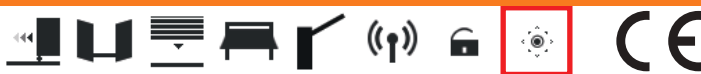


IS43 Rev08 11/02/2019

# H70/200AC

**centrale di comando per 2 motori asincroni**  
Istruzioni originali



- IT** Istruzioni ed avvertenze per l'installatore
- EN** Instructions and warnings for the installer
- DE** Anweisungen und Hinweise für den Installateur
- FR** Instructions et consignes pour l'installateur
- ES** Instrucciones y advertencias para el instalador
- PT** Instruções e advertências para o instalador

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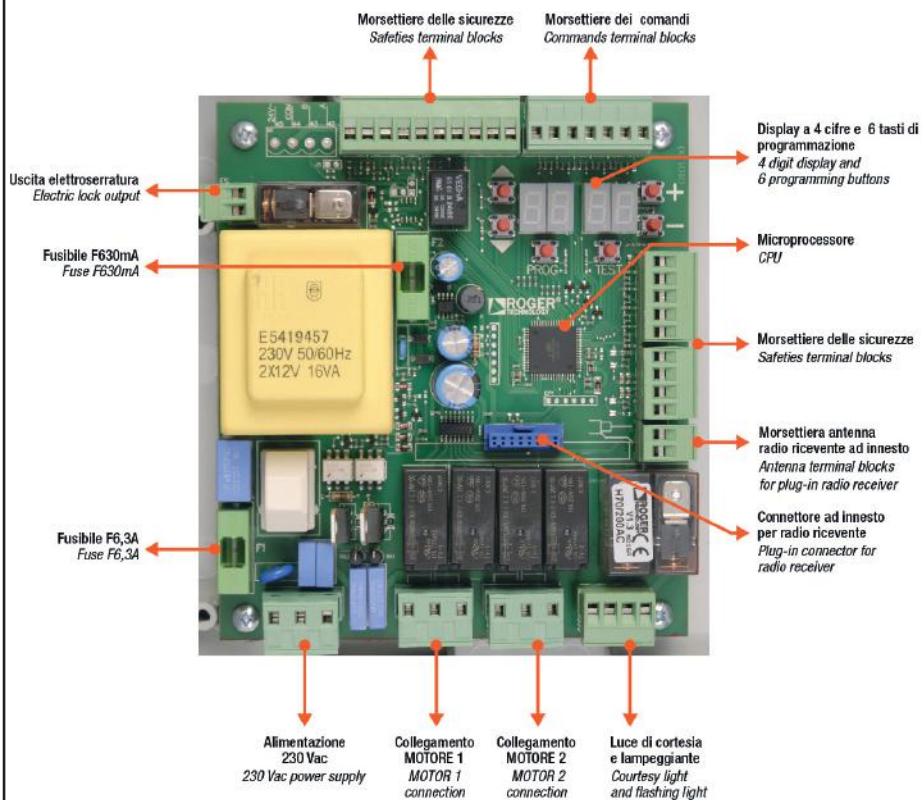
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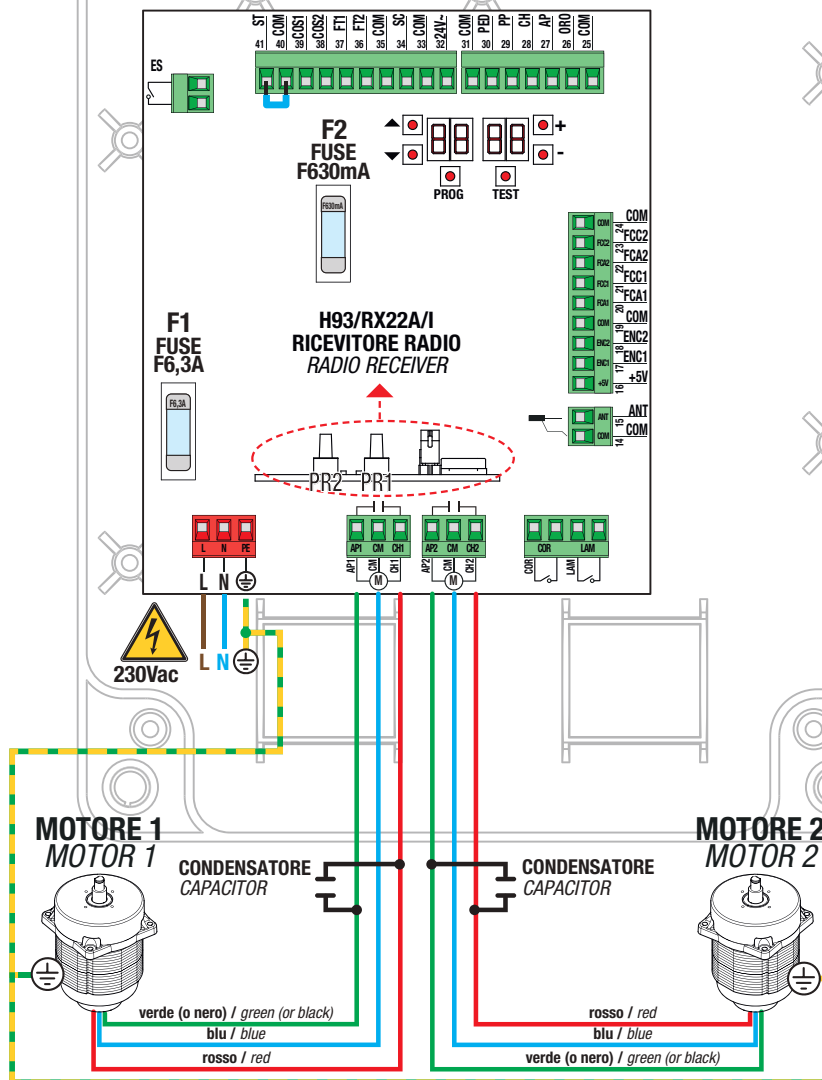
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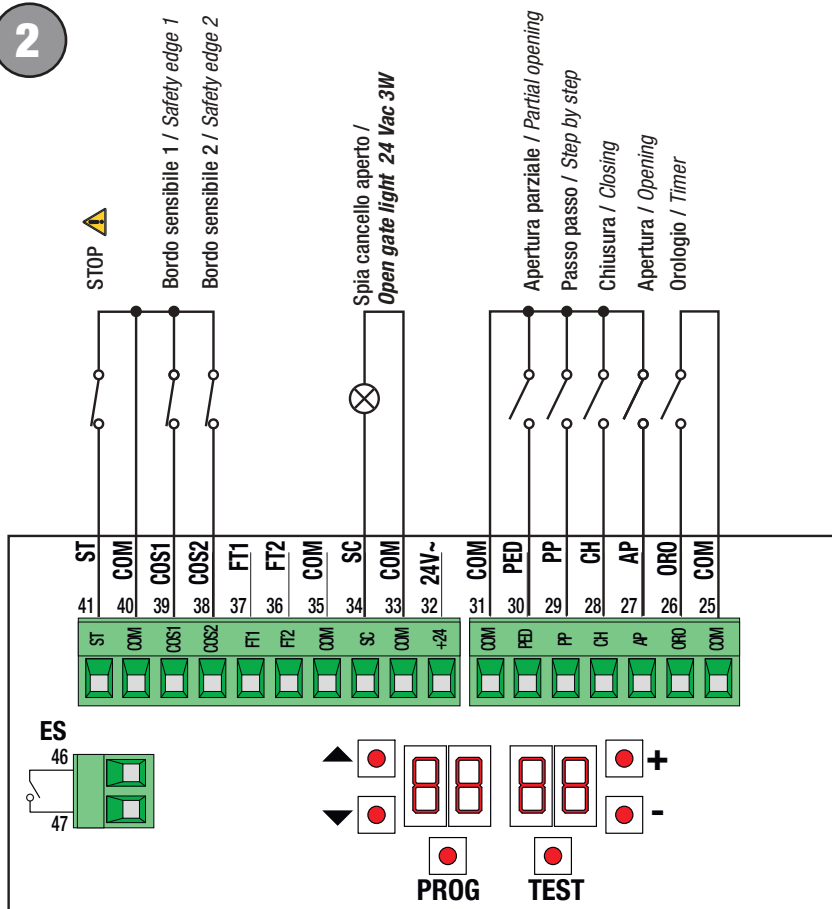
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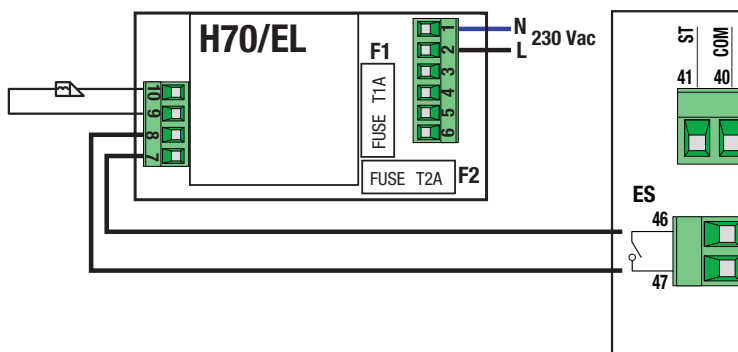


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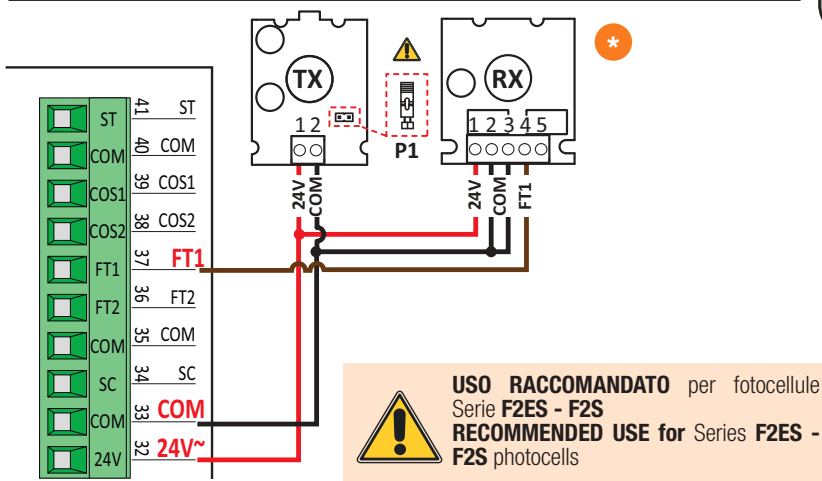
**Elettroserratura**  
**Electric lock**  
**12 Vac**  
**16 VA**



