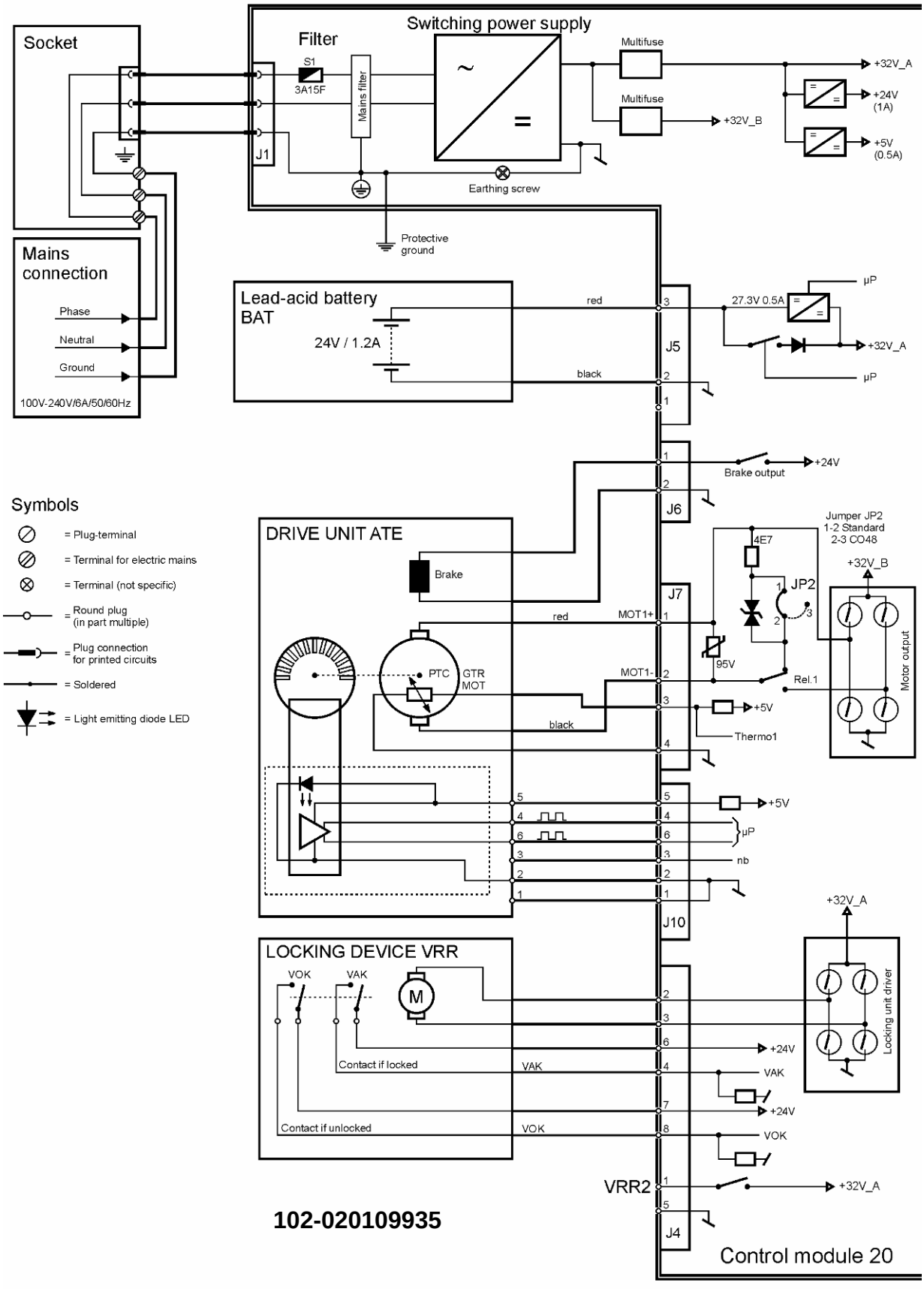
STM20

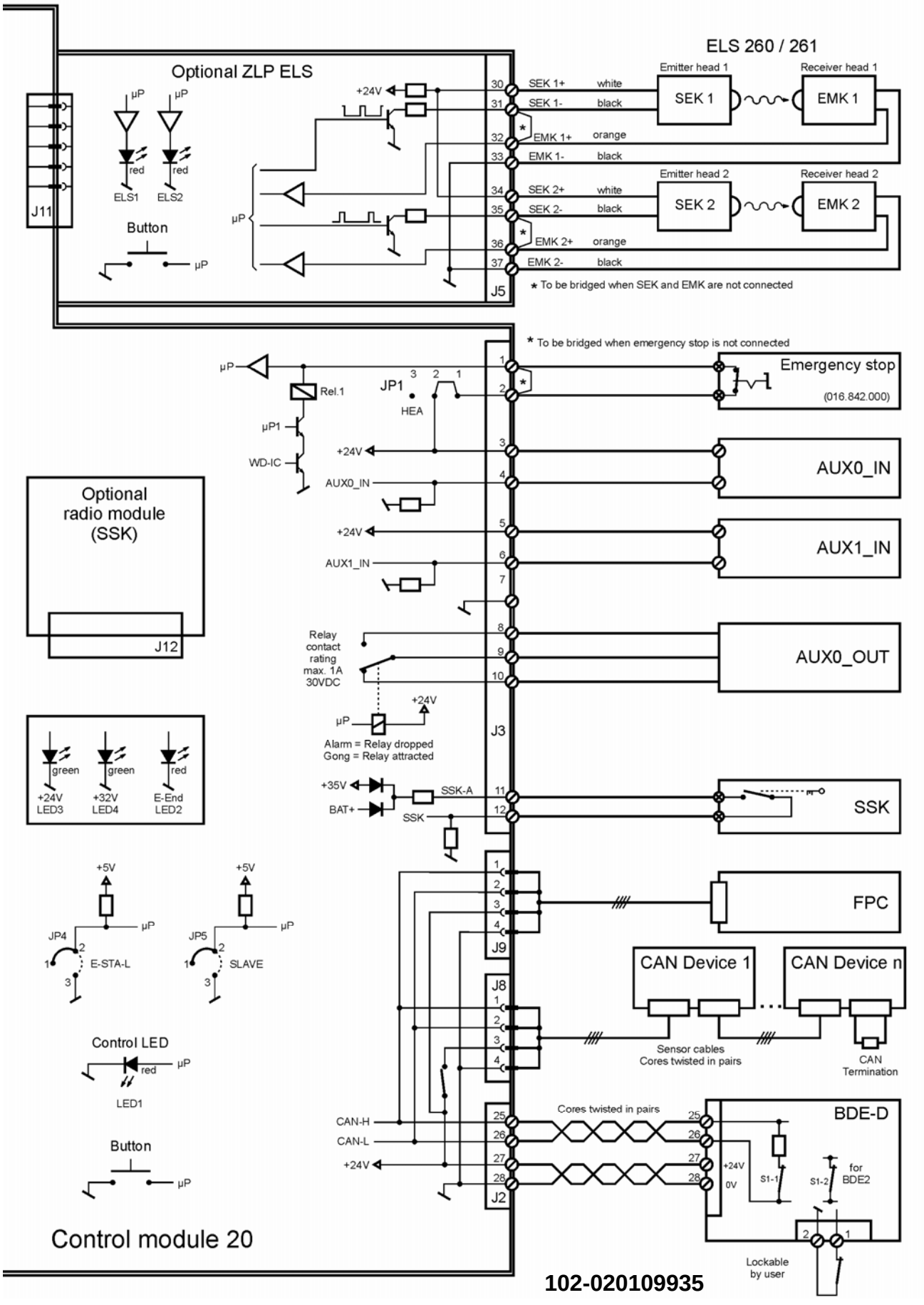


Jumper		**Change of function**
JP1	Jumper on HEA	Allows emergency stop and HEA to be connected in series: • HEA → 3-2 • Emergency stop → 2-1
JP2	Standard / CO48	Influences motor-driven braking function in case of power failure (weaker with CO48)
JP3	Syst.-conditioned, internal	Not visible – reserved for future applications
JP4	Standard D-ST & EST L	Change plugging to reverse rotational direction (EST-R) – The resetting of the control is required
JP5	Standard master mode	Slave – only in case of two STM
Light-emitting diode		**Meaning**
LD1	Red control-LED	For MF button S1 – blinking, when button is pressed
LD2	Ground – Red control-LED	• Must light up, if protective earth screw is withdrawn • Otherwise grounding is on
LD3	green + 24 V	• Is on, if 24 volt circuit is OK • Comes off in case of short-circuit in 24 volt
LD4	green + 32 V	• Is on, if system connected to mains voltage
Multifunctional key		**Function, after impulses have been given**
1 pulse		Releases an opening movement (AKI)
2 pulses		Calibrating ELS
3 pulses		Calibrating door parameters
4 pulses		Entering programming level
5 pulses		• Battery emergency reaction, as long as system is disconnected from mains • Battery test in case of mains connection
8 pulses		Loads default values of door type selected

9 pulses	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 **Emergency-Stop with Reset** is active!!
14 pulses	Hardware-Reset will be done after approx 12 sec.
Connector designation	**Connections**
J1	Mains plug
J2	Terminals 25 - 28 → for BDE-D
J3	Terminals 1 - 12: Functions according to wiring diagram 102-020109934
J4	Locking device
J5	Battery
J6	Motor brake
J7	ATE motor
J8	CAN bus
J9	CAN bus plug for FPC-servicing
J10	Encoder motor
J11	Extra printed circuit board ELS (ZLP ELS)
J12-14	Reserved for future modules

