VIMAR

Installer manual

RS17.P
Control panel for swing gates at 24 V DC with encoder EKKO 204D

ELVOX Door entry

WARNINGS FOR THE INSTALLER
Carefully read all the instructions and warnings in this document as they provide important information regarding safe installation, operation and maintenance.
After removing the packaging, check the condition of the equipment. The packaging must not be left within reach of children as it is potentially harmful.
Installation must be carried out in accordance with national safety regulations.
This equipment must be used only for the purpose for which it was expressly intended, i.e. for the automation of motors for roller blinds and for controlling resistive loads such as lights. Any other use is considered improper and therefore hazardous. The manufacturer declines all liability for damage caused by improper, incorrect or unreasonable use.
Always disconnect the equipment from the power supply at the main switch before performing maintenance or cleaning procedures.
In the event of faults and/or malfunctions, disconnect the equipment from the power supply at the switch and do not tamper with it. For repairs, contact only a service centre authorized by the manufacturer. Failure to observe the above may jeopardize the safety of the equipment.
All equipment within the system must be used exclusively for the purpose for which it is intended.
This document must always be kept with all paperwork regarding the installation.

Directive 2002/96/EC (WEEE).
The crossed out wheelie bin symbol marked on the equipment indicates that, at the end of its useful working life, the product must be handled separately from household refuse and must therefore be assigned to a differentiated collection centre for electrical and electronic equipment or returned to the dealer upon purchase of a new, equivalent item of equipment.

The user is responsible for ensuring the equipment is disposed of through the correct channels when no longer in service. Proper sorted waste collection for subsequent recycling, processing and environmentally conscious disposal of the old equipment helps to prevent any possible negative impact on the environment and human health while promoting the practice of recycling materials used in manufacture. For further details regarding available collection systems, contact your local waste disposal service or the shop from which the equipment was purchased.

Risks associated with substances considered hazardous (WEEE).
According to the new WEEE Directive, substances which for some time have been widely used in electrical and electronic equipment are considered hazardous to human heath and the environment. Proper sorted waste collection for subsequent recycling, processing and environmentally conscious disposal of the old equipment helps to prevent any possible negative impact on the environment and human health while promoting the practice of recycling materials used in manufacture.

Enclosure sizes

ELVOX Gates

⊠ VIMAR
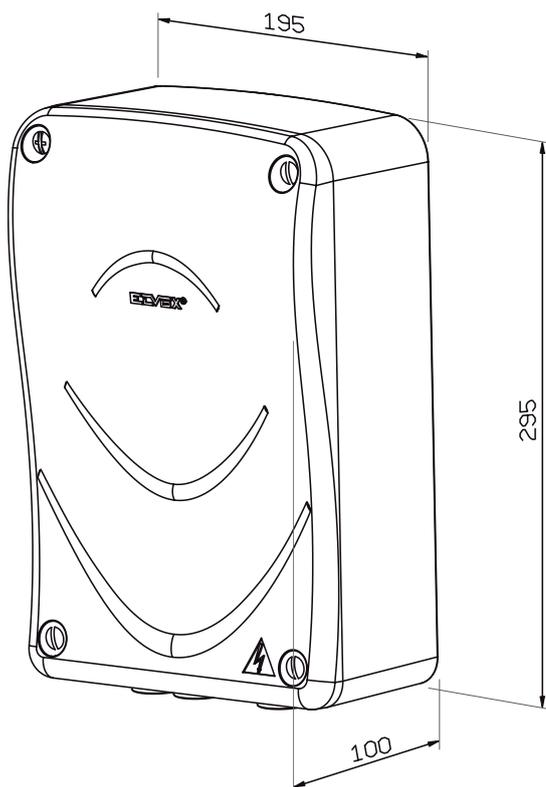
RS17.P

1 - Product features:
Control panel for governing swing gates for 24 Vdc gearmotors with encoder with battery charger and integrated receiver. The control panel:
- enables customizing the deceleration distance
- is equipped with an obstacle detection system
- is equipped with input diagnostics LED
- is equipped with an integrated 433 MHz receiver with a maximum capacity of 50 remote controls
- is equipped with short-circuit protection
- is equipped with a switching power supply

Technical data:

