

**FW**  
**P4.30**



IS160 Rev.17 11/10/2022

# EDGE1

## Instructions and warnings for the installer

**ROGER**  
BRUSHLESS

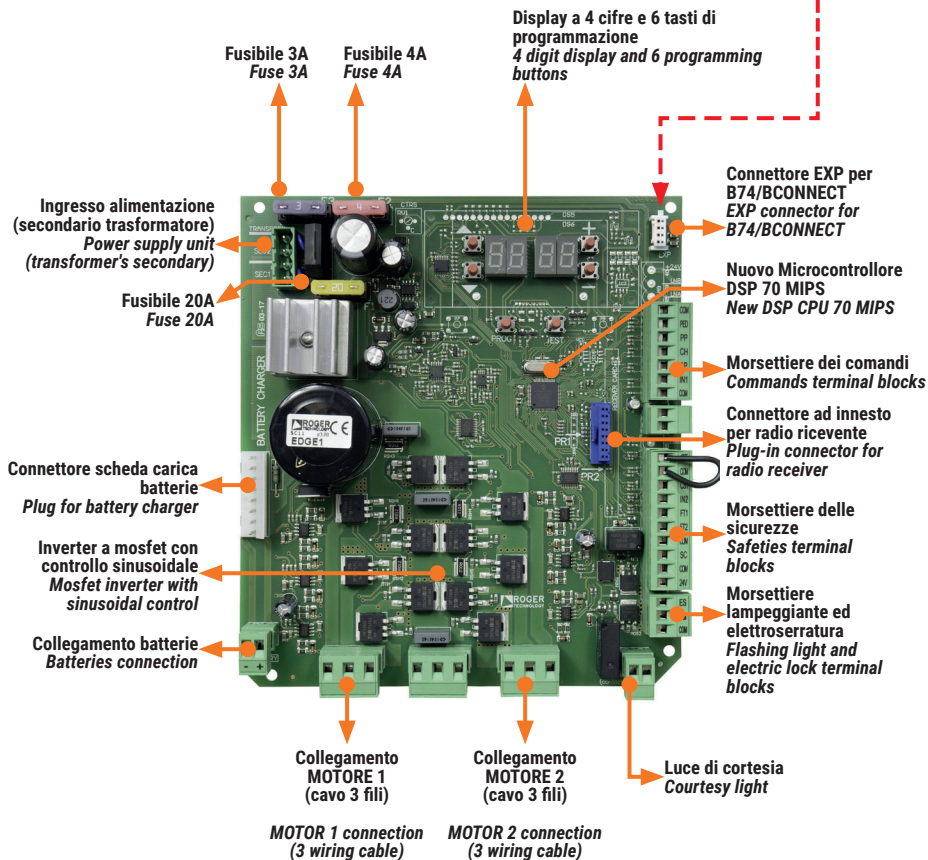


**ROGER**  
TECHNOLOGY

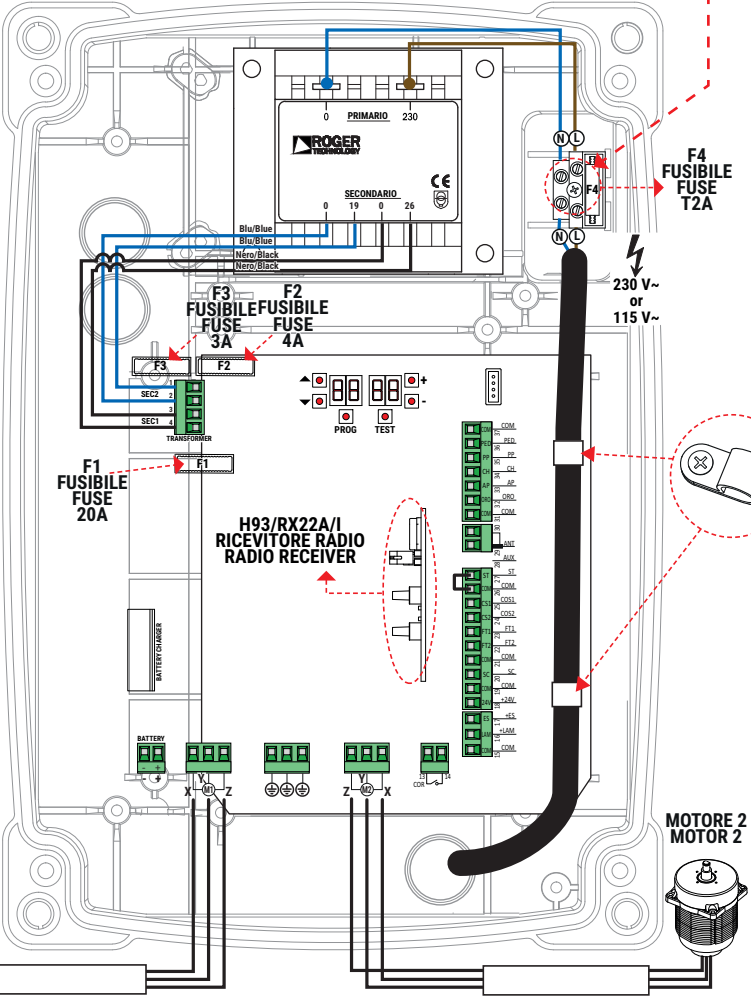
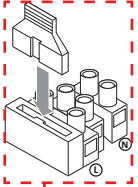


**FW**  
**P4.30**

Dispositivo IP B74/BCONNECT  
 B74/BCONNECT IP device



1



F4  
FUSIBILE  
FUSE  
T2A

230 V~  
or  
115 V~

F3 F2  
FUSIBILE FUSIBILE  
FUSE FUSE  
3A 4A

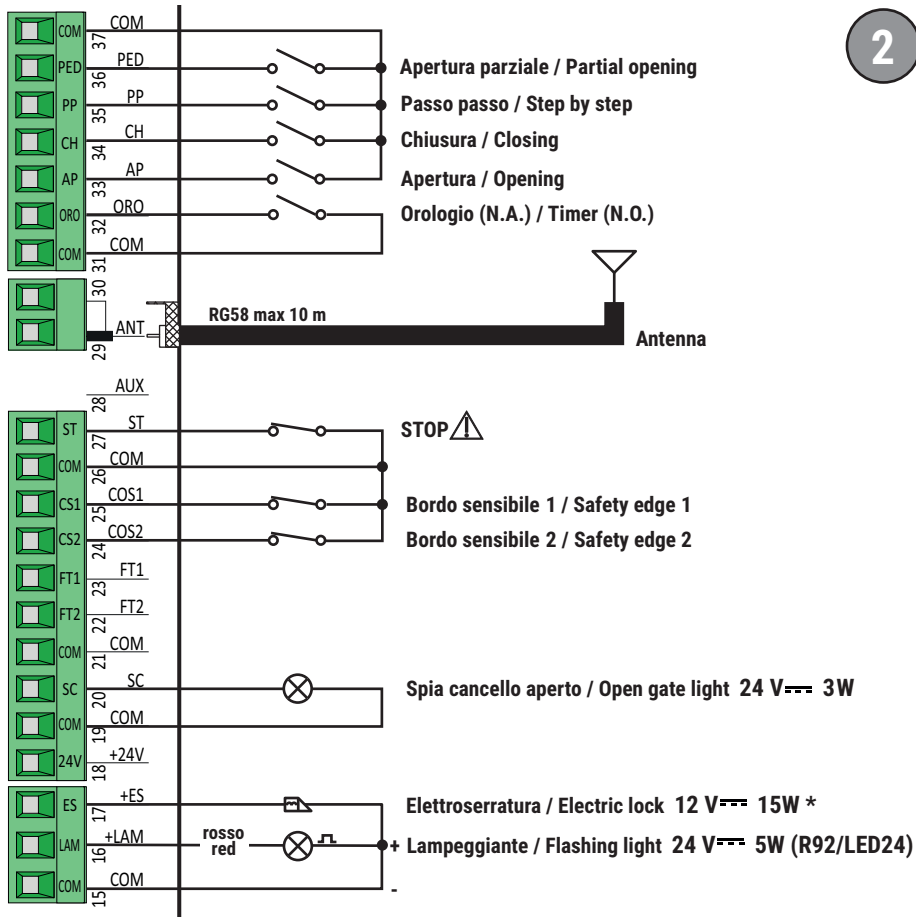
F1  
FUSIBILE  
FUSE  
20A

H93/RX22A/I  
RICEVITORE RADIO  
RADIO RECEIVER

MOTORE 1  
MOTOR 1

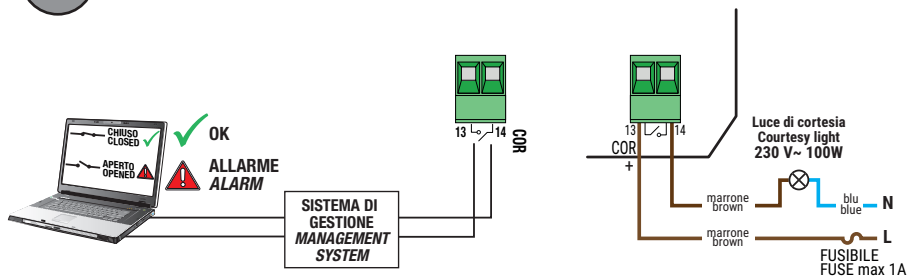
MOTORE 2  
MOTOR 2

2



(\*)  $V_{media}=12V_{\overline{\text{---}}}$ ;  $V_{max}=40V_{\overline{\text{---}}}$   
 (\*)  $V_{average}=12V_{\overline{\text{---}}}$ ;  $V_{max}=40V_{\overline{\text{---}}}$

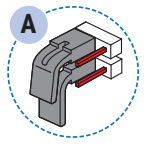
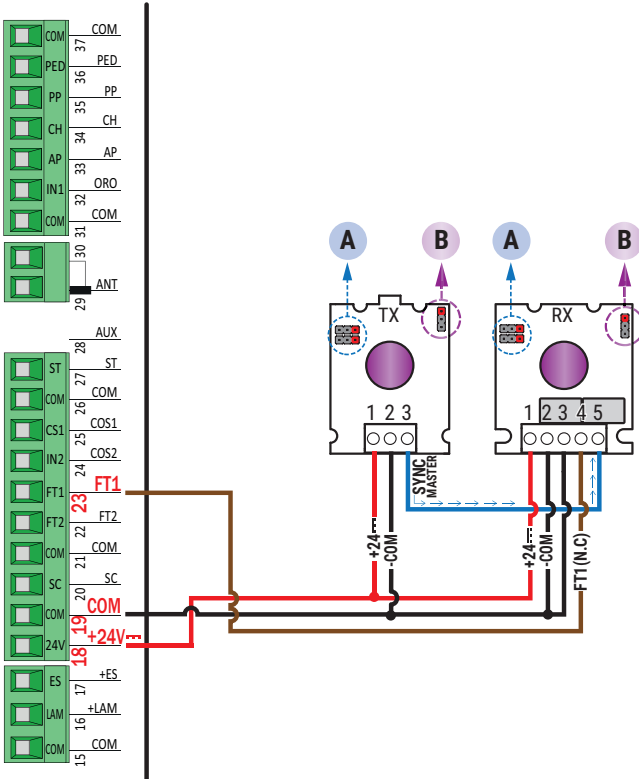
3



