



Installer manual

SL24.W
Control panel for sliding gates 24 Vdc

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1 - Product features:

Control panel for gear motors for 24Vdc sliding gates. The control panel:

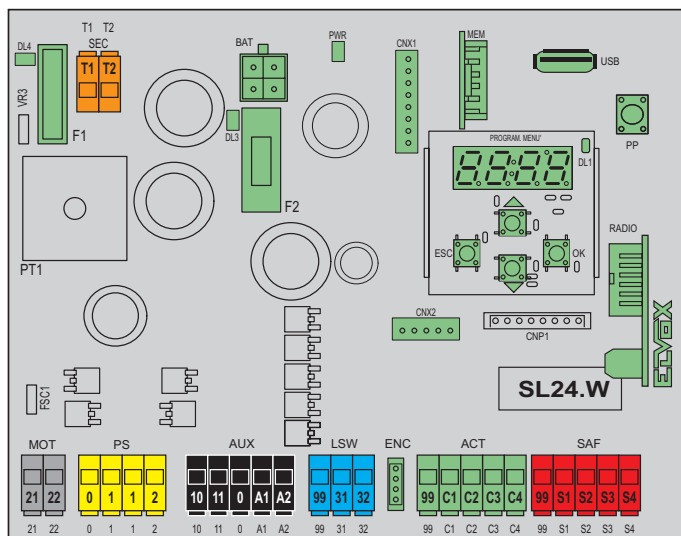
- is equipped with an integrated 433 MHz rolling code or fixed code receiver, storing up to 4032 codes
- is equipped with Wi-Fi connection and programming via Smartphone and Tablet using the EMC.W module and the By-gate Pro app is equipped with a back-lit display for programming and diagnostics
- is used to customise all gate movement control parameters (speed and slowdown spaces, motor force, obstacle sensitivity, reaction to obstacles, acceleration and deceleration ramps...)
- is equipped with fully configurable inputs and outputs
- is used to lock the control panel and receiver settings with a 4 digit password protection

Technical data:

Power supply	24 Vac
Motor supply voltage	24 V DC
Maximum motor power	150 W
Flashing light output	24 V DC 35 W max
Accessories power supply	24 V DC 500 mA
Receiver memory	4032 Elvox rolling codes
Receiver frequency	433 MHz
Remote controls code	Rolling code or fixed
Fuse F1	ATO line protection 15 A
Fuse F2	Accessories protection 5x20 mm F 3.15A
Operating temperature	-10 to +50°C
Ports	MEM for memory module MEM.W connection (included) RADIO for radio module 433RAD.W connection (included) USB for firmware updating CNX1 for Wi-Fi EMC.W module connection CNX2 for opposing leaf module connection

Controllable actuators:

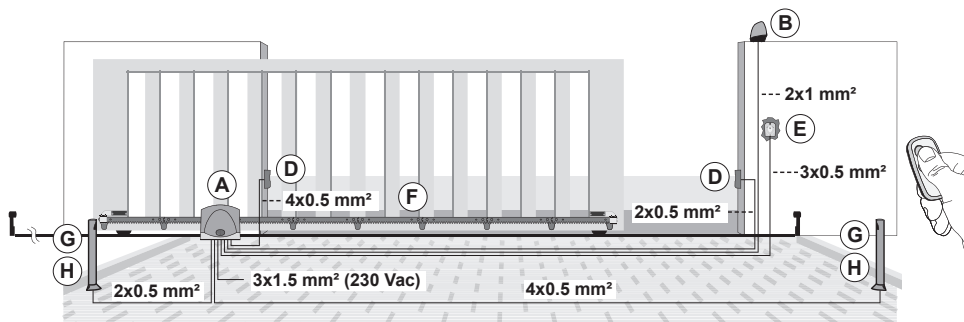
Ref.	Description
ESM2.W	ACTO 600D sliding 24 V 600 kg control panel actuator set up for Wi-Fi
ESM2.1000.W	ACTO 600D sliding 24 V 1000 kg control panel actuator set up for Wi-Fi



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2 - System type

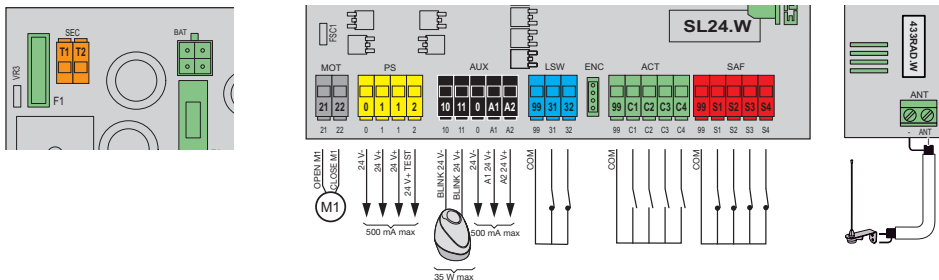
For the sizing of the cable routing, the required cross-sections of the cables are shown below.



Components for implementing a complete system

	Main Components		Accessories (optional)	
Actuator	A	Key selector	E	Post-mounted photocells
Blinking	B	Rack	F	Posts
Wall-mounted photocells	D			

3 - Description of the terminal blocks



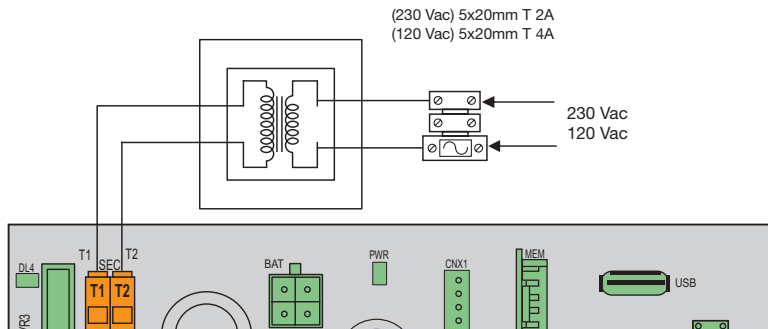
Block	Terminal	Description	Rated data
SEC	T1	Secondary transformer	24 Vac
	T2		
BAT	-	Battery pack rapid coupling	
MOT	21	Opening motor (white)	24 V DC
	22	Closing motor (brown)	150 W
PS	0	Accessory power supply negative	24 V DC 500 mA
	1	Accessory power supply positive	
	2	Accessories positive checked	
AUX	10	Flashing light negative	24 V DC
	11	Flashing light positive	35 W
	0	Accessories negative	24 V DC 500 mA
	A1	Configurable output 1 positive	
A2	Configurable output 2 positive		

