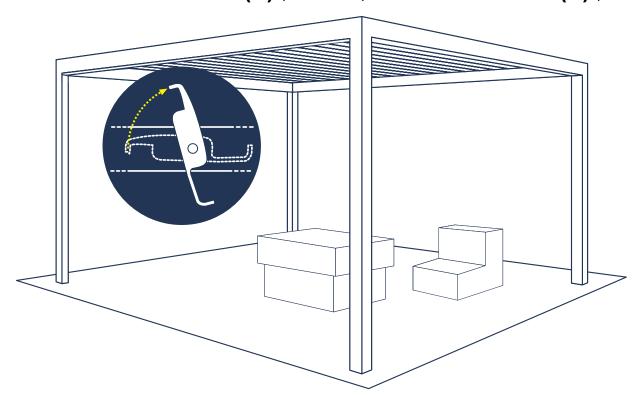
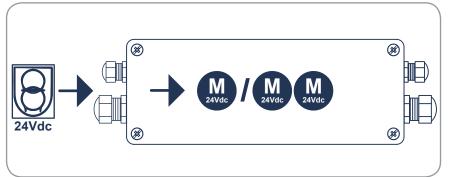




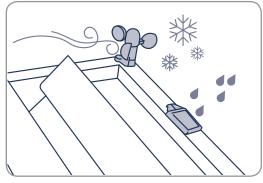
EN - 24V = = = CONTROL UNIT WITH RADIO RECEIVER TO CONTROL ONE OR TWO 24V MOTORS FOR ADJUSTABLE SLATS

Product code **TVPLA868CC2(S)** (h = 74mm) **TVPLA868CC2B(S)** (h = 50mm)



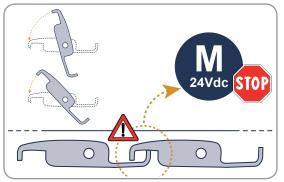


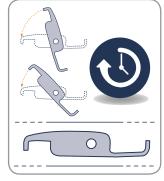
Independent or synchronized control of motor outputs.

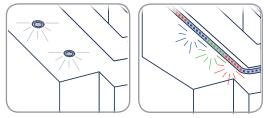


Inputs for rain, wind and temperature (for ice) sensors. Combination of rain and temperature sensors to detect snow.

Self-learning procedure for **limit switches** and **working times**.







LED CARD (optional) to control the **1-colour**, **RGB** or **RGBW** 24V **---** LED lights.

TVPLA868CC2(S)-CC2B(S)

DOC.: T569.16_EN

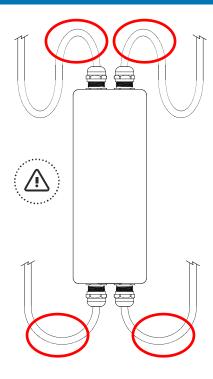
DATE: 06/04/18

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1.	Connections, adjustments and control unit warnings	page 3	4.	SENSORS		pages 11 - 13
2.	MOTOR CONFIGURATION 2.1 Pergola with 1 motor 2.2 Pergola with 2 synchronized motors 2.3 Pergola with 2 independent motors 2.4 Setting of the current threshold during configuration	pages 4 - 7		4.1 WIND sensor 4.2 SNOW condition 4.3 TEMPERATURE 9 4.4 RAIN sensor 4.5 Modification of the	sensor e alarm automatic angles	
3.	TRANSMITTERS 3.1 Radio codes memorization 3.2 Radio codes deletion 3.3 Remote memorization of other radio codes	pages 8 - 10	5.	5.1 Troubleshooting (v 5.2 Replacing the con 5.3 Quick learning of l	what to do IF) trol unit	page 14
	3.4 Remote deletion of a radio code		6.	Technical specifica	tions	page 15