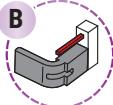
**COLLEGAMENTO CON 1 COPPIA FOTOCELLULE SINCRONIZZATE (MODALITÀ NORMALE, SOLO COPPIA MASTER)**  
**CONNECTION WITH 1 SYNCHRONISED PHOTOCELL PAIR (NORMAL MODE, MASTER PAIR ONLY)**

4

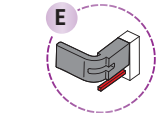
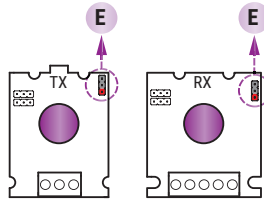
ROSSO = libero da jumper  
 RED = jumper free



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



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



**JUMPER DI ALLINEAMENTO ON\***  
**ALIGNMENT JUMPER ON\***

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



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

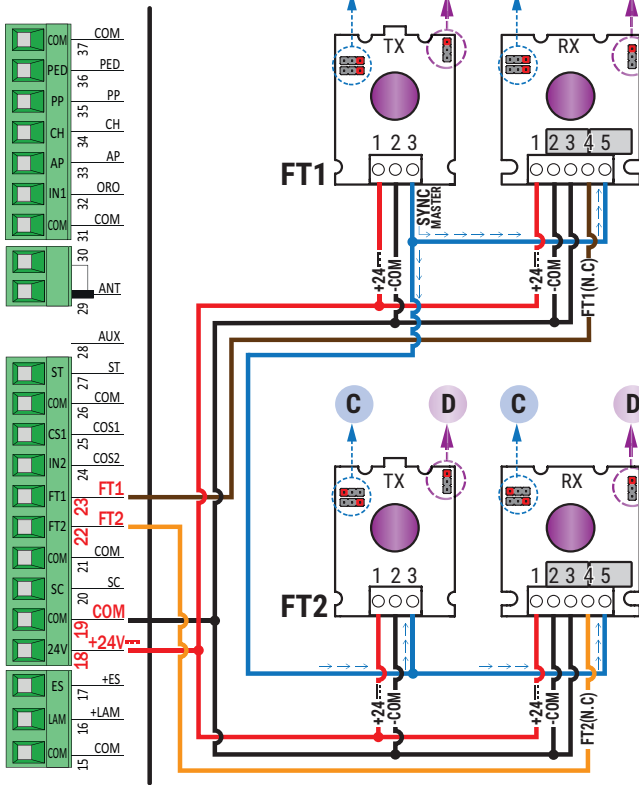
Scollegare la morsetteria della centrale che fornisce alimentazione alle fotocellule, oppure togliere completamente la tensione al controller digitale (scollegando, se presenti, anche le batterie di backup) e verificare nella fotocellula TX / RX che il LED rosso di alimentazione sia spento; procedere 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 FOTOCELLE SINCROZZATE (MODALITÀ 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



4

**A**

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

**B**

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

**C**

JUMPER DI SINCROZZAZIONE (PER SLAVE)  
SYNCHRONISATION JUMPER (FOR SLAVE)

**D**

JUMPER DI ALLINEAMENTO (PER SLAVE) OFF\*  
ALIGNMENT JUMPER (FOR SLAVE) OFF\*

**E**

JUMPER DI ALLINEAMENTO ON\*  
ALIGNMENT JUMPER ON\*

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



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

Scollegare la morsetteria della centrale che fornisce alimentazione alle fotocelle, oppure togliere completamente la tensione al controller digitale (scollegando, se presenti, anche le batterie di backup) e verificare nella fotocella 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.

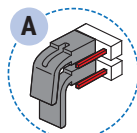
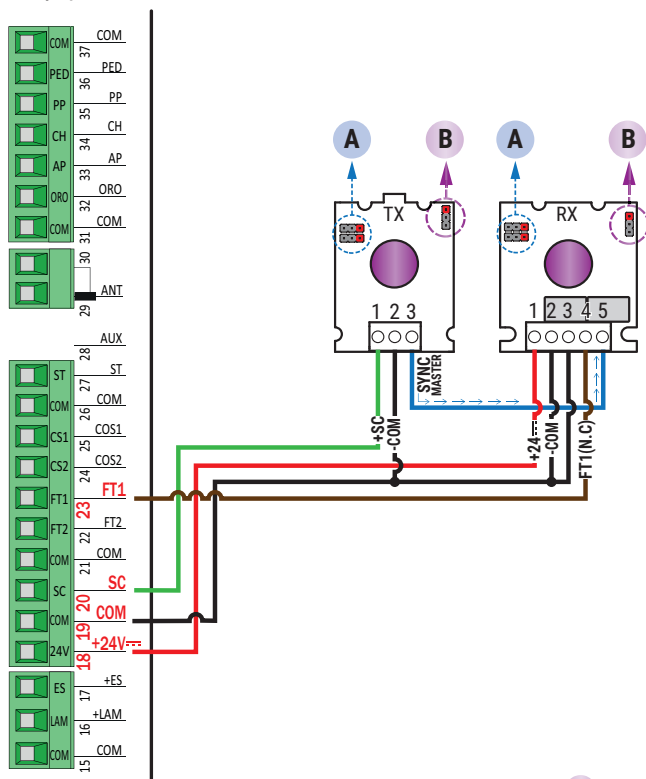
**SI RACCOMANDA L'USO DI fotocelle Serie F4ES - F4S / RECOMMENDED USE for Series F4ES - F4S photocells**

# TEST FOTOCELLULE · PHOTOCELLS TEST (AB 02)

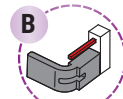
## COLLEGAMENTO CON 1 COPPIA FOTOCELLULE SINCRONIZZATE (MODALITÀ NORMALE, SOLO COPPIA MASTER) CONNECTION WITH 1 SYNCHRONISED PHOTOCCELL PAIR (NORMAL MODE, MASTER PAIR ONLY)

ROSSO = libero da jumper  
RED = jumper free

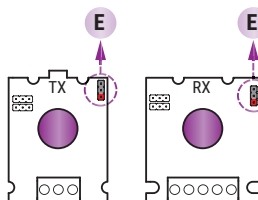
5



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



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



JUMPER DI ALLINEAMENTO ON\*  
ALIGNMENT JUMPER ON\*

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



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

Scollegare la morsetteria 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.

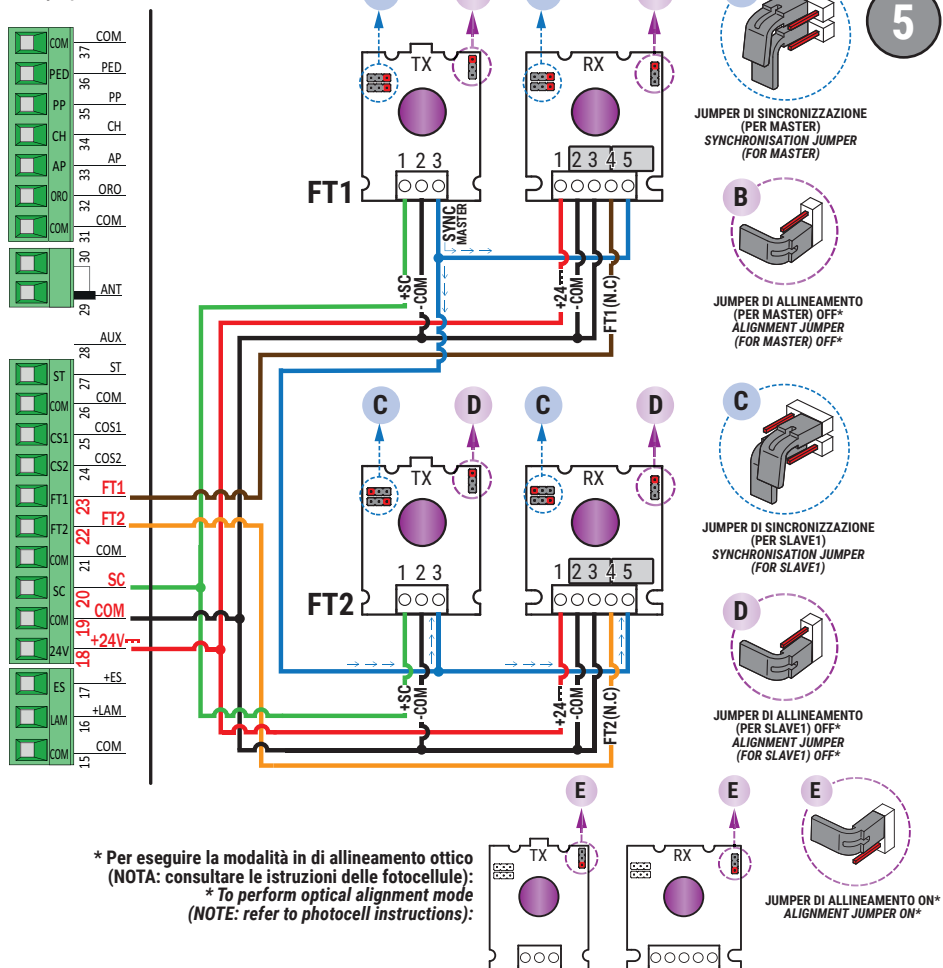
SI RACCOMANDA L'USO DI fotocellule Serie F4ES - F4S / RECOMMENDED USE for Series F4ES - F4S photocells



# TEST FOTOCELLULE · PHOTOCELLS TEST (AB 02)

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

ROSSO = libero da jumper  
RED = jumper free



**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 morsetteria 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

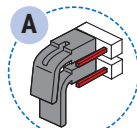
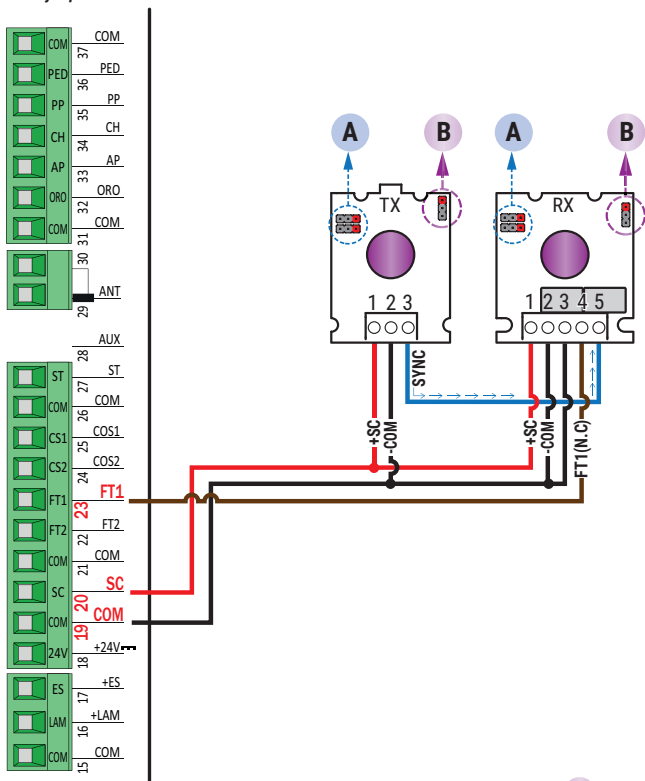
# BATTERY SAVING (AB 03)

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

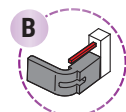
## COLLEGAMENTO CON 1 COPPIA FOTOCELLULE SINCRONIZZATE (MODALITÀ NORMALE, SOLO COPPIA MASTER) CONNECTION WITH 1 SYNCHRONISED PHOTOCELL PAIR (NORMAL MODE, MASTER PAIR ONLY)

ROSSO = libero da jumper  
RED = jumper free

6

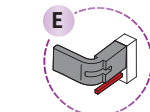
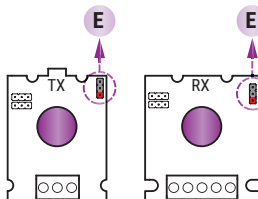


JUMPER DI SINCRONIZZAZIONE (PER MASTER)  
SYNCHRONISATION JUMPER (FOR MASTER)



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 morsetteria 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.