Power supply	120 to 230 Vac
Motor power supply voltage	24 Vdc
Maximum motor power	80 to 80 W
Output for flashing light	24 Vdc 10 W max
Electrical lock output	12 Vsc 15 VA 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
Fuse F2	Accessories protection 5x20 mm T8A
Operating temperature	-10 to +50°C

2 - System type:
For the sizing of the cable routing, the required cross-sections of the cables are shown below
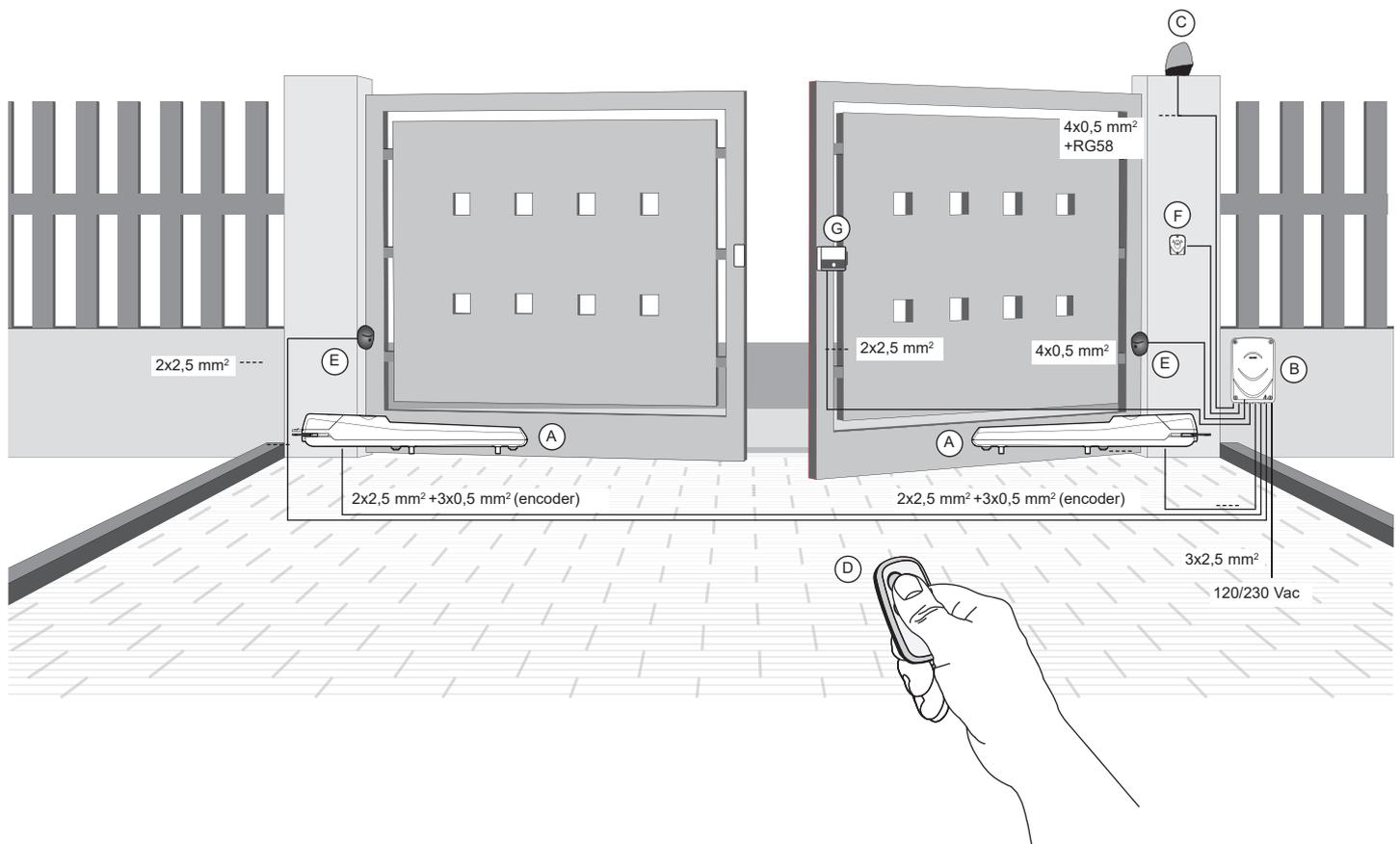
Legend
A - Linear actuator
B - Control unit
C - Flashing light with aerial
D - 2-channel remote control
E - Pair of photocells
F - Selector
G - Electrical lock

