FW
P5.05

HW
03

CE



IS160 Rev.24 09/12/2025

EDGE1

centrale di comando per cancelli battenti

Istruzioni originali

ROGER BRUSHLESS

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 instalador
NL - Aanwijzingen en waarschuwingen voor de installateur
PL - Instrukcja i ostrzeżenia dla instalatora

ROGER TECHNOLOGY

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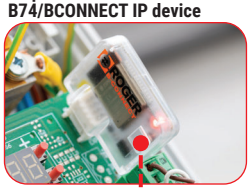
FRANÇAIS

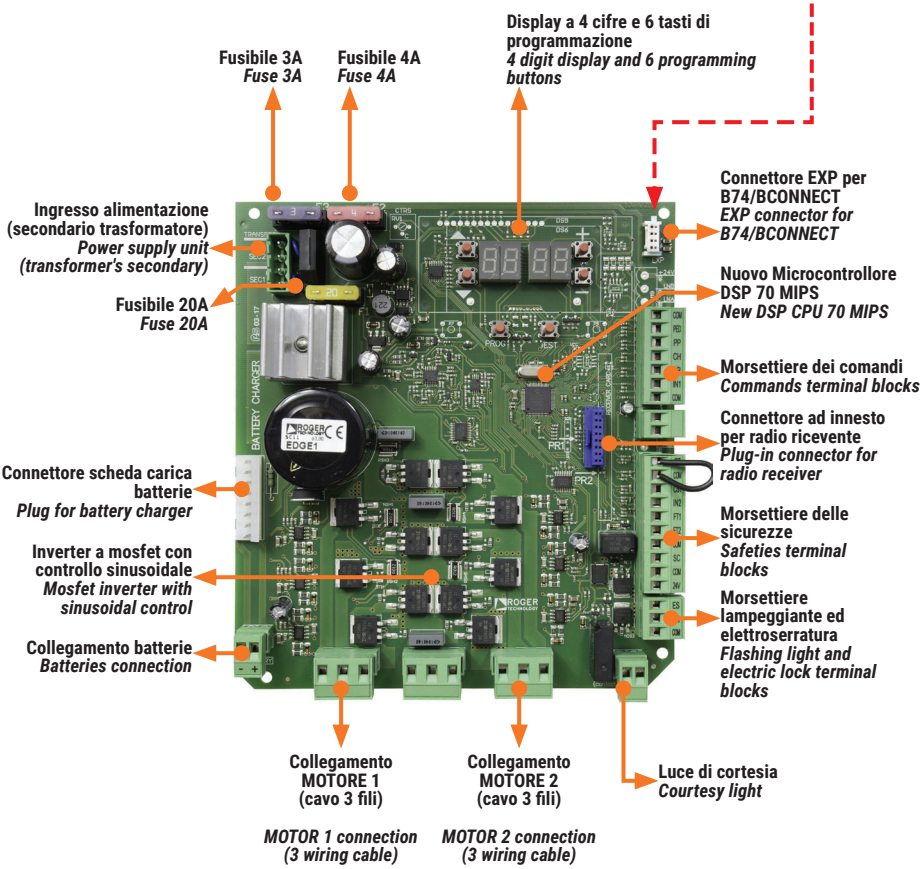
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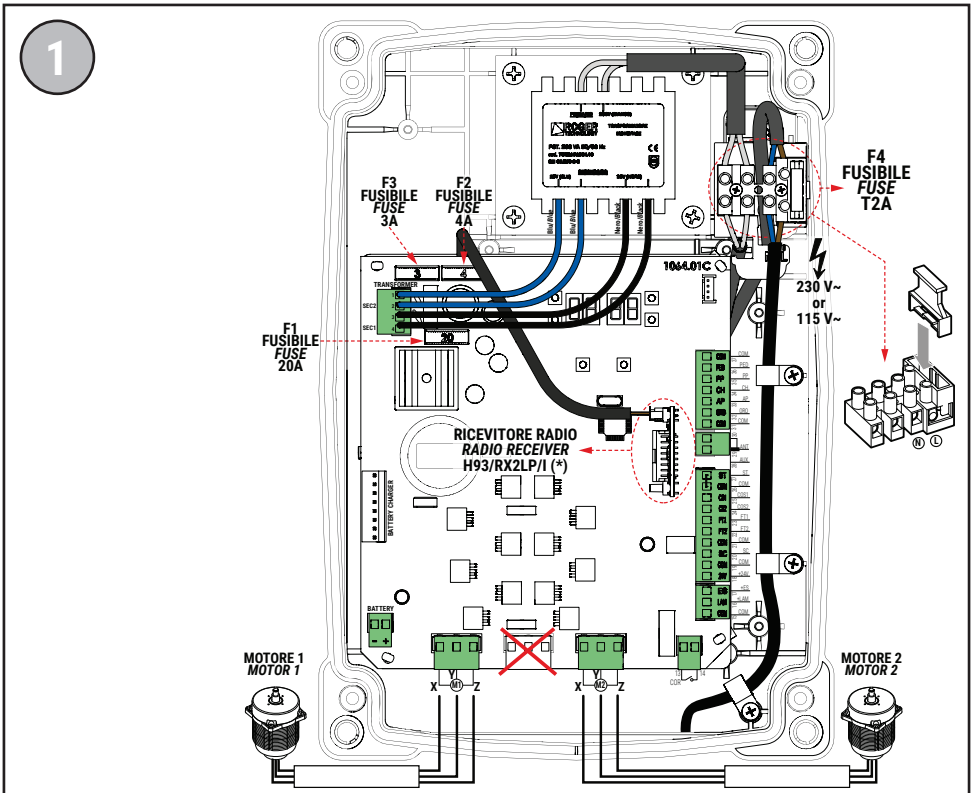
Illustrazioni e schemi - Pictures and schemes - Bilder und Pläne
Ilustrations et schémas - Ilustraciones y esquemas - Ilustrações e esquemas

FW
P5.05

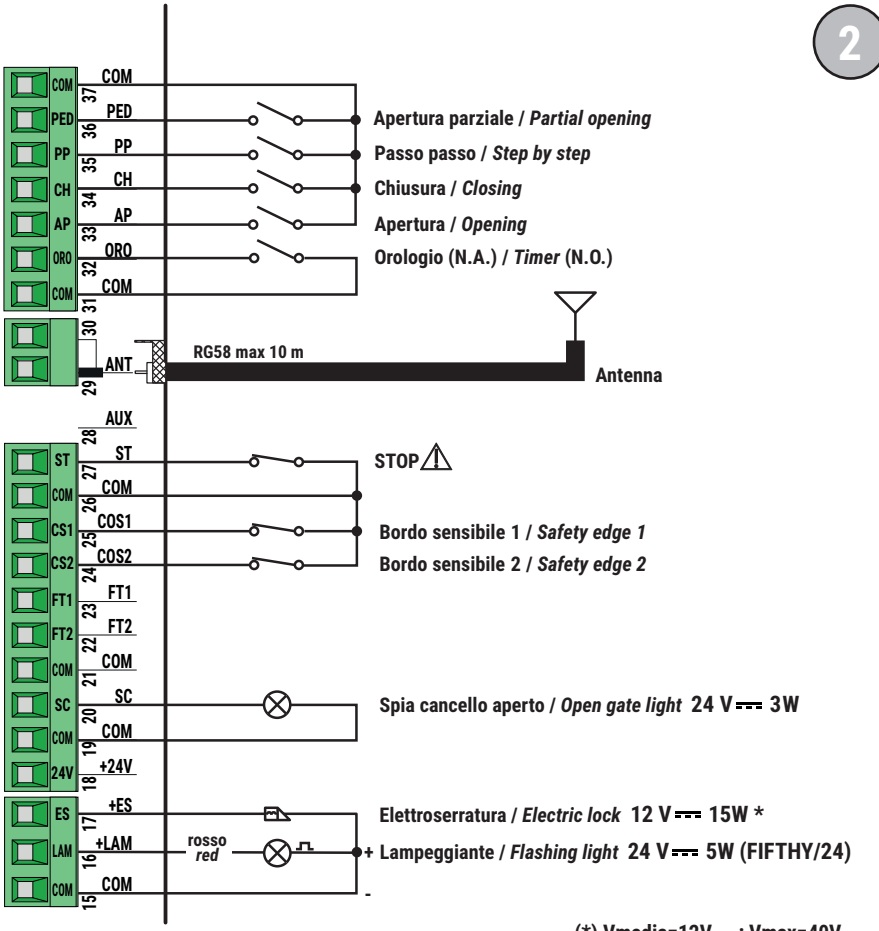
HW
03







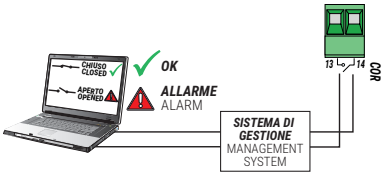
(*) Avvalendosi del dispositivo B70/MODLP collegato mediante cablaggio a 3 fili al ricevitore H93/RX2LP/I, la centrale controlla lo stato di funzionamento entrando dopo un tempo di inattività prestabilito nella modalità "low power" / *Using the B70/MODLP device connected via 3-wire cabling to the H93/RX2LP/I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



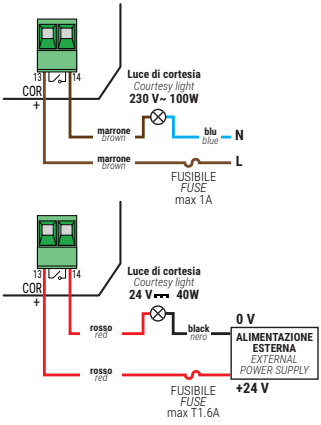
(*) Vmedia=12V⎓; Vmax=40V⎓
(*) Vaverage=12V⎓; Vmax=40V⎓



Utilizzo alternativo dell'uscita COR (par. 18 diverso da 00).
Alternative use of COR output (par. 18 different from 00).



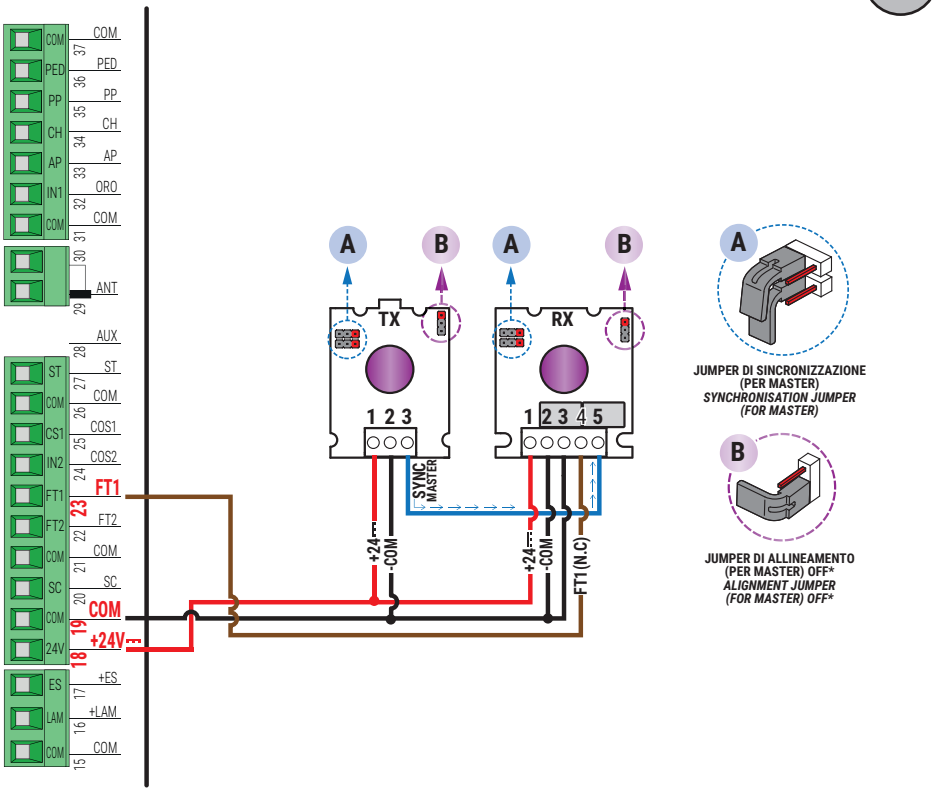
L'utilizzo è possibile solo disabilitando la modalità low-power (L 100)
Use is only possible by disabling low-power mode (L 100)



