VIMAR

Installer manual

RS16.P

24 Vdc control unit for sliding gate ACTO 404D

ELVOX Gates

RS16.P

Contents: **Page**

RS16.P

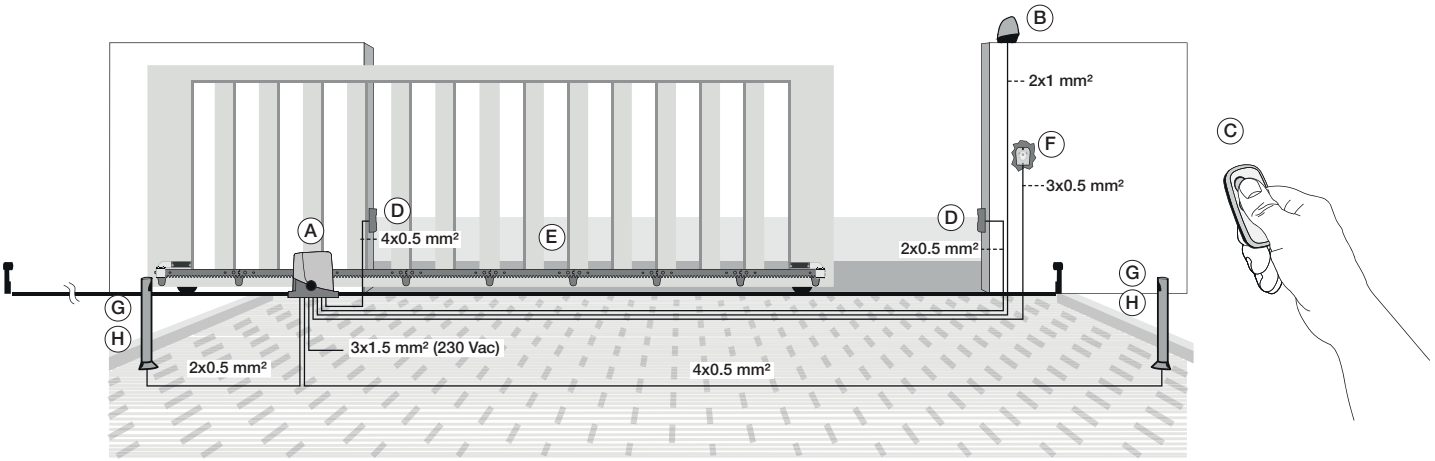
1 Product characteristics

Control unit for governing sliding gear motors at 24 Vdc with a maximum power of 80 W for gates of maximum length 6 m and 400 kg in weight, equipped with integrated magnetic limit switches on the board, encoder (used for obstacle detection) integrated receiver at 433 MHz and integrated battery charger.
The control unit enables:
- customizing the space and speed of deceleration
- equipped with obstacle detection system
- LED for input diagnostics
- integrated receiver with capacity for 50 remote controls (hard coded or rolling code)
- current control for electric motor protection

Tecnichal characteristics

Supply	120 ÷ 230 Vac
Motor power supply	24 Vdc
Maximum motor power	80 W
Output for flashing light	24 Vdc 10 W max
Accessories power supply	24 Vdc 300 mA
Receiver memory	50 remote controls
Receiver frequency	433 MHz
Remote controls code	Rolling code or fixed
Fuse F1 (line protection)	5x20 mm T1.6 A
Operating temperature	-10 ÷ +50°C

