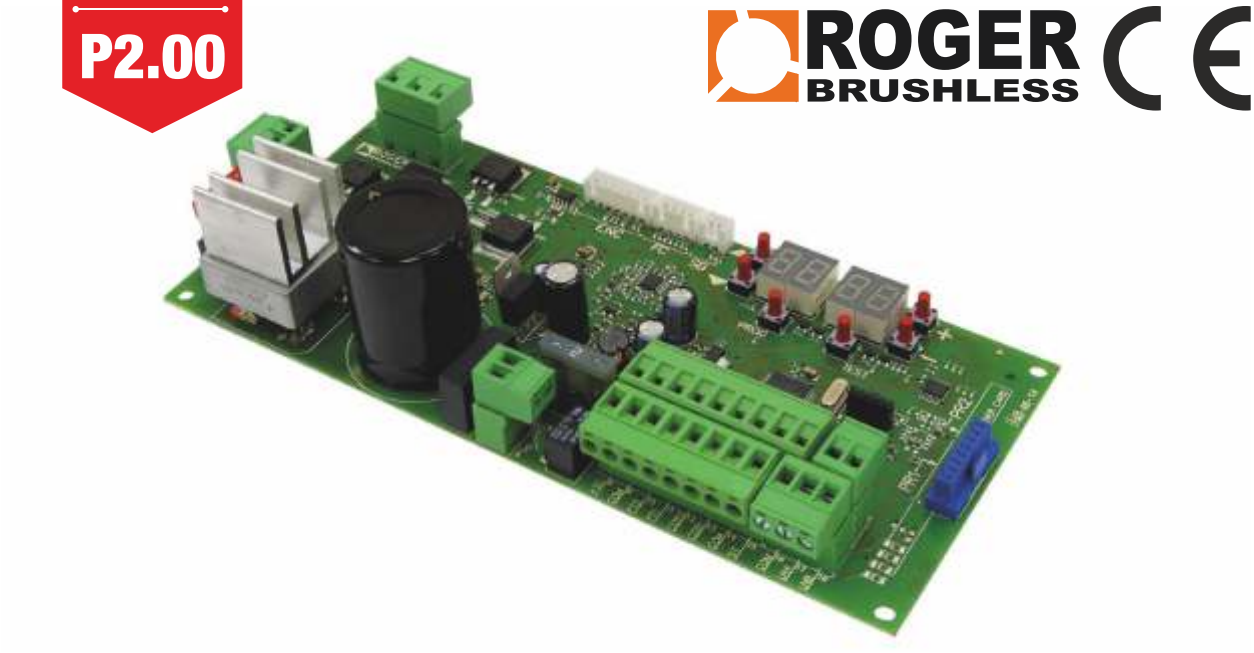
FW
P2.00



IS117 Rev.20 07/06/2022

B70/1DC

Instructions and warnings for the installer

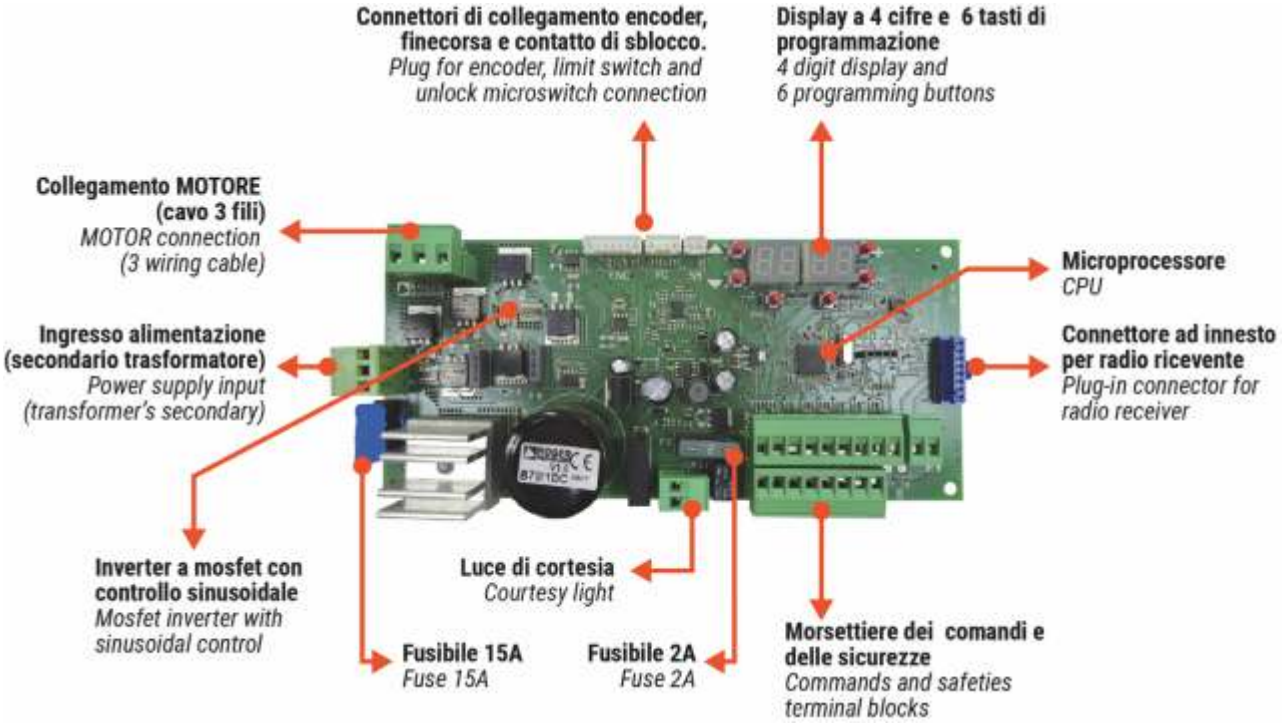
ROGER TECHNOLOGY

ENGLISH

1 General safety precautions
2 Symbols
3 Product description
4 Updates of version P2.00
5 Technical characteristics of product
6 Description of connections
6.1 Typical installation
6.2 Electrical connections
7 Commands and Accessories
8 Function buttons and display
9 Switching on or commissioning
10 Display function modes
10.1 Parameter display mode
10.2 Command and safety device status display mode
10.3 TEST mode
10.4 Standby mode
11 Travel acquisition
11.1 Before starting:
11.2 Acquisition procedure:
12 Index of parameters
13 Parameters menu
14 Special parameters for High Speed series
15 Special parameters for Reversible series
16 Safety input and command status (TEST mode)
17 Alarms and faults
18 Procedural veri"Ecations - INFO Mode
19 Mechanical release
20 Position recovery mode
21 Initial testing
22 Start-up
23 Maintenance
24 Disposal
25 Additional information and contact details
Declaration CE of Conformity

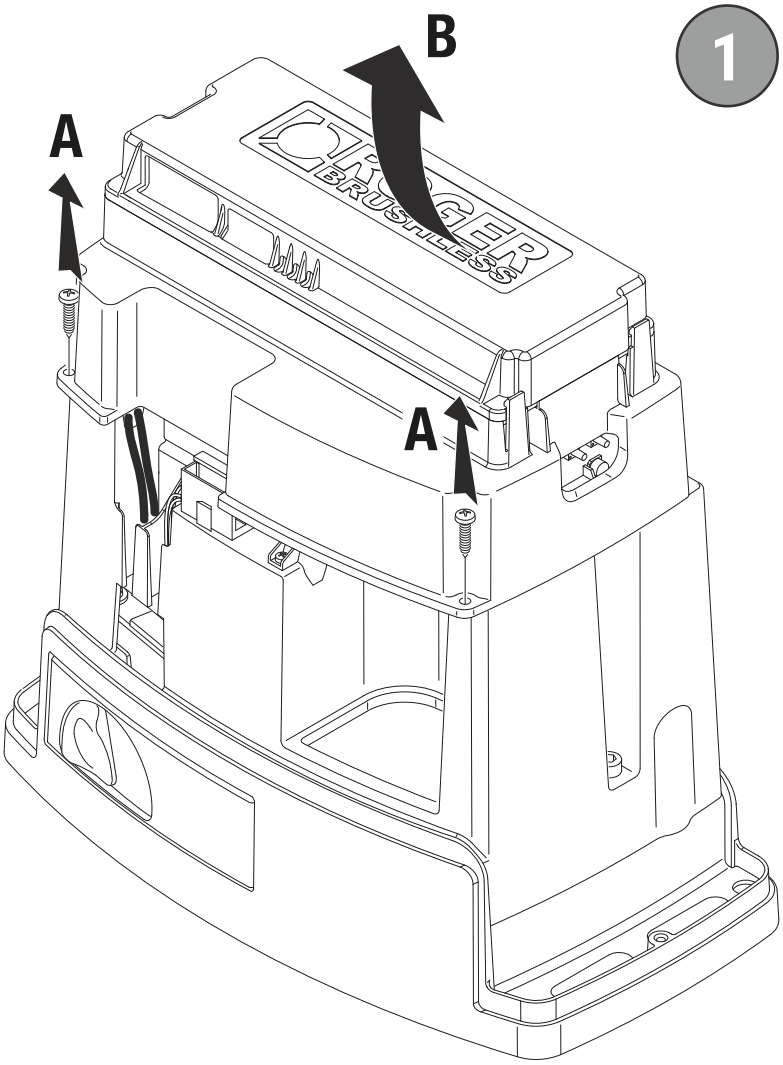
FW

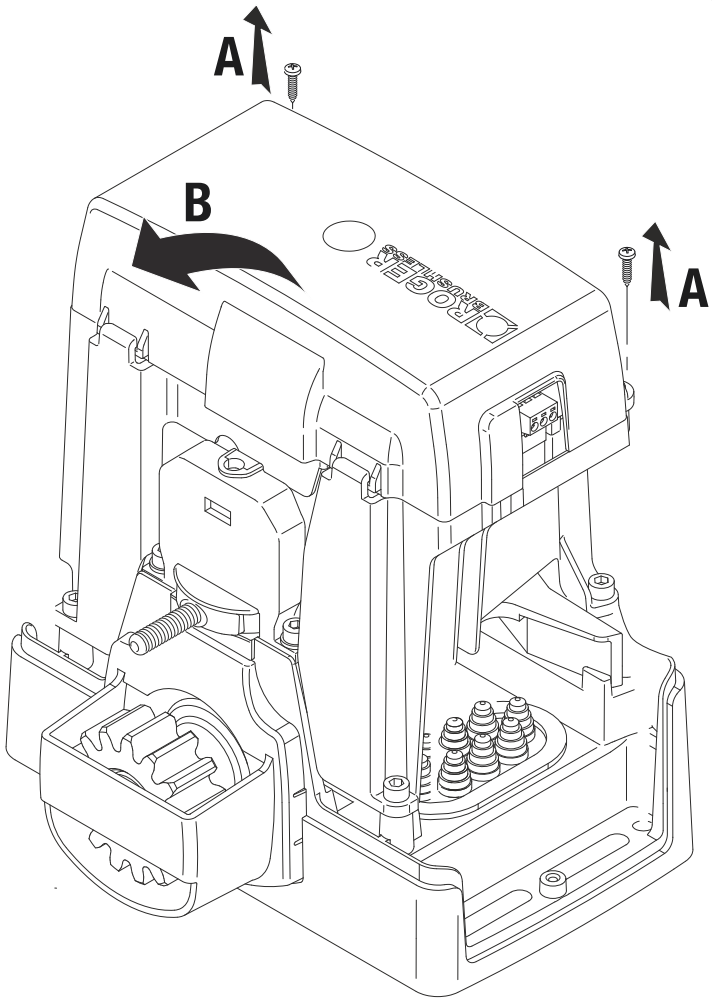
P2.00


Connettori di collegamento encoder, finecorsa e contatto di sblocco.
Plug for encoder, limit switch and unlock microswitch connection
Display a 4 cifre e 6 tasti di programmazione
4 digit display and 6 programming buttons
Collegamento MOTORE (cavo 3 fili)
MOTOR connection (3 wiring cable)
Microprocessore
CPU
Ingresso alimentazione (secondario trasformatore)
Power supply input (transformer's secondary)
Connettore ad innesto per radio ricevente
Plug-in connector for radio receiver
Inverter a mosfet con controllo sinusoidale
Mosfet inverter with sinusoidal control
Luce di cortesia
Courtesy light
Fusibile 15A
Fuse 15A
Fusibile 2A
Fuse 2A
Morsettiere dei comandi e delle sicurezze
Commands and safeties terminal blocks

BH30

1

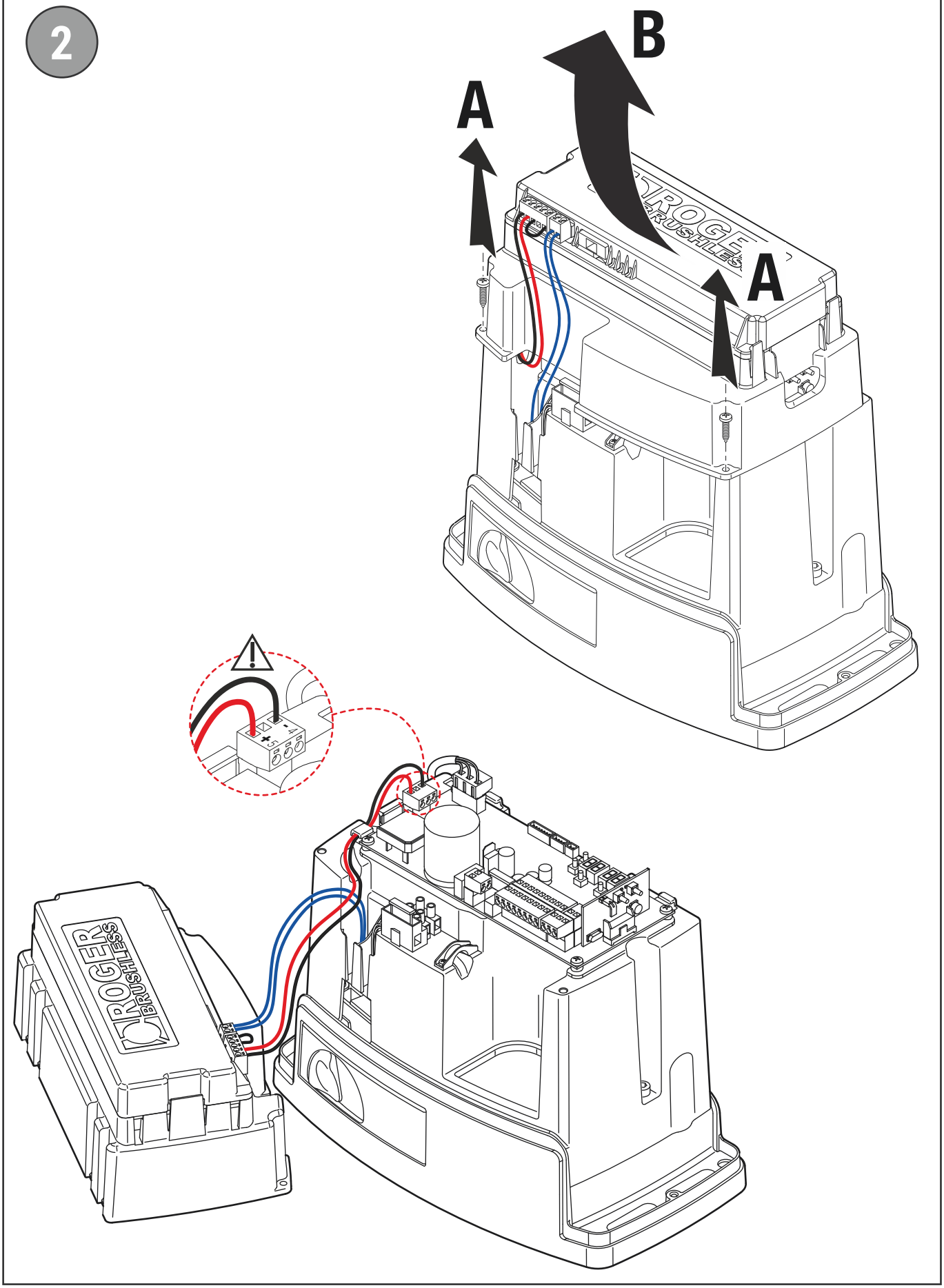




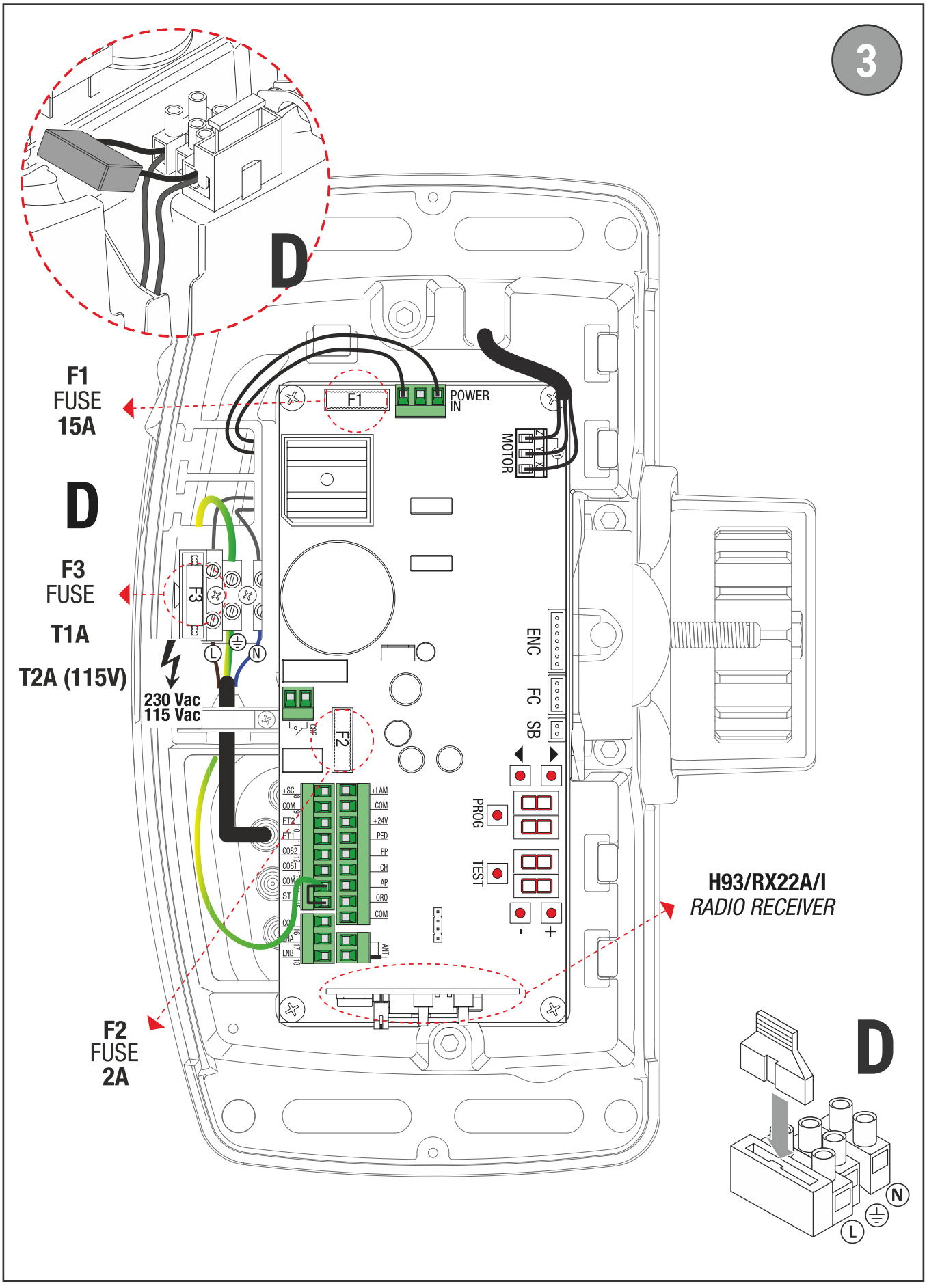
BM30

BH30 • B71/BC battery charger

2

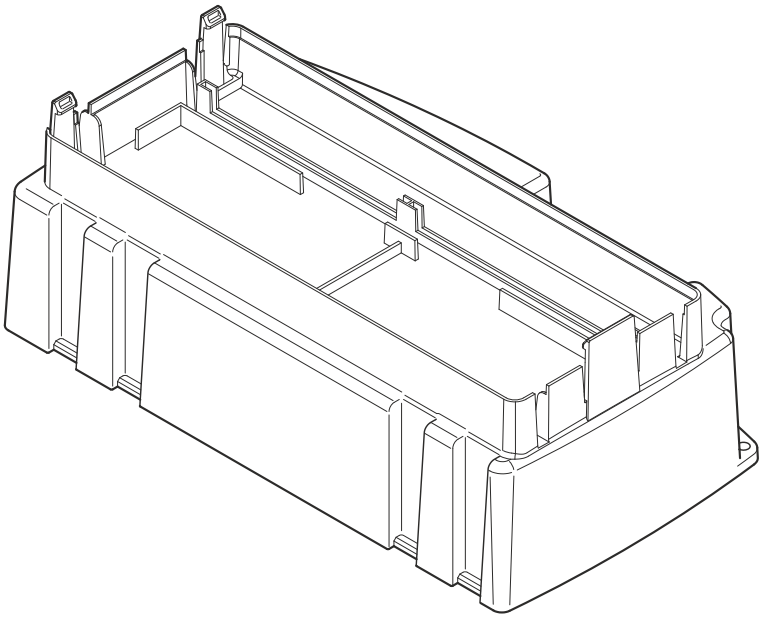


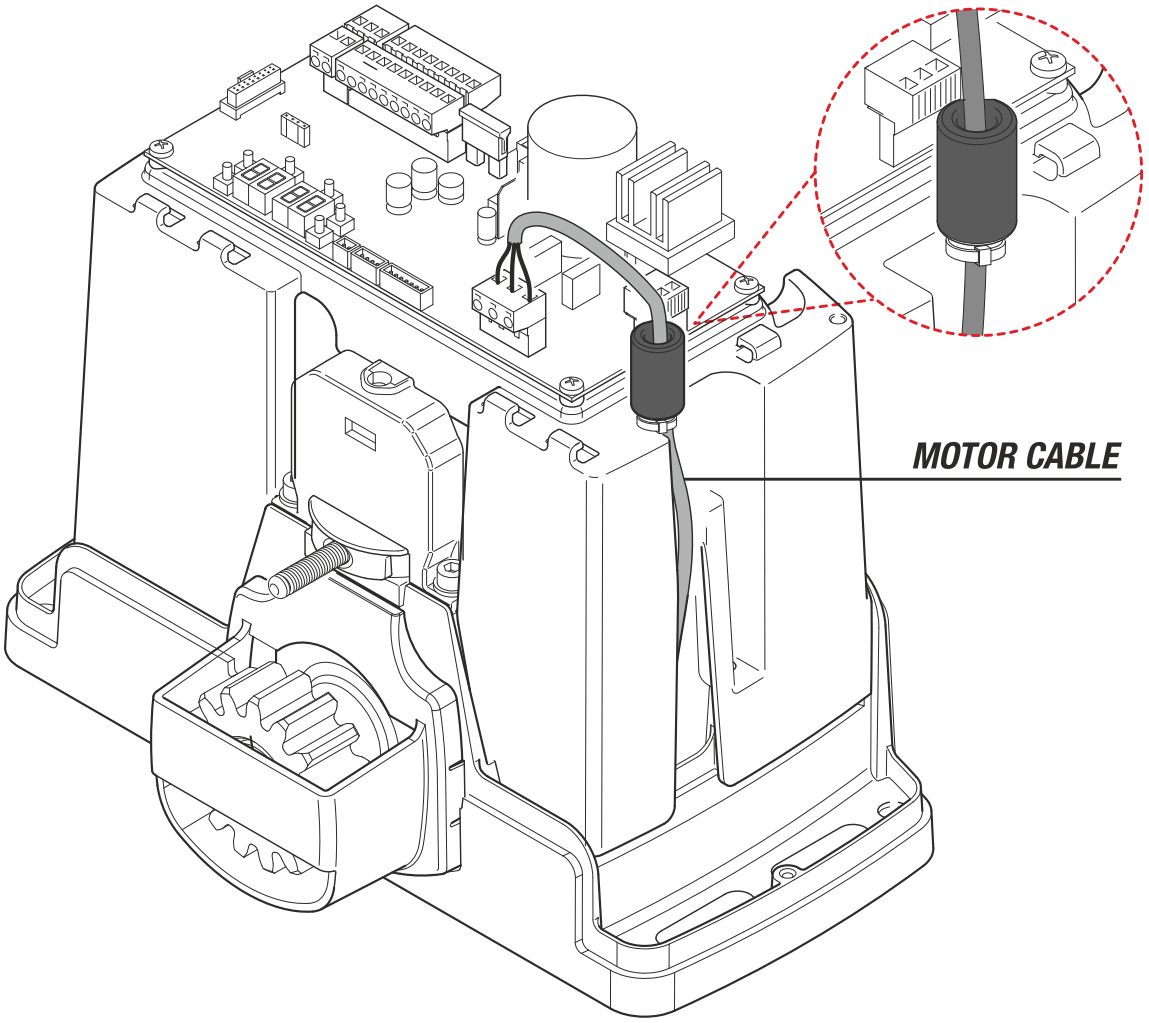
BH30


3
D
F1
FUSE
15A
D
F3
FUSE
T1A
T2A (115V)
230 Vac
115 Vac
F2
FUSE
2A
F1
POWER
IN
MOTOR
F3
F2
ENC
FC
SB
PROG
TEST
+SC
COM
FT2
FT1
COS2
COS1
COM
ST
+LAM
COM
+24V
PED
PP
CH
AP
ORO
COM
ANT
H93/RX22A/I
RADIO RECEIVER
D
N
L

