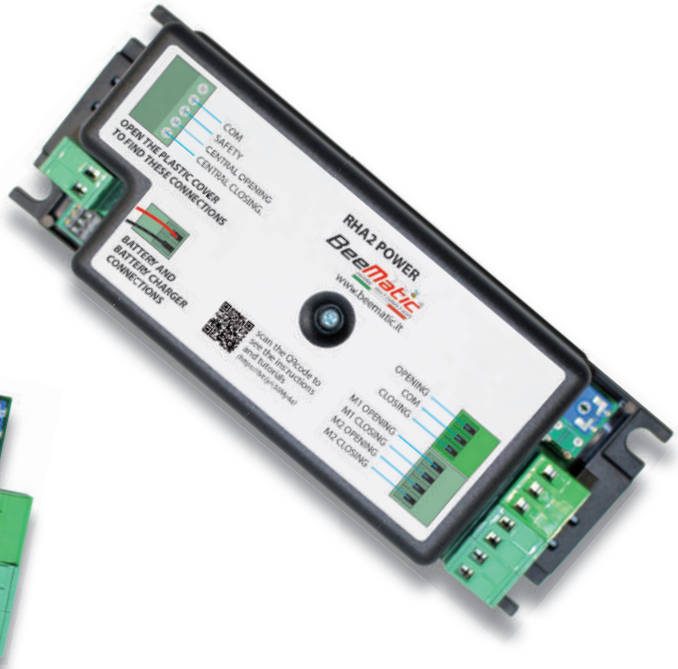
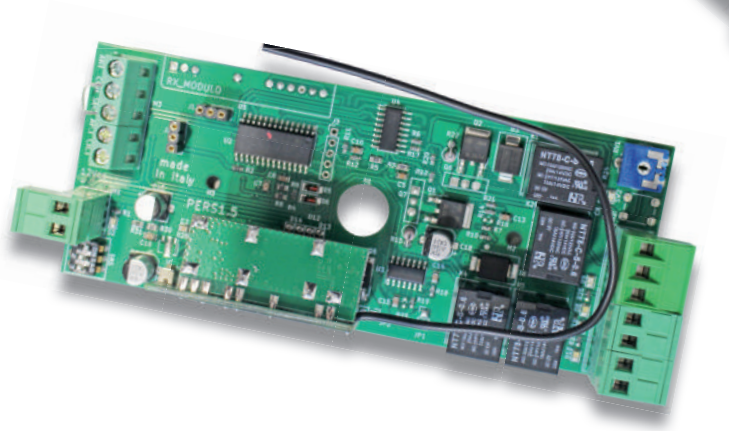
CONTROL UNIT
FOR HINGED SHUTTERS
POWERED WITH RECHARGEABLE BATTERIES
RHA2 POWER





FEATURES

Description	RHA2 POWER
Power supply	230 Vac / 50-60 Hz
Power	45 W max
Power supply	6400mAh Battery pack
Control unit power	12 Vdc
Motor power supply	12 Vdc / 1,4 A
Motor absorption	1,7 A max
Number of controllable motors	for 1 or 2 motors 12 Vdc, auto-detection
Energy saving	reduced consumption in stand-by and during use
Radio receiver absorption	<200uA in standby mode
Radio frequency	built-in radio, 433 MHz
Duration of recharge	approx. 1 month *
Torque / Thrust	35 Nm
Operating temperature	-20 ÷ 55°C
Degree of protection	IP20
Storable remote controls	20
ODS - Obstacle detection (causes stop or reversal of the maneuver if obstacle is detected)	Yes
Opening command	Yes
Closing command	Yes
Dead man command	Yes
Centralized opening command	Yes
Centralized closing command	Yes

** depends on the shutter weight and number of manoeuvres*

TYPE OF INSTALLATION

HINGED SHUTTER (single/double)

- One or two motors (single sash/double shutter); in case of double sash, the operation of one motor is delayed with respect to the other, according to the opening/closing phase (to handle the over/under shutter condition)