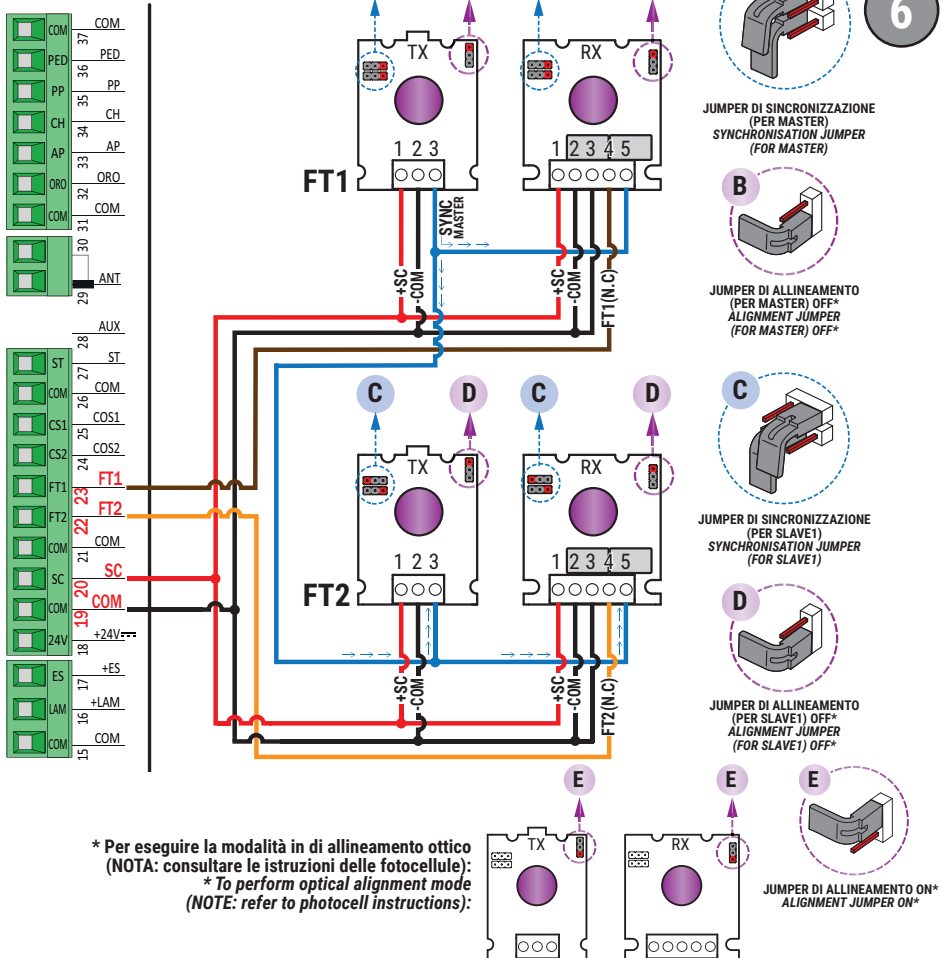
SI RACCOMANDA L' USO DI fotocellule Serie F4ES - F4S / RECOMMENDED USE for Series F4ES - F4S photocells

# BATTERY SAVING (AB 03)

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

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

ROSSO = libero da jumper  
RED = jumper free



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



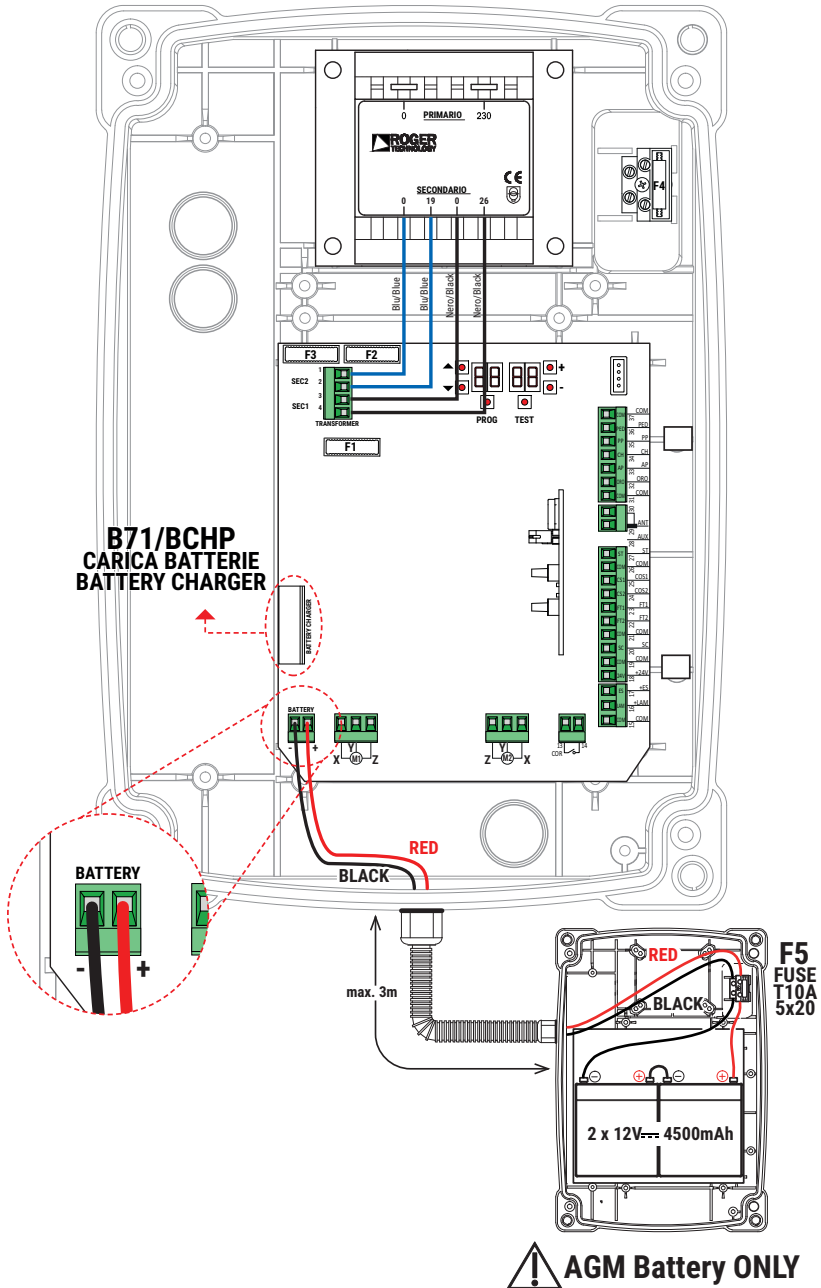
**ATTENZIONE!** Modificare la posizione dei jumper di sincronizzazione o di allineamento solamente quando le fotocellule sono **NON ALIMENTATE!** La configurazione scelta con i jumper viene memorizzata dalle fotocellule solamente all'accensione delle fotocellule.

Scollegare la morsetteria 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.

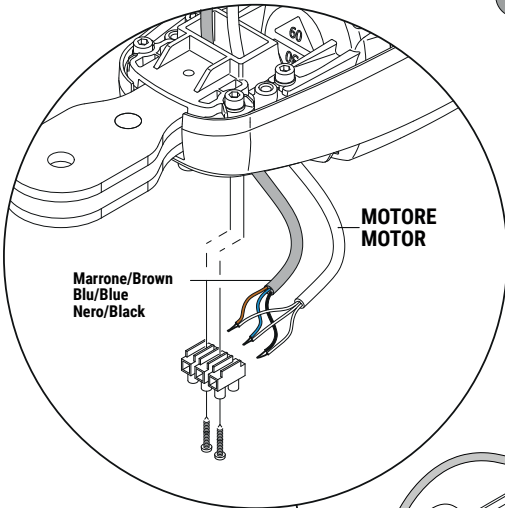
**SI RACCOMANDA L'USO DI** fotocellule Serie **F4ES - F4S** / **RECOMMENDED USE for** Series **F4ES - F4S** photocells

7



Marrone/Brown  
Blu/Blue  
Nero/Black

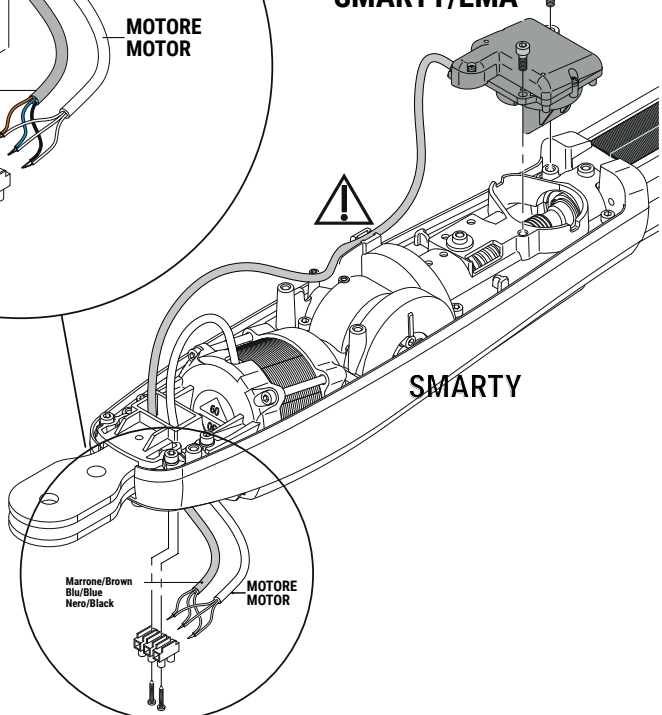
SMARTY/EMA



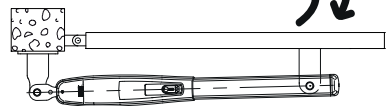
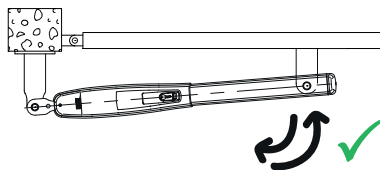
SMARTY/EMA



SMARTY



A




# 1 General safety precautions

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

This installation manual is intended for qualified personnel only.

