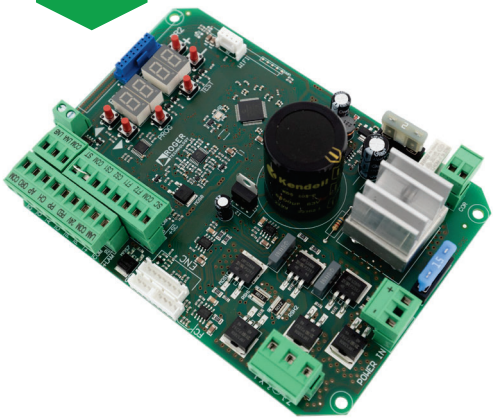
FW r2.00

HW 02



IS271 Rev.05 15/11/2025

B70/1T

centrale di comando 24Vdc per cancelli scorrevoli su colonna TW90 e barriera elettromeccanica WAY

ROGER BRUSHLESS

Istruzioni originali

IT - Istruzioni ed avvertenze per l'installatore
EN - Instructions and warnings for the installer
DE - Anweisungen und Hinweise für den Installateur
FR - Instructions et consignes pour l'installateur
ES - Instrucciones y advertencias para el instalador
PT - Instruções e advertências para o instalado
NL - Aanwijzingen en waarschuwingen voor de installateur
PL - Instrukcja i ostrzeżenia dla instalatora

ROGER TECHNOLOGY

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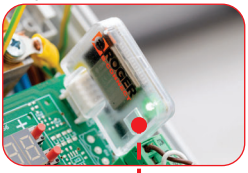
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FW
r2.00

HW
02

Dispositivo IP B74/BCONNECT
B74/BCONNECT IP device



Display a 4 cifre e 6 tasti di programmazione
4 digit display and 6 programming buttons

Connettore ad innesto per radio ricevente
Plug-in connector for radio receiver

Morsettiere dei comandi e delle sicurezze
Commands and safeties terminal blocks

Connettore per applicazione WiFi B74/BCONNECT
Connector for B74/BCONNECT WiFi application

Microcontrollore DSP 70 MIPS
DSP CPU 70 MIPS

Connettori di collegamento encoder, finecorsa e sblocco
Plug for encoder, limit switch and unlock connection

Fusibile 2A
Fuse 2A

Collegamento MOTORE (cavo 3 fili)
MOTOR connection (3 wiring cable)

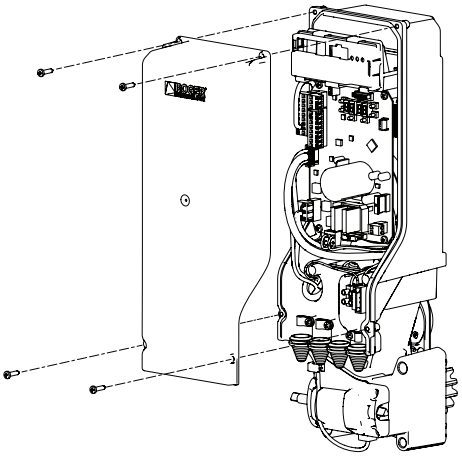
Luce di cortesia
Courtesy light

Ingresso alimentazione (secondario trasformatore)
Power supply input (transformer's secondary)

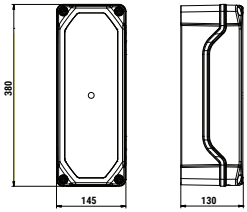
Fusibile 15A
Fuse 15A

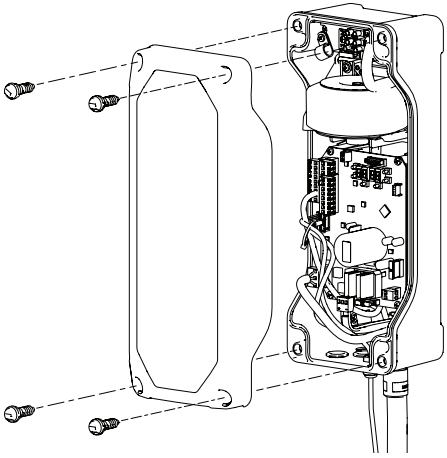
1

TW90/800
TW90/600/HS
TW90/800/R

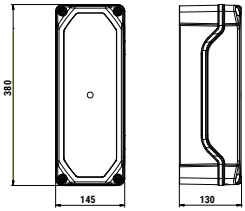


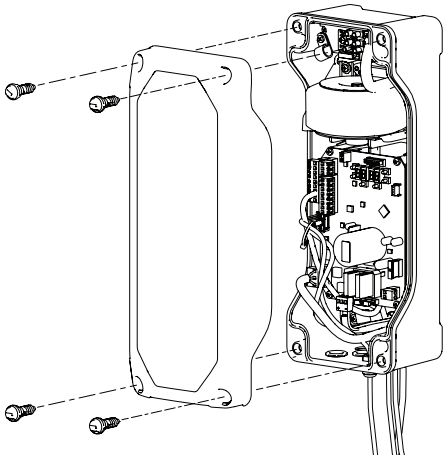
TW90/820
TW90/620/HS
TW90/820/R





WAY/004
WAY/005



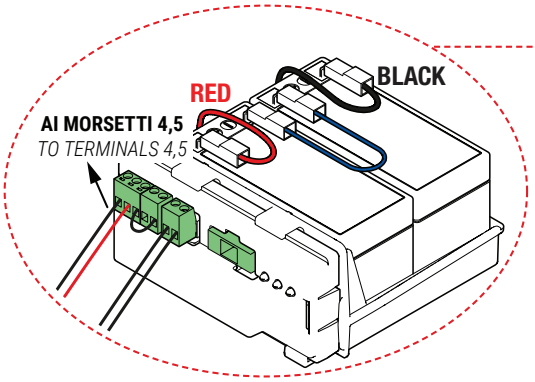


Scheda carica batteria **B71/BC** - **B71/BC** battery charger

TW90/800
TW90/600/HS
TW90/800/R

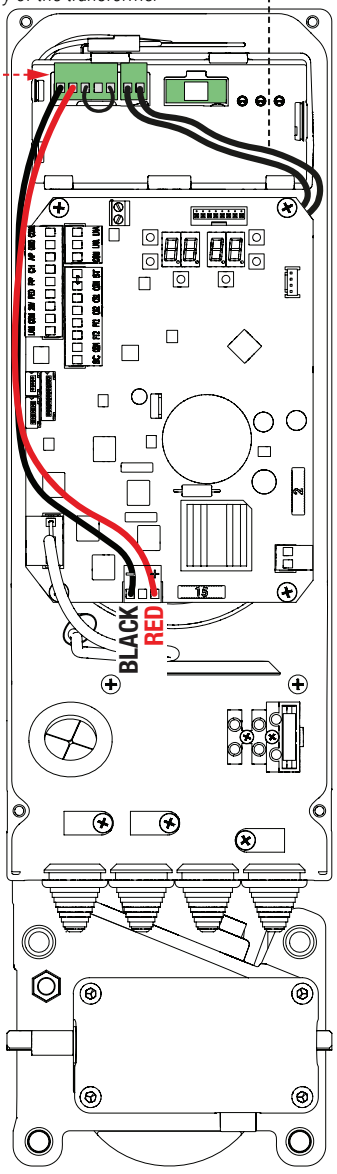
2

dal secondario del trasformatore
from the secondary of the transformer

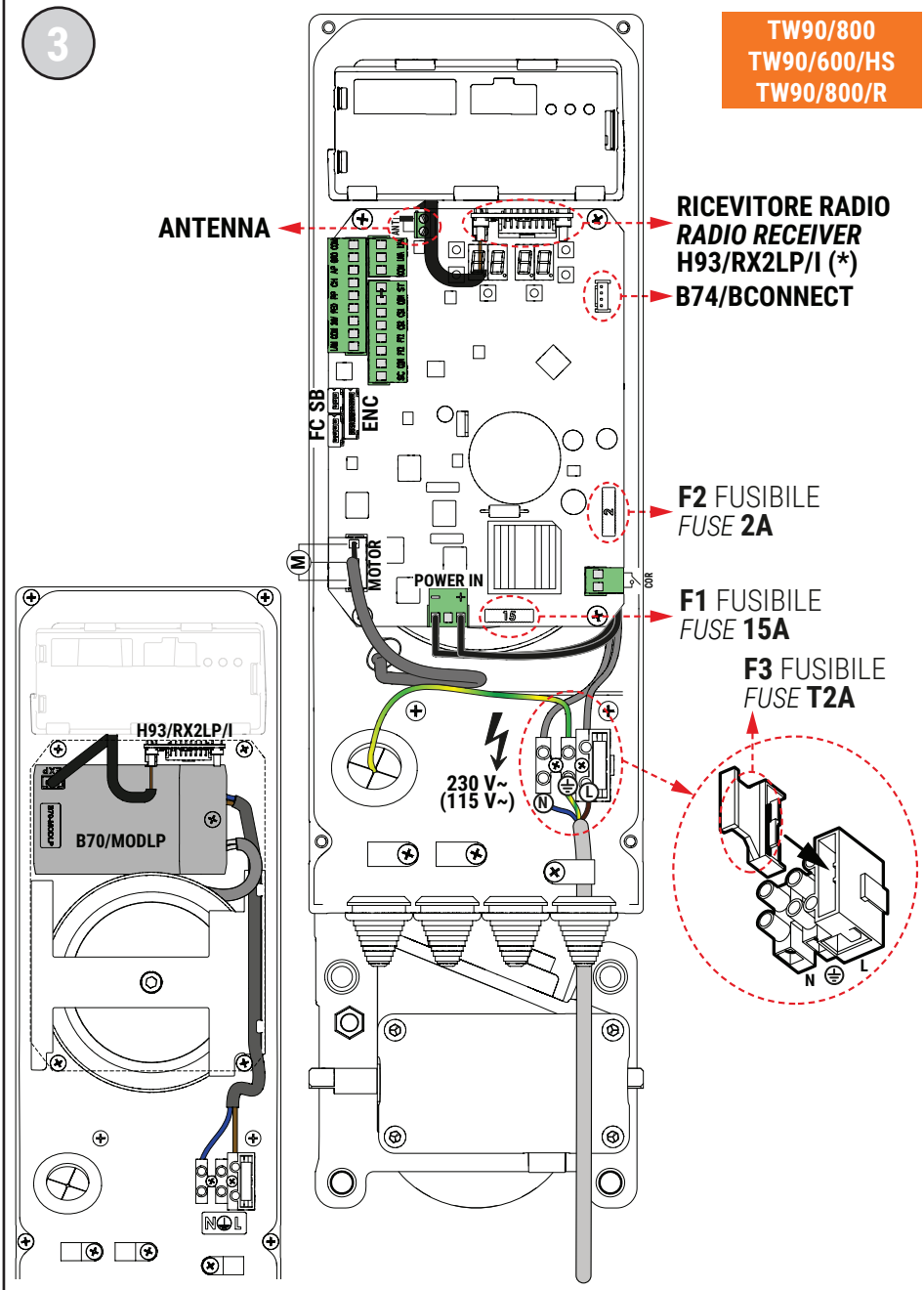


2 x 12V 1,2Ah

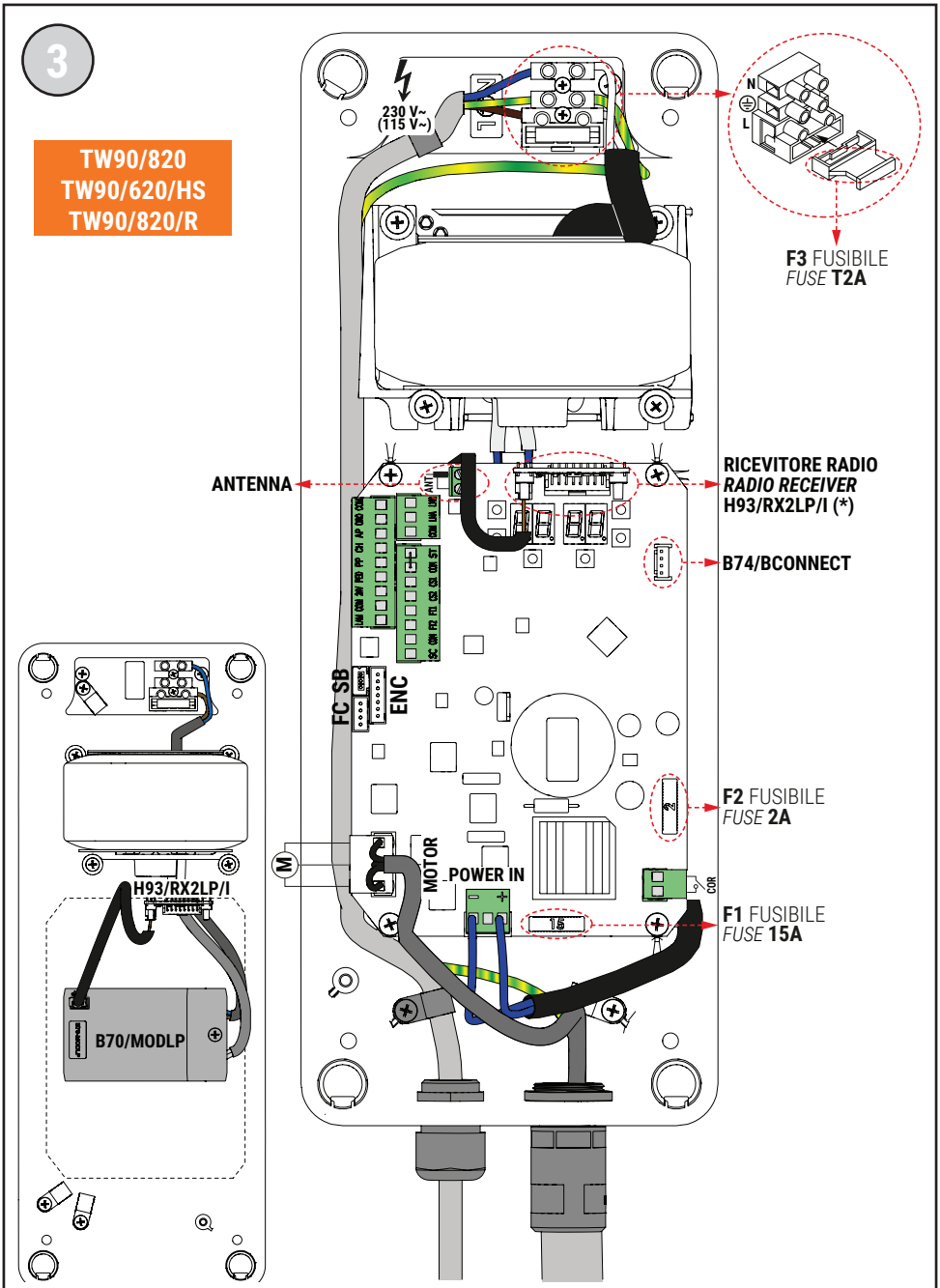
⚠ AGM Battery ONLY



L'utilizzo è possibile solo disabilitando la modalità low-power (L 100).
Use is only possible by disabling low-power mode (L 100).