3 - Description of the terminal blocks

Terminal	Description	Rated data
L	Phase	
⏚	Earth	120 to 230 V AC
N	Neutral	
21	Opening motor 1	24 V DC 80W
22	Closing motor 1	
25	Opening motor 2	24 V DC 80W
26	Closing motor 2	
18	Electrical lock negative	12 V AC 15 VA
19	Electrical lock positive	
11	Flashing light positive	24 V DC 10 W
0	Accessories negative	
17	Photo-test or gate open warning light positive	24 V DC 120 mA
0	Accessories negative	

Terminal	Description	Rated data
+E	Encoder positive	
41	Motor 1 encoder signal	
45	Motor 2 encoder signal	
-E	Encoder negative	

Note:
The cable connecting the encoder to the control panel must be no longer than 10 m and have no shielding. For encoder cabling longer than 10 m and in any case no longer than 15 m, a shielded cable must be used.

(B)

Terminal	Description	Rated data
1	Accessories positive	24 Vdc 300 mA
0	Accessories negative	
+B	Emergency battery positive	
-B	Emergency battery negative	
52	Pedestrian (N.O.)	
51	Step by step (N.O.)	
62	Photocell when closing (N.C.)	
63	Photocell (N.C.)	
64	Sensitive edge (N.C.)	
61	Stop (N.C.)	
99	Common inputs	
ANT	Aerial signal	
-	Aerial earth	
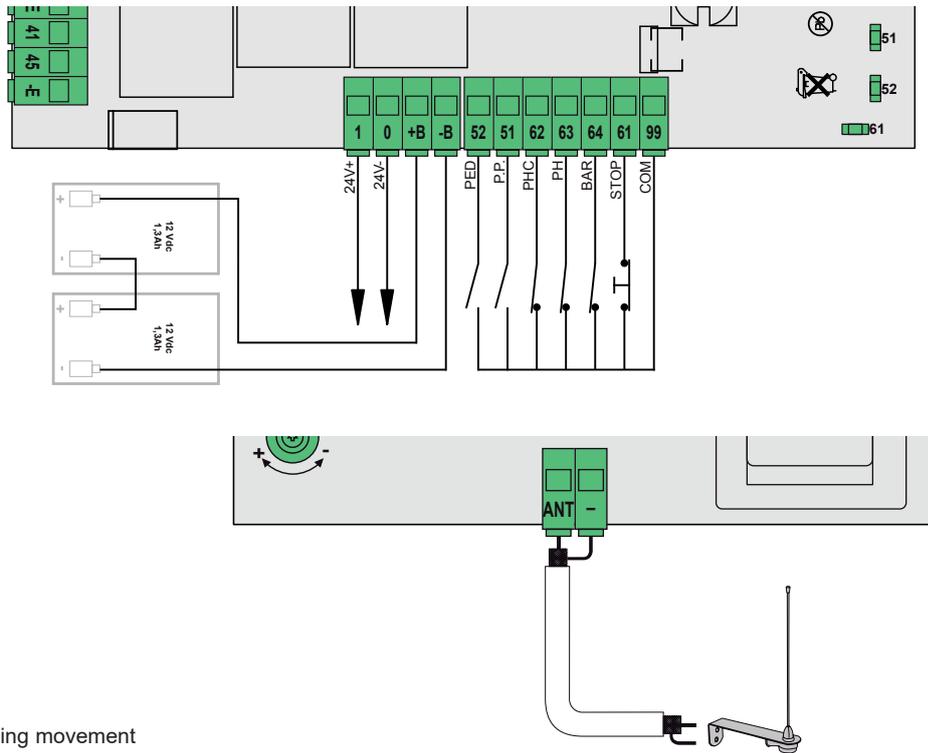
3.1 - Description of output function:

0-1 - Accessories power supply voltage:
Permanent 24 Vdc output

18-19 - Electrical lock:
12 Vac output powered for 2 s at the start of the opening movement