 Failure to observe the information included in this manual may result in personal in serious personal injury or damage to the equipment.

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

The installation, electrical connections and adjustments must be performed by qualified personnel, in accordance with best practices and in compliance with applicable regulations.

Read the instructions carefully before installing the product.

Incorrect installation may pose risks.

Before installing the product, make sure it is in perfect condition: In case of doubts, do not use the product and refer exclusively to professionally qualified personnel.

Do not install the product in explosive environment and atmosphere: inflammable gas or vapours constitute serious danger for safety.

Before installing the motor, make all structural modifications related to the safety precautions and to the protection or segregation of areas involving crushing, shearing, dragging risks or any other risks.

**WARNING:** check that the existing structure fulfils the required resistance and stability specifications.

ROGER TECHNOLOGY is not liable for failure to observe the good practices in the construction of fixtures to be motorised or for deformations that may occur during use.

The safety devices (photocells, sensing edges, emergency stops, etc.) must be installed taking into consideration the following: the regulations and directives in force, the good practices criteria, the installation environment, the operating logic of the system and the forces generated by the motorised door or gate.

The safety devices must protect any areas where there is crushing, shearing, dragging or any other danger in general generated by the motorised door or gate; the installer is advised to check that the moving wings do not have sharp edges or anything that may pose shearing and/or dragging risks.

Ensure that entrapment between the guided part and surrounding fixed parts due to the opening movement of the guided part is avoided.

If it is deemed necessary based on the risk analysis, install sensing edges on the mobile part.

It should be noted that, as provided by the UNI EN 12635 standard, all requirements of the EN 12604 and EN 12453 standards must be fulfilled and, if necessary, also checked.

The European standards EN 12453 and EN 12445 define the minimum safety requirements for the operation of automatic doors and gates. In particular, these standards require the use of force limiting and safety devices (sensing ground plates, photocell barriers, hold-to-run operation, etc.) intended to detect persons or objects in the operating area and prevent collisions in all circumstances.

The installer is required to measure impact forces and select on the control unit the appropriate speed and torque values to ensure that the door or gate remains within the limits defined by the standards EN 12453 and EN 12445.


ROGER TECHNOLOGY cannot be held responsible for any damage or injury caused by the installation of incompatible components which compromise the safety and correct operation of the device.

If the hold-to-run function is active, the installer will have the obligation to check the maximum stop distance or the alternative use of the rubber deformable edge, the closing speed or the gate and in general all aspects indicated by the applicable regulations. Moreover, please note that if the command means is fixed, it must be located in a position guaranteeing the automation system control and operation and the command type and the use type must comply with the UNI EN 12453 standard, prospectus 1 (with the following restrictions: type A or B command or type 1 or 2 use).

In case of hold-to-run operation, remove any potential persons away from the range of action of the automation system's moving parts; the direct commands must be installed at a minimum height of 1.5 m and must not be accessible to the public; moreover, unless the device is key operated, they must be located with a direct view to the motorised part and far from the moving parts.

Apply the signs indicated by the regulations in force for the identification of the dangerous areas.

Each installed device must have a visible indication of the motorised door or gate identification data, in accordance with the EN 13241-1:2001 standard or subsequent revisions.

 A switch or an omnipolar cut-off switch with a contact opening of at least 3 mm must be installed on the mains power line; put the cut-off switch in OFF position and disconnect any buffer batteries before performing any cleaning or maintenance operations.

Ensure that an adequate residual current circuit breaker with a 0.03 A threshold and a suitable overcurrent cut-out are installed upstream the electrical installation in accordance with best practices and in compliance with applicable legislation.

When requested, connect the automation to an effective earthing system that complies with current safety standards.

The electronic parts must be handled using anti-static conductive wrist straps with grounding wire.

Only use original spare parts when repairing or replacing products.

The installer must provide the user with complete instruction for using the motorised door or gate in automatic, manual and emergency modes, and must hand the operating instructions to the user of the installation upon completion. Keep away from hinges and moving parts.

Keep out of the area of action of the motorised door or gate while it is moving. Never try to stop the motorised door or gate while it is moving as this may be dangerous.

The motorised door or gate may be used by children aged 8 and above, by persons with diminished physical, sensory or mental capacity and by persons without the necessary experience and knowledge provided that they are supervised or have received adequate instruction on using the device safely and to ensure that they understand the dangers involved in its operation.

Children must be supervised at all times to ensure that they do not play with the device and that they keep out of the area of action of the motorised door or gate.

Keep remote controls and any other control devices out of the reach of children to prevent the risk of the motorised door or gate being operated unintentionally. Failure to observe these instructions may lead to danger.

Any repair or technical interventions must be performed by qualified personnel. The cleaning and maintenance operations must be performed exclusively by qualified personnel.

In the event of a fault or malfunction of the product, turn the main power switch off and have the installation serviced by qualified personnel and refrain from attempting to repair or perform any direct intervention yourself.

The packaging materials (plastic, polystyrene, etc.) should not be discarded in the environment or left within reach of children, as they are a potential source of danger.










Dispose of and recycle the packaging items according to the provisions of the laws in force.

These instructions must be kept and must be made available to any other persons authorised to use the installation.



## 2 Symbols

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

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

## 3 Product description

The 36V $\overline{\text{---}}$  **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 A1 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.**

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 (see list in the table in section 11.1)**


## 4 Updates of version P4.30

1. Improved inverter management for High Speed motors.
2. Added the management of the IP device B74/BCONNECT controllable via browser device Roger BCONNECT, for the complete management via IP, through the connection on WiFi network, of the EDGE1 control panels. The connection is possible in proximity of the installation of the automation with access point functionality directly provided by B74/BCONNECT (point to point connection) or through the registration and the activation to the cloud Roger Technology with the possibility to manage all the functions of the central unit remotely via web browser.
3. Possibility of FW update of the central unit in point-to-point mode (at the place of installation), or via browser (remotely via cloud or from another device connected to the same network).
4. Addition of "remote assistance" mode and automation management with "emergency functionality" enabled and managed by web browser.
5. Added par. 23 to time reclosing after partial opening.
6. Also enabled the PED command to perform position recovery.
7. Improved management of the sensitive 4.1 kOhm ribs (setting par. 73 and 74 to value 12).

## 5 Technical characteristics of product

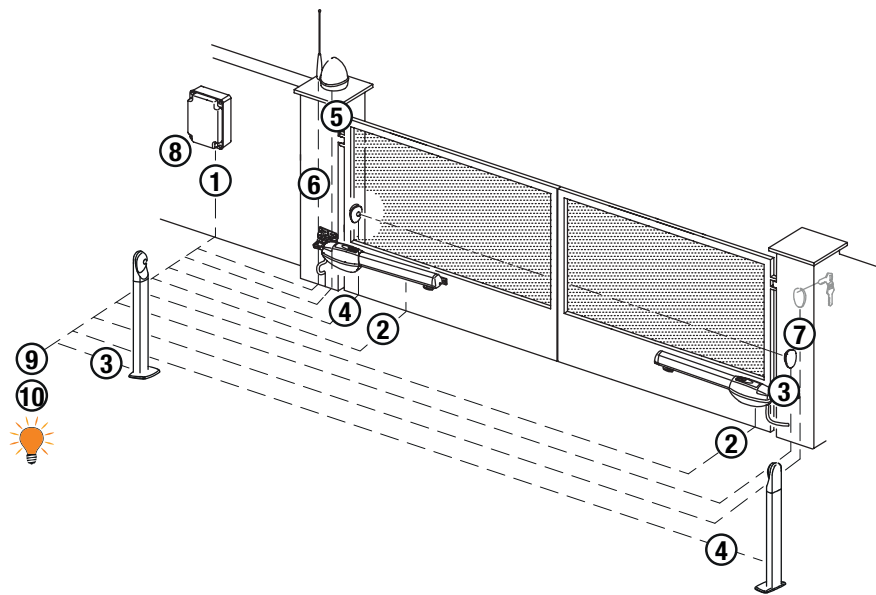
	EDGE1/BOX	EDGE1/115/BOX
<b>MAINS POWER VOLTAGE</b>	230V~ ± 10% 50 Hz	115V~ ± 10% 60 Hz
<b>MAXIMUM MAINS POWER ABSORPTION</b>	230 W	
<b>INRUSH POWER</b>	600 W	
<b>FUSES</b>	<b>F1</b> = 20A (ATO257) motor power circuit protection <b>F2</b> = 4A (ATO257) electric lock protection <b>F3</b> = 3A (ATO257) accessories power supply protection <b>F4</b> = T2A (5x20 mm) primary transformer coil protection	
<b>CONNECTABLE MOTORS</b>	2	
<b>MOTOR POWER SUPPLY</b>	36V~, with self-protected inverter	
<b>MOTOR TYPE</b>	sinusoidal drive brushless (ROGER BRUSHLESS)	
<b>MOTOR CONTROL TYPE</b>	sensorless field oriented control (FOC)	
<b>RATED MOTOR POWER</b>	60 W	
<b>MAXIMUM MOTOR POWER</b>	250 W	
<b>MAXIMUM POWER, FLASHING LIGHT</b>	25 W (24V $\overline{\text{---}}$ )	
<b>FLASHING LIGHT DUTY CYCLE</b>	50%	
<b>MAXIMUM POWER</b>	100 W 230V~ - 40 W 24V~ / $\overline{\text{---}}$ (potential free contact)	
<b>GATE OPEN LIGHT POWER</b>	3 W 24V $\overline{\text{---}}$	
<b>ELECTRIC LOCK POWER</b>	15 W 12V $\overline{\text{---}}$ (medium voltage) (*)	
<b>MAXIMUM ACCESSORY CURRENT ABSORPTION</b>	20 W 24V $\overline{\text{---}}$ (750 mA)	
<b>OPERATING TEMPERATURE</b>	 -20°C +55°C	
<b>DEGREE OF PROTECTION</b>	IP54	
<b>PRODUCT DIMENSION</b>	dimensions in mm 330x230x115 Weight: 3,9 kg	

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

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


## 6 Description of connections

### 6.1 Typical installation



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

		Recommended cable
1	Power supply	H07RN-F 2x1,5 mm <sup>2</sup> double insulated cable
2	Motor 1	Cable 3x2,5 mm <sup>2</sup> (max 10 m) - 3x4 mm <sup>2</sup> (max 30 m)
2	Motor 2	Cable 3x2,5 mm <sup>2</sup> (max 10 m) - 3x4 mm <sup>2</sup> (max 30 m)
3	Photocells - Receiver <b>F4ES/F4S</b>	Cable 5x0,5 mm <sup>2</sup> (max 20 m)
4	Photocells - Transmitter <b>F4ES/F4S</b>	Cable 3x0,5 mm <sup>2</sup> (max 20 m)
5	LED Flashing light <b>R92/LED24 - FIFTHY/24</b> Power supply 24V $\overline{\text{---}}$	Cable 2x1 mm <sup>2</sup> (max 10 m)
7	Key selector <b>R85/60</b>	Cable 3x0,5 mm <sup>2</sup> (max 20 m)
	Key pad <b>H85/TTD - H85/TDS</b> (connecting to <b>H85/DEC - H85/DEC2</b> )	Cable 2x0,5 mm <sup>2</sup> (max 30 m)
8	<b>H85/DEC - H85/DEC2</b> (connecting to control unit)	Cable 4x0,5 mm <sup>2</sup> (max 20 m) The number of conductors increases when using more than one output contact on <b>H85/DEC - H85/DEC2</b>
9	Gate open indicator Power supply 24V $\overline{\text{---}}$ 3W max	Cable 2x0,5 mm <sup>2</sup> (max 10 m)
10	Courtesy light (Potential free contact) Power supply 230V~ (100 W max)	Cable 2x1 mm <sup>2</sup> (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.