WARNINGS

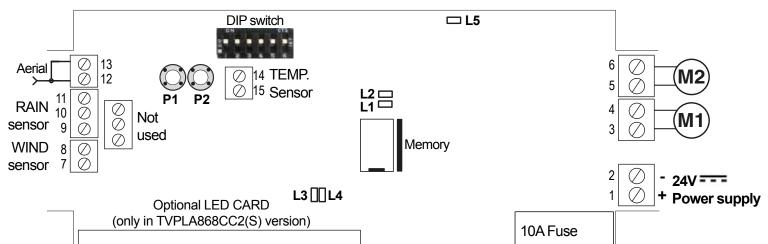
The product at issue must be installed, commissioned and maintained only by licensed and authorised people, respecting the laws concerning the automatic covers. The system is powered by 24V - . Before the connection to the power supply make sure that the sensors and motors are correctly connected. A faulty connection of the motors (polarity inversion) could damage them together with the connected mechanical elements. The power supply must supply the required voltage and current according to the characteristics of the system. The power supply must be compliant with IEC60950-1 and must be protected against the short-circuit and over-voltage. Use a 2x1.5mm cable to connect the motors and the control unit for length up to 6m, or 2x2.5mm cable for longer segments. PRODUCT DISPOSAL: at the end of this product's useful life, it must not be disposed of as domestic waste, but must be taken to a collection centre for waste electrical and electronic equipment. To prevent infiltration of water, wire the product as follows:



The manufacturer, Teleco Automation s.r.l, declares that the type of radio equipment is compliant with Directive 2014/53 / EU. The full text of the EU compliance declaration is available at the following Internet address: www.telecoautomation.com/ceIn the view of a constant development of their products, the manufacturer reserves the right for changing technical data and features without prior notice.

1

Connections, adjustments and control unit warnings



1	+24V POWER SUPPLY	
2	POWER SUPPLY GND	
3	MOTOR 1 (OPEN)	
4	MOTOR 1 (CLOSE)	
5	MOTOR 2 (OPEN)	
6	MOTOR 2 (CLOSE)	
7	WIND SENSOR (BROWN)	
8	WIND SENSOR (BLUE)	
9	RAIN SENSOR (WHITE, +12V ===)	
10	RAIN SENSOR (BLUE, SIGNAL)	
11	RAIN SENSOR (YELLOW, GND)	
12	AERIAL RF	
13 AERIAL GND		
14 TEMPERATURE SENSOR (BLACK)		
15	TEMPERATURE SENSOR (WHITE)	

,		1 7 3 1 3	
	The maximum	allowed power, including the plug-in LED controller board, i	is 240W .
	ATTENTION!	The electronic board is protected by a 10A fuse.	

LED	COLOUR	STATUS	MEANING	
L1	RED	ON until next manoeuvre	MOTOR 1: Limit switch or alarm	
L2	RED	ON until next manoeuvre	MOTOR 2: Limit switch or alarm	
L3	BLUE	ON	Synchronized mode activated	
		One flash every second	Synchronized mode activated (during configuration)	
		One flash every 2 s	Independent mode activated (during configuration)	
L4	RED	One flash every 10 s	Water draining alarm (par. 4.4)	
		Two quick flashes every 10 s	Rain alarm (par. 4.4)	
Three quick flashes e		Three quick flashes every 10 s	Ice / Snow alarm (par. 4.2 - 4.3)	
Four quick flashes every 10 s		Four quick flashes every 10 s	Wind alarm (par. 4.1)	
		Five quick flashes	Unexpected absorption of one motor in synchronized mode	
		Six quick flashes	Built-in motor limit switch activated	
		Seven quick flashes	Motor stopped by current absorption over the threshold	
		Eight quick flashes	Safety limit switch	
		Ten quick flashes	One motor is short-circuited	
One flash every 2 s		One flash every 2 s	Rain sensor is deactivated	
One flash every 3 s Tempe		One flash every 3 s	Temperature sensor is deactivated	
L5	RED	ON	Power ON	

= Weather sensor alarms	= MOTOR alarms
-------------------------	----------------

	DIP	MEANING
1 - 2 - 3 Setting of wind sensor threshold (see par. 4.1)		
4 - 5 Motor control mode (see pages 47		Motor control mode (see pages 47)
	6	Maximum motor current threshold set during configuration (see par. 2.4)

= It takes effect **DURING** configuration

FIRST POWER ON: at first power-on, the system is waiting to be programmed with the memorization of at least one transmitter (par. 3) and the configuration of the motors and relative working time (see below).