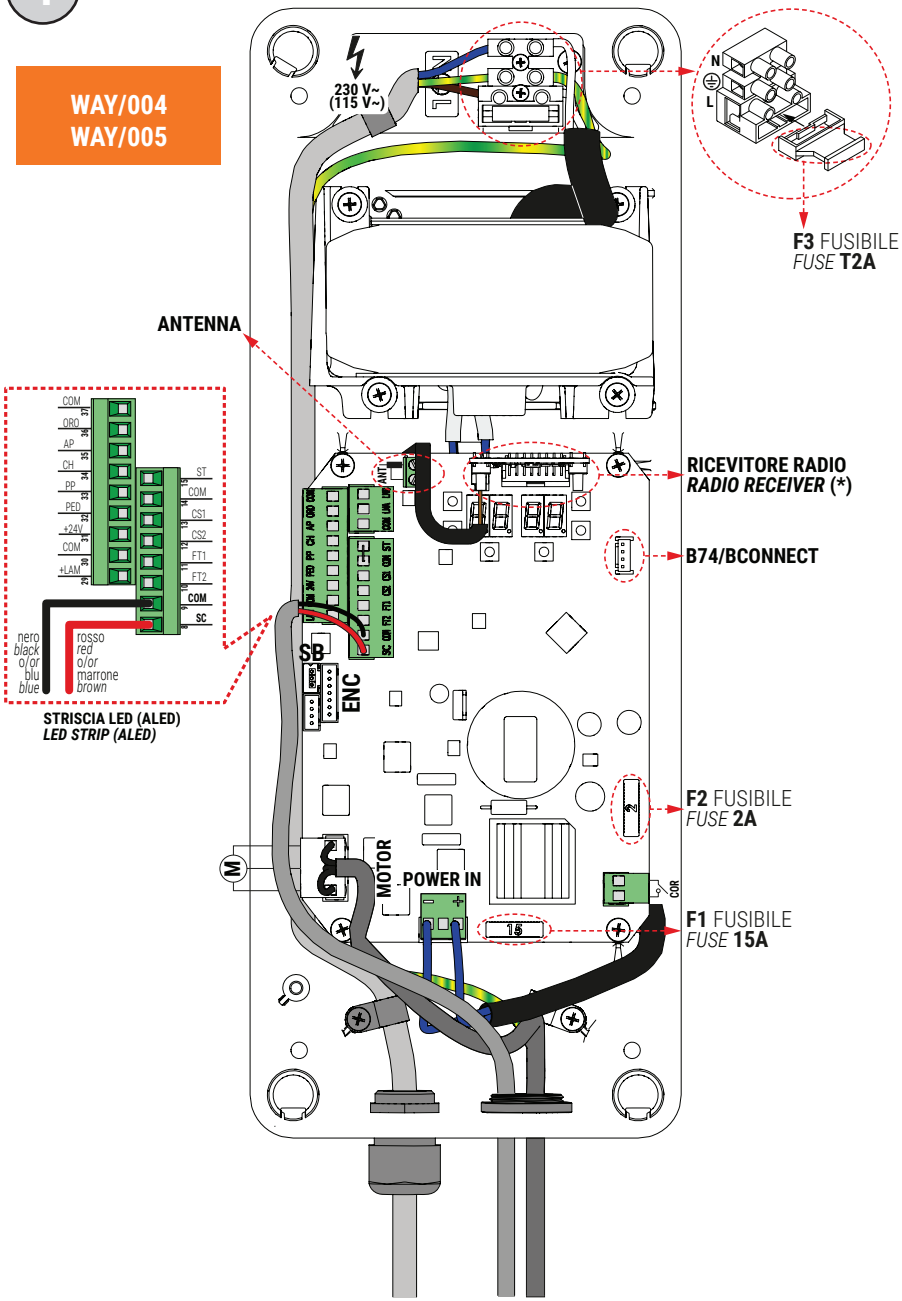
(*) Avvalendosi del dispositivo B70/MODLP collegato mediante cablaggio a 3 fili al ricevitore H93/RX2LP/I, la centrale controlla lo stato di funzionamento entrando dopo un tempo di inattività prestabilito nella modalità "low power" / *Using the B70/MODLP device connected via 3-wire cabling to the H93/RX2LP/I receiver, the control unit monitors the operating status by entering "low power" mode after a preset idle time*



(*) Avvalendosi del dispositivo B70/MODLP collegato mediante cablaggio a 3 fili al ricevitore H93/RX2LP/I, la centrale controlla lo stato di funzionamento entrando dopo un tempo di inattività prestabilito nella modalità "low power" / *Using the B70/MODLP device connected via 3-wire cabling to the H93/RX2LP/I receiver, the control unit monitors the operating status by entering "low power" mode after a preset idle time*

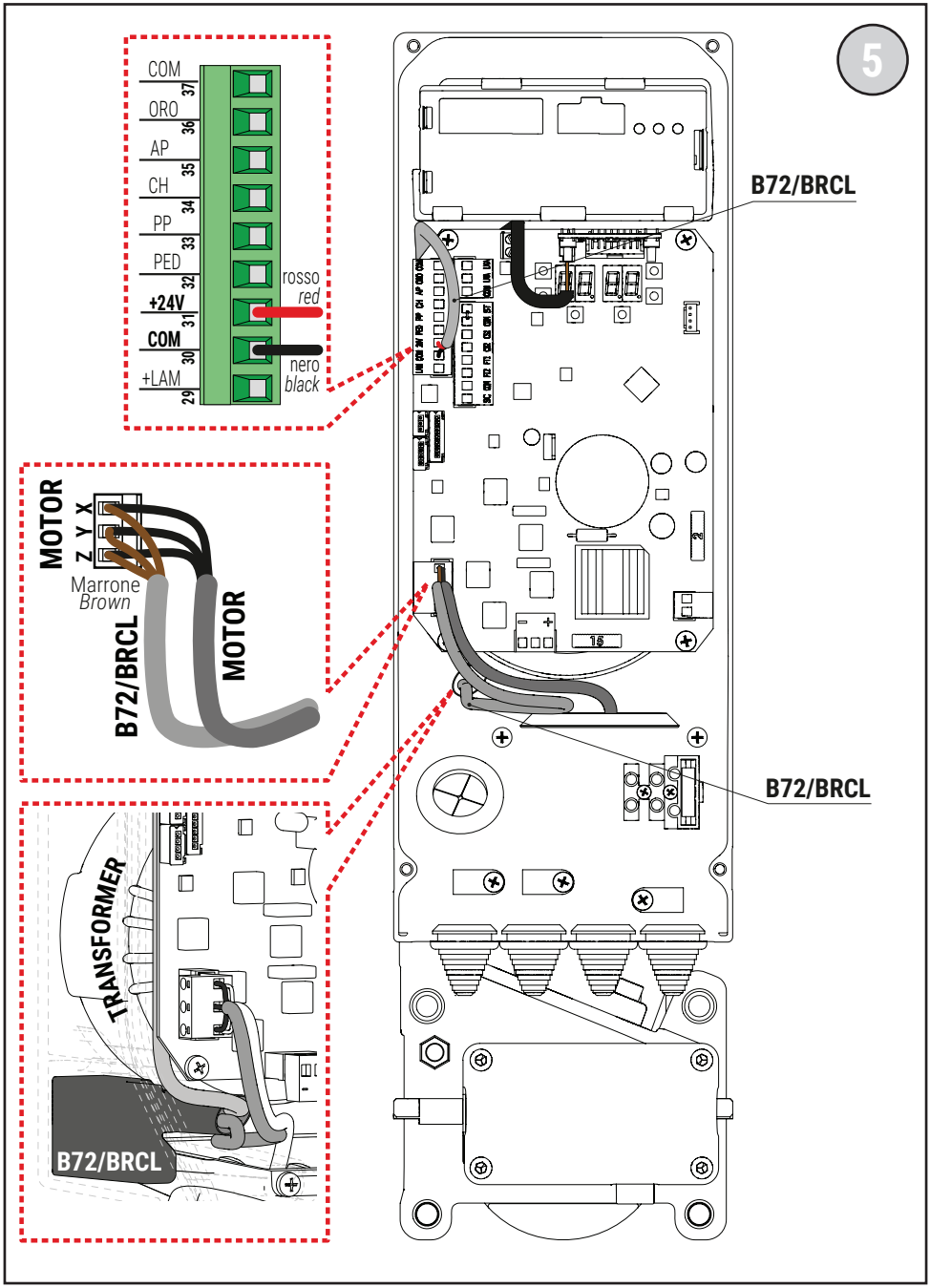
4

WAY/004
WAY/005

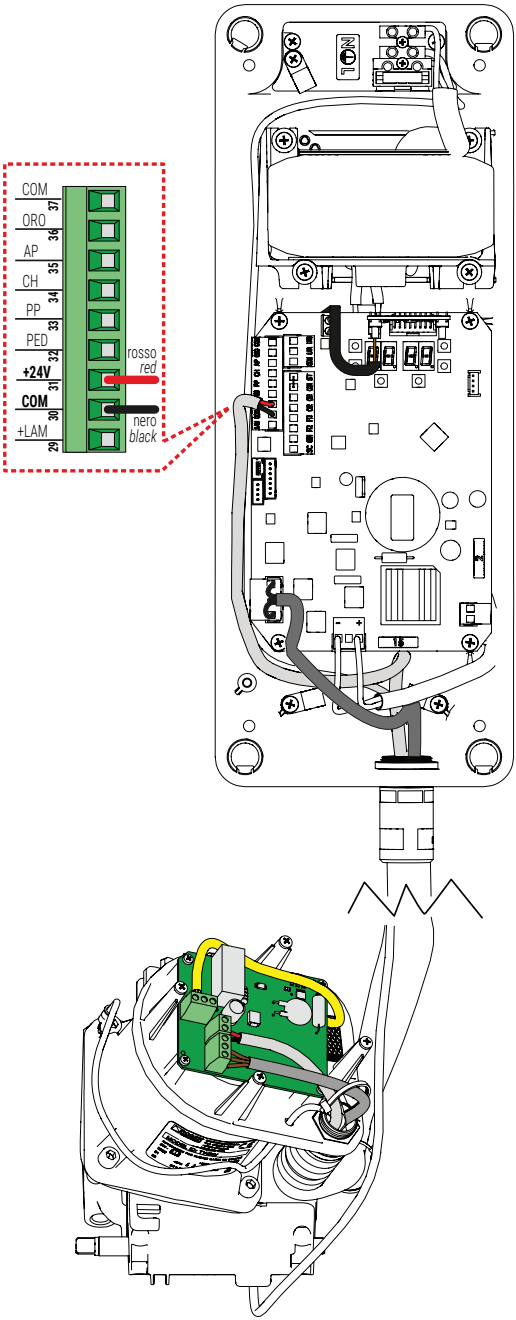


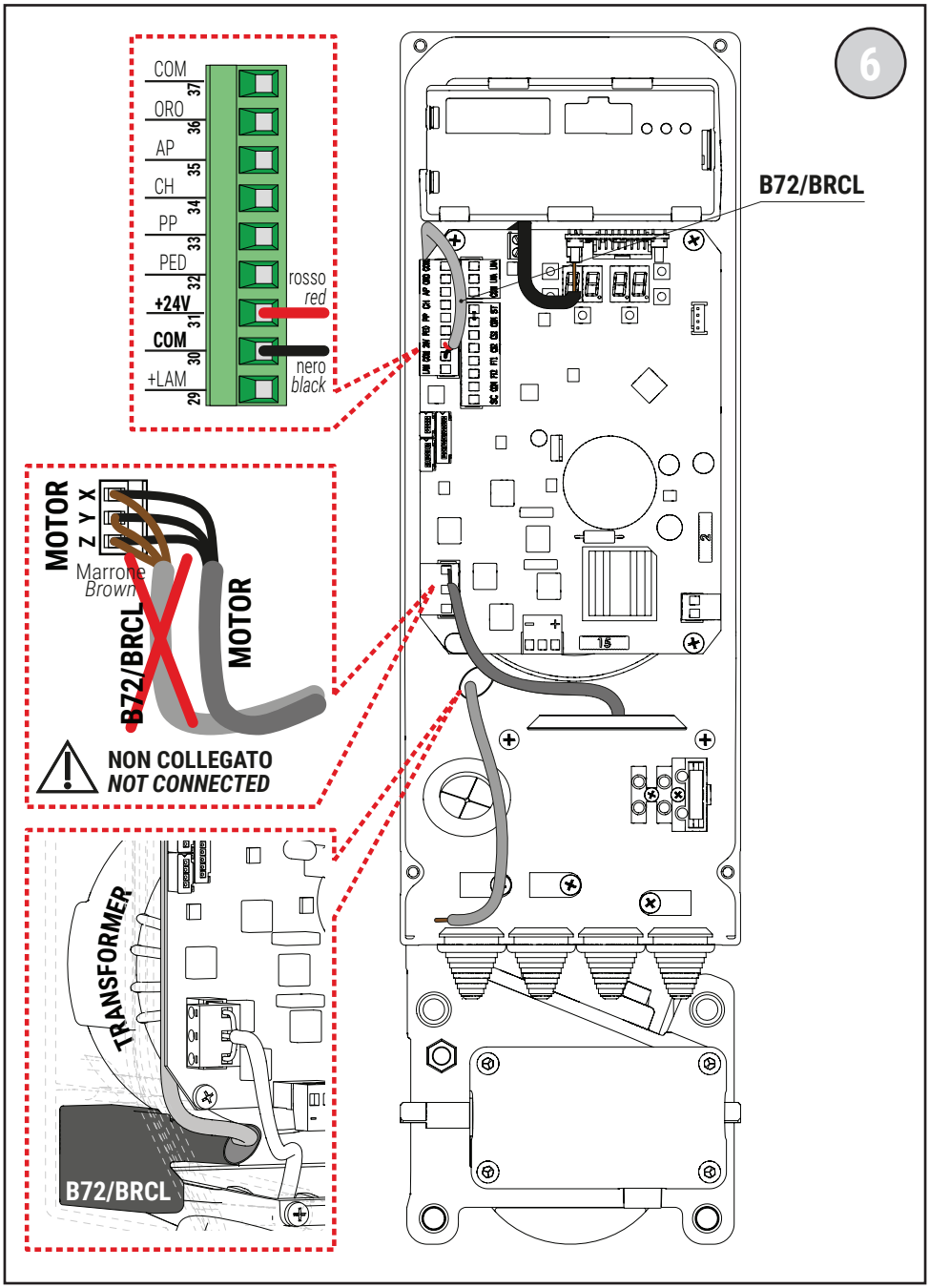
(*) **ATTENZIONE!** Impostare par.*L I* a *00* / **ATTENTION!** Set par.*L I* to *00*