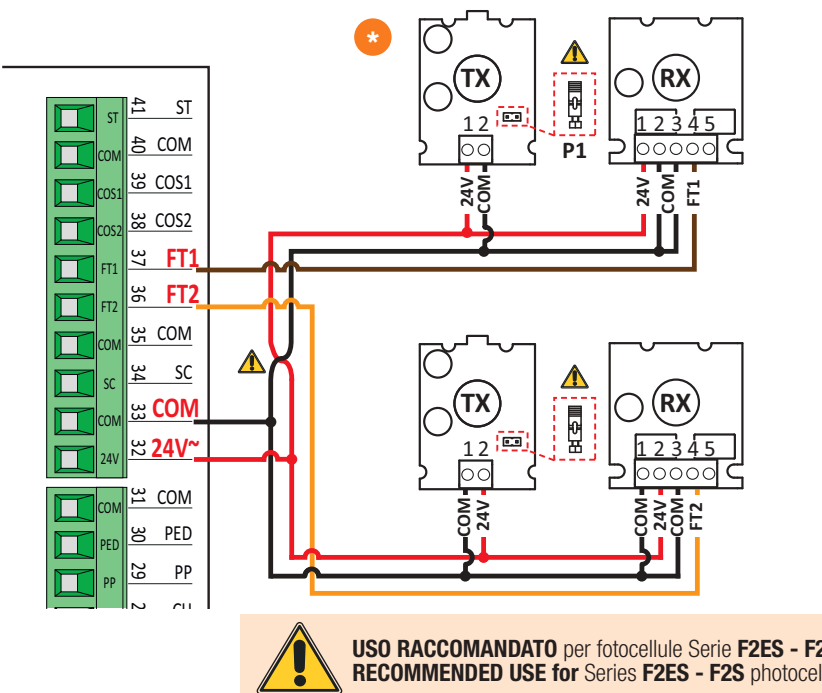
# FOTOCELLULE • PHOTOCELLS

## COLLEGAMENTO CON 1 COPPIA FOTOCELLULE • CONNECTION WITH 1 PAIR OF PHOCELLS

4



## COLLEGAMENTO CON 2 COPPIE FOTOCELLULE • CONNECTION WITH 2 PAIRS OF PHOCELLS

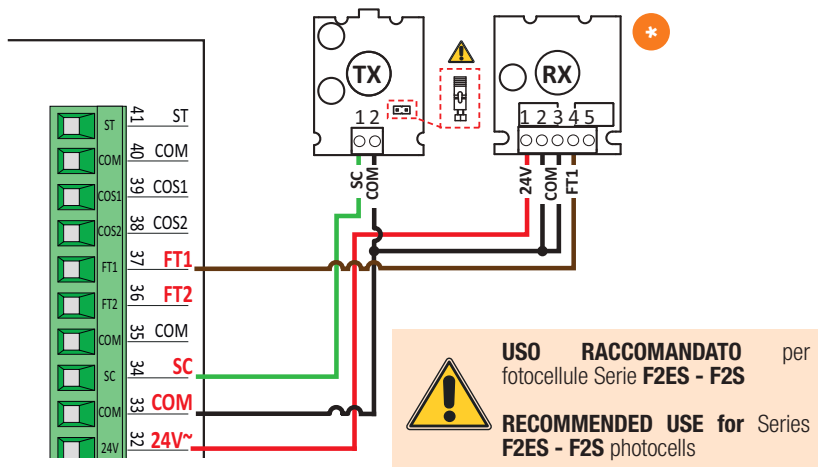


Per le impostazioni delle fotocellule, consultare il relativo manuale di installazione.  
 For photocell settings, refer to the relevant installation manual.

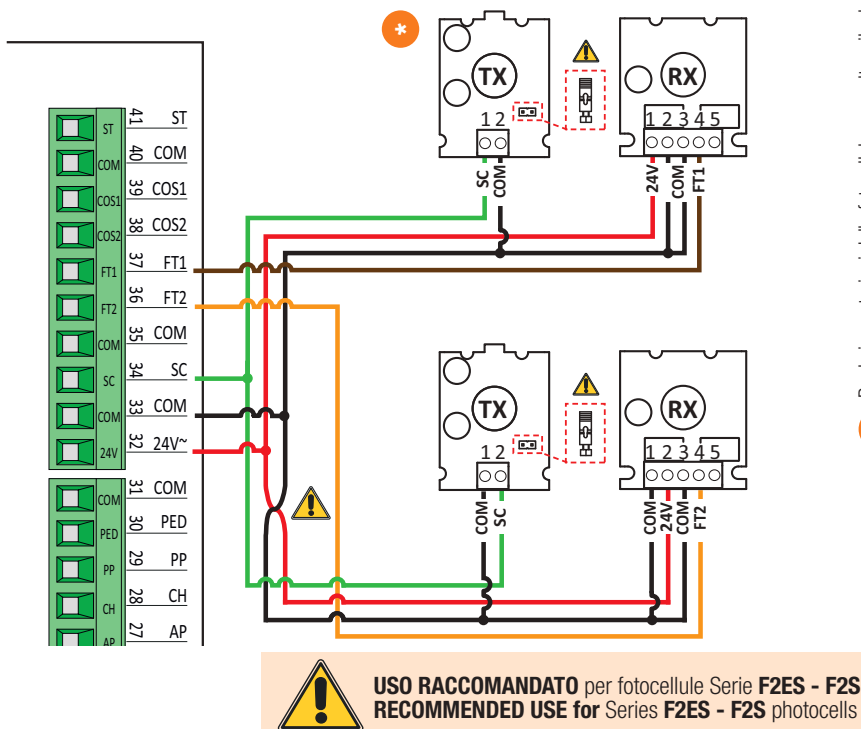
# TEST FOTOCELLULE • PHOTOCELLS TEST (AB 02)

## COLLEGAMENTO CON 1 COPPIA FOTOCELLULE • CONNECTION WITH 1 PAIR OF PHOCELLS

5



## COLLEGAMENTO CON 2 COPPIE FOTOCELLULE • CONNECTION WITH 2 PAIRS OF PHOCELLS



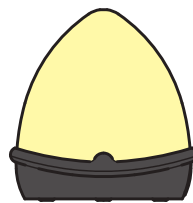
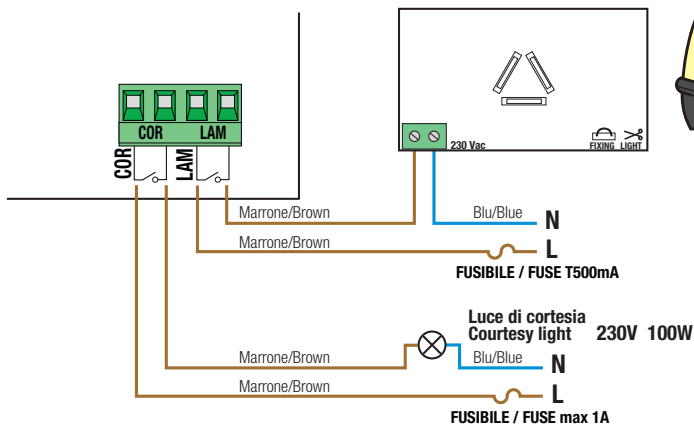
Per le impostazioni delle fotocellule, consultare il relativo manuale di installazione.  
For photocell settings, refer to the relevant installation manual.



# LAMPEGGIANTE · FLASHING LIGHT

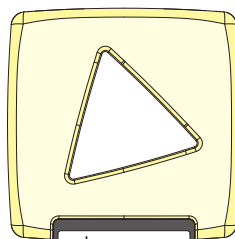
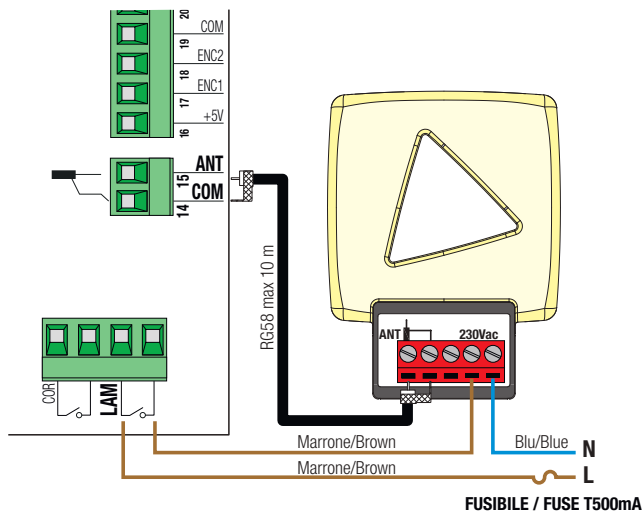
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## R92/LED230