0-11 - Flashing light:
24 Vdc output powered when the gate is moving

0-17 - Photo-test or gate open warning light:
24 Vdc 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.):
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.
If not used, jumper with the common (99)

64 - Sensitive edge (N.C.):
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.
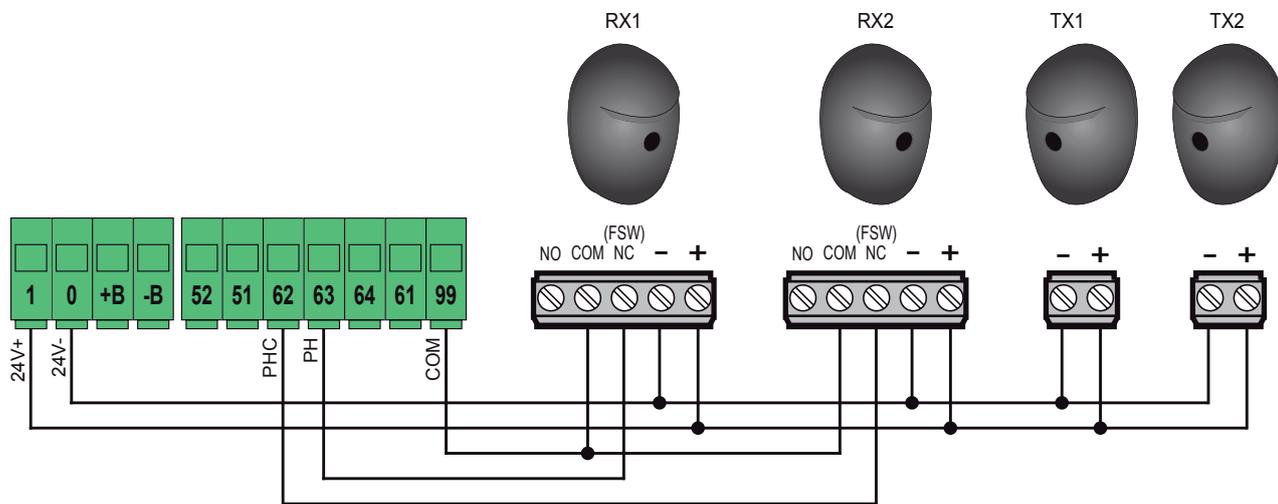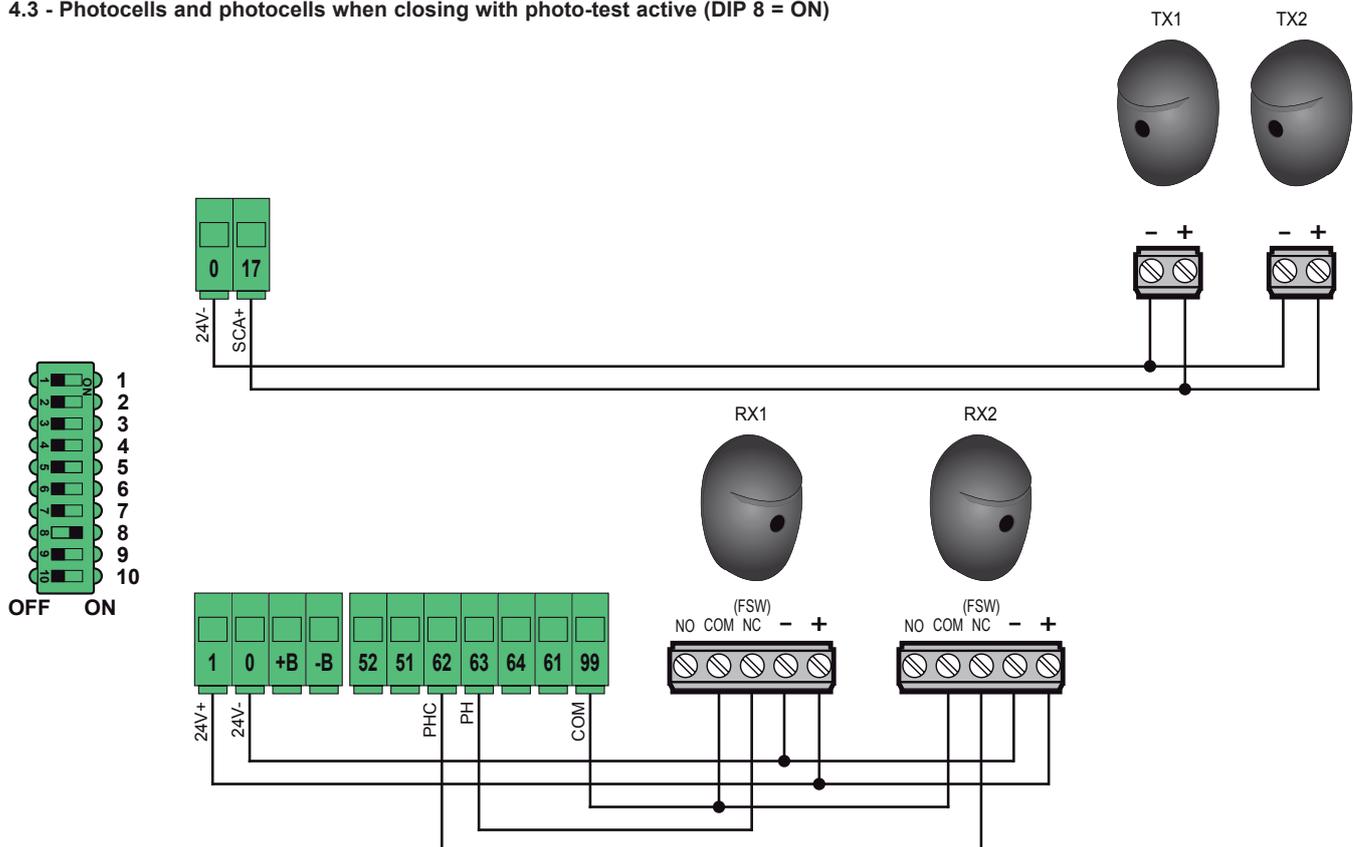If not used, jumper with the common (99)