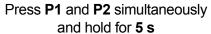
MOTOR CONFIGURATION: Identify the correct product application from the 3 given below and follow the relative configuration procedure. **Attention**: if the wrong application is selected, the configuration procedure must be repeated for the correct application.

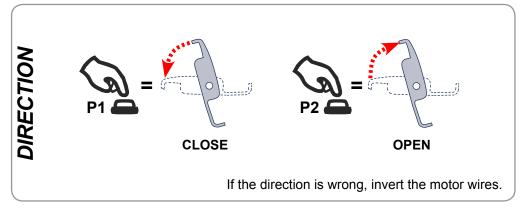
2.1 Pergola with 1 motor

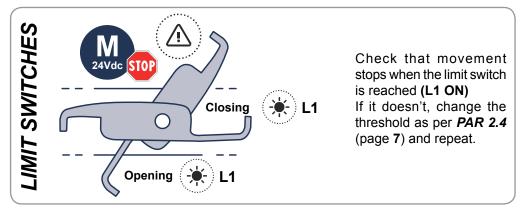
1. MOTOR CONFIGURATION

DIP5=OFF

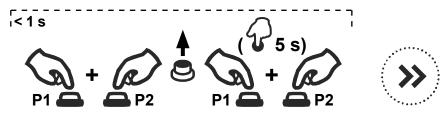




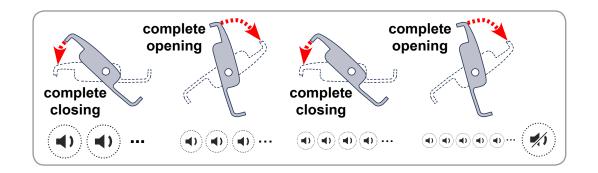




2. SELF-LEARNING OF LIMIT SWITCHES



Press **P1** and **P2** simultaneously **twice** in quick succession and hold them the second time for **5** s



ATTENTION:

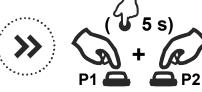


DO NOT change the DIP configuration. This change would be signalled by a new intermittent sound and the flashing of L3, and would require a new configuration procedure.

2.2 Pergola with 2 synchronized motors

1. MOTOR CONFIGURATION



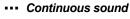


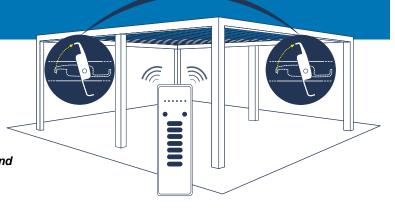




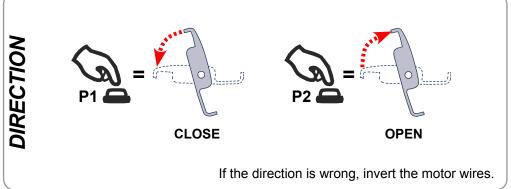


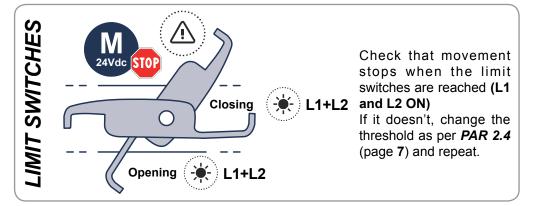




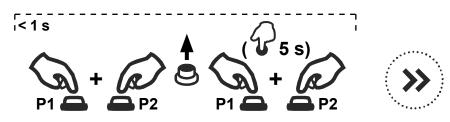


DIP5=ON Press P1 and P2 simultaneously and hold for 5 s

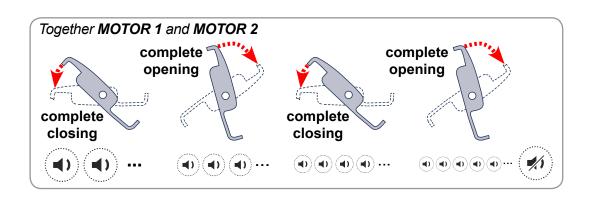




2. SELF-LEARNING OF LIMIT SWITCHES



Press P1 and P2 simultaneously twice in quick succession and hold them the second time for $5\,\mathrm{s}$



ATTENTION:



DO NOT change the DIP configuration. This change would be signalled by a new intermittent sound and the flashing of L3, and would require a new configuration procedure.