Block	Terminal	Description	Rated data
LSW	99	Inputs common (blue)	N.C.
	31	Limit switch 1 (brown)	
	32	Limit switch 2 (black)	
ENC	-	Motor encoder	
ACT	99	Control common	N.O.
	C1	Configurable control 1	
	C2	Configurable control 2	
	C3	Configurable control 3	
	C4	Configurable control 4	
SAF	99	Safety device common	N.C.
	S1	Configurable safety device 1	
	S2	Configurable safety device 2	
	S3	Configurable safety device 3	
	S4	Configurable safety device 4	
ANT	ANT	Aerial signal	
	-	Aerial earth	

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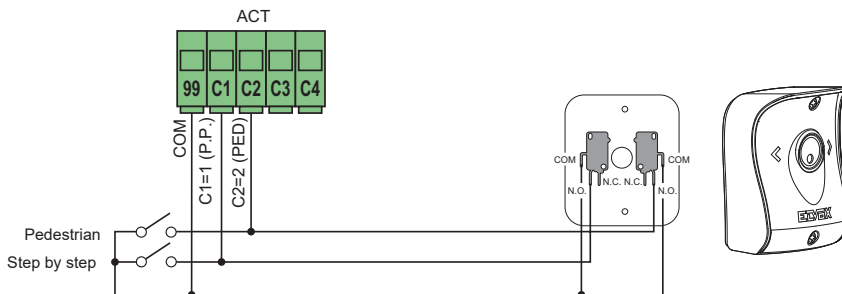
4 - Power supply connection

The control panel is powered at the SEC terminal with 24Vac and must be connected to the secondary terminal of a transformer for powering from the mains electricity. The transformer is supplied with the gear motor or control cabinet the control is fitted in and the secondary is pre-wired to the control panel. The primary terminal on the transformer is already wired to the fuse carrier, also supplied with the gear motor or the control cabinet, for connecting the fuse carrier to the electrical power supply refer to the image below:

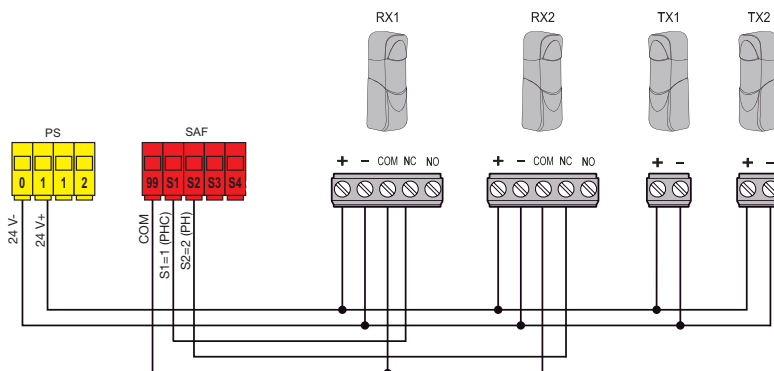


5 - Connecting accessories

5.1 - Key switch and control device

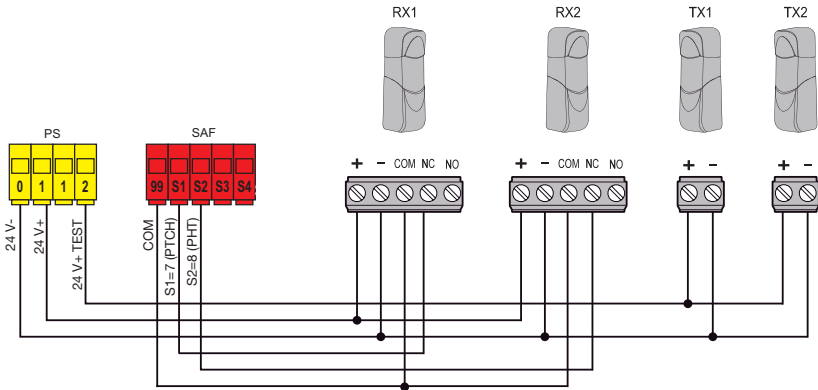


5.2 - Key switch and control device

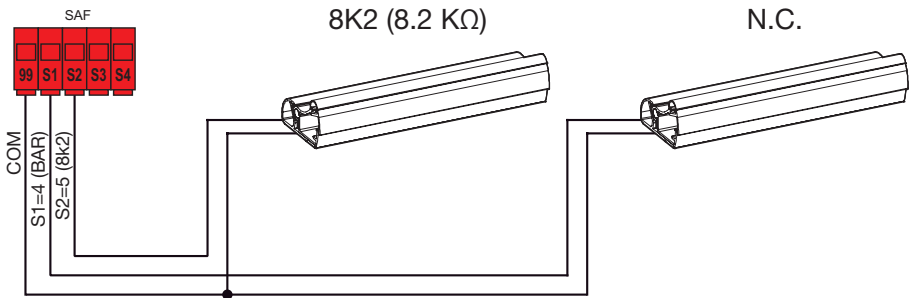


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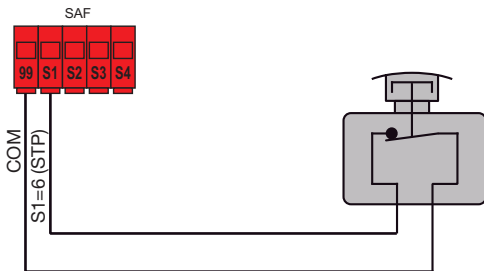
5.3 - Photocells and photocells in closing with photo-test on



5.4 - Sensitive edge



5.5 - Stop push button



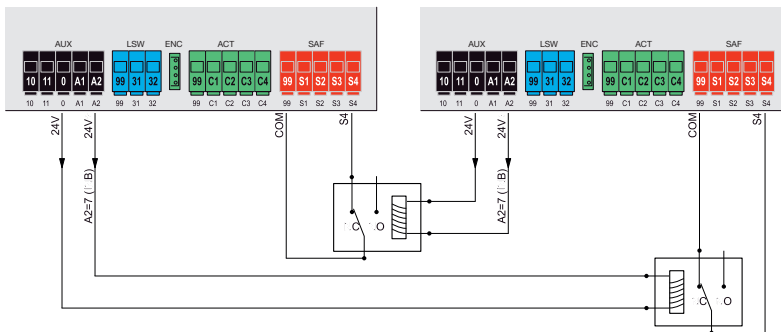
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5.6 - Connecting two control panels in interlocking mode, output A2 = 7 (INB)