4 - Connecting accessories:

4.1 - Key switch and control devices
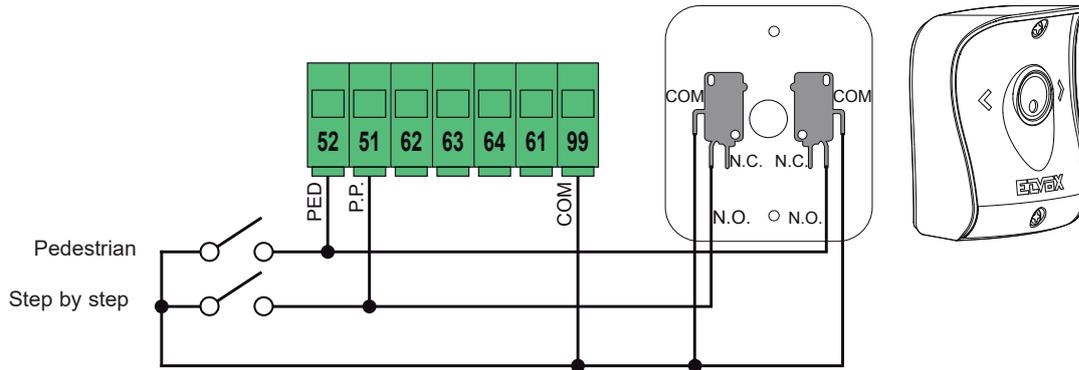
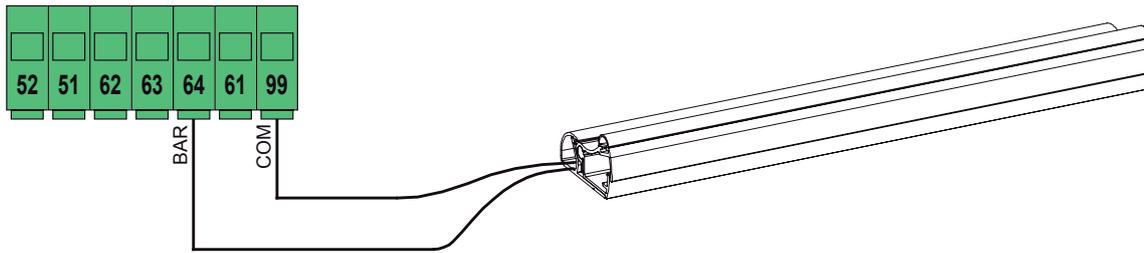### 4.2 - Photocells and photocells when closing