USER MANUAL

rev.1 del 12/2024

BeeMatic® HOME AUTOMATION

BEEMATIC is a registered trademark owned by
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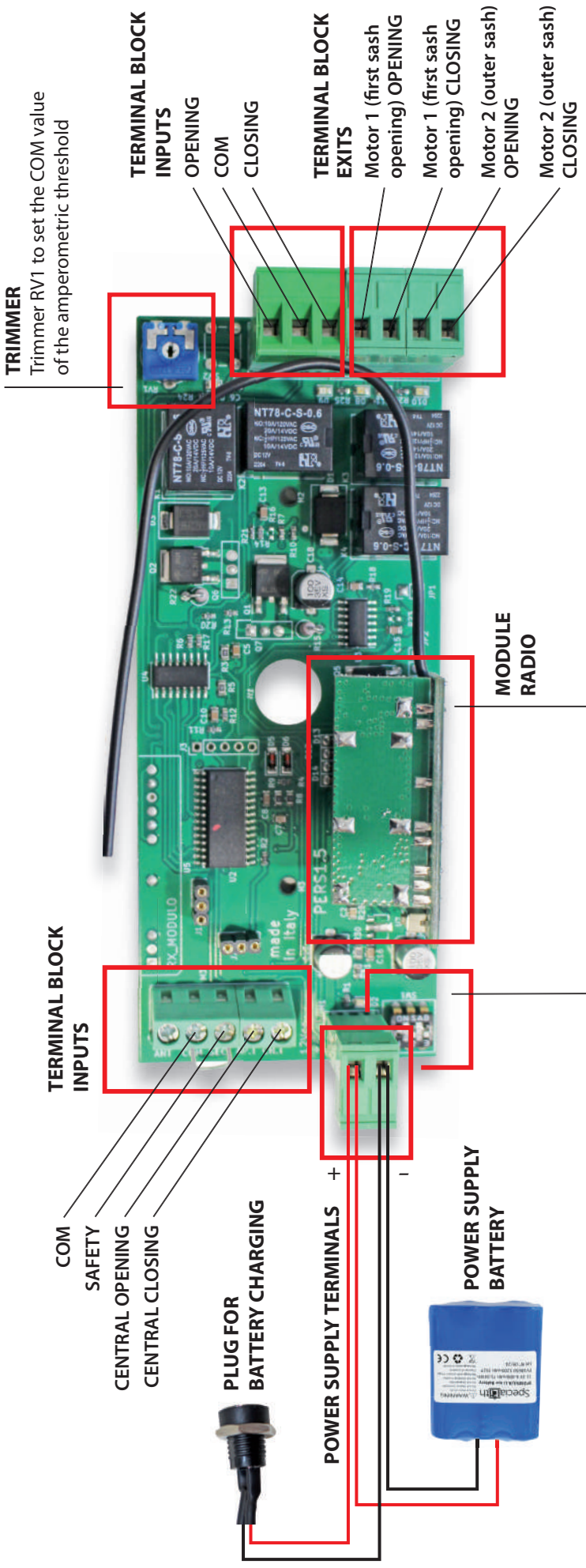
SUMMARY