TW90/600 High Speed

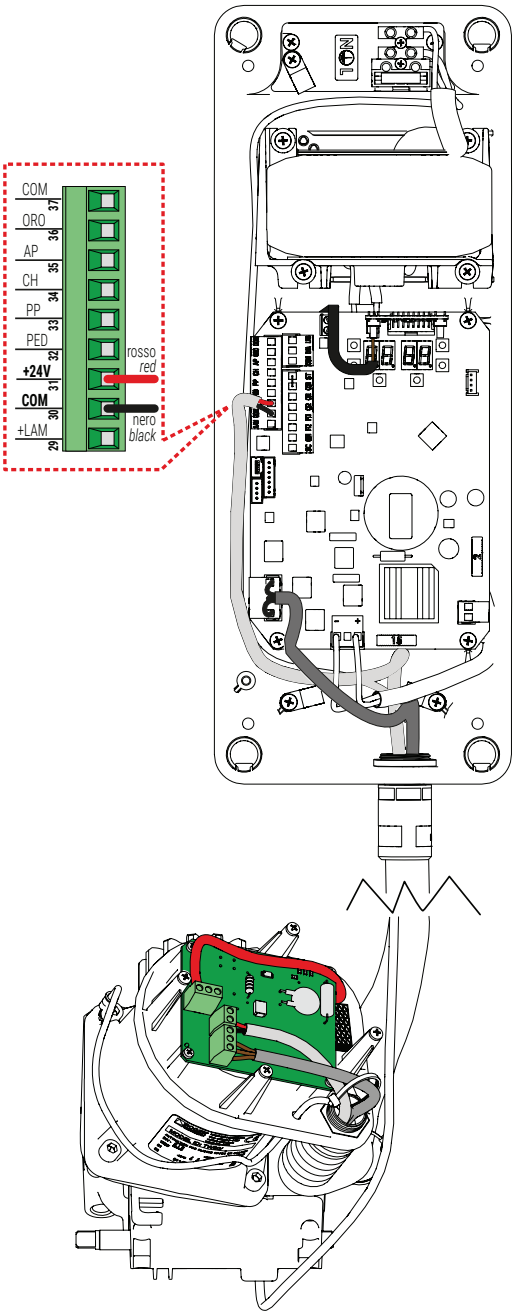


5

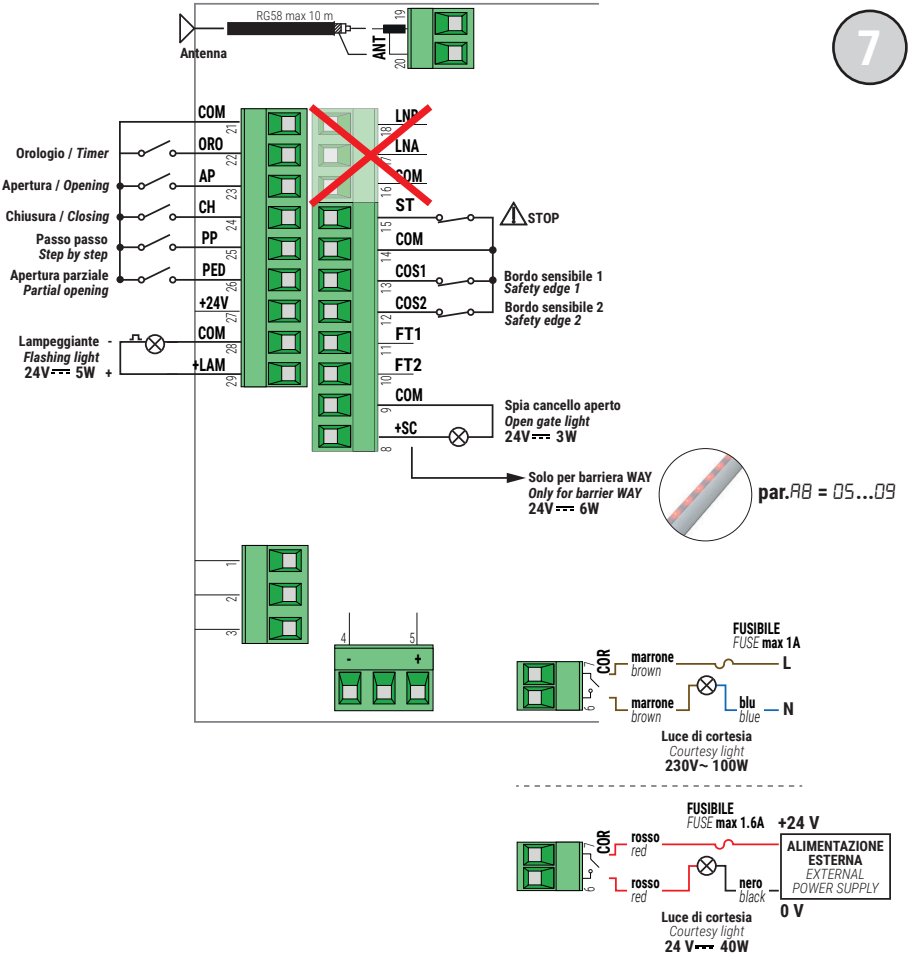

COM
ORO
AP
CH
PP
PED
+24V
COM
+LAM
37
36
35
34
33
32
31
30
29
rosso
red
nero
black


6
COM
ORO
AP
CH
PP
PED
+24V
COM
+LAM
37
36
35
34
33
32
31
30
29
rosso
red
nero
black
B72/BRCL
MOTOR
Z Y X
Marrone
Brown
B72/BRCL
MOTOR
NON COLLEGATO
NOT CONNECTED
TRANSFORMER
B72/BRCL

6


COM 37
ORO 36
AP 35
CH 34
PP 33
PED 32
+24V 31
COM 30
+LAM 29
rosso red
nero black

7



8



Utilizzo alternativo dell'uscita COR (par.20 diverso da 00).
Alternative use of COR output (par.20 different from 00).

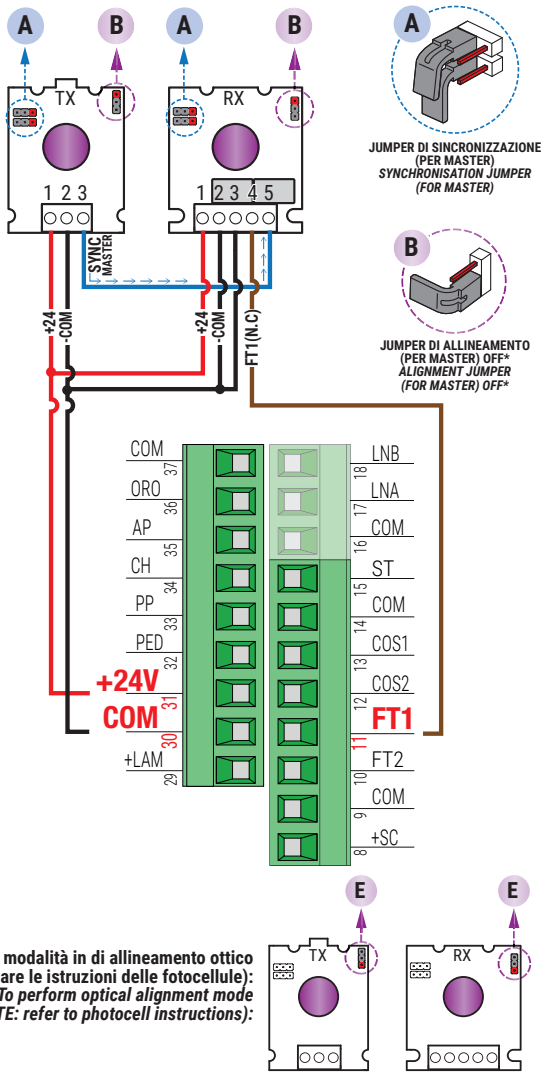


L'utilizzo è possibile solo disabilitando la modalità low-power (L 100)
Use is only possible by disabling low-power mode (L 100)

COLLEGAMENTO CON 1 COPPIA FOTOCELLULE SINCRONIZZATE (MODALITÁ NORMALE, SOLO COPPIA MASTER)
CONNECTION WITH 1 SYNCHRONISED PHOTOCELL PAIR (NORMAL MODE, MASTER PAIR ONLY)

ROSSO = libero da jumper
RED = jumper free

9



*** Per eseguire la modalità in di allineamento ottico (NOTA: consultare le istruzioni delle fotocellule):**
**** To perform optical alignment mode (NOTE: refer to photocell instructions):***

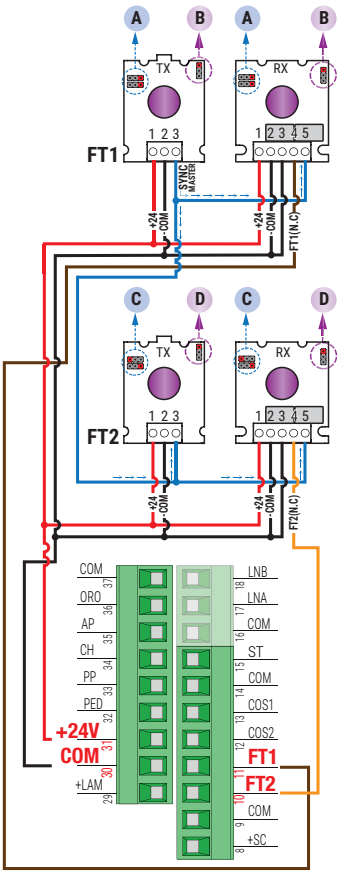
ATTENZIONE! Modificare la posizione dei jumper di sincronizzazione o di allineamento solamente quando le fotocellule sono **NON ALIMENTATE**! La configurazione scelta con i jumper viene memorizzata dalle fotocellule solamente all'accensione delle fotocellule.
Scollegare la morsettiera della centrale che fornisce alimentazione alle fotocellule, oppure togliere completamente la tensione al controller digitale (scollegando, se presenti, anche le batterie di backup) e verificare nella fotocellula TX / RX che il LED rosso di alimentazione sia spento; procedere soltanto ora all'impostazione della configurazione dei jumper.
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.

SI RACCOMANDA L' USO DI fotocellule Serie **F4ES - F4S / RECOMMENDED USE for** Series **F4ES - F4S** photocells

COLLEGAMENTO CON 2 COPPIE FOTOCELLULE SINCRONIZZATE (MODALITÁ NORMALE, 1 MASTER E 1 SLAVE)
CONNECTION WITH 2 SYNCHRONISED PHOTOCELL PAIRS (NORMAL MODE, 1 MASTER AND 1 SLAVE)

ROSSO = libero da jumper
RED = jumper free

10





JUMPER DI SINCRONIZZAZIONE (PER MASTER)
SYNCHRONISATION JUMPER (FOR MASTER)



JUMPER DI ALLINEAMENTO (PER MASTER) OFF*
ALIGNMENT JUMPER (FOR MASTER) OFF

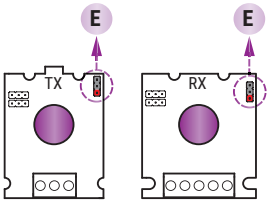


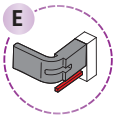
JUMPER DI SINCRONIZZAZIONE (PER SLAVE1)
SYNCHRONISATION JUMPER (FOR SLAVE1)



JUMPER DI ALLINEAMENTO (PER SLAVE1) OFF*
ALIGNMENT JUMPER (FOR SLAVE1) OFF

*** Per eseguire la modalità in di allineamento ottico (NOTA: consultare le istruzioni delle fotocellule):**
**** To perform optical alignment mode (NOTE: refer to photocell instructions):***





JUMPER DI ALLINEAMENTO ON*
ALIGNMENT JUMPER ON

ATTENZIONE! Modificare la posizione dei jumper di sincronizzazione o di allineamento solamente quando le fotocellule sono **NON ALIMENTATE**! La configurazione scelta con i jumper viene memorizzata dalle fotocellule solamente all'accensione delle fotocellule.
Scollegare la morsettiera della centrale che fornisce alimentazione alle fotocellule, oppure togliere completamente la tensione al controller digitale (scollegando, se presenti, anche le batterie di backup) e verificare nella fotocellula TX / RX che il LED rosso di alimentazione sia spento; procedere soltanto ora all'impostazione della configurazione dei jumper.
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.

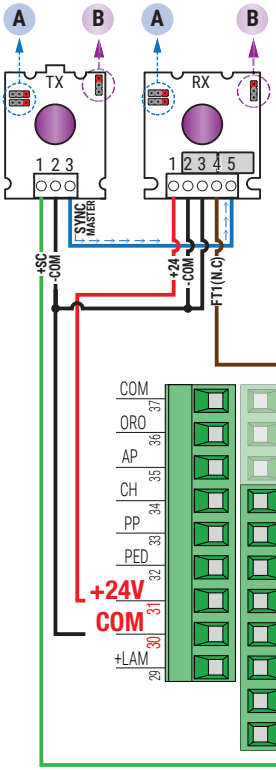
SI RACCOMANDA L' USO DI fotocellule Serie **F4ES - F4S / RECOMMENDED USE for** Series **F4ES - F4S** photocells

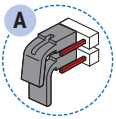
TEST FOTOCELLULE · PHOTOCELLS TEST (A8 02)

COLLEGAMENTO CON 1 COPPIA FOTOCELLULE SINCRONIZZATE (MODALITÁ NORMALE, SOLO COPPIA MASTER)
CONNECTION WITH 1 SYNCHRONISED PHOTOCELL PAIR (NORMAL MODE, MASTER PAIR ONLY)

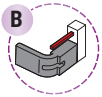
ROSSO = libero da jumper
RED = jumper free

11



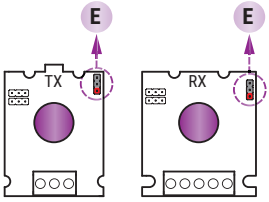


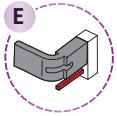
JUMPER DI SINCRONIZZAZIONE (PER MASTER)
SYNCHRONISATION JUMPER (FOR MASTER)



JUMPER DI ALLINEAMENTO (PER MASTER) OFF*
ALIGNMENT JUMPER (FOR MASTER) OFF*

*** Per eseguire la modalità in di allineamento ottico (NOTA: consultare le istruzioni delle fotocellule):**
**** To perform optical alignment mode (NOTE: refer to photocell instructions):***





JUMPER DI ALLINEAMENTO ON*
ALIGNMENT JUMPER ON*

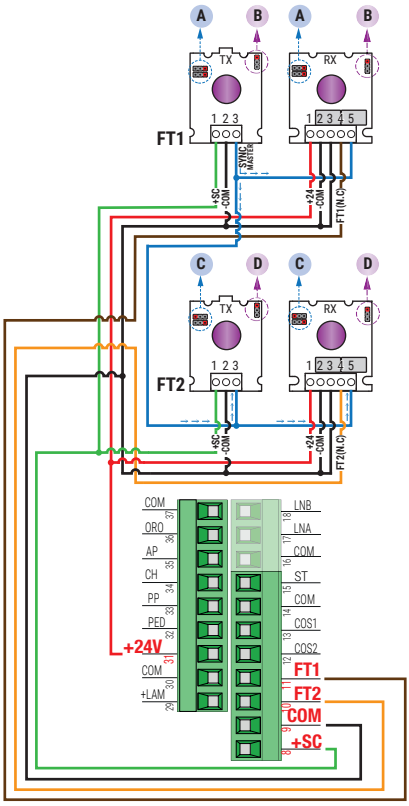
ATTENZIONE! Modificare la posizione dei jumper di sincronizzazione o di allineamento solamente quando le fotocellule sono **NON ALIMENTATE**! La configurazione scelta con i jumper viene memorizzata dalle fotocellule solamente all'accensione delle fotocellule.
Scollegare la morsettiera della centrale che fornisce alimentazione alle fotocellule, oppure togliere completamente la tensione al controller digitale (scollegando, se presenti, anche le batterie di backup) e verificare nella fotocellula TX / RX che il LED rosso di alimentazione sia spento; procedere soltanto ora all'impostazione della configurazione dei jumper.
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.