2.3 Pergola with 2 independent motors

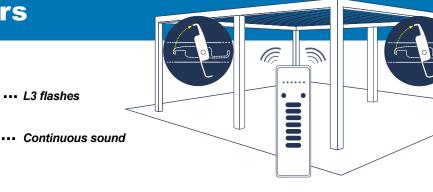
1. MOTOR 1 CONFIGURATION

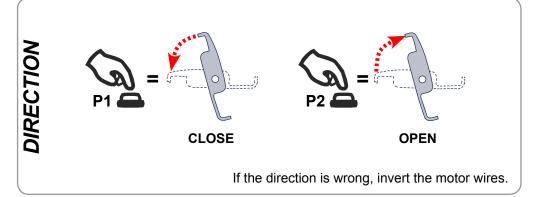


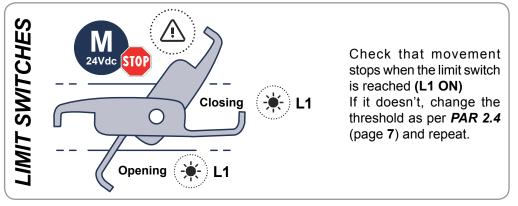
DIP4=**OFF**DIP5=**OFF**



Press P1 and P2 simultaneously and hold for 5 s



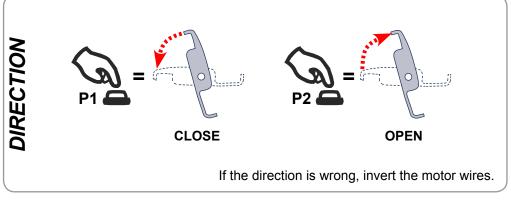


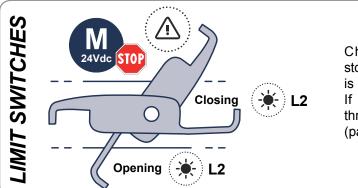


2. MOTOR 2 CONFIGURATION



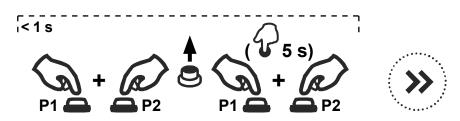
DIP4=**ON** DIP5=**OFF**



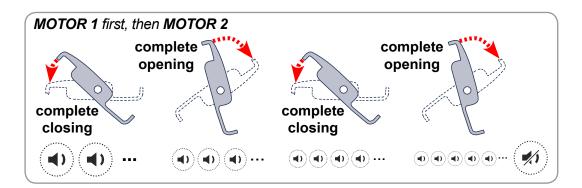


Check that movement stops when the limit switch is reached (L2 ON) If it doesn't, change the threshold as per *PAR 2.4* (page 7) and repeat.

3. SELF-LEARNING OF LIMIT SWITCHES



Press **P1** and **P2** simultaneously **twice** in quick succession and hold them the second time for **5** s



ATTENTION:



DO NOT change the DIP configuration. This change would be signalled by a new intermittent sound and the flashing of L3, and would require a new configuration procedure.

< 30 s

2.4 SETTING OF THE CURRENT THRESHOLD DURING CONFIGURATION

The control unit uses a current threshold for motor stop. The thresholds may therefore be changed during configuration according to the selected mode (**DIP4-5**):



- 1. Turn the control unit OFF then ON again.
- 2. Within 10 seconds from power ON, set DIP6 to ON.

< 10 s

WITHIN 30 SECONDS:

- 3. Press **P1** as many times as the desired level, from **1** (minimum = 0.5 A) to **9** (maximum = 4.5 A).
- 4. Set **DIP6** to **OFF** to store the new value.