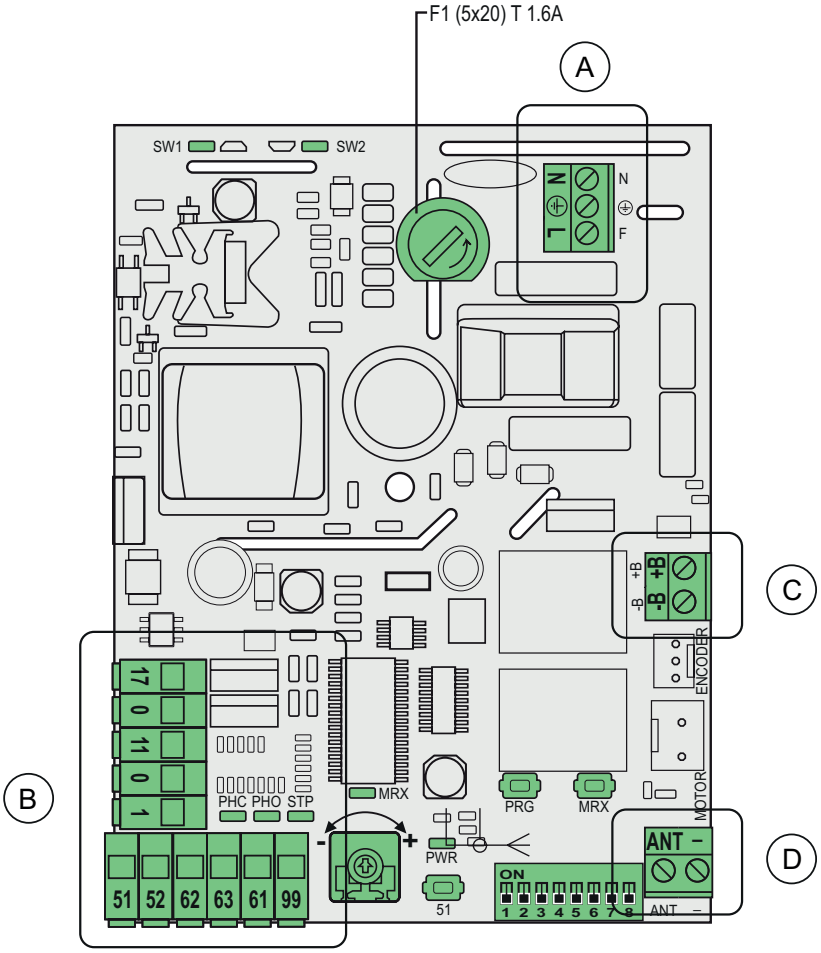
2 Example of installation



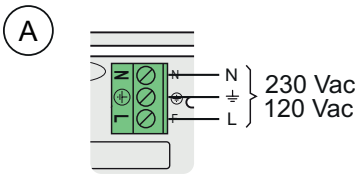
Components for creating a complete system with ESM7 or EK14 kit

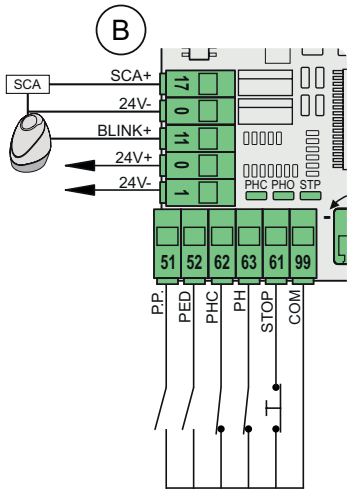
Main Components					Accessories (optional)			
Description	**Article**	**Ref.**	**Qty**	**Components in kit EK14**	**Description**	**Article**	**Ref.**	**Qty**
Operator	**ESM7**	A	1	YES	Key switch	**EDS1**	F	1
Flashing light	**ELA5**	B	1	YES	Post-mounted photocells	**EFA3**	G	1
Remote control	**ETR5**	C	1	YES	Posts	**EE21**	H	2
Wall-mount photocells	**EFA3**	D	1	YES	Pack of 2 batteries 12 V 1.3 Ah and wiring harness	**ZBA7**		1
Rack	**ZE03/1**	E	4 (4 m)	NO				

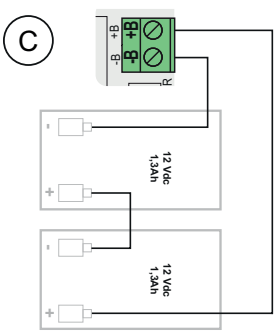
3 Description of the terminal blocks

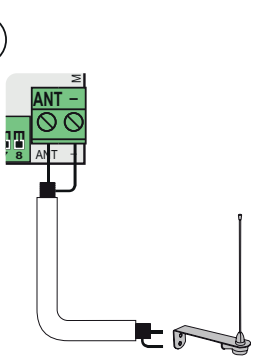


Terminal	Description	Rated data
N	Neutral	120÷230 Vac
⏚	Earth	
L	Phase	
17	Photo-test or gate open warning light positive	24 Vdc 120 mA
0	Accessories negative	
11	Flashing light positive	24 Vdc 10 W
0	Accessories negative	
1	Accessories positive	24 Vdc 300 mA
0	Accessories negative	
51	Step by step (N.O.)	
52	Pedestrian (N.O.)	
62	Photocell when closing (N.C.)	
63	Photocell (N.C.)	
61	Stop (N.C.)	
99	Common inputs	
-B	Emergency battery negative	
+B	Emergency battery positive	
ANT	Aerial signal	
-	Aerial earth	









3.1 Description of output function

0-1	**Accessories power supply:** Permanent 24 V DC output.
0-11	**Blinking:** 24 Vdc output powered when the gate is moving.
0-17	**Photo-test or gate open warning light:** 24 V DC output for signalling gate status or performing the safety test: With DIP 8 = OFF it is Gate Open Warning Light - Not powered with gate closed - Powered continuously with gate open or moving With DIP 8 = ON it is Photo-test Used for the power supply of the transmitters of the safety devices.

