

BeSUN Electronic Control Unit



An electronic control unit integrated into the Wind/Sun Sensor compartment, for the automation of sun blinds and rolling window shutters, with the possibility radio control operation for individual and/or centralised control.

- Mod. (BeSUN 306) : 306 MHz
- Mod. (BeSUN 330) : 330 MHz
- Mod. (BeSUN 418) : 418 MHz
- Mod. BeSUN 433 : 433,92 MHz
- Mod. BeSUN 433 SET: "Narrow Band" 433.92 MHz
- Mod. BeSUN 868 : "Narrow Band" 868.3 MHz

() Product intended for those countries where its use is permitted.

TECHNICAL DATA

- Power supply: 230V~ 50/60Hz 2.5 W
- Motor output: 230V~ 500W Max.
- Working temperature: -10+60°C
- Radio receiver: see model
- Compatible radio controls: 12-18 Bit or Rolling Code
- Anemometer sensitivity: 5 - 40 Km/h
- Sun sensor sensitivity: 5 - 40 Klux
- Number of codes that may be stored: 4 Max.
- Packaging dimensions: 240x185x110 mm.
- Container: PC UL94V-0 (IP54)

CONNECTION OF CN 1 TERMINAL BOARD

- 1: Earth
- 2: 230V line input (Phase).
- 3: 230V line input (Neutral).
- 4: Upward movement motor output.
- 5: Shared motor output.
- 6: Downward movement motor output.

INITIAL OPERATING CONDITION

The device can only operate in conjunction with one or more radio controls. There is no radio control code stored in the default factory setting.

OPERATION USING DIFFERENT MODELS OF REMOTE CONTROL

Different models of remote control may be programmed. By storing a code (1 button) a cyclic step by step operation (Up-Stop-Down) may be achieved, and by storing two different codes (2 buttons) different commands are produced, one for Up and one for Down. Storing three different codes (3 "BeFree" series buttons) produces three different commands: the first for Up, the second for Stop and the third for Down.

Operation using a 1-button radio control:

The following type of operation is obtained using a radio-control with a single button: The first press controls the upward movement until the motor stops (the motor has a running time of around 2 minutes). The second press controls the downward movement of the shutter. If the button is pressed before the motor stops running, the control unit will stop the shutter moving and the button will need to be pressed again to reactivate the motor in the opposite direction.

Operation using a 2-button radio control:

By using a radio control with 2 buttons, the following processes may be carried out: the first button, "Up", controls the upward movement for about 2 minutes, until the motor has stopped running and the second button ("Down") controls the downward movement of the shutter. If the upward movement is interrupted with another "Up" command, the motor will continue to run in the upward movement direction. If, however, the movement is interrupted with a "Down" command, the control unit will stop the motor.

The procedure is the same for the down movement phase.

Operation using a 3-button radio control (BeFree x1):

The following type of operation is obtained using the BeFree x1 radio control: the (Up) key controls the upward movement

until the end of the motor time (2 minutes), the (Stop) key makes the shutter stop and the (Down) key controls the downward movement. If a stop command is sent during the upward or downward movement, the control unit causes the shutter to stop. If a command that is in the opposite direction to the current movement is sent during the upward or downward movement, the control unit causes the shutter to change direction.

Operation using a 3-button radio control (BeFree x3):

When using the BeFree x3 radio control, you will obtain the same operation as previously described for the BeFree x1 version; in addition, by using the keys (-) and (+) at the sides of the radio control it is possible to enable and disable the sun sensor (the selection is confirmed by a quick Up / Down movement of the motor).

Operation using a 3-button radio control (BeFree x6):

When using the BeFree x6 radio control, you will obtain the same operation as previously described for the BeFree x1 version; in addition, by using the keys (-) and (+) at the sides of the radio control it is possible to select the UP - STOP - DOWN controls for 6 different types of use.

INVERSION OF THE ROTATION MOTOR

If you notice that when pressing the UP key on the radio-control the control unit causes the shutter to move upwards instead of downwards, all you have to do is simply repeat the programming procedure pressing the DOWN key instead of the UP key, or invert the motor's Upward movement wire with the Downward movement wire.

GROUP OR GENERAL CENTRALISATION

It is also possible to insert two identical codes (buttons) from one radio control to all the control units or a group of them that are situated at a maximum distance of 20 metres from the point of command, in order to obtain general or partial motion of more than one automation.