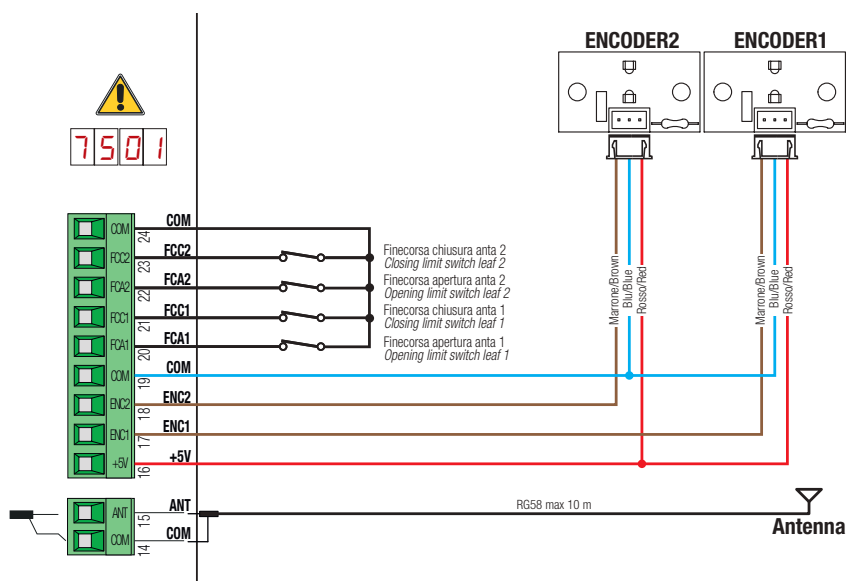


**Lampeggiante  
Flashing light**  
230V 40W max

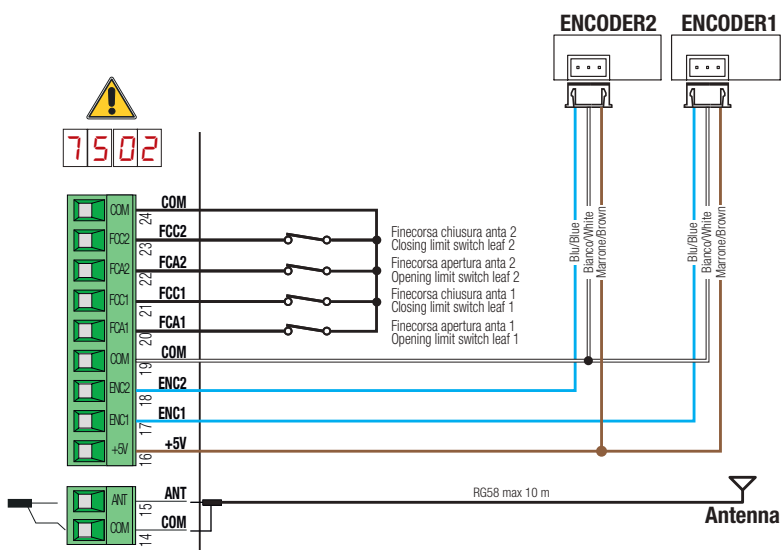
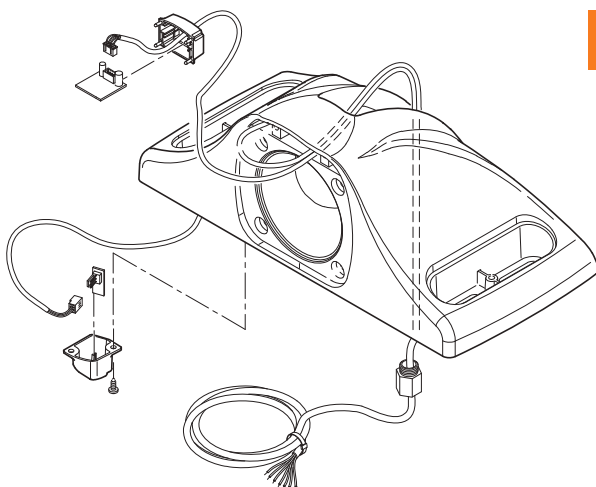
## FIFTY/230



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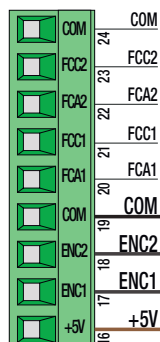
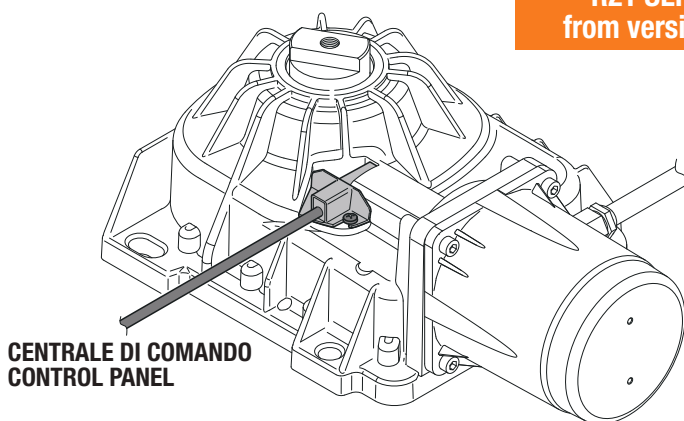
E30/800



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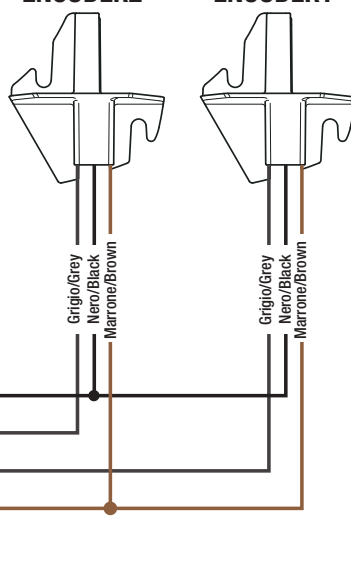
SERIE R21  
dalla versione V.1

R21 SERIES  
from version V.1



ENCODER2

ENCODER1



# 1 General safety precautions



## **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 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.

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.

## Declaration of Conformity

The undersigned Dino Florian, legal representative of **Roger Technology - Via Botticelli 8, 31021 Mogliano V.to (TV)** DECLARES that the **H70/200AC** digital control unit is compliant with the provisions established by Community directives:

- 2006/95/CE LVD Standard
- 2004/108/CE EMC Standard
- 2011/65/CE RoHS Standard

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  
EN 60335-2-103

Last two figures of year in which marking was applied **CE 09**.

Place: Mogliano V.to











Date: 02-07-2009

Signature



## 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>Hot surfaces risk.</b> Indicates danger due to hot surfaces or which anyway have high temperatures (risk of burns)
	<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 21.

## 3 Product description

The **H70/200AC** control unit is intended to control gate automation systems with 1 or 2 asynchronous single phase 230 V AC ROGER motors.

 **Use the same type of motor for both gate leaves in automation installations for double leaf swing gates.**



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.

Adjust the opening and closure speed, deceleration and delay settings appropriately for the specific installation, ensuring that the gate leaves overlap correctly.

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



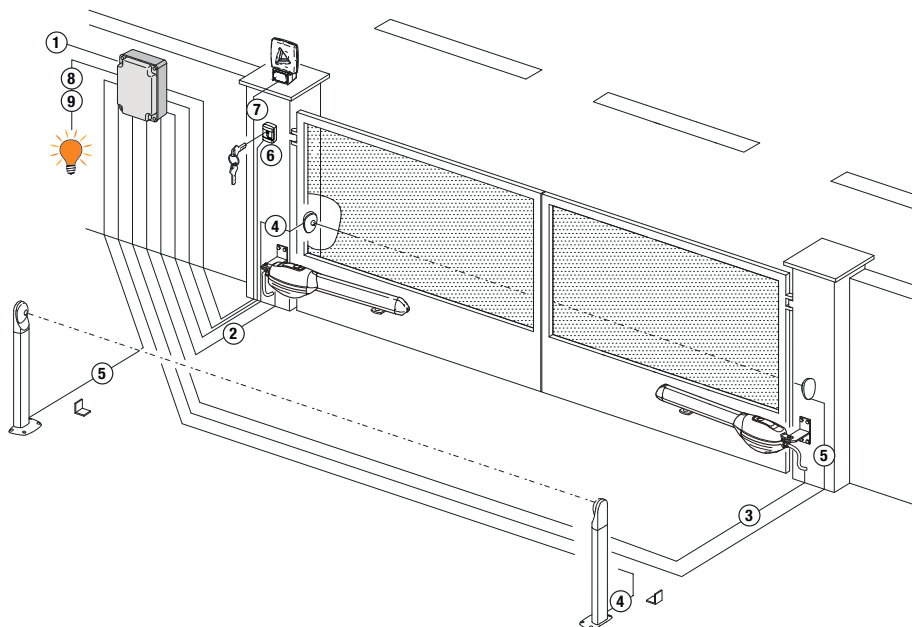
## 4 Technical characteristics of product

	H70/200AC
<b>MAINS POWER VOLTAGE</b>	230 V~ ± 10% 50 Hz
<b>MAXIMUM MAINS POWER ABSORPTION</b>	1400 W
<b>FUSES</b>	<b>F1</b> = F6,3A 250 V (5x20) motor power circuit protection <b>F2</b> = F630mA 250 V (5x20) accessories power supply protection
<b>CONNECTABLE MOTORS</b>	2
<b>MOTOR POWER SUPPLY</b>	230 V~
<b>MOTOR TYPE</b>	single-phase asynchronous
<b>MOTOR CONTROL TYPE</b>	triac phase control
<b>MAXIMUM MOTOR POWER</b>	600 W
<b>MAXIMUM POWER, FLASHING LIGHT</b>	40 W 230 V~ - 25 W 24 V~/--- (potential free contact)
<b>MAXIMUM POWER COURTESY LIGHT</b>	100 W 230 V~ - 25 W 24 V~/--- (potential free contact)
<b>ELECTRIC LOCK POWER</b>	25 W (potential free contact) max. 230 V~
<b>GATE OPEN LIGHT POWER</b>	3 W (24 V~)
<b>MAXIMUM ACCESSORY CURRENT ABSORPTION</b>	9 W
<b>OPERATING TEMPERATURE</b>	 -20°C  +55°C
<b>DEGREE OF PROTECTION</b>	IP44
<b>SOUND PRESSURE DURING USE</b>	<70 dB(A)
<b>PRODUCT DIMENSION</b>	dimensions in mm 137x156x43 Weight: 0,72 kg

## 5 Description of connections

Figures 1-2-3-4 show connection diagrams.

### 5.1 Typical installation



		Recommended cable
1	Power supply	H07RN-F 3x1,5 mm <sup>2</sup> double insulated cable
2	Connection Motor1 to control panel	Cable 4x1,5 mm <sup>2</sup>
3	Connection Motor2 to control panel	Cable 4x1,5 mm <sup>2</sup>
	Encoder connection	Cable 3x0,5 mm <sup>2</sup> (max 30 m)
4	Photocell - Receiver	Cable 4x0,5 mm <sup>2</sup> (max 20 m)
5	Photocell - Transmitter	Cable 2x0,5 mm <sup>2</sup> (max 20 m)
	Key selector R85/60	Cable 3x0,5 mm <sup>2</sup> (max 20 m)
6	Keypad H85/TTD - H85/TDS (connecting to control panel to decoder board H85/DEC - H85/DEC2)	Cable 3x0,5 mm <sup>2</sup> (max 20 m)
7	Flashing light <b>R92/LED230 - FIFTY/230</b> Power supply 230Vac - LED	Cable 2x1 mm <sup>2</sup> (max 10 m)
	Antenna	Cable tipo RG58 (max 10 m)
8	Gate open indicator	Cable 2x0,5 mm <sup>2</sup> (max 20 m)
9	Courtesy light	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.

## 5.2 Electrical connections

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

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


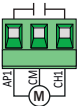
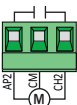
For power supply, use a H07RN-F 3G1.5 type electric cable and connect it to the terminals L (brown), N (blue),  (yellow/green), located inside the control panel box.

Strip the insulation from the ends of the power cable wires which will be connected to the terminal and secure the cable with the cable retainer.

 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 [B] (not supplied).

	DESCRIPTION
	Mains power supply 230 Vac $\pm 10\%$ connection.
<b>AP1-CM-CH1</b> 	<b>Connection to ROGER MOTOR 1.</b> The gate open and/or gate closed stop limit switches may be connected to the control unit. When a limit switch is activated, power is cut to the motor opening/closing the gate. Connect the gate open limit switch to terminals <b>AP1-CM</b> , and connect the gate closed limit switch to terminals <b>CH1-CM</b> . To connect the limit switches directly to the control unit, refer to chapter 6.  <b>N.B.:</b> the value of the capacitor between <b>AP1</b> and <b>CH1</b> is indicated in the instructions for the motor installed.
<b>AP2-CM-CH2</b> 	<b>Connection to ROGER MOTOR 2.</b> The gate open and/or gate closed stop limit switches may be connected to the control unit. When a limit switch is activated, power is cut to the motor opening/closing the gate. Connect the gate open limit switch to terminals <b>AP2-CM</b> , and connect the gate closed limit switch to terminals <b>CH2-CM</b> . To connect the limit switches directly to the control unit, refer to chapter 6.  <b>N.B.:</b> the value of the capacitor between <b>AP2</b> and <b>CH2</b> is indicated in the instructions for the motor installed.