BH30

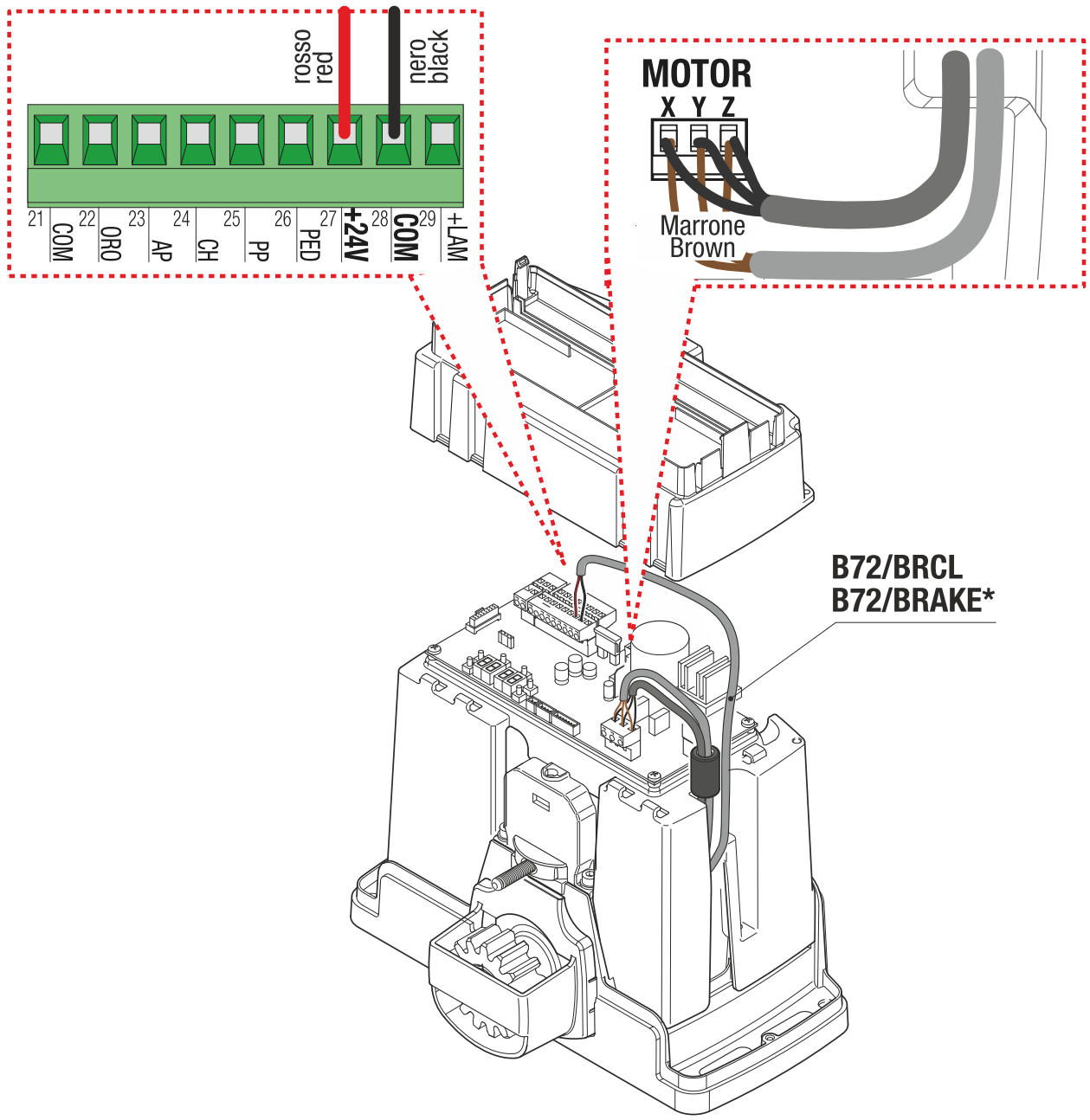
4





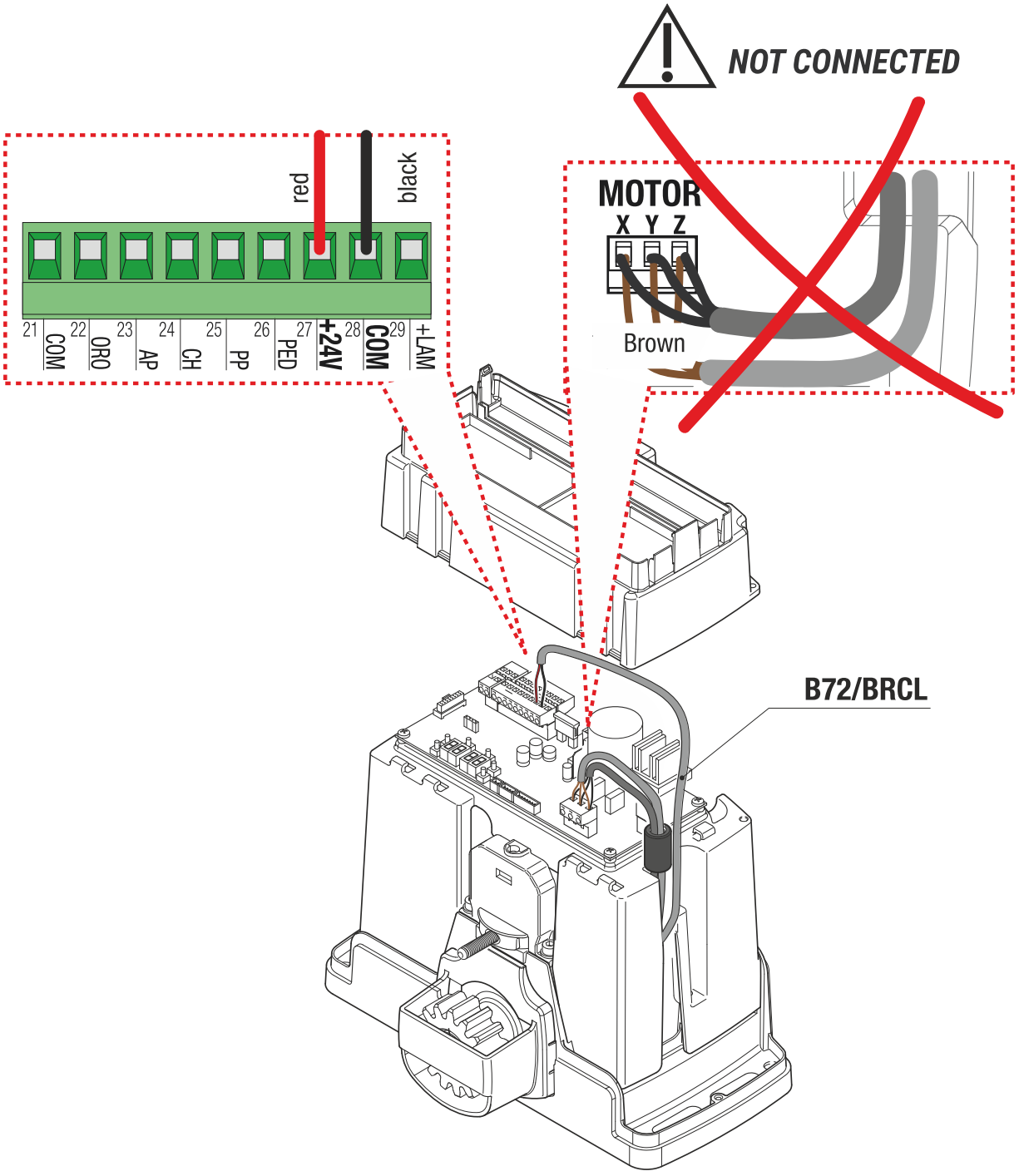
BH30 High Speed

5



(*) II **B72/BRCL** replaces the **B72/BRAKE**

6


NOT CONNECTED
red
black
MOTOR
X Y Z
Brown
21 COM
22 ORO
23 AP
24 CH
25 PP
26 PED
27 +24V
28 COM
29 +LAM
B72/BRCL

BM30

7

F1

FUSE
15A

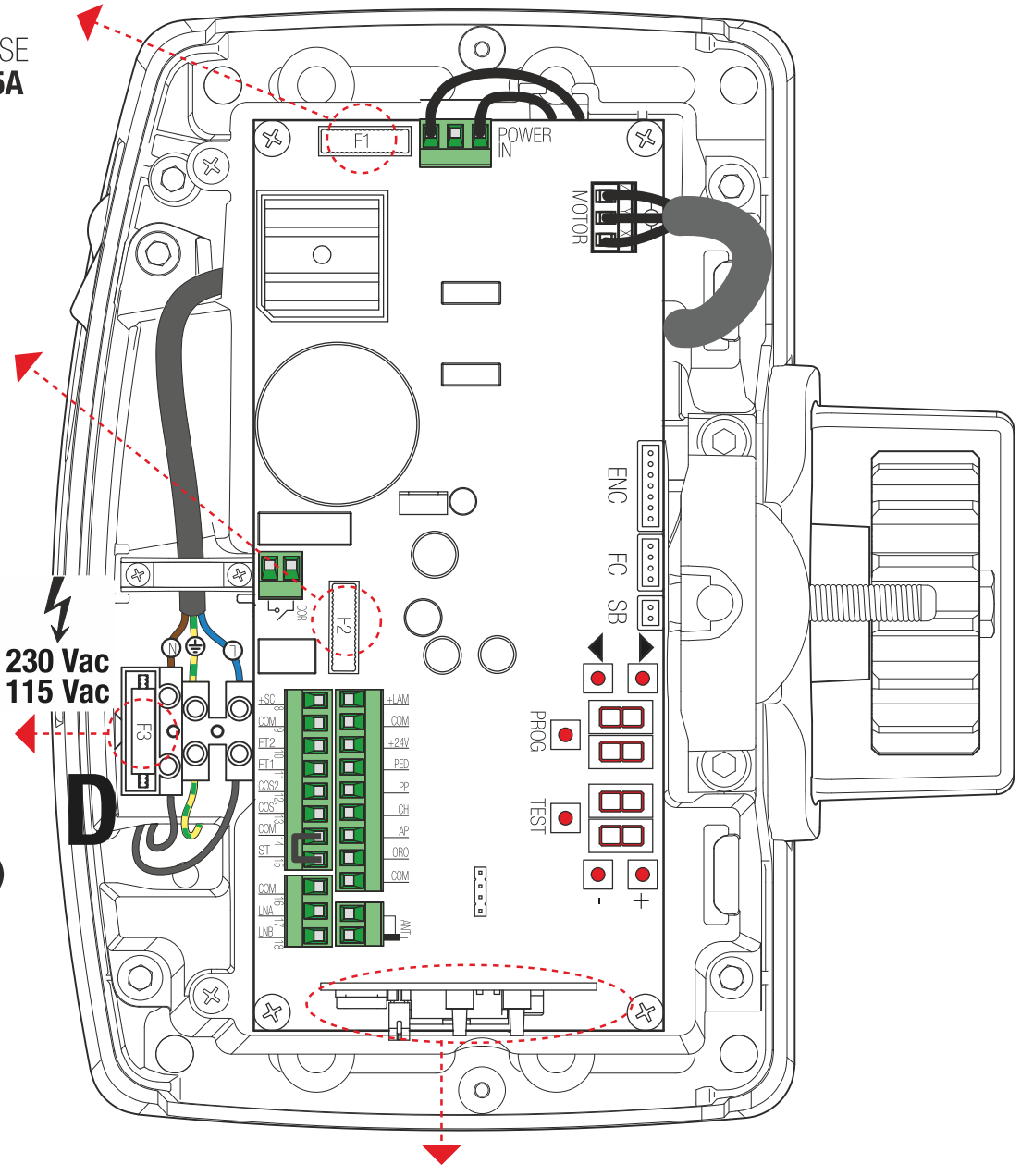
F2

FUSE
2A

F3

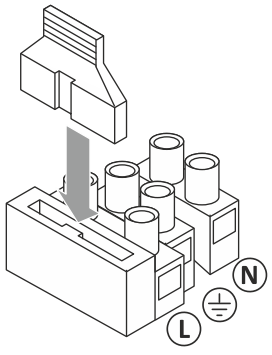
FUSE
T1A

T2A (115V)



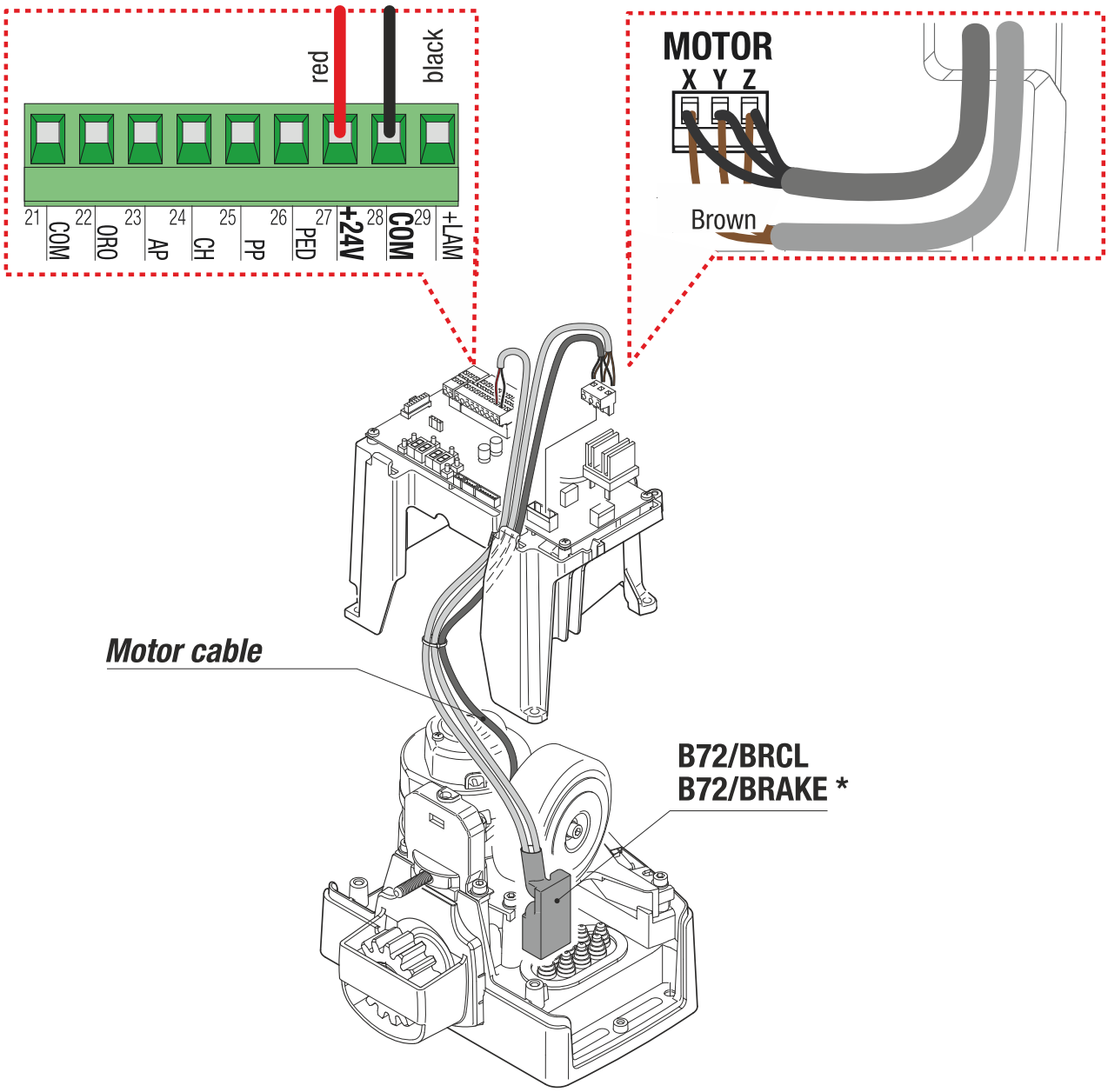
H93/RX22A/I

RADIO RECEIVER



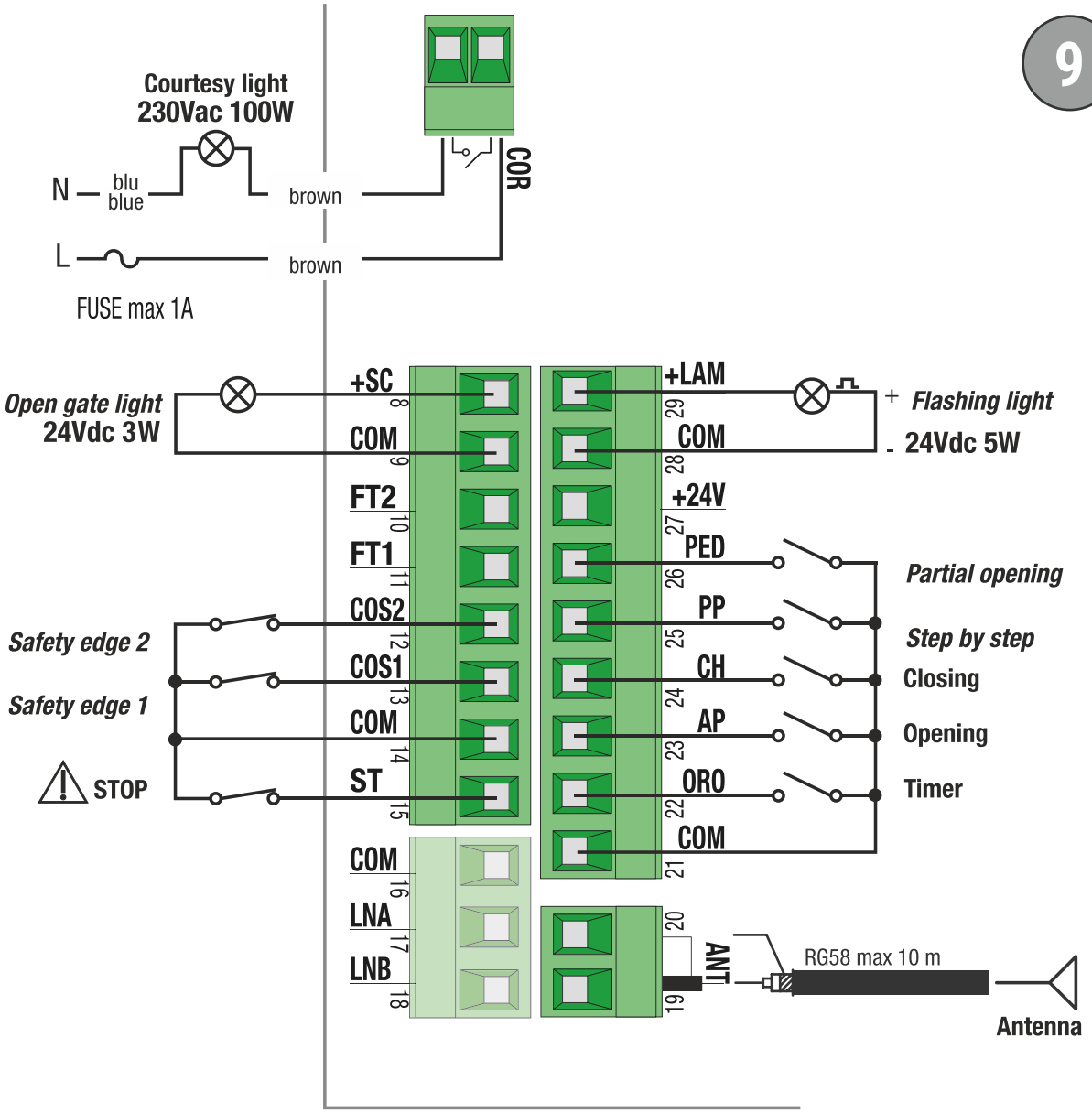
D

8

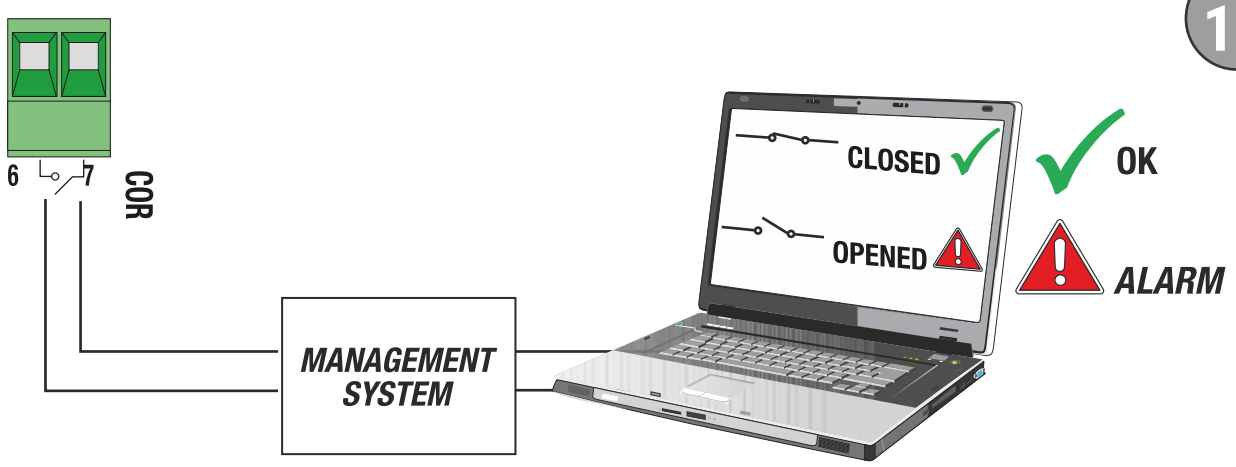


(*) • The **B72/BRCL** replaces the **B72/BRAKE**

9


Courtesy light
230Vac 100W
N
blu
blue
brown
L
brown
COR
FUSE max 1A
Open gate light
24Vdc 3W
+SC
COM
FT2
FT1
COS2
COS1
COM
ST
Safety edge 2
Safety edge 1
STOP
COM
LNA
LNB
+LAM
COM
+24V
PED
PP
CH
AP
ORO
COM
+ Flashing light
- 24Vdc 5W
Partial opening
Step by step
Closing
Opening
Timer
ANT
RG58 max 10 m
Antenna