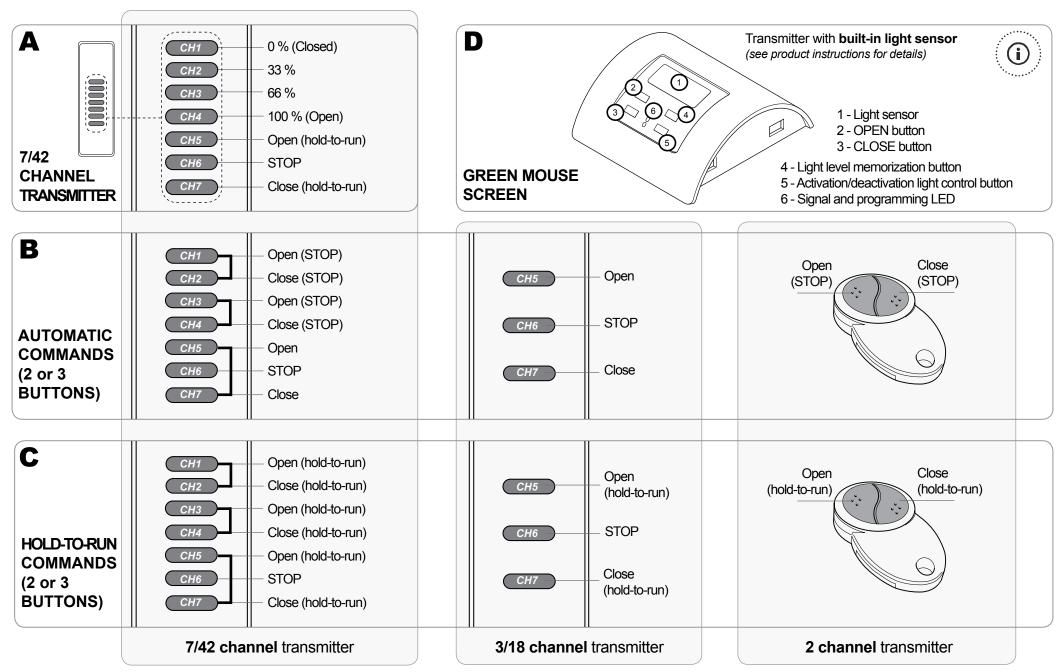
L4 will then flash as many times as the stored level. If **P1** is not pressed within 30 seconds,the procedure is automatically ended and the threshold remains unchanged.

ATTENTION: at the end of the procedure, DIP6 must be set to OFF and remain in that position during standard operation of the control unit.

PRESSES	Threshold (A)
1	0.5
2	1.0
3	1.5
4	2.0
5	2.5
6	3.0
7	3.5
8	4.0
9	4.5

= default value, unless otherwise indicated on the technical label of the product.

3 TRANSMITTERS



3.1

Radio codes memorization



If the system is configured as **pergola with 2 independent motors**, it associates memorization procedure using **P2** to *motor 2*. **Note:** the same radio code can in any case be associated with both motors. In the other configurations memorization is possible using either **P1** or **P2**.

TYPE OF MEMORIZATION (see description page 8)	P1 or P2 **	
A 7/42 CHANNEL TRANSMITTER	* 2x Press any button of the 7/42 channel transmitter	
B AUTOMATIC COMMANDS (2 or 3 BUTTONS)	* 3x Press the button of the transmitter relative to the code to be memorized.	(a)(a)(a)
C HOLD-TO-RUN COMMANDS (2 or 3 BUTTONS)	* 4x Press the button of the transmitter relative to the code to be memorized.	intermittent sound
D GREEN MOUSE SCREEN	* TATATATATATATATATATATATATATATATATATATA	

Press **P1** or **P2** (**) as many times as required by the type of desired memorization and hold the last time. The buzzer emits a continuous sound. Press the button of the transmitter relative to the code to be memorized. Successful memorization is indicated by the intermittent sound of the buzzer

^{*} The buzzer will make a beep each time the button is pressed.

^{**} According to the motor control mode

3.2

Radio code deletion



If the system is configured as **pergola with 2 independent motors**, use **P1** to delete associations with *motor 1* and **P2** for *motor 2*. Carry out deletion with either **P1** and **P2** if the code is associated with both motors.

In the other configurations deletion is possible using either P1 or P2.

TYPE OF DELETION P1 or P2 **		HOLD W	
SINGLE RADIO CODE	*	Press the button of the transmitter relative to the code to be deleted.	continuous sound

Press **P1** or **P2** (**) **5 times** and hold. The buzzer emits an intermittent sound. Press the button of the transmitter relative to the code to be deleted within 10 seconds. Successful deletion is indicated by a continuous sound of the buzzer.