The interlocking connection involves 2 gates operating according to the following method:

- gate 1 opens only if gate 2 is closed
- gate 2 opens only if gate 1 is closed

When this mode is on, the safety input S4 is automatically configured without the installer selecting it as an interlock input (checking that the other gate is closed). The two control panels operating in interlocking mode must be connected by interposing 2 relays as shown in the figure:

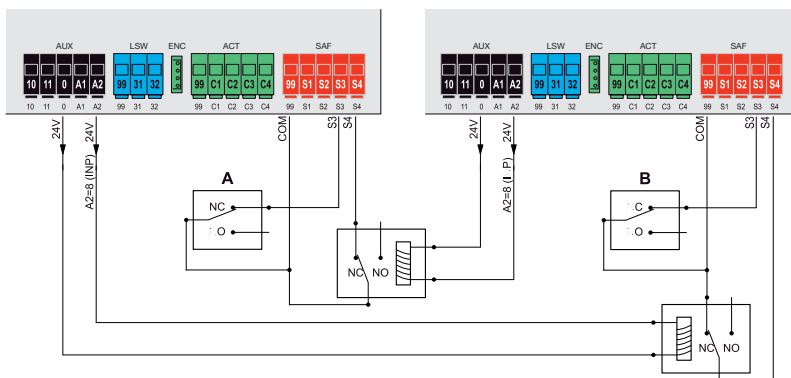


5.7 - Connecting two control panels in interlocking mode with presence, output A2 = 8 (INP)

The interlocking connection with consent to opening from presence signal involves 2 gates operating according to the following method:

- gate 1 opens only if gate 2 is closed
- gate 2 opens only if gate 1 is closed
- gate 1 opens only if there is a presence signal
- gate 2 opens only if there is a presence signal

When this mode is on, the safety input S4 is automatically configured without the installer selecting it as an interlock input (checks the state of closure of the other gate) and the safety input S3 is configured automatically as the presence input. The two control panels operating in interlocking mode must be connected by interposing 2 relays and using accessories which send the presence signals to the control panels (e.g. magnetic coils A and B) as shown in the figure:



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5.8 - Connection of control units in bi-parting mode

The connection in bi-parting mode entails 2 sliding gates functioning according to the following mode:

- Gate 1 and 2 move together as if they were the leaves of a swing gate with no delay
 - Activation of the command and safety devices has effect on both gates
- In this mode, one of the two gates is identified as MASTER and the other as SLAVE.

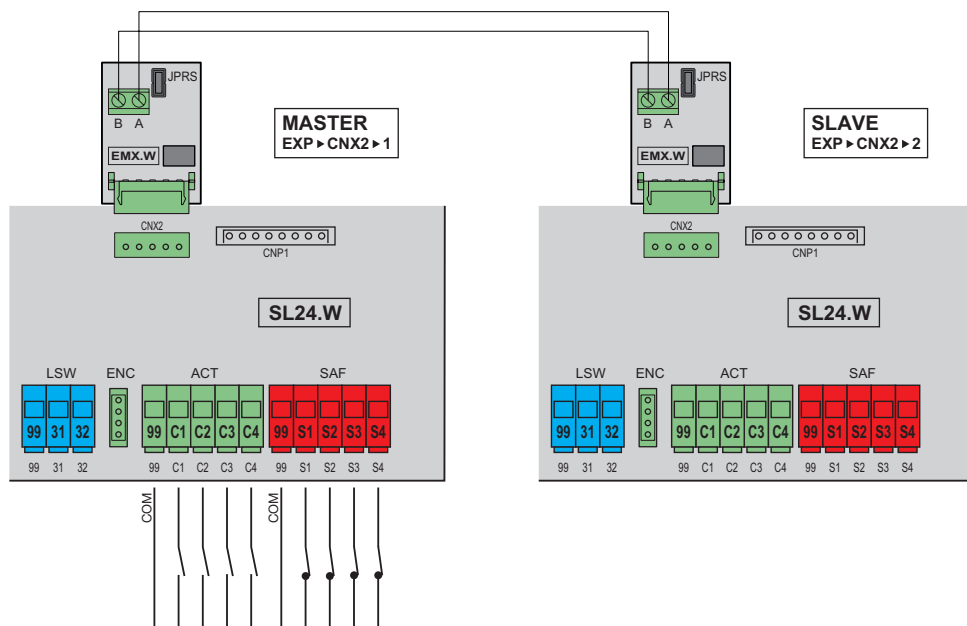
All control and safety devices must be connected to the MASTER only.

The MASTER, thanks to the serial communication with the SLAVE, will pass to the latter all the necessary command and safety signals.

To have a control panel set as the MASTER, proceed to the EXP menu, select the CNX2 parameter and assign the value 1.

To have a control panel set as the SLAVE, proceed to the EXP menu, select the CNX2 parameter and assign the value 2.

The connection of two control panels operating in bi-oparting mode must be carried out as shown in the figure:



Note:

The JPRS jumper is an RS485 series terminator.

Since there are only 2 devices (the MASTER and the SLAVE control panels), the terminator must always be left inserted. Do not remove the JPRS jumper otherwise the MASTER - SLAVE communication will not work.

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6 - Control panel programming

6.1 - Preliminary operations

To function correctly, the control panel requires some minimum and essential settings. There are two:

- Setting the motor type.

In its default configuration, the control panel is not associated to any type of motor. The type of motor associated to the control panel must be set.

- Gate travel calibration

The control panel must know some physical parameters of the gate in order to function correctly. The operation allowing the control panel to know these physical gate parameters is called travel calibration. If this is not done, the control panel may not perform slowdowns or detect obstacles correctly.