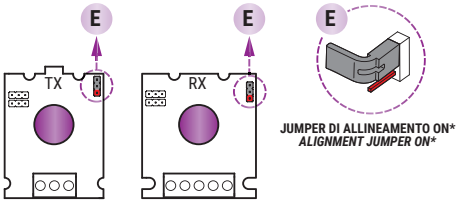
COLLEGAMENTO CON 1 COPPIA FOTOCELLULE SINCRONIZZATE (MODALITÁ NORMALE, SOLO COPPIA MASTER)
CONNECTION WITH 1 SYNCHRONISED PHOTOCELL PAIR (NORMAL MODE, MASTER PAIR ONLY)

ROSSO = libero da jumper
RED = jumper free

4



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

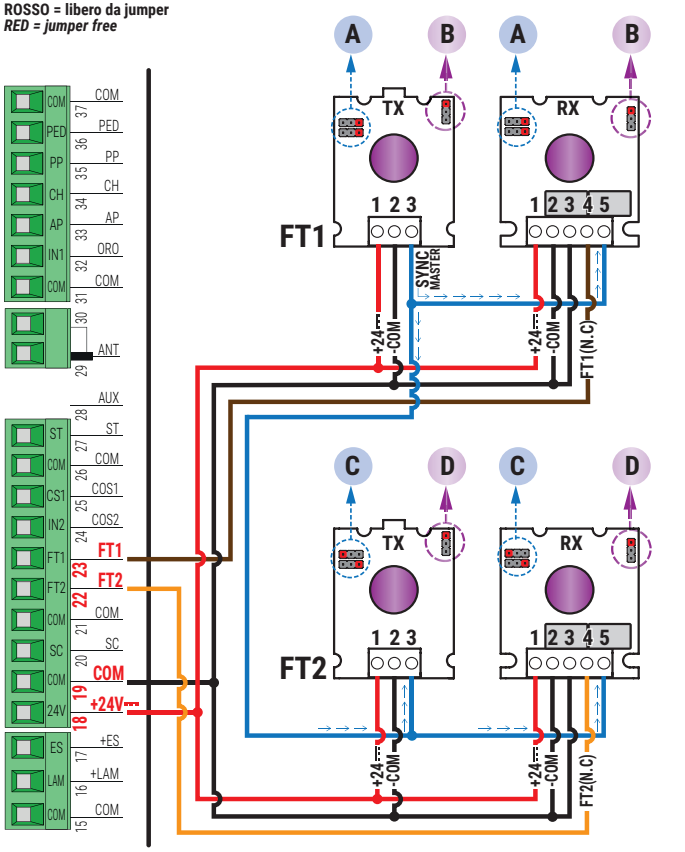


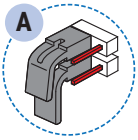
ATTENZIONE! Modificare la posizione dei jumper di sincronizzazione o di allineamento solamente quando le fotocellule sono **NON ALIMENTATE**! La configurazione scelta con i jumper viene memorizzata dalle fotocellule solamente all'accensione delle fotocellule.
Scollegare la morsettiera della centrale 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

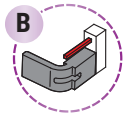
COLLEGAMENTO CON 2 COPPIE FOTOCELLULE SINCRONIZZATE (MODALITÁ NORMALE, 1 MASTER E 1 SLAVE)
CONNECTION WITH 2 SYNCHRONISED PHOTOCELL PAIRS (NORMAL MODE, 1 MASTER AND 1 SLAVE)

ROSSO = libero da jumper
RED = jumper free

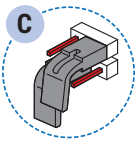




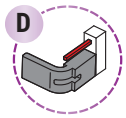
JUMPER DI SINCRONIZZAZIONE (PER MASTER)
SYNCHRONISATION JUMPER (FOR MASTER)



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

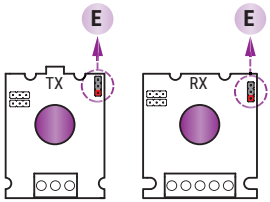


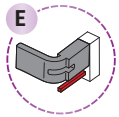
JUMPER DI SINCRONIZZAZIONE (PER SLAVE1)
SYNCHRONISATION JUMPER (FOR SLAVE1)



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.

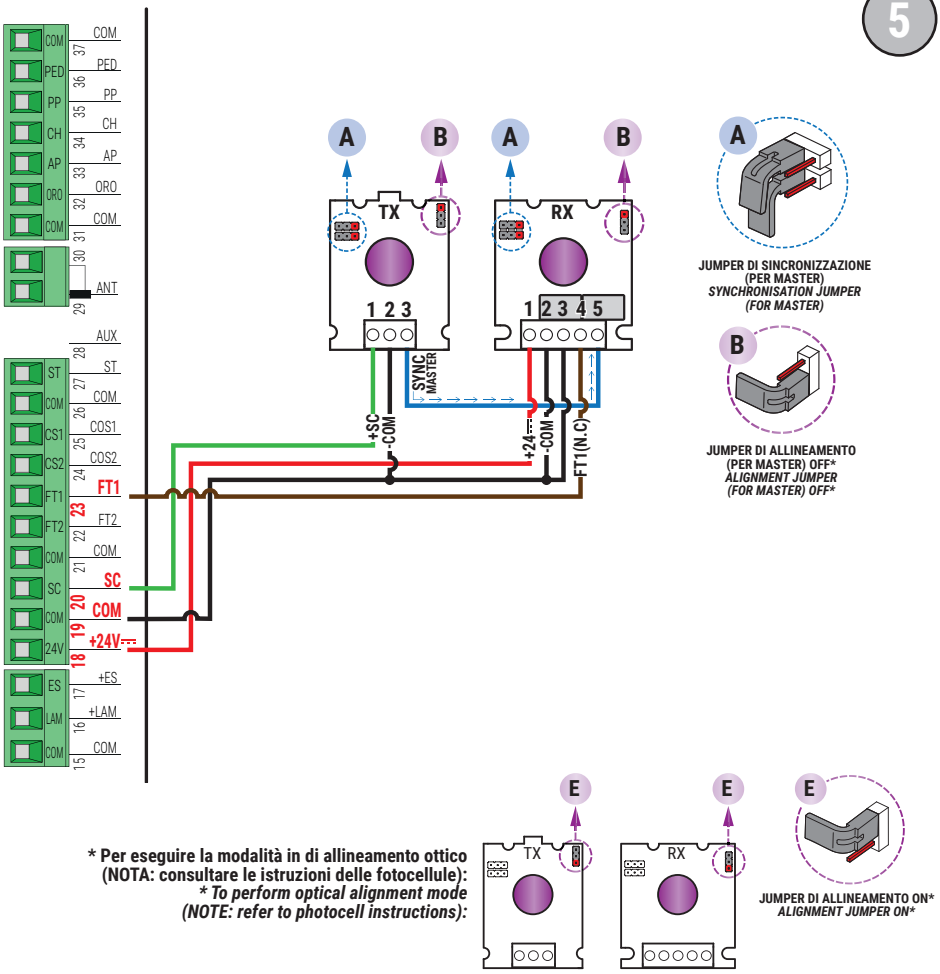
SI RACCOMANDA L' USO DI fotocellule Serie **F4ES - F4S / RECOMMENDED USE for** Series **F4ES - F4S** photocells

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

5



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):***

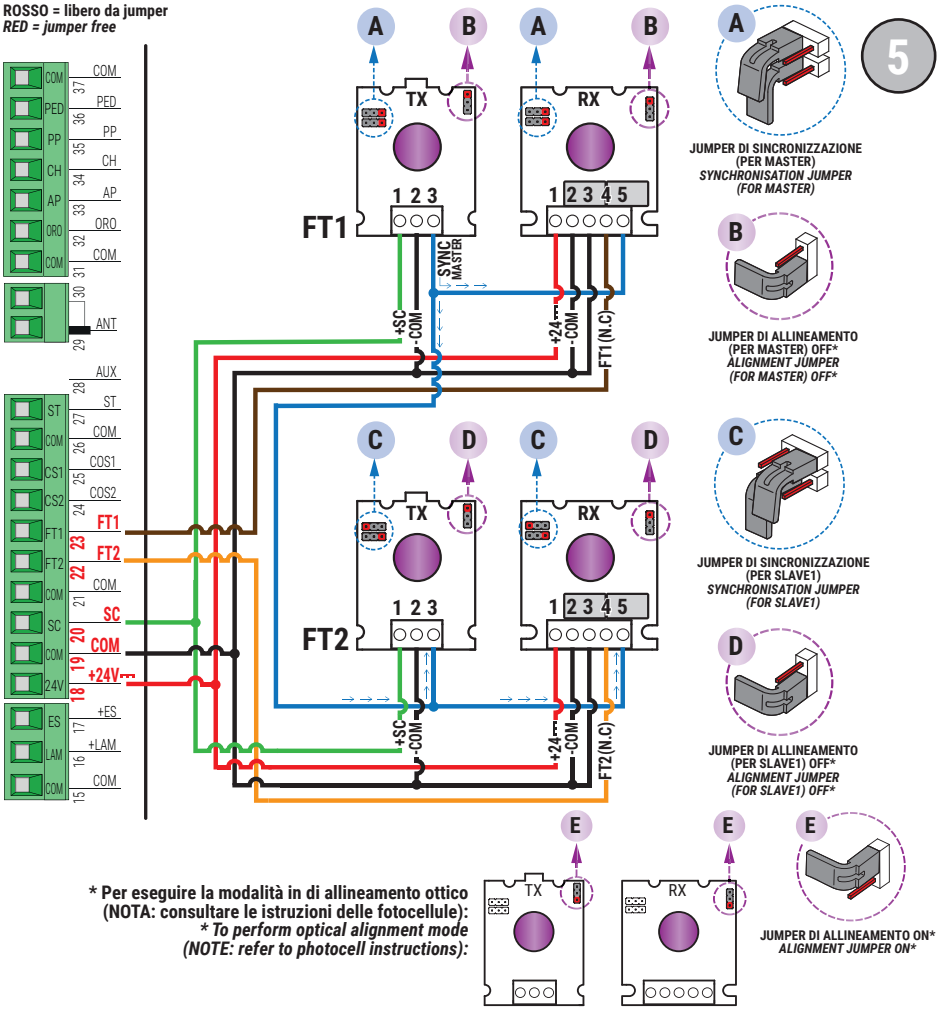
JUMPER DI ALLINEAMENTO ON*
ALIGNMENT JUMPER ON*

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

TEST FOTOCELLULE · PHOTOCELLS TEST (A8 02)

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)



*** 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.

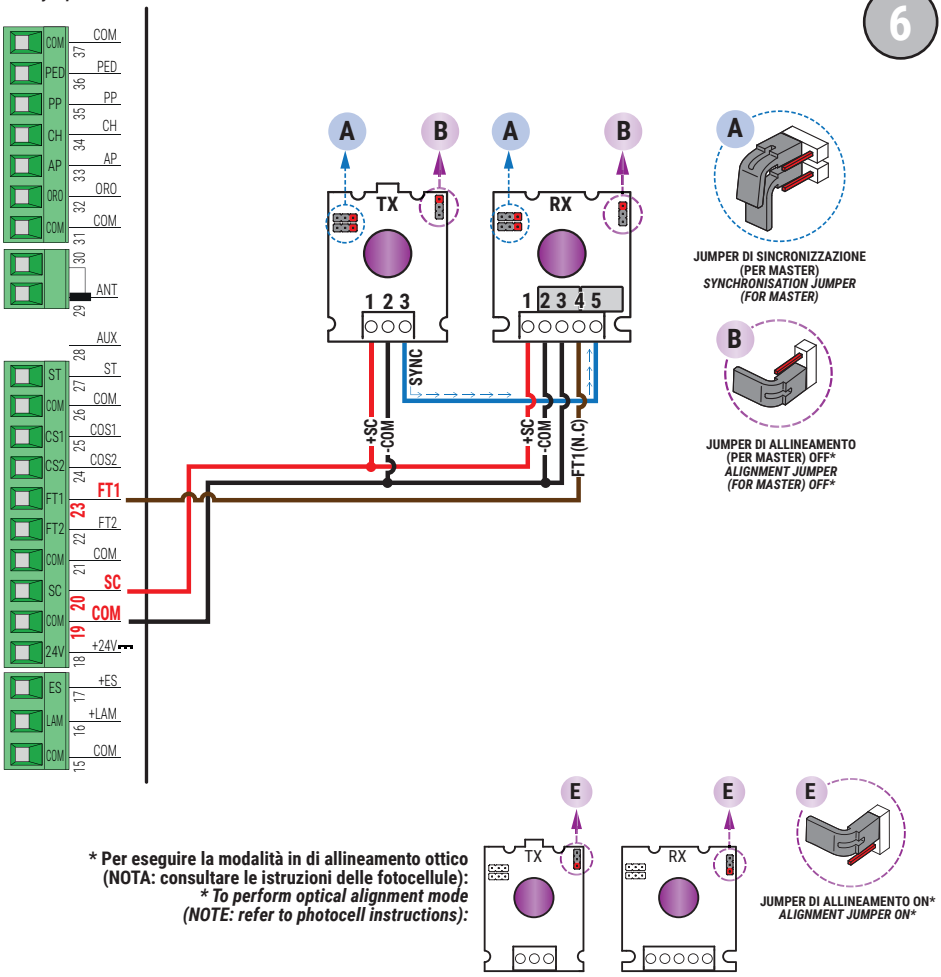
SI RACCOMANDA L' USO DI fotocellule Serie **F4ES - F4S / RECOMMENDED USE for** Series **F4ES - F4S** photocells