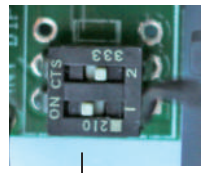
GENERAL SAFETY WARNINGS

1. Read the instructions carefully before proceeding with the control unit installation.
2. Keep these instructions for any future reference.
3. This product is designed and manufactured exclusively for the use intended and indicated in this document. Any other use not expressly indicated could affect the integrity of the product and/or represent a source of danger.
4. For the safety of all individuals, the instructions provided in this manual must be carefully followed. Incorrect installation or incorrect use of the product may cause serious personal injury.
5. Materials used for packaging should not be left within the reach of children, as they are potential sources of danger, and should be properly recicled.
6. AB TECNO SRL disclaims any responsibility for any consequences arising from improper use or use other than that for which the device was designed and built.
7. AB Tecno Srl is not responsible for non-compliance with current CE standards in the construction of the locks to be motorized or from other deformations that may occur during use.
8. Before starting the installation, check the integrity of the product.
9. Do not install the device in an explosive environnement: the presence of flammable gases or fumes is a serious safety hazard.
10. Installation must be carried out in compliance with EN 12453 and EN 12445. For non-EEC countries, in order to achieve a sufficient and adequate level of safety, the above standards must be observed in addition to the individual national regulatory references.
11. Before carrying out any work on the system, disconnect any batteries and cut off the power supply.
12. It is advisable to provide a single-pole switch with contact opening distance of 3 mm or more on the automation power supply. The use of a 6A thermal-magnetic circuit breaker with a single-pole breaker is recommended.
13. Verify that there is a residual current circuit breaker with a 0.03A threshold upstream of the system.
14. Verify that the grounding system is properly made and connect the metal parts of the lock to it.
15. Handling of electronic parts should be done by wearing anti-static conductive wristbands.
16. Even automations that have an internal anti-crushing safety function shall in all cases require functional verification in accordance with the standards indicated in Section 10.
17. Safety devices (standard EN 12978) provide protection for possible danger areas from mechanical hazards related to movement, such as crushing, conveying, shearing and lifting. These devices must be installed properly considering regulations, the directives in force, the criteria of Good Technology, the installation environment, the operating logic of the system and the forces developed.
18. For each installation, we suggest using at least one warning light (ex flashing light), as well as a properly secured and clearly visible warning sign.
19. AB Tecno Srl disclaims any responsibility related to safety and proper operation of the automation, in case of use of components not manufactured by AB Tecno Srl for the realization of the system.
20. The installer must provide the User with all information related to the manual operation of the automation in case of emergency.
21. Do not allow children or others to stand near the system during operation.
22. Keep any remote control or pulse-giver device out of the reach of children to prevent possible inadvertent uage of the automation.
23. The transit of persons and vehicles is permitted only and exclusively when the automation is fully open.
24. The User of the automation must refrain from any attempt to repair and/or direct intervention and refer only to qualified personnel. Otherwise, AB Tecno Srl declines all responsibility for any possible consequences.
25. Anything not expressly indicated in these instructions is not permitted.

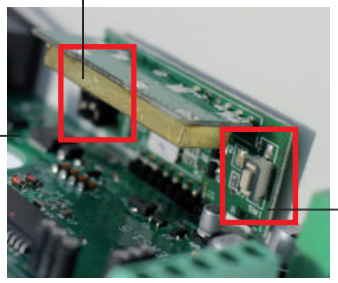
ELECTRICAL CONNECTIONS, BUTTONS AND TRIMMER



DIP	position	function
1	ON	Battery power supply
	OFF	Plug-in charger power supply
2	ON	Sfasamento ante: 2 secondi in apertura, totale in chiusura *
	OFF	Sashes offset: 2 seconds on opening, 4 seconds on closing
3	ON	Programming times and amperometric value
	OFF	Normal operation