6.2 - Using the display

The control panel is programmed using the display and the navigation buttons on board or via Smartphone/Tablet (see paragraph "Wi-Fi connection to Smartphone/Tablet"). The control panel settings are shown on the display and can be edited using the menu navigation buttons as shown in the following table:

Buttons	Function	Pressure length
OK	Switching on the display Sub-menu entry Confirm value change and return to menu	Instantaneous
▲	Scroll up Increase parameter value	Instantaneous
▼	Scroll down Reduce parameter value	Instantaneous
ESC	Exit the menu Cancel value change and return to menu Switching off the display	Instantaneous
▲+▼	Resetting the card	3 s
▲+OK	Opening control	1 s
▼+OK	Closing control	1 s
ESC + OK	Display test (switches on each segment of the display and points individually in sequence)	3 s
ESC + OK	When the board is switched on the Firmware updating mode starts	3 s
PP	Step-step control	Instantaneous


6.3 - Menu

The control panel programming is organised into menus and sub-menus used to access and edit the parameters and logics of the control panel. The control panel is equipped with the following first-level menus:

Menu	Description
MOT	Motor parameters setup
LRNT	Travel calibration procedure run menu
TRV	Travel parameter settings menu
OUT	Auxiliary output configuration menu
IN	Input configuration menu
LGC	Operating logic settings menu
RAD	Remote control management menu
STAT	Diagnostic and reporting menu
EXP	Expansion board management menu
LOAD	Default value restore menu
PASS	Protection level settings menu

All sub-menus are described in the following table

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Motor parameters					
MOT	O1	Type of gear motor used		Default 1	
		 Warning! If set to OFF the board performs no command !			
		OFF	Not set		
		1	Acto 600D (ESM2)		
		2	Acto 1000D (ESM2.1000)		
	O2	Type of position control		Default 3	
		Automatically set with the choice of gear motor. You are advised not to change the setting given by the type of gear motor.			
		2	Virtual encoder: the control panel calculates the gate position using the electric motor operating parameters		
		3	Encoder for Acto 600D (ESM2)		
	O3	Type of limit switch on opening		Default 1	
		Automatically set with the choice of gear motor. You are advised not to change the setting given by the type of gear motor.			
		OFF	No limit switch on opening: the electric motor stops at the end of the working time		
		1	Stop limit switch on opening: the limit switch stops the motor		
		2	Limit switch in proximity opening: the limit switch allows the manoeuvre to continue at the approach speed set until it detects the mechanical stop		
	O4	Type of limit switch on closing		Default 1	
		Automatically set with the choice of gear motor. You are advised not to change the setting given by the type of gear motor.			
OFF		No limit switch on closing: the electric motor stops at the end of the working time			
1		Stop limit switch on closing: the limit switch stops the motor			
	2	Limit switch in proximity closing: the limit switch allows the manoeuvre to continue at the approach speed set until it detects the mechanical stop			

Gate travel calibration			
LRNE	Rapid travel calibration.		
	The calibration is done fully automatically and sets:		
	- The slowdown in opening at 20% of the total travel		
	- The slowdown in closing at 20% of the total travel		
	- Pedestrian opening at 30% of the total travel		
	Pressing button	Msg on display	Phase description
	-	PP	Wait for start of calibration procedure
	PP	CL 1	When button pressed: closing and search for closing limit switch
	-	OP 1	Opening travel measurement
	-	CL 1	Closing travel measurement
-	OPC1	Opening current curve reading	
-	CLC1	Closing current curve reading	
-	END	End of procedure	
LRNT	Advanced travel calibration.		
	The calibration allows the installer to choose:		
	- Slowdown position in opening		
	- Slowdown position in closing		
	- Pedestrian opening position		
	Pressing button	Msg on display	Phase description
	-	PP	Wait for start of calibration procedure
	PP	CL 1	When button pressed: closing and search for closing limit switch
	PP	OP 1	Start opening. When button pressed: slowdown start position on opening setting
	-	OP 1	Continuation of opening and slowdown speed up to opening limit switch
PP	CL 1	Start closing. When button pressed: slowdown start position on closing setting	
-	CL 1	Continuation of closing at slowdown speed up to closing limit switch	
PP	OPED	Start pedestrian opening. When button pressed: pedestrian opening position setting	
-	CPED	Leaf closing from pedestrian opening position	
-	OPC1	Opening current reading	
-	CLC1	Closing current reading	
-	END	End of procedure	

SL24.W**6.4 - Self-calibration**

If the gate travel parameter is changed, there is no need for the installer to run new calibrations, however, when changing the travel parameters, the control panel needs to learn the current curve again, thus disabling the obstacle detection only during the self-calibration manoeuvre.

Self-calibration is appropriately signalled:

- on the control panel display by the code AT
- by the light flashing at twice the normal frequency

The events generating self-calibration are:

- change in parameters: T24, T26, T28, T30, T32, T34, T40
- loading of settings from a MEM.W memory card
- reset/import of settings from the By-gate Pro app

Gate travel parameters				
TRV	T1	Motor force (%).	Default 50	
		Sets the value of the force given to the motor to push the leaf		
		1	Minimum force	
		100	Maximum force	
	T4	Direction.	Default 1	
		Sets the motor direction		
		1	Left gear motor (the gate seen from the side where the gear motor is installed opens towards the left)	
		2	Right gear motor (the gate seen from the side where the gear motor is installed opens towards the right)	
	T7	Choice of intervention method for obstacle detection		Default 1
		1	Overcurrent or leaf stopped: the obstacle is detected when the current threshold or the encoder slowdown threshold is exceeded	
		2	Leaf stopped: the obstacle is detected only when the leaf slows down excessively	
		3	Overcurrent: the obstacle is detected when the current threshold is exceeded	
		4	Overcurrent and leaf stopped: the obstacle is detected when the current threshold and the encoder slowdown threshold are exceeded at the same time	
	T8	Motor obstacle detection time on opening		Default 20
Time after which the current threshold or the encoder threshold trigger the obstacle detection on opening (adjustable at intervals of 100 ms)				
10		100 ms (minimum time)		
	60	600 ms (maximum time)		
T9	Motor obstacle detection time on closing		Default 20	
	Time after which the current threshold or the encoder threshold trigger the obstacle detection on closing (adjustable at intervals of 100 ms)			
	10	100 ms (minimum time)		
	60	600 ms (maximum time)		
T12	Polling time		Default 2.0	
	Time during which the motor pushes with maximum force to move the leaf (adjustable at intervals of 0.5 s)			
	0.5	0.5 s (minimum time)		
	5.0	5.0 s (maximum time)		
T13	Pedestrian opening position (% of total opening travel)		Default 30	
	10	Minimum position		
	100	Maximum position		
T14	Disengagement space on obstacle		Default 5	
	(inversion distance following the detection of an obstacle)			
	OFF	Not disengaged, stops only		
	1	Minimum inversion		
	10	Maximum inversion		