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

6



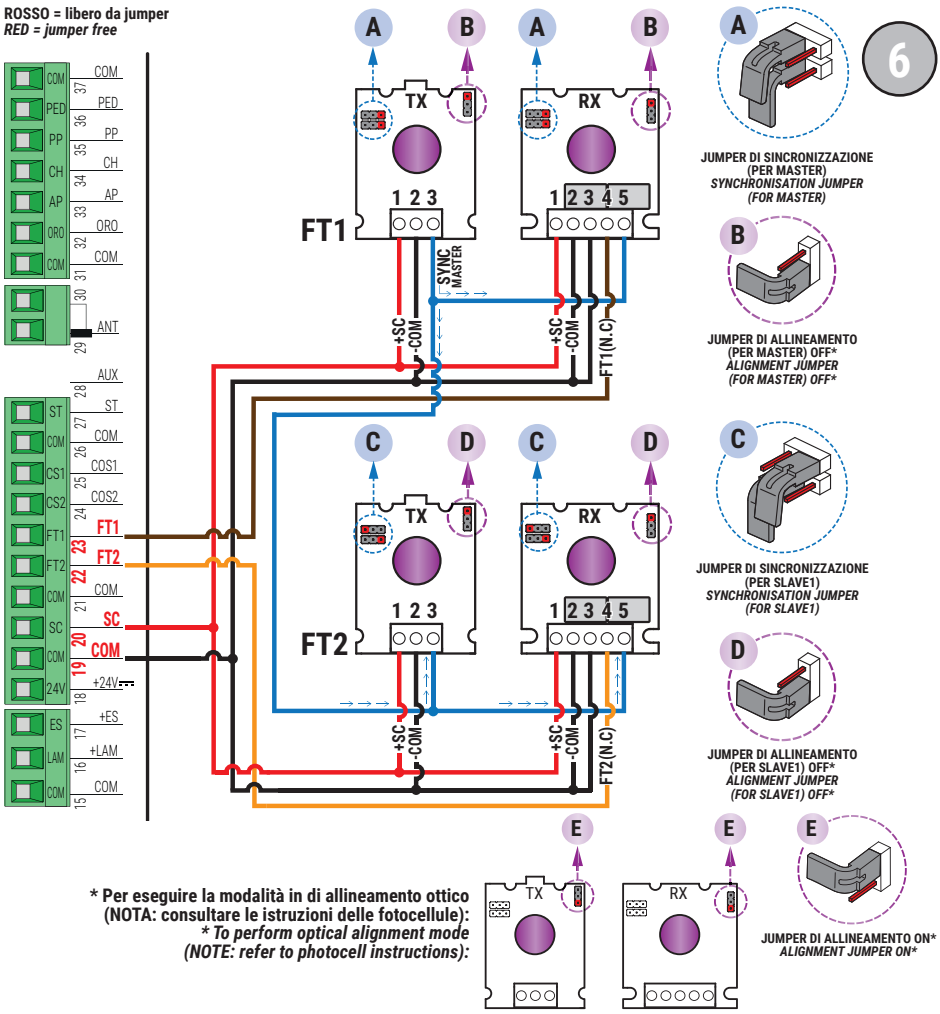
*** Per eseguire la modalità in di allineamento ottico (NOTA: consultare le istruzioni delle fotocellule):**
**** To perform optical alignment mode (NOTE: refer to photocell instructions):***

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 (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)

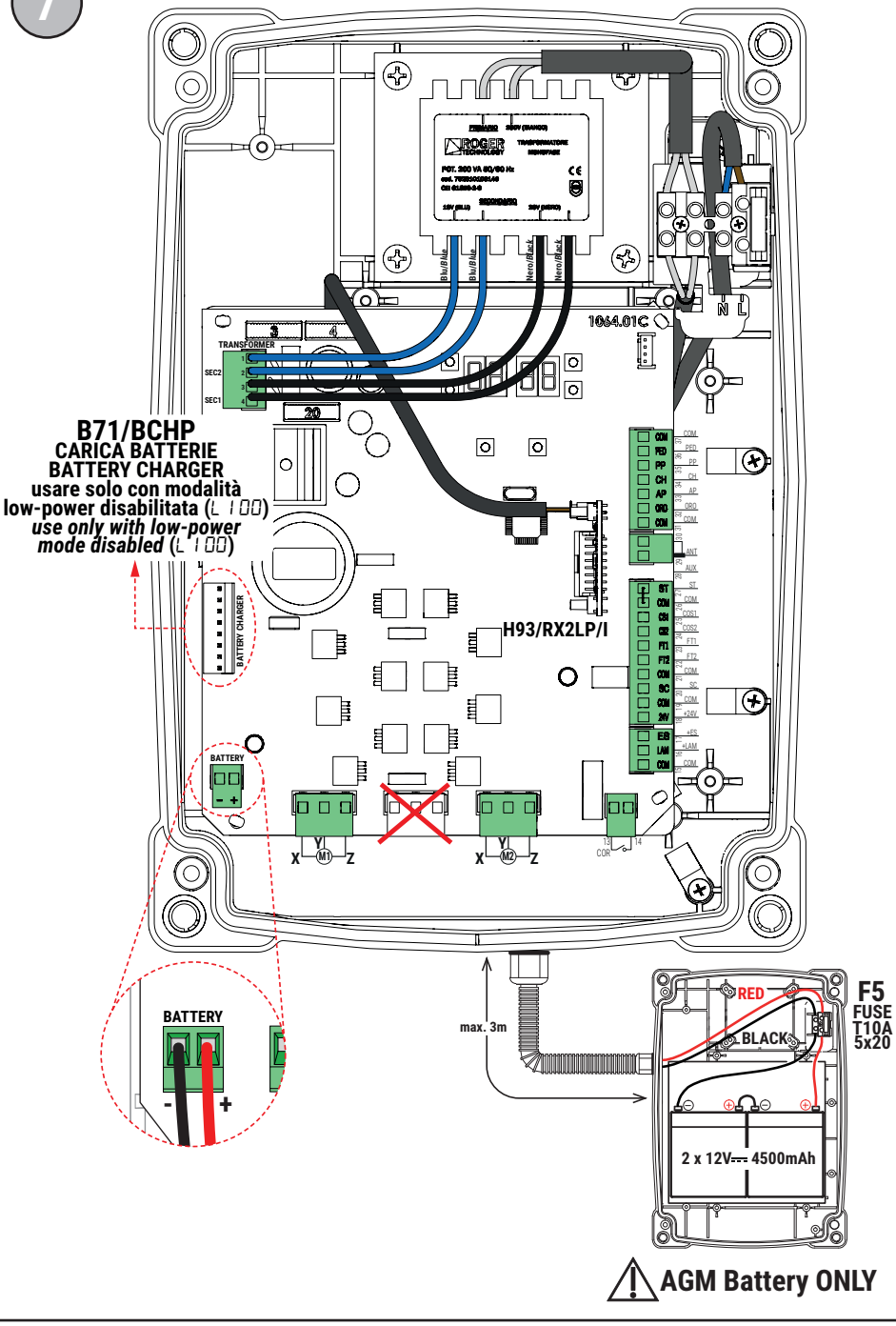


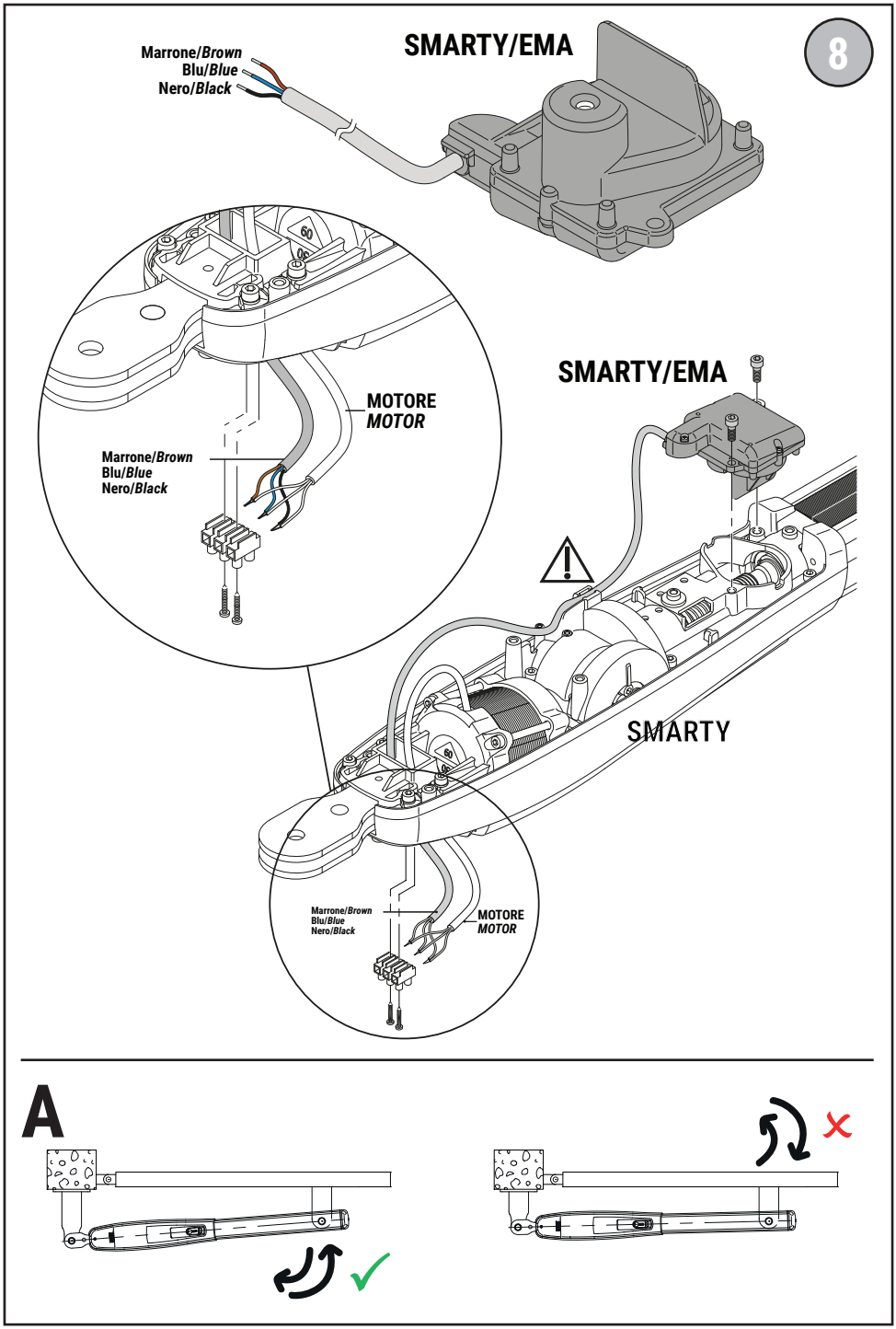
*** Per eseguire la modalità in di allineamento ottico (NOTA: consultare le istruzioni delle fotocellule):**
**** To perform optical alignment mode (NOTE: refer to photocell instructions):***

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.