ANEMOMETER OPERATION

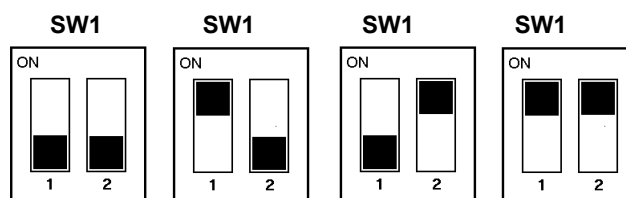
The electronic control unit will control the upward movement of the sun shade every time the wind exceeds the selected threshold.

SUN SENSOR OPERATION

The electronic control unit controls the downward movement of the sun shade after 5 minutes during which the brightness is greater than the threshold selected using the VR1 trimmer and displayed by means of the SUN LED; it also controls the upward movement of the shade after 5 minutes during which the brightness is below the selected threshold.

When the SUN LED lights up on the control unit, this indicates that the sun's intensity exceeds the threshold selected using the VR1 trimmer; this enables you to use the current light conditions as a reference when setting the desired value.

OPERATION PRINCIPLES



Step-by-step P/P + Down mov. Sun Sensor Test Anemometer Test

Step-by-step (Dip 1 and 2 OFF)

The following type of operation may be obtained using the BeFree xx radio control: the Up key controls the upward movement until the end of the set motor time (2 minutes), the Stop key makes the shutter stop and the Down key controls the downward movement. If a stop command is sent during the

upward or downward movement, the control unit causes the shutter to stop. If a command that is in the opposite direction to the current movement is sent during the upward or downward movement, the control unit causes the shutter to change direction. The electronic control unit will control the upward movement of the sun shade every time the wind exceeds the selected threshold.

2) Step-by-step + Aut. downward movement (Dip 1 ON and Dip 2 OFF)

The device operates as described previously (step-by-step) with the difference that, when the wind speed exceeds the set value, the control unit will cause the shade to move upwards; once the disturbance is over, the control unit will cause the shade to move downwards after 5 minutes in which the wind speed is less than the set value.

3) Sun Sensor Test (Dip 1 OFF and Dip 2 ON)

The operation of the Sun Sensor and the correct rotation direction can be checked at the time of installation in the following way: turn the VR1 trimmer as far as possible in a clockwise direction (in the + position); at the same time, the control unit will cause the SUN LED to light up and there will be an downward movement lasting 5 seconds. Turn the VR1 trimmer in an anticlockwise direction (in the – position); at the same time, the control unit will cause the SUN LED to switch off and there will be a upward movement lasting 5 seconds.

4) Anemometer Test (Dip 1 and 2 ON)

The operation of the Anemometer and the correct rotation direction can be checked at the time of installation in the following way: manually turn the anemometer blades; at the same time, the control unit will cause an upward movement lasting 5 seconds.

PROGRAMMING KEYS AND INDICATOR LEDs

SEL key: selects the type of function to store; selection is indicated by the LED flashing. The desired function can be selected by pressing the key repeatedly. The selected function remains active for 15 seconds (flashing LED) following which the control unit returns to its original status.

SET key: programmes the function that has been selected using the SEL. Key.

Indicator LED

LED on: option stored.

LED off: option not stored.

Flashing LED: option selected.

----- MAIN MENU -----		
Reference LED	LED Off	LED On
1) CODE	No code	TX Pgm code
2) T. MOT.	Motor time 2 minutes	Pgm motor time
3) WIND	Wind safety 25 km/h	Pgm. Wind safety
4) MAN/AUT	Sun sensor = OFF	Sun sensor = ON
5) SUN	Sun shining = OFF	Sun shining = ON

1) CODE LED

Programming using a 1- or 2-button radio control:

To programme the transmission codes in the radio control, proceed as follows: press the SEL key; the CODE LED begins to flash. Send the first preselected code using the relevant radio control at the same time; when the CODE LED begins to flash rapidly send the second code to be stored. The CODE LED will remain lit and the programming will be complete. If the second code is not sent within 10 seconds the control unit exits the programming stage, selecting the function using a single button on the radio control. If you have stored 4 codes and you repeat the programming operation, all the indicator LEDs will start flashing extremely rapidly to indicate that no more codes can be stored.