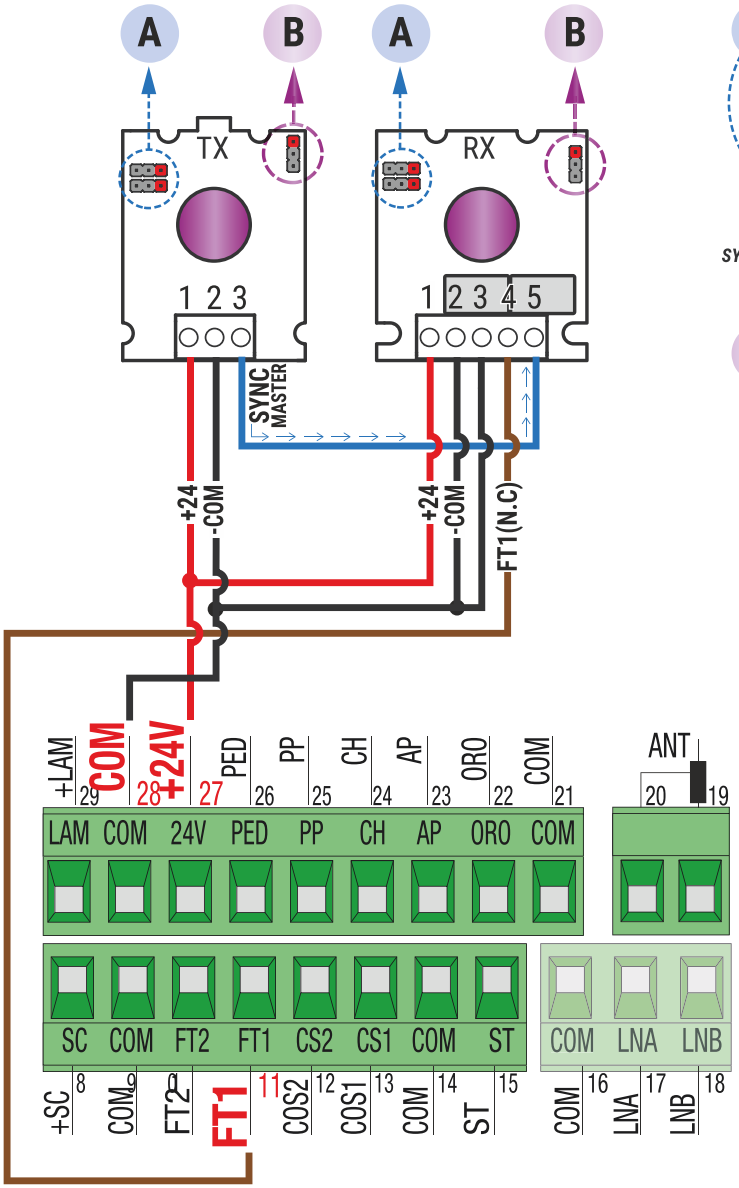
10

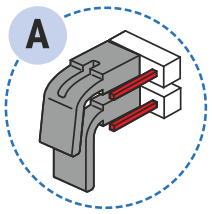

6
7
COR
MANAGEMENT
SYSTEM
CLOSED
OPENED
OK
ALARM

CONNECTION WITH 1 SYNCHRONISED PHOTOCELL PAIR (NORMAL MODE, MASTER PAIR ONLY)

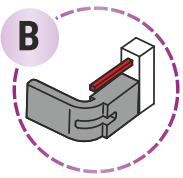
11

RED = jumper free



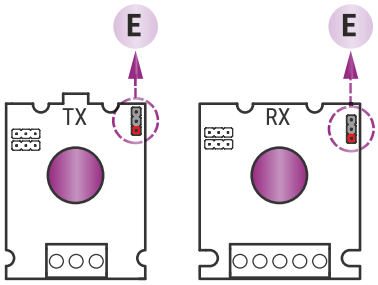


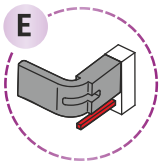
SYNCHRONISATION JUMPER (FOR MASTER)



*ALIGNMENT JUMPER (FOR MASTER) OFF**

** To perform optical alignment mode (NOTE: refer to photocell instructions):*





*ALIGNMENT JUMPER ON**

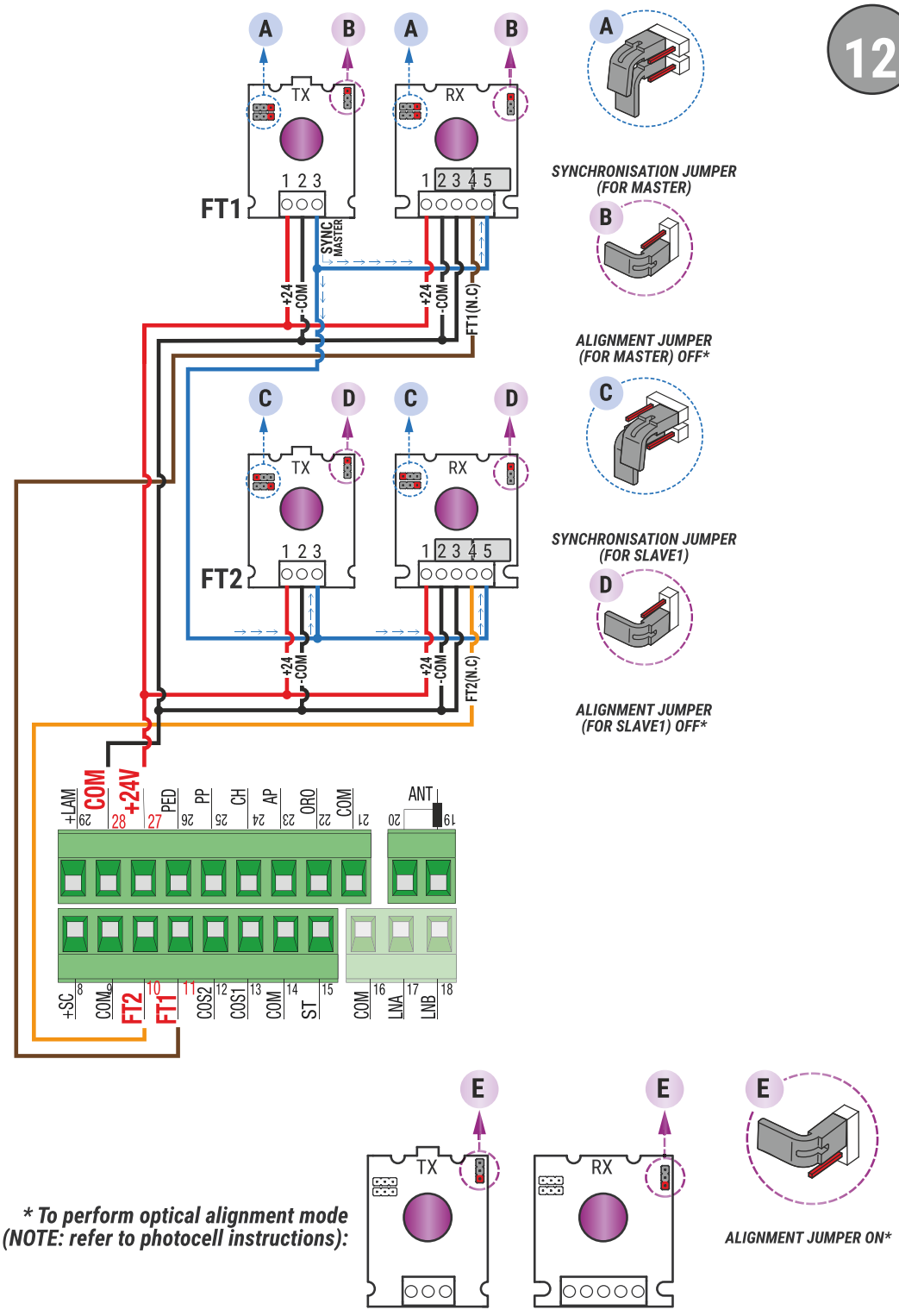
ATTENTION! Please ensure that the photocell jumpers are only changed with the power to the control panel switched off, including the disconnection of any battery backup. Remove the terminal of the photocell inputs or completely remove the voltage from the digital controller (check that the digital controller is not powered by backup batteries) and check that the TX / RX photocell red power LED is off.

RECOMMENDED USE for Series **F4ES - F4S** photocells

CONNECTION WITH 2 SYNCHRONISED PHOTOCELL PAIRS (NORMAL MODE, 1 MASTER AND 1 SLAVE)

RED = jumper free

12



**** To perform optical alignment mode (NOTE: refer to photocell instructions):***

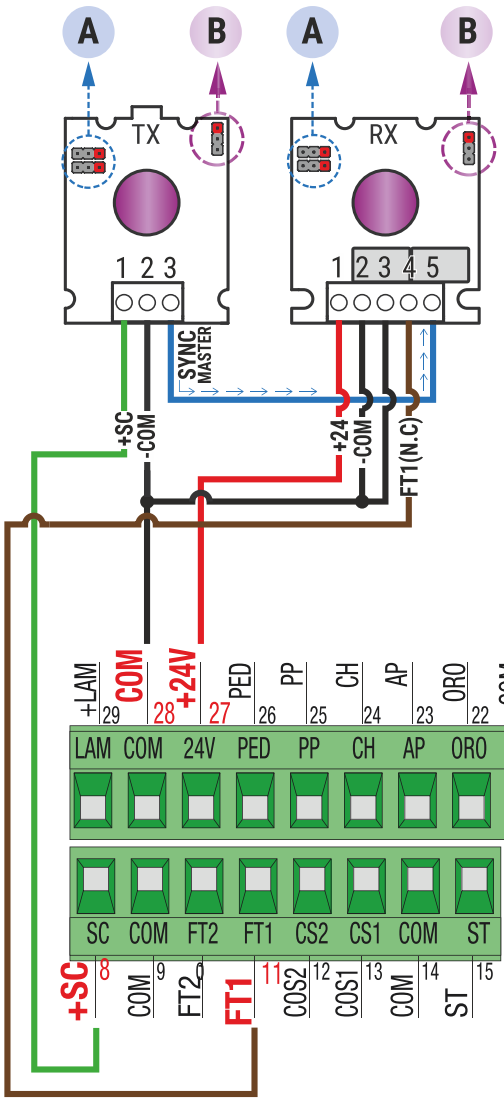
ATTENTION! Please ensure that the photocell jumpers are only changed with the power to the control panel switched off, including the disconnection of any battery backup. Remove the terminal of the photocell inputs or completely remove the voltage from the digital controller (check that the digital controller is not powered by backup batteries) and check that the TX / RX photocell red power LED is off.

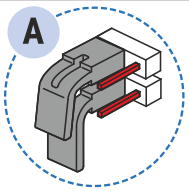
RECOMMENDED USE for Series **F4ES - F4S** photocells

PHOTOCELLS TEST (AB 02)

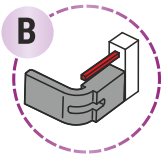
CONNECTION WITH 1 SYNCHRONISED PHOTOCELL PAIR (NORMAL MODE, MASTER PAIR ONLY)

RED = jumper free



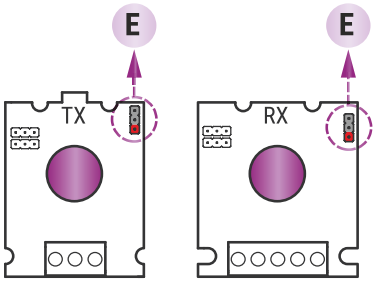


SYNCHRONISATION JUMPER (FOR MASTER)

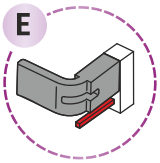


*ALIGNMENT JUMPER (FOR MASTER) OFF**

13



** To perform optical alignment mode (NOTE: refer to photocell instructions):*



*ALIGNMENT JUMPER ON**

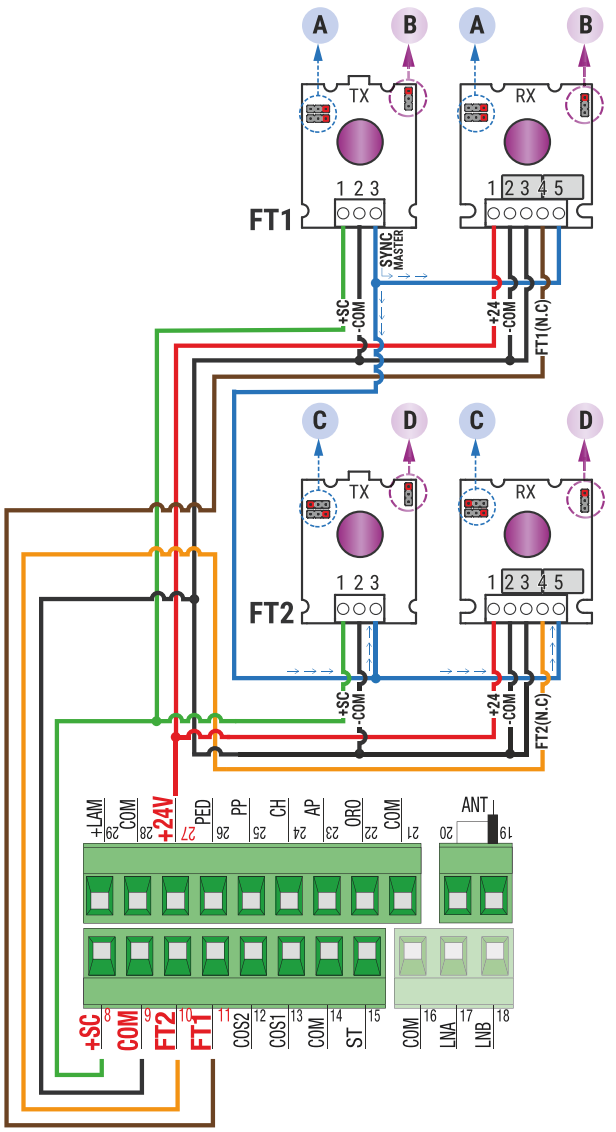
ATTENTION! Please ensure that the photocell jumpers are only changed with the power to the control panel switched off, including the disconnection of any battery backup. Remove the terminal of the photocell inputs or completely remove the voltage from the digital controller (check that the digital controller is not powered by backup batteries) and check that the TX / RX photocell red power LED is off.

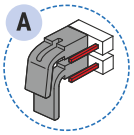
RECOMMENDED USE for Series **F4ES - F4S** photocells

PHOTOCELLS TEST (AB 02)

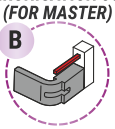
CONNECTION WITH 2 SYNCHRONISED PHOTOCELL PAIRS (NORMAL MODE, 1 MASTER AND 1 SLAVE)

RED = jumper free

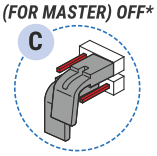




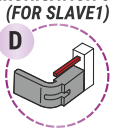
SYNCHRONISATION JUMPER (FOR MASTER)



*ALIGNMENT JUMPER (FOR MASTER) OFF**

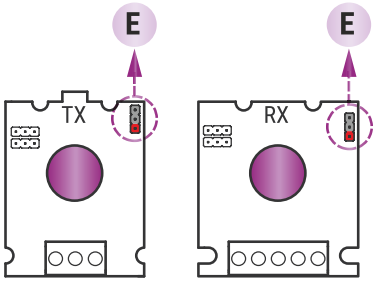


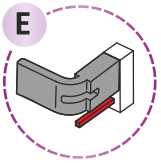
SYNCHRONISATION JUMPER (FOR SLAVE1)



*ALIGNMENT JUMPER (FOR SLAVE1) OFF**

** To perform optical alignment mode (NOTE: refer to photocell instructions):*





*ALIGNMENT JUMPER ON**

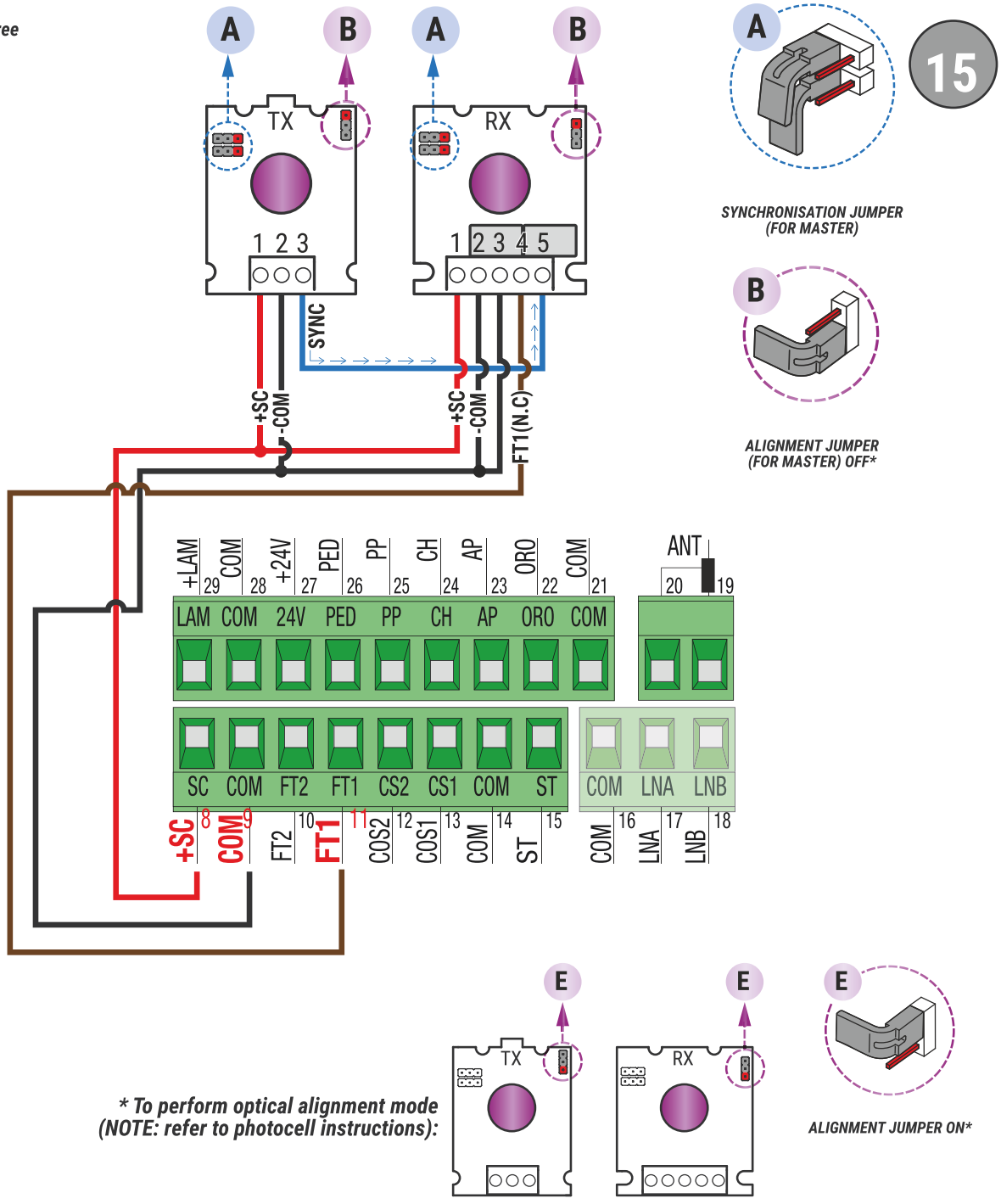
ATTENTION! Please ensure that the photocell jumpers are only changed with the power to the control panel switched off, including the disconnection of any battery backup. Remove the terminal of the photocell inputs or completely remove the voltage from the digital controller (check that the digital controller is not powered by backup batteries) and check that the TX / RX photocell red power LED is off.