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TRV	T15	Motor stop approach force reduction distance		Default OFF
		Indicates the distance from the mechanical stop starting from which the motor force is reduced by half (used to adjust the impact of the leaf on the mechanical stop). This happens only when the control panel works with encoder and proximity limit switch or without limit switch.		
		OFF	Force reduction off	
		10	Minimum force reduction distance	
		100	Maximum force reduction distance	
	T17	Easy release		Default OFF
		Disengagement time after manoeuvre to reduce the motor pressure on the mechanical stop (adjustable at intervals of 100 ms)		
		OFF	No disengagement	
		10	100 ms (minimum disengaging)	
		50	500 ms (maximum disengaging)	
	T24	Normal motor speed when opening		Default 90
		1	minimum speed	
		100	maximum speed	
	T26	Normal motor speed when closing		Default 90
		1	minimum speed	
		100	maximum speed	
T28	Motor slowdown speed when opening		Default 30	
	1	minimum speed		
	100	maximum speed		
T30	Motor slowdown speed when closing		Default 30	
	1	minimum speed		
	100	maximum speed		
T32	Motor slowdown distance when opening		Default 20	
	% of travel or total work time done at slowdown speed			
	0	No slowdown		
	100	Slowdown for the whole distance		
T34	Motor slowdown distance when closing		Default 20	
	% of travel or total work time done at slowdown speed			
	0	No slowdown		
	100	Slowdown for the whole distance		
T36	Motor acceleration time when opening		Default 0.5	
	Time during which the motor accelerates to reach the normal opening speed (adjustable at intervals of 0.1 s)			
	0	Maximum acceleration (0 s to reach normal speed)		
	2.0	Minimum acceleration (2.0 s to reach normal speed)		
T38	Motor acceleration time when closing		Default 0.5	
	Time during which the motor accelerates to reach the normal closing speed (adjustable at intervals of 0.1 s)			
	0	Maximum acceleration (0 s to reach normal speed)		
	2.0	Minimum acceleration (2.0 s to reach normal speed)		
T40	Motor deceleration ramp		Default 30	
	Deceleration ramp between normal motor speed and slowdown speed			
	0	Steep ramp (maximum deceleration)		
	100	Low ramp (minimum deceleration)		

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Auxiliary output configuration			
OUT	A1	Terminal A1 output type	Default 1
		OFF	Output off
		1	Gate open warning light (SCA) Operation as per SCA parameter setting
		2	Auxiliary Radio output (RAU) Operation as per RAU parameter setting
		3	Courtesy light (LCO) On during leaf movement and for the amount of time after the leaf stopping set in parameter LCO
		4	Zone light (LZO) On during leaf movement
		5	Gate left open (OAB) On if the gate remains open for a time longer than that defined by the open gate alarm logic (L16)
	6	Maintenance (MAN) Output off when the number of maintenance signalling manoeuvres (MNPS) is reached in the diagnostics section	
	A2	Terminal A2 output type	Default 2
		OFF	Output off
		1	Gate open warning light (SCA) Operation as per SCA parameter setting
		2	Auxiliary Radio output (RAU) Operation as per RAU parameter setting
		3	Courtesy light (LCO) On during leaf movement and for the amount of time after the leaf stopping set in parameter LCO
4		Zone light (LZO) On during leaf movement	
5		Gate left open (OAB) On if the gate remains open for a time longer than that defined by the open gate alarm logic (L16)	
6		Maintenance (MAN) Output off when the number of maintenance signalling manoeuvres (MNPS) is reached in the diagnostics section	
RAU	7	Synchronization output, compass type interlock (INB) Automatically configures input S4 as synchronization input without any choice by the user. The control panel consents to the gate opening only if the other gate is in the closed position	
	8	Synchronization output, compass type interlock (INP) with presence signal. Automatically configures input S4 as synchronization input and S3 as presence input without any choice by the user. The control panel consents to the gate opening only if the other gate is in the closed position and the presence input is occupied	
	Auxiliary Radio Output Configuration	Default 1	
RAUT	1	Impulsive: the output is active for 1 s following the RAU command from the remote control	
	2	Timed: the output is active for the time set in the RAUT parameter following the RAU command from the remote control	
	3	Bistable: the output works in Step-Step ON/OFF mode	
RAUT	RAU output timing	Default 1	
	1	1 s (minimum time)	
	600	600 s (maximum time)	

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OUT	LCO	Courtesy light timer		Default 120	
		1	1 s (minimum time)		
		300	300 s (maximum time)		
	SCA	SCA output operating mode			Default 1
		1	Gate closed: off Gate open: on fixed		
		2	Gate closed: off Gate moving: intermittent Gate open: on fixed Indeterminate position: intermittent pause of 1 s every 5		
		3	Gate closed: off Gate opening slow intermittent Gate open on fixed Gate closing intermittent Indeterminate position: intermittent pause of 1s every 5		
		4	Gate stopped on fixed Gate moving off		
		5	Gate closed off Gate moving on fixed		

Input configuration					
IN	C(X)	C1/C2/C3/C4 command input			
		1	Step-step (PP) The step-step control: - with the gate stopped and closed, opens the gate - in opening, stops or closes the gate according to the step-step logic setting (L10) - with the gate stopped after opening, closes the gate - in closing, stops or opens the gate according to the step-step logic setting (L10) - with the gate stopped after closing, opens the gate	Default C1	
		2	Pedestrian (PED) Opens the gate to the pedestrian position It acts like a step-step if the command is given with the gate beyond the pedestrian position	Default C2	
		3	Open (OPEN) The open command: - with the gate stopped and closed, opens the gate - in opening is ignored - with the gate open, resets the pause time - with the gate stopped, opens the gate - in closing, opens the gate	Default C3	
		4	Close (CLS) The close command: - with the gate stopped and closed, is ignored - in opening, closes the gate - with the gate stopped, closes the gate - in closing is ignored	Default C4	
		5	Timer (TIM) The timer command: - when closed, opens the gate and keeps it open as long as the contact remains closed - when the contact is released it closes the gate		
		6	Pedestrian Timer (TIMP) Has the same function as the timer command but on the pedestrian position		