SI RACCOMANDA L' USO DI fotocellule Serie **F4ES - F4S / RECOMMENDED USE for** Series **F4ES - F4S** photocells

COLLEGAMENTO CON 2 COPPIE FOTOCELLULE SINCRONIZZATE (MODALITÁ NORMALE, 1 MASTER E 1 SLAVE)
CONNECTION WITH 2 SYNCHRONISED PHOTOCELL PAIRS (NORMAL MODE, 1 MASTER AND 1 SLAVE)

ROSSO = libero da jumper
RED = jumper free

12





JUMPER DI SINCRONIZZAZIONE (PER MASTER)
SYNCHRONISATION JUMPER (FOR MASTER)



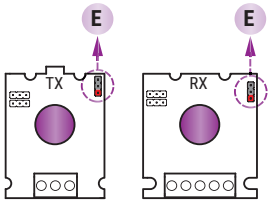
JUMPER DI ALLINEAMENTO (PER MASTER) OFF*
ALIGNMENT JUMPER (FOR MASTER) OFF*

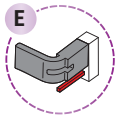


JUMPER DI SINCRONIZZAZIONE (PER SLAVE1)
SYNCHRONISATION JUMPER (FOR SLAVE1)



JUMPER DI ALLINEAMENTO (PER SLAVE1) OFF*
ALIGNMENT JUMPER (FOR SLAVE1) OFF*





JUMPER DI ALLINEAMENTO ON*
ALIGNMENT JUMPER ON*

*** Per eseguire la modalità in di allineamento ottico (NOTA: consultare le istruzioni delle fotocellule):**
**** To perform optical alignment mode (NOTE: refer to photocell instructions):***

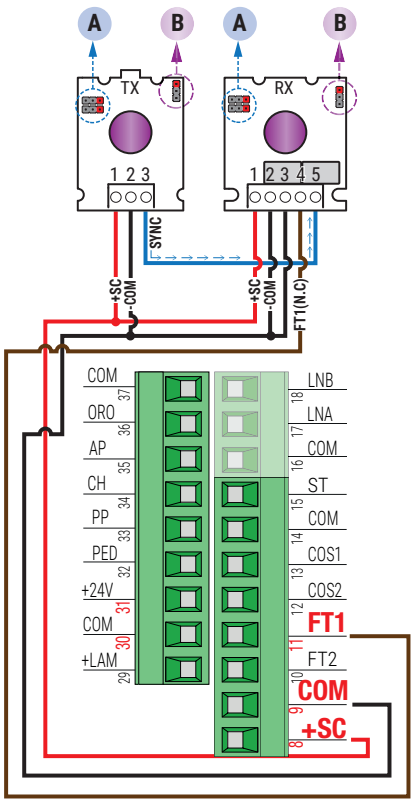
ATTENZIONE! Modificare la posizione dei jumper di sincronizzazione o di allineamento solamente quando le fotocellule sono **NON ALIMENTATE**! La configurazione scelta con i jumper viene memorizzata dalle fotocellule solamente all'accensione delle fotocellule.
Scollegare la morsettiera della centrale che fornisce alimentazione alle fotocellule, oppure togliere completamente la tensione al controller digitale (scollegando, se presenti, anche le batterie di backup) e verificare nella fotocellula TX / RX che il LED rosso di alimentazione sia spento; procedere soltanto ora all'impostazione della configurazione dei jumper.
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.

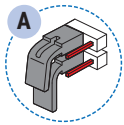
SI RACCOMANDA L' USO DI fotocellule Serie **F4ES - F4S / RECOMMENDED USE for** Series **F4ES - F4S** photocells

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

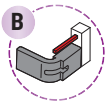
COLLEGAMENTO CON 1 COPPIA FOTOCELLULE SINCRONIZZATE (MODALITÁ NORMALE, SOLO COPPIA MASTER)
CONNECTION WITH 1 SYNCHRONISED PHOTOCELL PAIR (NORMAL MODE, MASTER PAIR ONLY)

ROSSO = libero da jumper
RED = jumper free



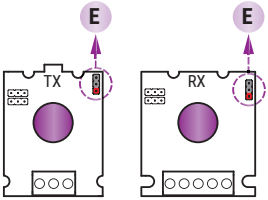


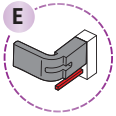
JUMPER DI SINCRONIZZAZIONE (PER MASTER)
SYNCHRONISATION JUMPER (FOR MASTER)



JUMPER DI ALLINEAMENTO (PER MASTER) OFF*
ALIGNMENT JUMPER (FOR MASTER) OFF*

*** Per eseguire la modalità in di allineamento ottico (NOTA: consultare le istruzioni delle fotocellule):**
**** To perform optical alignment mode (NOTE: refer to photocell instructions):***





JUMPER DI ALLINEAMENTO ON*
ALIGNMENT JUMPER ON*

ATTENZIONE! Modificare la posizione dei jumper di sincronizzazione o di allineamento solamente quando le fotocellule sono **NON ALIMENTATE**! La configurazione scelta con i jumper viene memorizzata dalle fotocellule solamente all'accensione delle fotocellule.
Scollegare la morsettiera della centrale che fornisce alimentazione alle fotocellule, oppure togliere completamente la tensione al controller digitale (scollegando, se presenti, anche le batterie di backup) e verificare nella fotocellula TX / RX che il LED rosso di alimentazione sia spento; procedere soltanto ora all'impostazione della configurazione dei jumper.
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.

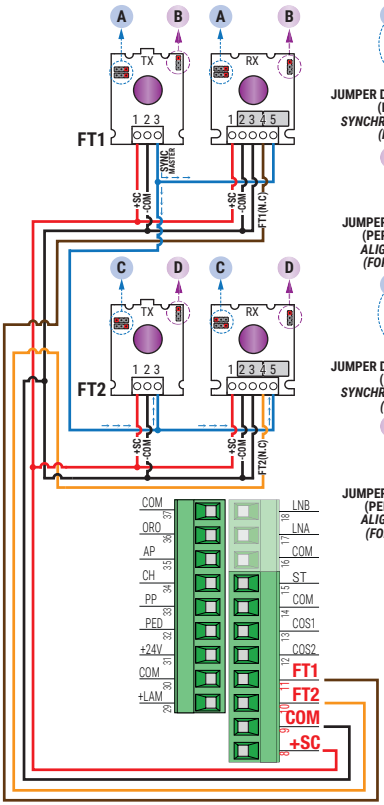
SI RACCOMANDA L' USO DI fotocellule Serie **F4ES - F4S / RECOMMENDED USE for** Series **F4ES - F4S** photocells

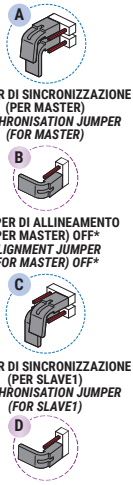
BATTERY SAVING (A8 03)
BATTERY SAVING + TEST FOTOCELLULE · PHOTOCELLS TEST (A8 04)

COLLEGAMENTO CON 2 COPPIE FOTOCELLULE SINCRONIZZATE (MODALITÁ NORMALE, 1 MASTER E 1 SLAVE)
CONNECTION WITH 2 SYNCHRONISED PHOTOCELL PAIRS (NORMAL MODE, 1 MASTER AND 1 SLAVE)

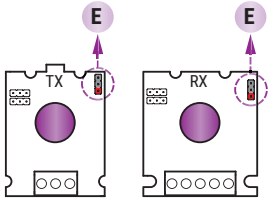
ROSSO = libero da jumper
RED = jumper free

14





*** Per eseguire la modalità in di allineamento ottico (NOTA: consultare le istruzioni delle fotocellule):**
**** To perform optical alignment mode (NOTE: refer to photocell instructions):***



ATTENZIONE! Modificare la posizione dei jumper di sincronizzazione o di allineamento solamente quando le fotocellule sono **NON ALIMENTATE**! La configurazione scelta con i jumper viene memorizzata dalle fotocellule solamente all'accensione delle fotocellule.
Scollegare la morsettiera della centrale che fornisce alimentazione alle fotocellule, oppure togliere completamente la tensione al controller digitale (scollegando, se presenti, anche le batterie di backup) e verificare nella fotocellula TX / RX che il LED rosso di alimentazione sia spento; procedere soltanto ora all'impostazione della configurazione dei jumper.
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.

SI RACCOMANDA L' USO DI fotocellule Serie **F4ES - F4S / RECOMMENDED USE for** Series **F4ES - F4S** photocells

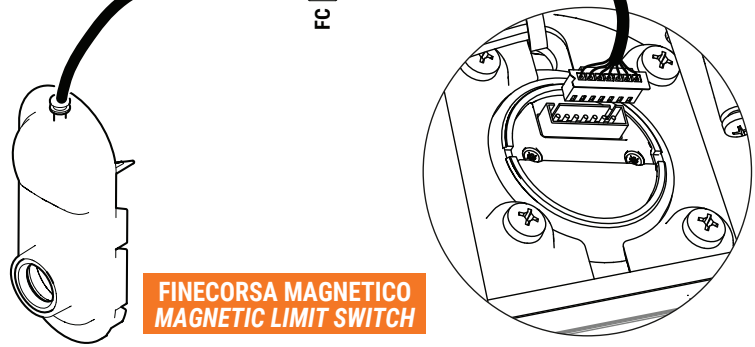
SENSORE MAGNETICO DI SBLOCCO
MAGNETIC UNLOCKING SENSOR

15

F

SB
ENC
FC

TW90/800
TW90/600/HS
TW90/800/R



FINECORSA MAGNETICO
MAGNETIC LIMIT SWITCH

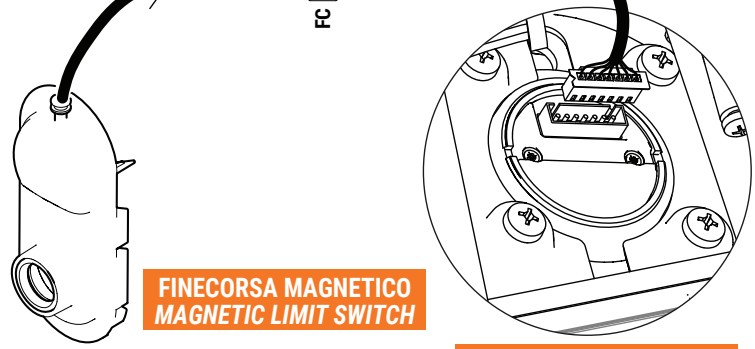
ENCODER

è possibile acquistare il finecorsa separatamente
it is possible to purchase the limit switch separately (**cod. MC784 / MC785**)

SENSORE MAGNETICO DI SBLOCCO
MAGNETIC UNLOCKING SENSOR

SB
ENC
FC

TW90/820
TW90/620/HS
TW90/820/R



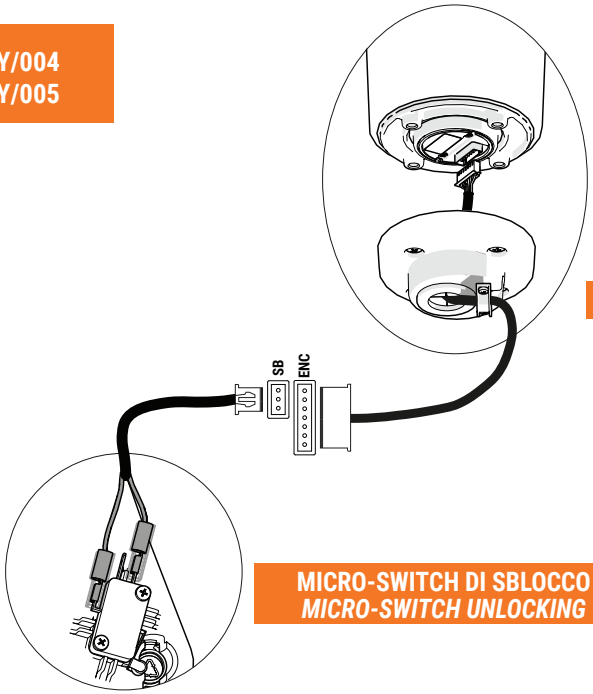
FINECORSA MAGNETICO
MAGNETIC LIMIT SWITCH

ENCODER

è possibile acquistare il finecorsa separatamente
it is possible to purchase the limit switch separately (**cod. MC788 / MC789**)

WAY/004
WAY/005

16



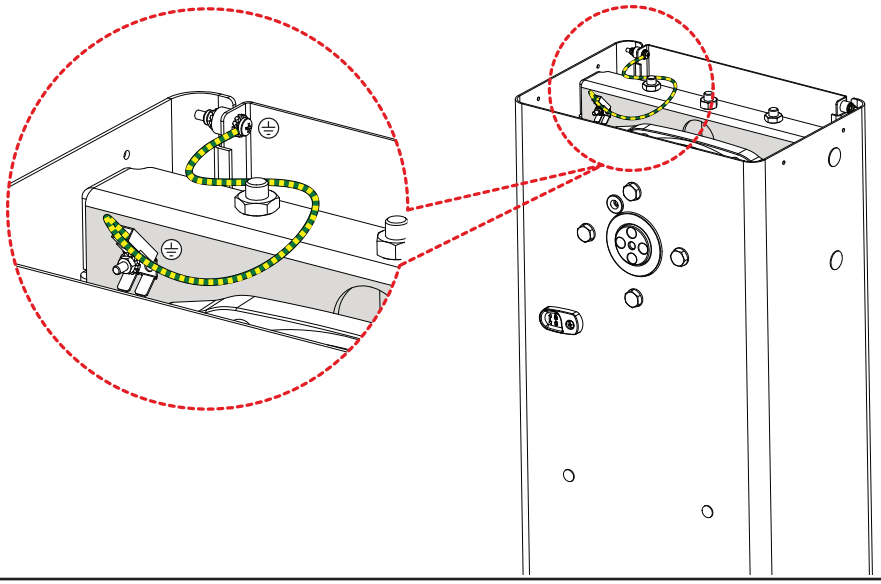
ENCODER

MICRO-SWITCH DI SBLOCCO
MICRO-SWITCH UNLOCKING

WAY/004
WAY/005

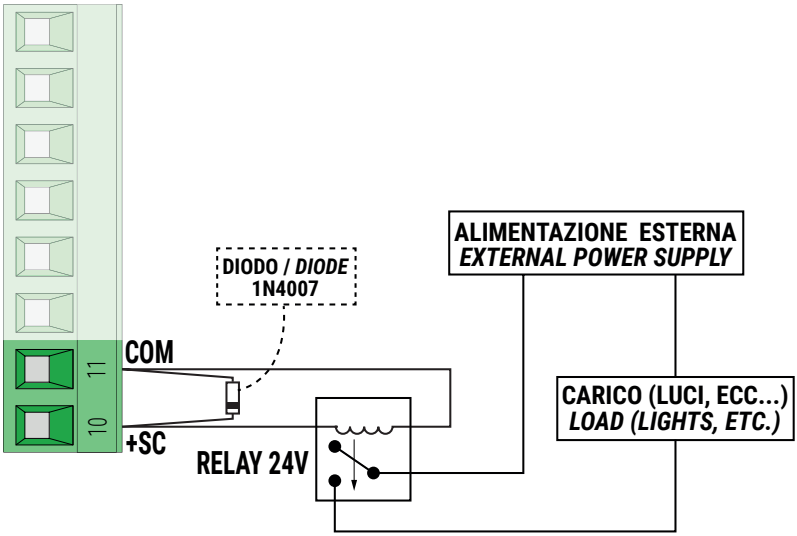
MESSA A TERRA
GROUNDING SCHEME

17



COLLEGAMENTO DI RELAY ESTERNO ALL' USCITA SC
CONNECTION OF EXTERNAL RELAY TO SC OUTPUT

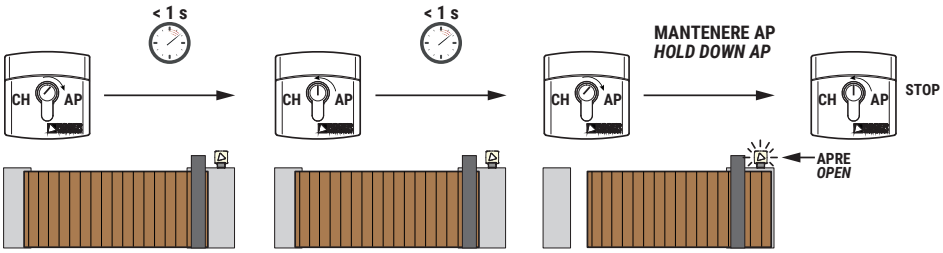
18



AZIONAMENTO A UOMO PRESENTE IN EMERGENZA (PAR. A7=03,04)
MAN-PRESENT DRIVE IN EMERGENCY (PAR. A7=03,04)

19

Installare unicamente selettore a chiave, in prossimità del cancello.
Vietato utilizzare ricevitori radio esterni per comandare AP e CH.
Only install key selector switch in the vicinity of the gate.
Do not use external radio receivers to control AP and CH.



solo per / *only for*: R85/60ES, R85/60EAS, R85/60EAS/TRIX, R85/60EAE, R85/60EAE/TRIX, R85/60IS, R85/60IAS, R85/60IAE

WARNING! This manual is intended for qualified personnel only; carefully read the general warnings supplied with this manual.