## 6 Commands and Accessories










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

KEY:

N.A. (Normally Open).

N.C. (Normally Closed).

CONTACT	DESCRIPTION
<b>10(COR)</b> <b>11</b> 	Output (potential free contact) for connecting courtesy light. 230 Vac 100 W (fig. 6).
<b>12(LAM)</b> <b>13</b> 	Connection for flashing light (potential free contact) 230 Vac 40 W (fig. 6). The settings for the pre-manoeuve flashing warning signal may be selected with parameter 85, while the flashing mode is set with parameter 78.
<b>14</b> <b>15(ANT)</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.
	MOTOR 1 ENCODER connection (fig. 7-8-9). Encoders are disabled by default (75 00).  <b>WARNING!</b> Always disconnect from electrical power before disconnecting or connecting the encoder cable.
	MOTOR 2 ENCODER connection (fig. 7-8-9). Encoders are disabled by default (75 00).  <b>WARNING!</b> Always disconnect from electrical power before disconnecting or connecting the encoder cable.
<b>20(FCA1)</b> <b>24(COM)</b> 	Input (N.C.) for connecting open limit switch for MOTOR 1 (fig. 6-7). Use a 4x0.5 mm <sup>2</sup> cable to connect the limit switch to the control unit. The gate stops when the limit switch is activated. When the gate is completely open, the control unit display shows FR.
<b>21(FCC1)</b> <b>24(COM)</b> 	Input (N.C.) for connecting closed limit switch for MOTOR 1 (fig. 6-7). Use a 4x0.5 mm <sup>2</sup> cable to connect the limit switch to the control unit. The gate stops when the limit switch is activated. When the gate is completely closed, the control unit display shows FC.
<b>22(FCA2)</b> <b>24(COM)</b> 	Input (N.C.) for connecting open limit switch for MOTOR 2 (fig. 6-7). Use a 4x0.5 mm <sup>2</sup> cable to connect the limit switch to the control unit. The gate stops when the limit switch is activated. When the gate is completely open, the control unit display shows FR.
<b>23(FCC2)</b> <b>24(COM)</b> 	Input (N.C.) for connecting closed limit switch for MOTOR 2 (fig. 6-7). Use a 4x0.5 mm <sup>2</sup> cable to connect the limit switch to the control unit. The gate stops when the limit switch is activated. When the gate is completely closed, the control unit display shows FC.
<b>26(ORO)</b> <b>25(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. The function of this command is determined by parameter 80.
<b>27(AP)</b> <b>31(COM)</b> 	Open control signal input (N.O.).
<b>28(CH)</b> <b>31(COM)</b> 	Close command input (N.O.).

CONTACT	DESCRIPTION
<b>29(PP) 31(COM)</b> 	Step by step mode command input (N.O.). The function of the control is determined by parameter <i>R4</i> .
<b>30(PED) 31(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>32(24V~) 33(COM)</b>	Power feed for external devices 24Vac 9 W.
<b>34(SC) 35(COM)</b> 	Connection for gate open indicator lamp 24 Vdc 3 W (see fig. 2) The function of the indicator lamp is determined by parameter <i>AB</i> .
<b>34(SC) 35(COM)</b>	Photocell test connection (see fig. 5). The power feed for the photocell transmitters (TX) may be connected to terminal <b>34(SC)</b> . Set the parameter <i>AB 02</i> 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.
<b>36(FT2) 33(COM)</b> 	Input (N.C.) for connecting photocells <b>FT2</b> (fig. 4). The photocells <b>FT2</b> are configured by default with the following settings: <ul style="list-style-type: none"> <li>– <i>53 00</i>. Photocell FT2 is disabled when gate is opening.</li> <li>– <i>54 00</i>. Photocell FT2 is disabled when gate is closing</li> <li>– <i>55 0 1</i>. The gate opens when an open command is received if photocell FT2 is obstructed.</li> </ul> If the photocells are not installed, jumper the terminals <b>36(FT2) - 33(COM)</b> or set the parameters <i>53 00</i> and <i>54 00</i> .
<b>37(FT1) 33(COM)</b> 	Input (N.C.) for connecting photocells <b>FT1</b> (fig. 4). The photocells <b>FT1</b> are configured by default with the following settings: <ul style="list-style-type: none"> <li>– <i>50 00</i>. Photocell FT1 is disabled when gate is opening.</li> <li>– <i>51 02</i>. Movement is reversed if the photocell is triggered during gate closure.</li> <li>– <i>52 0 1</i>. The gate opens when an open command is received if photocell FT1 is obstructed.</li> </ul> If the photocells are not installed, jumper the terminals <b>37(FT1) - 33(COM)</b> or set the parameters <i>50 00</i> and <i>51 00</i> .
<b>38(COS2) 40(COM)</b> 	Input (N.C. or 8.2 kOhm) for connecting sensing edge <b>COS2</b> (fig. 2). The sensing edge is configured by default with the following settings: <ul style="list-style-type: none"> <li>– <i>74 00</i>. The sensing edge COS2 is disabled.</li> </ul> If the sensing edge is not installed, jumper the terminals <b>38(COS2) - 40(COM)</b> or set the parameter <i>74 00</i> .
<b>39(COS1) 40(COM)</b> 	Input (N.C. or 8.2 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>– <i>73 03</i>. If the sensing edge COS1 is enabled, the gate always reverses.</li> </ul> If the sensing edge is not installed, jumper the terminals <b>39(COS1) - 40(COM)</b> or set the parameter <i>73 00</i> .
<b>41(ST) 40(COM)</b> 	STOP command input (NC). The current manoeuvre is arrested if the safety contact opens. <b>N.B.: the controller is supplied with this contact already jumpered by ROGER TECHNOLOGY.</b>
<b>46(ES) 47(COM)</b> 	Input for connecting electric lock (potential free contact) 230 Vac max 25 W (fig. 3).
<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 <i>75</i>).</li> <li>– <b>PR2</b> - partial opening command (modifiable with parameter <i>77</i>).</li> </ul>

## 7 Function buttons and display

UP

DOWN

▲

▼

88

88

PROG

TEST

+

-

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.

## 8 Switching on or commissioning

Power the control unit.  
The firmware version of the control unit is displayed briefly. See chapter 9.

## 9 Display function modes

### 9.1 Parameter display mode

PARAMETER

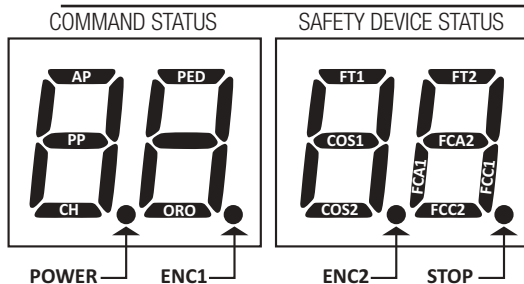
PARAMETER  
VALUE

A.1.

00

See chapter 11 for detailed descriptions of parameters.

## 9.2 Command and safety device status display mode



### COMMAND STATUS:

The command status indicators on the display are normally OFF.

They ILLUMINATE when a command is received (e.g.: when a step mode command is received, the segment PP illuminates).

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

### SAFETY DEVICE STATUS:

The safety device status indicators on the display are normally ON.

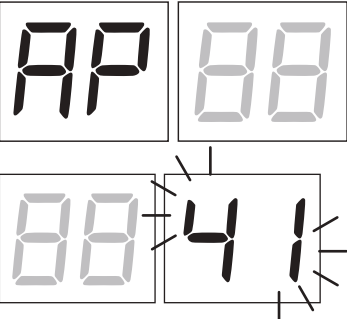
If an indicator is OFF, the relative device is in alarm state or is not connected.

The an indicator is FLASHING, the relative device has been disabled with a specific parameter.

SEGMENT	SAFETIES
FT1	photocell FT1
FT2	photocell FT2
COS1	COS1 sensing edge
COS2	COS2 sensing edge
FCA1	gate open limit switches - LEAF1
FCA2	gate open limit switches - LEAF2
FCC1	gate close limit switches - LEAF1
FCC2	gate close limit switches - LEAF2
ENC1	Encoder MOTOR 1
ENC2	Encoder MOTOR 2

### 9.3 TEST mode

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



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

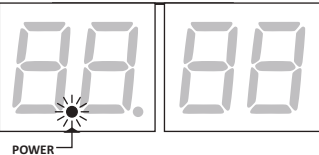
The status of the safety devices/inputs is shown on the right hand side of the display. The number of the terminal relative to the safety device in alarm state flashes.  
When the gate is completely open or completely closed, when the limit switches are connected to the control unit, the display shows **FR** or **FC** is shown on the display to indicate that the gate has reached the gate open limit switch **FR** or gate closed limit switch **FC**.

Example: STOP contact in alarm state.

00	No safety device in alarm state, and no limit switch activated
41	STOP contact (N.C.) open. Jumper the STOP contact.
39	Sensing edge COS1 contact isn't connect or is open
38	Sensing edge COS2 contact isn't connect or is open
37	Photocell FT1 contact isn't connect or is open
36	Photocell FT2 contact isn't connect or is open
FE	More than 3 limit switches activated
FR	Gate completely open / Gate open limit switch activated
FC	Gate completely closed / Gate closed limit switch activated
F1	Limit switch on gate leaf 1 error
F2	Limit switch on gate leaf 2 error
20	MOTOR 1 open limit switch activated
21	MOTOR 1 closed limit switch activated
22	MOTOR 2 open limit switch activated
23	MOTOR 2 closed limit switch activated

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

### 9.4 Standby mode



This mode is activated after 30 minutes with no user input. The POWER LED flashes slowly.  
Press UP ▲, DOWN ▼, +, - to reactivate the control unit.  
**NOTE:** If a safety password (only if active) is unlocked, to adjust the parameter settings, the password is automatically reactivated in Stand By mode.



# 10 Travel acquisition

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

## Before starting:

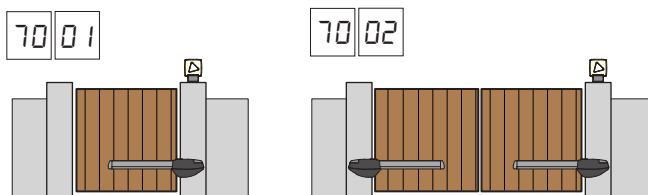
**IMPORTANT: Select the automation model installed with parameter A1.**



*It is very important that this parameter is selected correctly. An incorrect setting may cause severe damage or injury.*

SELECTION	MODEL
A1 00	Speed motor (4-pole)
A1 01	Slow motor (6pole)

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



2. If the encoder is installed, select the correct setting to parameter 75.

3. If the limit switches are connected to the control panel, select the correct setting to parameter 72.

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



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

6. Move the gate into the closed position. The doors must rest against the mechanical stops.

7. Press **TEST** (see TEST mode in chapter 9) and check the command signal and safety device states. If any safety devices are not installed, jumper the relative contact or disable the device from the relative parameter (50, 51, 53, 54, 73 and 74).