RECOMMENDED USE for Series **F4ES - F4S** photocells

BATTERY SAVING (AB 03)
BATTERY SAVING + PHOTOCELLS TEST (AB 04)

CONNECTION WITH 1 SYNCHRONISED PHOTOCELL PAIR (NORMAL MODE, MASTER PAIR ONLY)

RED = jumper free



15

SYNCHRONISATION JUMPER (FOR MASTER)

*ALIGNMENT JUMPER (FOR MASTER) OFF**

** To perform optical alignment mode (NOTE: refer to photocell instructions):*

*ALIGNMENT JUMPER ON**

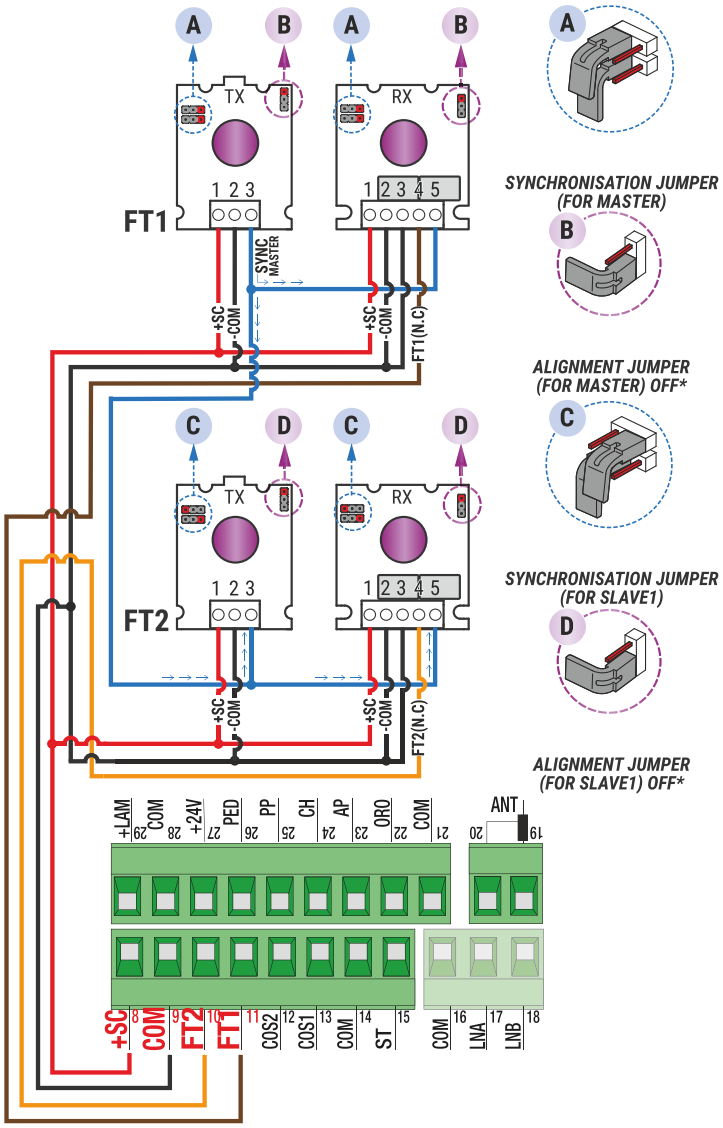
ATTENTION! Please ensure that the photocell jumpers are only changed with the power to the control panel switched off, including the disconnection of any battery backup. Remove the terminal of the photocell inputs or completely remove the voltage from the digital controller (check that the digital controller is not powered by backup batteries) and check that the TX / RX photocell red power LED is off.

RECOMMENDED USE for Series **F4ES - F4S** photocells

BATTERY SAVING (AB 03)
BATTERY SAVING +PHOTOCELLS TEST (AB 04)

CONNECTION WITH 2 SYNCHRONISED PHOTOCELL PAIRS (NORMAL MODE, 1 MASTER AND 1 SLAVE)

RED = jumper free

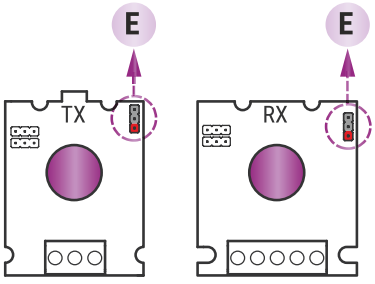


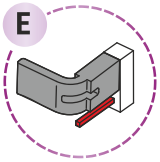
SYNCHRONISATION JUMPER (FOR MASTER)

*ALIGNMENT JUMPER (FOR MASTER) OFF**

SYNCHRONISATION JUMPER (FOR SLAVE1)

*ALIGNMENT JUMPER (FOR SLAVE1) OFF**





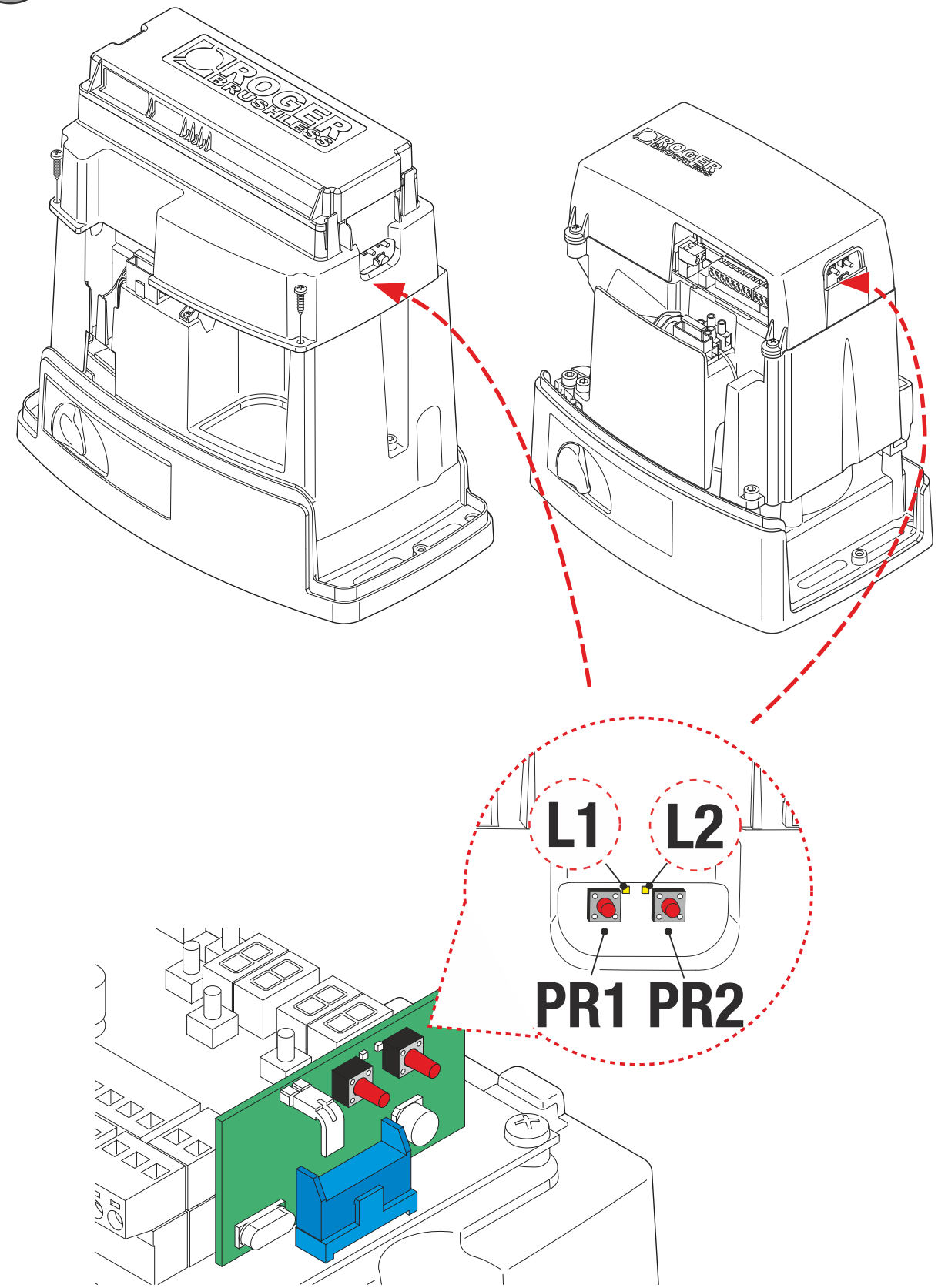
*ALIGNMENT JUMPER ON**

To perform optical alignment mode (NOTE: refer to photocell instructions):

ATTENTION! Please ensure that the photocell jumpers are only changed with the power to the control panel switched off, including the disconnection of any battery backup. Remove the terminal of the photocell inputs or completely remove the voltage from the digital controller (check that the digital controller is not powered by backup batteries) and check that the TX / RX photocell red power LED is off.

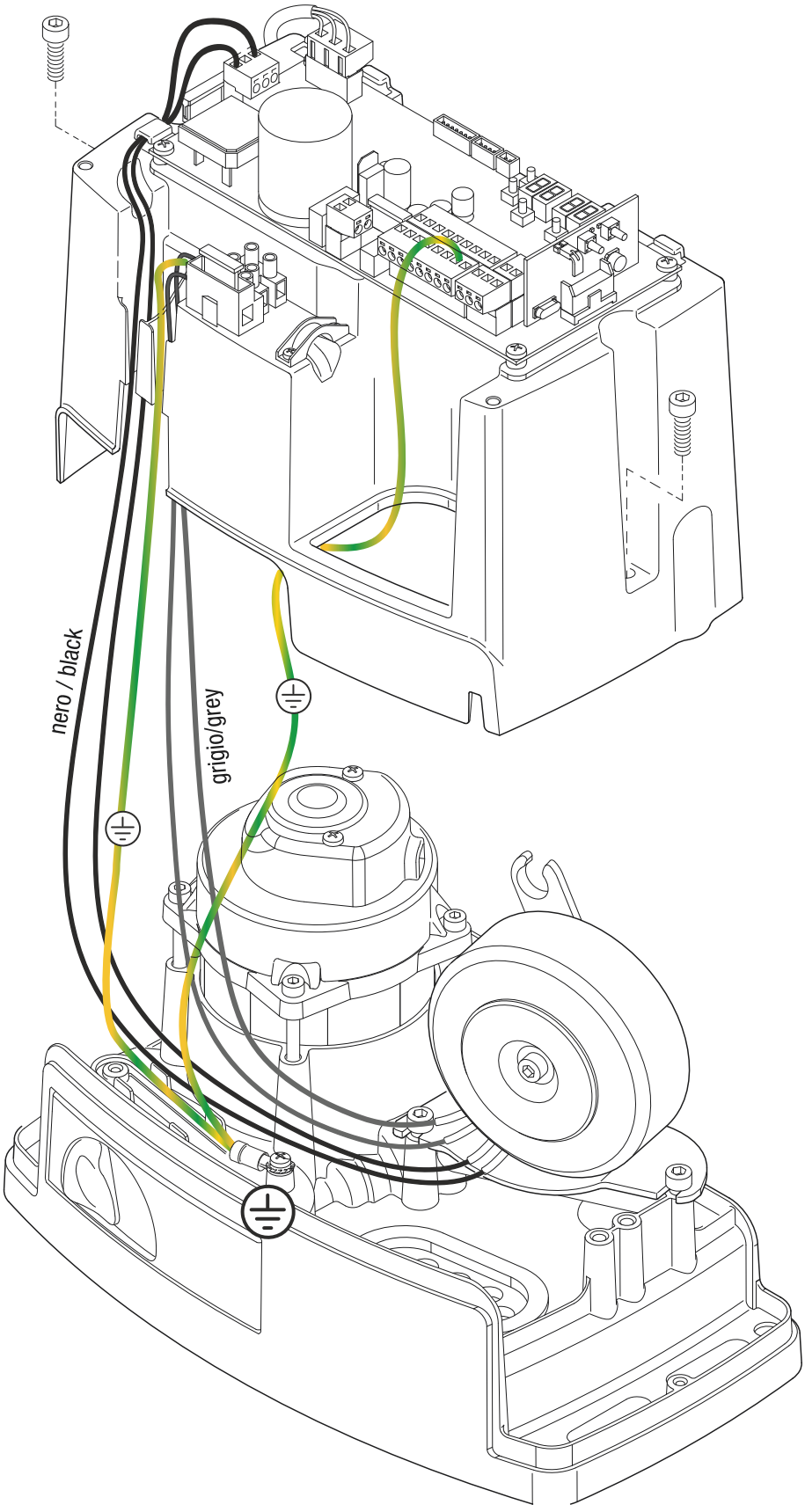
RECOMMENDED USE for Series **F4ES - F4S** photocells

17

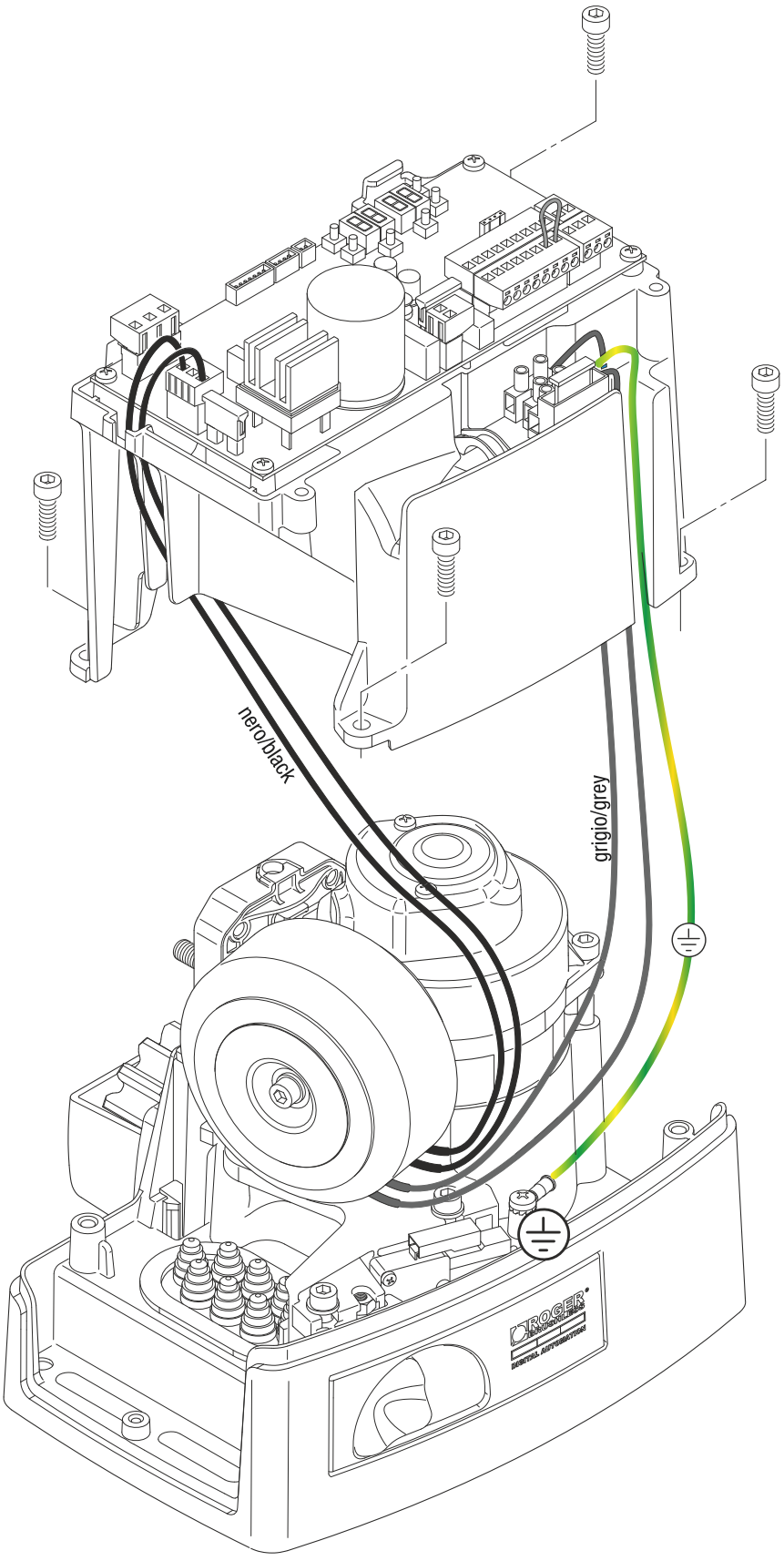


PR1/PR2: Radio channels

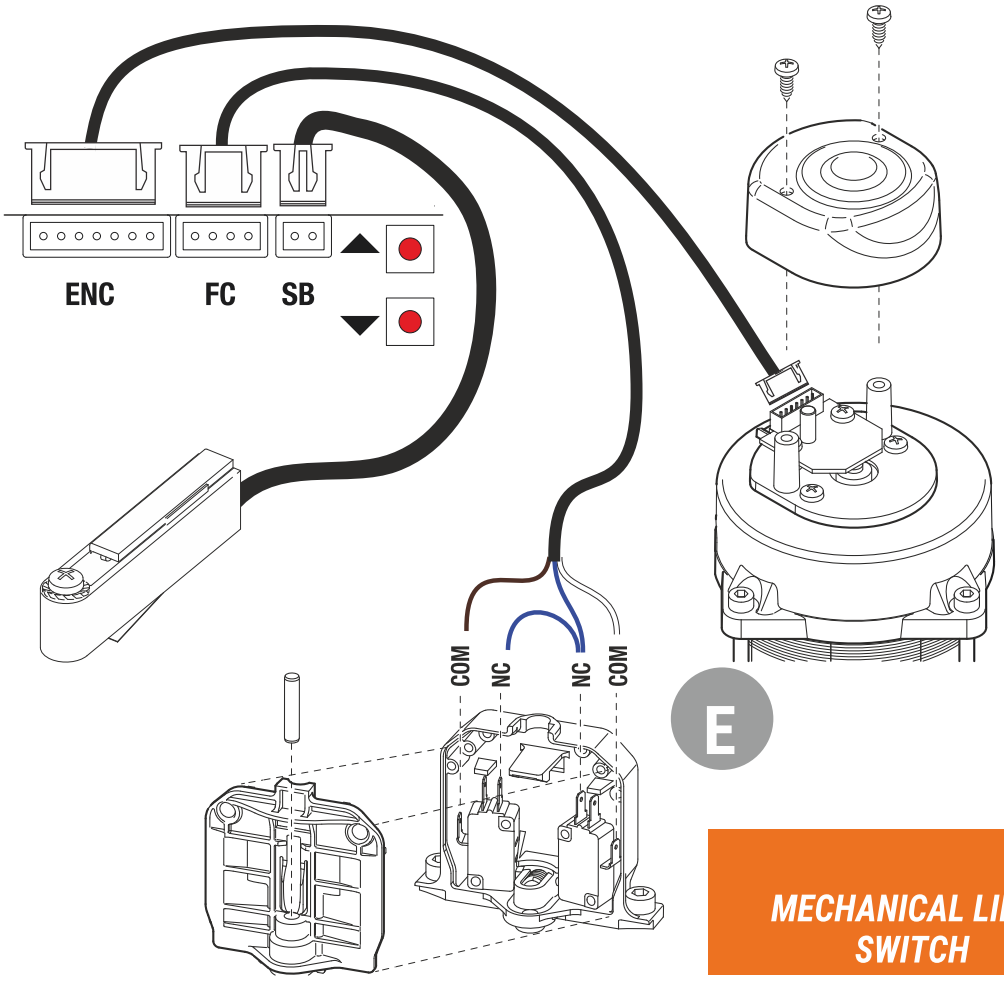
18



19

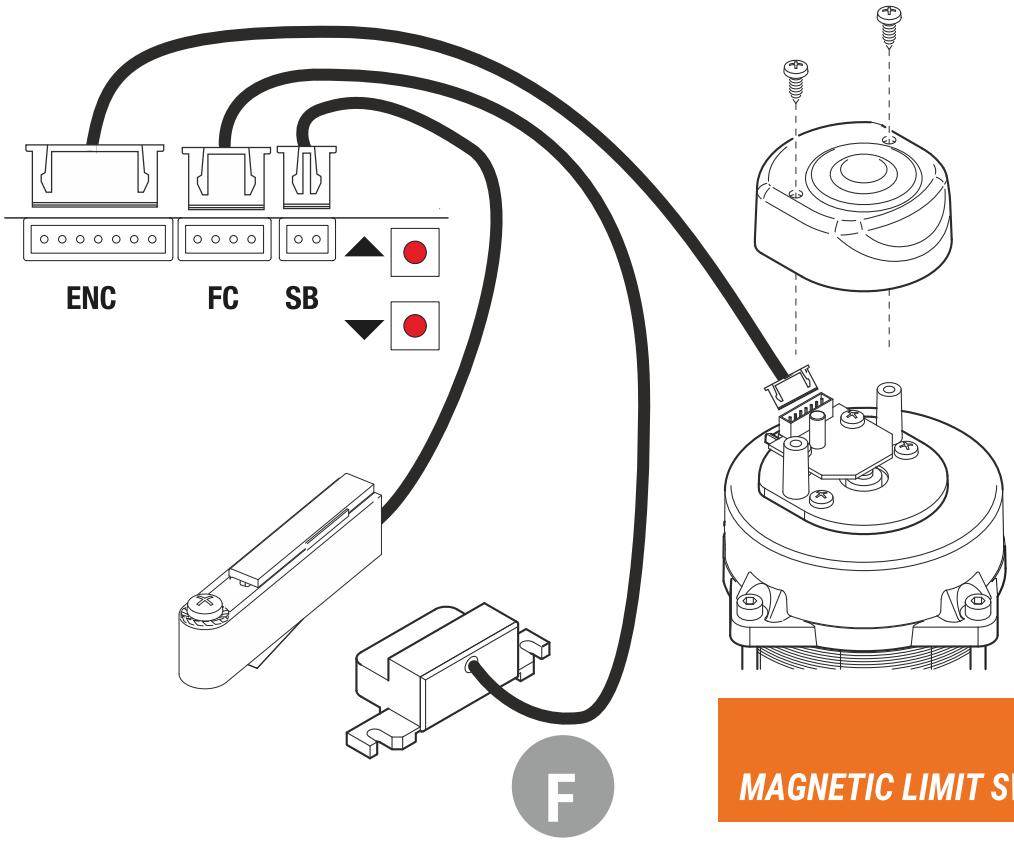


20



MECHANICAL LIMIT SWITCH

21



MAGNETIC LIMIT SWITCH

1 General safety precautions

WARNING: IMPORTANT SAFETY INSTRUCTIONS
THESE INSTRUCTIONS MUST BE FOLLOWED TO GUARANTEE THE SAFETY OF THE PERSONS
PRESERVE THESE INSTRUCTIONS

EN

This installation manual is intended for quali"Eed personnel only.
Failure to observe the information included in this manual may result in personal in serious personal injury or damage to the equipment.
ROGER TECHNOLOGY cannot be held responsible for any damage or injury due to improper use or any use other than the intended usage indicated in this manual.
The installation, electrical connections and adjustments must be performed by quali"Eed personnel, in accordance with best practices and in compliance with applicable regulations.
Read the instructions carefully before installing the product.
Incorrect installation may pose risks.
Before installing the product, make sure it is in perfect condition: In case of doubts, do not use the product and refer exclusively to professionally quali"Eed personnel.
Do not install the product in explosive environment and atmosphere: in"Fammable gas or vapours constitute serious danger for safety.
Before installing the motor, make all structural modi"Ecations related to the safety precautions and to the protection or segregation of areas involving crushing, shearing, dragging risks or any other risks.
WARNING: check that the existing structure ful"Els the requiredresistance and stability speci"Ecations.
ROGER TECHNOLOGY is not liable for failure to observe the good practices in the construction of "Extures to be motorised or for deformationsthat may occur during use.
The safety devices (photocells, sensing edges, emergency stops, etc.) must be installed taking into consideration the following: the regulations and directives in force, the good practices criteria, the installation environment, the operating logic of the system and the forces generated by the motorised door or gate.
The safety devices must protect any areas where there is crushing, shearing, dragging or any other danger in general generated by the motorised door or gate; the installer is advised to check that the moving wings do not have sharp edges or anything that may pose shearing and/or dragging risks.
Ensure that entrapment between the guided part and surrounding "Exed parts due to the opening movement of the guided part is avoided.
If it is deemed necessary based on the risk analysis, install sensing edges on the mobile part.