WARNING! the H93/RX2LP/I radio receiver is fully compatible with the H93/RX20/I - H93/RX22A/I- H93/RX2RC/I radio receivers, integrating either fixed code or "rolling code" (configurable) decoding operation.

For more information about LOW POWER mode please refer to the B70/MODLP manual and chapter 9.4 Stand By Mode.

1 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.

2 Product description

The **B70/1T** controller is a unit for the SENSORED control, with a high resolution encoder, of a ROGER Brushless motor for automated sliding gates integrated in the TW90 column and for road barrier automation WAY.

Ensure that the parameter *A1* is set correctly. If this parameter is not set correctly, the automation system may not function properly.

Using the B70/MODLP device connected via 3-wire cabling to the H93/RX2LP/I receiver, the control unit monitors the operating status by entering the "low power" mode after a preset time of inactivity (excluding WAY).
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. Specifically, we recommend installing **F4ES** or **F4S** series photocells.

For further information, refer to the installation manual of the **TW90** or barrier **WAY** automation system.

3 Updates of version r2.00

1. Added management of the 'low power' mode, handled by the new parameter *L1*; this mode requires the use of the H93/RX2LP/I receiver connected to the B70/MODLP
2. Added parameter *LO* to enable/disable B-CONNECT
3. Added new display messages '*StbY*', '*Act1*' and '*noLP*' relating to low-power operating situations
4. Added paragraph *S7* to manage ST, FT1, FT2 inputs as pure NC contacts or 8.2 kOhm resistive values
5. Values *02*, *03*, *04* added to par. *80* for new functions on PED input
6. Improved management of the persistent AP command
7. Improved management of the reclosing function on photocell intervention (par. *56*)
8. Renamed parameter *90* to '*FA*'

4 Technical characteristics of product

EN

	TW90/800 TW90/820	TW90/600/HS TW90/620/HS	TW90/800/R TW90/820/R	WAY/004 WAY/005
MAINS POWER VOLTAGE	230 V~ ± 10% 50/60 Hz (115 V~ ± 10% 50/60 Hz) (1)			
STAND-BY CONSUMPTION	≤0.5 W	≤0.5 W	≤0.5 W	NOT APPLICABLE
CONSUMPTION WAITING FOR COMMANDS WITH STAND-BY NOT ACTIVE	4.5 W (*)	4.5 W (*)	4.5 W (*)	NOT APPLICABLE
MAXIMUM MAINS POWER ABSORPTION (FROM NETWORK)	180 W			
INRUSH POWER (FROM NETWORK)	315 W	295 W	345 W	305 W
FUSES	**F1** = 15A (ATO257) motor power circuit protection **F2** = 2A (ATO257) accessories power supply protection **F3** = T2A 5x20 mm primary transformer protection			
CONNECTABLE MOTORS	1			
MOTOR POWER SUPPLY	24 V~, variable frequency, with self-protected inverter			
MOTOR TYPE	sinusoidal drive Brushless (ROGER BRUSHLESS)			
MOTOR CONTROL TYPE	field-oriented (FOC), sensored with high-resolution encoder			
RATED MOTOR POWER	120 W	100 W	85 W	170 W
STARTING MOTOR POWER	290 W	270 W	320 W	280 W
MAXIMUM POWER, FLASHING LIGHT	25 W (24 V⎓)			
FLASHING LIGHT DUTY CYCLE	50%			
MAXIMUM POWER	100 W 230 V~ - 40 W 24 V~/⎓ (potential free contact)			
GATE OPEN LIGHT POWER	3 W (24 V⎓)			
MAXIMUM ACCESSORY CURRENT ABSORPTION	10 W (24 V⎓)			
OPERATING TEMPERATURE	-20°C +55°C			
PRODUCT DIMENSIONS	dimensions in mm 165x117 weight: 0,233 kg			

ROGER 115V AC

(1) **TW90/800/115 - TW90/820/115 - TW90/600/HS/115 - TW90/620/HS/115 - WAY/004/115 - WAY/005/115**

(*) indicative consumption in the absence of connected accessories, with plug-in receiver engaged, in the absence of electrical braking applied to the motors (where applicable)

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.

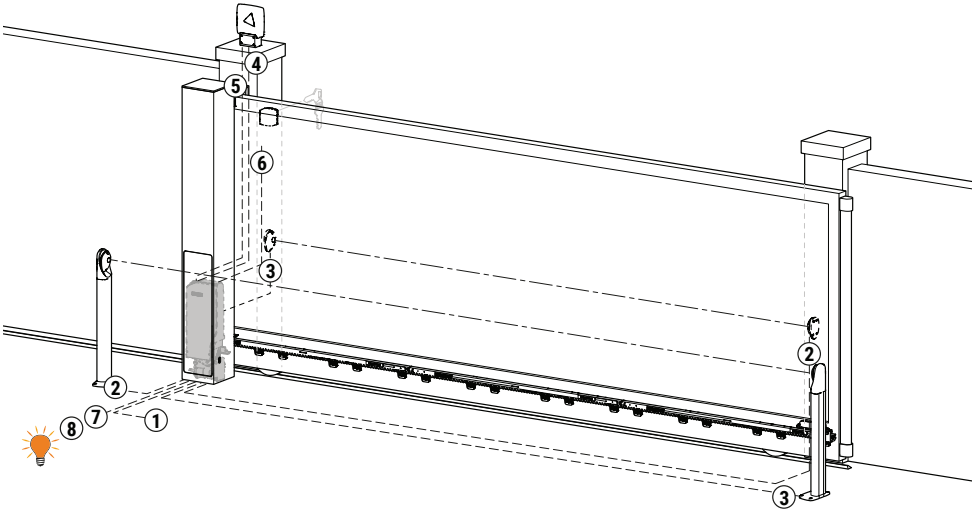
5 Description of connections

To access the control connection terminal board, remove the motor cover as shown in figure 1:
- remove the four screws and lift the cover

If the **B71/BC** charger is installed, refer to figure 2:
- pull out the drawer containing the charger and batteries.

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

5.1 TW90 automation type installation

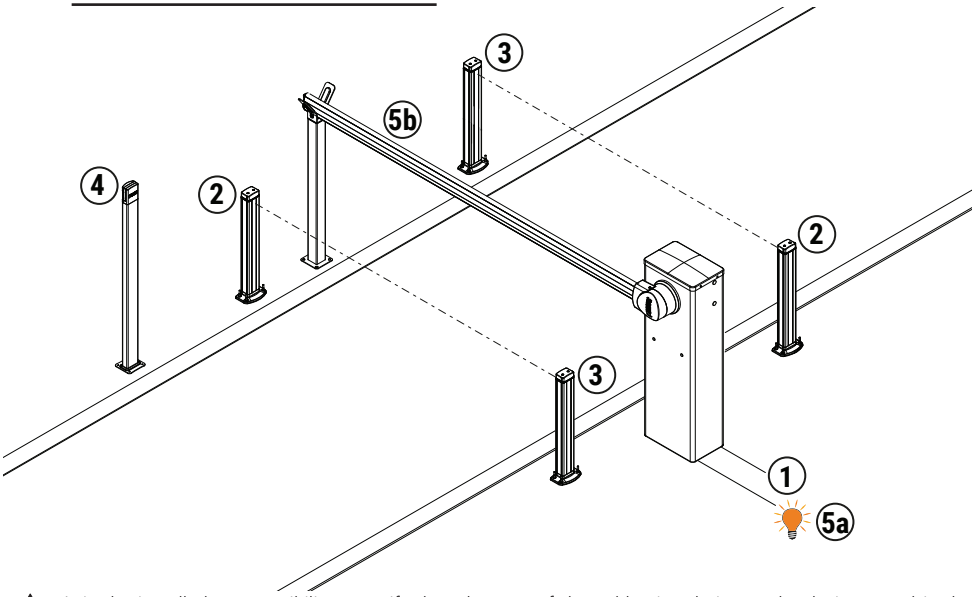


It is the installer's responsibility to verify the adequacy of the cables in relation to the devices used in the installation and their technical characteristics.

		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 **FIFTHY/24**	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	Cable 2x0,5 mm² (max 20 m)
8	Courtesy light (Potential free contact)	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.

5.2 WAY barrier type installation



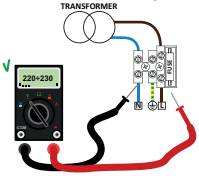
It is the installer's responsibility to verify the adequacy of the cables in relation to the devices used in the installation and their technical characteristics.

		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	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)
	Key pad **H85/TTD - H85/TDS** (connecting to **H85/DEC - H85/DEC2**)	Cable 2x0,5 mm² (max 30 m)
5a	Gate open indicator	Cable 2x0,5 mm² (max 20 m)
5b	Barrier boom lights 24V⎓ 6W	Cable supplied

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

5.3 Electrical connections

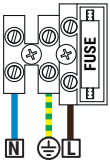
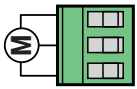
A switch or an omnipolar cut-off switch with a contact opening of at least 3 mm must be installed on the mains power line; put the cut-off switch in OFF position and disconnect any buffer batteries before performing any cleaning or maintenance operations.
Ensure that an adequate residual current circuit 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 (fig. 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:
- 230V~ ±10% for the B70/1T control unit.
- 115V~ ±10% for the B70/1T/115 control unit.

If the detected value does not comply with the above specified values or is not stable, the automation system may NOT operate efficiently.

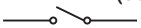
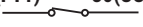
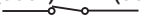
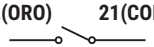
Connections to the electrical distribution network and to any other low-voltage conductors in the external section to the electrical panel must be on an independent path and separate from the connections to the command and safety devices (SELV = Safety Extra Low Voltage).
Make sure that the mains power 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 V~ ±10%, 50/60 Hz (115V~ ±10%, 50/60 Hz), fuse 5x20 T2A connection.
POWER IN 	Power feed input from transformer (or from **B71/BC** battery charger - if used, fig. 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 fig. 2).**
	Connection to ROGER Brushless motor. Connecting **B72/BRCL** controller for TW90/600/HS - TW90/620/HS High Speed (fig. 5). ***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 10-11.**

6 Commands and Accessories

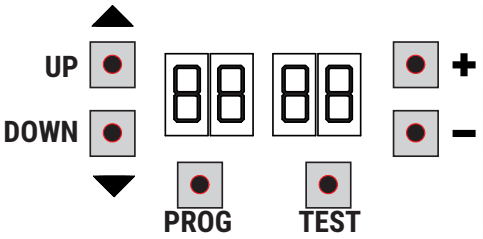
If not installed, safety devices with NC contacts must be jumpered at the COM terminals, or disabled by modifying the parameters 50, 51, 53, 54, 60, 73 and 74.
KEY:
N.A. (Normally Open) .
N.C. (Normally Closed).

EN

CONTACT	DESCRIPTION
6 **7(COR)** 	Output (potential free contact) for connecting courtesy light. 230 V~ 100 W - 24 V~/⎓ 40 W (fig. 8). ***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 (fig. 8). 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 V⎓ 3 W. The function of the indicator lamp is determined by parameter A8.
8(+SC) **9(COM)**	For TW90 automation: photocell test connection and/or battery saving (fig. 11-12-13-14) The power feed for the photocell transmitters (TX) may be connected to **8(SC)**. 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.
8(+SC) **9(COM)**	For WAY barrier automation: Connecting red boom lights ALED/4C, ALED/6C; setting par.A8 to values 05...09 selects the light signaling mode.
10(FT2) **30(COM)** 	Input (NC) for connecting photocells **FT2** (fig. 9-10-11-12-13-14). The photocells **FT2** are configured 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 **30(COM) - 10(FT2)** or set the parameters 53 00 and 54 00. **WARNING!** Use **F4ES** or **F4S** series photocells.
11(FT1) **30(COM)** 	Input (NC) for connecting photocells **FT1** (fig. 9-10-11-12-13-14). The photocells **FT1** are configured 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 **30(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** (fig. 9). The sensing edge is configured by default with the following settings: – 7400. 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** (fig. 9). The sensing edge is configured by default with the following settings: – 7300. 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. In case of WAY barrier automation, COS1 input is not managed.
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.
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.

CONTACT	DESCRIPTION
23(AP) 21(COM)	Open control signal input (N.O.). **WARNING:** 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. In case of WAY barrier automation, PED input is not managed.
27(+24V) 28(COM)	Power feed for external devices. See technical characteristics. Connecting **B72/BRCL** power unit for **TWO High Speed and Reversible versions** (fig. 5)
29(LAM) 28(COM)	Connection for flashing light (24 V⎓ - duty cycle 50%). The settings for the pre-manoeuvre flashing warning signal may be selected with parameter *A5*, while the flashing mode is set with parameter *78*.
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 optional magnetic limit switch (for TW90 automations only, see figure 15 - detail **F**). The gate stops when the limit switch is activated. **WARNING**: repeat the travel acquisition procedure after each adjustment to the limit switches.
SB	Connector (N.C.) for connecting release contact. Turning the motor release pin stops the gate stops and no command signals are accepted. **WARNING!** Once the release pin has been reset, the automation is in the intermediate position, without activating a limit switch (if one is installed), or in any case if limit switch is not installed, the control unit starts a position recovery procedure (see chapter 21) **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 (modifiable with parameter *76*). • PR2 - partial opening command (modifiable with parameter *77*). Only for TW90 automations: the receiver is connected to the B70/MODLP module by means of 3-wire cabling (the cabling is factory-made by ROGER TECHNOLOGY) and is indispensable for managing the "low power" mode. **ATTENTION!** H93/RX2LP/I must not be replaced with other ROGER plug-in receiver models.
BATTERY CHARGER B71/BC **(outside the control unit box, versions TW90/820 TW90/620/HS TW90/820/R)**	The use of the battery charger and buffer batteries is only possible by disabling the "low power" mode (*L 100*). 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 flashing light flashes briefly at intervals until mains power is restored or until the battery voltage drops below the minimum permissible limit. In this case, *bttO* (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 V⎓ 1,2 Ah. **or** **2x12 V⎓ 4,5 Ah** Only **AGM** type	Two battery kits are available: • Two 12 V⎓, 1.2 Ah batteries installed in the automation system itself. • Two 12 V⎓, 4.5 Ah batteries installed in an external case. For more information, refer to the installation manual for the **B71/BC** battery charger.
BATTERY CHARGER B71/BC **(inside the control unit box, versions TW90/800 TW90/600/HS TW90/800/R)**	To install the charger and 12V 1.2 Ah batteries: • Remove the cover. • Pull out the tray located above the control unit. • Insert the B71/BC charger board into the prepared slot. • Disconnect the cables coming from the transformer from the POWER IN terminal of the control unit and connect them to the charger terminal. • Connect the red-black cables of the wiring, supplied with the battery, to the POWER IN terminal of the control unit. • Place the 12V 1.2 Ah batteries in the prepared compartment, paying attention to the polarities. • Close the cover. To reduce battery consumption, the positive power supply of the photocell transmitters can be connected to the **SC** terminal (see fig. 11-12-13-14). Set *AB 03* or *AB 04*. In this way, when the gate is fully open or fully closed, the control unit removes power from the devices.
WIFI	Connector for B74/BCONNECT WiFi IP device. This IP device allows, using any internet browser, the complete management of the control panel both in proximity (point-to-point connection) and via cloud (remote connection).