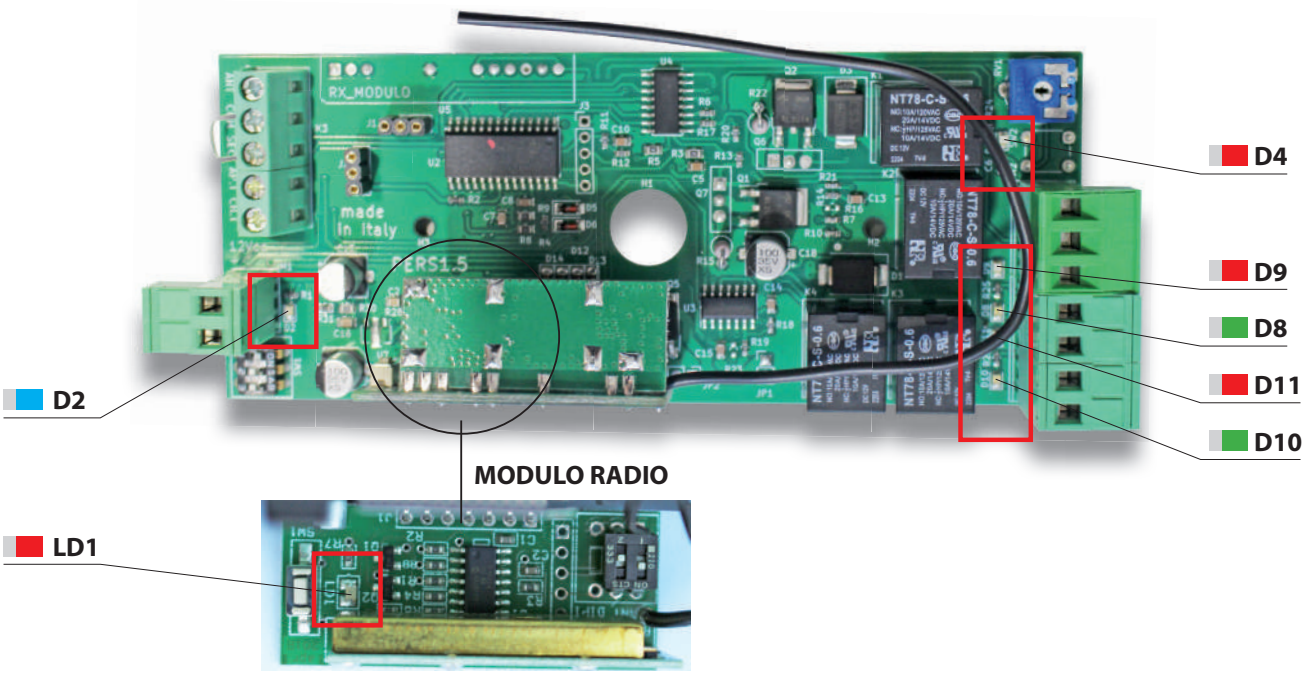


Dip Switches su scheda ricevente radio	function
DIP 1 = ON DIP 2 = OFF	DOOYA radio code
DIP 1 = ON DIP 2 = ON	HCS radio code standard
DIP 1 = OFF DIP 2 = ON	HCS code ABEXO
DIP 3 available only in the early versions	Unused