2.3. Wiring diagram control module STM 20



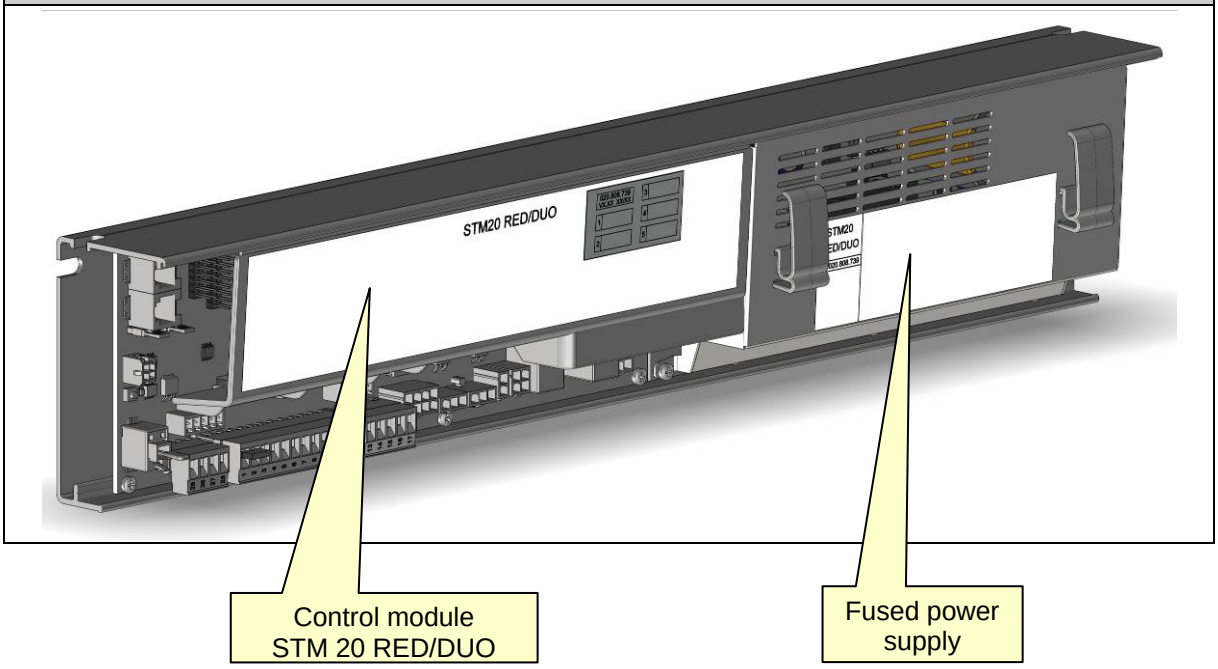

ELS 260 / 261
Optional ZLP ELS
µP
red
ELS1
ELS2
J11
Button
+24V
30 SEK 1+ white
31 SEK 1- black
32 EMK 1+ orange
33 EMK 1- black
34 SEK 2+ white
35 SEK 2- black
36 EMK 2+ orange
37 EMK 2- black
J5
Emitter head 1
Receiver head 1
SEK 1
EMK 1
Emitter head 2
Receiver head 2
SEK 2
EMK 2
* To be bridged when SEK and EMK are not connected
* To be bridged when emergency stop is not connected
Emergency stop
(016.842.000)
Rel.1
JP1
HEA
µP1
WD-IC
AUX0_IN
AUX1_IN
Optional
radio module
(SSK)
J12
Relay
contact
rating
max. 1A
30VDC
AUX0_OUT
Alarm = Relay dropped
Gong = Relay attracted
J3
green
green
red
+24V
LED3
+32V
LED4
E-End
LED2
+35V
BAT+
SSK-A
SSK
SSK
+5V
JP4
E-STA-L
JP5
SLAVE
FPC
J9
CAN Device 1
CAN Device n
J8
Sensor cables
Cores twisted in pairs
CAN
Termination
Control LED
LED1
Button
CAN-H
CAN-L
Cores twisted in pairs
BDE-D
+24V
0V
S1-1
S1-2
for
BDE2
J2
Lockable
by user
Control module 20
102-020109935

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.

Control module and power supply



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

NOTE

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

NOTE

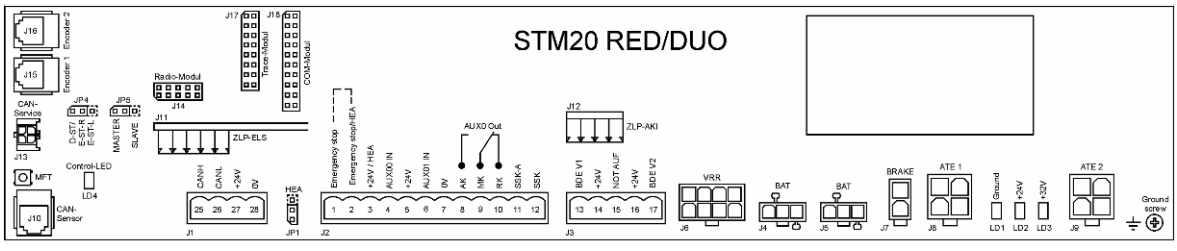
Control module STM 20 RED/DUO **with DUO software** has been tested according EN 13849-1:2006, **category 2 PLc.**

ATTENTION

- 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

STM 20 RED/DUO

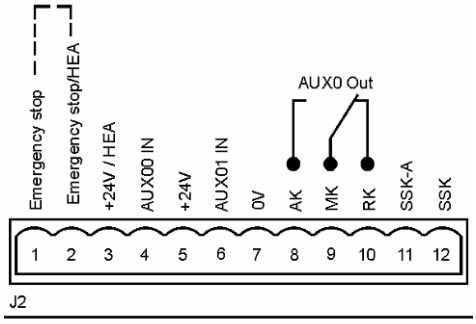


Jumper		Change of function
JP1	Jumper on HEA	Allows emergency stop and HEA to be connected in series • HEA → 3-2 • Emergency stop → 2-1
JP2		Not printed
JP3	Syst.-conditioned, internal	Not visible – required for VRR2 (MPV 16)

JP4	**On RED and DUO installation**	
	D-ST & EST-R	Factory setting
	EST-L	Fixing connecting clamp to **upper** part of toothed belt - **Shunt position remains unchanged !**
JP5	Standard Master operation mode	Slave – only in case of two STM
Light-emitting diodes		**Meaning**
LD1	Ground – red control-LED	• Ground – must light up, if protective earth screw is withdrawn • Otherwise grounding is on
LD2	green + 24 V	• Is on, if 24 volt circuit OK • Comes off in case of by-pass in 24 volt circuit
LD3	green + 32 V	• Is on, if system connected to mains voltage
LD4	red control-LED	For MF key S1 – is blinking, if button is pressed
Multifunctional key		**Function, after pulses have been given**
1 pulse		Releases an opening movement (AKI)
2 pulses		Calibrating ELS
3 pulses		Calibrating door parameters
4 pulses		Entering programming level
5 pulses		**RED** • Redundancy test, if system connected to mains voltage **DUO** • Battery emergency reaction, as long as system disconnected from mains • Battery test in case of mains connection
8 pulses		Loads default values of door type selected
9 pulses		Back to factory settings (afterwards emergency stop must be actuated within 10 seconds)
14 pulses		Hardware reset is performed after approx. 12 seconds
Connector designation		**Connections**
J1		Terminals 25 – 28 → for BDE-D
J2		Terminals 1 – 12: Functions according to wiring diagram 102-020110534
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 (used for DUO and RED applications)
J5		Battery 2 (only used for RED applications)
J6		Locking
J7		Motor brake
J8		ATE motor 1 (The DUO-application can be driven with 1 motor only)
J9		ATE motor 2
J10		CAN bus / CAN sensors

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

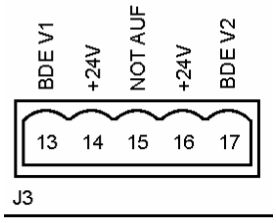
NOTE



Emergency stop:

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

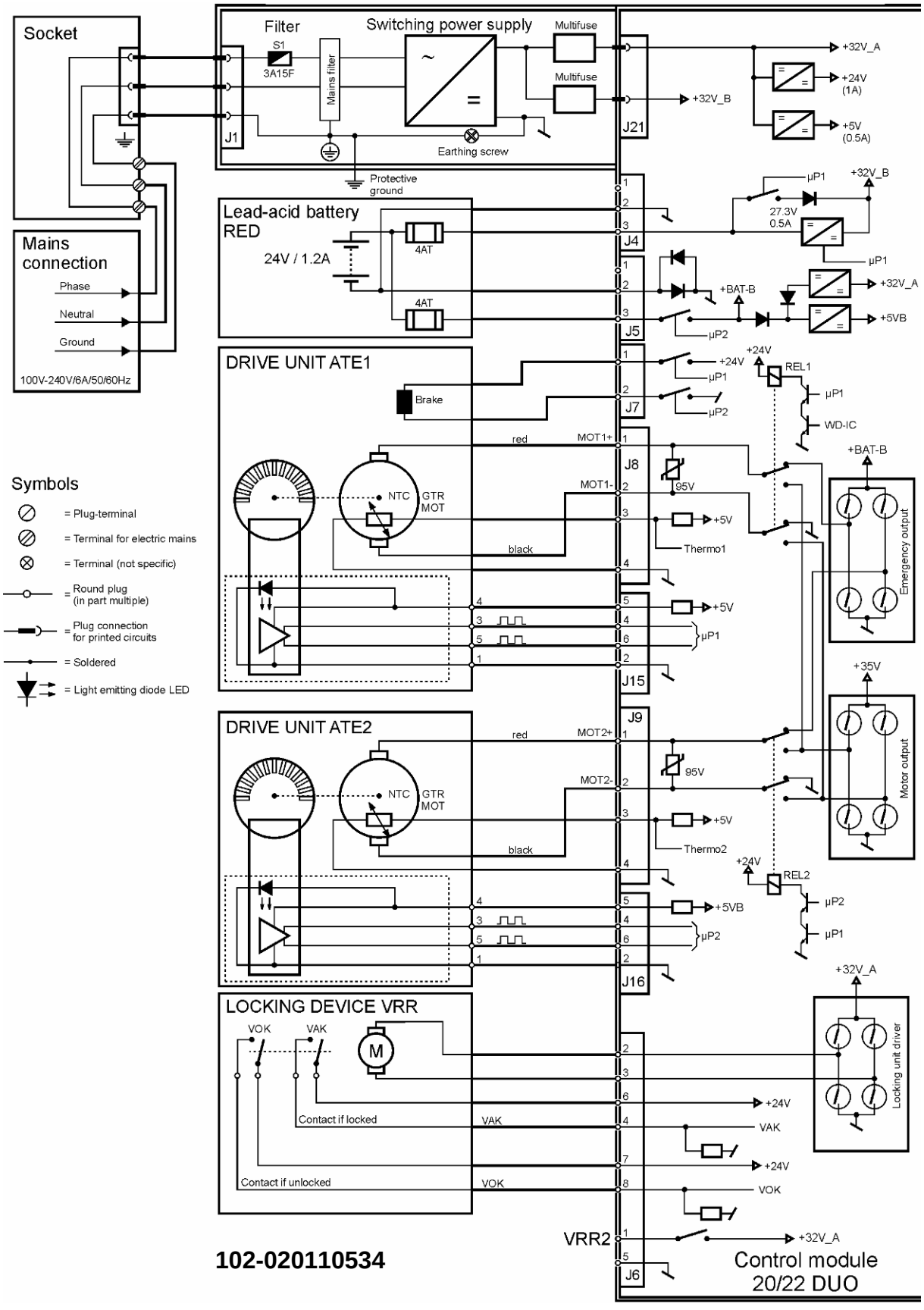
NOTE



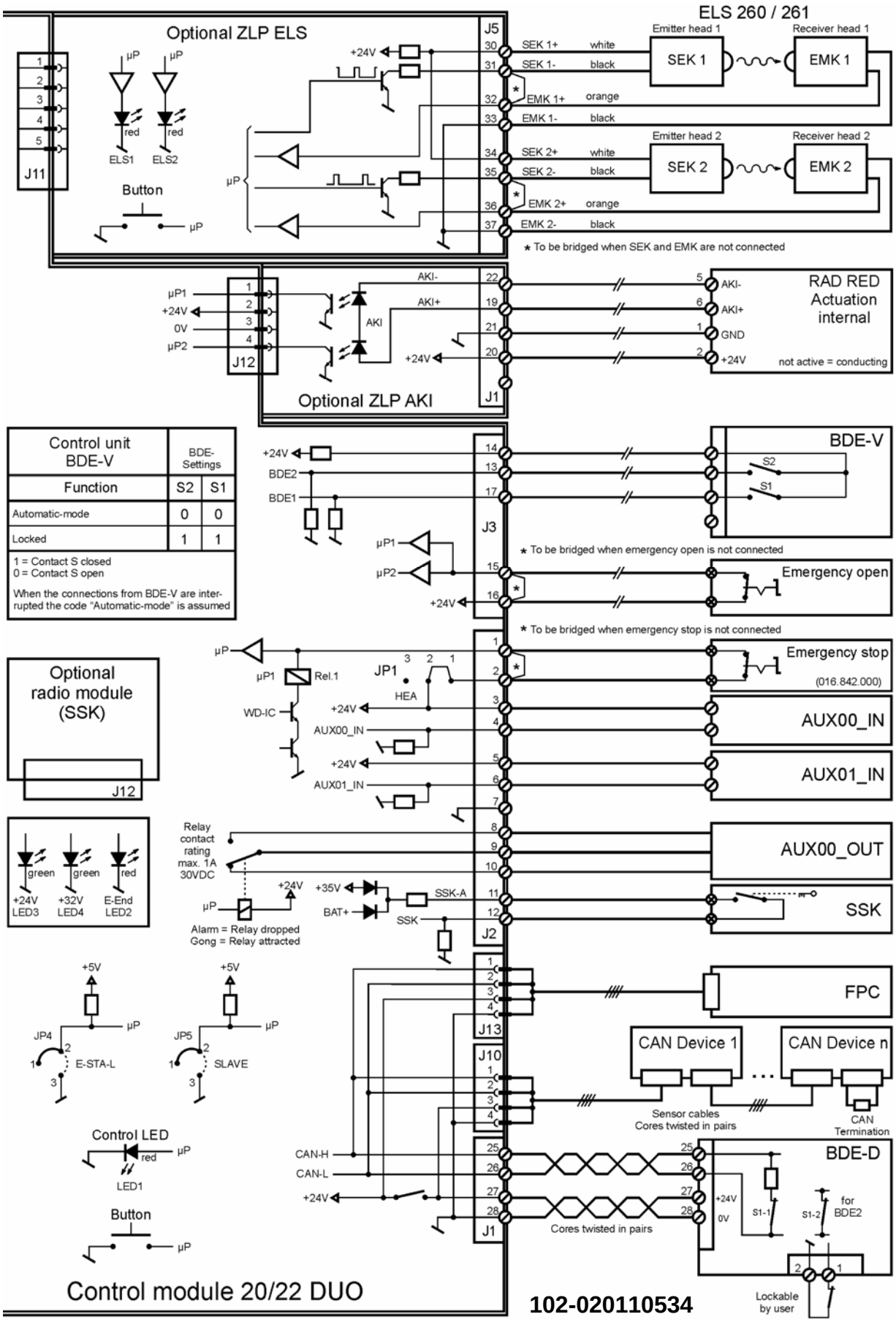
Emergency open:

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

3.4. Wiring diagram control module STM 20 RED/DUO



102-020110534


ELS 260 / 261
Optional ZLP ELS
J5
J11
ELS1
ELS2
Button
SEK 1+ white
SEK 1- black
EMK 1+ orange
EMK 1- black
SEK 2+ white
SEK 2- black
EMK 2+ orange
EMK 2- black
Emitter head 1
Receiver head 1
SEK 1
EMK 1
Emitter head 2
Receiver head 2
SEK 2
EMK 2
* To be bridged when SEK and EMK are not connected
Optional ZLP AKI
J12
J1
AKI-
AKI+
AKI
RAD RED Actuation internal
GND
not active = conducting
Control unit BDE-V
BDE-Settings
Function
S2
S1
Automatic-mode 0 0
Locked 1 1
1 = Contact S closed
0 = Contact S open
When the connections from BDE-V are interrupted the code "Automatic-mode" is assumed
BDE-V
BDE2
BDE1
J3
* To be bridged when emergency open is not connected
Emergency open
* To be bridged when emergency stop is not connected
Emergency stop
(016.842.000)
Optional radio module (SSK)
Rel.1
JP1
HEA
WD-IC
AUX00_IN
AUX01_IN
AUX00_OUT
SSK
Relay contact rating max. 1A 30VDC
Alarm = Relay dropped
Gong = Relay attracted
SSK-A
BAT+
J2
FPC
J13
J10
CAN Device 1
CAN Device n
Sensor cables
Cores twisted in pairs
CAN Termination
JP4
E-STA-L
JP5
SLAVE
Control LED
LED1
CAN-H
CAN-L
BDE-D
Cores twisted in pairs
for BDE2
Lockable by user
Control module 20/22 DUO
102-020110534

3.5. Components RED/DUO system

MS Power set DUO • Control module STM 20 RED/DUO • 2 pc. ATE 20 • Socket • Cable and installation material	**102-020808749**
BAT 20 RED	**102-020808835**

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.