It should be noted that, as provided by the UNI EN 12635 standard, all requirements of the EN 12604 and EN 12453 standards must be ful"Elled and, if necessary, also checked.
The European standards EN 12453 and EN 12445 de"Ene the minimumsafety requirements for the operation of automatic doors and gates. In particular, these standards require the use of force limiting and safety devices (sensing ground plates, photocell barriers, hold-to-run operation, etc.) intended to detect persons or objects in the operating area and prevent collisions in all circumstances.
The installer is required to measure impact forces and select on the control unit the appropriate speed and torque values to ensure that the door or gate remains within the limits de"Ened by the standards EN 12453 andEN 12445.
ROGER TECHNOLOGY cannot be held responsible for any damage or injury caused by the installation of incompatible components which compromise the safety and correct operation of the device.
If the hold-to-run function is active, the installer will have the obligation to check the maximum stop distance or the alternative use of the rubber deformable edge, the closing speed or the gate and in general all aspects indicated by the applicable regulations. Moreover, please not that if the command means is "Exed, it must be located in a position guaranteeing the automation system control and operation and the command type and the use type must comply with the UNI EN 12453 standard, prospectus 1 (with the following restrictions: type A or B command or type 1 or 2 use).
In case of hold-to-run operation, remove any potential persons away from the range of action of the automation system's moving parts; the direct commands must be installed at a minimum height of 1.5 m and must not be accessible to the public; moreover, unless the device is key operated, they must be located with a direct view to the motorised part and far from the moving parts.
Apply the signs indicated by the regulations in force for the identi"Ecation of the dangerous areas.
Each installed device must have a visible indication of the motorised door or gate identi"Ecation data, in accordance with the EN 13241-1:2001standard or subsequent revisions.
A switch or an omnipolar cut-off switch with a contact opening of at least 3 mm must be installed on the mains power line; put the cut-off switch in OFF position and disconnect any buffer batteries before performing any cleaning or maintenance operations.
Ensure that an adequate residual current circuit breaker with a 0.03 A threshold and a suitable overcurrent cut-out are installed upstream the electrical installation in accordance with best practices and in compliance with applicable legislation.
When requested, connect the automation to an effective earthing system that complies with current safety standards.
The electronic parts must be handled using anti-static conductive wrist straps with grounding wire.

Only use original spare parts when repairing or replacing products.
The installer must provide the user with complete instruction for using the motorised door or gate in automatic, manual and emergency modes, and must hand the operating instructions to the user of the installation upon completion.
Keep away from hinges and moving parts.
Keep out of the area of action of the motorised door or gate while it is moving.
Never try to stop the motorised door or gate while it is moving as this may be dangerous.
The motorised door or gate may be used by children aged 8 and above, by persons with diminished physical, sensory or mental capacity and by persons without the necessary experience and knowledge provided that they are supervised or have received adequate instruction on using the device safely and to ensure that they understand the dangers involved in its operation.
Children must be supervised at all times to ensure that they do not play with the device and that they keep out of the area of action of the motorised door or gate.
Keep remote controls and any other control devices out of the reach of children to prevent the risk of the motorised door or gate being operated unintentionally.
Failure to observe these instructions may lead to danger.
Any repair or technical interventions must be performed by quali"Eed personnel.
The cleaning and maintenance operations must be performed exclusively by quali"Eed personnel.
In the event of a fault or malfunction of the product, turn the main power switch off and have the installation serviced by quali"Eed personnel and refrain from attempting to repair or perform any direct intervention yourself.
The packaging materials (plastic, polystyrene, etc.) should not be discarded in the environment or left within reach of children, as they are a potential source of danger.
Dispose of and recycle the packaging items according to the provisions of the laws in force.
These instructions must be kept and must be made available to any other persons authorised to use the installation.

2 Symbols

The symbols and their meaning in the manual or on the product label are indicated below.

	**Generic danger** Important safety information. Indicates operations and situations in which the personnel involved must pay close attention.
	**Dangerous voltage risk** Indicates operations and situations in which the personnel involved must pay close attention to dangerous voltages.
	**Useful information** Indicates useful information for the installation.
	**Refer to the Installation and use instructions** Indicates the obligation to refer to the manual or original document, which must be available for future use and must not be damaged in any way.
	Protective earth connection point.
	Indicates the admissible temperature range.
	Alternating current (AC)
	Direct current (DC)
	Symbol for the product disposal according to the WEEE directive, see chapter 22.

3 Product description

The **B70/1DC** controller is a unit for the SENSORED control, with a high resolution encoder, of a ROGER brushless motor for automated sliding gates.

Ensure that the parameter A I is set correctly. If this parameter is not set correctly, the automation system may not function properly.

ROGER TECHNOLOGY cannot be held responsible for any damage or injury due to improper use or any use other than the intended usage indicated in this manual.

We recommend using only ROGER TECHNOLOGY accessories and control and safety devices. Speci"Ecally, we recommend installing **F4ES** or **F4S** series photocells.

For further information, refer to the installation manual of the **BH30** or **BM30** automation system.

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4 Updates of version P2.00

1. Maintaining the functions of version r1.65, the memory of FLASH has been expanded from 64k to 256k in view of future developments
2. Added connector to plug in the WiFi module (for future use)
3. Improved management of persistent AP command
4. Improved management of guaranteed closure
5. The position recovery mode can now also be activated with PED command

5 Technical characteristics of product

	BH30/603 BH33/604	BH30/803 BH30/804	BH30/503/HS BH30/504/HS BH30/603/HS BH30/604/HS	BM30/400	BM30/300/HS	BH30/804/R
MAINS POWER VOLTAGE	230 V~ ± 10% 50 Hz (**B70/1DC/115**: 115 V~ ± 10% 60 Hz)					
MAXIMUM MAINS POWER ABSORPTION	130 W	140 W	140 W	120 W	125 W	140 W
INRUSH POWER	300 W	450 W	350 W	280 W	320 W	330 W
FUSES	**F1** = 15A (ATO257) motor power circuit protection **F2** = 2A (ATO257) accessories power supply protection **F3** = T1A (5x20 mm) (**B70/1DC/115**: T2A (5x20 mm)) primary transformer protection					
CONNECTABLE MOTORS	1					
MOTOR POWER SUPPLY	24 V~, with self-protected inverter					
MOTOR TYPE	sinusoidal drive brushless (ROGER BRUSHLESS)					
MOTOR CONTROL TYPE	sensored "Eeld oriented control (FOC)					
RATED MOTOR POWER	45 W	75 W	120 W	45 W	100 W	110 W
MAXIMUM MOTOR POWER	125 W	200 W	350 W	110 W	320 W	330 W
MAXIMUM POWER, FLASHING LIGHT	13 W (24 Vdc)	25 W (24 Vdc)	25 W (24 Vdc)	13 W (24 Vdc)	25 W (24 Vdc)	25 W (24 Vdc)
FLASHING LIGHT DUTY CYCLE	50%					
COURTESY LIGHT POWER	100 W 230 V~ - 40 W 24 V~/dc (potential free contact)					
GATE OPEN LIGHT POWER	3 W (24 V ⎓)					
MAXIMUM ACCESSORY CURRENT ABSORPTION	7 W (24 V⎓)	10 W (24 V⎓)	10 W (24 V⎓)	7 W (24 V⎓)	10 W (24 V⎓)	10 W (24 V⎓)
OPERATING TEMPERATURE	-20°C +55°C					
SOUND PRESSURE DURING USE	<70 dB(A)					
PRODUCT DIMENSIONS	dimensions in mm 200x90x45 weight: 0,244 kg					

ROGER 115V AC

(1) **BH30/500/HS/115 - BH30/600/115 - BH30/600/HS/115 - BH30/800/115 - BH30/804/R/115 - BM30/300/HS/115**

⚠ The total of the absorption values of all the accessories connected must not exceed the maximum power values shown in the table. The values are guaranteed with original ROGER TECHNOLOGY accessories ONLY. The use of non-original accessories may lead to malfunctioning. ROGER TECHNOLOGY declines all responsibility for incorrect or non-conforming installations.
All the connections are protected by fuses (refer to the table). The courtesy light requires an external fuse.

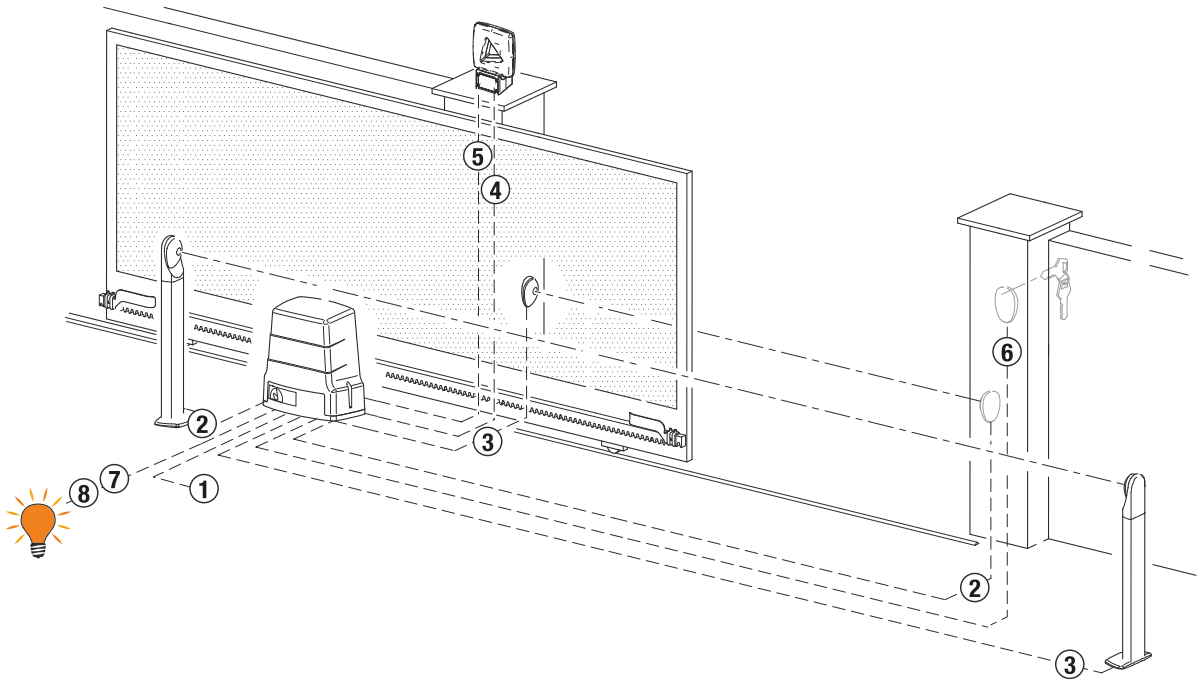
6 Description of connections

To access the control connection terminal board, remove the motor cover as shown in "Egure 1:
- remove the two screws **A** and lift the cover (detail **B**);
- **BH30**: push the cover in from the side, then lift it up (detail **B**).

See "Egure 2 if the battery charger**B71/BC** (**BH30** Series only) is installed:
- remove the two screws **A**;
- push the cover in from the side, then lift it up (detail **B**).
- turn the cover around by 180° (detail **C**) and set it down in front of the automation system. **Warning**! Lift the cover slowly and carefully to prevent damaging the wires.

Figure 3-4-5-6-7-8 shows connection diagrams for connecting mains voltage to the motor control unit (**B70/1DC**).

6.1 Typical installation



It is the installer's responsibility to verify the adequacy of the cables in relation to the devices used in the installation and their technical characteristics.

		Recommended cable
1	Power supply	H07RN-F 3x1,5 mm² double insulated cable
2	Photocell - Receiver **F4ES/F4S**	Cable 5x0,5 mm² (max 20 m)
3	Photocell - Transmitter **F4ES/F4S**	Cable 3x0,5 mm² (max 20 m)
4	LED Flashing light **R92/LED24 - FIFTHY/24** Power supply 24V dc	Cable 2x1 mm² (max 10 m)
5	Antenna	Cable 50 Ohm RG58 (max 10 m)
6	Key selector **R85/60**	Cable 3x0,5 mm² (max 20 m)
	Key pad **H85/TTD - H85/TDS** (connecting to **H85/DEC - H85/DEC2**)	Cable 2x0,5 mm² (max 30 m)
	H85/DEC - H85/DEC2 (connecting to control unit)	Cable 4x0,5 mm² (max 20 m) The number of conductors increases when using more than one output contact on **H85/DEC - H85/DEC2**
7	Gate open indicator Power supply 24V DC 3W max	Cable 2x0,5 mm² (max 20 m)
8	Courtesy light (Potential free contact) Power supply 230 Vac (100 W max)	Cable 2x1 mm² (max 20 m)

SUGGESTIONS: with existing installations, we recommend checking the cross section of the cables and that the cables themselves are in good condition.

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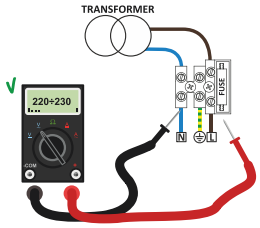
6.2 Electrical connections

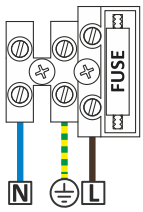
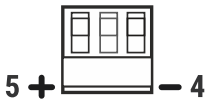
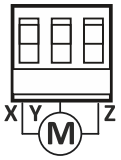
A switch or an omnipolar cut-off switch with a contact opening of at least 3 mm must be installed on the mains power line; put the cut-off switch in OFF position and disconnect any buffer batteries before performing any cleaning or maintenance operations.
Ensure that an adequate residual current circuit breaker with a 0.03 A threshold and a suitable overcurrent cut-out are installed upstream the electrical installation in accordance with best practices and in compliance with applicable legislation.
For power supply, use a H07RN-F 3G1.5 type electric cable and connect it to the terminals L (brown), N (blue), ⏚ (yellow/green), located inside the automation system.
Strip the insulation from the ends of the power cable wires which will be connected to the terminal (see ref. **D**, "Eg. 3-7), and secure the cable with the cable retainer.
Measure the voltage on the primary mains power connection with a tester.



For the Brushless automation system to function correctly, the mains power voltage must be:
- 230Vac ±10% for the B70/1DC control unit.
- 115Vac ±10% for the B70/1DC/115 control unit.

If the detected value does not comply with the above speci"Eed values or is not stable, the automation system may NOT operate ef"Eciently.

Connections to the electrical distribution network and to any other low-voltage conductors in the external section to the electrical panel must be on an independent path and separate from the connections to the command and safety devices (SELV = Safety Extra Low Voltage).
Make sure that the mains power conductors and the accessory wires (24 V) are separated.
The cables must be double insulated, strip them near the relevant connection terminals and lock them with clamps (not supplied).

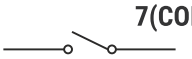
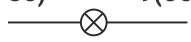
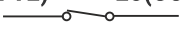
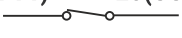
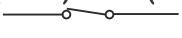
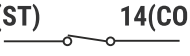
	DESCRIPTION
	Mains power supply 230 Vac ±10% (115 Vac ±10%) connection. Fuse 5x20 T1A. **B70/1DC/115:** Fuse 5x20 T2A.
POWER IN 	Power feed input from transformer (or from **B71/BC** battery charger **- only BH30 series -** if used, "Eg. 2). **N.B.: Ready wired in factory by ROGER TECHNOLOGY.** ***WARNING! With the board powered the battery connected, pay maximum attention to the polarity (see 1Eg. 2).***
X-Y-Z 	Connection to ROGER brushless motor. Connecting **B72/BRAKE / B72/BRCL** controller for BH30 High Speed ("Eg. 5) and BM30 High Speed versions ("Eg. 8). **N.B.: Ready wired in factory by ROGER TECHNOLOGY.** ***Warning! If the motor wires become disconnected from the terminal board, after reconnecting correctly, the gate travel must be acquired again as described in chapter 11.***

7 Commands and Accessories

If not installed, safety devices with NC contacts must be jumpered at the COM terminals, or disabled by modifying the parameters 50, 51, 53, 54, 73 and 74.

KEY:

N.A. (Normally Open) .
N.C. (Normally Closed).

CONTACT	DESCRIPTION
6 **7(COR)** 	Output (potential free contact) for connecting courtesy light. 230 Vac 100 W - 24 Vac/dc 40 W ("Eg. 9).**NOTE: Provide a protective fuse.**
6 **7(COR)**	Error alert contact only, for: • Unlocked gate / battery supply error (low battery); • Gate completely open / gate completely closed ("Eg. 10). The COR output operating mode is managed by parameter 20. The voltage level of the battery can be set via parameter 85.
8(+SC) **9(COM)** 	Connection for gate open indicator lamp. 24 Vdc 3 W. The function of the indicator lamp is determined by parameter A8.
8(+SC) **9(COM)**	Photocell test connection and/or battery saving ("Eg. 13-14-15-16) The power feed for the photocell transmitters (TX) may be connected to this. Set the parameter A8 02 to enable the test function. Each time a command is received, the control unit switches the photocells off and on to check that the contact changes state correctly. Power feeds for all external devices may be connected to reduce battery consumption (if batteries are used). Set A8 03 or A8 04. **WARNING!** If contact **8-SC** is used for the photocell test function or battery saving function, a gate open indicator lamp cannot be connected.
10(FT2) **28(COM)** 	Input (NC) for connecting photocells **FT2** ("Eg. 11-12-13-14-15-16). The photocells **FT2** are con"Egured by default with the following settings: – 53 00. Photocell FT2 disabled when gate is opening. – 54 00. Photocell FT2 disabled when gate is closing. – 55 01. The gate opens when an open command is received if photocell FT2 is obstructed. If the photocells are not installed, jumper the terminals **28(COM) - 10(FT2)** or set the parameters 53 00 and 54 00. **WARNING! Use F4ES or F4S series photocells.**
11(FT1) **28(COM)** 	Input (NC) for connecting photocells **FT1** ("Eg. 11-12-13-14-15-16). The photocells **FT1** are con"Egured by default with the following settings: – 50 00. Photocell triggers only during gate closure. Photocell is ignored during gate opening. – 51 02. Movement is reversed if the photocell is triggered during gate closure. – 52 01. The gate opens when an open command is received if photocell FT1 is obstructed. If the photocells are not installed, jumper the terminals **28(COM) - 11(FT1)** or set the parameters 50 00 and 51 00. **WARNING**! Use **F4ES** or **F4S** series photocells.
12(COS2) **14(COM)**	Input (NC or 8 kOhm) for connecting sensing edge **COS2** ("Eg. 9) The sensing edge is con"Egured by default with the following setings: – 74 00. The sensing edge COS2 (NC contact) is disabled. If the sensing edge is not installed, jumper the terminals **12(COS2) - 14(COM)** or set the parameter 74 00.
13(COS1) **14(COM)** 	Input (NC or 8 kOhm) for connecting sensing edge **COS1** ("Eg. 9) The sensing edge is con"Egured by default with the following setings: – 73 00. The sensing edge COS1 (NC contact) is disabled. If the sensing edge is not installed, jumper the terminals **13(COS1) - 14(COM)** or set the parameter 73 00.
15(ST) **14(COM)** 	STOP command input (NC). The current manoeuvre is arrested if the safety contact opens. **N.B.: the controller is supplied with this contact already jumpered by ROGER TECHNOLOGY.**