8. Select the appropriate self-acquisition procedure for your installation:

**A** Acquisition procedure **WITH** the encoder enabled, **WITH** or **WITHOUT** electric limit switches (see paragraph 10.1).

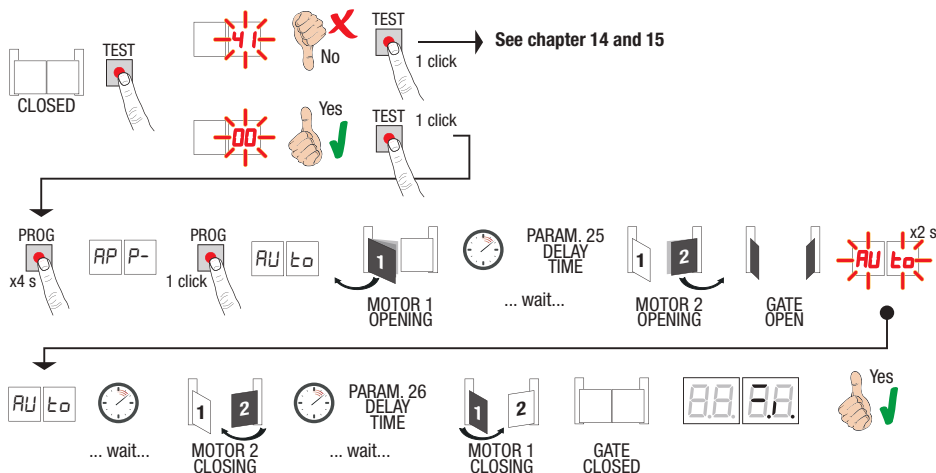
**B** Acquisition procedure **WITHOUT** encoder, **WITH** 2 opening and closing limit switches (see paragraph 10.2).

**C** Acquisition procedure **WITHOUT** encoder, **ONLY** for opening limit switch connected to the control unit (see paragraph 10.3).

**D** Acquisition procedure **WITHOUT** encoder and **WITHOUT** electric or magnetic limit switch (see paragraph 10.4).

**NOTE:** When the limit switches are connected in series to the motor phases, use this acquisition procedure.

## 10.1 Acquisition procedure WITH the encoder enabled, WITH or WITHOUT electric limit switches



- Press and hold **PROG** for 4 seconds, **AP P-** is shown on the display.
- Press **PROG** again. **RU t0** is shown on the display.
- MOTOR 1 starts opening at normal 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 or the relative limit switch is activated, the gate stops briefly. The message **RU t0** flashes on the display for 2 s.
- When the message **RU t0** 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 or the relative limit switch 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.

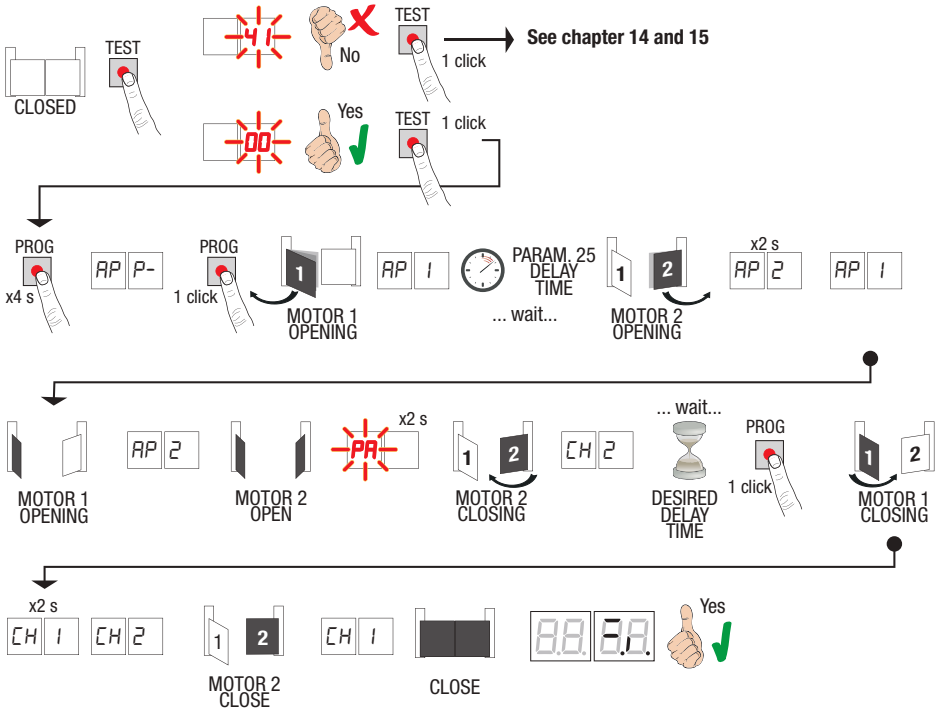


**For more information, see chapter 15 "Alarms and faults".**

## 10.2 Acquisition procedure WITHOUT encoder, WITH 2 opening and closing limit switches )



- WARNING: Before starting the self-acquisition procedure:**
- set parameters **11** and **12** - Deceleration space setting.
  - set parameter **72** **01**



- Press and hold **PROG** for 4 seconds. **AP P-** is shown on the display.
  - Press **PROG** again.
  - MOTOR 1 starts opening at normal speed. **AP 1** is shown on the display.
  - After the delay time set with parameter **25**, (with a default time setting of 3 s), MOTOR 2 starts an opening manoeuvre. **AP 2** is shown on the display for 2 s, and is immediately followed by **AP 1**.
  - **AP 2** appears on the display when MOTOR 1 reaches the open limit switch.
  - **PR** flashes on the display for 2 seconds when MOTOR 2 reaches the open limit switch.
  - After this 2 second interval, MOTOR 2 closes automatically. The message **CH 2** appears on the display.
  - Press **PROG** after the required delay period (set automatically with parameter **26**). **CH 1** appears on the display for 2 seconds and is immediately followed by **CH 2**.
  - **CH 1** appears on the display when MOTOR 2 reaches the closed limit switch.
  - The self-acquisition procedure concludes when MOTOR 1 reaches the closed limit switch.
- If the acquisition procedure is completed successfully, the display enters the command and safety device state display mode.

If the following error messages are shown on the display, repeat the acquisition procedure:

- **AP PE**: acquisition error. Press the **TEST** button to clear the error, and check the safety device in alarm state.



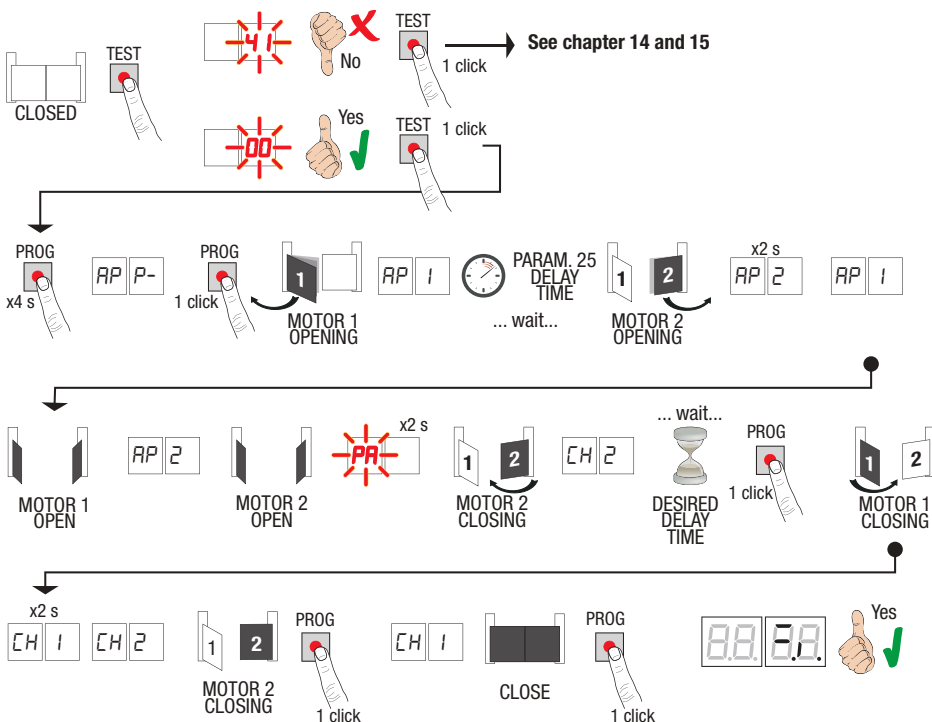
**For more information, see chapter 15 “Alarms and faults”.**

## 10.3 Acquisition procedure WITHOUT encoder, ONLY for opening limit switch connected to the control unit



**WARNING:** Before starting the self-acquisition procedure:

- set parameters  $l1$  and  $l2$  - Deceleration space setting.
- set parameter  $l2$  02



- Press and hold **PROG** for 4 seconds. **AP P-** is shown on the display.
- Press **PROG** again.
- MOTOR 1 starts opening at normal speed. **AP 1** is shown on the display.
- After the delay time set with parameter  $25$ , (with a default time setting of 3 s), MOTOR 2 starts an opening manoeuvre. **AP 2** is shown on the display for 2 s, and is immediately followed by **AP 1**.
- **AP 2** appears on the display when MOTOR 1 reaches the open limit switch.
- **PR** flashes on the display for 2 seconds when MOTOR 2 reaches the open limit switch.
- After this 2 second interval, MOTOR 2 closes automatically. The message **CH 2** appears on the display.
- Press **PROG** after the required delay period (set automatically with parameter  $26$ ). MOTOR 1 starts to close.
- NOTE: If the parameter is  $26$  00, MOTOR 1 closes at the same time as MOTOR 2.**
- **CH 1** appears on the display for 2 seconds and is immediately followed by **CH 2**.
- When the LEAF 2 reaches the closing mechanical stop, **immediately** press the **PROG** key.
- **CH 1** appears on the display.
- When the LEAF 1 reaches the closing mechanical stop, **immediately** press the **PROG** key.

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.