7 Function buttons and display

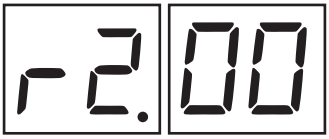


BUTTON	DESCRIPTION
UP ▲	Next parameter
DOWN ▼	Previous parameter
+	Increase value of parameter by 1
-	Decrease value of parameter by 1
PROG	Travel acquisition
TEST	Activate TEST mode

- 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 flash.
- 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 flashes rapidly to indicate that the new value has been saved.
- Parameters can only be modified while the motor is not running. Parameters can be viewed at any time.

8 Switching on or commissioning

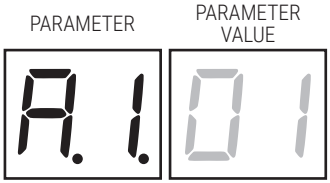
Power the control unit.
The firmware version of the control unit is displayed briefly.
Version installed r2.00.



Immediately afterwards, the displays enters the commands and safety device status mode. See chapter 9.

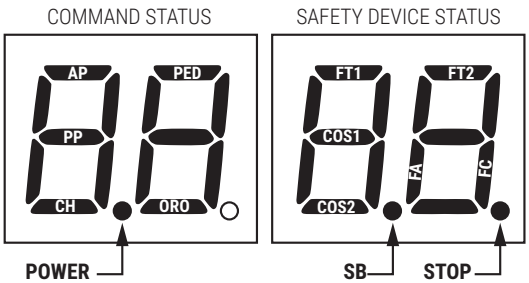
9 Display function modes

9.1 Parameter display mode



See chapter 12 for detailed descriptions of the parameters.

9.2 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).

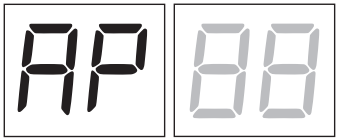
SEGMENT	COMMAND
AP	open
PP	step-by-step mode
CH	close
PE	partial opening (not managed for WAY barriers)
Or	clock

SAFETY DEVICE STATUS:
The safety device status indicators ON the display .
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 specific parameter.

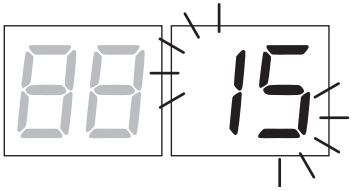
SEGMENT	SAFETY
Ft1	FT1 photocells
Ft2	FT2 photocells
COS1	COS1 sensing edge (not managed for WAY barriers)
COS2	COS2 sensing edge
FA	gate open limit switch (not managed for WAY barriers)
FC	gate closed limit switch (not managed for WAY barriers)
Sb	release pin rotated
StoP	STOP

9.3 TEST mode

The TEST mode is used to test activation of the commands and safety devices with visual confirmation.
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 flashing 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.

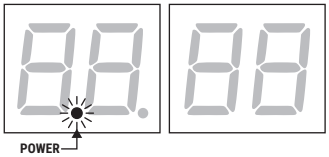


The status of the safety devices/inputs is shown on the right hand side of the display. The number of the terminal relative to the safety device in alarm state flashes.
When the gate is completely open or completely closed for automations in which limit switches are installed (par.60 = 01), FA or FC 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 pin rotated.
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 first 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.

9.4 Standby mode



There are two possible stand-by situations:
1. The one that simply turns off the display, leaving only the LED POWER flashing: this is activated after 30 min of inactivity and is only possible if low power management (L 100) is not enabled

2. The one that brings the power consumption of the control unit to a value ≤ 0.5 W, by default it is set to activate after 20 minutes of inactivity (L 104) but with a parameter value of 01, 02, 03 it can be set to 5-10-15 minutes of inactivity.
In this operating situation, the transformer is not powered, and only the logic section of the control unit, powered by the B70/MODLP module, remains in operation.
The 24V⎓ output of the control unit is therefore not powered, with the following consequences:
- it is not possible to use an external receiver, unless this is powered by a source external to the control unit

it is not possible to use certain command modes based on the crossing of the photocells, as the photocells are also not powered; reference to the settings of parameters 52 and 55 (to command opening) and 56 (to have reclosing after 6 seconds)

Other consequences:
- it is not possible to have backup batteries, as in stand-by they would not receive a charge (not even the maintenance charge) and above all, lacking the alternating transformer voltage (due to its shutdown operated by B70/MODLP) would activate the power supply from the battery ("bAtt" on the display), discharging it unnecessarily. To use the batteries it is compulsory to disable the "low power" mode (L 100)
- it is not possible to use B-CONNECT, because in stand-by the control unit does not communicate with it therefore it does not provide information nor does it allow the control unit to be controlled. To use B-CONNECT you must disable the "low power" mode (L 100).

The "low power" stand-by time countdown is managed as follows:
- resets when a command is received and as long as the drive is in motion
- resets if the drive is paused for reclosing (parameters A2 and 21), as this is still an active phase of the drive
- resets if the guaranteed reclosing countdown is running (par.82)
- resets if the COR output timing is in operation
- resets when one of the keys around the display is activated

Only at the end of the situations listed above does the countdown begin, which at the end of the time (selected in parameter L 1) leads to the "low power" stand-by phase.
The display shows "StbY" and after 1.5" turns off the display and deactivates the SC, LAM and COR outputs.

To activate stand-by without having to wait and be able to test the "low power" operation:
simultaneously activate the 4 buttons: UP ▲, DOWN ▼, **+** and **-** for about a second and a half: you will hear the relay switch inside the B70/MODLP and the display will show "StbY".
If for some reason the B70/MODLP fails to disconnect power to the transformer, "noLP" will appear on the central unit display after approximately 8 seconds, indicating that the "low power" has not been activated.

Exit from the stand-by mode occurs in one of the following ways:
- upon activation of a terminal board command (AP, CH, PP, PE, OR)
- upon activation of a radio command
- upon activation of one of the buttons PROG, TEST

Waking up from stand-by is indicated by the display message "Act ", which signals the reactivation of the control unit.**ATTENTION!** Reactivation involves re-powering the transformer, i.e. the return of the 24 V power supply to the control unit: the reaction to a command is slightly delayed as one has to wait for a time to stabilise the operation of the photocells and to be able to assess whether they are in alarm or not.

10 Travel acquisition for automation TW90

For the system to function correctly, the gate travel must be acquired by the control.

10.1 Before starting

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

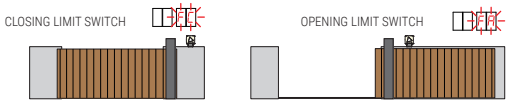
KEY: **HIGH SPEED Motor** **REVERSIBLE Motor**

SELECTION	MODEL	MOTOR TYPE	CONFIGURATION
A 1 01	**TW90/800** **TW90/820**	/	**800kg IRREVERSIBLE**
A 1 02	**TW90/600/HS** **TW90/620/HS**		**600kg HIGH SPEED** (see chapter 14 "Special Parameters for High Speed Motor")
A 1 03	**TW90/800/R** **TW90/820/R**		**800kg REVERSIBLE** (see chapter 15 "Special Parameters for Reversible Motor")

2. 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).



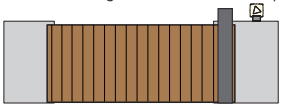
3. If limit switches enabled (60 0 1): adjust limit switches so that, after activation, the gate stops slightly in advance of the mechanical stop



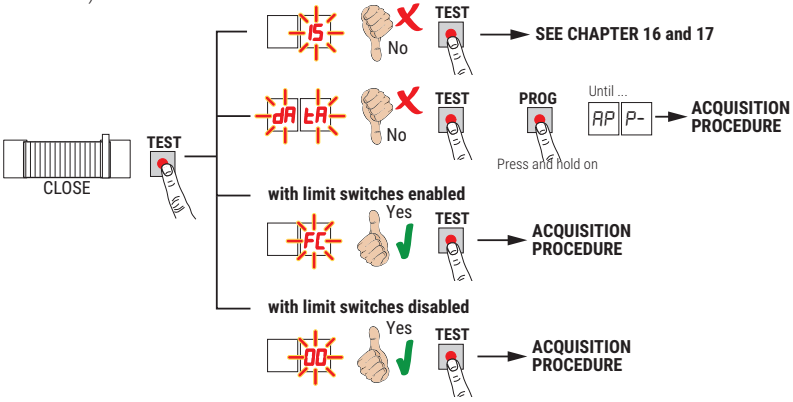
4. Check that the operator present function is not enabled (A7 00).



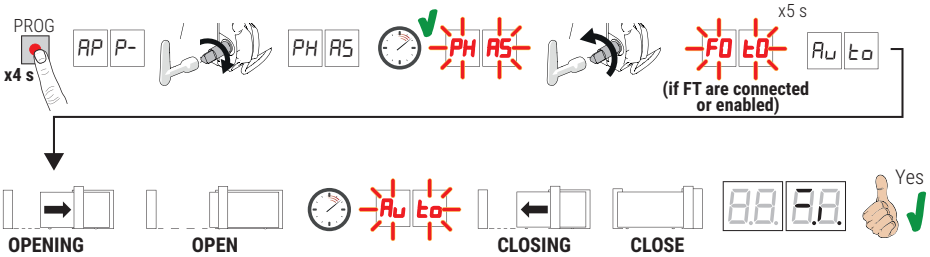
5. Move the gate into the closed position.



6. Press **TEST** (see TEST mode in chapter 9.3) 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, 5 1, 53, 54, 60, 73 and 74).



10.2 Acquisition procedure:



- Press and hold PROG for 4 seconds. AP P- is shown on the display.
- Turn the release pin, 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 flashes on the display.
- Return release pin. The acquisition procedure now starts.
- FOtO is shown on the display (only if parameters S0, S 1, S3, 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 briefly when it reaches the gate open limit switch. Auto flashes on the display.
- The gate closes until it reaches the gate closed limit switch.

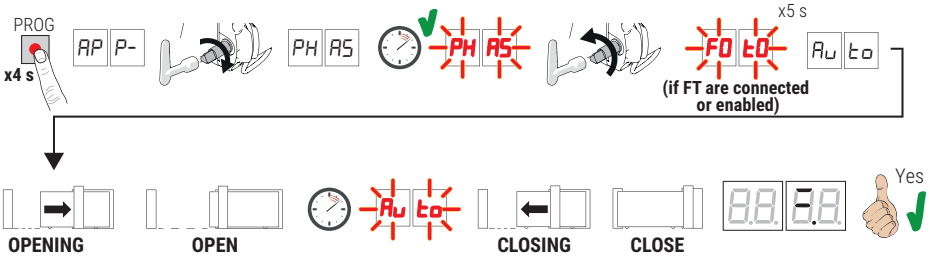
If the acquisition procedure is completed successfully, the display enters the command and safety device state display mode.

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 (at least 3cm), 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”.

10.3 Acquisition procedure without limit switches



- Press and hold PROG for 4 seconds. AP P- is shown on the display.
- Raise the release lever, 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 flashes on the display.
- Return release pin. The acquisition procedure now starts.
- FOtO is shown on the display (only if parameters 50, 51, 53, 54 are not disabled). Keep away from the photocell beam within 5 s, to prevent interrupting the procedure.
- When the mechanical opening stop is reached, the gate stops briefly. Auto flashes on the display.
- The gate closes again until the mechanical closing stop is reached.

If the acquisition procedure is completed successfully, the display enters the command and safety device state display mode. The gate retracts by the number of rotor revolutions selected in parameter 26.

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 P.L / AP P.M: travel length error. Press the TEST button to clear the error, and check that gate is completely closed.

ATTENTION: if the learning procedure was successful **BUT** the space left between the gate leaf and the mechanical stop is not as desired, increase the value of parameter 26. Check that when fully open, the sash maintains the same distance from the mechanical stop, adjust parameter 25 if necessary. Ensure that **AT LEAST** 3 centimetres remain between the leaf stop and the mechanical stop.

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

11 Travel acquisition for barrier WAY

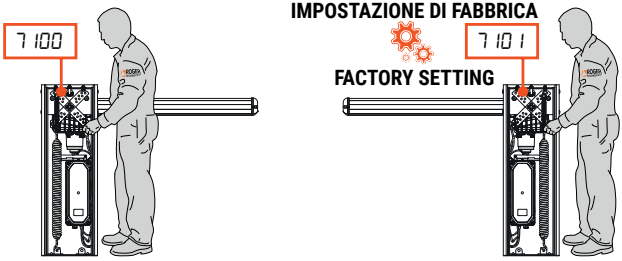
For the system to function correctly, the gate travel must be acquired by the control.

11.1 Before starting

1. Select the automation system model installed with the parameter A1.

SELECTION	MODEL	MOTOR TYPE	CONFIGURATION
A1 04	**WAY/004**	/	**With boom up to 4 metres**
A1 05	**WAY/005**	/	**With boom up to 5 metres**

2. Select the position of the barrier in relation to the gate, using parameter 71. The factory setting of the parameter is with the barrier installed on the right (7101) and the boom opening/closure gate on the left (seen from the inspection hatch side).



If the installation position is changed from the right to the left, the position of the spring(s) and the control unit box must also be changed.

For the correct installation, refer to the barrier installation manual.

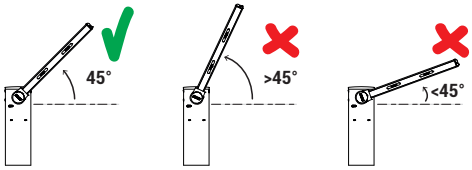
IMPORTANT! Lubricate the pivot points with lithium based grease (RS/GR2/100)

3. Check that the "operator present" function is not enabled (A7 00).



4. Check the spring balance setting and the mechanical stop settings.

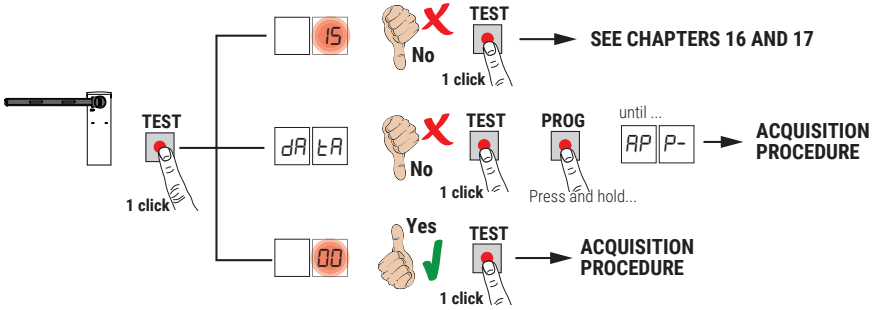
For further information, refer to the installation manual of the barrier.



