»sonneboy«

"The intelligent weather monitor"

No programming, no adjusting.
Install, connect, ready to go.
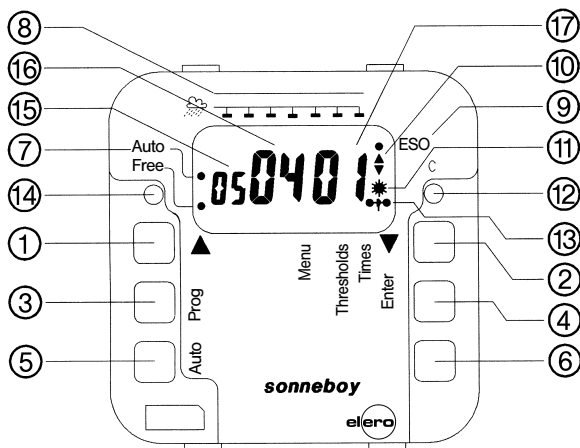
Installation and connection instructions

Contents

Explanation of display and keys

No. Function

① [UP ▲] command key
   a) manual „Up"
   b) setting figures in
      programming mode (plus)

② [DOWN ▼] command key
   a) manual „Down"
   b) setting figures in
      programming mode (minus)

③ [Prog] key
   Calling up and interrupting
   program

④ [ENTER] key
   Confirmation of programming
   (in programming mode)

⑤ [AUTO] key
   Automatic/manual mode

⑥ Unassigned key

⑦ Display
   Automatic On/Off

No. Function

⑧ Display for rain

⑨ Display for top end position
   (TEP)

⑩ Up/Down command key

⑪ Display, brightness value
   exceeded

⑫ [C] key (in conjunction with
   [DOWN ▼] key) to set
   thresholds and times
   in basic program

⑬ Display, set wind
   value exceeded

⑭ [Free] key
   programming protection

⑮ Display for temperature
   value (appears only if
   temperature control is
   active)

⑯ Display for brightness value

⑰ Display for wind value

1. General

The microprocessor-controlled elero sonneboy with rain sensor input is a compact control unit for electric sunshade systems like venetian blinds, awnings and blackout blinds.
The automatic control system controls the system automatically as a function of light intensity (sunshine), wind and rain (snow).
There is also the option of controlling shade as a function of temperature using the integrated temperature sensor (located on the board).
This is an especially useful facility in conservatories for saving heating costs. The wind monitor takes precedence over the light sensor and the rain monitor and also in automatic and manual operation so that the sunshade system is reliably protected from damage. The rain monitor takes precedence only over the light sensor and only works in automatic mode. Once the wind monitor has responded, the sunshade system cannot be actuated for at least the set pulse duration (30 sec.- 3 min.).

The "sonneboy" has a basic program in which light value, temperature, wind value, pulse duration and delay time are all pre-programmed, i.e. the automatic sunshade system can be started without being programmed.
If you would like to set different values for brightness, temperature, wind, pulse duration or delay time, proceed as per Section 8.

2. Technical data

- Voltage: 230 V AC
- Frequency: 50 Hz
- Power draw: 4,5 mA
- Switching current: 3 A, cos $\varphi = 0,6$
- Rupturing capacity: 690 VA
- Output: 2 relays (make contacts) potential-free
- Input: light sensor, wind monitor, rain monitor and external switch
- Pulse duration: 30 sec. to 3 min. (adjustable)
- Ambient temperature: $-5°C$ to $+50°C$
- Type of protection: IP 20
- Installation location: Dry areas (do not fit outdoors)
- Basic program: light value for extend 5, for retract 4, temperature "- -", wind value 3, pulse duration 3 min. and delay time for extend 5, for retract 10 are pre-programmed. These values can also be changed
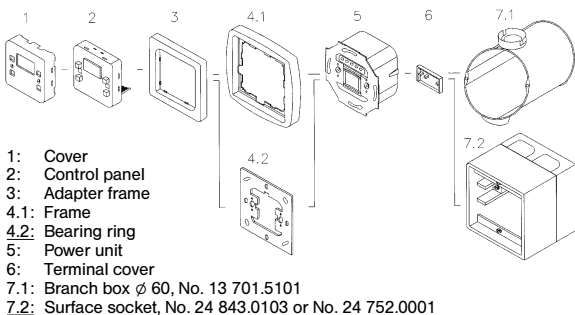
3. Assembly and connection

Work on the mains may be performed only by authorised specialists

When connecting the wires for mains and protective low voltage (sensors, external switches), VDE 0100 Part 410 and the assembly instructions should be observed.