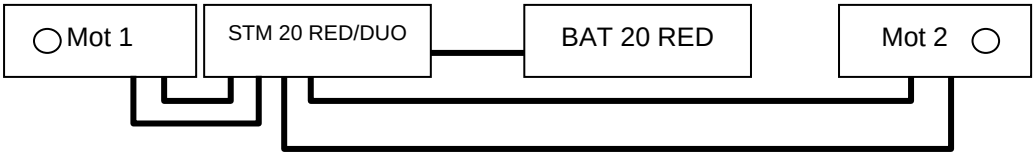
NOTE

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

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

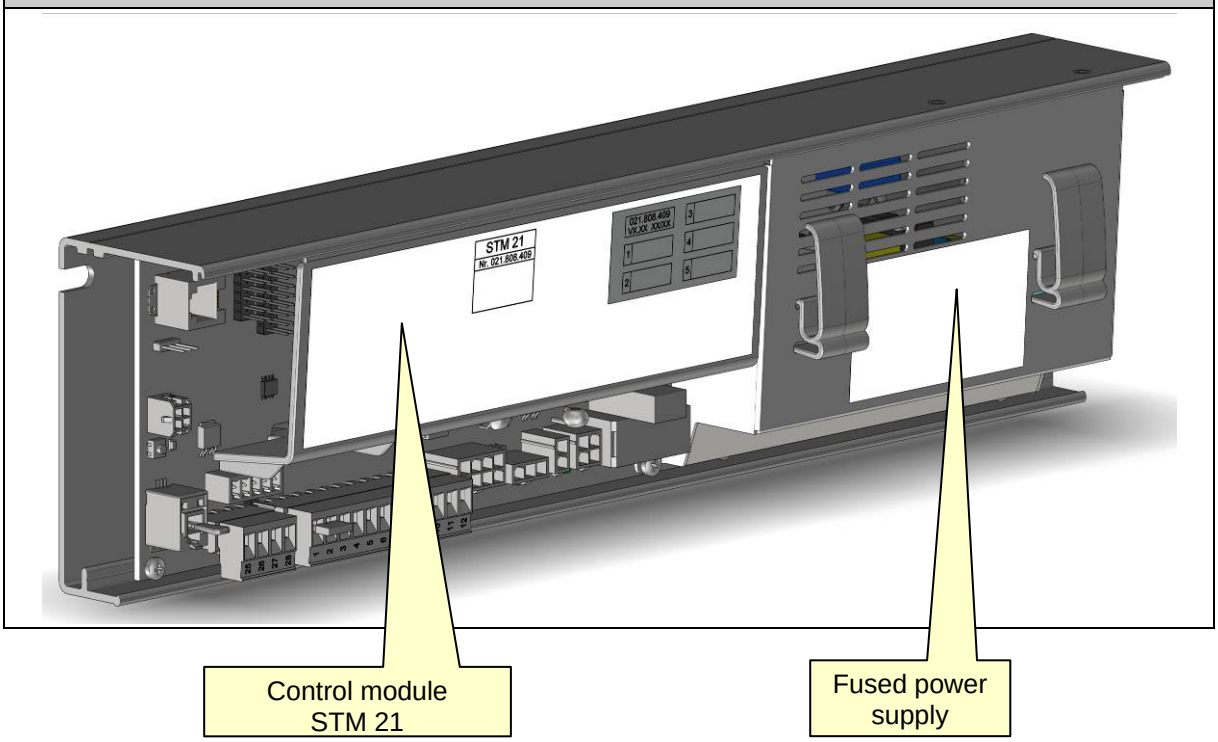
The BDE – V for the night closure must be procured locally. There are 2 closing contacts necessary.

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.