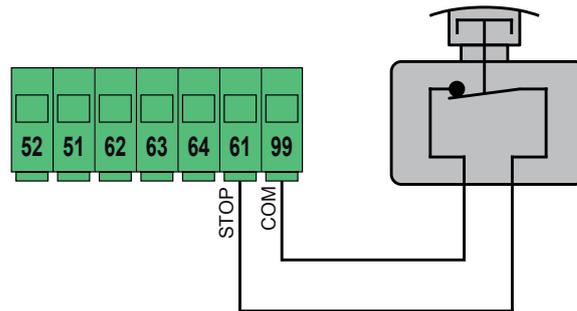### 4.3 - Photocells and photocells when closing with photo-test active (DIP 8 = ON)
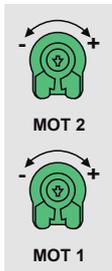
4.4 - Sensitive edge

4.5 - Stop push button

5 - Trimmer functions

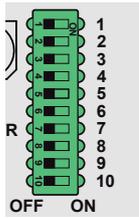| Trimmer	Description
MOT 1	Power of motor 1 (turn the trimmer clockwise to increase the power)
MOT 2	Power of motor 2 (turn the trimmer clockwise to increase the power)

6 - Functions of the buttons:

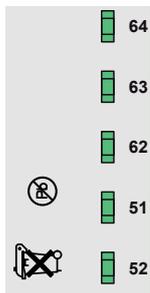| Button	Description
PROG	Button for programming the travel
MRX	Button for programming or deleting remote controls
51	Step-by-step command button

7 - 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 reclose 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	Hammering	OFF	Hammering for electrical lock off
		ON	Hammering for electrical lock on (required when using an electrical lock). Activate anyway if the leaves are having difficulties during the initial opening phase, for instance when temperatures are below zero and/or there is light friction.
DIP 7	Status of gate at reset	OFF	Status of gate closed at reset
		ON	Status of gate open at reset
			When the power supply is restored, a step-by-step command causes closing and if automatic closing is on (DIP-switch 2 = ON), closing occurs after the pause time
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
DIP 9	Normal speed	OFF	High normal speed
		ON	Low normal speed
DIP 10	Number of motors	OFF	Double swing gate leaf (M1 and M2 on)
		ON	Single swing gate leaf (only M1 on)

8 - 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	Savable remote control not in memory
	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 engaged when opening (term. 63 open)
	ON	Photocell not engaged when opening (term. 63 closed)
64	OFF	Sensitive edge engaged (term. 64 open)
	ON	Sensitive edge not engaged (term. 64 closed)

9 - Time setting

The control panel is programmed by default with the following times:
- automatic closing: 30 s
- offset for opening: 3 s
- offset for closing: 6 s

To change the default times, follow the procedure below (the phases for installing a double swing leaf gate have a grey background; if there is a single leaf, the leaf offsets are not programmed)

The control panel does not need travel setting as this is automatically measured with each action. For this to happen, run a complete open-close action (it will take place at reduced speed as the control panel does not know the exact position of the leafs).
NOTE: In order to perform this procedure, the gate must be stationary.
CAUTION! THE SAFETY DEVICES ARE DISABLED WHILE CARRYING OUT THIS PROCEDURE..

No.	Pressing push button	Phase	Description
1	PROG	Procedure activation	Press and hold down the PROG push button until the flashing light comes on steady, then release the button, and the automatic gate system will now close the gate.
2	-	Leaf closing	Unless the leafs are already closed, the first action MUST be CLOSING; otherwise, cut off the power supply to the control panel and invert the cables of the motor that opens instead of closing. **N.B. DO NOT INVERT THE ENCODER CABLES.**
3	-	Opening M1	M1 starts to open and the control panel starts the count of the offset for opening
4	51	Setting the offset for opening	After the desired time, press and release button 51 to set the offset for opening (if not pressed, after 40 s M2 will start automatically). M2 starts opening
5	-	Completion of opening	M1 and M2 continue to open at low speed until they reach the mechanical stops on opening
6	51	Setting the pause time	With the gate stationary in the fully open position, the automatic closing time count starts, after the required length of time has passed, press and release push button 51, the control panel will save the elapsed time (max. 250 seconds)
7	-	Closing M2	M2 starts to close and the control panel starts the count of the offset for closing
8	51	Setting the offset for closing M1 starts closing	After the desired time, press and release button 51 to set the offset for closing (if not pressed, after 130 s M1 will start automatically).
9	-	Completion of closure and end of programming	The automation completes the closure when it reaches the closing mechanical stops and the flashing light goes out to signal that the travel programming procedure has been exited.