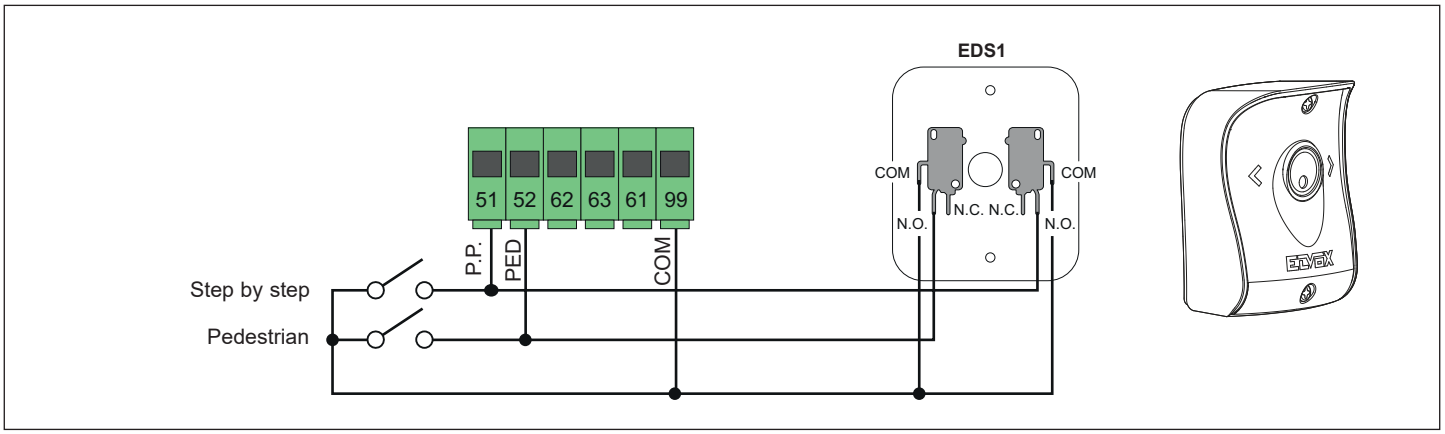
Note:
Using the photo-test requires specific wiring of the safety devices (par. 4.3).

3.2 Description of input function

51	**Step by step (N.O.)**: Sequential command input, to control the complete travel of the gate. It works with the following cycle: open-stop-close-stop or open-stop-close-open according to the setting of DIP 3
52	**Pedestrian (N.O.):** Command input for opening to the pedestrian distance.
61	**Stop (N.C.):** Gate stops, does not turn off automatic closing. If not used, jumper with the common (99)
62	**Photocell when closing - PHC (N.C.):** Photocell when closing, with the gate stationary it allows opening, when opening it does not trigger, with the gate open it does not allow closing and on release it resets the automatic closing time, when closing it commands immediate reopening. If not used, jumper with the common (99)
63	**Photocell - PH (N.C.):** Functions according to the DIP 6 setting. DIP 6 = OFF: photocell, active both when closing and when opening, with the gate stationary it does not allow opening, during opening it stops the movement and on release it continues opening, with the gate open it does not allow closing and on release it resets the automatic closing time, when closing it stops the movement and on release it commands reopening. DIP 6 = ON: safety sensitive edge, N.C. dry contact, with the gate stationary it does not allow opening, when opening it disengages, with the gate open it does not allow closing and on release it resets the automatic closing time, when closing it disengages. If not used, jumper with the common (99).