## 6.2 Electrical connections

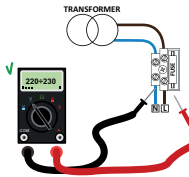
A switch or an omnipolar cut-off switch with a contact opening of at least 3 mm must be installed on the mains power line; put the cut-off switch in OFF position and disconnect any buffer batteries before performing any cleaning or maintenance operations.

Ensure that an adequate residual current circuit breaker with a 0.03 A threshold and a suitable overcurrent cut-out are installed upstream the electrical installation in accordance with best practices and in compliance with applicable legislation.

For power supply, use a H07RN-F 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:


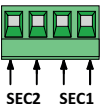
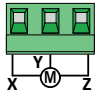
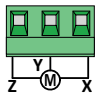

- 230V~ ±10% for the EDGE1 control unit.

- 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.

**i** 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).


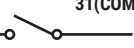
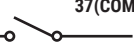
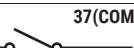
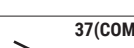
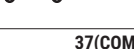
	DESCRIPTION
	Mains power supply 230V~ ±10% 50 Hz connection. ( <b>EDGE1/115/BOX</b> : 115V~ ± 10% 60Hz). Fuse 5x20 T2A.
	Secondary transformer input for 26V~ motor power (SEC1) and for 19V~ power to logical control and peripheral devices (SEC2). <b>N.B.:</b> Ready wired in factory by ROGER TECHNOLOGY.
<b>X-Y-Z</b> 	Connection to ROGER brushless MOTOR 1. <b>Warning!</b> If the motor rotates in the wrong direction, simply swap any two of the three motor connectors. Check the connections illustrated in fig. 1.
<b>Z-Y-X</b> 	Connection to ROGER brushless MOTOR 2. <b>Warning!</b> If the motor rotates in the wrong direction, simply swap any two of the three motor connectors. Check the connections illustrated in fig. 1.
<b>BATTERY</b> 	Connection to <b>B71/BCHP</b> (see fig. 7) <b>i</b> See instructions for <b>B71/BCHP</b> for further information.

# 7 Commands and Accessories

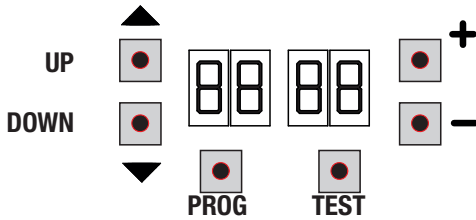
**⚠** If not installed, safety devices with NC contacts must be jumpered at the COM terminals, or disabled by modifying the parameters **50**, **51**, **53**, **54**, **73** and **74**.

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

CONTACT	DESCRIPTION
<b>13 (COR)</b>  <b>14</b>	Output (potential free contact) for connecting courtesy light. 230V~ 100 W - 24V~/--- 40 W (fig. 3).
<b>13 (COR)</b>  <b>14</b>	Error alert contact only, for: <ul style="list-style-type: none"> <li>• control unit in alarm / battery supply error (low battery);</li> <li>• gate completely open / gate completely closed (fig. 3).</li> </ul> The COR output operating mode is managed by parameter <b>1B</b> . The voltage level of the battery can be set via parameter <b>B5</b> .
<b>16(+LAM)</b>  <b>15(COM)</b>	Connection for flashing light (24V--- - duty cycle 50%) (fig. 2). The settings for the pre-manoeuve flashing warning signal may be selected with parameter <b>A5</b> , while the flashing mode is set with parameter <b>7B</b> .
<b>17(+ES)</b>  <b>15(COM)</b>	Input for connecting electric lock, 12V--- max. 15 W (fig. 2). The function of the electric lock is determined by parameter <b>2B</b> - <b>29</b> .  Vmedia=12V---, Vmax=40V---, see table "PRODUCT TECHNICAL FEATURES" on page 56
<b>18(+24V)</b>  <b>15(COM)</b>	Power feed for external devices; see table "PRODUCT TECHNICAL FEATURES" on page 56
<b>20(SC)</b>  <b>19(COM)</b>	Connection for gate open indicator lamp. 24V--- 3 W (fig. 2). The function of the indicator lamp is determined by parameter <b>AB</b> .
<b>20(SC)</b>  <b>19(COM)</b>	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 <b>AB 02</b> 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 <b>AB 03</b> or <b>AB 04</b> . <b>WARNING!</b> If contact <b>20 (SC)</b> is used for the photocell test function or battery saving function, a gate open indicator lamp cannot be connected.
<b>22(FT2)</b>  <b>21(COM)</b>	Input (N.C. or 8.2 kOhm) for connecting photocells <b>FT2</b> (fig. 4-5-6). The photocells <b>FT2</b> are configured by default with the following settings: <ul style="list-style-type: none"> <li>- <b>53 00</b>. Photocell FT2 disabled when gate is opening.</li> <li>- <b>54 00</b>. Photocell FT2 disabled when gate is closing.</li> <li>- <b>55 0 1</b>. The gate opens when an open command is received if photocell FT2 is obstructed.</li> <li>- <b>57 00</b>. NC (normally closed) incoming contact.</li> </ul> If the photocells are not installed, jumper the terminals <b>21(COM)</b> - <b>22(FT2)</b> or set the parameters <b>53 00</b> and <b>54 00</b> . <b>WARNING!</b> Use <b>R90/F4ES</b> , <b>G90/F4ES</b> or <b>T90/F4S</b> series photocells.
<b>23(FT1)</b>  <b>21(COM)</b>	Input (N.C. or 8.2 kOhm) for connecting photocells <b>FT1</b> (fig. 4-5-6). The photocells <b>FT1</b> are configured by default with the following settings: <ul style="list-style-type: none"> <li>- <b>50 00</b>. Photocell FT1 triggers only during gate closure. Photocell is ignored during gate opening.</li> <li>- <b>51 00</b>. Movement is reversed if the photocell is triggered during gate closure.</li> <li>- <b>52 0 1</b>. The gate opens when an open command is received if photocell FT1 is obstructed.</li> <li>- <b>57 00</b>. NC (normally closed) incoming contact.</li> </ul> If the photocells are not installed, jumper the terminals <b>23(FT1)</b> - <b>21(COM)</b> or set the parameters <b>50 00</b> and <b>51 00</b> . <b>WARNING!</b> Use <b>R90/F4ES</b> , <b>G90/F4ES</b> or <b>T90/F4S</b> series photocells.
<b>24(COS2)</b>  <b>26(COM)</b>	Input (NC or 8 kOhm) for connecting sensing edge <b>COS2</b> . The sensing edge is configured by default with the following settings: <ul style="list-style-type: none"> <li>- <b>74 00</b>. The sensing edge COS2 (NC contact) is disabled.</li> </ul> If the sensing edge is not installed, jumper the terminals <b>24(COS2)</b> - <b>26(COM)</b> or set the parameter <b>74 00</b> .
<b>25(COS1)</b>  <b>26(COM)</b>	Input (NC or 8 kOhm) for connecting sensing edge <b>COS1</b> (fig. 2). The sensing edge is configured by default with the following settings: <ul style="list-style-type: none"> <li>- <b>73 00</b>. If the sensing edge COS1 (NC contact) is enabled, the gate always reverses.</li> </ul> If the sensing edge is not installed, jumper the terminals <b>25(COS1)</b> - <b>26(COM)</b> or set the parameter <b>73 00</b> .
<b>27(ST)</b>  <b>26(COM)</b>	STOP command input (N.C. or 8.2 kOhm). The current manoeuvre is arrested if the safety contact opens. <b>N.B.:</b> the controller is supplied with this contact already jumpered by ROGER TECHNOLOGY. <ul style="list-style-type: none"> <li>- The contact is configured by default with the following settings: <b>57 00</b>. (normally closed) incoming contact.</li> </ul>

CONTACT	DESCRIPTION
<b>29 (ANT)</b>  <b>30</b>	Antenna connector for slot-in radio receiver board. Use RG58 if an external antenna is used; maximum recommended length: 10 m. <b>N.B.:</b> do not make joints in cable.
<b>32(ORO)</b>  <b>31(COM)</b>	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.
<b>33(AP)</b>  <b>37(COM)</b>	Open control signal input (N.O.). <b>IMPORTANT:</b> persistent activation of the opening command prevents automatic reclosure; the automatic reclosure time count is resumed when the opening command is released.
<b>34(CH)</b>  <b>37(COM)</b>	Close command input (N.O.).
<b>35(PP)</b>  <b>37(COM)</b>	Step by step mode command input (N.O.). The function of the control is determined by parameter <b>PH</b> .
<b>36(PED)</b>  <b>37(COM)</b>	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.
<b>ABSOLUTE ENCODER (SMARTY EMA)</b>	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.  <b>N.B.:</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 <b>SMARTY REVERSIBLE</b> : 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 <b>SMARTY IRREVERSIBLE</b> : product code <b>SMARTY/EMA</b> is available for installing the encoder on the motor. Enable the encoder with the parameter <b>7 I 0 I</b> and perform the travel acquisition procedure. <b>IMPORTANT:</b> before programming the travel, make sure you have selected the correct motor model via parameter <b>R 1</b> . An incorrect setting will prevent the absolute encoder from working. If parameter <b>R 1</b> is modified with <b>SMARTY/EMA</b> installed, repeat the travel acquisition procedure
<b>RECEIVER CARD</b>	Connector for plug-in radio receiver board. The control unit has two radio remote control functions by default: <ul style="list-style-type: none"> <li>- <b>PR1</b> - step mode command (modifiable with parameter <b>75</b>).</li> <li>- <b>PR2</b> - partial opening command (modifiable with parameter <b>77</b>).</li> </ul>
<b>BATTERY CHARGER B71/BCHP</b>	(Fig. 7) In the absence of mains voltage, the central network gets powered by the batteries, the display shows <b>bAtE</b> 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, <b>bELD</b> (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. <b>N.B.:</b> in battery power mode, a fixed delay time of 1.5 s is applied even if delay times are disabled with parameters <b>25</b> and <b>26</b> .
<b>BATTERY KIT</b> 2x12V 4,5 Ah <b>(B71/BCHP/EXT)</b>  Only <b>AGM</b> type	To reduce battery consumption, the positive power feed wire of the photocell transmitters and receiver may be connected to terminal <b>SC</b> (see fig. 5-6). Set <b>AB 03</b> or <b>AB 04</b> . In this configuration, the control unit disconnects power from the accessory devices when the gate is completely open or completely closed. <b>WARNING!</b> 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 <b>B71/BCHP</b> battery charger.
<b>EXP</b>	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).