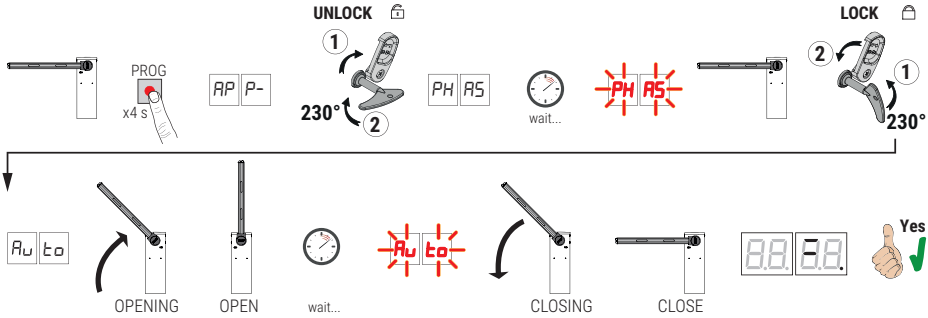
5. Move the barrier boom into the completely CLOSED position.

6. Press TEST (see TEST mode in paragraph 10.3) and check the command signal and safety device states. If the safety devices are not installed, jumper the contact or disable safety device function from the relative parameter (50, 51, 53, 54, 60, 73 and 74).

EN



11.2 STANDARD acquisition procedure



- Press and hold PROG for 4 seconds. *AP P-* is shown on the display.
- Unlock the barrier: open the release cover and turn the key 230° clockwise.
- After a few seconds, the message *PH A5* is shown on the display. 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 A5* flashes on the display.
- Fully close and lock the barrier.
- The acquisition procedure now starts. The message *Auto* is shown on the display and the barrier starts opening at low speed.
- Once the barrier open mechanical stop is reached, the barrier stops briefly. The message *Auto* flashes on the display.
- The barrier closes until it reaches the barrier closed mechanical stop.

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 P.E*: acquisition error.

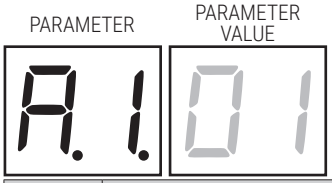
For more information, see chapter 17 “Alarms and faults”.

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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	**TW90/800 - TW90/820** - **IRREVERSIBLE** motor for gate leaves up to 800 kg.
02	**TW90/600/HS - TW90/620/HS** - **IRREVERSIBLE** motor for gate leaves up to 600 kg.
03	**TW90/800/R - TW90/820/R** - **REVERSIBLE** motor for gate leaves up to 800 kg.
04	**WAY/004** - **IRREVERSIBLE** barrier with boom up to 4 m.
05	**WAY/005** - **IRREVERSIBLE** barrier with boom up to 5 m.

A200	**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 indefinitely.

A300	**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 flashing light (independently of the value set with the parameter A5). The gate closes in "position recovery" mode (see chapter 21).

A400	**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 (A200), the condominium function automatically attempts a closing manoeuvre A201.
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 (A200), the condominium function automatically attempts a closing manoeuvre A201.
03	Open-close-open-close.
04	Open-close-stop-open.

A500	**Pre-flashing**
00	Disabled. The flashing 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 flashing warning signal prior to closing manoeuvre.

A600	**Condominium function for partial open command (PED)** **NOTE:** parameter A6 is not displayed for WAY automations because the PED command is not managed
00	Disabled. The gate opens partially in step mode: open-stop-close-stop-open...
01	Enabled. Partial commands are ignored during gate opening.

EN

A7 00	**Enabling operator present function** **NOTE**: enabling the dead man function prevents GAPT mode (par.80).
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	Opening takes place in semi-automatic mode, deadman closing operated only by CH command at terminal board; radio control is enabled only if configured to open.

Values 03 and 04 enable deadman activation '**in emergency**' which can only be activated by one of the terminal board commands: AP, CH; photocells and sensitive edges are ignored, STOP and shock detection (which does not reverse the movement, but stops the motor) remain managed.
During dead man operation, the flashing light makes sequences of 10 fast flashes interspersed with a short pause; movement takes place at minimum speed.
If, on the other hand, the automation is activated by radio control or with the terminal board commands PP, PED, OR, the operation remains the standard one (semi-automatic or automatic) with the aid of all enabled safeties.

ATTENTION! Only connect a key-operated selector switch installed in the immediate vicinity of the gate to the AP and CH terminals, in order to control it visually: failure to comply with this safety instruction may cause danger to persons or property.

To ensure the safety of voluntary start-up, the AP (or CH) terminal board command must be acted upon as follows (see fig. 19, for an example of the opening command):
- an initial activation (closing of the contact) lasting less than 1 second
- release the command and within 1 second reactivate the command and hold it: from this moment on, the automation moves with the operator present, stopping when the command is released.
As a further protection function: activation of the CH selector control while it is opening, or of the AP selector control while it is closing, stops the automation; to reactivate it, all the controls must be released and the sequence in fig. 19 repeated.

03	Enabling of deadman operation '**in emergency for residential installations**', with the terminal board control AP the sash can be fully opened, the terminal board control CH will only be available when the sash is fully open: only when the sash is fully open can it be closed again. During emergency operation '5-ES' is shown on the display (pressing TEST resets the display for a few seconds).
04	Enabling of deadman operation '**in emergency for condominium installations**', which can only be operated with the terminal board control AP, until fully open, without the possibility of closing. It is only possible to open the gate. During emergency operation, the display shows '5-EM' (pressing TEST resets the display for a few seconds).

A8 00	**Gate open indicator / photocell test function and "battery saving" / boom light configurations for barrier WAY** **NOTE**: the signal given by the gate open indicator can only be used if the "low power" mode is disabled (L 100)
00	The indicator is off when the gate is closed, and steadily lit during manoeuvres and when the gate is open.
01	The indicator flashes slowly during opening manoeuvres, and is lit steadily when the gate is completely open. It flashes 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 fig. 11-12.
03	Set to 03 if the output SC is used for the "battery saving" function. See fig. 13-14. 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 "battery saving" function and photocell test function. See fig. 13-14.
05	For barrier WAY only: boom lights always on.
06	Only for barrier WAY: boom lights on with boom still, flashing with boom in movement.
07	Only for barrier WAY: boom lights briefly flashing with stopped boom, flashing with moving boom
08	Only for barrier WAY: boom lights briefly flashing with closed boom or stopped in intermediate position, flashing with moving boom, off with open boom.
09	Only for barrier WAY: boom lights with short flashing with closed boom or stopped in intermediate position, flashing with moving boom, steady with open boom.

11 04	**Setting deceleration during opening and closing**
12 04	See chapters 14 and 15
01-05	01= the gate decelerates near the mechanical stop/limit switch ... 05= the gate decelerates long before the mechanical stop/limit switch.

13 05	**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 05	**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	For TW90 automations: 05= approx. 15 cm distance; ... 10= approx. 30 cm distance; ... 40= approx. 120 cm distance. For WAY operators: 05= approx. 0.5 degrees rod rotation; ... 40=approx. 4 degrees rod rotation **NOTE**: - with 4m rod, 4 degrees of rotation is equivalent to a vertical movement of approx. 28 cm - with 5m rod, 4 degrees of rotation is equivalent to a vertical movement of approx. 35 cm

15 50	**Partial opening adjustment (%)** **N.B.**: this parameter is set to 50% (half of total gate travel); by default not displayed for WAY barrier (PED control not managed)
10-99	From 10% to 99% of total gate travel.

16 10	**Adjusting automatic closing time after partial opening** The countdown starts when the pedestrian opening is reached, as defined in paragraph 15.
00-90	Pause time settable from 00 to 90 s.
92-99	Pause time settable from 2 to 9 min.

20 00	**Type of signaling provided by COR output** **NOTE**: the signal given by the COR output can only be used if the "low power" mode is disabled (L 100)
00	STANDARD operation managed by parameter 79
01	Contact closed if the control unit is working properly. Contact open if central locked in alarm.
02	Contact closed if the control unit is powered by the mains or charged battery. Open contact due to a fault: control unit powered by low battery (voltage level set by par. 85) or with error alert btLO (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 (opening) command activates the opening manoeuvre. When the gate is fully open, automatic reclosure is excluded. A subsequent AP (open) command activates the closing operation.
02	A PP (step-by-step) command activates the opening manoeuvre. When the gate is fully open, automatic reclosure is excluded. A subsequent PP (step-by-step) command activates the closing operation.
03	A PED (partial opening) command activates the partial opening operation. Automatic reclosure is excluded. A subsequent PED (partial opening) command activates the closing operation. **NOTE**: for WAY automation, the PED command is not managed

23 03	**Tolerance on opening stop** **NOTE:** parameter are visible if limit switches are disabled on parameter 60 (60 00, TW90 automation) or for WAY automation; adjust the value of par.23 to be less than or equal to that of par.25
01-05	01= minimum tolerance (rotor revolutions) ... 05= maximum tolerance (rotor revolutions)

24 03	**Tolerance on closing stop** **NOTE:** parameter are visible if limit switches are disabled on parameter 60 (60 00, TW90 automation) or for WAY automation; adjust the value of par.24 to be less than or equal to that of par.26
01-05	01= minimum tolerance (rotor revolutions) ... 05= maximum tolerance (rotor revolutions)

25 03	**Advance on stop on full opening** **NOTE:** parameter is only visible for TW90 automations and if the limit switches are visible if limit switches are disabled on parameter 60 (60 00) except for travel programming or repositioning manoeuvres, where the automation arrives at the mechanical closing stop, in standard closures it stops in advance. To set an advance on stop of approx. 3cm set the following values for parameter 25: 04 for TW90/800 - TW90/820 03 for TW90/600/HS - TW90/620/HS 02 for TW90/800/R - TW90/820/R
01- 15	01= minimum advance (rotor revolution) ... 15= maximum advance (rotor revolutions)

26 03	**Advance on stop on full closing** **NOTE:** parameter is only visible for TW90 automations and if the limit switches are visible if limit switches are disabled on parameter 60 (60 00) except for travel programming or repositioning manoeuvres, where the automation arrives at the mechanical closing stop, in standard closures it stops in advance. To set an advance on stop of approx. 3cm set the following values for parameter 26: 04 for TW90/800 - TW90/820 03 for TW90/600/HS - TW90/620/HS 02 for TW90/800/R - TW90/820/R
01- 15	01= minimum advance (rotor revolution) ... 15= maximum advance (rotor revolutions)

27 03	**Setting reverse time after activation of sensing edge or obstacle detection (crush prevention)** **NOTE**: the parameter is not visible for WAY automations, reversing always leads to full opening. 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 chapters 14 and 15
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 and for the WAY barrier boom to perform a rotation of 5°. **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 over to 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 insufficient 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 chapters 14 and 15
01-05	01= minimum speed, ..., 05=maximum speed TW90/800: min=7.4 m/min; max=12 m/min TW90/600/HS: min=6 m/min; max=25 m/min TW90/800/R: min=6 m/min; max=18 m/min WAY/004: min=90° in 4"; max=90° in 11" WAY/005: min=90° in 5"; max=90° in 17"

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.
01-05	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: TW90/800 - TW90/820 from approximately 2 m/min to 5 m/min TW90/600/HS - TW90/620/HS from approximately 3 m/min to 8 m/min TW90/800/R - TW90/820/R from approximately 5 m/min to 12 m/min WAY/004, WAY/005: min=10° in 1"; max=10° in 2.2" **NOTE**: to adjust the approach to the last 10° of travel, set parameters 13, 14 to value 10

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 (usable only if L 100).

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 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.

56 00	**Enable close command 6 s after activation of photocell (FT1-FT2)** **This parameter is not visible if A803 or A804 is set.** NOTE: in the case of photocells being blanked during opening, the 6 secs. count starts when the wings are completely open. If the automation enters stand-by in the fully open position, the function is not managed (the photocells are not powered).
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.

57 00	**Selecting contact type (NC or 8.2 kOhm) on inputs FT1/FT2/ST** In conformity with the safety regulations EN12453-EN12445, devices using an 8.2 kOhm contact instead of an NC contact may be connected to inputs **FT1/FT2/ST**. The controller unit must therefore be configured accordingly.		
	FT1	**FT2**	**ST**
00	The controller is configured for NC contacts by default.		
01	8k2	N.C.	N.C.
02	N.C.	8k2	N.C.
03	8k2	8k2	N.C.
10	N.C.	N.C.	8k2
11	8k2	N.C.	8k2
12	N.C.	8k2	8k2
13	8k2	8k2	8k2

60 00	**Limit switch enabling** **NOTE:** parameter visible only for TW90 automations
00	Limit switches disabled; programming the stroke and repositioning causes the sash to press on the mechanical stops, par. 25 and 26 adjust the stopping distance from these.
01	Limit switches enabled; stroke programming and repositioning are managed by the activation of the magnetic opening and closing limit switches.

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

7101	**Selecting installation position of motor relative to gate (seen from interior side)** **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.

7300	**Configuring sensing edge COS1** **NOTE:** not visible for WAY automations, input COS1 disabled
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.
12	Management of two 8k2 sensitive edges connected in parallel (total resistance 4k1). The gate reverses only when opening.
14	Management of two 8k2 sensitive edges connected in parallel (total resistance 4k1). The gate always reverses.

7400	**Configuring sensing edge COS2** **NOTE:** for WAY automations, the selectable values are only 00, 01, 02; the sensitive edge acts only if it intervenes during closing, causing complete opening.
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.
12	Management of two 8k2 sensitive edges connected in parallel (total resistance 4k1). The gate reverses only when closing.
14	Management of two 8k2 sensitive edges connected in parallel (total resistance 4k1). The gate always reverses.

7600	**Configuring radio channel 1 (PR1) N.B.**: With ROGER TECHNOLOGY plug-in radio receiver board.
7701	**Configuring 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 confirmation for safety. (1)
08	PARTIAL OPENING with confirmation for safety. (1)
09	OPENING with confirmation for safety. (1)
10	CLOSURE with confirmation for safety. (1)

(1) To prevent gate manoeuvres caused by accidentally pressing a remote control button, confirmation is required to enable the command. Example: parameters 7607 and 7701 set:

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

7800	**Configuring flashing light frequency**
00	The frequency is set electronically from the flashing light unit.
01	Slow flash.
02	Light flashes slowly when gate opens, rapidly when gate closes.

79 60	**Selecting courtesy light mode**
00	Disabled.
01	PULSE. The courtesy light illuminates briefly 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.

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80 00	**Clock contact configuration** 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.
It is possible to connect an external clock/timer to the PED input to activate the GAPT (Temporary Partial Opening Management), which works as follows: • when the PED contact closes, a partial opening is performed; when the contact is released, the door closes • if an AP command is received when the door is in the partial opening position, the automation opens completely, and when it closes again, it returns to the partial opening position • if a CH command is received when in the partial opening position, even with the PED contact closed, it closes completely; if an AP command is then received, after opening completely, GAPT operation is reactivated • if the PED contact is open, the automation returns to standard operation (closing always closes completely) • with GAPT mode enabled, the ORO input is not managed • values 02, 03, 04 are not available for WAY automations (PED not enabled) • values 03, 04 prevent dead man mode (par.A7)	
02	With GAPT mode enabled, the control unit does not accept AP and CH commands
03	With GAPT mode enabled, the control unit only accepts AP commands
04	With GAPT mode enabled, the control unit accepts AP and CH commands

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 sensitive edge intervenes, detecting an obstacle in the same direction in which the function is enabled. If instead the sensitive edge detects an obstacle during the movement opposite to the one guaranteed, the function remains active. • the number of closure attempts set by parameter A2 has been reached; • the acquired position is lost (perform position recovery, see chapter 21).
00	Disabled. The parameter B2 is not displayed.
01	Enabled. After a period of time set with parameter B2, the control unit signals a 5 second warning with the flashing light, regardless of the parameter A5, and then closes the gate.
02	Enabled. If the gate is closed as a result of a step mode command, after a period of time set with parameter B2, the control unit signals a 5 second warning with the flashing 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 B2. 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 B2.