- Switch off mains power
- Connect as per wiring diagram
- Fit light sensor, wind monitor and rain monitor as per Section 4, fit following the relevant instructions
- Clip terminal cover onto (8-pin) connecting terminal
- The power unit is fixed in position using 2 expanding binders or using mounting screws
- Clip cover onto control panel (see series of diagrams below)
- Plug on control panel
- Switch on power
- Set manual mode using "Auto On/Off" key. "Manual" appears on the display (manual mode is set on delivery).
- Using the ▲ or ▼ key, check direction of rotation of the motors.
  Important   Key ▲ sunshade system must retract
  **   Key ▼ sunshade system must extend**
- If the direction of rotation of the motors does not agree with the ▲ and ▼ symbols on the control panel, switch off power and change over wires a ▲ and ▼ terminals of the power unit, then switch power back on.

Series of diagrams for assembly (representation applies to any model)

1: Cover
2: Control panel
3: Adapter frame
4.1: Frame
4.2: Bearing ring
5: Power unit
6: Terminal cover
7.1: Branch box ⌀ 60, No. 13 701.5101
7.2: Surface socket, No. 24 843.0103 or No. 24 752.0001

Parts 4.2 and 7.2 replace parts 4.1 and 7.1 in the case of surface mounting.

Always put parts 1 and 2 together first when assembling.
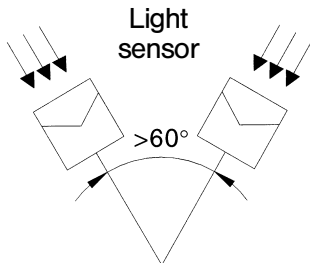
5

Important notes:

When connecting the light sensor, check the connection is correct (1-1, 3-3)!
If the light sensor is connected with incorrect polarity, brightness value 12 appears in the display.
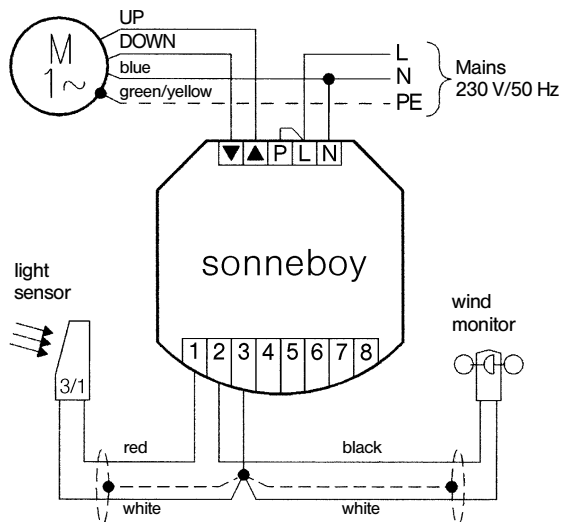
The connection wires to the light sensor, wind monitor and rain monitor must always be executed as a shielded cable;
either a separate 2-wire line or 4-wire shared line, e.g. Siemens LSYCY MSR control line or JY-ST-Y 2 x 2 x 0.6 telecommunications line

- Only 1 wind monitor per "sonneboy" may be connected between terminals 2 and 3.
- A second light sensor can be connected between terminals 4 and 6 to increase the angle of incidence. No account need be taken of the angle of incidence of the sunlight (for connection, see Page 8).
- If it is not possible to connect a second light sensor between terminals 4 and 6 because there are insufficient wires, it is also possible to connect the second light sensor in parallel with the first one between terminals 1 and 3.
The light sensors may not be fitted in the same angle of incidence of sunlight, however, they must be offset by at least 60° (see diagram below). Furthermore, the light value needs to be set at least 2-3 levels higher than in the basic programme.