## 8 Function buttons and display



BUTTON	DESCRIPTION
UP ▲	Next parameter
DOWN ▼	Previous parameter
+	Increase value of parameter by 1
-	Decrease value of parameter by 1
PROG	Programme travel
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.

## 9 Switching on or commissioning

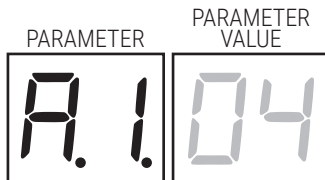
Power the control unit.  
The firmware version of the control unit is displayed briefly.  
Version installed: P4.30.



Immediately afterwards, the display enters the commands and safety device status mode. See chapter 7.

## 10 Display function modes

### 10.1 Parameter display mode



See chapter 11 for detailed descriptions of the parameters.

## 10.2 Command and safety device status display mode

COMMAND STATUS

POWER

SAFETY DEVICE STATUS

STOP

**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.

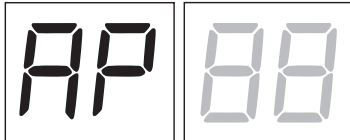
## 10.3 TEST mode

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.

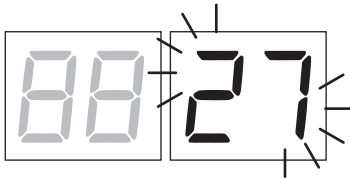
If the flashing light and the gate open indicator lamp illuminate for one second each time a control is used or a safety device is activated.

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 <b>PROG</b> key until <b>APP-</b> appears on the display, then repeat the acquisition procedure (see chap. 9).

**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.

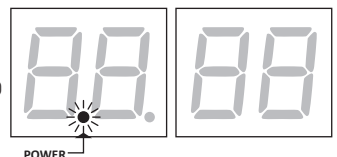
Press the TEST button again to exit test mode.

After 10 seconds with no user input, the display returns to command and safety device state display mode.

## 10.4 Standby mode

This mode is activated after 30 minutes with no user input. The POWER LED flashes slowly.

Press UP ▲, DOWN ▼, +, - to reactivate the control unit.






















# 11 Travel acquisition

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





## 11.1 Before starting

1. Select the automation system model installed with the parameter *R I*.

KEY:  HIGH SPEED Motor  REVERSIBLE Motor

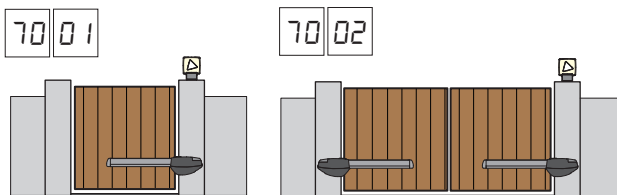
SELECTION	MODEL	MOTOR TYPE	CONFIGURATIONS
<i>R I 01</i>	BE20/200/HS 		-
<i>R I 02</i>	Serie BR20 	-	-
<i>R I 03</i>	BH23/282 	-	-
<i>R I 04</i>	BR21/351, BR21/361, BR21/362 	-	-
<i>R I 05</i>	SMARTY5 	-	<b>If SMARTY/EMA is installed, set 7 I 01</b> <b>NB:</b> the position data request message <i>dRtR</i> appears on the display whenever this parameter is modified. Press the PROG key until <i>APP-</i> appears on the display, then repeat the acquisition procedure (see chap. 11.2).
	SMARTY7 		
<i>R I 06</i>	SMARTY7R 		Set <i>54 01</i> and <i>7 I 01</i> <b>NB:</b> the position data request message <i>dRtR</i> appears on the display whenever this parameter is modified. Press the PROG key until <i>APP-</i> appears on the display, then repeat the acquisition procedure (see chap. 11.2).
<i>R I 07</i>	SMARTY5R5 		Set <i>54 01</i> and <i>7 I 01</i> <b>NB:</b> the position data request message <i>dRtR</i> appears on the display whenever this parameter is modified. Press the PROG key until <i>APP-</i> appears on the display, then repeat the acquisition procedure (see chap. 11.2).
<i>R I 08</i>	SMARTY4HS 		<b>If SMARTY/EMA is installed, set 7 I 01</b> <b>NB:</b> the position data request message <i>dRtR</i> appears on the display whenever this parameter is modified. Press the PROG key until <i>APP-</i> appears on the display, then repeat the acquisition procedure (see chap. 11.2).
<i>R I 09</i>	BH23/252/HS 		-
<i>R I 10</i>	BR21/351/HS, BR21/361/HS 		-



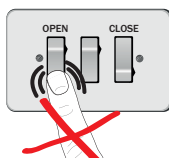
R1 11	BE20/400		-	-
	MONOS4		-	-
R1 12	BR20/400/R			-

**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.



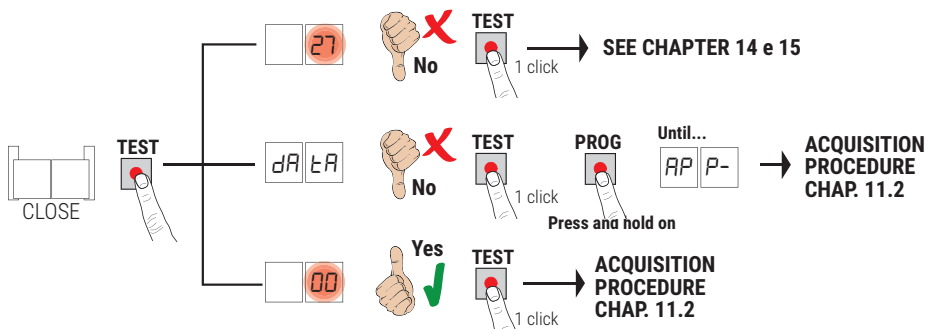
3. Check that the operator present function is not enabled (R7 00).



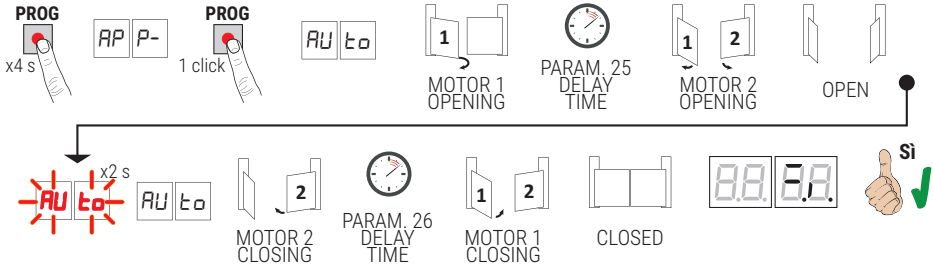
4. Install mechanical stops in both the open and closed positions.

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 8) 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).



## 11.2 Acquisition procedure



- Press and hold **PROG** for 4 seconds. **AP P-** is shown on the display.
- Press **PROG** again. **AU Eo** 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 **AU Eo** flashes on the display for 2 s.
- When the message **AU Eo** 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 15 “Alarms and faults”.**

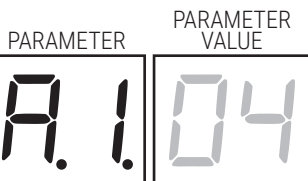
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# 13 Parameters menu



PARAMETER	PARAMETER VALUE	DESCRIPTION
<b>A104</b>		<b>Selecting automation system model</b> <b>WARNING!</b> If this parameter is not set correctly, the automation system may not function properly. <b>N.B.:</b> in the event of a reset to restore the default parameters, this parameter must be set again manually.
01		<b>BE20/200/HS - IRREVERSIBLE HIGH-SPEED</b> piston.
02		<b>BR20 series - IRREVERSIBLE</b> piston.
03		<b>BH23/282</b> - Gear motor with <b>IRREVERSIBLE</b> articulated arm.
04		<b>BR21/351</b> - Underground <b>IRREVERSIBLE</b> gear motor. <b>BR21/361</b> - Underground <b>IRREVERSIBLE</b> gear motor. <b>BR21/362</b> - Underground <b>IRREVERSIBLE</b> gear motor.
05		<b>SMARTY 5</b> or <b>SMARTY 7 - IRREVERSIBLE</b> piston.
06		<b>SMARTY 7R - REVERSIBLE</b> piston. <b>IMPORTANT:</b> set 64 01 and 71 01.
07		<b>SMARTY 5R5 - REVERSIBLE</b> piston. <b>IMPORTANT:</b> set 64 01 and 71 01.
08		<b>SMARTY 4HS - IRREVERSIBLE</b> piston <b>HIGH-SPEED</b> .
09		<b>BH23/252/HS</b> - Gear motor with <b>IRREVERSIBLE HIGH-SPEED</b> articulated arm.
10		<b>BR21/351/HS</b> - Underground <b>IRREVERSIBLE HIGH-SPEED</b> gear motor.
		<b>BR21/361/HS</b> - Underground <b>IRREVERSIBLE HIGH-SPEED</b> gear motor.
11		<b>BE20/400 - IRREVERSIBLE</b> piston. <b>MONOS4 - IRREVERSIBLE</b> piston.
12		<b>BR20/400/R - REVERSIBLE</b> piston.
<b>A200</b>		<b>Automatic closure after pause time (from gate completely open)</b>
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.
<b>A300</b>		<b>Automatic gate closing after mains power outage</b>
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 18-19).
<b>A400</b>		<b>Selecting step mode control function (PP)</b>
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 A2 0 1.
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 A2 0 1.
03		Open-close-open-close.

04	Open-close-stop-open.
----	-----------------------

<b>A5 00</b>	<b>Pre-flashing</b>
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.

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

<b>A7 00</b>	<b>Enabling operator present function</b>
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.

<b>A8 00</b>	<b>Gate open indicator / photocell test function and "battery saving"</b>
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 <b>SC</b> is used for the photocell test. See fig. 5. <b>NB:</b> the type of photocell test can be selected by means of parameters <b>5B</b> and <b>59</b> .
03	Set to 03 if the output <b>SC</b> 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 <b>SC</b> to reduce battery consumption.
04	Set to 04 if the output <b>SC</b> is used for the "battery saving" function and photocell test function. See fig. 6. <b>NB:</b> the type of photocell test can be selected by means of parameters <b>5B</b> and <b>59</b> .

### Parameters visible ONLY if:

PARAMETER	A1 01	A1 05	A1 06	A1 07	A1 08	A1 09	A1 10	A1 11	A1 12
	BE20/200/HS	SMARTY5 07	SMARTY7R	SMARTY5R5	SMARTY4/HS	BH23/252/HS	BR21/351/HS	BE20/400	BR20/400/R
	<b>ONLY IF 71 01 = SMARTY/EMA ENABLED</b>								
A9 04	<b>Setting deceleration MOTOR 1 during OPENING</b>								
10 04	<b>Setting deceleration MOTOR 2 during OPENING</b>								
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	<b>Setting deceleration MOTOR 1 during CLOSING</b>
12 04	<b>Setting deceleration MOTOR 2 during CLOSING</b>
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	<b>Setting deceleration MOTOR 1 during opening and closing</b>
12 04	<b>Setting deceleration MOTOR 2 during opening and closing</b>
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).