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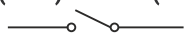
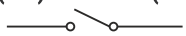
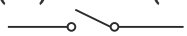
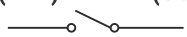
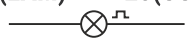
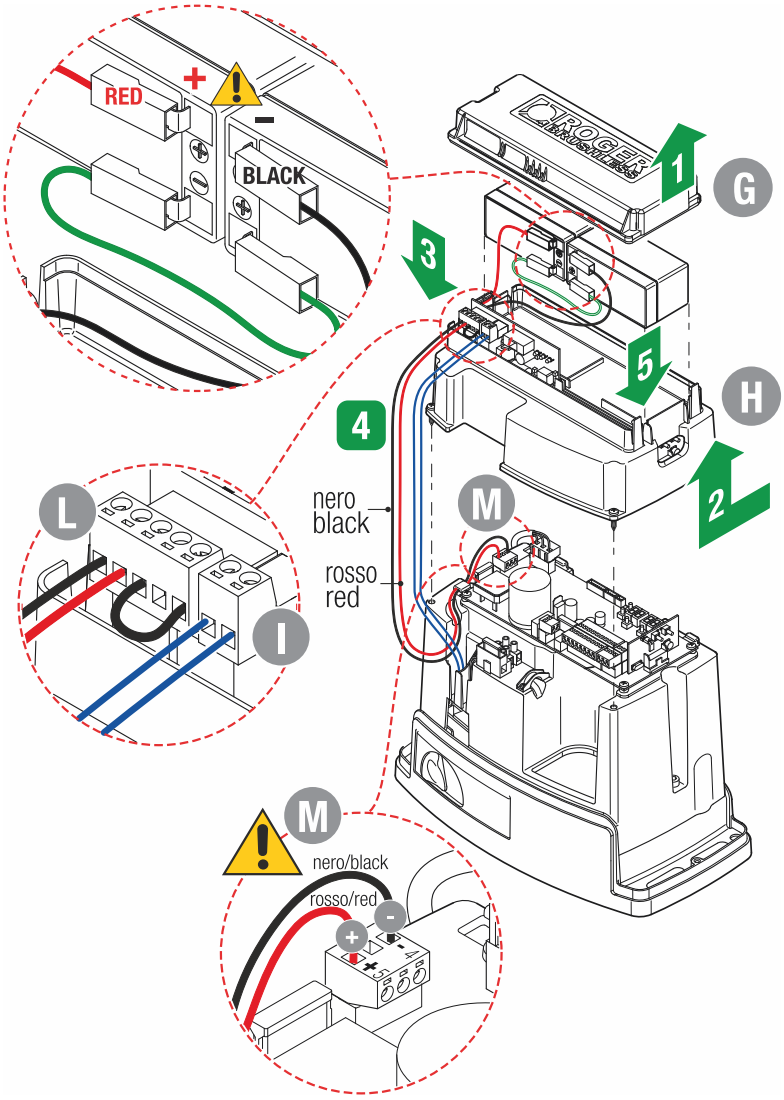
CONTACT		DESCRIPTION
20 **19(ANT)** 		Antenna connector for slot-in radio receiver board. Use RG58 if an external antenna is used; maximum recommended length: 10 m. **N.B.**: do not make joints in cable.
22(ORO) **21(COM)** 		Clock timer contact input (N.O.). When the clock function is active, the gate opens and remains open. At the end of the programmed time set with the external device (clock), the gate closes. The function of this command is determined by parameter 80.
23(AP) **21(COM)** 		Open control signal input (N.O.). **IMPORTANT**: persistent activation of the opening command prevents automatic reclosure; the automatic reclosure time count is resumed when the opening command is released.
24(CH) **21(COM)** 		Close command input (N.O.).
25(PP) **21(COM)** 		Step by step mode command input (N.O.). The function of the control is determined by parameter A4.
26(PED) **21(COM)** 		Partial open control signal input (N.O.). Set by default to 50% of completely open position.
27(+24V) **28(COM)**		Power feed for external devices. See technical characteristics. Connecting **B72/BRAKE - B72/BRCL** power unit for **BH30** High Speed ("Eg. 5),**BH30** Reversible ("Eg. 6) and**BM30** High Speed versions ("Eg. 8)
29(LAM) **28(COM)** 		Connection for "Fashing light(24 Vdc - duty cycle 50%). The settings for the pre-manoeuvre "Fashing warning signal may be selected with parameter A5, while the "Fashing mode is set with parameter78.
ENC		Connector for connecting to encoder installed on motor. **WARNING**! Always disconnect from electrical power before disconnecting or connecting the encoder cable. **In case of encoder replacement, repeat the acquisition procedure.** **N.B.**: Ready wired in factory by ROGER TECHNOLOGY.
FC		Connector (N.C. contacts) for connecting mechanical limit switch (see **,Egure 20- detail E**) or magnetic limit switch (see **,Egure 21- detail F**). The gate stops when the limit switch is activated. **IMPORTANT**: repeat the travel acquisition procedure after each adjustment to the limit switches. **N.B.**: Ready wired in factory by ROGER TECHNOLOGY.
SB		Connector (N.C.) for connecting release contact. If the motor release handle is opened, the gate stops and no command signals are accepted. Once the release handle is closed again, if the gate is in an intermediate position, the controller unit initiates the position recovery procedure (see chapter 18). **N.B.**: Ready wired in factory by ROGER TECHNOLOGY.
RECEIVER CARD		Connector for plug-in radio receiver board. The control unit has two radio remote control functions by default: – PR1 - step mode command (modi"Eable with parameter76). – PR2 - partial opening command (modi"Eable with parameter77). The programming buttons **PR1** and **PR2** are also accessible with the cover closed (see "Eg. 17).
ONLY BH30 Series	**BATTERY CHARGER B71/BC**	In the event of a mains power loss, the controller unit is powered by the batteries. When battery power is used, bAtt is shown on the display and the "Fashing light "Fashes brie"Fy at intervals until mains power is restored or until the battery voltage drops below the minimum permissible limit. In this case, btLO (Battery Low) is shown on the display and the controller unit accepts no commands. WARNING! the batteries must always be connected to the electronic controller unit in order to charge. Periodically (at least every 6 months), check that the battery is in good working order.
	2x12 Vdc 1,2 Ah. or 2x12 Vdc 4,5 Ah	Two battery kits are available: • Two 12 V DC, 1.2 Ah batteries installed in the automation system itself. • Two 12 V DC, 4.5 Ah batteries installed in an external case. For more information, refer to the installation manual for the **B71/BC** battery charger. WARNING: it is recommended to use AGM type batteries.

CONTACT		DESCRIPTION
ONLY BH30 Series	**BATTERY CHARGER** **B71/BC** **2x12 Vdc** **1,2 Ah.**	To install the battery charger and the 12 V DC, 1,2 Ah batteries: • Remove the upper cover **G**. • Remove the cover **H**. • Install the **B71/BC** battery charger board in the relative seat. • Disconnect the wires from the transformer and from the **POWER IN** terminal of the controller unit, and connect them to terminal **I** of the battery charger. • Connect the red-black wires of cable **L** included with the battery to the **POWER IN** terminal **M** of the controller unit. • Close the cover **H** and fasten with the screws. • Fit the 12 V DC 1.2 Ah batteries in the relative compartment, ensuring that the polarity is correct. • Close the upper cover **G**.  To reduce battery consumption, the positive power feed wire of the photocell transmitters may be connected to terminal **SC** (see "Eg. 13-14-15-16). Set A8 03 or A8 04. In this con"E guration, the controller unit disconnects power from the accessory devices when the gate is completely open or completely closed.

EN

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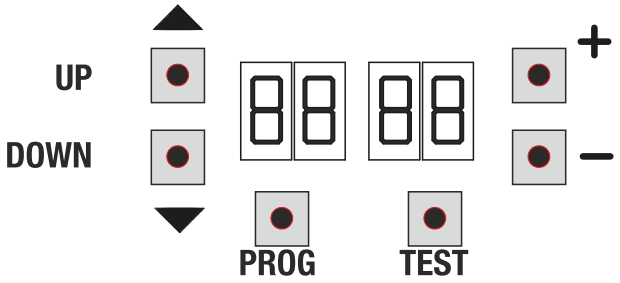
8 Function buttons and display

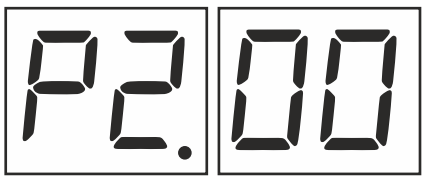


BUTTON	DESCRIPTION
UP ▲	Next parameter
DOWN ▼	Previous parameter
+	Increase value of parameter by 1
-	Decrease value of parameter by 1
PROG	Travel acquisition
TEST	Activate TEST mode

- Press the UP ▲ and/or DOWN ▼ buttons to view the parameter you intend to modify.
- Use the + and - buttons to modify the value of the parameter. The value starts to "Fash.
- Press and hold the + or - button to scroll quickly through values, to modify the parameter more quickly.
- To save the new value, wait a few seconds or move onto another parameter with the UP ▲ or DOWN ▼ button. The display "Fashes rapidly to indicate that the new value has beensaved.
- Parameters can only be modi"Eed while the motor is not running.Parameters can be viewed at any time.

9 Switching on or commissioning

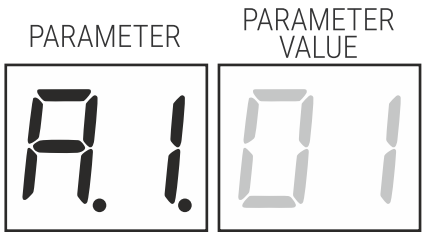
Power the control unit.
The "Ermware version of the control unit is displayed brie"Fy.
Version installed P2.00.



Immediately afterwards, the displays enters the commands and safety device status mode. See chapter 10.

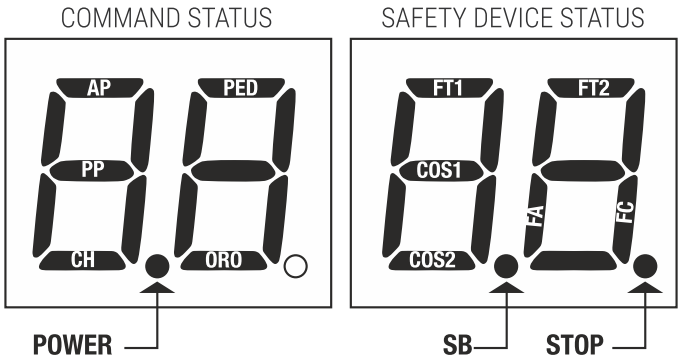
10 Display function modes

10.1 Parameter display mode



See chapter 13 for detailed descriptions of parameters.

10.2 Command and safety device status display mode



COMMAND STATUS:
The command status indicators on the display are normally OFF.
They ILLUMINATE when a command is received (e.g.: when a step mode command is received, the segment PP illuminates).

SEGMENT	COMMAND
AP	open
PP	step by step mode
CH	close
PED	partial opening
ORO	clock

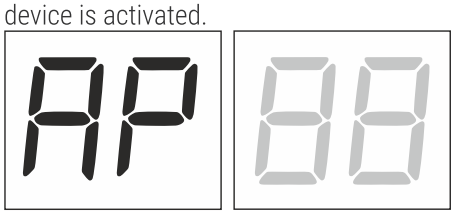
SAFETY DEVICE STATUS:
The safety device status indicators on the display are normally ON.
If an indicator is OFF, the relative device is in alarm state or is not connected.
The an indicator is FLASHING, the relative device has been disabled with a speci"Ec parameter.

SEGMENT	SAFETY
FT1	photocell
FT2	photocell
COS1	sensing edge
COS2	sensing edge
FA	gate open limit switch
FC	gate closed limit switch
SB	release handle open

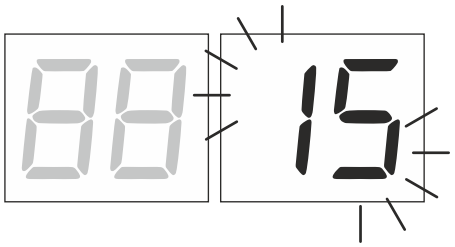
EN

10.3 TEST mode

The TEST mode is used to test activation of the commands and safety devices with visual con"Ermation.
To activate the mode, press the TEST button with the automatic door system at rest. If the gate is moving, pressing TEST stops the gate. Pressing the button again enables TEST mode.
If the "Fashing light and the gate open indicator lamp illuminate for one second each time a control is used or a safety device is activated.



The command signal status is shown on the left hand side of the display for 5 seconds, ONLY when the respective command signal is active (AP, CH, PP, PE, OR). For example, if the gate open command is activated, the letters AP appear on the display.



The status of the safety devices/inputs is shown on the right hand side of the display. The number of the terminal relative to the safety device in alarm state "Fashes.
When the gate is completely open or completely closed, FA or FC is shown on the display to indicate that the gate has reached the gate open limit switch FA or gate closed limit switch FC.

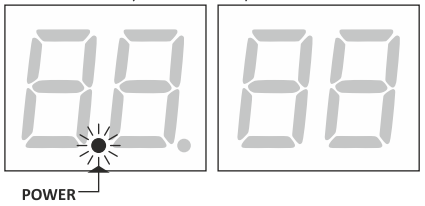
Example: STOP contact in alarm state

00	No safety device in alarm state and no limit switch activated.
5b (Sb)	Release handle or lock open.
15	STOP contact (N.C.) open. If there is no STOP switch, jumper the contact.
13	Sensing edge contact COS1 (N.C.) is open. Check connection. If sensing edge is not installed, disable with 73 00.
12	Sensing edge contact COS2 (N.C.) is open. Check connection. If sensing edge is not installed, disable with 74 00.
11	Photocell contact FT1 (N.C.) is open. Check connection. If photocell is not installed, disable with 50 00.
10	Photocell contact FT2 (N.C.) is open. Check connection. If photocell is not installed, disable with 53 00.
FE	Both limit switches in error state. Check connections and settings of limit switches.
FA	If gate is open, gate open limit switch is detected.
FC	If gate is closed, gate closed limit switch is detected.

NOTA: If one or more contacts are open, the gate will not open or close. This does not apply for the limit switch signal state, however, which is shown on the display but does not prevent normal operation of the gate.
If more than one safety device is in alarm state, once the problem relative to the "Erst device is resolved, the alarm for the next device is displayed. Any further alarm states are also displayed with the same logic.
Press the TEST button again to exit test mode.
After 10 seconds with no user input, the display returns to command and safety device state display mode.

10.4 Standby mode

This mode is activated after 30 minutes with no user input. The POWER LED "Fashes slowly.
Press UP ▲, DOWN ▼, **+** or **-** to reactivate the control unit.



NOTE: If a safety password (only if active) is unlocked, to adjust the parameter settings, the password is automatically reactivated in Stand By mode.

11 Travel acquisition

For the system to function correctly, the barrier travel must be acquired by the controller.

11.1 Before starting:

IMPORTANT: Select the automation system model installed with the parameter A 1.

KEY: **HIGH SPEED Motors** **REVERSIBLE Motor**

SELECTION	MODEL	MOTOR TYPE	CONFIGURATION
A 1 01	**BH30/603** **BH30/604**	/	**600kg IRREVERSIBLE**
A 1 02	**BH30/803** **BH30/804**	/	**1000kg IRREVERSIBLE**
A 1 03	**BH30/503/HS** **BH30/504/HS** **BH30/603/HS** **BH30/604/HS**		**600kg IRREVERSIBLE HIGH SPEED** see chapter 14 "Special Parameters for High Speed Motor"
A 1 04	**BM30/400**	/	**500kg IRREVERSIBLE**
A 1 05	**BM30/300/HS**		**400kg IRREVERSIBLE HIGH SPEED** see chapter 14 "Special Parameters for High Speed Motor"
A 1 06	**BH30/804/R**		**800kg REVERSIBLE** see chapter 15 "Special Parameters for Reversible Motor"

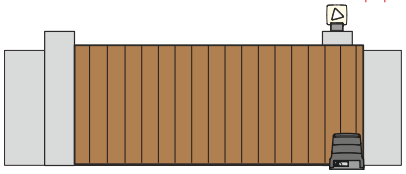
1. Select the position of the motor relative to the gate with the parameter 7 1. The default setting for this parameter is with the motor installed on the right hand side of the gate (seen from interior side).

LEFT OPENING 7 1 00

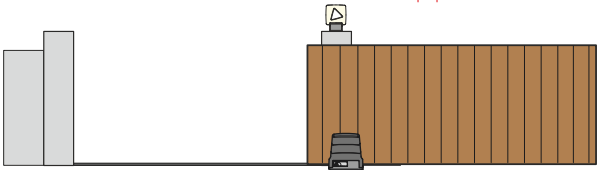
RIGHT OPENING 7 1 01

2. Adjust the (mechanical or magnetic) limit switches so that, once triggered, the gate stops slightly before it reaches the mechanical stop.

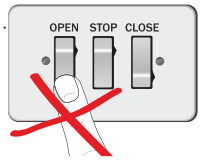
CLOSING LIMIT SWITCH F C



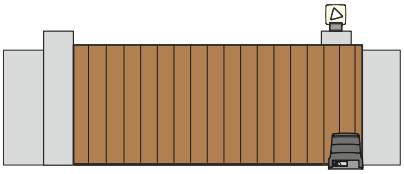
OPENING LIMIT SWITCH F A



3. Check that the operator present function is not enabled (A 7 00).



4. Move the gate into the closed position.



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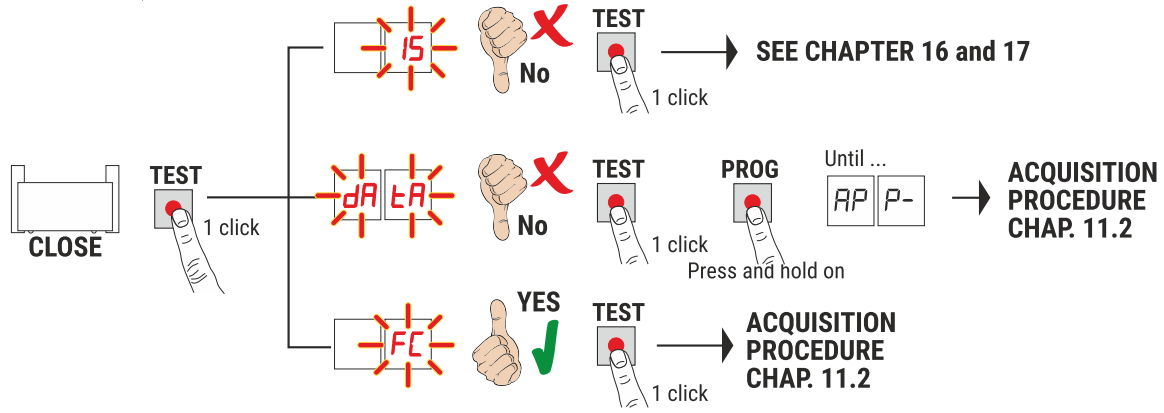
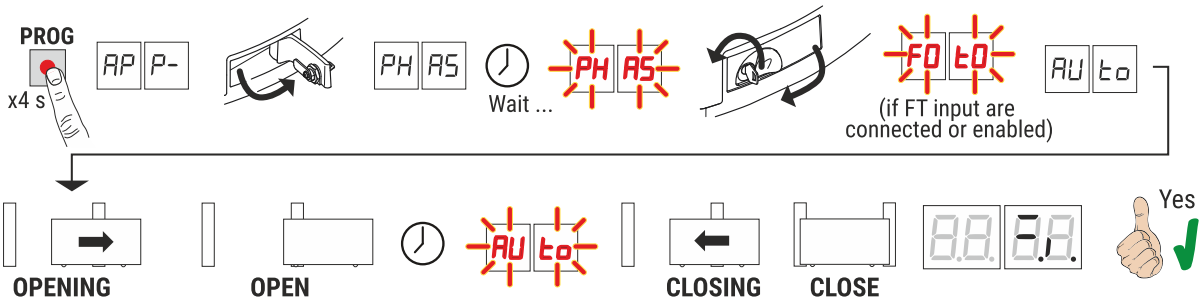
5. Press **TEST** (see TEST mode in chapter 10) and check the command signal and safety device states. If any safety devices are not installed, jumper the relative contact or disable the device from the relative parameter (50, S1, 53, S4, 73 and 74).



11.2 Acquisition procedure:



- Press and hold **PROG** for 4 seconds. AP P- is shown on the display.
- Open the release handle. The message PH AS appears on the display after a few seconds. The controller unit launches a calibration procedure. The operating parameters of the motor are determined during calibration.
- If the motor calibration procedure is successful, the message PH AS "Fashes on the display.
- Close the release handle. The acquisition procedure now starts.
- FOtO is shown on the display (only if parameters 50, S1, 53, S4 are not disabled). Keep away from the photocell beam within 5 s, to prevent interrupting the procedure.
- AUto is shown on the display and the gate starts opening at low speed.
- The gate stops brie"Fy when it reaches the gate open limit switch. AUto "Fashes on the display.
- The gate closes until it reaches the gate closed limit switch.

If the acquisition procedure is completed successfully, the display enters the command and safety device state display mode.

If the following error messages are shown on the display, repeat the acquisition procedure:
- no PH: calibration procedure failed.
- AP PE: acquisition error. Press the **TEST** button to clear the error, and check the safety device in alarm state.
- AP PL: travel length error. Press the **TEST** button to clear the error, and check that gate is completely closed.

ATTENTION: if the acquisition procedure was successful **BUT** the space between the leaf (stopped at the limit switch) and the mechanical stop is not as desired, move the limit switch and REPEAT THE ACQUISITION PROCEDURE. Ensure that AT LEAST 3 centimetres remain between the leaf stop and the mechanical stop.

For more information, see chapter 17 “Alarms and faults”.

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PARAM.	FACTORY DEFAULT	DESCRIPTION	PAGE
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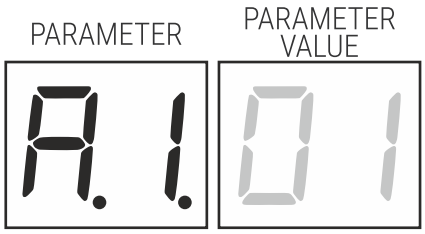
13 Parameters menu



A101	**Selecting automation system model** **WARNING!** If this parameter is not set correctly, the automation system may not function properly. **N.B.:** in the event of a reset to restore the default parameters, this parameter must be set again manually.
01	**BH30/603 - IRREVERSIBLE** motor for gate leaves up to 600 kg **BH30/604 - IRREVERSIBLE** motor for gate leaves up to 600 kg
02	**BH30/803 - IRREVERSIBLE** motor for gate leaves up to 1000 kg **BH30/804 - IRREVERSIBLE** motor for gate leaves up to 1000 kg
03	**BH30/503/HS - BH30/504/HS - IRREVERSIBLE HIGH SPEED** motor for gate leaves up to 600 kg **BH30/603/HS - BH30/604/HS - IRREVERSIBLE HIGH SPEED** motor for gate leaves up to 600 kg (see chapter 14 "Special parameters for High Speed series")
04	**BM30/400 - IRREVERSIBLE** motor for gate leaves up to 500 kg
05	**BM30/300/HS - IRREVERSIBLE HIGH SPEED** motor for gate leaves up to 400 kg (see chapter 14 "Special parameters for High Speed series")
06	**BH30/804/R - REVERSIBLE** motor for gate leaves up to 800 kg (see chapter 15 "Special parameters for High Speed series")

A2 00	**Automatic closure after pause time (from gate completely open)**
00	Disabled.
01-15	From 1 to 15 of gate closure attempts after photocell is triggered. Once the number of attempts set is reached, the gate remains open.
99	The gate tries to close inde"Enitely.