Control module and power supply



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

NOTE

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

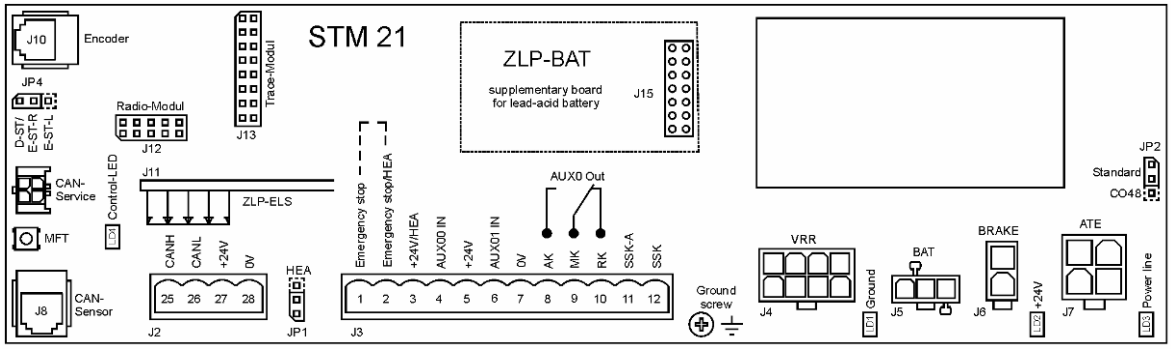
4.2.2. Unavailable applications

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

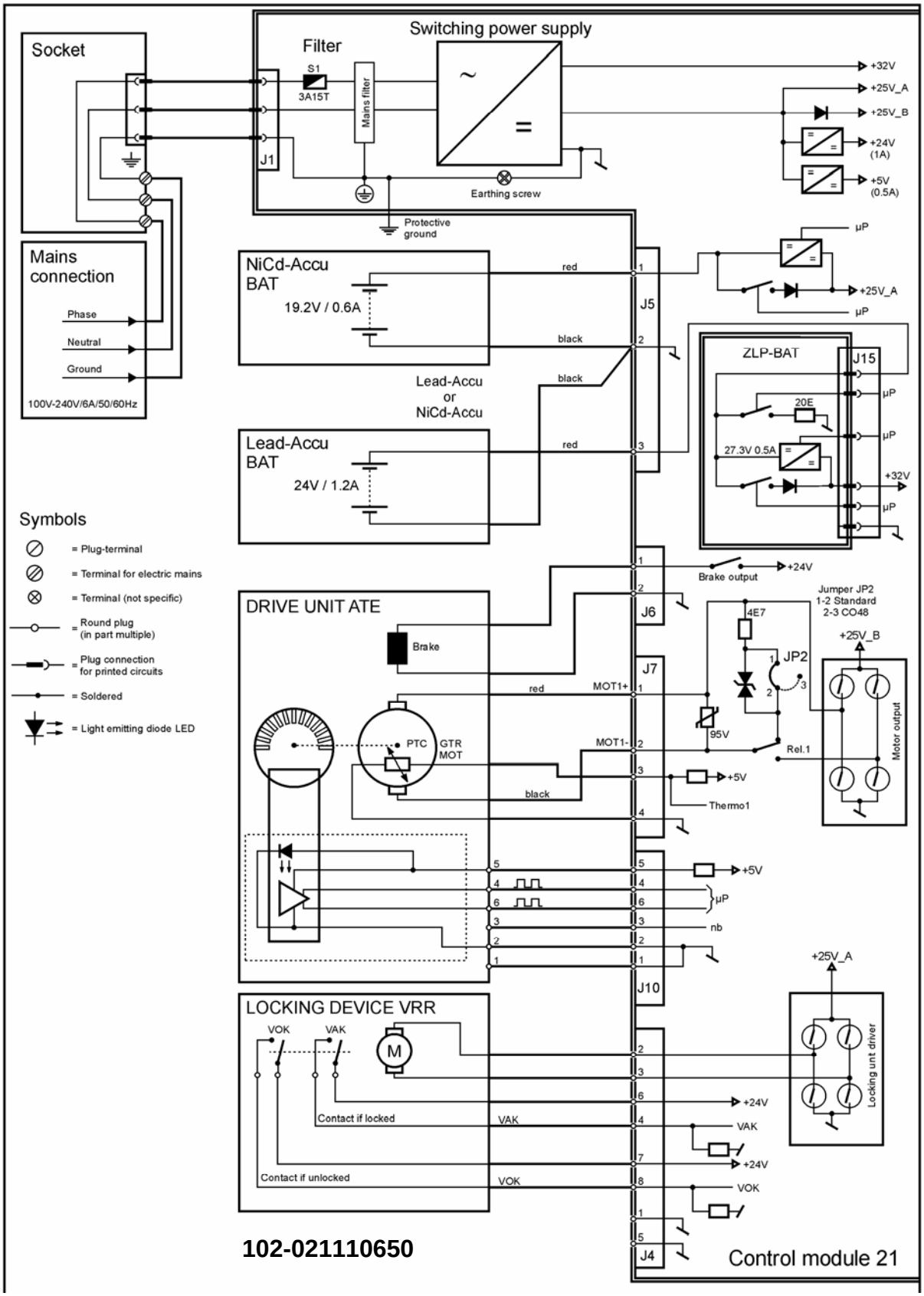
STM 21 DUO

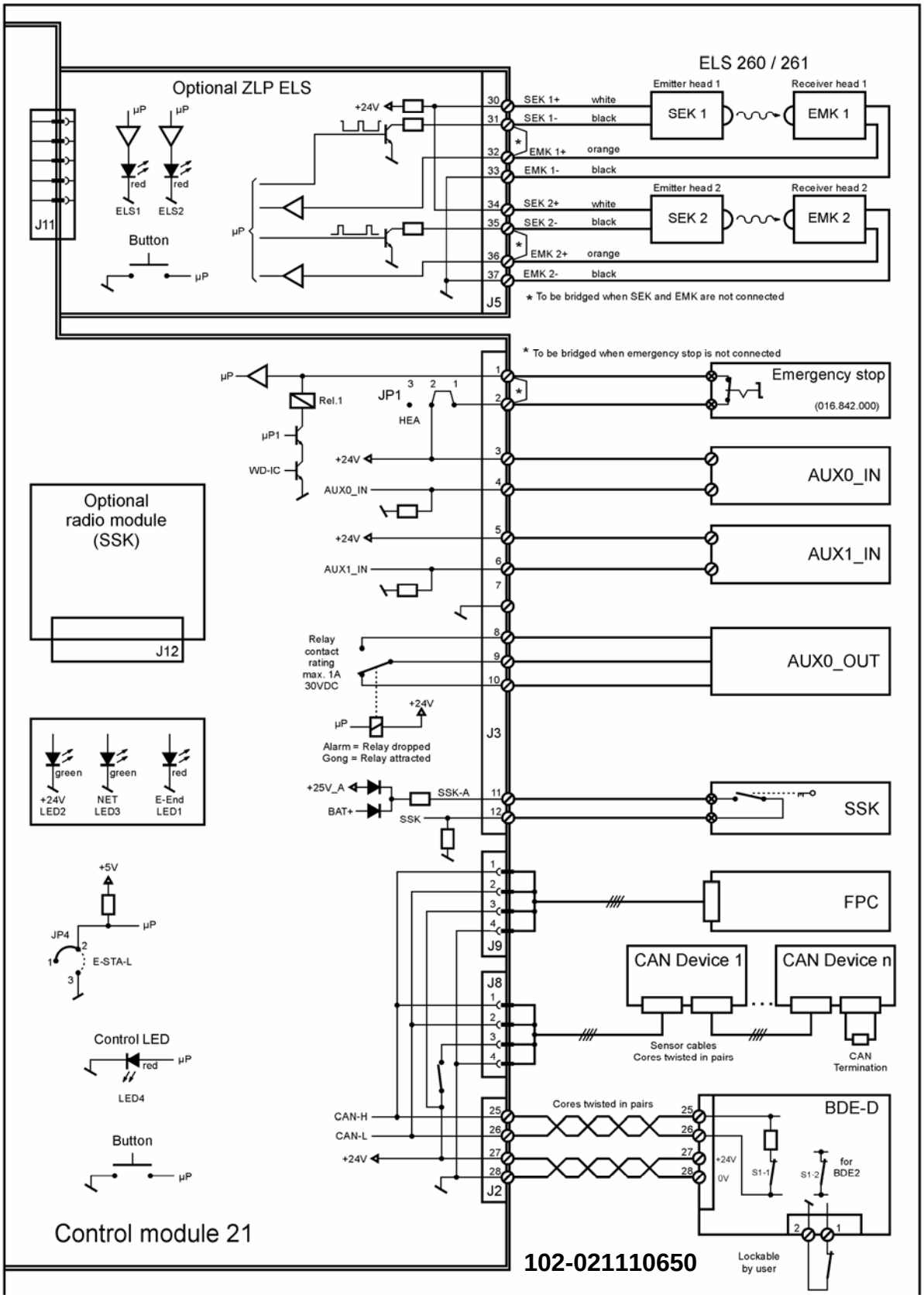


Jumper		Change of function
JP1	Jumper on HEA	Allows emergency stop and HEA to be connected in series:: • HEA → 3-2 • Emergency stop → 2-1
JP2	Standard / CO48	Influences motor-driven braking function in case of power failure (weaker with CO48)
JP3	Syst.-conditioned, internal	Not visible – reserved for future applications

JP4	Standard D-ST & EST L	Re-plugging for monitoring devices EST R – subsequently reboot of control necessary
Light-emitting diode		**Meaning**
LD1	Red control-LED	For multifunctional key S1 – blinks when key is pressed
LD2	Red	• Change plugging to reverse rotational direction (EST-R) • Then resetting STM is required
LD3	Green + 24 V	• Is on, if 24 volt circuit OK • Comes off in case of by-pass in 24 volt circuit
LD4	Green + 32 V	• Is on, if system connected to mains voltage
Multifunctional key		**Function, after impulses have been given**
1 puls		Activates an opening function (AKI)
2 pulses		Calibrating ELS
3 pulses		Calibrating door parameters
4 pulses		Entering programming level
5 pulses		• Battery emergency reaction, as long as system is disconnected from mains • Battery test in case of mains connection
8 pulses		Loads default values of door type selected
9 pulses		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 **Emergency-Stop with Reset** is active!!
14 pulses		Hardware reset is performed within ca. 12 seconds
Connector designation		**Connections**
J1		Mains plug
J2		Terminals 25 – 28 → für BDE-D
J3		Terminals 1 - 12: Functions according to wiring diagram 021.110.649_D
J4		Locking device
J5		Battery
J6		Motor brake
J7		ATE Motor
J8		CAN-bus
J9		CAN bus plug for FPC-servicing
J10		Encoder motor
J11		Extra printed circuit board ELS (ZLP-ELS)
J12 - 13		Reserved for future modules
J15		Extra printed circuit board BAT (ZLP-BAT) for lead-acid battery

4.4. Wiring diagram control module STM 21



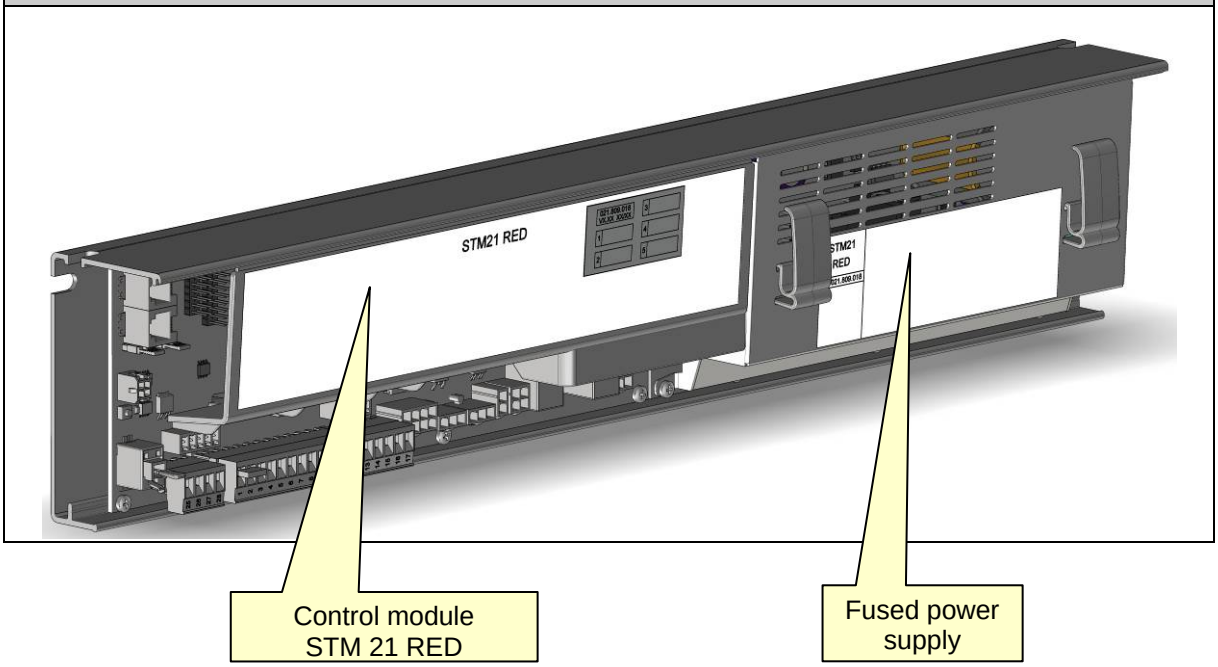

ELS 260 / 261
Optional ZLP ELS
Emitter head 1
Receiver head 1
SEK 1
EMK 1
SEK 1+ white
SEK 1- black
EMK 1+ orange
EMK 1- black
Emitter head 2
Receiver head 2
SEK 2
EMK 2
SEK 2+ white
SEK 2- black
EMK 2+ orange
EMK 2- black
* To be bridged when SEK and EMK are not connected
* To be bridged when emergency stop is not connected
Emergency stop
(016.842.000)
AUX0_IN
AUX1_IN
AUX0_OUT
SSK
FPC
CAN Device 1
CAN Device n
Sensor cables
Cores twisted in pairs
CAN Termination
BDE-D
Cores twisted in pairs
for BDE2
Lockable by user
Optional radio module (SSK)
Relay contact rating max. 1A 30VDC
Alarm = Relay dropped
Gong = Relay attracted
Control LED
Button
LED4
Control module 21
102-021110650

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.

Control module and power supply



DANGER

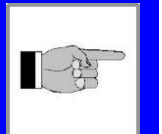
ELEKTRIC SHOCK

- 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

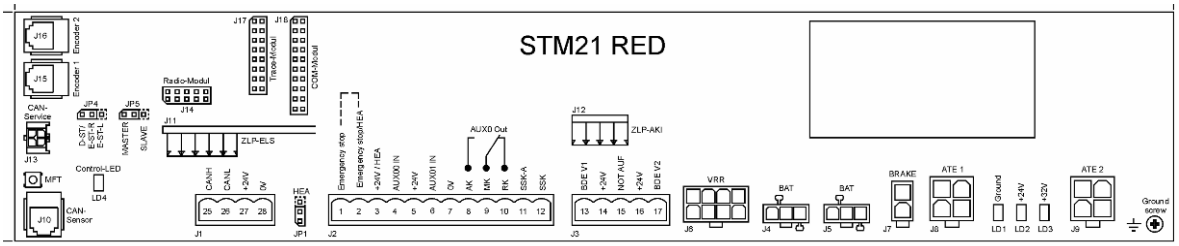
5.2.1. Escape and rescue routes as RED installation