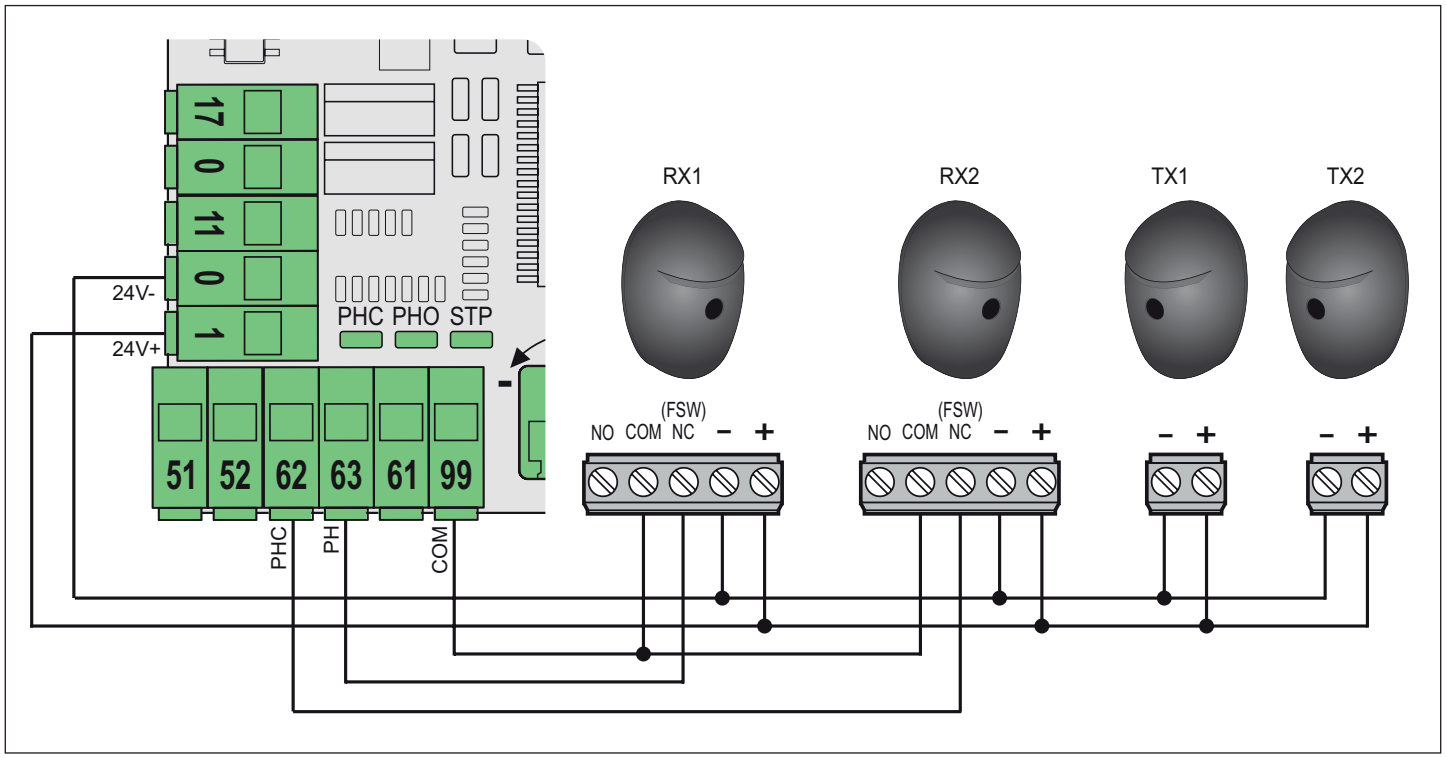
4 Connecting accessories

4.1 Key switch and control devices

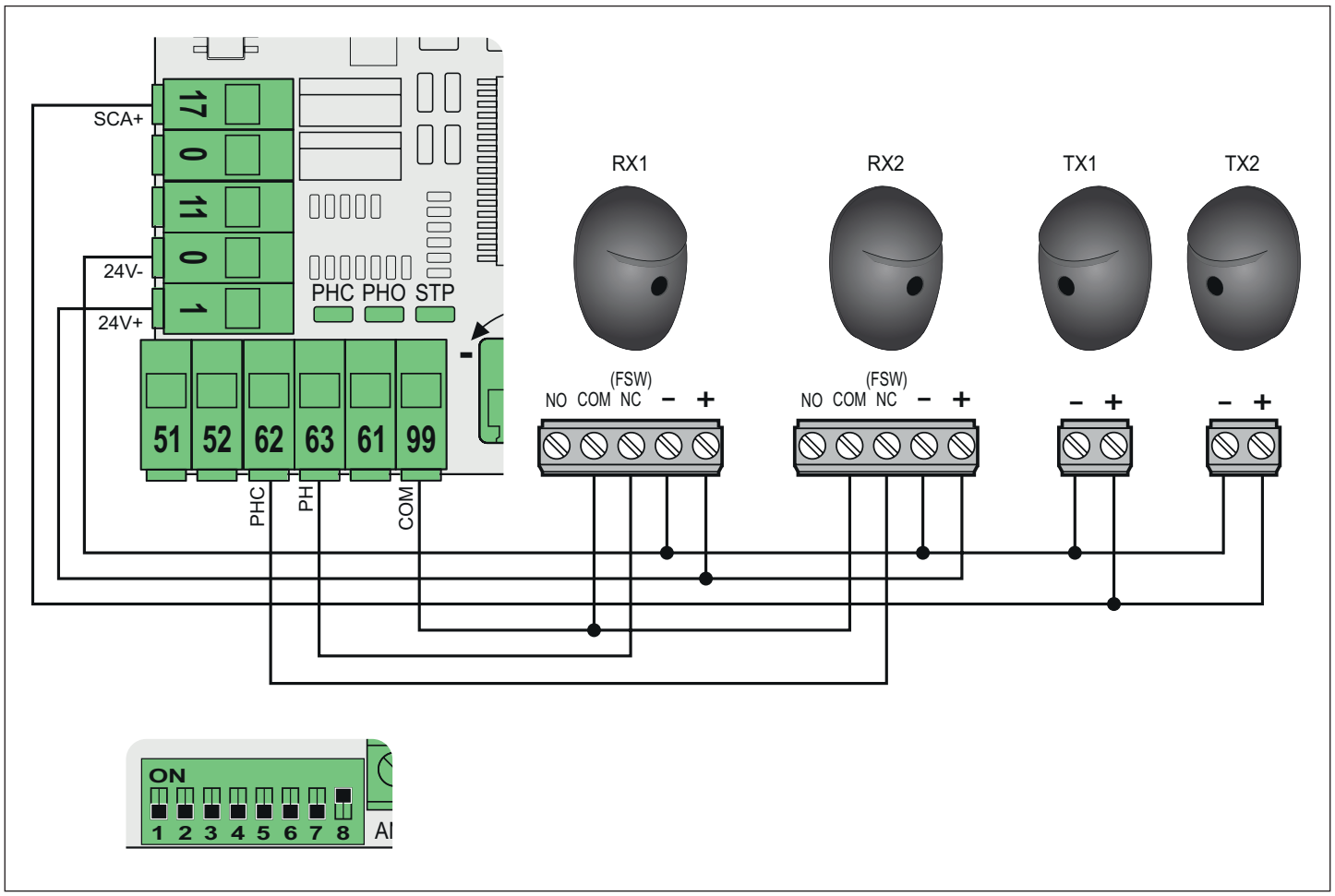


4.2 Photocells and photocells when closing

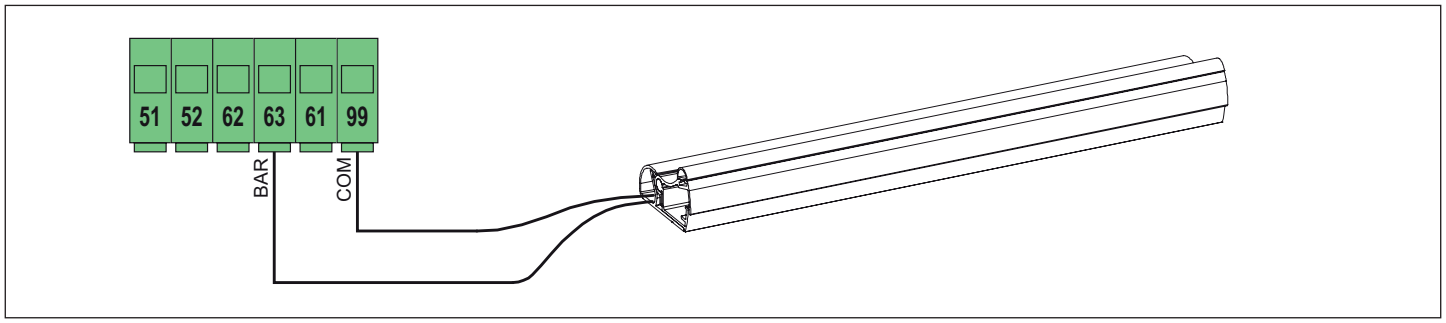
Normally closed contact (when the photocells are