<b>13 10</b>	<b>Adjusting LEAF 1 position control when completely opens or closes</b> 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. <b>Warning!</b> Excessively low values cause the gate to reverse when it reaches the gate open stop. <b>N.B.:</b> with <b>BR21</b> 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.
<b>14 10</b>	<b>Adjusting LEAF 2 position control when completely opens or closes</b> 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. <b>Warning!</b> Excessively low values cause the gate to reverse when it reaches the gate closed stop. <b>N.B.:</b> with <b>BR21</b> 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.
<b>0 1-20</b>	Motor revolutions ( $0 1$ = minimum / $20$ = maximum).
<b>15 99</b>	<b>Partial opening adjustment (%)</b> <b>N.B.:</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.
<b>15-99</b>	From 15% to 99% of total gate travel.
<b>18 00</b>	<b>Type of signaling provided by COR output</b>
<b>00</b>	STANDARD operation managed by parameter 79
<b>0 1</b>	Contact closed if the control unit is working properly. Contact open if central locked in alarm.
<b>02</b>	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 <b>b&amp;L 0</b> (the control unit no longer accept commands).
<b>03</b>	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 .
<b>04</b>	Closed contact if the gate is not completely open. Open contact if the gate is completely open.
<b>05</b>	Closed contact if the gate is not completely closed. Open contact if the gate is completely closed.
<b>19 00</b>	<b>Adjusting stop advance of LEAF 1 when opening</b>
<b>20 00</b>	<b>Adjusting stop advance of LEAF 2 when opening</b>
<b>00</b>	The leaf stops against the opening stop.
<b>0 1-25</b>	A leaf stop advance of 1 to 25 motor turns before the completely open position may be set.
<b>21 30</b>	<b>Setting automatic closing time</b> 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. <b>IMPORTANT:</b> persistent activation of the opening command prevents automatic reclosure; the automatic reclosure time count is resumed when the opening command is released.
<b>00-90</b>	Pause time settable from 00 to 90 s.
<b>92-99</b>	Pause time settable from 2 to 9 min.
<b>22 00</b>	<b>Enabling of management for opening with automatic reclosure exclusion</b> If enabled, the exclusion of automatic reclosure only applies for the command selected via the parameter. <b>For example:</b> if you set <b>22 0 1</b> , automatic reclosure is excluded following an AP command, but it is activated following a PP or PED command. <b>NB:</b> a command activates a manoeuvre in the open-stop-close or close-stop-open sequence.
<b>00</b>	Disabled.
<b>0 1</b>	An <b>AP</b> (opening) command activates the opening manoeuvre. With the gate fully open, automatic reclosure is excluded. An <b>AP</b> (open) or <b>CH</b> (close) command activates the closure manoeuvre.
<b>02</b>	A <b>PP</b> (step mode) command activates the opening manoeuvre. With the gate fully open, automatic reclosure is excluded. Another <b>PP</b> (step mode) command activates the closure manoeuvre.
<b>03</b>	A <b>PED</b> (partial opening) command activates the partial opening manoeuvre. Automatic reclosure is excluded. Another <b>PED</b> (partial opening) command activates the closure manoeuvre.

<b>23 10</b>	<b>Adjusting automatic closing time after partial opening</b> 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.
<b>25 03</b>	<b>Adjusting opening delay (alignment) of MOTOR 2</b> During opening, MOTOR 2 starts with an adjustable delay after MOTOR 1.
00-10	From 0 to 10 s.
<b>26 05</b>	<b>Adjusting closing delay (alignment) of MOTOR 1</b> During closing, MOTOR 1 starts with an adjustable delay after MOTOR 2.
00-30	From 0 to 30 s.
<b>27 03</b>	<b>Setting reverse time after activation of sensing edge or obstacle detection (crush prevention)</b> This sets the reverse manoeuvre time after activation of the sensing edge or the obstacle detection system.
00-60	From 0 to 60 s.
<b>28 00</b>	<b>Electric lock mode selection</b>
00	Normally UNPOWERED electric lock (powered only for 3 s when opening starts). <b>N.B.:</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.
<b>29 00</b>	<b>Enable electric lock</b>
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.
<b>30 07</b>	<b>Setting motor torque</b> 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).
<b>31 15</b>	<b>Setting obstacle impact force sensitivity MOTOR 1</b> 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. <b>N.B.:</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 <b>N.B.:</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. <b>May only be used if the gate is equipped with a sensing edge.</b>
<b>32 15</b>	<b>Setting obstacle impact force sensitivity MOTOR 2</b> 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). <b>N.B.:</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 <b>N.B.:</b> only use these settings if the medium motor torque values are not suitable for the installation.
11-19	Medium motor torque. <b>Recommended setting for adjusting force settings correctly.</b> 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.

<b>33 10</b>	<b>Setting motor torque MOTOR 2</b> 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.

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

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

<b>40 04</b>	<b>Setting opening speed (%)</b>
<b>41 04</b>	<b>Setting closing speed (%)</b>
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					
<b>43 00</b>	<b>Opening approach distance setting MOTOR1</b>					
<b>44 00</b>	<b>Opening approach distance setting MOTOR2</b>					
<b>45 00</b>	<b>Closing approach distance setting MOTOR1</b>					
<b>46 00</b>	<b>Closing approach distance setting MOTOR2</b>					
00-80	from min. 0 to max. 80 of turns performed by the motor at the minimum speed. Speed is set by the control unit automatically and it isn't adjustable.					

<b>49 01</b>	<b>Setting number of automatic closure attempts after activation of sensing edge or obstacle detection (crush protection)</b>
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.

<b>50 00</b>	<b>Setting photocell mode during gate opening (FT1)</b>
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.

<b>5102 Setting photocell mode during gate closing (FT1)</b>	
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.

<b>5201 Photocell (FT1) mode with gate closed</b> N.B.: this parameter is not visible if <i>AB02</i> or <i>AB03</i> or <i>AB04</i> 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.

<b>5300 Setting photocell mode during gate opening (FT2)</b>	
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.

<b>5400 Setting photocell mode during gate closing (FT2)</b>	
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.

<b>5501 Photocell (FT2) mode with gate closed</b> N.B.: this parameter is not visible if <i>AB 02</i> or <i>AB 03</i> or <i>AB 04</i> 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.

<b>5600 Enable close command 6 s after activation of photocell (FT1-FT2)</b> N.B.: This parameter is not visible if <i>AB 03</i> or <i>AB 04</i> is set. NOTE: in the case of photocells being blanked during opening, the 6 secs. count starts when the wings are completely open.	
00	Disabled.
01	Enabled. When the photocell 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.


<b>5700 Selecting contact type (NC or 8.2 kOhm) on inputs FT1/FT2/ST</b> 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.			
	<b>FT1</b>	<b>FT2</b>	<b>ST</b>
	The controller is configured for NC contacts by default.		
00			
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 **AB02** or **AB04** 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 **AB02** or **AB04** 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.

00	The motor of the <b>SMARTY 5R5/7R</b> 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 <b>SMARTY 5R5/7R</b> 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. <b>ATTENTION:</b> 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= 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 11).

01	1 motor.
02	2 motors. <b>IMPORTANT:</b> 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 11.2).  
**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. <b>N.B:</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.

<b>74 00 Configuring sensing edge COS2</b>	
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.

<b>76 00 Configuring radio channel 1 (PR1)</b>	
<b>77 01 Configuring radio channel 2 (PR2)</b>	
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. <sup>(1)</sup>
08	PARTIAL OPENING with confirmation for safety. <sup>(1)</sup>
09	OPENING with confirmation for safety. <sup>(1)</sup>
10	CLOSURE with confirmation for safety. <sup>(1)</sup>

<sup>(1)</sup> 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.

<b>78 00 Configuring flashing light frequency</b>	
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.

<b>79 60 Selecting courtesy light mode</b>	
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.

<b>80 00 Clock contact configuration (ORO)</b>	
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.

<b>81 00</b>	<p><b>Enable safeguarded gate closure/opening</b></p> <p>Enabling this parameter ensures that the gate is not left open due to an incorrect and/or accidental command. This function is <b>NOT</b> enabled if:</p> <ul style="list-style-type: none"> <li>the gate receives a STOP command;</li> <li>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.</li> <li>the number of closure attempts set by parameter <b>A2</b> has been reached;</li> <li>the acquired position is lost (perform position recovery, see chapter 18-19).</li> </ul>
00	Disabled. The parameter <b>B2</b> is not displayed.
01	Safeguarded closure enabled. After a period of time set with parameter <b>B2</b> , the control unit signals a 5 second warning with the flashing light, regardless of the parameter <b>A5</b> , 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 <b>B2</b> , the control unit signals a 5 second warning with the flashing light (regardless of the parameter <b>A5</b> ), 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 <b>B2</b> . 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 <b>B2</b> .
<b>82 03</b>	<p><b>Setting safeguarded closure/opening activation time</b></p> <p><b>N.B.:</b> this parameter is not visible if the value of parameter <b>B1</b> = 00.</p>
02-90	Wait time settable from 2 to 90 s.
92-99	Wait time settable from 2 to 9 min.
<b>83 00</b>	<p><b>Selecting limitations in battery operation</b></p> <p><b>N.B.:</b> the parameter is visible only if par. <b>B5</b> is different than 00</p>
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 <b>B5</b> and <b>Z0</b> are adequately set).
01	When the battery voltage drops under the threshold selected with par. <b>B5</b> , the control unit accepts only opening commands and does not perform closing.
02	When the battery voltage drops under the threshold selected with par. <b>B5</b> , 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 <b>B0 01</b> .
04	When the battery voltage drops to the threshold selected with par. <b>B5</b> the control unit, after a prelampping of 5s, automatically closes the gate and accepts only one opening command.
<b>84 00</b>	<p><b>Battery type selection and consumption reduction</b></p> <p><b>NOTE:</b> An INCORRECT setting of this parameter, when there is no mains voltage, blocks the functions and the display shows the message <b>bEeL0</b> (if set to 01 or 02 and the battery is 2x12V<math>\rightarrow</math>) or an error alert <b>bFod</b>.</p>
00	Battery 24V $\rightarrow$ (2x12V $\rightarrow$ ) with B71/BCHP. Acceleration/deceleration/speed reduction enabled, to increase the battery life.
01	Battery 24V $\rightarrow$ (2x12V $\rightarrow$ ) with B71/BCHP. No performance reduction, maximum battery consumption.
02	Battery 36V $\rightarrow$ (3x12V $\rightarrow$ ) with external charger. Acceleration/deceleration/speed reduction enabled, to increase the battery life.
03	Battery 36V $\rightarrow$ (3x12V $\rightarrow$ ) with external charger. No performance reduction, maximum battery consumption.
<b>85 00</b>	<p><b>Selection of the battery operation management</b></p> <p>Setting a value different than 00 a battery voltage level check is activated. The desired operation type can be selected via parameter <b>B3</b> and an error alert can be activated through the COR output via parameter <b>IB</b>.</p>
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 $\rightarrow$ for battery 2x12V $\rightarrow$ )
02	The command becomes active when the battery voltage drops to the medium threshold (23V $\rightarrow$ for battery 2x12V $\rightarrow$ )
03	The command becomes active when the battery voltage drops to the maximum threshold (24V $\rightarrow$ for battery 2x12V $\rightarrow$ )

## 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  $P55E$  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 ( $CP00$ ) and press TEST for 5 s. The message  $P55E$  is displayed, followed by the messages  $UPdE$  flashing for 4 seconds: to reset the alarm, hold down the TEST key until  $dOnE$  is displayed.