**For more information, see chapter 15 "Alarms and faults".**

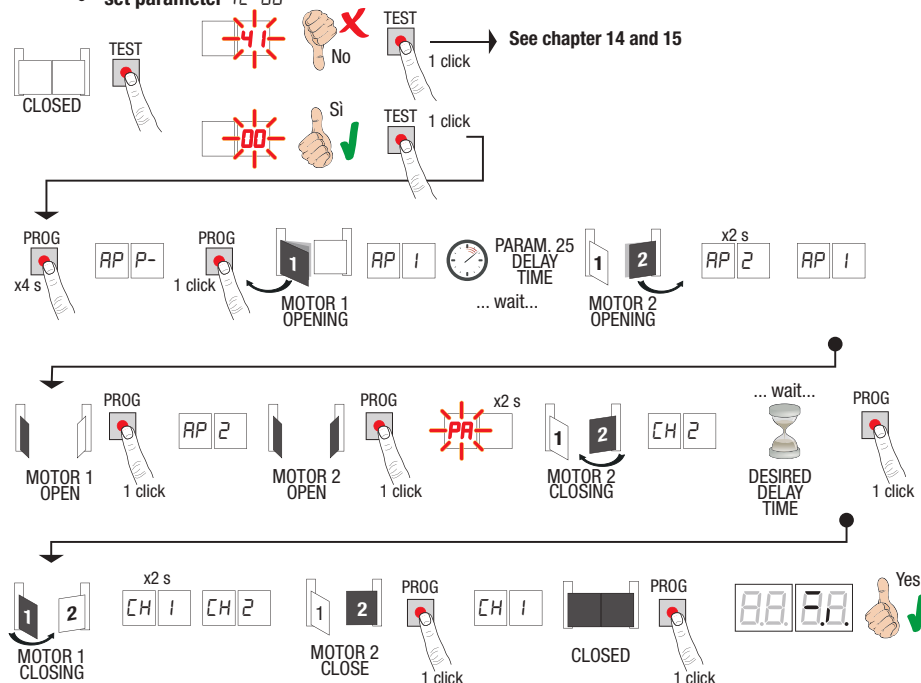
## 10.4 Acquisition procedure WITHOUT encoder and WITHOUT electric or magnetic limit switch

**NOTE:** When the limit switches are connected in series to the motor phases, use this acquisition procedure.



**WARNING:** Before starting the self-acquisition procedure:

- set parameters 11 and 12 - Deceleration space setting.
- set parameter 72 00



- Press and hold **PROG** for 4 seconds. **AP P-** is shown on the display.
- Press **PROG** again.
- MOTOR 1 starts opening at normal speed. **AP 1** is shown on the display.
- After the delay time set with parameter 25 (with a default time setting of 3 s), MOTOR 2 starts an opening manoeuvre. **AP 2** is shown on the display for 2 s, and is immediately followed by **AP 1**.
- When the LEAF 1 reaches the opening mechanical stop, **immediately** press the **PROG** key. **AP 2** appears on the display.
- When the LEAF 2 reaches the opening mechanical stop, **immediately** press the **PROG** key. **PA** flashes on the display for 2 seconds.
- After this 2 second interval, MOTOR 2 closes automatically. The message **CH 2** appears on the display.
- Press **PROG** after the required delay period (set automatically with parameter 25). MOTOR 1 starts to close.
- **NOTE: If the parameter is 25 00, MOTOR 1 closes at the same time as MOTOR 2.**
- The message **CH 1** appears on the display for 2 seconds and is immediately followed by **CH 2**.
- When the LEAF 2 reaches the closing mechanical stop, **immediately** press the **PROG** key.
- **CH 1** appears on the display.
- When the LEAF 1 reaches the closing mechanical stop, **immediately** press the **PROG** key.

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.



**For more information, see chapter 15 "Alarms and faults".**

# 11 Index of parameters

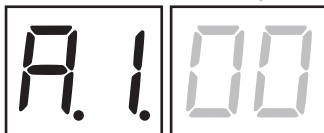
PARAM.	FACTORY DEFAULT	DESCRIPTION	PAGE
<i>R 1</i>	<i>00</i>	Motor type selection	64
<i>R 2</i>	<i>00</i>	Automatic close after pause time (from gate completely open)	64
<i>R 3</i>	<i>00</i>	Automatic gate closing after mains power outage (black-out)	64
<i>R 4</i>	<i>00</i>	Selecting step mode control function (PP)	64
<i>R 5</i>	<i>00</i>	Pre-flashing	64
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<i>R 7</i>	<i>00</i>	Enabling operator present function.	65
<i>R 8</i>	<i>00</i>	Gate open indicator / photocell test function	65
<i>1 1</i>	<i>15</i>	Set MOTOR 1 deceleration space (%)	65
<i>1 2</i>	<i>15</i>	Set MOTOR 2 deceleration space (%)	65
<i>1 3</i>	<i>10</i>	Adjusting LEAF 1 position control	65
<i>1 4</i>	<i>10</i>	Adjusting LEAF 2 position control	65
<i>1 5</i>	<i>99</i>	Partial opening adjustment (%)	65
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<i>2 1</i>	<i>30</i>	Setting automatic closing time	65
<i>2 2</i>	<i>04</i>	Setting MOTOR 1 manoeuvre time	66
<i>2 3</i>	<i>04</i>	Setting MOTOR 2 manoeuvre time	66
<i>2 4</i>	<i>00</i>	Enable double manoeuvre time	66
<i>2 5</i>	<i>03</i>	Adjusting opening delay of MOTOR 2	66
<i>2 6</i>	<i>05</i>	Adjusting closing delay of MOTOR 1	66
<i>2 7</i>	<i>02</i>	Setting reverse time after activation of sensing edge or obstacle detection (crush prevention).	66
<i>2 8</i>	<i>0 1</i>	Setting electric lock activation lead time	66
<i>2 9</i>	<i>03</i>	Setting electric lock activation time	66
<i>3 0</i>	<i>00</i>	Enable anti-disturbance filter for power from generator	66
<i>3 1</i>	<i>06</i>	Set motor torque during manoeuvre	66
<i>3 2</i>	<i>06</i>	Set motor torque during deceleration	66
<i>3 3</i>	<i>08</i>	Adjusting of motor torque	66
<i>3 4</i>	<i>02</i>	Set initial acceleration when opening/closing (soft-start)	67
<i>3 5</i>	<i>08</i>	Set torque after activation of sensing edge or obstacle detection system	67
<i>3 6</i>	<i>03</i>	Set initial maximum torque boost time	67
<i>3 7</i>	<i>00</i>	Set open/closed stop approach distance	67
<i>3 8</i>	<i>00</i>	Enable lock release reverse impulse	67
<i>4 1</i>	<i>0 1</i>	Set deceleration during opening/closure	67
<i>4 2</i>	<i>20</i>	Set obstacle detection sensitivity during manoeuvres	67
<i>4 3</i>	<i>50</i>	Set obstacle detection sensitivity during deceleration	67
<i>4 9</i>	<i>00</i>	Number of automatic closure attempts after activation of sensing edge or obstacle detection (crush protection)	68
<i>5 0</i>	<i>00</i>	Setting photocell mode during gate opening (FT1)	68
<i>5 1</i>	<i>02</i>	Setting photocell mode during gate closing (FT1)	68

PARAM.	FACTORY DEFAULT	DESCRIPTION	PAGE
52	01	Photocell (FT1) mode with gate closed	68
53	00	Setting photocell mode during gate opening (FT2)	68
54	00	Setting photocell mode during gate closing (FT2)	68
55	01	Photocell (FT2) mode with gate closed	69
56	00	Enable close command 6 s after activation of photocell (FT1-FT2)	69
60	00	Enable braking at open and closed mechanical stop/limit switch	69
61	00	Enable braking after activation of photocells	69
62	00	Enable braking after STOP command	69
63	00	Enable braking after open > close / close > open inversion	69
64	05	Set braking time	69
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70	02	Select number of motors installed	69
72	00	Enable limit switches	69
73	03	Configuring sensing edge COS1	70
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75	00	Configure encoder	70
76	00	Configuring radio channel 1 (PR1)	70
77	01	Configuring radio channel 2 (PR2)	70
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## 12 Parameter menu

PARAMETER

PARAMETER  
VALUE



<b>A1 00</b>	<b>Motor type selection</b>
00	Speed motor (4-pole)
01	Slow motor (6-pole) - (R20/302, R20/502, R21/368, H23/282, R41/832, R41/833)
<b>A2 00</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>A3 00</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 17).
<b>A4 00</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 (A2 00), the condominium function automatically attempts a closing manoeuvre A2 01.
02	Condominium function: the gate opens and closes after the set automatic closing time. The automatic closing timer does NOT restart if a new step mode command is received. Step mode commands are ignored while the gate is opening. This allows the gate to open completely and prevents the gate from closing when not required. If automatic closing is disabled (A2 00), the condominium function automatically attempts a closing manoeuvre A2 01.
03	Open-close-open-close.
04	Open-close-stop-open.
<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</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>11 15</b>	<b>Set MOTOR 1 deceleration space (%)</b> <b>N.B.:</b> if no encoder is installed, repeat the travel acquisition procedure after any change made to this parameter.
<b>12 15</b>	<b>Set MOTOR 2 deceleration space (%)</b> <b>N.B.:</b> if no encoder is installed, repeat the travel acquisition procedure after any change made to this parameter.
01-30	From 1% to 30% of the total gate travel.
<b>13 10</b>	<b>LEAF 1 completely open/closed position control adjustment</b> <b>N.B.:</b> parameter visible only with encoder enabled (75 01 or 75 02) and if limit switches are not installed (72 00 or 72 02). If 75 03, the factory value becomes 35. The selected value 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/closed stop.
<b>14 10</b>	<b>LEAF 2 completely open/closed position control adjustment</b> <b>N.B.:</b> parameter visible only with encoder enabled (75 01 or 75 02) and if limit switches are not installed (72 00 or 72 02). If 75 03, the factory value becomes 35. The selected value 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 open/closed stop.
01-40	Motor revolutions.
<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.
01-99	From 1% to 99% of total gate travel.
<b>16 00</b>	<b>Setting additional time after direction inversion, with no encoder</b> <b>N.B.:</b> parameter visible only if encoder is disabled 75 00. In the event of photocell activation or a reverse command during an opening or closing manoeuvre, the gate reverses for the elapsed manoeuvre time plus an additional time to allow the manoeuvre to be completed.
00	3 s.
01	6 s. Recommended setting for installations with hydraulic motors.
<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.
00-90	Pause time settable from 00 to 90 s.
92-99	Pause time settable from 2 to 9 min.