NOTE

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

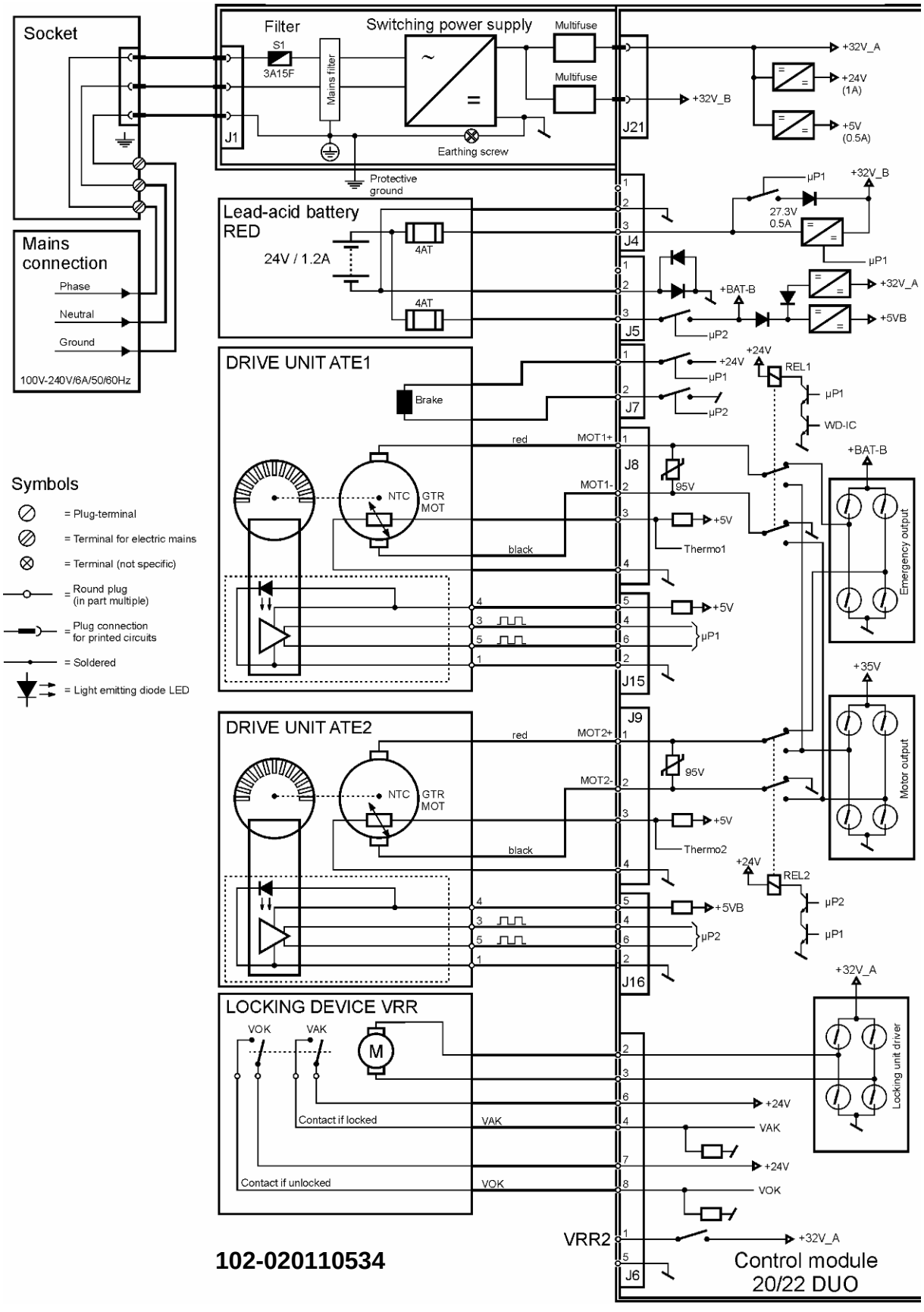
STM 21 RED



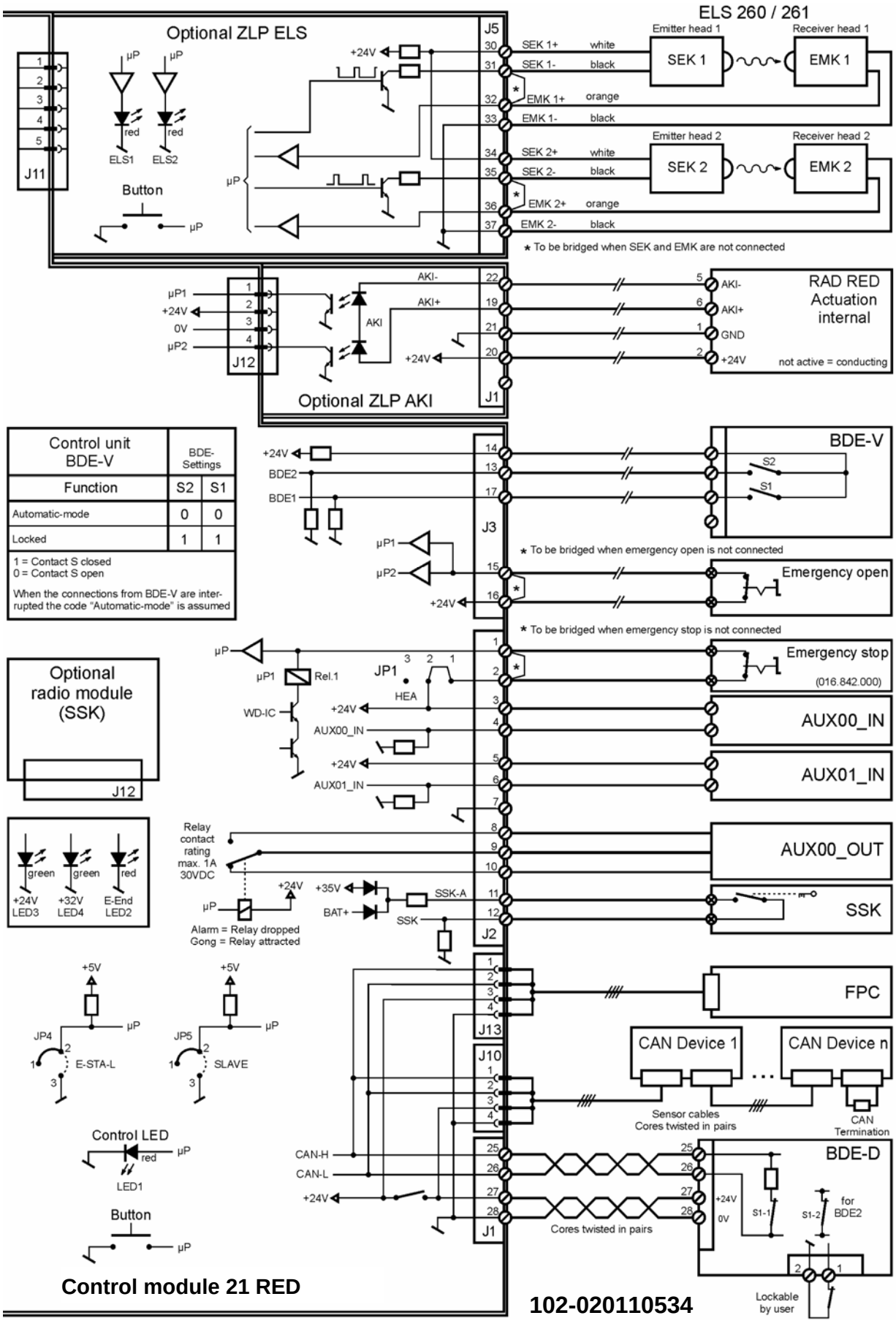
Jumper		Change of function
JP1	Jumper on HEA	Allows emergency stop and HEA to be connected in series • HEA → 3-2 • Emergency stop → 2-1
JP2		Not printed
JP3	Syst.-conditioned, internal	Not visible – required for VRR2 (MPV 16)
JP4	**On RED and DUO installation**	
	D-ST & EST-R	Factory setting
	EST-L	Fixing connecting clamp to **upper** part of toothed belt - **Shunt position remains unchanged !**
JP5	Standard Master operation mode	Slave – only in case of two STM
Light-emitting diodes		**Meaning**
LD1	Ground – red control-LED	• Ground – must light up, if protective earth screw is withdrawn • Otherwise grounding is on
LD2	green + 24 V	• Is on, if 24 volt circuit OK • Comes off in case of by-pass in 24 volt circuit
LD3	green + 32 V	• Is on, if system connected to mains voltage
LD4	red control-LED	For MF key S1 – is blinking, if button is pressed

Multifunctional key	Function, after pulses have been given
1 pulse	Releases an opening movement (AKI)
2 pulses	Calibrating ELS
3 pulses	Calibrating door parameters
4 pulses	Entering programming level
5 pulses	**RED** • Redundancy test, if system connected to mains voltage **DUO** • Battery emergency reaction, as long as system disconnected from mains • Battery test in case of mains connection
8 pulses	Loads default values of door type selected
9 pulses	Back to factory settings (afterwards emergency stop must be actuated within 10 seconds)
14 pulses	Hardware reset is performed after approx. 12 seconds
Connector designation	**Connections**
J1	Terminals 25 – 28 → for BDE-D
J2	Terminals 1 – 12: Functions according to wiring diagram 102-020110534
J3	Terminals 13 – 17 (only used with RED applications): Functions according to wiring diagram 102-020110534
J4	Battery 1 (used for DUO and RED applications)
J5	Battery 2 (only used for RED applications)
J6	Locking
J7	Motor brake
J8	ATE motor 1
J9	ATE motor 2
J10	CAN bus / CAN sensors
J11	Extra printed circuit board ELS (ZLP-ELS)
J12	Extra printed circuit board AKI (ZLP-AKI)
J13	CAN bus plug for FPC-servicing
J14	Reserved for future modules
J15	Encoder motor 1
J16	Encoder motor 2
J17	Reserved for future modules
J18	Reserved for future modules

5.4. Wiring diagram control module STM 21 RED



Control module 21 RED


ELS 260 / 261
Optional ZLP ELS
J11
ELS1
ELS2
Button
J5
SEK 1+ white
SEK 1- black
EMK 1+ orange
EMK 1- black
SEK 2+ white
SEK 2- black
EMK 2+ orange
EMK 2- black
Emitter head 1
Receiver head 1
SEK 1
EMK 1
Emitter head 2
Receiver head 2
SEK 2
EMK 2
* To be bridged when SEK and EMK are not connected
Optional ZLP AKI
J12
J1
AKI-
AKI+
AKI
RAD RED Actuation internal
GND
not active = conducting
Control unit BDE-V
BDE-Settings
Function
S2
S1
Automatic-mode 0 0
Locked 1 1
1 = Contact S closed
0 = Contact S open
When the connections from BDE-V are interrupted the code "Automatic-mode" is assumed
BDE-V
BDE2
BDE1
J3
* To be bridged when emergency open is not connected
Emergency open
* To be bridged when emergency stop is not connected
Emergency stop
(016.842.000)
Optional radio module (SSK)
J12
JP1
HEA
Rel.1
WD-IC
AUX00_IN
AUX01_IN
AUX00_OUT
SSK
SSK-A
BAT+
Relay contact rating max. 1A 30VDC
Alarm = Relay dropped
Gong = Relay attracted
green
green
red
+24V LED3
+32V LED4
E-End LED2
J2
FPC
J13
J10
CAN Device 1
CAN Device n
Sensor cables
Cores twisted in pairs
CAN Termination
JP4
E-STA-L
JP5
SLAVE
Control LED
LED1
CAN-H
CAN-L
BDE-D
for BDE2
Lockable by user
Control module 21 RED
102-020110534

5.5. Components RED system

MS Power set STM 21 RED • Control module STM 21 RED • 1 pc. ATE 21 (Linix) • 1 pc. ATE 21 • Socket • Cable and installation material	**102-021808964**
BAT 20 RED	**102-020808835**

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.