not engaged the PHC LED must be on), if not used then jumper between COM. and PHC, you must observe the polarity of the power supply for the photocells:



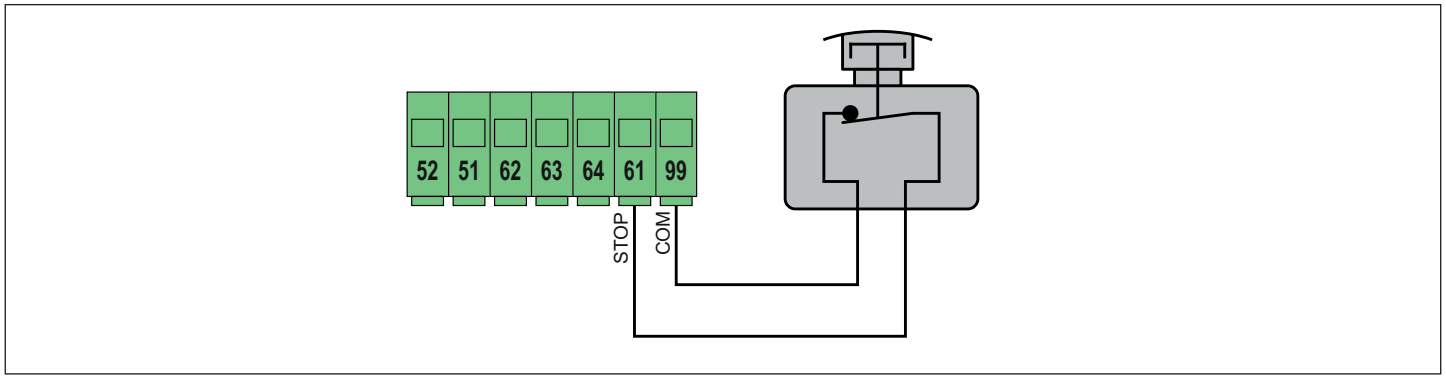
4.3 Photocells and photocells when closing with photo-test active (DIP 8 = ON)