Light sensor

>60°

Wiring diagram

UP
DOWN
blue
green/yellow

M 1~

L
N
PE
} Mains 230 V/50 Hz

▼ ▲ P L N

sonneboy

light sensor

3/1

1 2 3 4 5 6 7 8

wind monitor

red   black

white   white

Connection max. 1 motor

Do not connect with power switched on!

Attention: you must observe the correct polarity when connecting the light sensor

Additional control units are required to connect several motors or switching points.
To do this, please ask for elero control documentation.

Note:
When a temperature level is set, the light sensor only becomes active once the set level has been exceeded.
A second switching point (individual switch) can be connected for individual operation. This is given equal priority to the functions of the [UP] and [DOWN] keys on the control panel and is thus also only active in manual mode (for connection, see Page 8).
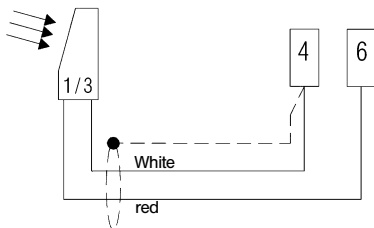
Connecting a switch

Attention: switch only works in "manual" mode.

Switch

▲ ▼

| 4 | 5 | 6 |
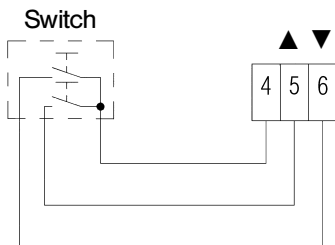
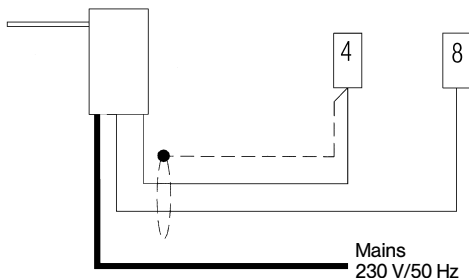## Connecting a second light sensor
(to increase angle of incidence)

| 4 | 6 |

1 / 3

White

red

Note: either a switch or a second light sensor can be connected. It is not possible to connect both at once.

Connecting a rain monitor

The rain monitor retracts the system if it rains (▲).

| 4 | 8 |

Mains
230 V/50 Hz

4. Fitting accessories

Light sensor and wind monitor combined

- Fit light sensor and wind monitor vertically, close to the awning (see Fig.) where sun shines and not in the lee of the wind. Ensure that no shadows (e.g. from a tower or masts) and no reflections fall on the light sensor.
- Connect as per wiring diagram (see Page 7).
- Clip on cover and/or unscrew (execution Aero).

Aero
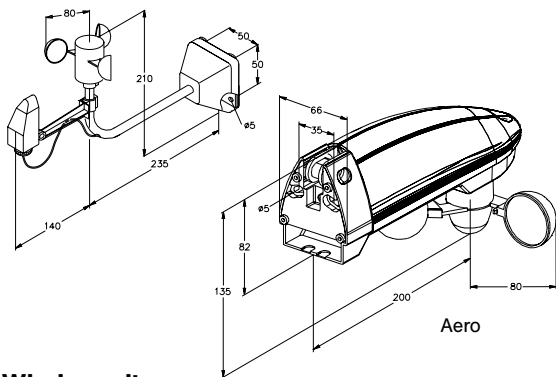
Wind monitor

- Fit wind monitor close to the awning, not in the lee of the wind.
- Check correctly positioned (see Fig.).
- Connect as per wiring diagram (see Page 7).
- Clip on cover.
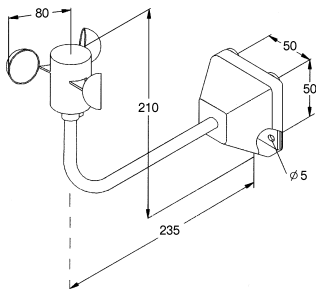
Light sensor

- Attach light sensor vertically (cable inlet underneath) above the awning with two screws (max. diameter 4) in an area where sun shines.
  Ensure that no shadows (e.g. from a tower or masts) and no reflections fall on the light sensor.
- Connect as per wiring diagram (see Page 7/8).
- Clip on hood.