A3 00	**Automatic gate closing after mains power outage**
00	Disabled. The gate does not close automatically when mains power is restored.
01	Enabled. If the gate is NOT completely open, when mains power is restored, the gate closes after a 5 second warning signalled with the "Fashing light (independently of the value set with the parameter A5). The gate closes in "position recovery" mode (see chapter 20).

A4 00	**Selecting step mode control function (PP)**
00	Open-stop-close-stop-open-stop-close...
01	Condominium function: the gate opens and closes after the set automatic closing time. The automatic closing timer restarts if a new step mode command is received. Step mode commands are ignored while the gate is opening. This allows the gate to open completely and prevents the gate from closing when not required. If automatic closing is disabled (A2 00), the condominium function automatically attempts a closing manoeuvre A2 01.
02	Condominium function: the gate opens and closes after the set automatic closing time. The automatic closing timer does NOT restart if a new step mode command is received. Step mode commands are ignored while the gate is opening. This allows the gate to open completely and prevents the gate from closing when not required. If automatic closing is disabled (A2 00), the condominium function automatically attempts a closing manoeuvre A2 01.
03	Open-close-open-close.
04	Open-close-stop-open.

A5 00	**Pre-,Fashing**
00	Disabled. The "Fashing light is activated during opening and closing manoeuvres.
01-10	Flashing warning signal for 1 to 10 seconds prior to every manoeuvre.
99	5 second "Fashing warning signal prior to closing manoeuvre.

A6 00	**Condominium function for partial open command (PED)**
00	Disabled. The gate opens partially in step mode: open-stop-close-stop-open...
01	Enabled. Partial commands are ignored during gate opening.

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A7 00	**Enabling operator present function**
00	Disabled.
01	Enabled. The open (AP) or close (CH) button must be pressed continuously to operate the gate. The gate stops when the button is released.
02	Equipped with safety function according to standard EN ISO 13849. To open the gate, press the AP command, release it and then press it again, holding it pressed. The gate stops when the button is released. To close the gate, press the CH command, release it and then press it again, holding it pressed. The gate stops when the button is released.

A8 00	**Gate open indicator / photocell test function and “battery saving”**
00	The indicator is off when the gate is closed, and steadily lit during manoeuvres and when the gate is open.
01	The indicator "Fashes slowly duringopening manoeuvres, and is lit steadily when the gate is completely open. It "Fashes quickly during closing manoeuvres. If the gate is stopped in an intermediate position, the lamp extinguishes twice every 15 seconds.
02	Set 02 if the output SC is used for the photocell test. See "Eg. 13-14
03	Set to 03 if the output SC is used for the %Öbattery saving%Ü function. See "Eg. 15-16. When the gate is completely open or closed, the controller unit deactivates any accessories connected to terminal SC to reduce battery consumption.
04	Set to 04 if the output SC is used for the %Öbattery saving%Ü functionphotocell test function. See "Eg. 15-16.

11 04	**Setting deceleration during opening and closing**
12 04	See chapter 14-15 "Special parameters for High Speed and Reversible series"
01-05	01= the gate decelerates near the limit switch ... 05= the gate decelerates long before the limit switch.

13 02	**Setting gate open limit switch constant speed approach distance** **N.B.:** the manoeuvre speed is set with parameter 42. After decelerating, the gate completes the distance to the limit switch at constant speed.
14 02	**Setting gate closed limit switch constant speed approach distance** **N.B.:** the manoeuvre speed is set with parameter 42. After decelerating, the gate completes the distance to the limit switch at constant speed.
05-40	05= Approximate 15 cm distance; ... 10= Approximate 30 cm distance; ... 40= Approximate 120 cm distance.

15 50	**Partial opening adjustment (%)** **N.B.**: This parameter is set to 50% (half of total gate travel) by default.
10-99	From 10% to 99% of total gate travel.

20 00	**COR output operating mode**
00	STANDARD operation managed by parameter 79
01	Closed contact if the release handle is correctly closed (with the key turned to closed position). Open contact due to a fault: Motor released and/or key turned to open position.
02	Contact closed if the motor is powered by the mains or charged battery. Open contact due to a fault: Motor powered by low battery (voltage level set by par. 85) or with error alert bAtO (the control unit no longer accept commands).
03	Closed contact if none of the fault related situations 1 and 2 occurs. Open contact if at least one of the fault related situations 1 and 2 occurs
04	Closed contact if the gate is not completely open. Open contact if the gate is completely open.
05	Closed contact if the gate is not completely closed. Open contact if the gate is completely closed.

21 30	**Setting automatic closing time** The timer starts from the gate open state and continues for the set time. Once the set time is reached, the gate closes automatically. The timer count restarts if a photocell is triggered.
00-90	Pause time settable from 00 to 90 s.
92-99	Pause time settable from 2 to 9 min.

22 00	**Enabling of management for opening with automatic re-closure exclusion** If enabled, the exclusion of automatic re-closure only applies for the command selected via the parameter. For example: if you set 220 1, automatic re-closure is excluded following an AP command, but it is activated following a PP or PED command. **NOTE**: The command has open-stop-close or close-stop-open sequence activation function.
00	Disabled.
01	An AP (open) command activates the opening manoeuvre. With the gate fully open, automatic reclosing is excluded. Another AP (open) command activates the closure manoeuvre.
02	A PP (step mode) command activates the opening manoeuvre. With the gate fully open, automatic reclosing is excluded. Another PP (step mode) command activates the closure manoeuvre.
03	A PED (partial opening) command activates the partial opening manoeuvre. Automatic re-closure is excluded. Another PED (partial opening) command activates the closure manoeuvre.

27 03	**Setting reverse time after activation of sensing edge or obstacle detection (crush prevention)** This sets the reverse manoeuvre time after activation of the sensing edge or the obstacle detection system. The gate comes to a stop after reversal dues to activation of the sensing edge or obstacle detection system at the end of manoeuvre deceleration speed. As a result, the effective reversal manoeuvre time is slightly longer than the set time.
00-60	From 0 to 60 s.

30 05	**Setting motor torque** Increasing or decreasing the value of the parameter increases or decreases motor torque and, as a result, adjusts obstacle detection sensitivity. Use values below 03 ONLY for particularly lightweight installations not exposed to severe weather conditions (strong winds or very cold temperatures).
01-09	01= -35%; 02= -25%; 03= -16%; 04= -8% (reduced motor torque = increased sensitivity). 05= default motor torque setting. 06= +8%; 07= +16%; 08= +25%; 09= +35% (increased motor torque = reduced sensitivity).

31 15	**Setting obstacle impact force sensitivity** If the reaction time to obstacle impact force is too long, reduce the value of the parameter. If the impact force exerted on obstacles is too high, reduce the value of parameter 30.
01-10	Low motor torque: 01 = minimum obstacle impact force ... 10 = maximum obstacle impact force **N.B.: only use these settings if the medium motor torque values are not suitable for the installation.**
11-16	Medium motor torque. **Recommended setting for adjusting force settings correctly.** 11 = minimum obstacle impact force ... 16 = maximum obstacle impact force.
17	70% of maximum motor torque, 1 s of reaction time. Sensing edge is compulsory.
18	80% of maximum motor torque, 2 s of reaction time. Sensing edge is compulsory.
19	Maximum motor torque, 3 s of reaction time. Sensing edge is compulsory.
20	Maximum motor torque, 5 s of reaction time. Sensing edge is compulsory.

33 04	**Setting start acceleration during opening and closing**
34 04	See chapter 14-15 "Special parameters for High Speed and Reversible series"
01-05	01= the gate accelerates rapidly at start of manoeuvre ... 05= the gate accelerates slowly and progressively at start of manoeuvre.

36 00	**Enabling maximum torque boost at start of manoeuvre** If this parameter is enabled, each time the motor starts a manoeuvre, maximum torque is produced for a maximum of 5 seconds, or for the time necessary for the gate to open by approximately 65 cm. **N.B:** in the case of **High Speed** motors, a motor boost mode is implemented for 2 seconds after each gate start, regardless of the setting of parameter 36.
00	Disabled.
01	Enabled at start of opening manoeuvre only (including position recovery). The motor starting current function is only enabled for closing manoeuvres if the gate position is known and the gate is at least 2 metres from the completely closed position.
02	Enabled for all starts (including position recovery).

37 00	**Setting motor torque during position recovery** Adjust motor torque with parameter 37 if, during position recovery, the values set with parameters 30 and 31 are insuf"Ecient to allow the gate to complete the manoeuvre. If position recovery is not completed, normal gate operation will not be resumed.
00	The response of the obstacle detection system depends solely on the values set for parameters 30 and 31.
01	The response of the obstacle detection system depends on the values set for parameters 30 and 31 and on the maximum current value stored during travel acquisition.
02	The response of the obstacle detection system is a 70% reduction in maximum torque for a period of 1 s.
03	The response of the obstacle detection system is a 80% reduction in maximum torque for a period of 2 s.
04	The response of the obstacle detection system is a 100% reduction in maximum torque for a period of 3 s.
05	The response of the obstacle detection system is a 100% reduction in maximum torque for a period of 5 s.

40 05	**Setting opening and closing speed (%)**
41 05	See chapter 14-15 "Special parameters for High Speed and Reversible series"
01-05	01= 60% minimum speed, 02= 70%, 03= 80%, 04=90%, 05= 100% maximum speed.

42 03	**Setting end of manoeuvre constant approach speed** Once deceleration is complete, the gate continues to the limit switch at constant speed. The distance is set with the parameters 13 and 14.
01-08	01= 250 RPM; 02= 300 RPM; 03= 350 RPM; 04= 400 RPM; 05= 450 RPM; 06= 500 RPM; 07= 550 RPM; 08= 600 RPM **NOTE:** The minimum and maximum approaching speeds vary according to the installed motor model. The settings are divided in constant size steps. Indicative values: BH30/800 from approximately 2 m/min to 5 m/min BH30 and BM30 HIGH SPEED from approximately 3 m/min to 8 m/min BH30 REVERSIBLE from approximately 2 m/min to 6 m/min

49 01	**Setting number of automatic closure attempts after activation of sensing edge or obstacle detection (crush protection)**
00	No automatic closure attempts.
01-03	From 1 to 3 automatic closure attempts. We recommend setting a value equal to or lower than the value set for parameter A2. Automatic closure is only performed if the gate is completely open.

50 00	**Setting photocell mode during gate opening (FT1)**
00	DISABLED. Photocell is not active or not installed.
01	STOP. The gate stops and remains stationary until the next command is received.
02	IMMEDIATE REVERSE. The gate reverses immediately if the photocell is activated during gate opening.
03	TEMPORARY STOP. The gate stops as long as the photocell is obstructed. The gate resumed opening when the photocell is cleared.
04	DELAYED REVERSE. The gate stops if the photocell is obstructed. The gate closes when the photocell is cleared.

51 02	**Setting photocell mode during gate closing (FT1)**
00	DISABLED. Photocell is not active or not installed.
01	STOP. The gate stops and remains stationary until the next command is received.
02	IMMEDIATE REVERSE. The gate reverses immediately if the photocell is activated during gate closure.
03	TEMPORARY STOP. The gate stops as long as the photocell is obstructed. The gate resumed closing when the photocell is cleared.
04	DELAYED REVERSE. The gate stops if the photocell is obstructed. The gate opens when the photocell is cleared.

52 01	**Photocell (FT1) mode with gate closed** This parameter is not visible if A8 02, A8 03 or A8 04 is set.
00	If the photocell is obstructed, the gate cannot open.
01	The gate opens when an open command is received, even if the photocell is obstructed.
02	The photocell sends the gate open command when obstructed.

53 00	**Setting photocell mode during gate opening (FT2)**
00	DISABLED. Photocell is not active or not installed.
01	STOP. The gate stops and remains stationary until the next command is received.
02	IMMEDIATE REVERSE. The gate reverses immediately if the photocell is activated during gate opening.
03	TEMPORARY STOP. The gate stops as long as the photocell is obstructed. The gate resumed opening when the photocell is cleared.
04	DELAYED REVERSE. The gate stops if the photocell is obstructed. The gate closes when the photocell is cleared.

54 00	**Setting photocell mode during gate closing (FT2)**
00	DISABLED. Photocell is not active or not installed.
01	STOP. The gate stops and remains stationary until the next command is received.
02	IMMEDIATE REVERSE. The gate reverses immediately if the photocell is activated during gate closure.
03	TEMPORARY STOP. The gate stops as long as the photocell is obstructed. The gate resumed closing when the photocell is cleared.
04	DELAYED REVERSE. The gate stops if the photocell is obstructed. The gate opens when the photocell is cleared.

55 01	**Photocell (FT2) mode with gate closed** This parameter is not visible if *AB 02*, *AB 03* or *AB 04* is set.
00	If the photocell is obstructed, the gate cannot open.
01	The gate opens when an open command is received, even if the photocell is obstructed.
02	The photocell sends the gate open command when obstructed.

56 00	**Enable close command 6 s after activation of photocell (FT1-FT2)** This parameter is not visible if *AB 03* or *AB 04* is set. **NOTE:** in the case of photocells being blanked during opening, the 6 secs. count starts when the wings are completely open.
00	Disabled.
01	Enabled. When the photocell barrier FT1 is crossed, a close command is sent 6 seconds later.
02	Enabled. When the photocell barrier FT2 is crossed, a close command is sent 6 seconds later.

65 05	**Setting motor stop distance**
01-05	01= faster deceleration/shorter stop distance ... 05= slower deceleration/longer stop distance.

71 01	**Selecting installation position of motor relative to gate (seen from interior side)** **NB:** the position data request message data appears on the display whenever this parameter is modi"Eed. Press the PROG key until *APP-* appears on the display, then repeat the acquisition procedure. **N.B.:** in the event of a reset to restore the default parameters, this parameter must be set again manually.
00	Motor installed on left.
01	Motor installed on right.

73 00	**Con,Eguring sensing edgeCOS1**
00	Sensing edge NOT INSTALLED.
01	NC contact (normally closed). The gate reverses only when opening.
02	Contact with 8k2 resistor. The gate reverses only when opening.
03	NC contact (normally closed). The gate always reverses.
04	Contact with 8k2 resistor. The gate always reverses.

74 00	**Con,Eguring sensing edgeCOS2**
00	Sensing edge NOT INSTALLED.
01	NC contact (normally closed). The gate reverses only when closing.
02	Contact with 8k2 resistor. The gate reverses only when closing.
03	NC contact (normally closed). The gate always reverses.
04	Contact with 8k2 resistor. The gate always reverses.

EN

76 00	**Con,Eguring radio channel 1 (PR1)** N.B.: With ROGER TECHNOLOGY plug-in radio receiver board.
77 01	**Con,Eguring radio channel 2 (PR2)** N.B.: With ROGER TECHNOLOGY plug-in radio receiver board.
00	STEP MODE.
01	PARTIAL OPENING
02	OPENING
03	CLOSING.
04	STOP.
05	Courtesy light. The output COR is managed from the remote control. The light remains lit as long as the remote control is active. The parameter 79 is ignored.
06	Courtesy light in step mode (PP). The output COR is managed from the remote control. The remote control turns the courtesy light on and off. The parameter 79 is ignored.
07	STEP MODE with con"Ermation for safety.(1)
08	PARTIAL OPENING with con"Ermation for safety.(1)
09	OPENING with con"Ermation for safety.(1)
10	CLOSURE with con"Ermation for safety.(1)

(1) To prevent gate manoeuvres caused by accidentally pressing a remote control button, con"Ermation is required to enable the command. Example: parameters 76 07 and 77 01 set:

- Pressing the CHA button on the remote control selects the step mode function, which must be con"Ermed within 2 seconds by pressing CHB on the remote control. Press CHB to activate partial opening.

78 00	**Con,Eguring ,Fashing light frequency**
00	The frequency is set electronically from the "Fashing light unit
01	Slow "Fash.
02	Light "Fashes slowly when gate opens, rapidly when gate closes.

79 60	**Selecting courtesy light mode** **N.B.:** the parameter is not visible if par. 20 is different than 00
00	Disabled.
01	PULSE. The courtesy light illuminates brie"Fy at the start of each manoeuvre.
02	ACTIVE. The light remains lit for the entire duration of the manoeuvre.
03-90	From 3 to 90 s. The light remains lit for the time period set after the manoeuvre is completed.
92-99	From 2 to 9 minutes. The light remains lit for the time period set after the manoeuvre is completed.

80 00	**Clock contact con,Eguration** When the clock function is active, the gate opens and remains open. At the end of the programmed time set with the external device (clock), the gate closes.
00	When the clock function is active, the gate opens and remains open. Any command signal received is ignored.
01	When the clock function is active, the gate opens and remains open. Any command signal received is accepted. When the gate returns to the completely open position, the clock function is reactivated.

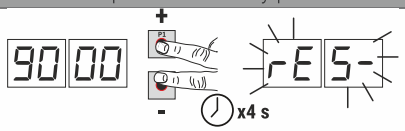
81 00	**Enable safeguarded gate closure/opening** Enabling this parameter ensures that the gate is not left open due to an incorrect and/or accidental command. This function is NOT enabled if: • the gate receives a STOP command; • the sensing edge intervenes, detecting an obstacle in the same direction in which the function is enabled. If instead the sensing edge detects an obstacle during the movement opposite to the guaranteed one, the function is maintained active. • the number of closure attempts set by parameter A2 has been reached; • the acquired position is lost (perform position recovery, see chapter 20).
00	Disabled. The parameter 82 is not displayed.
01	Guaranteed closing enabled. After a period of time set with parameter 82, the control unit signals a 5 second warning with the "Fashinglight, regardless of the parameter A5, and then closes the gate.
02	Guaranteed closing and opening enabled. If the gate is closed as a result of a step mode command, after a period of time set with parameter 82, the control unit signals a 5 second warning with the "Fashing light (regardless of the parameter A5), and then the gate closes. If the gate is stopped by the obstacle detection system during a closure manoeuvre, the gate closes after a period of time set with parameter 82. If the gate is stopped by the obstacle detection system during an opening manoeuvre, the gate closes after a period of time set with parameter 82.

8203	**Setting safeguarded closure/opening activation time** **N.B.:** this parameter is not visible if the value of parameter 81 = 00.
02-90	Wait time settable from 2 to 90 s.
92-99	Wait time settable from 2 to 9 min.

8500	**Selection of the battery operation management** Setting a value different than 00 a battery voltage level check is activated. The desired operation type can be selected via parameter 86 and an error alert can be activated through the COR output via parameter 20.
00	The control unit always accepts commands until the battery is completely exhausted.
01	The command becomes active when the battery voltage drops to the minimum threshold (22Vdc for battery 2x12Vdc)
02	The command becomes active when the battery voltage drops to the medium threshold (23Vdc for battery 2x12Vdc)
03	The command becomes active when the battery voltage drops to the maximum threshold (24Vdc for battery 2x12Vdc)

8600	**Selecting the battery operation limitations** **N.B.**: the parameter is visible only if par. 85 is different than 00
00	There is no limitation for the commands when the battery voltage drops under the selected threshold. An error alert may be activated via the COR output (if parameters 85 and 20 are adequately set).
01	When the battery voltage drops under the threshold selected with par. 85, the control unit accepts only opening commands and does not perform closing.
02	When the battery voltage drops under the threshold selected with par. 85, after a 5 s pre-flashing, the control unit automatically opens the barrier's boom and accepts only a closing command.
03	It accepts only closing commands (if the ORO input is active, it accepts closing commands only if 80 01).

8700	**Selection of the battery type and consumption reduction**
00	Battery 24Vdc (2x12V). Acceleration/deceleration/speed reduction enabled, to increase the battery life.
02	Battery 24Vdc (2x12V). No performance reduction, maximum battery consumption.

9000	**Restoring factory default values** **NOTE** This procedure is only possible is NO data protection password is set.
	 **Warning!** Restoring default settings cancels all settings made previously except for parameter A1, 71, 86, 87: after restore, check that all parameters are suitable for the installation. • Press and hold the PLUS **+** and MINUS **-** button until the unit switches on. • The display flashes after 4 s rES- . • The default factory settings have now been restored. **Note:** it is possible to reset the parameters in a second way: when the control unit is switched on, before the "Ermware version appears on the display, press and hold down the ▲ (UP ARROW) and ▼ (DOWN ARROW) buttons for 4s.

	Identi,Ecation number The identi"Ecation number consists of the values of the parametes from n0 to n6. **N.B.**: The values shown in the table are indicative only.	
n001	**HW version.**	Example: 01 23 45 67 89 01 23
n123	**Year of manufacture.**	
n245	**Week of manufacture.**	
n367	**Serial number.**	
n489		
n501		
n623	**FW version.**	

EN

View manoeuvre counter

The number consists of the values of the parameters from oN to o1 multiplied by 100.
N.B.: The values shown in the table are indicative only.

oN 01
o023
o145

Manoeuvres performed.
Example: 01 23 45 x100 = 1.234.500 manoeuvres.

View manoeuvre hour counter

The number consists of the values of the parameters from h0 to h1.
N.B.: The values shown in the table are indicative only.

h001
h123

Manoeuvre hours.
Example: 01 23 = 123 hours.

View control unit days on counter

The number consists of the values of the parameters from d0 to d1.
N.B.: The values shown in the table are indicative only.

d001
d123

Days with unit switched on.
Example: 01 23 = 123 days.

Password

Setting a password prevents unauthorised persons from accessing the settings.
With password protection active (CP=01), parameters may be viewed, but the values CANNOT be modi"Eed.
Only a single password is used to control access to the gate automation system.
WARNING: Contact the Technical Support Service if you lose your password.

P100
P200
P300
P400

Password activation procedure:
- Enter the desired values for parameters P1, P2, P3 and P4.
- Use the UP ▲ and/or DOWN ▼ buttons to view the parameter CP.
- Press and hold the + and - buttons for 4 seconds.
- The display "Fashes to con"Erm that the password has been saved.
- Switch the control unit off and on again. Check that password protection is activated (CP=01).

Temporary unlock procedure:
- Enter the password.
- Check that CP=00 .