Programming BeFree xx series radio controls.

The control unit allows you to store the whole “BeFree xx” radio control by programming only the UP key.

To programme the “BeFree xx” radio-control codes, proceed as follows: press the SEL key; the CODE LED begins to flash. Press the UP key of the desired radio control at the same time; at that moment, the CODE LED will remain lit and programming will be complete. If all of the possible 4 radio control codes have been stored and you repeat the programming operation, all indicator LEDs will start flashing very rapidly to indicate that no new codes can be stored.

Deleting the codes

To delete all transmission codes stored in the memory, proceed as follows: press the SEL key; the CODE LED starts flashing. Then press the SET key; the CODE LED switches off and the procedure is complete.

2) LED T. MOT.

Programming the motor operating time

The control unit comes with a motor power supply time of two minutes (LED T.MOT. OFF).

The motor time must be programmed when the shutter is down and in the following way:

Press the SEL key until the T.MOT LED key flashes, then hold down the SET key; the shutter will begin to move upwards. Once the desired position has been reached, release the SET key – at this very moment, the motor time will be stored and the T.MOT LED will remain lit.

If you are using an automation with a stop limit, we recommend that you set a time that exceeds the stop limit of the shutter by a few seconds.

If you want unlimited motor time, perform the same programming procedure, holding down the SET key for less than two seconds; the T.MOT LED will remain lit and the unlimited time function will be set. The operation may be repeated if a mistake is made during programming.

3) WIND SPEED LED

Programmed wind threshold display

The wind safety threshold may be displayed in the following way: use the SEL key to navigate to the WIND LED position; the LED will double-flash the same number of times as the stored wind safety threshold (each WIND LED double-flash corresponds to an increase of 5 Km/h), (for example: 5 WIND LED flashes = 25 Km/h).

Wind safety threshold selection from 5 to 40 km/h

The control unit comes with a default wind safety threshold setting of 25 km/h (WIND LED OFF).

The wind safety threshold may be programmed in the following way: use the SEL key to navigate to WIND LED, then press the SET key to start the programming procedure: At the same time the WIND LED will begin to double-flash (each double-flash of the WIND LED corresponds to an increase of 5 km/h); press the SET key once the desired threshold has been reached – at this moment, the selected value will be stored and the WIND LED will remain lit (for example: 5 WIND LED double-flashes = 25 km/h).

The operation may be repeated if a mistake is made during programming.

4) MAN/AUT LED

Enabling the Sun Sensor

The control unit comes with the Sun Sensor disabled (MAN/AUT LED OFF).

The Sun Sensor may be enabled in the following ways:

Using the SEL and SET keys:

press the SEL key until the MAN/AUT LED flashes, then press the SET key briefly; at this moment the MAN/AUT LED remains lit and the Sun Sensor will be enabled. Repeat the operation to disable the Sun Sensor.

Using the BeFree x3 radio control:

Hold the (+) key on the radio control down for 5 seconds; at the same time the control unit will cause the shutter to move Up/Down for one second to confirm that the Sun Sensor has been enabled, and the MAN/AUT LED will remain lit. Repeat the operation to disable the Sun Sensor by following the same procedure, but instead holding down the (-) key for 5 seconds.

5) SUN LED

Sun sensitivity adjustment (5 - 40 Klux)

The control unit allows you to adjust the sensitivity of the Sun Sensor using the VR1 trimmer. When the SUN LED lights up on the control unit, this indicates that the intensity of the sun exceeds the selected threshold; this enables you to use the current light conditions as a reference when setting the desired value.

EXTENDED MENU

The control unit is supplied by the manufacturer with the possibility of selecting only the functions listed in the main menu.

To enable the functions of the extended menu proceed as follows: press the SET key and hold for 5 seconds; the WIND and MAN/AUT LEDs will flash alternately and the user has 30 seconds within which to select the functions of the extended menu using the SEL and SET keys. After another 30 seconds the control unit returns to the main menu.