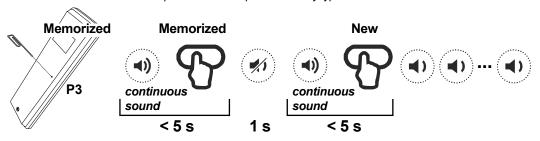


Press P1 or P2 6 times and the sixth time hold for 10 seconds. The buzzer emits a fast intermittent sound. Release when the sound becomes continuous.

* The buzzer will make a beep each time the button is pressed. ** According to the motor control mode

3.3 Remote memorization of other radio codes

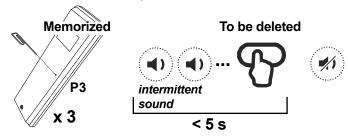
Note: The button P3 is located inside the transmitter. The added radio code will have the same functions as the code used for memorization. This procedure is compatible with any type of transmitter.



Press button **P3** of the **memorized** transmitter and hold. The buzzer emits a continuous sound. Press a button relative to an **already memorized** code. The buzzer stops for 1 second and then starts the continuous sound again. Press the button relative to the **new** code to be memorized. Successful memorization is indicated by the intermittent sound of the buzzer.

3.4 Remote deletion of a radio code

Note: The button P3 is located inside the transmitter. If the radio code was associated with both motors, carry out the deletion twice.



Press the button **P3** of the **memorized** transmitter **3 times** and hold. The buzzer emits a slow intermittent sound. Press a button relative to the code **to be deleted** within 5 seconds. Upon completion of deletion, the buzzer will stop.

4.1 WIND sensor

Alarm priority
HIGH



Factory setting ACTIVATED



The anemometer (**ANEM4**) detects wind speed, which the control unit compares with the threshold set through **DIPs 1-2-3** (see table). The control unit is only compatible with anemometers generating 4 pulses per rev.

ALARM ACTIVATED when

The detected speed is higher than the set threshold (see table at side).

What happens with ALARM ACTIVATED

The control unit tilts the pergola slats at **33**% of full opening. The control unit executes **no command**.

ALARM NOT ACTIVE when

The sensor has detected a lower speed than the set threshold for 60 seconds.

	_	<u> </u>	_
DIP1	DIP2	DIP3	Km/h
OFF	OFF	OFF	40
OFF	OFF	ON	45
OFF	ON	OFF	50
OFF	ON	ON	55
ON	OFF	OFF	60
ON	OFF	ON	65
ON	ON	OFF	70
ON	ON	ON	75

4.2 **SNOW** condition

Alarm priority MEDIUM-HIGH

L4 ***

Factory setting DEACTIVATED



To manage the alarm associated with snow, the temperature and the rain sensors must be both activated.

ALARM ACTIVATED when

The measured temperature is below 2 °C and rain has been detected (see par. 4.4)

What happens with ALARM ACTIVATED

The control unit tilts the slats to **66%** of full opening. The control unit only executes **hold-to-run commands**.

ALARM NOT ACTIVE when

The measured temperature is above 3 °C or rain is no longer detected.

4.3 TEMPERATURE sensor

Alarm priority MEDIUM

L4



Factory setting DEACTIVATED



The temperature sensor (NTC 10K/3435K) activates whenever there is danger of ice forming.

ALARM ACTIVATED when

The measured temperature is below 2 °C and the slats are **closed**.

What happens with ALARM ACTIVATED

The control unit tilts the pergola slats to 10% of full opening.

ALARM NOT ACTIVE when

The measured temperature is above 3 °C or any command is received.

Activation/deactivation of the TEMPERATURE sensor by means of the transmitter *

Activation (only if the sensor is connected)
Press the "STOP" button of a memorized 7/42
or 3-channel transmitter 10 times and hold the
last time for 2 s. The buzzer emits a continuous
sound for 4 seconds.