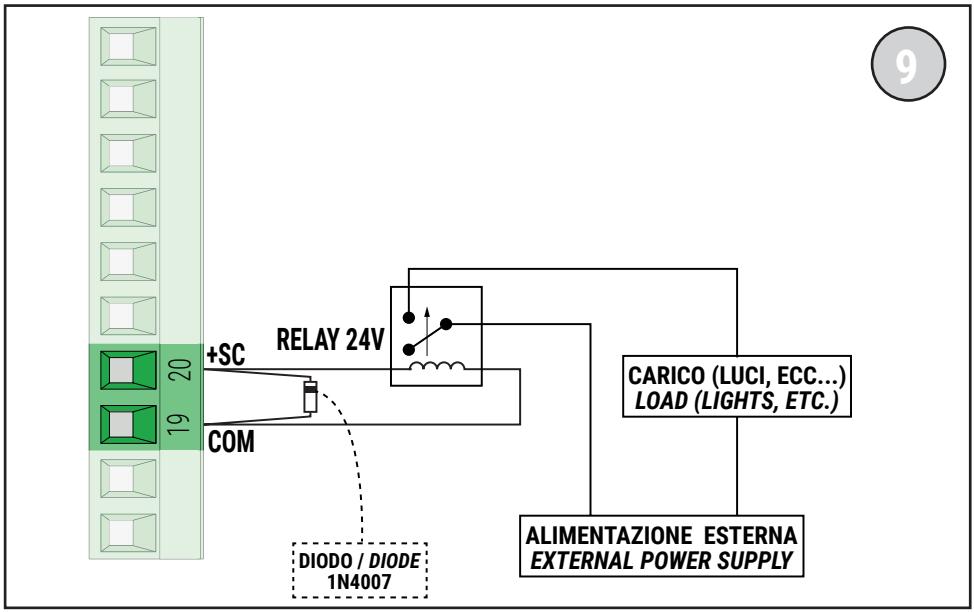
SI RACCOMANDA L' USO DI fotocellule Serie **F4ES - F4S / RECOMMENDED USE for** Series **F4ES - F4S** photocells

7


B71/BCHP
CARICA BATTERIE
BATTERY CHARGER
usare solo con modalità
low-power disabilitata (L100)
use only with low-power
mode disabled (L100)
H93/RX2LP/I
1064.01C
TRANSFORMER
BATTERY CHARGER
BATTERY
BLU/Blue
Nero/Black
N L
X Y Z
M1
M2
COR
max. 3m
RED
BLACK
F5
FUSE
T10A
5x20
2 x 12V⎓ 4500mAh
AGM Battery ONLY


8
SMARTY/EMA
Marrone/Brown
Blu/Blue
Nero/Black
MOTORE
MOTOR
Marrone/Brown
Blu/Blue
Nero/Black
SMARTY/EMA
SMARTY
Marrone/Brown
Blu/Blue
Nero/Black
MOTORE
MOTOR
A

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



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 36V⎓ **EDGE1** control unit controls 1 or 2 ROGER brushless motors in sensorless mode for applications on large sized or heavy gate wings.

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

Use the same type of motor for both gate leaves in automation installations for double leaf swing gates.
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.
Adjust the opening and closure speed, deceleration and delay settings appropriately for the specific installation, ensuring that the gate leaves overlap correctly.
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 automation installation manual of the connected automation

3 Updates of version P5.05

1. Improved motor control management for the BR21 series (par.A I = 04) and BR21/HS series (par.A I = 10)
2. Improved and more efficient data management with B74/BCONNECT
3. Improved clock management

4 Technical characteristics of product

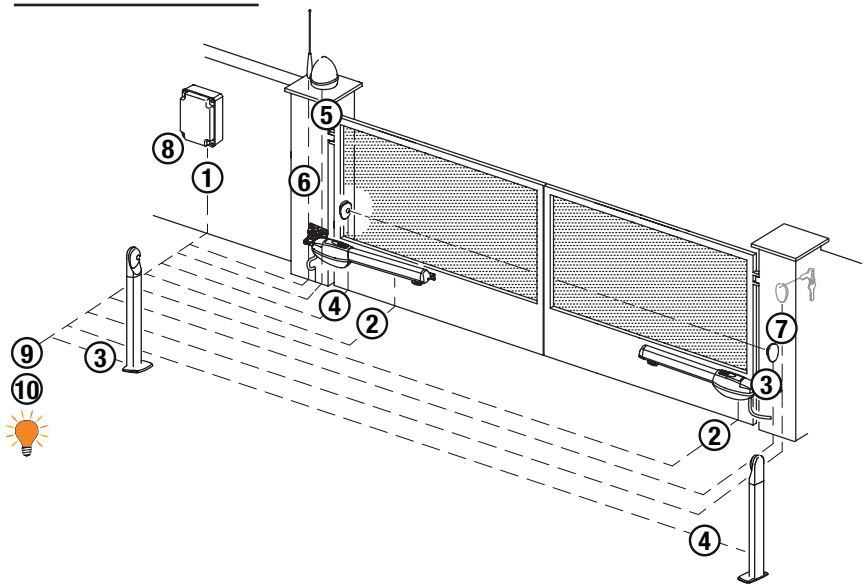
	EDGE1/BOX	EDGE1/115/BOX
MAINS POWER VOLTAGE	230 V~ ± 10% 50/60 Hz	115 V~ ± 10% 50/60 Hz
STAND-BY CONSUMPTION	≤0.5 W	
CONSUMPTION WAITING FOR COMMANDS WITH STAND-BY NOT ACTIVE	8 W (*)	
MAXIMUM MAINS POWER ABSORPTION	230 W	
INRUSH POWER	600 W	
FUSES	**F1** = 20A (ATO257) motor power circuit protection **F2** = 4A (ATO257) electric lock protection **F3** = 3A (ATO257) accessories power supply protection **F4** = T2A (5x20 mm) primary transformer coil protection	
CONNECTABLE MOTORS	2	
MOTOR POWER SUPPLY	36 V~, variable frequency, with self-protected inverter	
MOTOR TYPE	Sinusoidal drive brushless (ROGER BRUSHLESS)	
MOTOR CONTROL TYPE	Sensorless field oriented control (FOC)	
RATED MOTOR POWER	60 W	
MAXIMUM POWER FOR ONE MOTOR	250 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⎓	
ELECTRIC LOCK POWER	15 W 12 V⎓ (medium voltage) (**)	
MAXIMUM ACCESSORY CURRENT ABSORPTION	20 W 24 V⎓ (750 mA)	
OPERATING TEMPERATURE	-20°C +55°C	
DEGREE OF PROTECTION	IP54	
PRODUCT DIMENSION	dimensions in mm 330x230x115 Weight: 3,9 kg	

(*) 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 electric lock output provides a voltage of 36V⎓ nominal (max 40V⎓) modulated to 30% (30% ON, 70% OFF). The device to be connected must therefore be able to withstand a maximum voltage of 40V⎓.

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

5.1 Typical installation



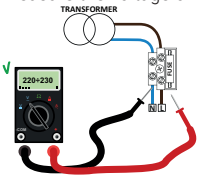
It is the installer's responsibility to verify the adequacy of the cables in relation to the devices used in the installation and their technical characteristics.

		Recommended cable
1	Power supply	H07RN-F 2x1,5 mm² double insulated cable
2	Motor 1	Cable 3x2,5 mm² (max 10 m) - 3x4 mm² (max 30 m)
	Motor 2	Cable 3x2,5 mm² (max 10 m) - 3x4 mm² (max 30 m)
3	Photocells - Receiver **F4ES/F4S**	Cable 5x0,5 mm² (max 20 m)
4	Photocells - Transmitter **F4ES/F4S**	Cable 3x0,5 mm² (max 20 m)
5	Flashing light **FIFTHY/24**	Cable 2x1 mm² (max 10 m)
6	Antenna	Cable 50 Ohm RG58 (max 10 m)
7	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)
8	**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**
9	Gate open indicator	Cable 2x0,5 mm² (max 10 m)
10	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 Electrical connections

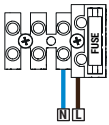
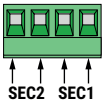
A switch or an omnipolar cut-off switch with a contact opening of at least 3 mm must be installed on the mains power line; put the cut-off switch in OFF position and disconnect any buffer batteries before performing any cleaning or maintenance operations.
Ensure that an adequate residual current circuit 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 2G1.5 type electric cable and connect it to the terminals L (brown) and N (blue), located inside the control panel box.
Strip the insulation from the ends of the power cable wires which will be connected to the terminal (fig. 1-2), 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 EDGE1 control unit.
- 115V~ ±10% for the EDGE1/115/BOX 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.

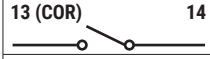
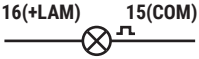
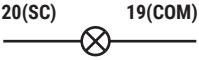
Connections to the electrical distribution network and to any other low-voltage conductors in the external section to the electrical panel must be on an independent path and separate from the connections to the command and safety devices (SELV = Safety Extra Low Voltage).
Make sure that the mains power 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 230V~ ±10% 50/60 Hz connection (115 V~ ± 10% 50/60Hz). Fuse 5x20 T2A.
	Secondary transformer input for 26V~ motor power (SEC1) and for 19V~ power to logical control and peripheral devices (SEC2). **N.B.**: Ready wired in factory by ROGER TECHNOLOGY.
X-Y-Z 	Connection to ROGER brushless MOTOR 1. **Warning!** If the motor rotates in the wrong direction, simply swap any two of the three motor connectors. Check the connections illustrated in fig. 1.
Z-Y-X 	Connection to ROGER brushless MOTOR 2. **Warning!** If the motor rotates in the wrong direction, simply swap any two of the three motor connectors. Check the connections illustrated in fig. 1.
BATTERY 	Connection to **B71/BCHP** (see fig. 7) **See instructions for B71/BCHP for further information.**

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, 73 and 74.

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

CONTACT	DESCRIPTION
13 (COR) **14** 	Output (potential free contact) for connecting courtesy light. 230V~ 100 W - 24V~/⎓ 40 W (fig. 3).
13 (COR) **14**	Error alert contact only, for: • control unit in alarm / battery supply error (low battery); • gate completely open / gate completely closed (fig. 3). The COR output operating mode is managed by parameter 18. The voltage level of the battery can be set via parameter 85.
16(+LAM) **15(COM)** 	Connection for flashing light (24V⎓ - duty cycle 50%) (fig. 2). The settings for the pre-manoeuvre flashing warning signal may be selected with parameter 45, while the flashing mode is set with parameter 78.
17(+ES) **15(COM)** 	Input for connecting electric lock, 12V⎓ max. 15 W (fig. 2). The function of the electric lock is determined by parameter 28 - 29. Vmedia=12V⎓, Vmax=40V⎓, see table "PRODUCT TECHNICAL FEATURES"
18(+24V) **15(COM)**	Power feed for external devices; see table "PRODUCT TECHNICAL FEATURES"
20(SC) **19(COM)** 	Connection for gate open indicator lamp. 24V⎓ 3 W (fig. 2). The function of the indicator lamp is determined by parameter A8.
20(SC) **19(COM)** 	Photocell test connection and/or battery saving (fig. 5 and 6). The power feed for the photocell transmitters (TX) may be connected to this. Set the parameter A8 02 to enable the test function. Each time a command is received, the control unit switches the photocells off and on to check that the contact changes state correctly. Power feeds for all external devices may be connected to reduce battery consumption (if batteries are used). Set A8 03 or A8 04. **WARNING!** If contact **20 (SC)** is used for the photocell test function or battery saving function, a gate open indicator lamp cannot be connected.
22(FT2) **21(COM)** 	Input (N.C. or 8.2 kOhm) for connecting photocells **FT2** (fig. 4-5-6). 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. – 57 00. NC (normally closed) incoming contact. If the photocells are not installed, jumper the terminals **21(COM) - 22(FT2)** or set the parameters 53 00 and 54 00. **WARNING!** Use **R90/F4ES**, **G90/F4ES** or **T90/F4S** series photocells.
23(FT1) **21(COM)** 	Input (N.C. or 8.2 kOhm) for connecting photocells **FT1** (fig. 4-5-6). 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. – 57 00. NC (normally closed) incoming contact. If the photocells are not installed, jumper the terminals **23(FT1) - 21(COM)** or set the parameters 50 00 and 51 00. **WARNING!** Use **R90/F4ES**, **G90/F4ES** or **T90/F4S** series photocells.
24(COS2) **26(COM)** 	Input (NC or 8 kOhm) for connecting sensing edge **COS2**. The sensing edge is configured by default with the following settings: – 74 00. The sensing edge COS2 (NC contact) is disabled. If the sensing edge is not installed, jumper the terminals **24(COS2) - 26(COM)** or set the parameter 74 00.