If the TEST key is released,  $Ab-E$  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.

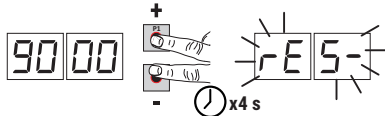
00 Disabled.

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).

## 90 00 Restoring factory default values

**NOTE** This procedure is only possible if NO data protection password is set.



**Warning!** Restoring default settings cancels all settings made previously except for parameter  $P1$ , 71, 86, 87: after restore, check that all parameters are suitable for the installation.

- Press and hold the PLUS + and MINUS - button until the unit switches on.
- The display flashes after 4 s  $rE5-$ .
- 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.**

$n123$  **Year of manufacture.**

$n245$  **Week of manufacture.**

$n367$

$n489$  **Serial number.**

$n501$

$n623$  **FW version.**

Example: 01 23 45 67 89 01 23

## 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.).

$o001$  **Manoeuvres performed.**

$o123$  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  $B5$  and  $B7$ ) is exceeded, the visual maintenance signal is activated (e.g. every 1500 manoeuvre hours).

**IMPORTANT:** "manoeuvre" means every motor opening activation.

The message  $A55E$  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  $A55E$  is displayed, followed by the messages  $UPdE$  flashing for 4 seconds: to reset the alarm, hold down the TEST key until  $d00E$  is displayed.

If the TEST key is released,  $Ab-E$  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.

$h0\ 01$

### Manoeuvre hours.

$h1\ 23$

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.

$d0\ 01$

### Days with unit switched on.

$d1\ 23$

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.

$P1\ 00$

$P2\ 00$

$P3\ 00$

$P4\ 00$

### 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  $P1\ 00$ ,  $P2\ 00$ ,  $P3\ 00$  and  $P4\ 00$  indicate that no password is set).
- Switch the control unit off and on again ( $CP=00$ ).

$CP\ 00$

## Changing password

$00$

Protection deactivated.

$01$

Protection activated.

# 14 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 <b>STOP</b> contact is open. Incorrect setting of parameter 57.	Check that parameter 57 is set correctly	Install a <b>STOP</b> button (NC) or jumper the <b>ST</b> contact with the <b>COM</b> contact.
88 25	Sensing edge <b>COS1</b> not connected or incorrectly connected.	Set the parameter 73 00 if not used or to disable.	Jumper contact <b>COS1</b> with contact <b>COM</b> , if not used or to disable
88 24	Sensing edge <b>COS2</b> not connected or incorrectly connected.	Set the parameter 74 00 if not used or to disable.	Jumper contact <b>COS2</b> with contact <b>COM</b> , if not used or to disable.
88 23	Photocell <b>FT1</b> 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 <b>FT1</b> with contact <b>COM</b> , if not used or to disable. Check connection referring to relative connection diagram (figure 4).
88 22	Photocell <b>FT2</b> 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 <b>FT2</b> with contact <b>COM</b> , 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 <b>PP - COM</b> contacts and connections to buttons.
CH 00		-	Check <b>CH - COM</b> contacts and connections to buttons.
AP 00		-	Check <b>AP - COM</b> contacts and connections to buttons.
PE 00		-	Check <b>PED - COM</b> contacts and connections to buttons.
Or 00		-	Check <b>ORO - COM</b> 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.

# 15 Alarms and faults

EN

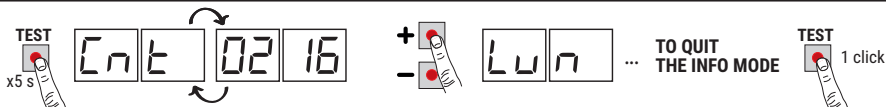
PROBLEM	ALARM	POSSIBLE CAUSE	ACTION
The gate does not open or close.	POWER LED off	No power.	Check power cable.
	POWER LED off	Fuses blown.	Replace fuse. Always disconnect from mains power before removing fuses.
	OF 5t	Input mains power voltage fault. Control initialisation failed.	Disconnect from mains power, wait 10 seconds then reconnect to the mains and switch on. If the problem persists, contact your local authorized dealer for verification and possible assistance. Pressing the TEST button it is possible to hide the alarm temporarily and consult the control unit's parameters.
	Pr 0t	Overcurrent detected in inverter.	Press the <b>TEST</b> 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 I modified	The position data request message <i>dAtA</i> appears on the display whenever this parameter is modified. Press the PROG key until <i>APP</i> appears on the display, then repeat the acquisition procedure (see chapter 11.2).
	Not 1	Motor 1 not connected.	Check the motor cable.
	Not 2	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: 15 EE 21 EE	Configuration parameter error.	Set configuration value correctly and save.
	En 11	MOTOR 1 encoder not responding, absent or faulty.	Check encoder connection. Replacing the encoder is recommended if the problem persists.
	En 21	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.
	En 22	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.
	En 23	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.
En 24	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 <i>A I</i> and repeat the learning procedure. Replacing the encoder is recommended if the problem persists.	

PROBLEM	ALARM	POSSIBLE CAUSE	ACTION
The gate does not open or close.	<i>E<sub>n</sub> 15</i>	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).
	<i>E<sub>n</sub> 25</i>	Position detected of MOTOR 2 incongruent with travel length.	Check the setting of parameter <i>A 1</i> 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).
	<i>b<sub>t</sub>L0</i> (btLO)	Flat batteries.	Wait for mains power to be restored.
	<i>FALL</i>	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.	<i>AP P.E</i>	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.
	<i>AP PL</i>	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).	<i>ASSt</i> (ASSt)	Maintenance alarm.	Perform a maintenance programm. To reset the alarm, release the protection by inputting the password ( <i>CP00</i> ) and press TEST for 5 s. The message <i>ASSt</i> is displayed, followed by the messages <i>UPdE</i> flashing for 4 seconds: to reset the alarm, hold down the TEST key until <i>donE</i> is displayed. If the TEST key is released, <i>Ab-rE</i> appears on the display and the alarm is not reset. The manoeuvre counter resets. The number of hours <i>HO-H 1</i> 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 <i>POS</i> together with audible warning signal. (with SMARTY/EMA only)	<i>POS 1</i> (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 <i>E<sub>n</sub> 11</i> is shown on the display.
	<i>POS 2</i> (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 <i>E<sub>n</sub> 11</i> 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.
	<i>b<sub>f</sub>l0d</i>	Incorrect selection of the battery type.	Change the value of the parameter <i>B4</i> .

**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.

# 16 Procedural verifications - INFO Mode



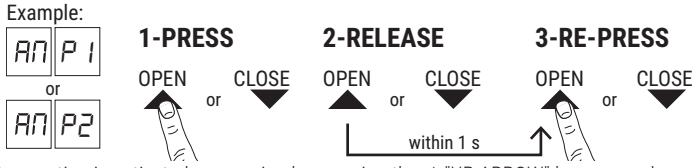
INFO mode may be used to view certain parameters measured by the **EDGE1** controller.

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	
P4.30	View for 3 s the firmware version of the control unit.	
Cnt1	Cnt2	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.
rPN1	rPN2	View MOTOR 1 /MOTOR 2 speed, in revolutions per minute (rPM).
ANP1	ANP2	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= 37.6 mains voltage= 207V~ (-10%), bUS= 33.6 mains voltage= 253V~ (+10%), bUS= 41.6
CNP1	CNP2	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, ANP must always be lower than the value ASC.
Et n1	Et n2	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.
Abs1	Abs2	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. UP L LEAF 1 position unknown, position recovery in progress. UP L LEAF 2 position unknown, position recovery in progress. UP L2 positions of both leaves unknown, position recovery in progress.
DC		Indicates the state of the automation system (open/closed). DC OP automation system opening (motor active). DC CL automation system closing (motor active). DC -O automation system completely open (motor not actives). DC -C automation system completely closed (motor not actives).
UF		UF U mains voltage too low or overload. UF H motors overcurrent.
HDU		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; i0=brake active on motor 1; 02=brake active on motor 2; i2= 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 "dRA" 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:  $Cn1$ ,  $rP1$ ,  $ANP$  and  $Ab5$  appear on the display. MOTOR 2 is controllable when the messages:  $Cn2$ ,  $rP2$ ,  $ANP2$  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.

## 16.1 B74/BCONNECT mode

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.

<b>ASCC</b>	"Remote assistance" mode enabled
<b>L-ES</b>	"Residential emergency operation" mode enabled
<b>L-EM</b>	"Condominium emergency operation" mode enabled

## 17 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 **54 00**, 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.

## 18 Position recovery WITHOUT the absolute encoder

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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, as it may cause the leaf position parameters to be lost (see parameters  $E_{nE1}$  /  $E_{nE2}$  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.

## 19 Position recovery WITH the absolute encoder (SMARTY range only)

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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.

## 20 Initial testing

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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 Chapter 1 "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  $E_{YD1}$  (SMARTY REVERSIBLE only), check that the gate leafs are locked when the motors are stopped.

# 21 Maintenance

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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.

# 22 Disposal

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The product may only be uninstalled by qualified technical personnel, following suitable procedures for removing the product correctly and safely. This product consists of numerous different materials. Some of these materials may be recycled, while others must be disposed of correctly at the specific recycling or waste management facilities indicated by local legislation applicable for this category of product.

Do not dispose of this product as domestic refuse. Observe local legislation for differentiated refuse collection, or hand the product over to the vendor when purchasing an equivalent new product.

Local legislation may envisage severe fines for the incorrect disposal of this product.

**Warning!** Some parts of this product may contain substances that are harmful to the environment or dangerous and which may cause damage to the environment or health risks if disposed of incorrectly.

# 23 Additional information and contact details

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ROGER TECHNOLOGY reserves the right to modifying or perfecting the product, which will not imply a FW version change. In the absence of an instruction manual revision, it is understood that these instructions hold good for this and for subsequent FW versions of the control unit.

This instruction manual and the warnings for the installer are given in printed form and are included in the box containing the product.

The digital version of this documentation (PDF) and any future updates are available from the reserved area of our website [www.rogertechnology.com/B2B](http://www.rogertechnology.com/B2B), in the Self Service section.

## **ROGER TECHNOLOGY CUSTOMER SERVICE:**

business hours: Monday to Friday  
08:00 to 12:00 - 13:30 to 17:30

Telephone no: +39 041 5937023

E-mail: [service@rogertechnology.it](mailto:service@rogertechnology.it)

Skype: service\_rogertechnology

To request support for any problems or for any other queries regarding the automation system, please compile the online form "REPAIRS" in the 'Self Service' area of our website [www.rogertechnology.com/B2B](http://www.rogertechnology.com/B2B).

# UE Declaration of Conformity (DoC)

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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





**ROGER TECHNOLOGY**  
Via S. Botticelli 8 • 31021 Bonisiolo di Mogliano Veneto (TV) • ITALIA  
PIVA 01612340263 • Tel. +39 041.5937023 • Fax. +39 041.5937024  
info@rogertechnology.com • [www.rogertechnology.com](http://www.rogertechnology.com)