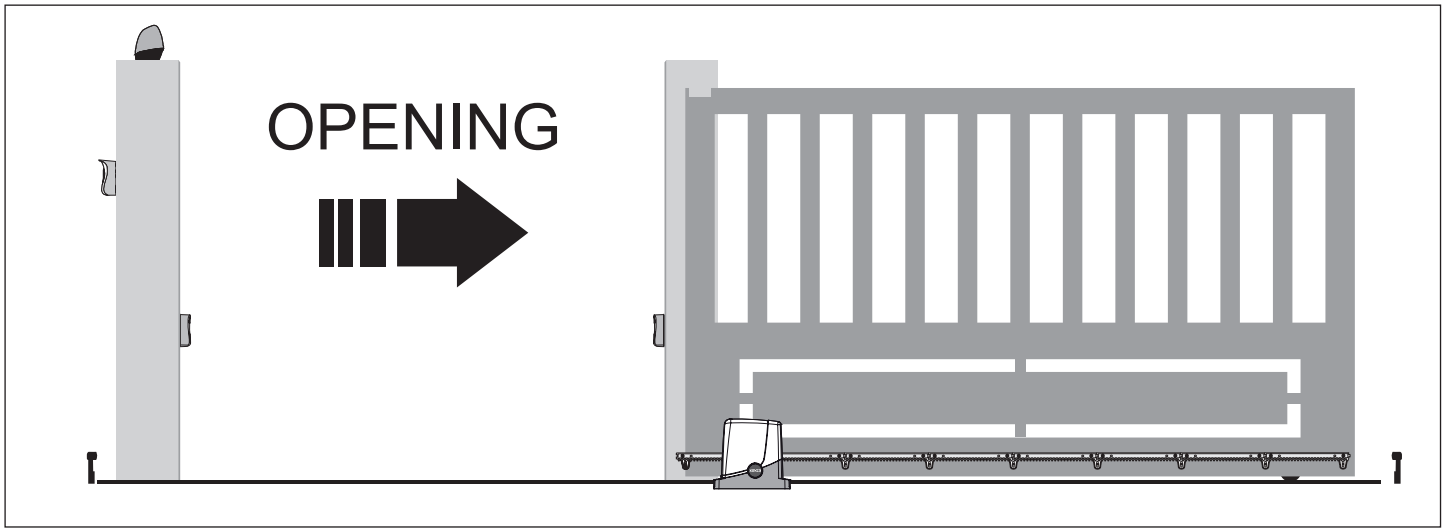
4.4 Sensitive edge



4.5 Stop push button



5 Changing the programmable parameters



The control panel is programmed by default with the following parameters:
- automatic closing: 30 s
- opening direction: to the right
- pedestrian opening position: 1 m

Notes:
Do not change the wiring for the electric motors. To reverse the opening direction, follow the procedure described below in paragraph 5.2.

The control panel never needs travel setting as this is automatically measured with each action. When the card is started a full open-close action is performed to calibrate the travel (it takes place at slower speed as the control panel does not know the exact position of the gate).

To change the default settings, follow the instructions provided below.
NOTES: to change the programmable parameters, the gate must be stationary.
WARNING! THE SAFETY DEVICES ARE DISABLED WHILE THE PROGRAMMABLE PARAMETERS ARE BEING CHANGED.

5.1 Changing the automatic closing time
1. While the gate is stationary, press and hold PRG for 2 s; the flashing light comes on and remains steadily lit to indicate that programming is in progress. The gate closes and reopens.
2. When the gate reaches its opening stop limit, once the desired reclosing time has elapsed (120 s max), press 51 (the gate closes again).

5.2 Reversing the opening direction

1. While the gate is stationary and not closed, press and hold PRG for 2 s; the flashing light comes on and remains steadily lit to indicate that programming is in progress. The gate closes.
2. Press MRX (the gate stops).
3. Create a pulse (e.g. Press 51); the gate begins to close.

5.3 Changing the pedestrian opening position

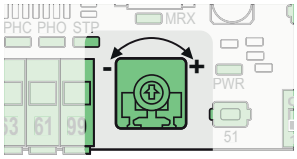
1. Have a remote control available with the 2nd radio channel stored.
2. While the gate is closed, press and hold PRG for 2 s; the flashing light comes on and remains steadily lit to indicate that programming is in progress. The gate opens.
3. Once the desired opening position has been reached, press the button on the remote control stored as the 2nd radio channel.