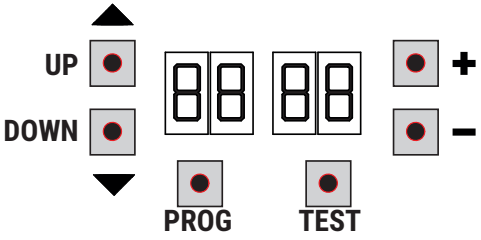
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CONTACT	DESCRIPTION
25(COS1) 26(COM)	Input (NC or 8 kOhm) for connecting sensing edge **COS1** (fig. 2). The sensing edge is configured by default with the following settings: – 7303. If the sensing edge COS1 (NC contact) is enabled, the gate always reverses. If the sensing edge is not installed, jumper the terminals **25(COS1) - 26(COM)** or set the parameter 7300.
27(ST) 26(COM)	STOP command input (N.C. or 8.2 kOhm). The current manoeuvre is arrested if the safety contact opens. **N.B.:** the controller is supplied with this contact already jumpered by ROGER TECHNOLOGY. The contact is configured by default with the following settings: – 5700. (normally closed) incoming contact.
29 (ANT) 30	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.
32(ORO) 31(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.
33(AP) 37(COM)	Open control signal input (N.O.). **IMPORTANT**: persistent activation of the opening command prevents automatic reclosure; the automatic reclosure time count is resumed when the opening command is released.
34(CH) 37(COM)	Close command input (N.O.).
35(PP) 37(COM)	Step by step mode command input (N.O.). The function of the control is determined by parameter A4.
36(PED) 37(COM)	Partial open control signal input (N.O.). On double leaf gate automation systems, by default, the partial opening command opens LEAF 1 completely. With single leaf swing gate installations, by default, partial opening is 50% of total opening.
ABSOLUTE ENCODER (SMARTY EMA)	Absolute encoder installed on SMARTY Series motors. Its installation (which is a factory standard for reversible SMARTY motors) makes it impossible to use SMARTY motors to open the door outwards (fig. 8, detail A). During travel acquisition, the encoder reading is acquired in the completely open and completely closed positions. During normal operation, the encoder reading is acquired at each motor start, except in the case of direction inversion due to activation of the sensing edge, the obstacle detection system or the photocells, or requested by the user with a command. **N.B.**: The absolute encoder is connected in parallel with the motor phases. Normally, the encoder will emit a short audible signal (whistle). If no audible signal is heard, the encoder may be disconnected, absent or damaged. For **SMARTY REVERSIBLE**: the encoder is already assembled and installed in the factory by ROGER TECHNOLOGY. The reading of the position by absolute encoder, only when the door is completely closed or open, is preceded by a slow rotation of the motor (duration 1 second) which discharges the mechanical voltage from the reduction before starting the manoeuvre. This ensures a softer start and eliminates any noise. For **SMARTY IRREVERSIBLE**: product code **SMARTY/EMA** is available for installing the encoder on the motor. Enable the encoder with the parameter 7101 and perform the travel acquisition procedure. **IMPORTANT**: before programming the travel, make sure you have selected the correct motor model via parameter A1. An incorrect setting will prevent the absolute encoder from working. If parameter A1 is modified with **SMARTY/EMA** installed, repeat the travel acquisition procedure
RECEIVER CARD H93/RX2LP/I	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). 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.

CONTACT	DESCRIPTION
BATTERY CHARGER B71/BCHP Version HW 02	The use of the battery charger and buffer batteries is only possible by disabling the "low power" mode (L 100). (Fig. 7) IIn the absence of mains voltage, the central network gets powered by the batteries, the display shows bAtt and the flashing light gets activated with reduced frequency, until mains power is restored or until the battery voltage drops below the minimum permissible limit. In this case, bttL0 (Battery Low) is shown on the display and the control unit accepts no commands. If mains power is lost while the gate is moving, the gate stops and then automatically resumes the interrupted manoeuvre after 2 seconds. N.B: in battery power mode, a fixed delay time of 1.5 s is applied even if delay times are disabled with parameters 25 and 26. To reduce battery consumption, the positive power feed wire of the photocell transmitters and receiver may be connected to terminal **SC** (see fig. 5-6). Set A8 03 or A8 04. In this configuration, the control unit disconnects power from the accessory devices when the gate is completely open or completely closed. **WARNING!** the batteries must always be connected to the electronic control unit in order to charge. Periodically (at least every 6 months), check that the batteries are in good working order. For more information, refer to the installation manual for the **B71/BCHP** battery charger.
BATTERY KIT (B71/BCHP/EXT) 2x12V⎓ 4,5 Ah Only **AGM** type	
EXP	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).

EN

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

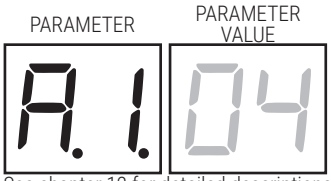
Power the control unit.
The firmware version of the control unit is displayed briefly.
Version installed: P5.05.



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

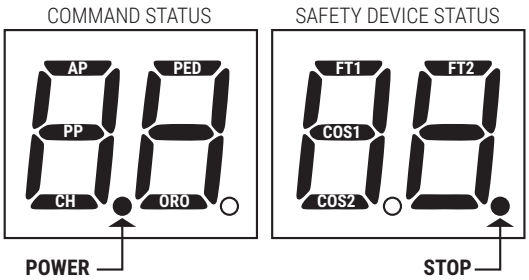
9 Display function modes

9.1 Parameter display mode



See chapter 12 for detailed descriptions of the parameters.

9.2 Command and safety device status display mode



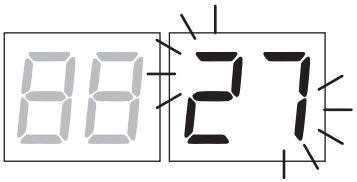
COMMAND STATUS:
The command status indicators on the display (segments **AP** = open, **PP** = step mode, **CH** = close, **PED** = partial opening, **ORO**= clock) are normally off. They illuminate when a command is received (e.g.: when a step mode command is received, the segment **PP** illuminates).
SAFETY DEVICE STATUS:
The safety device status indicators on the display (segments **FT1/FT2**=photocells, **COS1/COS2** = sensing edges, **STOP**) are normally on. If an indicator is off, the relative device is in alarm state or is not connected.
The an indicator is flashing, the relative device has been disabled with a specific parameter.

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 gate 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.

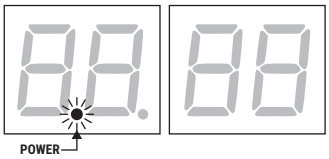


The status of the safety devices/inputs is shown on the right hand side of the display. The number of the terminal relative to the safety device in alarm state flashes.
Example: STOP contact in alarm state.

00	No safety device in alarm state, and no limit switch activated
27	STOP.
25	Sensing edge COS1.
24	Sensing edge COS2.
23	Photocell FT1.
22	Photocell FT2.
dAtA	Parameter 71 modified. Press the **PROG** key until APP- appears on the display, then repeat the acquisition procedure (see chap. 10).

NOTA: If one or more contacts are open, the gate will not open or close.
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, and furthermore in the specific case of the EDGE1 control unit its communication line interferes with the control of the B70/MODLP. 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 half a second: 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

The OR command brings the automation to complete opening, typically for a period of time well in excess of the 20 minute maximum time for stand-by to be activated; consequently when the OR contact opens (to request closure) the control unit wakes up and performs the manoeuvre.

Waking up from stand-by is indicated by the display message "Act 1", 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 the system to function correctly, the gate travel must be acquired by the control.

10.1 Before starting

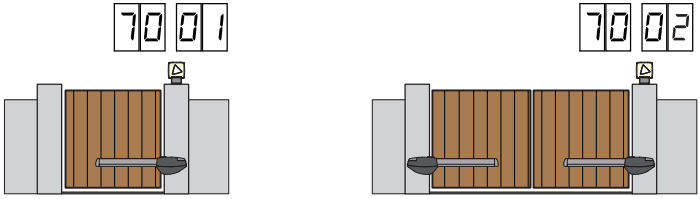
1. Select the automation system model installed with the parameter *A 1*.

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

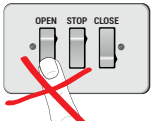
SELECTION	MODEL		MOTOR TYPE	CONFIGURATIONS
A 1 01	**BE20/200/HS**		RAPID	-
A 1 02	**Serie BR20**		-	-
A 1 03	**BH23/282**		-	-
A 1 04	**BR21/351, BR21/361, BR21/362**		-	-
A 1 05	**SMARTY5**		-	**If SMARTY/EMA is installed, set** *7 1 01* **NB:** the position data request message *dAtA* appears on the display whenever this parameter is modified. Press the PROG key until *APP-* appears on the display, then repeat the acquisition procedure (see chap. 10).
	SMARTY7			
A 1 06	**SMARTY7R**			Set *64 01* and *7 1 01* **NB:** the position data request message *dAtA* appears on the display whenever this parameter is modified. Press the PROG key until *APP-* appears on the display, then repeat the acquisition procedure (see chap. 10).
A 1 07	**SMARTY5R5**			Set *64 01* and *7 1 01* **NB:** the position data request message *dAtA* appears on the display whenever this parameter is modified. Press the PROG key until *APP-* appears on the display, then repeat the acquisition procedure (see chap. 10).
A 1 08	**SMARTY4HS**		RAPID	**If SMARTY/EMA is installed, set** *7 1 01* **NB:** the position data request message *dAtA* appears on the display whenever this parameter is modified. Press the PROG key until *APP-* appears on the display, then repeat the acquisition procedure (see chap. 10).
A 1 09	**BH23/252/HS**		RAPID	-
A 1 10	**BR21/351/HS, BR21/361/HS**		RAPID	-
A 1 11	**BE20/400**		-	-
	MONOS4		-	-
A 1 12	**BR20/400/R**			-

Attention: The motors of the **SMARTY** series with **SMARTY/EMA** installed must not be installed to open the door towards the outside (fig. 8/A).

2. Select the number of motors installed with the parameter 70. This parameter is set for two motors by default.



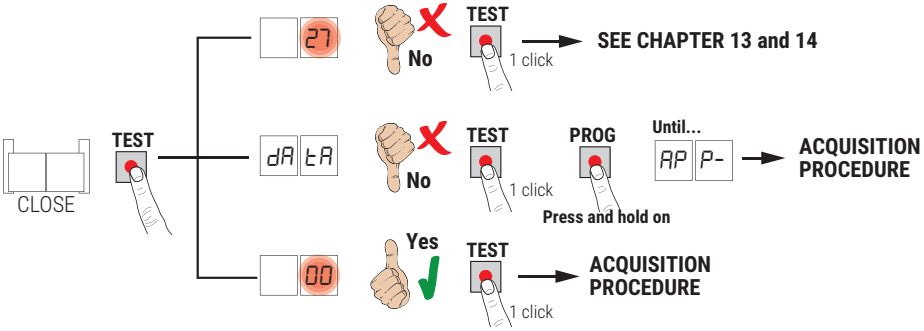
3. Check that the operator present function is not enabled (A7 00).