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		S1/S2/S3/S4 safety input	
		OFF Off	Default S3/S4
IN	S(X)	1 Photocell closing (PHC) The closing photocell: - with the gate stopped, allows the gate to open - in opening does not intervene - with the gate open, does not allow it to close and when released will reset the pause time - in closing, reopens the gate immediately	Default S1
		2 Photocell (PH) The photocell: - with the gate stopped, does not allow the gate to open - during opening stops the movement and when released proceeds with opening - with the gate open, does not allow it to close and when released will reset the pause time - in closing stops the movement and when released reopens the gate	Default S2
		3 Opening photocell (PHO) The opening photocell: - with the gate stopped, allows the gate to open - in opening, recloses it completely - with the gate open, allows it to close and does not reset the pause time - in closing does not intervene	
		4 Sensitive edge with NC clean contact (BAR) - with the gate stopped, does not allow the gate to open - in opening disengages - with the gate open, does not allow it to close and when released will reset the pause time - in closing disengages	
		5 8.2 KΩ balanced sensitive edge (8K2) Same behaviour as the NC sensitive edge	
		6 Stop (STP) - stops the gate Interrupts the automatic closing as per the logic stop setting from stop (L12)	
		7 Photocell closing checked (PHC) As per closing photocell but with check	
		8 Photocell checked (PHT) As per photocell but with check	
		9 Photocell opening checked (PHC) As per opening photocell but with check	
		10 NC sensitive edge checked (BART) As per K Ω NC sensitive edge but with check	
		11 8.2 KΩ balanced sensitive edge checked (8K2T) As per 8.2 K Ω sensitive edge but with check	

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Control panel logic settings				
LGC	L1	Automatic closing		Default ON
		OFF	Automatic closing off	
		ON	Automatic closing on	
	L2	Pause time		Default 30
		1	1 s (minimum time)	
		180	180 s (maximum time)	
	L3	Pedestrian pause time		Default 20
		1	1 s (minimum time)	
		180	180 s (maximum time)	
	L4	State on power up		Default OP
		CL	Gate in closed position: The first step-step command opens the gate.	
		OP	Gate in open position: The first step-step command closes the gate. If automatic closing is on, after the pause time the gate closes	
	L5	Apartment block		Default OFF
		OFF	Apartment block function off	
		1	Ignores closing and stop commands in opening	
		2	Ignores closing and stop commands in opening and in pause	
	L6	Rapid closing		Default OFF
		OFF	Rapid closing function off	
		1	Rapid closing in gate mode: The control panel starts to count the clearance time (L7) from when the closing photocell is released, when the clearance time expires it closes again.	
		2	Rapid closing in barrier mode: The control panel starts to count the clearance time (L7) from when the closing photocell is released, when the clearance time expires it closes again. If the closing photocell is occupied again, it does not command it to reopen but to stop. When released again it continues with closing. The closing photocell returns to normal operating after complete closure	
L7	Clearance time (adjustable at intervals of 1 s) Time after which the gate closes again if the rapid closing (L6) is on		Default 2	
	1	Minimum clearance time		
	10	Maximum clearance time		

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LGC	L8	Pre-flash		Default
		Flashing time of the flashing light before the gate starts to move		OFF
		OFF	Pre-flash disabled	
		3	3 s pre-flash	
		5	5 s pre-flash	
	L9	Manned		Default
		OFF	Manned function off	OFF
		1	Step-step command disabled, remote controls not working. The control panel accepts only open and close commands	
	L10	Step by step		Default
		2	Step-step command operates in 2 steps: open, close, open...	4
		3	Step-step command operates in 3 steps: open, stop, close, open...	
		4	Step-step command operates in 4 steps: open, stop, close, stop, open...	
	L11	Stop from step-step		Default
		OFF	Automatic closing disabled when a stop command from step-step is given	ON
	L12	Stop from stop		Default
		ON	Automatic closing not disabled when a stop command from step-step is given	ON
OFF		Automatic closing disabled when a stop command from stop is given		
L14	Operation in battery		Default	
	ON	Automatic closing not disabled when a stop command from stop is given	1	
	1	Standard operation		
	2	Normal operation with flashing light disabled		
	4	When the main power supply is cut off it opens and remains open		
L15	Economy		Default	
	OFF	Standard operation	OFF	
L16	Gate blocked open indicator		Default	
	Number of minutes after which, with the gate partially or totally open, whatever the set pause time, an alarm signal is sent (on the display and output configured as OAB)		30	
	OFF	Indicator disabled		
	60	Maximum interval		

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RAD	Remote control management			
	PP	Saving a button as step-step		
		0000	Waiting for code	
		1001	Remote control 1 saved as step-step	
		1055	Remote control 55 saved as step-step	
	OPEN	Saving a button as open		
		0000	Waiting for code	
		2001	Remote control 1 saved as open	
		2055	Remote control 55 saved as open	
	PED	Saving a button as pedestrian		
		0000	Waiting for code	
		3001	Remote control 1 saved as pedestrian	
		3055	Remote control 55 saved as pedestrian	
	RAU	Saving a button as Auxiliary Radio Output activation		
		0000	Waiting for code	
		4001	Remote control 1 saved as Auxiliary Radio Output	
		4055	Remote control 55 saved as Auxiliary Radio Output	
	CLS	Saving a button as close		
		0000	Waiting for code	
		5001	Remote control 1 saved as close	
		5055	Remote control 55 saved as close	
	STP	Saving a button as stop		
		0000	Waiting for code	
		6001	Remote control 1 saved as stop	
		6055	Remote control 55 saved as stop	
	LCO	Saving a button as Courtesy light on		
		0000	Waiting for code	
7001		Remote control 1 saved as Courtesy light on		
	7055	Remote control 55 saved as Courtesy light on		
CTRL	Control of remote control memory position			
	0000	Waiting for code		
	5001	Remote control button 1 saved as close		
	7099	Remote control button 99 saved as Courtesy light on		
	-030	Remote control button 30 not in memory		
	----	Remote control not in memory		
RE	Remote control programming		Default 1	
	OFF	Remote programming of remote controls off		
	1	Remote programming of remote controls on: used to programme remote controls from a remote control already in the memory, using the following procedure: -press buttons 1 and 2 on the remote control already in the memory at the same time -press the button on the remote control already in the memory to copy on the new remote control -press the button on the new remote control on which to copy the button just pressed on the remote control already in the memory Note: the button on the new remote control just saved inherits the function assigned to the button on the remote control already in the memory		
	Total receiver memory deletion			
	Press OK for 5 s			
	0000	Signals the deletion of the receiver memory on the display		
	Deletion of single remote control from its position in the memory			
	ERS1	X	Use buttons ▲ ▼ to select the number of the remote control to delete	
			Press OK to confirm	
	ERSR	Deletion of single remote control from the remote control code		
0000		Waiting for code		
		Deleting remote control		