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 PROG 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 PROG button. The flashing light will turn off.
5. The control panel is now set with the default times.

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+PROG	Off	Press and hold down the MRX and PROG push buttons for no more than 7 s
2	MRX+PROG+remote control	-	With the MRX and PROG 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	MRX LED indicator	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

Problem	Cause	Solution
The automation system does not work	No mains supply	Check the power line switch
	Blown fuses	Replace blown fuses with others of the same value
	Control and safety inputs not working	Check the diagnosis LEDs (FCL, FOP, COSTA and STOP must be on)
You cannot save the remote controls	Safety devices open	FCL, FOP, COSTA and STOP 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 via trimmer MOT 1 for motor M1 and MOT 2 for M2
Movement of one of the 2 motors is reversed	Wrong wiring	Check the motor wiring
During calibration the motor M1 starts and stops after 1 second	Encoder 1 wiring reversed with encoder 2	Check the encoder wiring
With the electrical lock the motor 1 is not able to start opening or does not close completely	Electrical lock unable to get freed	Set DIP-switch 6 in ON position (hammering on)
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 opens one leaf at a time with an offset of 40s	The leaf offset has not been programmed	Return the working times to default or if necessary program them.
The gate detects an obstacle even when it is not there	- Incorrect bracket dimensions - Force trimmer too low - Gate mechanics stiff	- Check dimensions - Raise force trimmer - Service the gate
Closing one leaf at a time	- Previous no mains - Reset action in case of overlapping leafs.	Wait for the operation to be completed, the gate will be reset automatically
The leaves have difficulty during the initial opening phase	Temperatures below zero and/or there is light friction	Set DIP 6 to ON

⊠ **VIMAR**

EC DECLARATION OF CONFORMITY

(Declaration of incorporation of partly completed machinery annex IIB 2006/42/EC)

No. : ZDT00737.00

The undersigned, representing the following manufacturer **Vimar SpA**
Viale Vicenza, 14 - 36063 Marostica (VI) Italy

herewith declares that the products

Electronic control unit

Articles

Trade mark	Type ref.	Cat. ref.	Description EN *
Elvox	RS16	RS16	24V ACTO 404D control card
Elvox	RS17	RS17	24V EKKO 204D control card
Elvox	RS17.A	RS17.A	Switchboard 24V EKKO ART 204D
Elvox	RS17.P	RS17.P	Switchboard 24V EKKO 204D

when installed with the appropriate accessories and/or enclosures for devices are in conformity with the provisions of the following EU directive(s) (including all applicable amendments)

Machinery Directive 2006/42/CE	EN 60335-2-103 (2015), EN 13241 (2003) + A2 (2016), EN 12453
LV Directive 2014/35/EU	(2002)
R&TTE Directive 1999/5/CE	EN 301 489-3 (2013), EN 300 220-2 (2012)
EMC Directive 2014/30/EU	EN 61000-6-1 (2007), EN 61000-6-3 (2007) + A11 (2011)

Further hereby declares that the product must not be put into service until the final machinery into which it is to be incorporated has been declared in conformity with the provisions of Directive 2006/42/EC, where appropriate.

Declares that the relevant technical documentation is compiled by Vimar SpA and in accordance with part B of Annex VII of Directive 2006/42/EC and the following essential requirements of this Directive are applied and 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.

I undertake to make available, in response to a reasoned request by the national authorities, any further supporting product documents they require.

Marostica, 24/02/2015

The Managing Director

Note: The contents of this declaration correspond to what declared in the last revision of the official declaration available before printing this manual. The text herein has been re-edited for editorial purposes. A copy of the original declaration can be requested to Vimar SpA