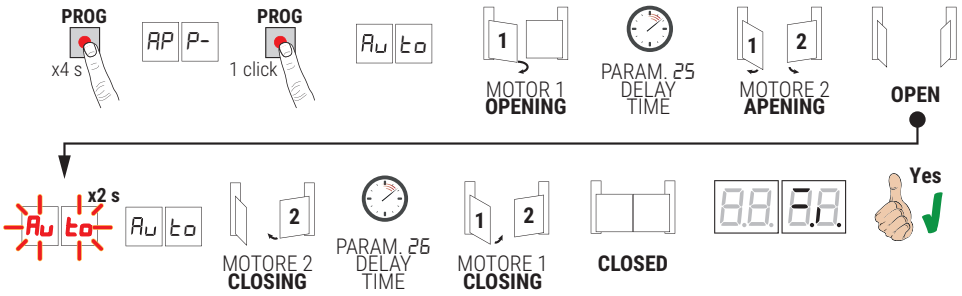
4. Install mechanical stops in both the open and closed positions.

5. Move the gate into the closed position. The gate leaves must be against the mechanical stops.

6. Press **TEST** (see TEST mode in chapter 9) 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, 51, 53, 54, 73 and 74).



10.2 Acquisition procedure



- Press and hold **PROG** for 4 seconds. AP P- is shown on the display.
- Press **PROG** again. Auto is shown on the display.
- MOTOR 1 starts opening at low speed.
- After the delay time set with parameter 25 (with a default time setting of 3 s), MOTOR 2 starts an opening manoeuvre.
- Once the gate open mechanical stop is reached, the gate stops briefly. The message Auto flashes on the display for 2 s.
- When the message Auto stops flashing and is steadily lit on the display, MOTOR 2 closes first and then, after a delay set with parameter 26 (default setting 5 s), MOTOR 1 closes until the gate closed mechanical stop is reached.

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:
- 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 TEST to clear the error, and check that both gate leaves are fully closed before launching a new acquisition procedure.

For more information, see chapter 14 “Alarms and faults”.

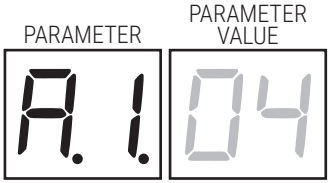
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12 Parameters menu



A104	**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	**BE20/200/HS** - **IRREVERSIBLE** *HIGH-SPEED* piston.
02	**BR20** series - **IRREVERSIBLE** piston.
03	**BH23/282** - Gear motor with **IRREVERSIBLE** articulated arm.
04	**BR21/351** - Underground **IRREVERSIBLE** gear motor. **BR21/361** - Underground **IRREVERSIBLE** gear motor. **BR21/362** - Underground **IRREVERSIBLE** gear motor.
05	**SMARTY 5** or **SMARTY 7** - **IRREVERSIBLE** piston.
06	**SMARTY 7R** - **REVERSIBLE** piston. **IMPORTANT:** set b4 01 and 7101.
07	**SMARTY 5R5** - **REVERSIBLE** piston. **IMPORTANT:** set b4 01 and 7101.
08	**SMARTY 4HS** - **IRREVERSIBLE** piston *HIGH-SPEED*.
09	**BH23/252/HS -** Gear motor with **IRREVERSIBLE** *HIGH-SPEED* articulated arm.
10	**BR21/351/HS -** Underground **IRREVERSIBLE** *HIGH-SPEED* gear motor. **BR21/361/HS -** Underground **IRREVERSIBLE** *HIGH-SPEED* gear motor.
11	**BE20/400** - **IRREVERSIBLE** piston. **MONOS4** - **IRREVERSIBLE** piston.
12	**BR20/400/R - REVERSIBLE** piston.

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 17-18)

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.

A5 00	**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.

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

A7 00	**Enabling operator present function**
00	Disabled.
01	Enabled. The open (AP) or close (CH) button must be pressed continuously to operate the gate. The gate stops when the button is released.

A8 00	**Gate open indicator / photocell test function and "battery saving"** **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. 5. **NB**: the type of photocell test can be selected by means of parameters 58 and 59.
03	Set to 03 if the output **SC** is used for the "battery saving" function. See fig. 6. When the gate is completely open or closed, the control 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. 6. **NB**: the type of photocell test can be selected by means of parameters 58 and 59.

Parameters visible ONLY if:

PARAMETER	A1 01 BE20/200/HS	A1 05 SMARTY5 o 7	A1 06 SMARTY7R	A1 07 SMARTY5R5	A1 08 SMARTY4/HS	A1 09 BH23/252/HS	A1 10 BR21/351/HS	A1 11 BE20/400	A1 12 BR20/400/R
		ONLY IF 71 01 = SMARTY/EMA ENABLED							
A9 04	**Setting deceleration MOTOR 1 during OPENING**								
10 04	**Setting deceleration MOTOR 2 during OPENING**								
01-05(*)	01= the gate decelerates near stops and the limit switch (if installed) ... 05= the gate decelerates long before stops and the limit switch (if installed). (*) 10 for SMARTY Series automations								

IF parameters A9 and 10 are visible, then:

11 04	**Setting deceleration MOTOR 1 during CLOSING**
12 04	**Setting deceleration MOTOR 2 during CLOSING**
01-05(*)	01= the gate decelerates near stops and the limit switch (if installed) ... 05= the gate decelerates long before stops and the limit switch (if installed). (*) 10 for SMARTY Series automations

11 04	**Setting deceleration MOTOR 1 during opening and closing**
12 04	**Setting deceleration MOTOR 2 during opening and closing**
01-05	01= the gate decelerates near stops and the limit switch (if installed). ... 05= the gate decelerates long before stops and the limit switch (if installed).

13 10	**Adjusting LEAF 1 position control when completely opens or closes** The value selected must ensure that LEAF 1 is opened/closed correctly when it reaches the respective (open or closed) mechanical stop. The position of LEAF 1 is calculated by the system from the number of motor revolutions and the motor reduction gear ratio. **Warning!** Excessively low values cause the gate to reverse when it reaches the gate open stop. **N.B.**: with **BR21** automation systems, with the gate leaf in the completely closed position, adjust the inner mechanical stop so that the lever of the gear motor can move by a few millimetres.
14 10	**Adjusting LEAF 2 position control when completely opens or closes** The value selected must ensure that LEAF 2 is opened/closed correctly when it reaches the respective (open or closed) mechanical stop. The position of LEAF 2 is calculated by the system from the number of motor revolutions and the motor reduction gear ratio. **Warning!** Excessively low values cause the gate to reverse when it reaches the gate closed stop. **N.B.**: with **BR21** automation systems, with the gate leaf in the completely closed position, adjust the inner mechanical stop so that the lever of the gear motor can move by a few millimetres.
01-20	Motor revolutions (01 = minimum / 20 = maximum).

15 99	**Partial opening adjustment (%)** **N.B.:** with double leaf swing gate installations, this parameter is set by default as the completely open position of LEAF 1. With single leaf swing gate installations, this parameter is set to 50% of total opening.
15-99	From 15% to 99% of total gate travel.

18 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 bt LO (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.

19 00	**Adjusting stop advance of LEAF 1 when opening**
20 00	**Adjusting stop advance of LEAF 2 when opening**
00	The leaf stops against the opening stop.
01-25	A leaf stop advance of 1 to 25 motor turns before the completely open position may be set.

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. **IMPORTANT**: persistent activation of the opening command prevents automatic reclosure; the automatic reclosure time count is resumed when the opening command is released.
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 reclosure exclusion** If enabled, the exclusion of automatic reclosure only applies for the command selected via the parameter. **For example:** if you set 22 01, automatic reclosure is excluded following an AP command, but it is activated following a PP or PED command. **NB:** a command activates a manoeuvre in the open-stop-close or close-stop-open sequence.
00	Disabled.
01	An **AP** (opening) command activates the opening manoeuvre. With the gate fully open, automatic reclosure is excluded. An **AP** (open) or **CH** (close) command activates the closure manoeuvre.
02	A **PP** (step mode) command activates the opening manoeuvre. With the gate fully open, automatic reclosure is excluded. Another **PP** (step mode) command activates the closure manoeuvre.
03	A **PED** (partial opening) command activates the partial opening manoeuvre. Automatic reclosure is excluded. Another **PED** (partial opening) command activates the closure manoeuvre.

EN

23 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.

25 03	**Adjusting opening delay (alignment) of MOTOR 2** During opening, MOTOR 2 starts with an adjustable delay after MOTOR 1.
00- 10	From 0 to 10 s.

26 05	**Adjusting closing delay (alignment) of MOTOR 1** During closing, MOTOR 1 starts with an adjustable delay after MOTOR 2.
00-30	From 0 to 30 s.

27 03	**Setting reverse time after activation of sensing edge or obstacle detection (crush prevention)** This sets the reverse manoeuvre time after activation of the sensing edge or the obstacle detection system.
00-60	From 0 to 60 s.

28 00	**Electric lock mode selection** **NOTE**: selection of the "ventouse" type electroblock automatically disables the "low power" mode (par. L 1 not visible).
00	Normally UNPOWERED electric lock (powered only for 3 s when opening starts). **N.B.**: The electric lock is enabled by parameter 29.
01	"ventouse" type electric block (normally powered when the gate is completely closed). Not powered when gate is moving.
02	"ventouse" type electric block (normally powered when the gate is completely opened or completely closed). Not powered when gate is moving.
10- 12	Electric lock of normally NOT powered type, with adjustable timing 10=0.5 seconds; 11=1 second; 12=1.5 seconds.

29 00	**Enable electric lock**
00	Disabled.
01	Enabled. When LEAF 1 approaches the gate closed stop, the controller delivers supplementary power to MOTOR 1 to latch the electric lock.
02	Enabled. When LEAF 1 approaches the gate closed stop, the controller delivers maximum power to MOTOR 1 to latch the electric lock. The obstacle detection system is disabled.

30 07	**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 SOLO **ONLY** for particularly lightweight installations not exposed to severe weather conditions (strong winds or very cold temperatures). In installations with gate leaves of different lengths, they torque value may be set separately, setting a value for parameter 33 between 01 and 09.
01-09	01= -35%; 02= -25%; 03= -16%; 04= -8% (reduced motor torque = increased sensitivity). 05= 0%. 06= +8%; 07= +16%; 08= +25%; 09= +35% (increased motor torque = reduced sensitivity).

31 15	**Setting obstacle impact force sensitivity MOTOR 1** 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. **N.B:** repeat the acquisition procedure after any change made to this parameter.
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- 19	Medium motor torque. **Recommended setting for adjusting force settings correctly.** 11 = minimum obstacle impact force ... 19 = maximum obstacle impact force.
20	Maximum motor torque. ***May only be used if the gate is equipped with a sensing edge.***

32 15	**Setting obstacle impact force sensitivity MOTOR 2** 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 (or 33, if enabled: 33 different from 10). **N.B:** repeat the acquisition procedure after any change made to this parameter.
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- 19	Medium motor torque. **Recommended setting for adjusting force settings correctly.** 11 = minimum obstacle impact force ... 19 = maximum obstacle impact force.
20	Maximum motor torque. May only be used if the gate is equipped with a sensing edge.

33 10	**Setting motor torque MOTOR 2** 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 SOLO 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= 0%. 06= +8%; 07= +16%; 08= +25%; 09= +35% (increased motor torque = reduced sensitivity).
10	The torque is set with parameter 30.

34 08	**Setting start acceleration MOTOR 1 during opening and closing**
35 08	**Setting start acceleration MOTOR 2 during opening and closing**
01- 10	01= the gate accelerates rapidly at start of manoeuvre ... 10= the gate accelerates slowly and progressively at start of manoeuvre.

38 00	**Enable electric lock release reverse impulse**
00	Disabled.
01	Enabled. The controller applies a brief closing force (max. 4 s) to release the electric lock.

40 04	**Setting opening speed (%)**
41 04	**Setting closing speed (%)**
01-05	01= 60% minimum speed ... 05= 100% maximum speed.

Parameters visible ONLY if:						
PARAMETER	A1 05 **SMARTY5 o 7**	A1 06 **SMARTY7R**	A1 07 **SMARTY5R5**	A1 08 **SMARTY4/HS**	A1 11 **BE20/400**	A1 12 **BR20/400/R**
	ONLY IF 71 01 = SMARTY/EMA ENABLED					
43 00	**Opening approach distance setting MOTOR1**					
44 00	**Opening approach distance setting MOTOR2**					
45 00	**Closing approach distance setting MOTOR1**					
46 00	**Closing approach distance setting MOTOR2**					
00-80	from min. 00 to max. 80 of turns performed by the motor at the minimum speed. Speed is setted by the control unit automatically and it isn't adjustable.					