Deactivation

Press the "STOP" button of a memorized 7/42 or 3-channel transmitter 10 times and hold the last time for 2 s. The buzzer emits 2 beeps. L4 flashes once every 3 seconds.









once everv 3 s

^{*} The motors must be stopped. ** The motors make short movements

Activation/deactivation of the TEMPERATURE sensor by means of P1 *



continuous sound 4 s

ACTIVATION *** (only if the sensor is connected)



L4 flashes once every 3 s

DEACTIVATION ***

RAIN sensor

Alarm priority LOW

L4

Factory setting ACTIVATED

ALARM NOT ACTIVE when



ALARM ACTIVATED when

The sensitive surface of the sensor detects

What happens with ALARM ACTIVATED

The control unit completely **CLOSES** the pergola slats. The control unit executes no command.

The sensor doesn't detect any drop.

System operation AFTER rain alarm (draining of water): once the rain alarm has ended, for the following 6 hours the control unit, upon receiving an automatic movement command from the transmitter, will tilt the pergola slats to 33% to allow water to drain off. For 4 minutes the control unit can only execute hold-to-run commands, thereby exiting from the alarm status.

Activation/deactivation of the RAIN sensor by means of the transmitter *

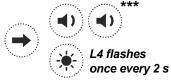
Deactivation

drops of water.

Press the "STOP" button of a memorized 7/42 or 3-channel transmitter for 10 s. The buzzer emits 2 beeps. L4 flashes once every 2 seconds.

STOP (10 s)





Activation

Press the "STOP" button of a memorized 7/42 or 3-channel transmitter for 10 s. The buzzer emits a continuous sound for 4 seconds.





continuous sound 4 s

Activation/deactivation of the RAIN sensor by means of P2 *







once everv 2 s

DEACTIVATION ***

continuous sound

ACTIVATION ***

^{*} The motors must be stopped. ** The buzzer will make a beep each time the button is pressed. *** The motors make short movements

4.5 Change of the automatic alarm angles

Use the following procedures to change the default angles of the pergola slats associated with the alarms. The system must have been configured and at least one transmitter memorized.

			P1 or P2 **	HOLD (5 s)	
WIND alarm angle		* x8	44444	쇼	continuous sound complete closing
TEMP. alarm angle	desired position Put the slats to	* x9	22222	<u>ዋ</u> ያ⊕	continuous sound 2 s complete closing
SNOW alarm angle	the desired angle, then:	* x13	22222222	<u>ዮ</u> ዮ⊕	continuous sound 4 s complete closing
Reset default angles		* x10	222222	☆ ☆	continuous sound

Press **P1** or **P2** (**) as many times as required by the type of desired memorization and hold the last time. The buzzer emits a continuous sound.

NOTE: after a new configuration procedure the automatic alarm angles are always reset to default values.

^{*} The buzzer will make a beep each time the button is pressed. ** According to the motor control mode

5.1 TROUBLESHOOTING (what to do IF...)

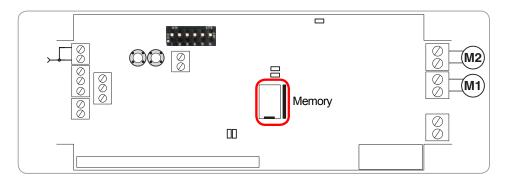
Problem	Solution
At power-on, the control unit does not move the motors and emits no warning.	The system needs to be programmed, see section 2.
L3 flashes and an intermittent sound starts after configuration.	Repeat the procedure. At the end of it DO NOT change the DIP4-5 setting.
The configuration procedure does not start upon pressing P1 and P2 twice.	P1 and P2 must be pressed simultaneously. There must be no more than 1 second between pressing the first and the second time.
During the manual movement test in the configuration procedure, the motors do not stop automatically at the limit stop.	Change the current threshold (section 2.4) before continuing with configuration.
There's no continuous beep during transmitter memorization.	There must be no more than 1 second between pressing the buttons.
It is impossible to memorize a transmitter.	The radio code is already memorized or the memory is full.

5.2 Replacing the control unit

In the event of a defective control unit, if the provided memory (see below) is still working and the revision of the board is > 9.x, it may be replaced without losing the configuration parameters.

To do this, the control unit must not be powered:

- insert the memory card of the defective control unit into the new one;
- set the DIP switches of the new control unit as they were in the old one;
- switch the system on.