22 04	<b>MOTOR 1 operating time increase</b> <b>N.B.:</b> parameter visible only if encoder is disabled 75 00. Additional time (in seconds) added to the operation time programmed during the acquisition phase. <b>It is NOT necessary to repeat the travel acquisition.</b>
23 04	<b>MOTOR 2 operating time increase</b> <b>N.B.:</b> parameter visible only if encoder is disabled 75 00. Additional time (in seconds) added to the operation time programmed during the acquisition phase. <b>It is NOT necessary to repeat the travel acquisition.</b>
03- 10	from 0 to 10 s of manoeuvre.
24 00	<b>Enable double manoeuvre time</b> Enabling this parameter is recommended for installations with particularly long operating times. <b>N.B.:</b> parameter visible only if encoder is disabled 75 00.
00	Disabled.
0 1	Enabled.
25 03	<b>Adjusting opening delay of MOTOR 2</b> During opening, MOTOR 2 starts with an adjustable delay after MOTOR 1.
00- 10	From 0 to 10 s.
26 05	<b>Adjusting closing delay of MOTOR 1</b> During closing, MOTOR 1 starts with an adjustable delay after MOTOR 2.
00- 60	From 0 to 60 s.
27 02	<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.
28 01	<b>Set electric lock activation lead time</b> Sets the electric lock activation time before any manoeuvre.
00- 02	From 0 to 2 s.
29 03	<b>Enable electric lock</b> Sets duration of electric lock activation time.
00	Disabled.
0 1- 06	Enabled, with time from 1 to 6 s. This parameter must be set to a value higher than parameter 38 (if enabled).
30 00	<b>Enable anti-disturbance filter for power from generator</b>
00	Disabled.
0 1	Enabled. This parameter enables a supplementary digital filter function to improve the operation of the control unit when powered by a generator and optimise motor control.
31 06	<b>Set motor torque during open/close manoeuvre</b> This parameter must always be equal to or less than the value set for parameter 33.
04- 08	4 = minimum motor torque ... 8 = maximum motor torque.
32 06	<b>Set motor torque during deceleration</b>
04- 08	4 = minimum motor torque ... 8 = maximum motor torque.
33 08	<b>Set motor torque boost at start of manoeuvre</b>
0 1- 08	1 = minimum motor torque ... 8 = maximum motor torque.

<b>34 02</b>	<b>Set initial acceleration when opening/closing (soft-start)</b>
00	Disabled.
01-02	Enabled. The gate accelerates slowly and progressively at the start of the manoeuvre.
03-04	Enabled. The gate accelerates even more slowly and progressively at the start of the manoeuvre. N.B.: values available only if encoder is enabled (75 different from 00). Setting a value of 04 is not recommended for heavy gates.
<b>35 08</b>	<b>Set motor torque after activation of sensing edge or encoder.</b>
00	Disabled. Torque applied is the value set for parameter 31.
01-08	1 = minimum motor torque ... 8 = maximum motor torque.
<b>36 03</b>	<b>Enable maximum torque boost at start of manoeuvre</b>
	If this parameter is enabled, each time the motor starts the maximum boost torque is applied for a settable period of time to allow the gate to start moving.
00-20	From 0 to 20 s.
<b>37 00</b>	<b>Set open/closed stop approach distance</b>
00	Disabled.
01-05	01 = 0.5 m long gate leaf; 02 = 1 m long gate leaf; 03 = 1.5 m long gate leaf; 04 = 2 m long gate leaf; 05 = gate leaf $\geq 2.5$ m in length.  If this function is enabled, the torque applied is reduced during the final part of the gate travel to reduce gate vibration when it reaches the stop. On installations with an electric lock, the torque applied is increased during the final part of the closing travel to ensure that the lock latches correctly. On installations with no electric lock, the torque applied is reduced during the final part of the gate travel to reduce gate vibration. N.B.: parameter visible only if encoder is enabled 75 01.
<b>38 00</b>	<b>Enable electric lock release reverse impulse</b>
00	Disabled.
01-04	Enabled. At the start of each opening manoeuvre, the control unit applies a brief closing force (settable from 1 to 4 s) to release the electric lock. Enabling the electric lock release reverse impulse function automatically enables parameters 28 01 (electric lock lead time = 1 s) and 29 03 (electric lock activation time = 3 s).
<b>41 01</b>	<b>Set deceleration during opening/closure</b>
00	Disabled.
01	Medium deceleration. N.B.: maximum settable value for 6 pole motors (R20/302, R20/502, R21/368, H23/282, R41/832, R41/833)..
02	Maximum deceleration. <b>IMPORTANT:</b> Use <u>ONLY</u> in outstanding possibilities, for example gates very light. <u>DO NOT USE</u> 6 pole motors (R20/302, R20/502, R21/368, H23/282, R41/832, R41/833).
<b>42 20</b>	<b>Set obstacle detection sensitivity during manoeuvres</b>
	The gate reverses immediately when an obstacle is detected during an opening or closing manoeuvre. <b>NOTE:</b> The maximum value is limited to 50 for 6-pole slow motors (R1 01).
<b>43 50</b>	<b>Set obstacle detection sensitivity during deceleration</b>
	The gate reverses immediately when an obstacle is detected during opening or closing deceleration. <b>NOTE:</b> The maximum value is limited to 50 for 6-pole slow motors (R1 01).
01-99	From 1% to 99%. 01 = minimum sensitivity ... 99 = maximum sensitivity.

<b>49 00</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>51 02</b>	<b>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>52 01</b>	<b>Photocell (FT1) mode with gate closed</b>
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>53 00</b>	<b>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>54 00</b>	<b>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>55 01</b>	<b>Photocell (FT2) mode with gate closed</b>
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>56 00</b>	<b>Enable close command 6 s after activation of photocell (FT1-FT2)</b> <b>N.B.:</b> This parameter is not visible if AB 03 or AB 04 is set.
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>60 00</b>	<b>Enable braking at open and closed mechanical stop/limit switch</b>
00	Disabled.
01	Enabled. The gate brakes at the end of the manoeuvre against the mechanical open and/or closed stop.
<b>61 00</b>	<b>Enable braking after activation of photocells</b>
00	Disabled.
01	Enabled. The gate brakes when the photocells are activated.
<b>62 00</b>	<b>Enable braking after STOP command</b>
00	Disabled.
01	Enabled. The gate brakes when the control unit receives a STOP command.
<b>63 00</b>	<b>Enable braking after open &gt; close / close &gt; open inversion</b>
00	Disabled.
01	Enabled. The gate brakes before inverting direction when the control unit receives a close command while the gate is opening, or an open command while the gate is closing.
<b>64 05</b>	<b>Set braking time</b> <b>WARNING:</b> preferably set low values to ensure that the gate stops correctly.
01-20	Settable from 1 to 20 tenths of a second.
<b>65 08</b>	<b>Set braking force</b> <b>CAUTION:</b> it is advisable to check that the value set guarantees the best braking.
05-08	5 = minimum force ... 8 = maximum force.
<b>70 02</b>	<b>Select number of motors installed</b> <b>N.B.:</b> if this parameter is modified, disconnect from 230 V AC mains power, wait for the display to turn off then reconnect to mains power. <i>Repeat acquisition procedure (see Chapter 10).</i>
01	1 motor.
02	2 motors. <b>IMPORTANT:</b> Use the same type of motor for both gate leaves.
<b>72 00</b>	<b>Enable limit switches</b> <b>N.B.:</b> if this parameter is modified, disconnect from 230 V AC mains power, wait for the display to turn off then reconnect to mains power. <i>Repeat acquisition procedure (see Chapter 10).</i> <b>ATTENTION:</b> set a value different from 00 only if the limit switch is connected to the control unit.
00	No limit switch installed.
01	Gate open and close limit switches installed.
02	Gate open limit switches installed.

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.

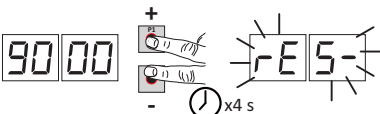
74 00	Configuring sensing edge COS2
00	Sensing edge NOT INSTALLED.
01	NC contact (normally closed). The gate reverses only when closing.
02	Contact with 8k2 resistor. The gate reverses only when closing.
03	NC contact (normally closed). The gate always reverses.
04	Contact with 8k2 resistor. The gate always reverses.

75 00	Configure encoder
<b>N.B.:</b> if no encoder is installed, time based control is used. if this parameter is modified, disconnect from 230 V AC mains power, wait for the display to turn off then reconnect to mains power. <b>Repeat acquisition procedure, see Chapter 10.</b>	
00	No encoder installed.
01	Optical encoders installed (8 pulses/revolution).
02	<b>E30 Series.</b> Magnetic encoders installed (1 pulse/revolution)
03	<b>R21 series (version V.1).</b> Magnetic encoders installed (1 pulse/revolution).

76 00	Configuring radio channel 1 (PR1)
77 01	Configuring radio channel 2 (PR2)
00	STEP MODE.
01	PARTIAL OPENING
02	OPENING
03	CLOSING.
04	STOP.
05	Courtesy light. The output COR is managed from the remote control. The light remains lit as long as the remote control is active. The parameter 79 is ignored.
06	Courtesy light ON-OFF (PP). The output COR is managed from the remote control. The remote control turns the courtesy light on and off. The parameter 79 is ignored.
07	FLASHING LIGHT. The FLASHING LIGHT output is managed from the remote control. The light remains lit as long as the remote control is active. The parameter 78 is ignored.
08	FLASHING LIGHT ON-OFF. The FLASHING LIGHT output is managed from the remote control. The remote control turns the courtesy light on and off. The parameter 78 is ignored.

78 00	Configuring flashing light frequency
00	The frequency is set electronically from the flashing light unit.
01	Slow flash.
02	Light flashes slowly when gate opens, rapidly when gate closes.

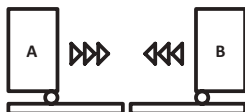
79 60	Selecting courtesy light mode
00	Disabled.
01	PULSE. The courtesy light illuminates briefly at the start of each manoeuvre.
02	ACTIVE. The light remains lit for the entire duration of the manoeuvre.
03-90	From 3 to 90 s. The light remains lit for the time period set after the manoeuvre is completed.
92-99	From 2 to 9 minutes. The light remains lit for the time period set after the manoeuvre is completed.