----- EXTENDED MENU -----		
Reference LED	LED Off	LED On
A) CODE	remote PGM = OFF	remote PGM = ON
B) T.MOT.	Aut. Movement lock = OFF	Aut. Movement lock = ON
C) WIND	Flashing beacon ON/OFF	
D) MAN/AUT	Flashing beacon ON/OFF	

A) CODE

(Remote programming of radio control):

The control unit allows the transmission code to be programmed by remote, without using the SEL key.

To programme the transmission code from remote proceed as follows: send the radio control code continuously for more than 10 seconds and the control unit will enter the programming mode as described above for the CODE LED in the main menu.

The control unit is supplied by the manufacturer with remote programming of the transmission code not enabled; to enable the function proceed as follows: check that the extended menu is enabled (WIND and MAN/AUT LEDs start flashing alternately), use the "SEL" key to navigate to the CODE LED when it is flashing and press the "SET" key: the CODE LED lights up and programming is completed. Repeat the operation to restore the previous configuration.

B) T. MOT. (Automatic movement lock):

The control unit enables the prevention of automatic movements (Up / Down sun blind movements on the Sun Sensor command or the within the Automatic Downward movement function), so that if a stop command is sent from a radio control during the movement stage, the control unit locks the automatic movements until a new Up or Down command is sent. The control unit is supplied by the manufacturer with the Automatic Movement Lock disabled; to enable the function proceed as follows: check that the extended menu is enabled (WIND and MAN/AUT LEDs start flashing alternately), use the "SEL" key to navigate to the T.MOT LED and when it is flashing press the "SET" key: the T.MOT LED will light up and programming is completed. Repeat the operation to restore the previous configuration.

RESET

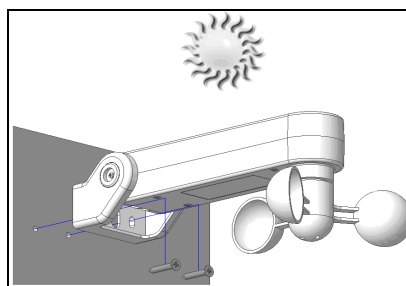
To restore the default configuration, press the SEL and SET keys simultaneously; all indicator LEDs will switch on and then off again immediately.

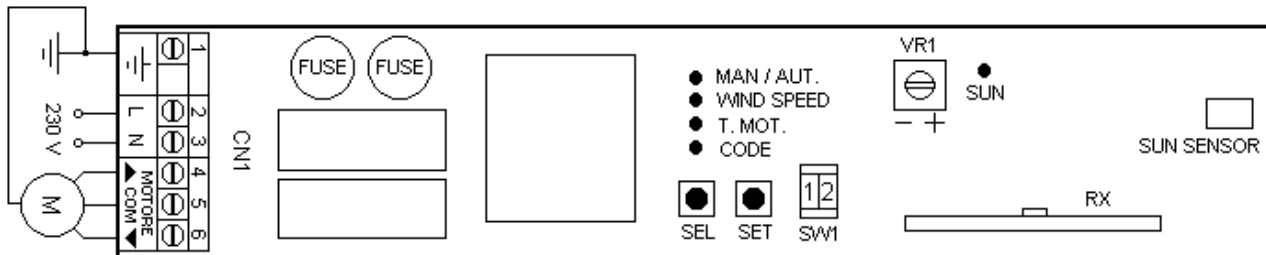
NOTES FOR THE INSTALLER

- Before the shutter automation, it is necessary to check it is in good condition and that it complies with EN 12604 and the Machines Directive.
- The wiring of external electrical components must comply with EN 60204-1 as amended in section 5.2.7 of EN 12453. The power supply leads and connection cables must be secured using the cable clamp included in the container.
- Connect the earth wire of the motor to the earth wire of the electrical system using the special terminal, as illustrated in the connection diagram.
- The control unit is not equipped with a 230 V a/c electric line sectioning device. The installer is responsible for installing a sectioning device in the system. The sectioning device must be positioned so that it is protected against accidental closure, in compliance with section 5.2.9 of EN 12453.
- The motor reducer used to move the shutter must comply with section 5.2.7. of EN 12453.
- For the radio receiver to operate correctly when two or more control units are used, we recommend that you install the devices at least 3 metres away from each other.

SEAV s.r.l. hereby declares that the following product:

BeSUN electronic control unit complies with the requirements of Directives R&TTE 99/5/EC, EMC 2004/108/EC, LVD 2006/95/EC.






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