Note:

If you want to return the control panel to default, perform the following procedure:

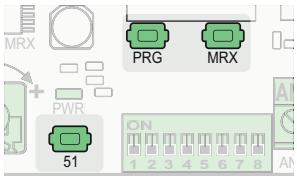
1. Disconnect the power to the control panel.
2. Press and hold the PRG button.
3. Reconnect the power to the control panel and wait for the flashing light to come on steady.
4. After 3 sec., release the PRG button. The flashing light will turn off.
5. The control panel is now set with the default times.

6 Trimmer functions



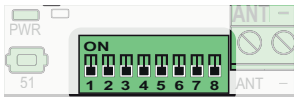
Trimmer	Description
MOT 1	Power of motor (turn the trimmer clockwise to increase the power)

7 Functions of the buttons



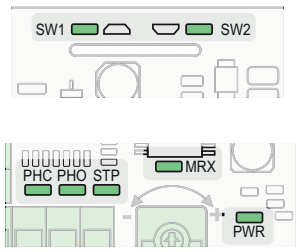
Button	Description
PRG	Button for programming the travel
MRX	Button for programming or deleting remote controls
51	Step-by-step command button

8 DIP-switch functions



Dip	Function	Status	Description
DIP 1	Close immediately	OFF	Close immediately off
		ON	Close immediately on: The engagement and subsequent disengagement of the photocell when closing, while opening or during the pause time causes the gate to re-close immediately at least 3 s after full opening, regardless of the set automatic closing time
DIP 2	Automatic closing	OFF	Automatic closing off
		ON	Automatic closing on
DIP 3	Step-step logic	OFF	2 steps: step-by-step (term. 51 and radio) with logic in 2 steps (open - close - open)
		ON	Step-by-step command (term. 51 and radio) with logic in 4 steps (open - stop - close - stop - open - stop)
DIP 4	Apartment block	OFF	Apartment block off
		ON	Apartment block on (while the gate is opening, you cannot stop the movement with a radio command or with inputs 51 (step-by-step) and 52 (pedestrian). With automatic closing on (DIP-switch 2 = ON) and the gate open, an additional step-by-step command (terminal 51 or radio command) renews the pause time and if input 51 remains engaged the control panel suspends the pause count until the input is disengaged (for connecting any coils or a timer)
DIP 5	Slowdown distance	OFF	Slowdown distance at 10% of the travel
		ON	Slowdown distance at 20% of the travel
DIP 6	Input 63 function	OFF	Input 63 configured as photocell (PH)
		ON	Input 63 configured as safety edge (BAR)
DIP 7	Action speed	OFF	Action speed high
		ON	Action speed low
DIP 8	Photo-test	OFF	Photo-test off
		ON	Photo-test on At the start of each action, the control panel checks the operation of the photocells. It requires specific wiring

9 LED functions



LED	Status	Description
PWR	OFF	Mains power supply not present
	ON	Mains power supply present
MRX	1 blink	Saving a new remote control
	2 blinks	Saving a remote control already in memory
	3 blinks	Deleting a remote control
	4 blinks	Radio memory full
	5 blinks	Attempt to store a remote control with a different code from the one used to set the receiver
	10 blinks	Complete deletion of the radio memory
51	OFF	Step-by-step input (term. 51) not engaged
	ON	Step-by-step input (term. 51) engaged
52	OFF	Pedestrian input (term. 52) not engaged
	ON	Pedestrian input (term. 52) engaged
61	OFF	Stop contact (term. 61) open (engaged)
	ON	Stop contact (term. 61) closed (not engaged)
62	OFF	Photocell engaged when closing (term. 62 open)
	ON	Photocell not engaged when closing (term. 62 closed)
63	OFF	Photocell or safety edge engaged (term. 63 open)
	ON	Photocell or safety edge not engaged (term. 63 closed)
SW1	OFF	Limit switch 1 (corresponding to the right limit switch bracket marked DX) not used
	ON	Limit switch 1 engaged
SW2	OFF	Limit switch 2 (corresponding to the left limit switch bracket marked SX) not used
	ON	Limit switch 2 engaged

10 Remote control programming

Note: Remote control programming can only be done with the automatic gate system stationary

Step-by-step programming

No.	Pressing push button	Signal MRX LED	Description
1	MRX	Off	Press and hold down the MRX push button for no more than 7 s
2	MRX + remote control	-	With the MRX push button still pressed, press the button of the remote control to be saved
3	-	1 blink	Button of the saved remote control (new remote control)
		2 blinks	Button of the saved remote control (remote control already in memory)