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.

5102	**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.

5201	**Photocell (FT1) mode with gate closed** This parameter is not visible if A802 or A803 or A804 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 L100).

5300	**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.

5400	**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.

5501	**Photocell (FT2) mode with gate closed** This parameter is not visible if A8 02 or 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.

5600	**Enable close command 6 s after activation of photocell (FT1-FT2)** This parameter is not visible if A8 03 or A8 04 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 gate FT1 is crossed, a close command is sent 6 seconds later.
02	Enabled. When the photocell gate FT2 is crossed, a close command is sent 6 seconds later.

5700	**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

58 00	**Selecting the type of photocell test on input FT1** This parameter is visible if A802 or A804 is set. If the photocell test is enabled, the control unit will check the photocells connected to input FT1 are working properly. The test lasts max. 3 s OFF / 3 s ON.
59 00	**Selecting the type of photocell test on input FT2** This parameter is visible if A802 or A804 is set. If the photocell test is enabled, the control unit will check the photocells connected to input FT2 are working properly. The test lasts max. 3 s OFF / 3 s ON.
00	Photocell test disabled.
01	Photocell test enabled on opening ONLY.
02	Photocell test enabled on closure ONLY.
03	Photocell test enabled on both opening and closure.

64 00	**Reversibility management for SMARTY 5R5-SMARTY 7R automations** This parameter is visible ONLY if A1 05 or A1 07. The mechanism of the SMARTY 5R5/7R is REVERSIBLE. This parameter if enabled helps to limit the effects of reversibility. **NOTE:** Even though it is a REVERSIBLE unit, the motor is equipped with a lock release system. Enabling electrical braking excludes "low power" mode (par. L1 not visible).
00	The motor of the **SMARTY 5R5/7R** does not resist any external forces. It is therefore possible to move the leaf manually, in any direction, without unlocking the motor.
01	The motor of the **SMARTY 5R5/7R** is used as a holding brake when the power is on and when it is not rotating, holding the leaf in position with a certain braking torque. An external force applied to the leaf, if greater than the force exerted by the motor, will cause the leaf to move manually. **ATTENTION**: If the automation is to be locked in the fully open or fully closed position, it is MANDATORY to install an electric lock.

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

70 02	**Select number of motors installed** **N.B.:** if SMARTY REVERSIBLE MOTOR are used, whenever this parameter is modified repeat the acquisition procedure (see chapter 10).
01	1 motor.
02	2 motors. **IMPORTANT**: Use the same type of motor for both gate leaves.

71 00	**Enabling absolute encoder (SMARTY Series automation systems only)** ***Attention: the parameter 71 01 must be set and SMARTY/EMA installed for all applications with the SMARTY REVERSIBLE motor.*** **NB:** the position data request message dAtA appears on the display whenever this parameter is modified. Press the PROG key until APP- appears on the display, then repeat the acquisition procedure (see chapter 10). **Attention: SMARTY** motors with **SMARTY/EMA** installed must not be installed to open the door towards the outside (fig. 8, detail A).
00	Disabled.
01	Enabled. Perform or repeat the acquisition procedure to acquire the parameters relative to the installation. **N.B:** see chapter 12 for more information on the absolute encoder.

73 03	**Configuring sensing edge COS1**
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.

74 00	**Configuring sensing edge COS2**
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 opening.
14	Management of two 8k2 sensitive edges connected in parallel (total resistance 4k1). The gate always reverses.

76 00	**Configuring radio channel 1 (PR1)**
77 01	**Configuring radio channel 2 (PR2)**
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 ON-OFF (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 76 07 and 77 01 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.

78 00	**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** NOTE: the parameter is not visible if par. 18 other than 00
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.

80 00	**Clock contact configuration (ORO)** 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.

B100	**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 17-18).
00	Disabled. The parameter **B2** is not displayed.
01	Safeguarded closure 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	Safeguarded closure / opening 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**.

B203	**Setting safeguarded closure/opening activation time** **N.B.:** this parameter is not visible if the value of parameter **B1** = **00**.
02-90	Wait time settable from 2 to 90 s.
92-99	Wait time settable from 2 to 9 min.

B300	**Selecting limitations in battery operation** **N.B.**: the parameter is visible only if par. **B5** 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 **B5** and **20** are adequately set).
01	When the battery voltage drops under the threshold selected with par. **B5**, the control unit accepts only opening commands and does not perform closing.
02	When the battery voltage drops under the threshold selected with par. **B5**, 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 **B001**.
04	When the battery voltage drops to the threshold selected with par. **B5** the control unit, after a prelamping of 5s, automatically closes the gate and accepts only one opening command.

B400	**Battery type selection and consumption reduction** **NOTE:** An INCORRECT setting of this parameter, when there is no mains voltage, blocks the functions and the display shows the message **bELO** (if set to **01** or **02** and the battery is 2x12V⎓) or an error alert **bMod**.
00	Battery 24V⎓ (2x12V⎓) with B71/BCHP. Acceleration/deceleration/speed reduction enabled, to increase the battery life.
01	Battery 24V⎓ (2x12V⎓) with B71/BCHP. No performance reduction, maximum battery consumption.
02	Battery 36V⎓ (3x12V⎓) with external charger. Acceleration/deceleration/speed reduction enabled, to increase the battery life.
03	Battery 36V⎓ (3x12V⎓) with external charger. No performance reduction, maximum battery consumption.

B503	**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 **B3** and an error alert can be activated through the COR output via parameter **18**.
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⎓ for battery 2x12V⎓ ; 36.4V⎓ for battery 3x12V⎓)
02	The command becomes active when the battery voltage drops to the medium threshold (23V⎓ for battery 2x12V⎓ ; 36.8V⎓ for battery 3x12V⎓)
03	The command becomes active when the battery voltage drops to the maximum threshold (24V⎓ for battery 2x12V⎓ ; 37.2V⎓ for battery 3x12V⎓)

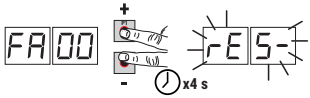
EN

86 00	**Enabling of regular maintenance activation** **N.B:** Parameter visible if any password other than the default password is set (Parameter P1÷P4). **N.B.:** in the event of a reset to restore the default parameters, this parameter must be set again manually. When the manoeuvre hour limit (set by 86 and 87) is exceeded, the visual maintenance signal is activated (e.g. every 1500 manoeuvre hours). **IMPORTANT**: "manoeuvre" means every motor opening activation. The message ASSt is shown on the display and the flashing light, with the motors stop, flashes with a regular duty cycle (1 s on / 4 s off) until system maintenance is performed and the alarm is reset. To reset the alarm, release the protection by inputting the password (CP 00) and press TEST for 5 s. The message ASSt is displayed, followed by the messages UPdt flashing for 4 seconds: to reset the alarm, hold down the TEST key until donE is displayed. If the TEST key is released, Abrt appears on the display and the alarm is not reset. The number of hours H0-H1 is stored by the control unit, and the count is reset. **N.B.:** When 8000 hours of operation are exceeded, the maintenance alarm is disabled entirely.
00	Disabled.
01	Maintenance enabled for a period = parameter value 87 x10 hours.
02	Maintenance enabled for a period = parameter value 87 x100 hours.

87 00	**Adjustment of regular maintenance activation hour counter** **N.B:** Parameter visible with parameter 86 01 or 86 02. **N.B.:** in the event of a reset to restore the default parameters, this parameter must be set again manually.
00	Disabled.
01-80	from 10 to 800 hours with parameter 86 01. from 100 to 8000 hours with parameter 86 02. Maximum limit: 8000 hours (beyond this value the maintenance alarm is disabled entirely).

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.
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, 28, 29, 64, 70, 71, 86, 87, L0, L1: after restore, check that all parameters are suitable for the installation. • Press the PLUS **+** and MINUS **-**. • 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.

	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 o0 to o1 multiplied by 100. **N.B.**: The values shown in the table are indicative only. **IMPORTANT**: "manoeuvre" means every motor activation (total opening or closure / partial opening / step mode, etc.).
o001 o123	**Manoeuvres performed.** Example: 01 23 x100 = 12.300 manoeuvres.

	View manoeuvre hour counter The number consists of the values of the parameters from h0 to h1. **N.B.**: The values shown in the table are indicative only. When the manoeuvre hour limit (set by 86 and 87) is exceeded, the visual maintenance signal is activated (e.g. every 1500 manoeuvre hours). **IMPORTANT**: "manoeuvre" means every motor opening activation. The message ASSt is shown on the display and the flashing light, with motors stop, flashes with a regular duty cycle (1 s on / 4 s off) until system maintenance is performed and the alarm is reset. To reset the alarm, release the protection by inputting the password (CP 00) and press TEST for 5 s. The message ASSt is displayed, followed by the messages UPdt flashing for 4 seconds: to reset the alarm, hold down the TEST key until donE is displayed. If the TEST key is released, Abrt appears on the display and the alarm is not reset. The number of hours H0-H1 is stored by the control unit, and the count is reset. If the value H0=80 H1=00 is exceeded (8000 hours of operation) the maintenance alarm is no longer managed.
h001 h123	**Manoeuvre hours.** Example: 01 23 = 123 hours.

	View control unit days on counter The number consists of the values of the parameters from d0 to d1. **N.B.**: The values shown in the table are indicative only.
d001 d123	**Days with unit switched on.** Example: 01 23 = 123 days.

	Password Setting a password prevents unauthorised persons from accessing the settings. With password protection active (CP=01), parameters may be viewed, but the values CANNOT be 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, P2, P3, P4 = 00 • Use the UP ▲ and/or DOWN ▼ buttons to view the parameter CP. • Press and hold the **+** and **-** buttons for 4 seconds. • The display 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.

13 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 27	The safety **STOP** contact is open. Incorrect setting of parameter 57.	Check that parameter 57 is set correctly	Install a **STOP** button (NC) or jumper the **ST** contact with the **COM** contact.
88 25	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 24	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 23	Photocell **FT1** not connected or incorrectly connected. Incorrect setting of parameter 57.	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 (figure 4).
88 22	Photocell **FT2** not connected or incorrectly connected. Incorrect setting of parameter 57.	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 (figure 4).
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 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.

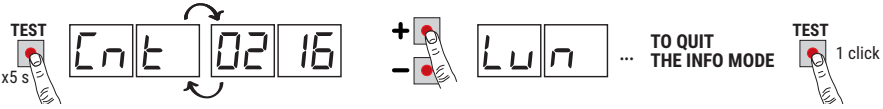
14 Alarms and faults

PROBLEM	ALARM	POSSIBLE CAUSE	ACTION
The gate does not open or close.	**POWER** LED off	No power.	Check power cable.
	POWER LED off	Fuses blown.	Replace fuse. Always disconnect from mains power before removing fuses.
	OFSt	Input mains power voltage fault. Control initialisation failed.	Disconnect from mains power, wait 10 sec. 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.
	PrOt	Overcurrent detected in inverter.	Press the **TEST** button twice or perform 3 command requests in succession.
	SECO	Incorrect connection between SEC1 and SEC2 of the transformer.	Swap the connection between SEC1 and SEC2.
	dAtA	Incorrect travel length values.	Press the TEST button and check the safety device/s in alarm state and the connections of the safety devices. Check that the mechanical stops of MOTOR 1 and MOTOR 2 are positioned correctly. Repeat acquisition procedure.
		Parameter 7 1 modified	The position data request message dAtA appears on the display whenever this parameter is modified. Press the PROG key until APP- appears on the display, then repeat the acquisition procedure (see chapter 10).
	Mot 1	Motor 1 not connected.	Check the motor cable.
	Mot2	Motor 2 not connected.	Check the motor cable.
	FUSE	Fuse F1 blown or damaged. This message is not visible if controller is in battery power mode.	Replace fuse. Always disconnect from mains power before removing and refitting fuses.
	example: 1SEE 2 1EE	Configuration parameter error.	Set configuration value correctly and save.
	En 1 1	MOTOR 1 encoder not responding, absent or faulty.	Check encoder connection. Replacing the encoder is recommended if the problem persists.
	En2 1	MOTOR 2 encoder not responding, absent or faulty.	Check encoder connection. Replacing the encoder is recommended if the problem persists.
	En 12	Communication error between controller and MOTOR 1 encoder.	Check connection of MOTOR 1.
	En22	Communication error between controller and MOTOR 2 encoder.	Check connection of MOTOR 2.
	En 13	Minor malfunction of MOTOR 1 encoder.	Check connection of MOTOR 1. Check power voltage of controller.
	En23	Minor malfunction of MOTOR 2 encoder.	Check connection of MOTOR 2. Check power voltage of controller.
	En 14	Encoder MOTOR 1 encoder magnet malfunction. Severe encoder error.	Replacing the encoder is recommended if the problem persists.
	En24	Encoder MOTOR 2 encoder magnet malfunction. Severe encoder error.	Replacing the encoder is recommended if the problem persists.
	En 15	Position detected of MOTOR 1 incongruent with travel length.	Check the setting of parameter A 1 and repeat the learning procedure. Replacing the encoder is recommended if the problem persists.
	En 15	Incorrect installation of the motors	Verify the correct installation of the motors. SMARTY motors with SMARTY/EMA installed must not be installed to open the door towards the outside (fig. 8, detail A).