*** recommended when the two sashes have different opening angles**

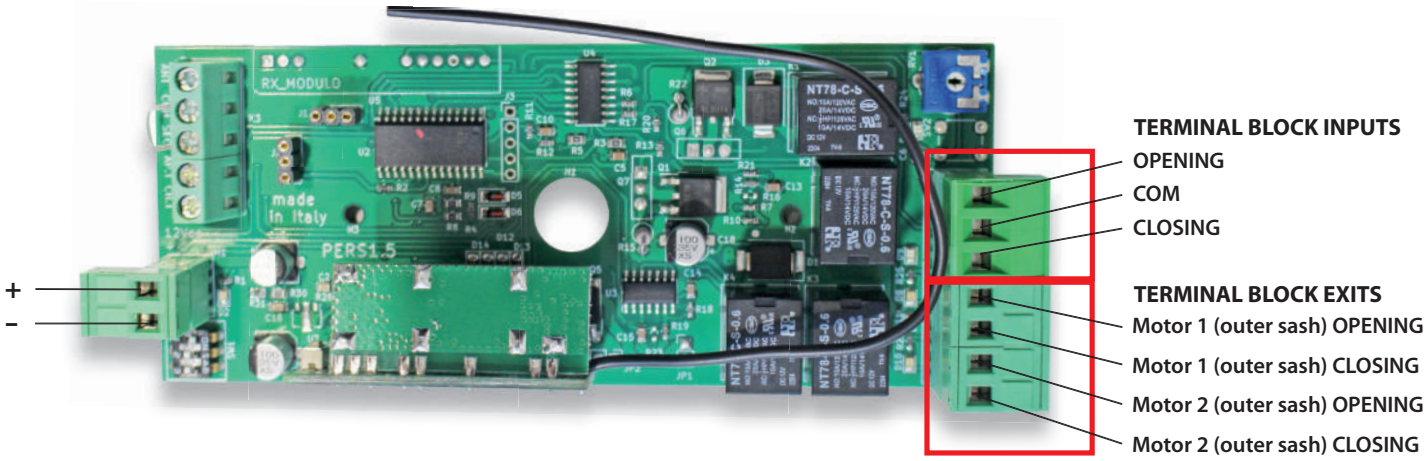
LED SIGNALS



LED	colour	function
D2	Blue	It turns on when the command is received and turns off two seconds after the movement is complete
D4	Red	On the radio board: • Lights up after the button is pressed • Flashes twice after storing the remote control's first button (opening) • Turns off after storing the remote control's second button (closing)
D8	Green	Indicates motor 1 in opening
D9	Red	Indicates motor 2 in closing
D10	Green	Indicates motor 2 in opening
D11	Red	Indicates motor 1 in closing
LD1	Red	Indicates 'programming time and amperometric value' mode. Lights up with Dip Switch 3 in the "ON" position

NOTE: On POWER ON the first movement is opening (M1)

INPUT/OUTPUT FEATURES AND OPERATION LOGIC



NB: in caso di utilizzo con anta singola effettuare i collegamenti sui morsetti 4 & 5 (apertura e chiusura anta 1).

INPUT FEATURES

(1) OPENING

Activation of terminals 1 e 2, N.O.:

- Activates opening motors
- If motor power is higher than threshold performs a stop.

(3) CHIUSURA

Activation of terminals 2 e 3, N.O.:

- Activates the motors in closing
- If motor power is higher than threshold performs a stop

+ and - = Power supply from 12 Vdc battery

OUTPUT FUNCTIONALITY

(4) Opening motor 1 (outer sash)

(5) Closing motor 1 (outer sash)

(6) Opening motor 2 (internal sash)

(7) Closing motor 2 (internal sash)

OPERATION LOGIC

"STEP-BY-STEP" LOGIC

Single remot control button for opening and closing.
Sequence: open/stop/close/stop, and so on.
Note: even in this operating logic there are two learned keys: the first learnt key acts in step-by-step mode, the second learnt key always acts as a close command.

INSTALLATION SET UP

1) Before powering up the control unit, set the Dip Switches for the chosen features
2) After the first power up, it is necessary to proceed with the installation procedures:
   - Memorizing the first remote control (see chapter **MANAGING REMOTE CONTROLS**) or wiring of terminals 1, 2 and 3 for wired control
   - Setting the automatism functions (see chapter **LEARNING TIMES AND AMPEROMETRIC VALUE**)

REMOTE CONTROL MANAGEMENT

REMOTE CONTROL MEMORISATION

The control unit always learns two buttons, the first for an opening signal and the second for a closing signal.
Note: two buttons are always learnt even if step-by-step logic has been set. In this case the first button will operate in stepping logic while the second button will only act as a close command.
To memorise a remote control press the button on the radio module, the red LED lights up to indicate entry into radio learning mode.

- within 8 seconds press:
  - the first button of the radio control which will be combined with the open command (the red LED will flash to confirm)
  - the second button of the remote control which will be combined with the closing command (the red LED will switch off).

If the second button is not pressed, the system exits the radio learning mode, also deleting the first learned button.

COMPLETE REMOTE CONTROLS DELETION

To delete all remote controls in memory:

- press and hold the button on the radio module.
- The red LED D4 lights up steadily for a few seconds and then flashes three times, wait for the red LED to switch off while holding down the button on the radio module.
- When the LED switch off, the memory will be reset.

LEARNING TIME AND AMPEROMETRIC THRESHOLD (MAXIMUM TORQUE/CURRENT)

Functions

The amperometric threshold value is recorded during time learning with the following functions:

1. In support, the opening and closing stops act as end-stop stroke
2. In the presence of an obstacle it acts as an anti-crushing device
3. If an obstacle is detected during movement, the amperometric threshold intervention stops only the hindered motor and then when closing, motor 2 closes first (until the end of the stroke) and then motor 1 (same when opening).