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Diagnostics and reporting			
ALM	Alarm log reading		
	0	Most recent alarm	
	10	Oldest alarm	
ALMA	Error signals		Default
	1	Only on display	1
	2	On display and maintenance output	
MNPC	Reading of number of manoeuvres since last maintenance		
	002	First 3 digits of the number of manoeuvres since last maintenance	
	3256	Last 4 digits of the number of manoeuvres since last maintenance	
	In the case described above, the gate has carried out 23,256 manoeuvres since the last maintenance		
MNPS	Number of manoeuvres since last maintenance		Default
	Number of manoeuvres generating a maintenance signal (in thousands of manoeuvres)		OFF
	OFF	Maintenance signalling off	
	1	1,000 manoeuvres (minimum interval)	
	300	300,000 manoeuvres (maximum interval)	
MNPA	Maintenance signalling		Default
	1	Signalling only on display	
	2	Signalling on display and maintenance output (MAN)	
	3	Signalling on display and flashing light (rapid flashing at end of manoeuvre)	
	4	Signalling on display, flashing light (rapid flashing at end of manoeuvre) and maintenance output (MAN)	
MNPE	Reset manoeuvres since last maintenance counter		
	oooo	Waiting press OK for 5 s to reset the counter to 0	
MNTC	Total manoeuvres counter		
	012	First 3 digits of the number of manoeuvres since last maintenance	
	5874	Last 4 digits of the number of manoeuvres since last maintenance	
	In the case described above, the gate has carried out 125,874 manoeuvres in total		
LIFE	Life counter (days of activity of the control panel)		
	584	Reading of the number of days of activity of the control panel	
	In the case described above, the control panel was active for 584 days		
PONC	Number of control panel power-ups counter		
	2547	Reading of the number of control panel power-ups	
	In the example shown above, the control panel was powered up 2547 times (it could indicate a poor quality mains electricity, with frequent power cuts)		
PONE	Reset number of control panel power-ups counter		
	oooo	Waiting press OK for 5 s to reset the counter to 0	
RSTC	Number of self-reset counter		
	1123	Reading of the number of control panel self-resets	
	A self-reset is a reset of the microswitch by the control panel for safety reasons. Typically the control panel goes to self-reset when the minimum microswitch voltage threshold has been reached. An excessive number of self-resets could indicate a poor quality power supply, subject to strong voltage fluctuation.		
RSTE	Reset number of self-reset counter		
	oooo	Waiting press OK for 5 s to reset the counter to 0	
TL	Installer telephone settings and display		
	Press OK briefly to view the saved number (use buttons ▲ ▼ to scroll)		
	3334	First 4 digits of the installer number	
	2548	Next 4 digits of the installer number	
	32	Last 2 digits of the installer number	
	In the example shown above the installer telephone number is: 3334254832		
Press OK for 5 s to enter the number edit mode. Use buttons ▲ ▼ to change the value, OK to confirm the number, use ESC to return to the previous digit, underscore “_” indicates a space			
INF	Control panel info display		
	SL24.W	Control panel name	
	1.13	Control panel firmware version	

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Connection module				
EXP	CNX1	Connection module on CNX1 connector		Default 1
		OFF	No module connected	
		1	Wi-Fi module EMC.W connected	
	CNX2	Connection module on CNX2 connector		Default OFF
		OFF	No module connected	
		1	Opposing leaf module EMX.W connected. Control panel functioning as MASTER	
2	Opposing leaf module EMX.W connected. Control panel functioning as SLAVE			

Restore default values and loading from memory card			
LOAD	DEF	Loading the default values	
		oooo	Waiting press OK for 5 s to load the default values.
		Note:	
		Loading the default values then requires the travel to be calibrated again, LRNT flashes on the display until (rapid or advanced) calibration is done.	
	MEM	Loading the programming from memory card	
		oooo	Waiting press OK for 5 s to load the values from memory card.
		DONE	Loading from memory card completed OK
		EMEM	Loading from memory card error (e.g. no card)

Control panel protection level settings			Default OFF
PASS	Programming block not authorised		
	OFF	No protection	
	1	Protection of menus MOT, LRNT, TRV, OUT, IN, LGC, STAT, EXP, LOAD	
	2	Protection of menu RAD	
	3	Protection from IP connection (it is not possible to connect to the control panel from a smartphone)	
	4	Protection of menus MOT, LRNT, TRV, OUT, IN, LGC, STAT, EXP, LOAD and IP connection	
	5	Protection of menu RAD and IP connection	
	6	Complete control panel protection	
7	Protection of all board menus, IP connection available		

Note:

- The password must be entered in the control panel each time you wish to access a protected menu. If the password entered is incorrect access to the menu is denied.
- A new password must be saved in the control panel each time you change the protection level from OFF to any one of the 6 protected levels. The new password must be entered twice, the second time to confirm it has been entered correctly.
- Use buttons ▲ ▼ to change the password digits and OK to confirm and move to the next digit

SL24.W**7 - Diagnostics:****7.1 - Signalling**

Signalling indications are shown on the display for events of interest to the installer concerning normal and anomalous operation. They appear on the display when the associated event occurs. These indications may signal a failure if some of the system components are not working (e.g. photocells).

The following table gives the list of indications shown to the installer:

Signal	Description
C1	Contact closed on command C1 input
C2	Contact closed on command C2 input
C3	Contact closed on command C3 input
C4	Contact closed on command C4 input
S1	Contact open on safety device S1 input
S2	Contact open on safety device S2 input
S3	Contact open on safety device S3 input
S4	Contact open on safety device S4 input
FO1	Opening limit switch position reached
FC1	Closing limit switch position reached
OBO	Obstacle detected on opening
OBC	Obstacle detected on closing
AF1	Motor in stop approach force reduction interval
MSO1	Mechanical stop reached in opening
MSC1	Mechanical stop reached in closing

Signal	Description
BATT	Operation with battery. When this message is displayed it is followed by an indication of the battery operating voltage, e.g. 24.5V
BT-	Battery almost flat (indication shown only when the gate is stopped)
BT--	Battery totally flat (indication shown only when the gate is stopped)
RX	Radio command received from saved remote control or from App
NX	Radio command received from unsaved remote control button
RD	Rolling/fix code decoding off
OAB	Gate left open
AT	Gate in self-calibration

7.2 - Alarms

Alarms are generally indications on the display of operating failures which prevent the automation system from working. They appear on the display when the associated event occurs. The alarms generally signal wiring errors, but may also indicate control panel or gear motor failures.