Note: functions only in automatic mode
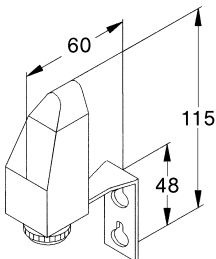
Rain monitor

- Fit rain monitor vertically (cable inlet underneath) above the sunshade system (unprotected).
- Connect as per wiring diagram (in cover): make contact 4/6 (see Page 8).
- Screw on cover.

Note: functions only in automatic mode

5. Operation

Operating modes: manual mode (see Section 5.1)
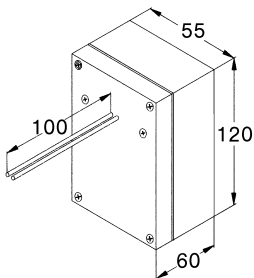   automatic mode (see Section 5.2)

Numerical display: the first two figures (smaller figures) indicate
the currently-measured temperature value,
the next 2 figures indicate the light value and
the last two figures indicate the currently-
measured wind value.

5.1 Manual mode

The sunshade system cannot be extended manually if the set wind
value is exceeded. In normal conditions, the system can be operated
by hand at any time, as long as the operating mode is set to "Manual". It
should be noted that when the Up or Down key is operated for less
than 1 second, short pulses are issued (inching mode). If the Up or
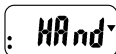Down key is operated for longer than 1 second, the system operates
continuously.

Key: press "Auto On/Off"
              "HAnd" (manual) and "Auto Off" symbol
              appears

Function: Up: press ▲ key
              Stop: press ▼ key briefly.
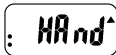
Function: Down: press ▼ key
              Stop: press ▲ key briefly.

5.2 Automatic mode

Key: press "Auto On/Off"
              "HAnd" (manual) goes out and "Auto On"
              symbol comes on
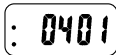
Unless otherwise programmed, the sunshade system is
controlled in accordance with the set light and wind
values any by the rain monitor.
If the wind value is exceeded, it is not possible to
execute a manual Stop command.
- If the light or wind value is exceeded, the symbols
  for sun or wind appear and flash in the display.
- If the temperature value is exceeded, the first two
  figures (smaller figures) flash in the display.
- If the rain monitor is activated, 7 bars appear and
  flash in the display.

The light sensor and the rain monitor only work in automatic mode.
In automatic mode, a command to raise the sunshade is auto-
matically given for safety reasons after power is reinstated after a
cut.

6. Setting ranges

Light value	level 1 – 14 (adjustable)
	level 1 approx. 4 klx. – low brightness
	level 14 over 50 klx. – bright midday sun
Basic program	
retract	level 4 approx. 15 klx.
extend	level 5 approx. 18 klx.

Note: The light values for extending and retracting can be set differently, but the level for retracting can never be set to be greater than the level for extending

Temperature value	level 1 – 14 bzw. "- -" (adjustable)
	level 1 approx. 17°C
	level 14 approx. 30°C
Basic program	- - (not temperature-controlled)

Note: if shade is to be controlled as a function of temperature, select the desired level instead of " - - " when programming.

Wind value	level 1 – 9 (adjustable)
	level 1 light breeze
	level 9 storm
Basic program	level 3

Attention: if the wind value is set too high, there is a risk of the sunshade system being destroyed.

Pulse duration	level 00 : 30 – 03 : 00 (adjustable)
	level 00 : 30 = 30 sec.
	level 03 : 00 = 3 min.
Basic program	level 03 : 00 = 3 min.

Delay time	level 5 – 30 (adjustable)
for the light value	level 5 = 5 min.
	level 30 = 30 min.
Basic program	
extend	level 5 = 5 min.
retract	level 10 = 10 min.

Note: the delay times for extending/retracting can be set differently.

7. Explanation of Prog key

By pressing the "Prog" key, you can select one after the other the input options for values which can be altered for menus, thresholds (sun, temperature and wind) and times (pulse duration and delay times).
The "Prog" key only works if the "Free" symbol is being displayed (see programming protection, Page 15). The "Free" symbol is displayed on delivery.

Notes:
1. Using the "Prog" key, you can call up a program step or interrupt programming at any time.
2. It is not possible to initiate any manual "Up" or "Down" commands during programming.
3. If programming is interrupted for over 5 min., the operating state display reappears.
   Repeat programming if necessary.
4. Input not confirmed with "Enter" is considered not entered and the previously-entered value is retained.