Programming the pedestrian

No.	Pressing push button	Signal MRX LED	Description
1	MRX + PRG	Off	Press and hold down the MRX and PRG push buttons for no more than 7 s
2	MRX + PRG + remote control	-	With the MRX and PRG push buttons still pressed, press the button of the remote control to be saved
3	-	1 blink	Button of the saved remote control (new remote control)
		2 blinks	Button of the saved remote control (remote control already in memory)

Deleting a remote control

No.	Pressing push button	Signal MRX LED	Description
1	MRX	On steady	Press and hold down the MRX push button for at least 7 s until the MRX LED comes on steady
2	MRX + remote control	-	With the MRX push button still pressed, press the button of the remote control to be deleted
3	-	3 blinks	Deletion successful

Complete deletion of the receiver

No.	Pressing push button	Signal MRX LED	Description
1	MRX	Flashing light	Press and hold down the MRX push button for at least 14 s until the MRX LED starts flashing
2	-	10 blinks	Complete deletion of the receiver

Note:
After deleting all the remote controls, the first saved remote control configures the control panel to accept only remote controls with a rolling code or only remote controls with a fixed code.

11 Troubleshooting

Problema	Cause	Solution
The automation system does not work	No mains supply	Check the power line switch
	Blown fuse	Replace blown fuse with others of the same value
	Control and safety inputs not working	Check the diagnosis LEDs (61, 62, 63 must be on)
You cannot save the remote controls	Safety devices open	61, 62, 63 must be on
	Batteries of the remote control discharged	Replace the batteries
	Remote control not compatible with the first one saved	The first saved remote control configures the control panel to save only rolling-code remote controls or only dip-switch remote controls
	Reached memory saturation	Delete at least one remote control or add an external receiver (maximum capacity 50 remote controls)
As soon as the gate starts, it stops and reverses	Motor torque not sufficient	Increase the power with the trimmer
After a command the flashing light blinks 6 times but the gate fails to open	Photo-test check failed	Check the electrical wiring (see section 4) and DIP-switch 8. Check the alignment of the photocells
The flashing light does not work during the movement	No mains power supply and motors on battery operation	Check the mains power supply
The gate moves at slowdown speed	Probable 230 V AC mains failure	Run 1 complete open/close action
The gate detects an obstacle even when it is not there	Poor or no clearance between the pinion and rack	Check the rack-pinion clearance
	Force trimmer too low	Raise force trimmer
	Gate mechanics stiff	Service the gate

EC DECLARATION OF CONFORMITY
(Declaration of incorporation of partly completed machinery Annex IIB Directive 2006/42/EC)

No.:ZDT00434.00

The undersigned, representing the following manufacturer

Elvox SpA
Via Pontarola, 14/A - 35011 Campodarsego
(PD) Italy

herewith declares that the products

CONTROL BOARD - RS SERIES

Articles **RS16.P**

are in conformity with the provisions of the following EU Directive(s) (including all applicable amendments) and that all of the following standards and/or specifications have been applied

EMC Directive 2004/108/EC:	**EN 61000-6-1 (2007), EN 61000-6-3 (2007) + A1 (2011)**
R&TTE Directive 1999/5/EC:	**EN 301 489-3 (2002), EN 300 220-3 (2000)**
Machinery Directive 2006/42/EC	**EN 60335-2-103 (2003) + A11 (2009),**
	EN 13241 (2003) + A1 (2011), EN 12453 (2000)

He also declares that the product must not be commissioned until the end machine, in which it is to be incorporated, has been declared in conformity, when applicable, with the provisions of Directive 2006/42/EC.

He declares that the relevant technical documentation has been constituted by Elvox SpA, drawn up in accordance with Annex VIIB of Directive 2006/42/EC and that the following essential requirements have been fulfilled: 1.1.1, 1.1.2, 1.1.3, 1.1.5, 1.1.6, 1.2.1, 1.2.2, 1.2.6, 1.3.1, 1.3.2, 1.3.3, 1.3.4, 1.3.7, 1.3.8, 1.3.9, 1.4.1, 1.4.2, 1.5.1, 1.5.2, 1.5.4, 1.5.5, 1.5.6, 1.5.7, 1.5.8, 1.5.9, 1.6.1., 1.6.2, 1.7.1, 1.7.2, 1.7.3, 1.7.4.

He undertakes, in response to an adequately justified request from the national authorities, to present all the necessary supporting documentation concerning the product.

Campodarsego, 29/04/2013

The Chief Executive Officer

Note: The contents of this declaration match what was declared in the latest revision of the official declaration that was available before this manual was printed. This text has been adapted for editorial purposes. A copy of the original declaration can be requested from Elvox SpA

CE

RS16.P installer EN 00 1804

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Viale Vicenza, 14
36063 Marostica VI - Italy
www.vimar.com