5.3 Quick learning of limit switch

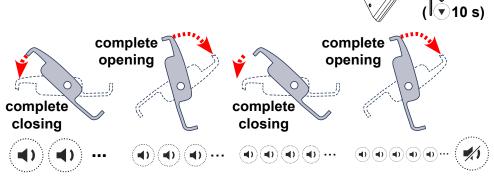
If the following have been already programmed

- motor control mode
- the correct motor direction
- at least one transmitter for each of the independent motor output
- current threshold to be applied

it is possible to carry out the self-learning of limit switches without accessing the control unit.

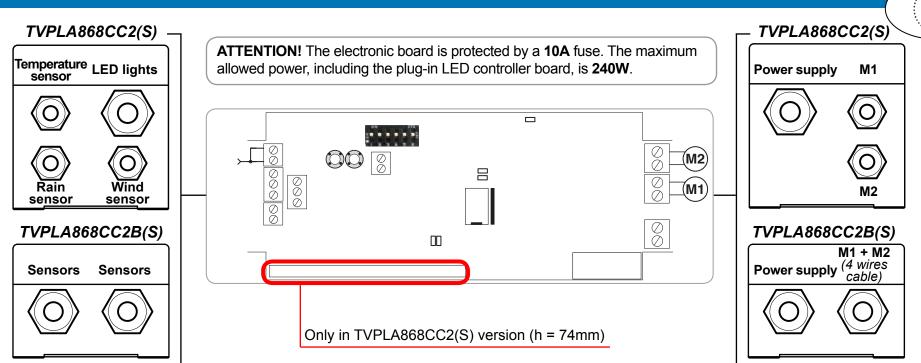
Memorized

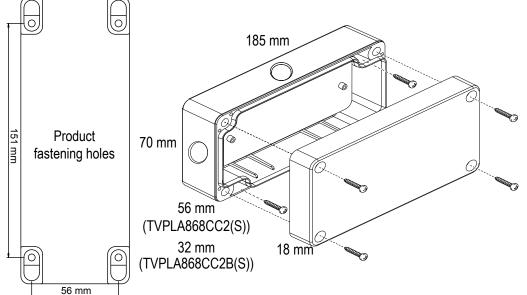
Test the movement and the direction of the motors by means of the memorized transmitter, after this keep the button $\bf P3$ of the transmitter pressed for $\bf 10~s$.



- Pergola with 2 synchronized motors: Together MOTOR 1 and MOTOR 2
- Pergola with 2 independent motors: MOTOR 1 first, then MOTOR 2

TECHNICAL SPECIFICATIONS

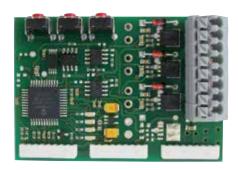




	Power supply	24V
	Max. power for each output	4,5A
	Maximum power applicable to the board	240W
	Fuse (blade)	10A
	Operating temperature range	-20° / +45°C
)	Reception frequency	868.3 MHz
	Radio memory capability (transmitters)	16
	Rain sensor power supply	12 Vdc (max.100mA)
)	Anemometer	4 pulses/rotation (ANEM4)
	Temperature probe	NTC (R=10Kohm; B=3435K)
	Protection rating	IP54
	Material of the box and its cover (Not suitable for direct UV exposure)	Thermoplastic ABS

LED CARD to control the **1-colour**, **RGB** or **RGBW** 24V - LED lights.

(optional only in TVPLA868CC2(S) version)



TVSTRD00PSI24 - LED 1-colour

Independent or simultaneous control of 3 outputs. 24V = = power supply from the PLA control unit (60W per output).

TVRGB00PSI24 - LED RGB (red, green, blue)

24V === power supply from the PLA control unit (60W per output).

TVRGBW00PSI24 - LED RGB+W (red, green, blue + white) Independent control of RGB and WHITE outputs, by means of separate memorization of transmitter channels.

24V = = power supply from the PLA control unit (60W per output).

ATTENTION! Maximum power of the system (motors and lights) is 240W.



ANEM4 (WIND sensor)



RAIN102 (RAIN sensor)



TMP150 (TEMPERATURE sensor)