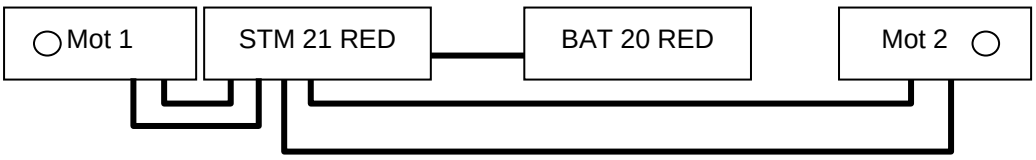
NOTE

On RED system the Encoder cable must be also connected on the 2nd 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 Encorder connection cable)

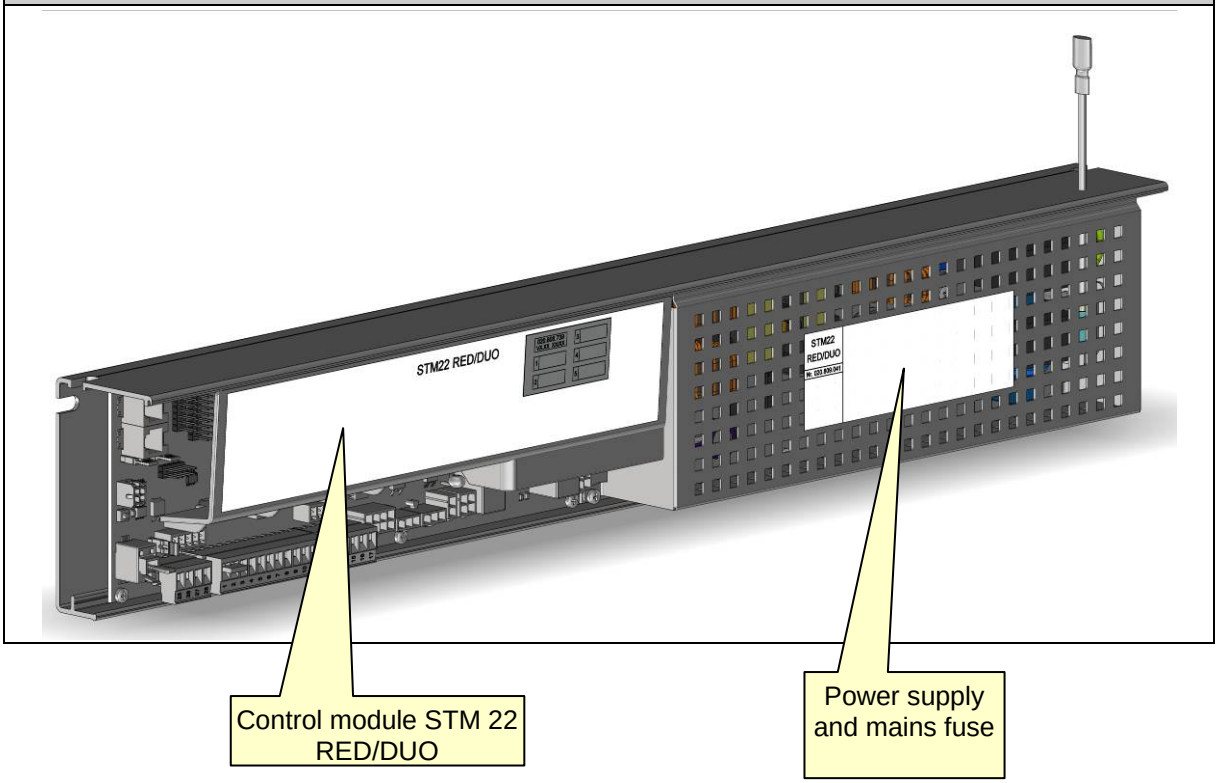
The BDE – V for the night closure must be procured locally. There are 2 closing contacts necessary.

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.

Control module and power supply



DANGER

ELECTRIC SHOCK

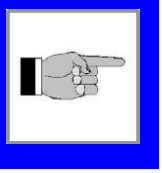
- Electrical shock, burns, death if you touch the power supply without protective cover.
  - ➢ Before removing the metal cover disconnect the drive from the main.
  - ➢ Installation only reconnects to the network after the protection cover is closed.

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

NOTE



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

NOTE

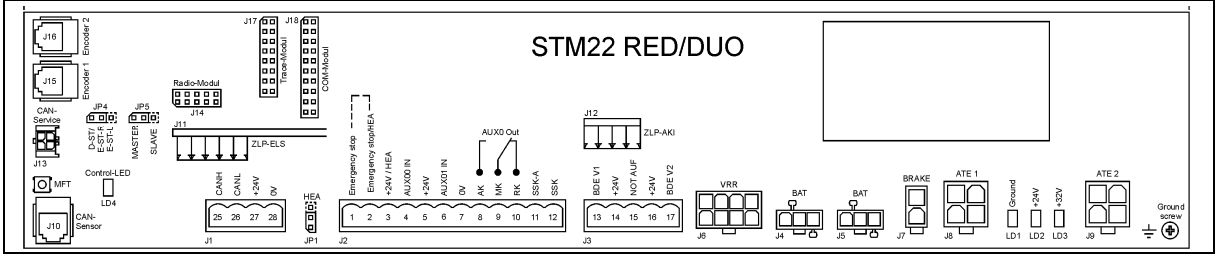
The STM 22 RED/DUO control module **with RED Software** complies with EN 13849-1:2006, **Category 2 PLc.**

ATTENTION

- The STM 22 RED/DUO is usually delivered **with RED soft ware**!
- 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

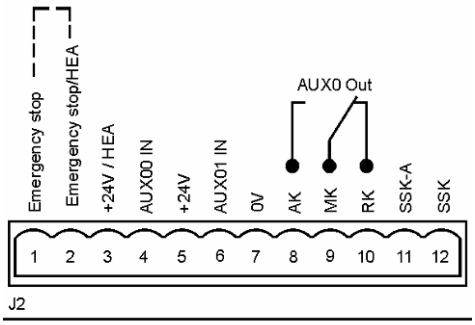
STM 22 RED/DUO



Jumper		Change of function
JP1	Jumper on HEA	Allows emergency stop and HEA to be connected in series:: • HEA → 3-2 • Emergency stop → 2-1
JP2		Not equipped
JP3	Syst.-conditioned, internal	Not visible – reserved for future applications
JP4	**If used as RED+DUO-installation**	
	D-ST & EST-R	Factory setting
	EST-L	Mounting of the belt clamp at the **upper belt torsion – the jumper-position remains unchanged!**
JP5	Standard master mode	Slave – only used with two STM
Light-emitting diode		**Meaning**
LD1	Ground – Red control-LED	• Must light with distant ground screw • Otherwise, there is ground present
LD2	green + 24 V	• Is on, if 24 volt circuit OK • Comes off in case of by-pass in 24 volt circuit
LD3	green + 32 V	• Is on, if system connected to mains voltage
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 pulses		Calibrating ELS
3 pulses		Calibrating door parameters
4 pulses		Entering programming level
5 pulses		**RED** • Redundancy test with existing mains power **DUO** • Battery emergency reaction, if no mains power available • Battery test with existing mains power
8 pulses		Loads default values of door type selected
9 pulses		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 **Emergency-Stop with Reset** is active!!
14 pulses		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)

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

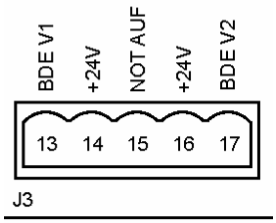
NOTE



Emergency stop:

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

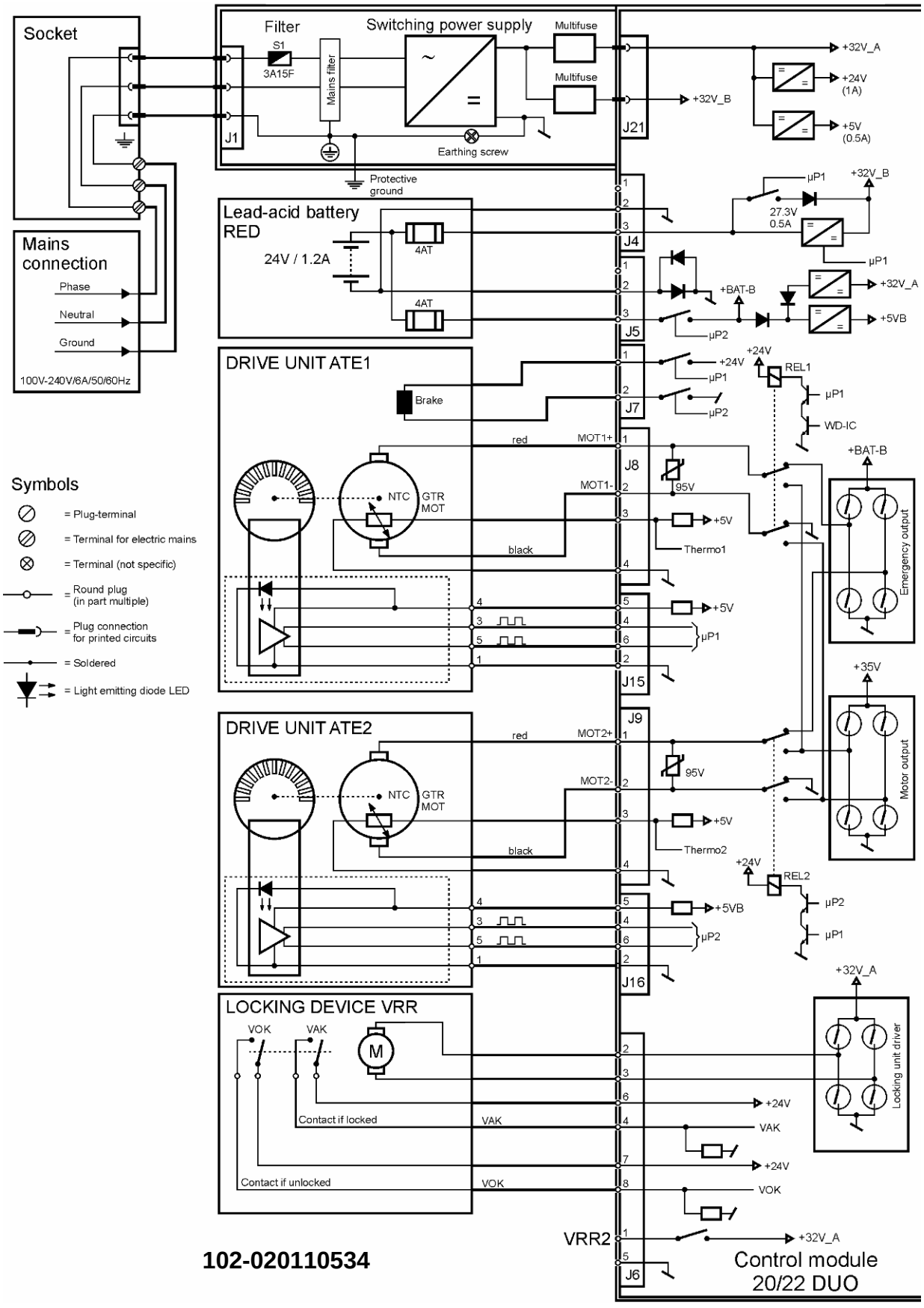
NOTE



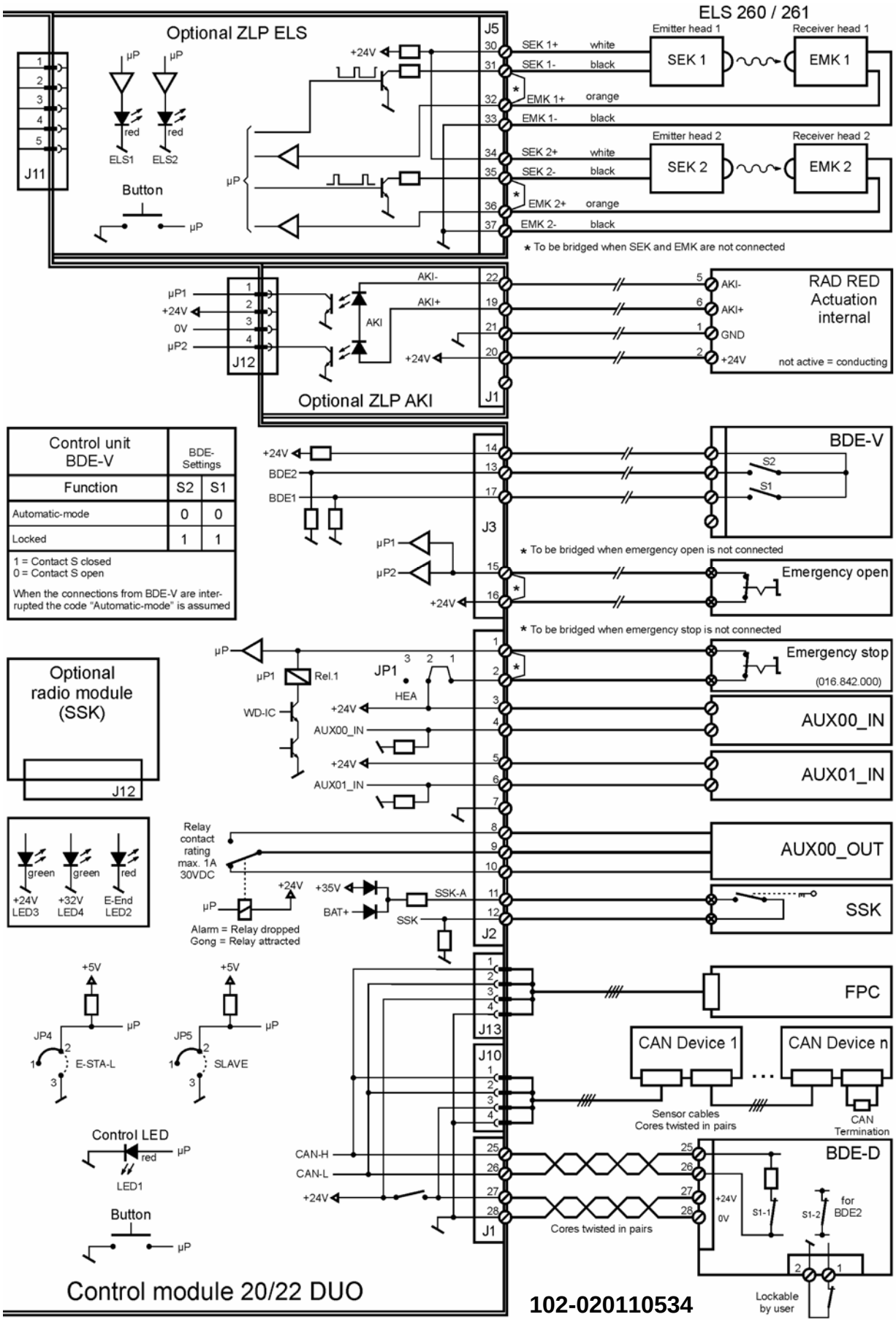
Emergency open:

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

6.4. Wiring diagram control module STM 22 DUO/RED



102-020110534


ELS 260 / 261
Optional ZLP ELS
J5
J11
µP
red
ELS1
ELS2
Button
+24V
SEK 1+ white
SEK 1- black
EMK 1+ orange
EMK 1- black
Emitter head 1
Receiver head 1
SEK 1
EMK 1
SEK 2+ white
SEK 2- black
EMK 2+ orange
EMK 2- black
Emitter head 2
Receiver head 2
SEK 2
EMK 2
* To be bridged when SEK and EMK are not connected
µP1
+24V
0V
µP2
J12
AKI-
AKI+
AKI
GND
RAD RED
Actuation
internal
not active = conducting
Optional ZLP AKI
J1
Control unit
BDE-V
BDE-
Settings
Function
S2
S1
Automatic-mode
0
0
Locked
1
1
1 = Contact S closed
0 = Contact S open
When the connections from BDE-V are interrupted the code "Automatic-mode" is assumed
BDE2
BDE1
BDE-V
J3
* To be bridged when emergency open is not connected
Emergency open
* To be bridged when emergency stop is not connected
Emergency stop
(016.842.000)
Optional
radio module
(SSK)
J12
Rel.1
JP1
HEA
WD-IC
AUX00_IN
AUX01_IN
AUX00_OUT
SSK
green
red
+24V
LED3
+32V
LED4
E-End
LED2
Relay
contact
rating
max. 1A
30VDC
Alarm = Relay dropped
Gong = Relay attracted
+35V
BAT+
SSK-A
J2
FPC
J13
J10
CAN Device 1
CAN Device n
Sensor cables
Cores twisted in pairs
CAN
Termination
JP4
E-STA-L
JP5
SLAVE
Control LED
LED1
Button
CAN-H
CAN-L
BDE-D
S1-1
S1-2
for
BDE2
Lockable
by user
Control module 20/22 DUO
102-020110534

6.5. Components RED/DUO installations

MS Power set STM22 RED/DUO • Control module STM 22 RED/DUO • 2 pc. ATE • Cable and installation material	**102-020401204**
BAT 20 RED	**102-020808835**

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.

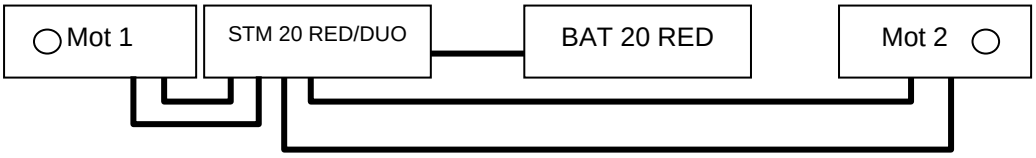
NOTE

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 Encorder connection cable)

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