The following table gives the list of alarms shown to the installer:

Alarm	Description
XXXX	Reset card
MNP	Manoeuvre interval since last maintenance reached alarm
F0	Error motor not selected
F1	Motor cables inverted error
F3	Reversed limit switch error
F4	Both open limit switch alarm
F5	Opening limit switch malfunction error
F6	Closing limit switch malfunction error
F9	Communication error with expansion card
F10	Error alarm motor not connected
F12	Encoder error alarm
F14	Microswitch undervoltage (check power supply and outputs)
F15	Safety test 1 failed
F16	Safety test 2 failed

Alarm	Description
F17	Safety test 3 failed
F18	Safety test 4 failed
F19	Manoeuvre length/timeout alarm
F21	Mosfet short alarm
F23	Blocked rotor alarm
F25	Overlapping leaf in closing alarm
F26	5th obstacle in closing alarm
F27	Overcurrent alarm
F29	Radio memory full alarm
F30	Faulty radio memory alarm
F31	Short flashing alarm
F32	Gate open light short alarm
F33	No memory card alarm
F34	FW checksum alarm
F36	Board temperature alarm

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8 - Updating Firmware:

The control panel is equipped with a USB port that is used to update the control panel Firmware or the Wi-Fi EMC.W communication module Firmware

Caution:

If the firmware updating procedure is not carried out properly it may damage the control panel or the Wi-Fi communication module, make sure not to interrupt the mains power supply during the update.

To perform the Firmware Update, consult the instructions provided with the Firmware

9 - Control panel behaviour when loading settings:

On full uploading of the settings, some parameters are loaded, others maintained and others again are reset.

According to the type of loading, it may be necessary to calibrate the gate travel again.

To know which parameters the control panel loads, which are maintained and which are reset, refer to the table below:

Action	Data	Control panel behaviour
RESET (control panel reboot)	Fixed counters	No variation
	Resettable counters	
	Motor parameters	
	Gate travel data	
	Installer settings	
	Password	
Firmware Updating	Fixed counters	No variation
	Resettable counters	
	Motor parameters	
	Gate travel data	
	Installer settings	
	Password	
LOAD MEM (loading from memory card)	Fixed counters	No variation
	Resettable counters	
	Motor parameters	Importing data from a MEM.W memory card
	Gate travel data	Self-calibration on first manoeuvre
	Installer settings	
	Password	Importing data from a MEM.W memory card
Reset/Import control panel data from By-gate Pro app	Fixed counters	No variation
	Resettable counters	
	Motor parameters	Importing data from By-gate Pro app
	Gate travel data	Self-calibration on first manoeuvre
	Installer settings	Importing data from By-gate Pro app
	Password	
LOAD DEF (loading default values)	Fixed counters	No variation
	Resettable counters	
	Motor parameters	
	Gate travel data	Travel data reset, new LRNE or LRNA calibration required
	Installer settings	Restored to DEFAULT
	Password	
ERSA (deletion of receiver memory)	Fixed counters	No variation
	Resettable counters	
	Motor parameters	
	Gate travel data	
	Installer settings	
	Password	
Remote controls	Complete deletion	
Reset/Import receiving data from By-gate Pro app	Fixed counters	No variation
	Resettable counters	
	Motor parameters	
	Gate travel data	
	Installer settings	
	Password	
Remote controls	Import of remote control list from By-gate Pro app	

SL24.W**10 - IP control panel connection**

The control panel may be programmed/controlled directly from a Smartphone/Tablet with no need to interact through the panel display and buttons both locally and remotely.

Requirements for establishing the connection:

- an SL24.W or SW24.W control panel
- an EMC.W Wi-Fi connection module
- an Android device with at least version 4.4 or iOS minimum version 8.0 with the By-gate Pro App installed (downloadable from Google Play or App Store)
- service access credentials (supplied by Vimar Spa)
- for the remote connection: a Wi-Fi network connected to the internet.

To enable the connection check that the EMC.W module is connected to the CNX1 connector and that the parameter EXP-> CNX1 is set to 1.

Follow the instructions given in the EMC.W module instructions to establish the connection.

Using the Wi-Gate app all the configurations which can be done using the control panel buttons can also be done from the Smartphone both locally and remotely. The By-gate Pro App uses full descriptions to make the meaning of the parameters immediately understandable.

In addition to connection to the control panel for more immediate and easy configuration, the By-gate Pro App can be used to save/restore the control panel configuration data on/from a Cloud-based database which can be managed from the Web portal by accessing the page:

<https://by-gate.vimar.cloud>

The installation database management web portal access credentials are the ones used to access the By-gate Pro App. Here it is possible to manage the records of the saved installations and the access authorisations for the collaborators of the account holder.

Note: the configuration data of the saved control panels and receivers are not visible from the web interface, they are physically saved on the cloud but can be retrieved from the cloud and exported onto the control panels only using the By-gate Pro App.

With the control panel connected to the internet, all diagnostics and programming operations can be performed remotely as if you were on site.

With the control panel connected to the internet, the end user can operate the gate and receive notifications from it (ex. gate open) also remotely through the specific end user By-gate App.

REACH (EU) Regulation no. 1907/2006 – Art.33.

The product may contain traces of lead.

EC DECLARATION OF CONFORMITY

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

No.: ZDT00744.00

The undersigned, representing the following manufacturer

**Vimar SpA Viale Vicenza 14,
36063 Marostica VI Italy**

declares under his own responsibility that the products

Electronic control unit

Trade mark	Type ref.	Cat. ref.	Description EN *
Elvox	SL24.W	SL24.W	Control card Wi-Fi 24V sliding gates
Elvox	SW24.W	SW24.W	Control card Wi-Fi 24Vswing gates

* See www.vimar.com for the full description of the products.

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)

LV Directive 2014/35/EU

R&TTE Directive 1999/5/CE EN 301 489-3 (2013), EN 301 489-17 (2012) EN 300 220-2 (2012),
EN 300 328 (2015)

EMC Directive 2014/30/EU EN 61000-6-2 (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, 6/3/2017

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



SL24.W installer EN 08 1911



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