Learning Procedure

1. Release the clutch
2. Position the sashes in fully closed position
3. Tighten the clutch
4. Connect the photocells or close with a jumper (already present) the safety input with the common input (otherwise the sashes will not open)
5. Set dip-switch 3 (the outermost one) to ON
6. Trimmer RV1 must be set to minimum
7. The control unit automatically detects whether one or two motors are present and adjusts accordingly. During programming, it determines the average amperometric value.
8. Give an opening signal (using a learned remote control or a wired button), from this point the system does not accept commands and performs the following operations:
   - Release of the electric lock (if present).
   - Sash 1 starts and reaches the open limit switch (at maximum speed, amperometric value is measured).
   - Sash 2 starts and reaches the open limit switch (at maximum speed, amperometric value is measured).
   - Sash 2 starts and reaches the closed limit switch.
   - Sash 1 starts and reaches the closed limit switch.
   - Electro-block hooks up mechanically (if present)
   - Electro-block releases (if present)
   - Sash 1 restarts, followed by sash 2 two seconds later, opening to check operation.
   - Three seconds before reaching the open limit switch, they slow down.
   - Both sashes close again with a four-second offset until they are fully closed.
   - The electro-block hooks up mechanically
9. Reset dip-switch 3 to OFF
10. Disconnect the power supply terminal
11. Reconnect the power terminal to apply the changes, and the system is ready to operate.

"WINDPROOF/DEAD MAN OPERATION" LOGIC

In case of strong wind, the sail effect may exceed the amperometric threshold, causing the motors to stop due to the anti-crush safety mechanism. To bypass this issue, **hold the open or close command for more than 5 second**s. The control unit will ignore the amperometric values, and the motors will complete the movement with maximum torque.

"HINDERED SASHES REALIGNMENT" FUNCTION

The transmission of motion from the motors to the sashes takes place through a mechanical clutch that allows the sliding of the motor in the event of strong wind impacts, thus preventing breakage or twisting of mechanical components.

If the external sash slips into the internal position, overlapping the other sash, **a radio or wired command** will trigger the control unit to automatically perform a realignment maneuver. It will close sash 2 (internal) first, followed by sash 1 (external).

BATTERY PERFORMANCE

In this battery-operated control unit there is a speed and amperometric control when the power supply decreases:

at 12.5V (fully charged battery), the opening/closing time is approximately 15 seconds, with a slowdown during the last 3 seconds in both opening and closing phases

Below 11.5V, the opening and closing time increases to approximately 25 seconds, and the slowdown becomes visibly earlier, signaling that the battery will soon need recharging

Below 11V, the slowdown is no longer noticeable as the operation is performed entirely at low speed (first visual warning)

a 9,5V at 9.5V the system automatically switches to 'dead man' logic (second visual warning): one button opens and one button closes, indicating that the batteries must be recharged via the power supply plug on the box (about 50 openings/closures are made before the battery goes into protection and no longer delivers power). In this situation, the internal sash closes first, and once it reaches the limit switch, the external sash closes (to prevent overlapping)

at 9V the batteries go into protection and no longer supply energy, so the automation stops working

N.B.: Recharge the battery once a month to prevent it from reaching a voltage level that is too low, which would cause the automation system to stop functioning.

CHARGING CONNECTOR INSTALLATION

photo 1

photo 2

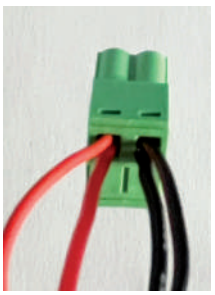


photo 3

Keeping in mind the length of the cables welded to the charging plug, use a drill and an 8.5 mm diameter iron drill bit to make a hole in the side of the box at the position where the plug is to be placed (photo 1).

Unscrew the fixing ring from the socket, insert the socket into the hole made and re-screw the ring to fix the panel-mounted socket (see photo 2).

The two power cables soldered to the socket should be connected in parallel with the battery on the power terminal of the control unit (see photo 3).

BATTERY CHARGING VIA CHARGER

The automation is supplied with a panel socket suitable for housing the connector of a 12V charger that will be used to recharge the battery.

If the battery is flat, when the connector is plugged in the led will be **RED** and remain red until charging is complete.

Once charging is complete, the LED will appear **GREEN**.

low battery

fully charged battery

BATTERY LIFE EXTENSION VIA SOLAR PANEL

It is possible to connect a 16V, 5W (or higher wattage) solar panel to the charging socket to keep the battery charged.