8. Programming

If the basic program set at the factory is to be changed, the following steps are required.
Example setting: sun extend 7, sun retract 6, temperature 7, wind 2, pulse duration 1 min. 30 sec., delay time extend 10 min., delay time retract 20 min.

Programming thresholds

Key:	press "Prog" 2x **Thresholds** symbol flashes	
Key:	press "Enter" 1x Display is activated Two right-hand figures: set light value (extend) flashes Two left-hand figures: currently-measured light value	`0305`
Key:	▲ or ▼, set desired light value for **extend**.	`0307`
Key:	"Enter" to confirm light value (extend). Two right-hand figures: set light value (retract) flashes Two left-hand figures: currently-measured light value	`0304`
Key:	▲ or ▼, set desired light value for **retract**.	`0306`

Key: Enter", confirms light value (retract).
Two right-hand figures: set
temperature value flashes
Two left-hand figures: currently-measured
temperature value

Key: ▲ or ▼ to set desired temperature value.

Key: "Enter" to confirm temperature value.
Two right-hand figures: set wind
value flashes
Two left-hand figures: currently-measured
wind value

Key: ▲ or ▼, set desired wind value.

Key: "Enter" to confirm wind value.
Currently-measured temperature,
light and wind values appear.
Programming is complete

Programming times

Key: press "Prog" 3x
Times symbol flashes

Key: press "Enter" 1x
Display is activated
4 figures: set pulse
duration flashes

Key: ▲ or ▼ to set desired
pulse duration.

Key: "Enter" to confirm pulse duration.
2 figures: set delay time
(extend) flashes

Key: ▲ or ▼ to set desired delay time for
extend.

Key: "Enter" to confirm delay time (extend).
2 figures: set delay time
(retract) flashes

Key: ▲ or ▼, set desired delay time for
retract.

Key: "Enter" to confirm delay time (retract).
Currently-measured temperature,
light and wind values appear.
Programming is complete.

14

9. Menu selection

It is possible to select one of the 3 menus specified by the factory so that not all the values have to be adjusted individually.

Menu 1 (e. g. awnings) Basic program
Light value extend   level 5   Wind value   level 3
Light value retract   level 4   Delay time extend 5 min.
Temperature   - -   Delay time retract 10 min.

Menu 2 (e.g. Venetian blinds)
Light value extend   level 4   Wind value   level 4
Light value retract   level 4   Delay time extend 5 min.
Temperature   - -   Delay time retract 20 min.

Menu 3 (e.g. for sunshades in conservatories)
Light value extend   level 5   Wind value   level 4
Light value retract   level 4   Delay time extend 5 min.
Temperature   level 6   Delay time retract 15 min.

10. Programming menus

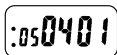**Key:** press "Prog" 1x
Menus symbol flashes

Key: press "Enter" 1x
Display is activated
2 figures: 00 flashes (last values set)

Key: ▲ or ▼ set desired
menu (e.g. Menu 3)

Key: "Enter" to confirm menu.
Currently-measured temperature,
light and wind values appear.
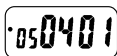Programming is complete.

The individual values (thresholds and times) in the menu can be changed ,(see Programming) or viewed (see View program).
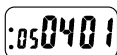
11. Programming protection

If you would like to protect the control system from unintentional programming, deactivate the "Free" symbol.
Key: press "FREE" 1x
If you like to release the programming,
you should press the "FREE-sign".

Key: press "FREE" 1x

12. View program

Identical to programming item 8, but without modifying the values.

13. Delete program

Press key "C" with a ball-point pen or similar object. The display goes out. Also press the [DOWN] key.
Then release "C" key (full display appears for approx. 2 sec.).
After the full display has gone out, "clr" appears. Then likewise release the [DOWN] key.
After the program has been deleted, reprogrammed light, temperature, wind and delay values and intermediate position/turning point are deleted and the **basic program is active again (Menu 1).**
The currently-measured light and wind value appear

# 14. Programming intermediate position/ turning point

Note:
Programming an intermediate position or turning point is possible only in manual mode (for explanation of operation/manual mode, see Page 11).

Programming an intermediate position
The "intermediate position" function (only possible when straight) allows the sunshade system to be positioned in an intermediate position.