82 03	**Setting safeguarded closure/opening activation time** **N.B.:** this parameter is not visible if the value of parameter B 1 = 00.
02-90	Wait time settable from 2 to 90 s.
92-99	Wait time settable from 2 to 9 min.

85 03	**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 B6 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 (22V⎓ with B71/BC charger; 24.6V⎓ with B71/PBX external charger)

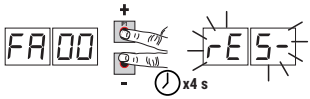
02	The command becomes active when the battery voltage drops to the medium threshold (23V⎓ with B71/BC charger; 25V⎓ with B71/PBX external charger)
03	The command becomes active when the battery voltage drops to the maximum threshold (24V⎓ with B71/BC charger; 25.4V⎓ with B71/PBX external charger)

86 00	**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 even if the ORO input is active and if the parameter is 80 01.
04	When the battery voltage drops to the threshold selected with par. 85 the control unit, after a prelamping of 5s, automatically closes the gate and accepts only one opening command

87 00	**Selection of the battery type and consumption reduction**
00	Battery 24V⎓ (2x12V⎓) with B71/BCHP. Acceleration/deceleration/speed reduction enabled, to increase the battery life.
01	Battery 24V⎓ (2x12V⎓) with external battery charger B71/PBX. Acceleration/deceleration/speed reduction enabled, to increase the battery life.
02	Battery 24V⎓ (2x12V⎓) with external battery charger B71/PBX. No performance reduction, maximum battery consumption.
03	Battery 24V⎓ (2x12V⎓) with external charger B71/PBX. No reduction in performance. Maximum battery consumption

L0 00	**Enabling serial communication**
00	Disabled
01	Enabling module B74/BCONNECT
02	Enabling debug board (internal use)

L104	**Configuration of 'low power stand-by' mode** NOTE: 'low power stand-by' is activated after inactivity that lasts for the preset time, i.e. with the automation stopped and no activation of commands or keys on the display. With the automation fully open and paused for automatic reclosing, stand-by is not activated, as it is in any case an active phase of automatic operation (regulated by par. A2 and 21). Similarly, the time countdown for guaranteed closing/opening (par. 81 and 82) is considered an active phase, so stand-by is not activated. **ATTENTION! This parameter is not displayed for TW90 High Speed and Reversible automations, or for WAY automations.**
00	"low power" mode disabled
01	Stand-by activation after 5 minutes of inactivity
02	Stand-by activation after 10 minutes of inactivity
03	Stand-by activation after 15 minutes of inactivity
04	Stand-by activation after 20 minutes of inactivity

FA 00	**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, 60, 71, 86, 87, L0, L1: 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 firmware version appears on the display, press and hold down the ▲ (UP ARROW) and ▼ (DOWN ARROW) buttons for 4s.

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	Identification number The identification number consists of the values of the parameters 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 sequential version.**	

	View manoeuvre counter The number consists of the values of the parameters from oM to o1 multiplied by 100. **N.B.**: The values shown in the table are indicative only.
oM01	**Manoeuvres performed.** Example: 01 23 45 x100 = 1.234.500 manoeuvres.
o023	
o145	

	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	**Manoeuvre hours.** Example: 01 23 = 123 hours.
h123	

	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	**Days with unit switched on.** Example: 01 23 = 123 days.
d123	

	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 modified. 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 flashes to confirm 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 = 00, P2 = 00, P3 = 00, 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 flashes to confirm 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 and WAY series



The High Speed **(/HS)** series is a family of digital Brushless high speed sliding motor units for sliding gates weighing up to 600 kg (**TW90/600/HS - TW90/620/HS**) and dedicated to residential applications and the series of WAY Brushless barriers with up to 5 m boom dedicated to the residential, industrial, commercial and parking 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.

A102 A104 A105	**Selecting automation system model** This parameter is factory configured by ROGER TECHNOLOGY. **ATTENTION!** The value of parameter A1 is set at the factory to select the motor model (02, 04, 05, see table below). If this value is incorrectly changed, the automation will not be able to work at full efficiency and malfunctions may occur. NOTE: in the case of resetting to the standard factory parameters, the value of the parameter is not changed.
01	~~TW90/800 - TW90/820~~
02	TW90/600/HS - TW90/620/HS
03	~~TW90/800/R - TW90/820/R~~
04	WAY/004
05	WAY/005

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

4008	**Setting opening speed**
4108	**Setting closure speed**
01-05	01= minimum speed, ..., 05=maximum speed TW90/800: min=7.4 m/min; max=12 m/min TW90/600/HS: min=6 m/min; max=25 m/min TW90/800/R: min=6 m/min; max=18 m/min WAY/004: min=90° in 4"; max=90° in 11" WAY/005: min=90° in 5"; max=90° in 17"

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

N.B.: the WAY series barriers, which also have a non-High-Speed irreversible motor, have the same adjustment parameters for optimal boom movement.

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15 Special parameters for Reversible series



The Reversible **(/R)** series is a family of digital brushless motor units for sliding gates weighing up to 800 kg (**TW90/800/R - TW90/820/R**) and dedicated exclusively to residential and industrial applications.
REVERSIBLE technology makes it possible to open and close the gate without releasing the motor even in the event of power failure. When the gate is moved manually, in the absence of supply voltage, the rotation of the motor provides power o the motor control section. **WARNING!** handle the gate by hand with moderation.
The control unit allows independent management of speed, acceleration, deceleration and the safety devices used in the system.
With the motor at a standstill and the control unit powered (from mains voltage or battery), electric braking is activated to prevent 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 sufficient 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 21).
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.

A103	**Selecting automation system model** This parameter is factory configured by ROGER TECHNOLOGY. **ATTENTION!** The value of parameter *A 1* is set at the factory to select the motor model (*03*, see table below). If this value is incorrectly changed, the automation will not be able to work at full efficiency and malfunctions may occur. **NOTE:** in the case of resetting to the standard factory parameters, the value of the parameter is not changed.
01	~~TW90/800 - TW90/820 -~~
02	~~TW90/600/HS - TW90/620/HS -~~
03	TW90/800/R - TW90/820/R
04	~~WAY/004~~
05	~~WAY/005~~

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

4008	**Setting opening speed (%)** **N.B.:** the speed setting range is subdivided into 5 equal segments.
4108	**Setting closure speed (%)** **N.B.:** the speed setting range is subdivided into 5 equal segments.
01-05	*01* = minimum speed, ..., *05*=maximum speed TW90/800: min=7.4 m/min; max=12 m/min TW90/600/HS: min=6 m/min; max=25 m/min TW90/800/R: min=6 m/min; max=18 m/min WAY/004: min=90° in 4"; max=90° in 11" WAY/005: min=90° in 5"; max=90° in 17"

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 pin is open.	-	Turn the release pin 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. In the absence of limit switches, check that par.60 is set to 00.
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. In the absence of limit switches, check that par.60 is set to 00.
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. In the absence of limit switches, check that par.60 is set to 00.
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.

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17 Alarms and faults

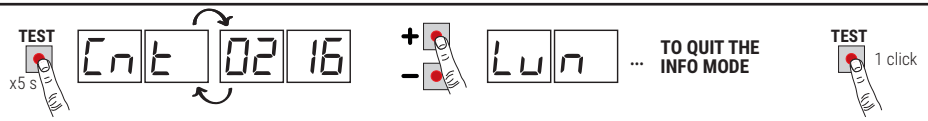
EN

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 verification 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 (if limit switches are enabled). 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. Before resetting the release pin, ensure that PHAS flashes in 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. Check if limit switches are absent that par.60 is set to 00.
	example: 15 EE 21 EE	Configuration parameter error.	Set configuration 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.
		Insufficient 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 flat.
	EnE8	Encoder calculation error.	Repeat acquisition procedure.
	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 flashing	Release device open.	Reset the release pin and check the connection to the release contact.
	no PH	Motor control anomaly detected	Repeat the acquisition procedure. If the problem persists, replace the control unit.
	no PH	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.

PROBLEM	ALARM	POSSIBLE CAUSE	ACTION
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 that the release pin has rotated.
			Check that the motor turns without impediment. Contact technical support in case of any problems.
			Check that the mains voltage is correct and that the mains cable cross-section is adequate.
	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 (the signalling of the limit switch FC if limit switches enabled par.*60*, must be active) and repeat the procedure.
			Check cable of limit switches (if installed and enabled on par.*60*). 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 flashing light is not working.	-	Bulb / LED blown or flashing 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.
	SELF	**Only for TW90/800/R - TW90/820/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 confirm 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 fig. 2). By pressing the TEST button, the error can be temporarily hidden to consult the control unit parameters.
"Low power" mode does not activate.	noLP	B70/MODLP damaged / relay contact stuck.	Control exercised by H93/RX2LP/I faulty. Wiring between H93/RX2LP/I and B70/MODLP defective.
Transformer incorrectly switched off by B70/MODLP.	notr	B70/MODLP damaged / relay contact stuck.	Control exercised by H93/RX2LP/I faulty. Wiring between H93/RX2LP/I and B70/MODLP defective.

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 verifications - INFO Mode



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INFO mode may be used to view certain parameters measured by the **B70/1T** 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
r2.00	View for 3 s the firmware 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 711 00; 0113 = motor installed on the right 711 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~ (nominal), bUS= 28.5 mains voltage = 207 V~ (-10%), bUS= 25.5 mains voltage = 253 V~ (+10%), bUS= 31.6
CAP	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.
tIm	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.

18.1 B74/BCONNECT mode

Use of the B74/BCONNECT must be enabled by setting par.L0=01; by default this parameter is 00 (disabled).
The use of the device requires disabling the low-power management (L100), as described in section 9.4.
By inserting **B74/BCONNECT** in the **WIFI** connector, all the functions are managed through internet browser and devices such as smartphones, tablets, PCs, exploiting WiFi communication, tablet, PC, all the functionalities of the central unit are managed, using the WiFi communication.

For further information consult the installation manual of the connection module **B74/BCONNECT** connection module.

Remote assistance" mode
Allows access and therefore the management of all the data of the control unit only in cloud mode and therefore with remote management.
When remote assistance is enabled, the message **ASCC** (assistance connect controlled) appears on the display.
By pressing the **TEST** button this message disappears for 10 seconds, and it is possible to access the parameters and other functions of the display.
After 30 minutes the display goes into stand-by, if the display is awakened by pressing a key the flashing ASCC reappears.

"Emergency operation" mode
This mode is used to exclude motor and safety alarms (e.g. photocells and sensitive edges), allowing the automation to open and close at low speed and with the operator present, with movement of the leaves only in the presence of a persistent command (when the command is released, the automation stop).
Emergency operation is indicated by activation of the flashing light at a higher frequency.
Two types of "emergency" mode are possible: residential or condominium.
1) **residential** (flashing **L-ES** display indication): the PP command (from the terminal board or radio control) is initially managed as an opening command; only when complete opening has been reached will activation of the command send it to closing. Only when complete closure has been achieved will the command be able to open again.
2) **condominium** (flashing **L-EM** display indication): the PP command is initially managed as an opening command, but once it has been fully opened the leaves no longer close.
In this mode the display stand-by is not activated, always indicating the mode in progress.
By pressing the **TEST** button this message disappears for 10 seconds, and it is possible to access the parameters and other functions of the display.

ASCC	"Remote assistance" mode enabled
L-ES	"Residential emergency operation" mode enabled
L-EM	"Condominium emergency operation" mode enabled

19 Operation without limit switches

If magnetic limit switches are not installed (par. *60 00*, limit switches disabled or WAY automation), the stroke programming or position recovery procedure causes the leaf (or the boom) to press against the mechanical stops.

Only for TW90 automation: once the procedure has been completed, the sash moves back by the number of revolutions set by parameters *25* and *26*, and in subsequent manoeuvres the sash always stops ahead of the mechanical stops.
Attention! Ensure that the value of par.*23* is always less than or at most equal to par.*25*; the same applies to par.*24* with respect to par.*26*

20 Mechanical release

In the absence of mains voltage and power supply from batteries (if fitted), the gate can be unlocked. For systems with TW90/800/R - TW90/820/R the gate can be moved by hand without unlocking it.
If the gate releases with the controller unit powered, the message *StoP* flashes on the display.

For further information, refer to the locking/release operation in the manual of the automation system **TW90** or **WAY**.

When the release system is restored to the normal operating position, if the gate is not completely open or completely closed (by activating the corresponding limit switch, if installed and enabled, *600 1*) or if limit switches are not installed (*6000*), the control initiates a position recovery procedure (see chapter 21).
ATTENTION! The release sensor for TW90 automations is magnetic and must be powered in order to detect the position of the release pin. When the control unit is in standby mode (only for TW90/800), power saving mode switches off the sensor, which loses its function.
It is therefore only permitted to unlock the automation when there is no mains power supply, in order to avoid incorrect or dangerous operating situations when a command is received (the door slamming against the stop because the control unit has not detected the release being activated and has therefore not activated the position recovery mode).

21 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 (not activating one of the two limit switches, if installed and enabled), the control initiates a position recovery procedure:

- The gate starts a low speed manoeuvre.
- The flashing light flashes with a different duty cycle than normal (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 it is completed.
- For TW90 without limit switches and for WAY automations, the position is lost even after 3 consecutive impacts occurring in the same position.

In the presence of limit switches (60 01)

- If the gate leaf is in the fully open or fully closed position, the position recovery procedure is as follows: the gate clears the limit switch, stops briefly and resumes operation at the speed set in parameters 40 and/or 41. Arrival at the opposite limit switch takes place at the reduced speed set automatically (irrespective of the settings of parameters 13, 14 and 42), recovering position control with maximum precision.
- If, on the other hand, the leaf is in an intermediate position, it runs at reduced speed and the activation of one of the two limit switches allows immediate recovery of the position.

Without limit switch (60 00)

The execution of a complete stroke, from one mechanical stop to the other, allows the position to be recovered. The leaf retracts by the number of revolutions chosen in paragraphs 25, 26 (only for TW90 automation).

- Only for **TW90/800/R - TW90/820/R** motor. If the control unit, which activates the electric brake when the motor is stopped, detects a manual movement of more than 3 cm from the initial position, it sends a movement command that returns the door to its position.

22 Initial testing

The testing must be performed by qualified 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 defined by the standards EN 12453 and EN 12445.

Make sure that the provisions in "GENERIC WARNINGS" are observed.

- Turn on the power supply.
- Check that all connected controls are working correctly.
- Check that the release pin works correctly. The message STOP must flash 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 (if installed). If necessary, change the setting of the parameter determining the motor position (right, left).
- 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 TW90 with limit switches installed).
- If 'low power' mode is enabled (par: L1 not equal to 00), perform a test as indicated in paragraph 9.4 (forced activation by pressing 4 buttons simultaneously).
- **Only for TW90/800/R - TW90/820/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 TW90/800/R - TW90/820/R.** If there are batteries, disconnect the mains power and check that the display shows bAtt. If SELF is displayed followed by ALIM, change the red and black cables connection to the POWER-IN terminal strips, as indicated in fig 2.
- Only for **barrier WAY**: check the correct balancing of the rod (spring adjustment).

Declaration CE of Conformity

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

– 2014/35/UE LVD Standard; – 2014/30/UE EMC Standard; – 2014/53/UE RED Standard; – 2011/65/UE RoHS Standard

and that all the standards and/or technical requirements indicated as follows have been applied:
EN 61000-6-3; EN IEC 61000-6-2; EN 60335-1

Place: Mogliano V.to Date: 03/06/2023 Signature