Password cancellation procedure:
- Enter the password (CP=00).
- Save the values P1, P2, P3, P4 = 00
- Use the UP ▲ and/or DOWN ▼ buttons to view the parameter CP.
- Press and hold the **+** and **-** buttons for 4 seconds.
- The display "Fashes to con"Erm that the password has been cancelled (the values P100, P200, P300 and P400 indicate that no password is set).
- Switch the control unit off and on again.

CP00 Changing password

00	Protection deactivated.
01	Protection activated.

14 Special parameters for High Speed series

The High Speed series is a family of digital brushless high speed sliding motor units for sliding gates weighing up to 600 kg (**BH30/503/HS - BH30/504/HS - BH30/603/HS - BH30/604/HS**) and up to 400 kg (**BM30/300/HS**) and dedicated exclusively to residential applications.
High Speed technology makes it possible for the automation system to operate 100% faster than a conventional system, and allows independent management of speed, acceleration, deceleration and the safety devices used in the system.
Note: As the mechanics of the gate is unknown, to guarantee the maximum safety of the installation, we recommended to use sensitive edges.

The additional parameters for enabling High Speed technology are indicated as follows.

A103	**Selecting automation system model** This parameter is factory con"Egured by ROGER TECHNOLOGY. **WARNING!** The parameter is already con"Egured by default to enable use ofthe of motor in high speed mode. If this parameter is modi"Eed, all the speci"Ec motor funcions relative to high speed mode will no longer be available. The automation system will no longer function effectively and it will not be possible to diagnose faults. **N.B.:** in the event of a reset to restore the default parameters, this parameter must be set again manually.
01	BH30/603 - BH30/604
02	BH30/803- BH30/804
03	**BH30/503/HS - BH30/504/HS - BH30/603/HS - BH30-604/HS**
04	BM30/400
05	**BM30/300/HS**
06	BH30/804/R

1104	**Setting deceleration during opening**
1204	**Setting deceleration during closing**
01-05	01= the gate decelerates near the limit switch ... 05= the gate decelerates long before the limit switch.

3304	**Setting start acceleration during opening**
3404	**Setting start acceleration during closing**
01-05	01= the gate accelerates rapidly at start of manoeuvre ... 05= the gate accelerates slowly and progressively at start of manoeuvre.

4005	**Setting opening speed (%)** **N.B.:** the speed setting range is subdivided into 5 equal segments.
4105	**Setting closure speed (%)** **N.B.:** the speed setting range is subdivided into 5 equal segments.
01-05	01= 10 m/min (minimum speed) ... 05= 24 m/min (maximum speed).

N.B.: to set the constant speed deceleration space, see parameters 13 and 14 on chapter 13.

EN

15 Special parameters for Reversible series

The BH30/R series (REVERSIBLE) is a family of digital brushless motor units for sliding gates weighing up to 800 kg and dedicated exclusively to residential and industrial applications.
REVERSIBLE technology makes it possible to open and close the gate, without power supply, without releasing the motor even.
When the gate is moved manually, in the absence of supply voltage, the rotation of the motor supplies power to the control panel, the display turns ON and the message "SELF" appears. **WARNING**! Move the gate by hand with moderation.
The control unit allows independent management of speed, acceleration, deceleration and the safety devices used in the system.
During normal operation (including operation under battery power), the control unit applies a suf"Ecient braking force to impede manual movement of the gate.
As a result, prolonged operation may drain the battery when operating under battery power.
If the braking force applied is not suf"Ecient to impede manual movement of the gate and a gate movement of more than 3 cm is detected, the control unit initiates a position recovery procedure (see chapter 20).

NOTE: Even though it is a REVERSIBLE unit, the motor is equipped with a lock release system.

The additional parameters for enabling REVERSIBLE technology are indicated as follows.

A104	**Selecting automation system model** This parameter is factory con"Egured by ROGER TECHNOLOGY. **WARNING!** The parameter is already con"Egured by default to enable use ofthe of motor REVERSIBLE mode. If this parameter is modi"Eed, all the speci"Ec motor functions relative to REVERSIBLE mode will no longer be available. The automation system will no longer function effectively and it will not be possible to diagnose faults. **N.B.:** in the event of a reset to restore the default parameters, this parameter must be set again manually.
01	BH30/603 - BH30/804
02	BH30/803 - BH30/804
03	BH30/503/HS - BH30/504/HS - BH30/603/HS - BH30/604/HS
04	BM30/400
05	BM30/300/HS
06	**BH30/804/R**

1104	**Setting deceleration during opening**
1204	**Setting deceleration during closing**
01-05	01= the gate decelerates near the limit switch ... 05= the gate decelerates long before the limit switch.

3304	**Setting start acceleration during opening**
3404	**Setting start acceleration during closing**
01-05	01= the gate accelerates rapidly at start of manoeuvre ... 05= the gate accelerates slowly and progressively at start of manoeuvre.

4005	**Setting opening speed** **N.B.:** the speed setting range is subdivided into 5 equal segments.
4105	**Setting closure speed** **N.B.:** the speed setting range is subdivided into 5 equal segments.
01-05	01= 7 m/min (minimum speed) ... 05= 20 m/min (maximum speed).

N.B.: to set the constant speed deceleration space, see parameters 13 and 14 on Chapter 13.

16 Safety input and command status (TEST mode)

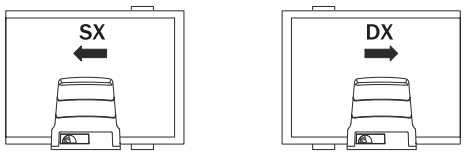
With no currently active commands, press the TEST button and check the following:

DISPLAY	POSSIBLE CAUSE	ACTION BY SOFTWARE	PHYSICAL CORRECTIVE ACTION
88 Sb (00 Sb)	The release handle is open.	-	Close the release handle and turn the key to the close position. Check that the release contact is connected correctly.
88 15	The safety STOP contact is open.	-	Install a STOP button (NC) or jumper the ST contact with the COM contact.
88 13	Sensing edge COS1 not connected or incorrectly connected.	Set the parameter 73 00 if not used or to disable	Jumper contact COS1 with contact COM, if not used or to disable
88 12	Sensing edge COS2 not connected or incorrectly connected.	Set the parameter 74 00 if not used or to disable	Jumper contact COS2 with contact COM, if not used or to disable
88 11	Photocell FT1 not connected or incorrectly connected.	Set the parameter 50 00 e 51 00 if not used or to disable	Jumper contact FT1 with contact COM, if not used or to disable. Check connection referring to relative connection diagram.
88 10	Photocell FT2 not connected or incorrectly connected.	Set the parameter 53 00 e 54 00 if not used or to disable	Jumper contact FT2 with contact COM, if not used or to disable. Check connection referring to relative connection diagram.
88 FE	Both limit switches in open contact state or not connected.	-	Check connection of limit switches.
88 FA	Gate is at gate closed limit switch.	If the limit switch state indicated is incorrect, check the setting of parameter 71.	-
	Gate open limit switch absent or not connected.	-	Check connection of limit switches.
88 FC	Gate is at gate closed limit switch.	If the limit switch state indicated is incorrect, check the setting of parameter 71.	-
	Gate closed limit switch absent or not connected.	-	Check connection of limit switches.
PP 00	If occurs with no voluntary command, the contact (N.O.) may be faulty or one of the buttons may be incorrectly connected.	-	Check PP - COM contacts and connections to buttons.
CH 00		-	Check CH - COM contacts and connections to buttons.
AP 00		-	Check AP - COM contacts and connections to buttons.
PE 00		-	Check PED - COM contacts and connections to buttons.
Or 00	If occurs with no voluntary command, the contact (N.O.) may be faulty or the timer may be incorrectly connected.	-	Check ORO - COM contacts. Contact must not be jumpered if not used.

N.B: press TEST to exit TEST mode.
We recommend troubleshooting safety device and input status errors with “corrective action by software” only.

EN

17 Alarms and faults

PROBLEM	ALARM	POSSIBLE CAUSE	ACTION
The gate does not open or close.	**POWER** LED off	No power.	Check power cable.
	POWER LED off	Fuses blown.	Replace fuses. Always disconnect from mains power before removing fuses.
	OF St	Input mains power voltage fault. Control initialisation failed.	Disconnect from mains power, wait 10 seconds then reconnect to the mains and switch on. If the problem persists, contact your local authorized dealer for veri"Ecation and possible assistance. Pressing the TEST button it is possible to hide the alarm temporarily and consult the control unit's parameters.
	Pr Ot	Overcurrent detected in inverter.	Press the **TEST** button twice or perform 3 command requests in succession.
	dAtA	Travel data acquisition error.	Check that open and closed limit switches are positioned correctly. Press TEST and check if any safety devices are in alarm state. Repeat acquisition procedure.
		Calibration procedure failed.	Allow the indicated calibration times to elapse during self-acquisition. Check that PHAS is shown "Fashing on the display before closing the release lock cover. Repeat acquisition procedure.
		Automation system position selection modi"Ecation message with parameter 11.	 Motors for sliding gates are factory con"Egured for right hand opening gates 1101 gates (position of motor relative to passage seen from interior side). If the position is changed and message dAtA is displayed: • Move the gate into the closed position. • Disconnect from mains power or remove the main fuse and wait 5 seconds. • Reconnect to mains power or re"Et the fuse. • Press and hold PROG until dAtA disappears and APP- appears on the display. Repeat acquisition procedure.
	not	Motor not connected.	Check the motor cable.
	FE	Both limit switches activated.	Check connections of limit switches or check for foreign objects in limit switch blocks.
	Example: 15 EE 21EE	Con"Eguration parameter error.	Set con"Eguration value correctly and save.
	EnE 1	Encoder not connected.	Check connection to encoder. Replacing the encoder is recommended if the problem persists.
	EnE3	Severe encoder malfunction.	Press TEST button. If the error code is displayed again, switch off the controller unit, wait 5 seconds and switch on again. Replace the encoder if the problem persists.
	EnE5 (EnE5)	Encoder malfunction.	Press TEST button. Replace the encoder if the problem persists.
		Insuf"Ecient power supply	If the unit contains dirt, moisture, insects or other foreign matter, disconnect from mains power and clean the board and the encoder. Replace the encoder if the problem persists.
		Batteries functioning	The batteries are almost "Fat.
	EnE8	Encoder calculation error.	Repeat acquisition procedure.

PROBLEM	ALARM	POSSIBLE CAUSE	ACTION
The gate does not open or close.	tEMP	Inverter thermal overload circuit breaker tripped.	Function is restored automatically within 2 min.
	SEnS	Motor power control anomaly detected	If the problem persists, replace the control unit.
	btLO (btLO)	Flat batteries.	Wait for mains power to be restored.
	StoP "Fashing	Release device open.	Close the release handle and turn the key to the close position. Check that the release contact is connected correctly.
	noPH	Motor control anomaly detected	Repeat the acquisition procedure. If the problem persists, replace the control unit.
		Problems at the encoder circuit or at the connection cable.	Check the integrity of the connection cable. Disconnect and reconnect the power supply. Give a command (opening / step-by-step, ...). If noPH is NOT displayed, repeat the acquisition procedure. If noPH is displayed again, contact the technical service department.
Acquisition procedure does not complete correctly.	noPH	Motor calibration failed.	Repeat acquisition procedure. If the problem persists, check the cable connecting the encoder to the motor.
			Check if release handle is open.
			Check that the motor turns without impediment. Contact technical support in case of any problems.
	APPE	TEST button pressed accidentally.	Repeat acquisition procedure.
		Safety devices in alarm state.	Press the TEST button and check the safety device/s in alarm state and the connections of the safety devices.
		Excessive voltage drop.	Repeat acquisition procedure. Check mains voltage.
		Incorrect setting of parameters 30 and 31.	Adjust parameters 30 and 31 correctly for the weight and speed of the gate leaf.
	APPL	Travel length error.	Move gate into completely closed position (FC limit switch signal must be active) and repeat the procedure.
			Check cable of limit switches. Replace the cable if the problem persists.
			Reset default controller unit parameters and repeat the procedure.
			Stroke length less than the minimum allowed: increase the length.
	APPN	Maximum permitted travel length exceeded	Reduce the ride. Contact technical assistance (travel exceeding the maximum allowed by the technical characteristics).
Remote control has limited range and does not work while automated gate is moving.	-	The radio transmission is impeded by metal structures and reinforced concrete walls.	Install the antenna outside.
	-	Flat batteries.	Replace the transmitter batteries.
The "Fashing light is not working.	-	Bulb / LED blown or "Fashing light wires disconnected.	Check LED circuit and/or connector wires.
Gate open indicator lamp does not work.	-	Bulb blown or wires disconnected.	Check the bulb and/or wires.
Gate does not perform desired manoeuvre.	-	Incorrect setting of parameter 71.	Select the correct installation position with parameter 71.
The control unit is switched off and does not start.	-	F2 fuse blown due to overvoltage.	Replace the 2A F2 fuse.

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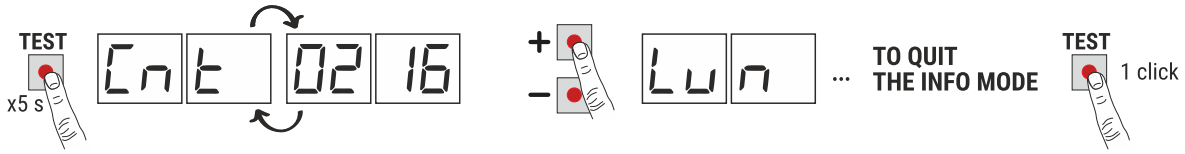
PROBLEM	ALARM	POSSIBLE CAUSE	ACTION
	SELF	**Only for BH30/804/R.** The gate is moved by hand without being unlocked, without mains and/or battery voltage	**WARNING:** if B71/BC is used, check the correct connection of the battery charger to the control unit (the red cable [+] must be connected to the POWER IN terminal 5, the black cable [-] must be connected to the POWER IN terminal 4). Otherwise, the manual manoeuvre will not be performed correctly.
The control unit does not accept commands.	SELF ALIM	Incorrect connection of the battery charger to the control unit. After 5 s the display shows ALIM to con"Erm the incorrect connection of the POWER-IN terminal strip.	Reverse the connection of the (+) and (-) wires on the POWER IN terminal strip of the control unit (see battery connection at page 2) By pressing the TEST button, the error can be temporarily hidden to consult the control unit parameters.

N.B.: Press the TEST button to temporarily cancel the alarm.
The next time a command is received, the alarm reappears on the display if the problem has not been resolved.

18 Procedural veri,Ecations - INFO Mode



INFO mode may be used to view certain parameters measured by the **B70/1DC** controller.
Press and hold the TEST button for 5 seconds from the "View command signals and safety devices" mode with the motor stationary.
The control unit displays the following parameters and the corresponding measured values in sequence:

Parameter	Function
P2.00	View for 3 s the "Ermware version of the control unit.
CnE	Displays the position of MOTOR, expressed in revolutions and relative to total length, at the time of the test. (example: 0. 113 = motor installed on the left 71 00; 0113 = motor installed on the right 71 01).
Lun	View total length of programmed travel of MOTOR, in motor revolutions.
rPM	View motor speed of MOTOR, in revolutions per minute (rPM).
AMP	View current absorption of motor, in Amperes (e.g.: 001.1 = 1,1 A .... 016.5 = 16,5 A). If the MOTOR is stationary, the current absorption value is 0. Activate a command function to test current absorption.
bUS	System OK indicator. To check for overloading (e.g.: too many utilities connected to 24 V output) or if the mains voltage is too low, compare the parameters read with values indicated as follows with the motor stationary: mains voltage = 230 V AC (nominal), bUS= 28.5 mains voltage = 207 V AC (-10%), bUS= 25.5 mains voltage = 253 V AC (+10%), bUS= 31.6
CMP	Display current, expressed in Amperes, used to compensate for strain detected by MOTOR due, for example, to low external temperatures (e.g.: 0 = 0 A ... 4 = +6 A). At the beginning of a manoeuvre from the completely open or completely closed position, if the control unit detects a strain higher than the value stored in its memory during the travel acquisition cycle, the controller automatically increases the current delivered to MOTOR.
ASC	Display current threshold, expressed in Amperes, at which the obstacle detection function (crush prevention) of MOTOR is triggered. This value is calculated automatically by the controller in relation to the settings of parameters 30 and 31. For the motor to function correctly, AMP must always be lower than the value ASC.
tIn	Indicates time taken by MOTOR to detect an obstacle, as set with parameter 31, in seconds. E.g. 1.000 = 1 s / 0. 120 = 0.12 s (120 ms). Ensure that the manoeuvre time is more than 0.3 s.
UP	If the control unit is capable of identifying the position of the gate when the test is conducted, the following is shown on the display: UP__ position known, normal operation. UP 1_ position unknown, position recovery in progress.
OC	Indicates the state of the automation system (open/closed). OC OP automation system opening (motor active). OC CL automation system closing (motor active). OC -O automation system completely open (motor not actives). OC -C automation system completely closed (motor not actives).
UF	UF U_ mains voltage too low or overload. UF _H motors overcurrent.
nPtE	Displays the number of thermal protection interventions of the inverter. If it displays a number different from 0000, check that there are no excessive stress points and if the leaf, coming onto mechanical stops, does not activate the limit switch. Check the settings of parameters 30 and 31.
H ibu	Displays information about the electronic voltage limiter (ROGER TECHNOLOGY's TECHNICAL ASSISTANCE ONLY).

- Use the **+** / **-** buttons to scroll through the parameters. When the last parameter in the sequence is reached, press the **-** button to return through the previous parameters.
- In INFO mode, the automation system may be activated to test operation in real time.
- Press and hold the TEST button for a few seconds to exit INFO mode.

EN

19 Mechanical release

In the event of a fault or mains power loss, the gate may be released and opened manually. For systems with BH30/804/R the gate can be moved by hand without unlocking it.
If the gate releases with the controller unit powered, the message StoP "Fashes on the display.

For further information, refer to the locking/release operation in the manual of the **BH30** or **BM30** automation system.

- When the release system is restored to the normal operating position, if the gate is not completely open or completely closed the next time a command is received, the control initiates a position recovery procedure (see chapter 20).
- Activating one of the two limit switches immediately reacquires the position.

20 Position recovery mode

After a mains power outage or after mechanically releasing the gate, if the gate is not completely open or completely closed the next time a command is received, the control initiates a position recovery procedure:
- The gate starts a low speed manoeuvre.
- The "Fashing light "Fashes with a different duty cycle than norma(3 s on, 1.5 s off).
- The control unit recovers the installation data during this procedure. Warning! During this procedure, do not use any controls until one of the two limit switches is reached.
- Activating one of the two limit switches immediately reacquires the position.

21 Initial testing

The testing must be performed by quali"Eed technical personnel.
The installer is required to measure impact forces and select on the control unit the appropriate speed and torque values to ensure that the motorised door or gate remains within the limits de"Ened by the standards EN 12453 and EN 12445.

Make sure that the provisions in Chapter 1 "GENERIC WARNINGS are observed.
- Turn on the power supply.
- Check that all connected controls are working correctly.
- Check that the release handle works correctly. The message StOP must "Fash on the display.
- Check travel and deceleration.
- Check that the impact force is correct, in compliance with EN 12453 and EN12445.
- Check that the safety devices are activated correctly.
- If the battery kit is installed, disconnect from mains and check that the batteries are working.
- Disconnect from mains power and disconnect the batteries (if used), then reconnect. Starting with the gate stopped in an intermediate position, check that the position recovery procedure is completed correctly for both the open and closed positions.
- Check that the limit switches are set correctly and function correctly. Adjust the position of installation of the motor if necessary.
- Check that there is a gap of at least 2-3 cm between the gate and the mechanical stop at the end of the manoeuvre.
- **Only for BH30/804/R.** Check that without mains or battery voltage, when moving the leaf by hand, the control unit is switched on and that the display shows the "SELF" message.
- **Only for BH30/804/R.** If there are batteries, disconnect the mains power and check that the display shows bAtt. If SELF is displayed followed by ALIn, change the red and black cables connection to the POWER-IN terminal strips, as indicated in "Eg2.

22 Start-up

The installer is required to draw up and preserve the technical "Ele of the system for at least 10 years, which must contain the wiring diagram, the drawing and the photo of the system, the risk analysis and the solutions adopted, the manufacturer's declaration of conformity for all connected devices, the instructions manual of each device and / or

accessory and the system's maintenance plan.
Apply a plate indicating the automation system data on the motorised door or gate, the name of the person in charge of the start-up, the serial number and the year of construction, as well as the CE mark.
Apply a plate and / or label with the indications for the operations required to manually unlock the system.
Draw up and provide the end user with the declaration of conformity, instructions and warnings for use and the maintenance plan.
Make sure that the end user has understood the correct automatic, manual or emergency operation of the system.
Inform the end user about the dangers and risks that may be present.

23 Maintenance

Perform scheduled maintenance every 6 months.
Check cleanliness and function.
If the unit contains dirt, moisture, insects or other foreign matter, disconnect from mains power and clean the board and the housing.
Repeat the initial installation test procedure after cleaning.
If any corrosion is found on the printed circuit board, evaluate if it is necessary to replace the board itself.
Check that the battery is in good working order.

24 Disposal

This product may only be uninstalled by qualified technical personnel, following suitable procedures for removing the product correctly and safely. This product consists of numerous different materials. Some of these materials may be recycled, while others must be disposed of correctly at the specific recycling or waste management facilities indicated by local legislation applicable for this category of product. Do not dispose of this product as domestic refuse. Observe local legislation for differentiated refuse collection, or hand the product over to the vendor when purchasing an equivalent new product.
Local legislation may envisage severe fines for the incorrect disposal of this product.
Warning! Some parts of this product may contain substances that are harmful to the environment or dangerous and which may cause damage to the environment or health risks if disposed of incorrectly.

25 Additional information and contact details

This instruction manual and the warnings for the installer are given in printed form and included in the box containing the product.
The digital version of this documentation (in PDF format) and all future revisions are available from the reserved area of our website www.rogertechnology.com/B2B, in the section 'Self Service'.

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08:00 to 12:00 - 13:30 to 17:30
Telephone no: +39 041 5937023
E-mail: service@rogertechnology.it
Skype: service_rogertechnology

Declaration CE of Conformity

The undersigned Dino Florian, legal representative of **Roger Technology - Via Botticelli 8, 31021 Mogliano V.to (TV)**
DECLARES that the **B70/1DC** digital control unit is compliant with the provisions established by Community directives:

– 2014/35/EU LVD Standard
– 2014/30/EU EMC Standard
– 2014/53/EU RED Standard
– 2011/65/CE RoHS Standard

Place: Mogliano V.to Date: 02/05/2016 Signature

ROGER BRUSHLESS

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