PROBLEM	ALARM	POSSIBLE CAUSE	ACTION
The gate does not open or close.	En25	Position detected of MOTOR 2 incongruent with travel length.	Check the setting of parameter A1 and repeat the learning procedure. Replacing the encoder is recommended if the problem persists.
		Incorrect installation of the motors	Verify the correct installation of the motors. SMARTY motors with SMARTY/EMA installed must not be installed to open the door towards the outside (fig. 8, detail A).
	btLO (btLO)	Flat batteries.	Wait for mains power to be restored.
	FALL	The motor supply voltage is dropping, the control unit is assessing whether this is due to a broken fuse or actual low battery voltage.	No intervention, it is a waiting phase to give a definite certain signal (btLO or FUSE).
Acquisition procedure does not complete correctly.	APP.E	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.
	APPL	Travel length error.	Move gate into completely closed position and repeat the procedure.
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.
	-	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.
With gate stops, the flashing light flashes with a regular duty cycle (1 s on / 4 s off).	ASSt (ASSt)	Maintenance alarm.	Perform a maintenance programm. To reset the alarm, release the protection by inputting the password (CPOD) and press TEST for 5 s. The message ASSt is displayed, followed by the messages UPdt flashing for 4 seconds: to reset the alarm, hold down the TEST key until donE is displayed. If the TEST key is released, Abrt appears on the display and the alarm is not reset. The manoeuvre counter resets. The number of hours H0-H1 is stored by the control unit, and the count is reset. N.B.: when 8000 hours of manoeuvres are exceeded, the maintenance alarm is disabled entirely.
Message POS together with audible warning signal. (with SMARTY/ EMA only)	POS1 (POS1)	Notification that MOTOR 1 position reading is in progress.	At start of each manoeuvre, the control unit acquires the position of MOTOR 1. If the position is not read successfully, the message En11 is shown on the display.
	POS2 (POS2)	Notification that MOTOR 2 position reading is in progress.	At start of each manoeuvre, the control unit acquires the position of MOTOR 2. If the position is not read successfully, the message En21 is shown on the display.
Gate open indicator lamp does not work.	-	Bulb blown or wires disconnected.	Check the bulb and/or wires.
Gate does not perform desired manoeuvre.	-	Motor leads crossed.	Swap two wires on terminal X-Y-Z or Z-Y-X.
	bMod	Incorrect selection of the battery type.	Change the value of the parameter B4.
"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.

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.

15 Procedural verifications - INFO Mode

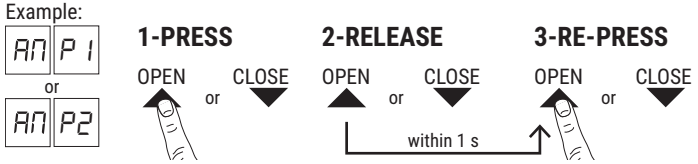


INFO mode may be used to view certain parameters measured by the **EDGE1** controller.
Press and hold the TEST button for 5 seconds from the "View command signals and safety devices" mode with the motor stationary. The control unit displays the following parameters and the corresponding measured values in sequence:

Parameter		Function
PS.05		View for 3 s the firmware version of the control unit.
CnE1	CnE2	Displays the position of MOTOR 1 / MOTOR 2, expressed in revolutions and relative to total length, at the time of the test.
Lun1	Lun2	View total length of MOTOR 1/ MOTOR 2 programmed travel , in motor revolutions.
rPM1	rPM2	View MOTOR 1 /MOTOR 2 speed, in revolutions per minute (rPM).
AMP1	AMP2	View current absorption of MOTOR 1/MOTOR 2, in Amperes (e.g.: 001.1 = 1,1 A .... 016.5 = 16,5 A). If the MOTOR 1 / MOTOR 2 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= 230V~ (nominal), bUS= 31.6 mains voltage= 207V~ (-10%), bUS= 33.6 mains voltage= 253V~ (+10%), bUS= 41.6
CMP1	CMP2	Display current, expressed in Amperes, used to compensate for strain detected by MOTOR 1 / MOTOR 2 due, for example, to low external temperatures (e.g.: 0 = 0 A ... 4 = +3 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 1 / MOTOR 2.
ASC1	ASC2	Display current threshold, expressed in Amperes, at which the obstacle detection function (crush prevention) of MOTOR 1 / MOTOR 2 is triggered. This value is calculated automatically by the controller in relation to the settings of parameters 30, 31 and 32. For the motor to function correctly, AMP must always be lower than the value ASC.
tIn1	tIn2	Indicates time taken by motor to detect an obstacle, as set with parameter 31/32, 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.
Ab51	Ab52	MOTOR 1 / MOTOR 2 status OK indicator. In normal conditions, this value is less than 500. If the value exceeds 2000, the controller disables the motor. A value exceeding 500 indicates that the characteristics of the connection cable are inadequate for the installation or that the connection cable is too long or of inadequate cross section, or may indicate an electrical fault of the brushless motor.
UP		If the control unit is capable of identifying the position of the gate leaf when the test is conducted, the following is shown on the display: UP__ position known, normal operation. UP1_ LEAF 1 position unknown, position recovery in progress. UP_1 LEAF 2 position unknown, position recovery in progress. UP12 positions of both leaves 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.
HOUr		Displays the number of hours remaining before the maintenance alarm is activated. The number is preceded by a – (minus) symbol. If the number of remaining hours is a four figure value, the minus symbol (–) is replaced by a point. Example: -1234 hours remaining until maintenance alarm = .1234 • Pressing ▼ (DOWN arrow): view number of hours of last maintenance service. The first service is indicated as 0.0.0.0. . • Pressing ▲ (UP arrow): return to remaining hours display.
bLoc		Displays 00= motor brake not active; 10=brake active on motor 1; 02=brake active on motor 2; 12= brake active on both motors; -- -- = brake function not available.

- If only one motor is connected to the control unit, the parameters relative to "MOTOR 1" only are displayed.
- 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.
- The two motors may be controlled independently in OPERATOR PRESENT mode, ignoring the position data request message "dREA" and bypassing the safety devices installed (photocells, sensing edges and STOP button) with the

exception of the obstacle detection system. MOTOR 1 is controllable when the messages: Cnt 1, rPM 1, AMP 1 and Ab5 1 appear on the display. MOTOR 2 is controllable when the messages Cnt2, rPM2, AMP2 and Ab52 appear on the display.



- THE MOTOR in question is activated on opening by pressing the ▲"UP ARROW" key, or on closure by pressing the ▼ "DOWN ARROW" key.
- For safety, the open and close functions are only available in continuous control (operator present) mode: press the button, release within 1 second and then press and hold. The motor stops as soon as the button is released.
  WARNING: during the check, the motor revolution count (position) is updated but the gate leaf alignment control function may cause problems. Before exiting INFO, make sure that the gate leaves are correctly aligned.
- Press and hold the **TEST** button for a few seconds to exit INFO mode.

15.1 B74/BCONNECT mode

Use of the B74/BCONNECT must be enabled by setting par.LO=01; by default this parameter is 00 (disabled).
The use of the device requires disabling the low-power management (L 100), as described in section 9.4.
By inserting **B74/BCONNECT** in the **EXP** 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 leaves 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

16 Mechanical release

In the event of power failure, the gate may be unlocked by following the instructions given in the use and maintenance manual of the automation system. On receiving the first command signal after mains power is restored, the control unit starts an opening manoeuvre in position recovery mode (see chapter 18-19).
For **SMARTY 5R5 / SMARTY 7R**: in the event of an electricity failure or 6400, the gate can be manually opened and closed without releasing it, with the motor idle.
The **SMARTY/EMA** absolute encoder (installed as standard on **SMARTY REVERSIBLE** units and optional on **SMARTY IRREVERSIBLE** units) allows the controller to reacquire the position immediately after each new command signal received.

17 Position recovery WITHOUT the absolute encoder

On receiving the first command signal after a power failure or after detecting an obstacle in the same position three consecutive times, the control unit starts a manoeuvre in position recovery mode.
On receiving a command signal, the gate starts a manoeuvre at low speed. 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:** Do not use any controls until the gate has performed a complete manoeuvre for both leaves.

If the gate is released in the completely open or completely closed position with the control unit powered, always return the gate leaves into their original positions before locking the gate release again. The gate will resume normal operation on receipt of the first control command.
WARNING: Releasing the gate in an intermediate position is not recommended, at it may cause the leaf position parameters to be lost (see parameters CnE 1 / CnE2 in INFO mode). In this case, a position recovery procedure is necessary.

Should the wings not be returned to the same position in which they were before the manual handling, the data relative to their position will be lost, therefore:
1. The wings movement gets inverted on the mechanical strike plates (obstacle detection).
2. Activation of a PP command (step mode) activates the opposite manoeuvre (example: if the gate was closing, it opens).
3. The control unit detects an anomaly in the motor revs count and automatically:
   - activates the position recovery mode;
   - stops the motors for 0.4 s.
   - the wings resume the manoeuvre at low speed through to the striker plate.
   - On the subsequent Step by Step command (PP), the wings carry out the manoeuvre at low speed again.
4. Leave the wings to carry out a complete manoeuvre to restore normal operation mode.

18 Position recovery WITH the absolute encoder (SMARTY range only)

Upon receipt of the first command after a power failure or after the gate is unlocked, the controller uses the absolute encoder to reacquire the position of the gate leaf immediately.
If the control unit detects that the gate leaves are not positioned correctly, it corrects the error automatically.
For example: if the control unit receives a close request but the gate leaves cannot close, the unit executes a complete open cycle and then closes the leaves after 1 s (even if automatic closure is not enabled) to restore the correct alignment.
Warning: Do not use any controls until the gate has performed a complete manoeuvre for both leaves.

19 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 the automation system motors rotate in the correct direction. If the leaves do not move correctly, swap any two of the wires on the X-Y-Z motor terminal
- Check that all connected controls are working correctly.
- 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 photocell test is enabled, check it is working properly by obscuring the photocells and giving a command: the gate leaves must not move.
- 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. Check the correct completion of the position recovery phase when opening and when closing.
- For SMARTY Series automation systems with absolute encoder installed, disconnect and reconnect power. Perform a manoeuvre with the controls and check that the speed and deceleration values are correct. The position recovery manoeuvre is not performed.
- If 64 0 1 (SMARTY REVERSIBLE only), check that the gate leafs are locked when the motors are stopped.

20 Maintenance

Perform scheduled maintenance every 6 months.
Check cleanliness and function.
If the unit contains dirt, moisture, insects or other foreign matter, disconnect from mains power and clean the board

and the housing.
Repeat the initial installation test procedure after cleaning.
If any corrosion is found on the printed circuit board, evaluate if it is necessary to replace the board itself.
Check that the battery is in good working order.
Check the SMARTY 5R5 and 7R motors are braking properly.

UE Declaration of Conformity (DoC)

The undersigned Dino Florian, legal representative of Roger Technology - Via Botticelli 8, 31021 Mogliano V.to (TV)
DECLARES that the **EDGE1** digital control unit is compliant with the provisions established by Community directives:
2014/30/UE
2014/35/UE
2011/65/UE
and that all the standards and/or technical requirements indicated as follows have been applied:
EN 61000-6-3
EN 61000-6-2
EN 60335-1
Last two figures of year in which marking was applied CE 17.

Place: Mogliano V.to Date: 01-03-2017 Signature 