80 00	<b>Clock contact configuration</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.	
90 00	<b>Restoring factory default values</b> <b>NOTE</b> This procedure is only possible if NO data protection password is set.	
	<div></div> <p><b>Warning!</b> Restoring default settings cancels all settings made previously: after restore, check that all parameters are suitable for the installation. The default factory settings may also be restored using the + (PLUS) and/or - (MINUS) buttons as follows:</p> <ul style="list-style-type: none"><li>• Turn off the power.</li><li>• Press and hold the + (PLUS) and - (MINUS) buttons until the unit switches on.</li><li>• The message -E5- flashes on the display after 4 s.</li><li>• The default factory settings have now been restored.</li></ul>	
	<b>Identification number</b> The identification number consists of the values of the parameters from α0 to α5. <b>N.B.:</b> The values shown in the table are indicative only.	
α0 01	<b>HW version.</b>	Example: 01 23 45 67 89 01 23
α1 23	<b>Year of manufacture.</b>	
α2 45	<b>Week of manufacture.</b>	
α3 67		
α4 89	<b>Serial number.</b>	
α5 01		
α6 23	<b>FW version.</b>	
	<b>View manoeuvre counter</b> The number consists of the values of the parameters from α0 to α1 multiplied by 100. <b>N.B.:</b> The values shown in the table are indicative only.	
α0 01	<b>Manoeuvres performed.</b>	Example: 01 23 x100 = 12.300 manoeuvres.
α1 23		
	<b>View manoeuvre hour counter</b> The number consists of the values of the parameters from h0 to h1. <b>N.B.:</b> The values shown in the table are indicative only.	
h0 01	<b>Manoeuvre hours.</b>	Example: 01 23 = 123 hours.
h1 23		
	<b>View control unit days on counter</b> The number consists of the values of the parameters from d0 to d1. <b>N.B.:</b> The values shown in the table are indicative only.	
d0 01	<b>Days with unit switched on.</b>	Example: 01 23 = 123 days.
d1 23		

	<b>Password</b> 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. <u>Only a single password is used to control access to the gate automation system.</u> <b>WARNING:</b> Contact the Technical Support Service if you lose your password.
$P1\ 00$ $P2\ 00$ $P3\ 00$ $P4\ 00$	<b>Password activation procedure:</b> <ul style="list-style-type: none"> <li>Enter the desired values for parameters <math>P1, P2, P3</math> and <math>P4</math>.</li> <li>Use the UP <math>\blacktriangle</math> and/or DOWN <math>\blacktriangledown</math> buttons to view the parameter <math>CP</math>.</li> <li>Press and hold the + and - buttons for 4 seconds.</li> <li>The display flashes to confirm that the password has been saved.</li> <li>Switch the control unit off and on again. Check that password protection is activated (<math>CP=01</math>).</li> </ul> <b>Temporary unlock procedure:</b> <ul style="list-style-type: none"> <li>Enter the password.</li> <li>Check that <math>CP=00</math>.</li> </ul> <b>Password cancellation procedure:</b> <ul style="list-style-type: none"> <li>Enter the password (<math>CP=00</math>).</li> <li>Save the values <math>P1, P2, P3, P4 = 00</math></li> <li>Use the UP <math>\blacktriangle</math> and/or DOWN <math>\blacktriangledown</math> buttons to view the parameter <math>CP</math>.</li> <li>Press and hold the + and - buttons for 4 seconds.</li> <li>The display flashes to confirm that the password has been cancelled (the values <math>P1\ 00, P2\ 00, P3\ 00</math> and <math>P4\ 00</math> indicate that no password is set).</li> <li>Switch the control unit off and on again (<math>CP=00</math>).</li> </ul>
$CP\ 00$	<b>Changing password</b>
$00$	Protection deactivated.
$01$	Protection activated.

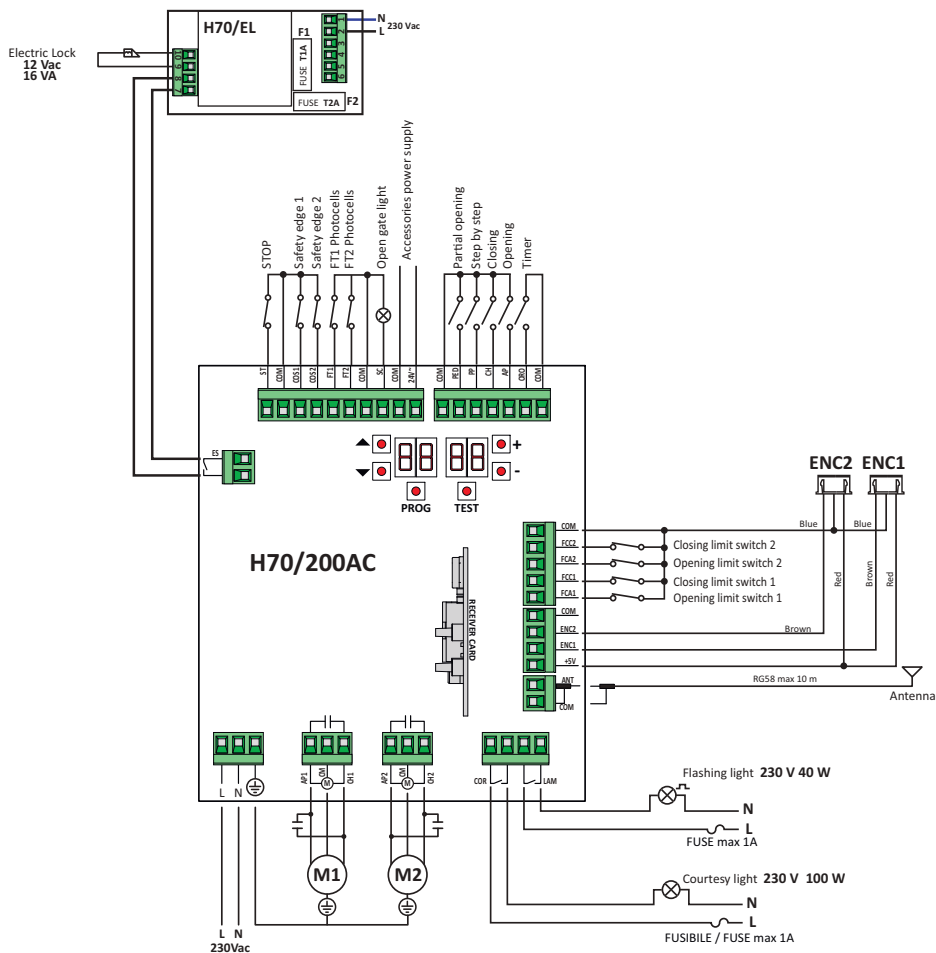


# 13 Example installation with two opposing automation systems



Two opposing sliding gate automation system may be connected to a single H70/200AC control unit.

Connect automation system **A** to terminals **AP1-CM-CH1** and connect automation system **B** to terminals **AP2-CM-CH2**.



## 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 41	The safety <b>STOP</b> contact is open.	-	Install a <b>STOP</b> button (NC) or jumper the <b>ST</b> contact with the <b>COM</b> contact.
88 39	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 38	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 37	Photocell <b>FT1</b> not connected or incorrectly connected.	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
88 36	Photocell <b>FT2</b> not connected or incorrectly connected.	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
88 FE	At least 3 limit switches in open contact state or not connected.	-	Check connection of limit switches.
88 FA	Both gate leaves at open limit switch.	-	-
	Open limit switch not connected.	-	Check connection of limit switches.
88 FC	Both gate leaves at closed limit switch.	-	-
	Closed limit switch not connected.	-	Check connection of limit switches.
88 F1	LEAF 1 limit switches not connected or incorrectly connected.	-	Check connection of limit switches.
88 F2	LEAF 2 limit switches not connected or incorrectly connected.	-	Check connection of limit switches.
88 20	LEAF 1 open limit switch not connected or incorrectly connected. Or LEAF 1 is open.	-	Check connection of limit switches.
88 21	LEAF 1 closed limit switch not connected or incorrectly connected. Or LEAF 1 is closed.	-	Check connection of limit switches.
88 22	LEAF 2 open limit switch not connected or incorrectly connected. Or LEAF 2 is open.	-	Check connection of limit switches.
88 23	LEAF 2 closed limit switch not connected. Or LEAF 2 is closed.	-	Check connection of limit switches.
PP 00	If occurs with no voluntary command, the contact (N.O.) may be faulty or one of the buttons may be incorrectly connected.	-	Check <b>PP</b> - <b>COM</b> contacts and connections to buttons.
CH 00		-	Check <b>CH</b> - <b>COM</b> contacts and connections to buttons.
AP 00		-	Check <b>AP</b> - <b>COM</b> contacts and connections to buttons.
PE 00		-	Check <b>PED</b> - <b>COM</b> contacts and connections to buttons.
OR 00	If occurs with no voluntary command, the contact (N.O.) may be faulty or the timer may be incorrectly connected.	-	Check <b>ORO</b> - <b>COM</b> contacts. Contact must not be jumpered if not used.

**N.B.:** Press **TEST** button to exit from the **TEST** Mode.

We recommend troubleshooting safety device and input status errors with "corrective action by software" only.

## 15 Alarms and faults

PROBLEM	ALARM	POSSIBLE CAUSE	ACTION
The gate does not open or close.	<b>POWER</b> LED off	No power.	Check power cable.
	<b>POWER</b> LED off	Fuses blown.	Replace fuse. Always disconnect from mains power before removing fuses.
	Example: <b>15 EE</b> <b>21 EE</b>	Configuration parameter error.	Set configuration value correctly and save.
	<b>24 AC</b> flashing	Fuse F2 disconnected or damaged. Accessories are not powered.	Refit fuse F2 correctly or replace.
Acquisition procedure does not complete correctly.	<b>AP PE</b>	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.
Remote control has limited range and does not work while automated gate is moving.	-	The radio transmission is impeded by metal structures and reinforced concrete walls.	Install the antenna outside.
	-	Flat batteries.	Replace the transmitter batteries.
The flashing light is not working.	-	Bulb / LED blown or flashing light wires disconnected.	Check LED circuit and/or connector wires.
Gate open indicator lamp does not work.	-	Bulb blown or wires disconnected.	Check the bulb and/or wires.
Gate does not perform desired manoeuvre.	-	Motor leads crossed.	Swap two wires on terminal X-Y-Z or Z-Y-X.

**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 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.



For further information, refer to the locking/release operation in the 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 17).

## 17 Position recovery mode

When it receives the first command signal after a power failure, after unlocking the motor or after an obstacle is detected in the same position three consecutive times (with encoders enabled), the control unit starts a manoeuvre in position recovery mode.

If encoder is installed the manoeuvre in position recovery mode happens at low speed; otherwise the manoeuvre happens at normal 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 completed the opening and closing manoeuvre.

Position recovery is performed immediately when the limit switches (if installed) are activated.

## 18 Initial testing

The testing must be performed by qualified technical personnel.

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

Make sure that the provisions in Chapter 1 "GENERIC WARNINGS are observed.

- Turn on the power supply.
- 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
- Disconnect from mains power then reconnect.
- Starting with the gate stopped in an intermediate position, check that the position recovery procedure is completed correctly for both the open and closed positions.
- Check the limit switch settings (if installed).
- Check that the release system works correctly.

## 19 Start-up

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

Apply a plate indicating the automation system data on the motorised door or gate, the name of the person in charge of the start-up, the serial number and the year of construction, as well as the CE mark.

Apply a plate and / or label with the indications for the operations required to manually unlock the system.

Draw up and provide the end user with the declaration of conformity, instructions and warnings for use and the maintenance plan.

Make sure that the end user has understood the correct automatic, manual or emergency operation of the system.

Inform the end user about the dangers and risks that may be present

## 20 Maintenance

Perform scheduled maintenance every 6 months.

Check cleanliness and function.

If the unit contains dirt, moisture, insects or other foreign matter, disconnect from mains power and clean the board and the housing.

Repeat the initial installation test procedure after cleaning.

If any corrosion is found on the printed circuit board, evaluate if it is necessary to replace the board itself.

## 21 Disposal



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.



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