• Press [Up] key and wait for "FTP" symbol
  (see explanation on "FTP", Page 17).
• Press [Up] key and [Down] key **simultaneously**
  for at least 3 seconds.
• Press [Down] key until the desired position is reached and then also press the [Up] key in this position (this stores the position).
• Release both keys.
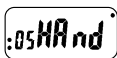
Programming the turning point of a Venetian blind
The "turning point" function is for setting an automatic oblique angle of the slats.

• Press the [Up] key and wait for the "FTP" symbol (see explanation of "FTP", Page 17).
• Press [Up] key and [Down] key simultaneously for at least 3 seconds.
• Press [Down] key until the desired position is reached and then also press the [Up] key several times in this position. This angles the slats to the desired oblique angle
• Release both keys (this stores the position).

Notes:
The programmed intermediate position and/or turning point is only reached from the ESO-position meaning that the impulse time of the last "UP" command has expired.
– When the intermediate position/turning point starts up, direction arrow ▼ or ▲ flashes.
– It is possible to extend the shade completely from the programmed intermediate position/turning point by giving another "DOWN" command.

Delete intermediate position/turning point

• Press [Up] key and wait for "FTP" symbol
  (see explanation on "FTP" below).
• Press [Up] key and [Down] key **simultaneously** for at least
  3 seconds. (Deletion is automatic when both keys are pressed).

Explanation of "FTP": the symbol "FTP" appears once the pulse duration of the Up command has elapsed, when the [UP ▲] key is pressed (only possible in manual mode) or after an automatic [UP ▲] command. (Depending on the pulse duration set, between 30 sec. and 3 min.)

15. Automatic test for light value

The automatic test is an installation aid and enables the sun function to be tested quickly. The minutes set as the delay time are converted into seconds for this purpose.

Start automatic test
The blind must be pulled right up, the control must be on Auto "ON" and the "FTP" symbol must have appeared (see explanation of "FTP").
If these conditions are met, the "Unassigned" and [AUTO] keys must be pressed simultaneously. Activation is shown by the "FTP" symbol flashing.
If the light value for pulling out exceeds the period of the delay time (in seconds) the blind goes out. When after going out the light value on the light sensor descends below the programmed light value for the entry for the period of the delay time (in seconds) the blind goes in.

Switch off automatic test
The installation aid is automatically switched off once "FTP" is reached again.

Troubleshooting

Fault	Cause	Remedy
Motor not running	L-P bridge missing	Pinch in L-P bridge (p. 7)
Motor running in wrong direcuon	Incorrect connection	Switch ▲ and ▼ wires on power unit (p. 6)
Motor fails to run right to bottom	Intermediate position programmed	Delete intermediate position (p. 17)
Intermediate position cannot be programmed	1.) Sunshade system not in top end position (FTP) 2.) Old intermediate position not deleted 3.) Manual mode not set	1.) Move sunshade system up and wait until "FTP" symbol is displayed (p. 17) 2.) Delete intermediate position (p. 17) 3.) Switch off automatic (p. 11)
Intermediate position cannot be deleted	Sunshade system not in top end position (FTP)	Move sunshade system up and wait until "FTP" symbol is displayed (p. 17)
Sunshade system does not run down, although "sun" symbol is flashing	1.) Sunshade system is not in top end position (FTP) 2.) Automatic mode not switched on 3.) Delay time has not yet elapsed 4.) Set temperature value not yet reached	1.) Move sunshade system up and wait until "FTP" symbol is displayed (p. 17) 2.) Switch on Automatic (p. 11) 3.) Wait for delay time (p. 12) 4.) Wait for temperature to rise, possibly reduce or switch of temperature level (p. 12)
Sunshade system goes up, although the "sun" symbol is flashing	1.) Set wind value exceeded 2.) Set temperature value not reached	1.) Wait for wind to drop (p. 12) 2.) Wait for temperature to rise, possibly reduce or switch off temperature level (p. 12)
Brightness value in display for sun is on 12, although sun is not shining	Light sensor connections are back to front	Switch connections (p. 7)
System does not extend in spite of bright light	Light sensor is shade (too little sun)	Position light sensor elswhere

Notes

Notes

Notes