

EB-Therm 300

E 85 816 65 / SSTL 35 304 74

MONTERINGSANVISNING / INSTALLATION INSTRUCTIONS
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EBECO ®

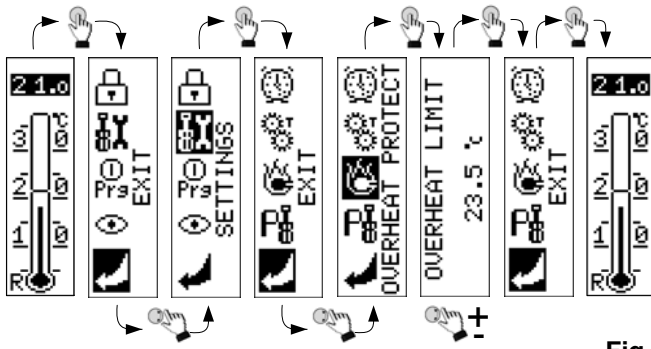


Fig 8

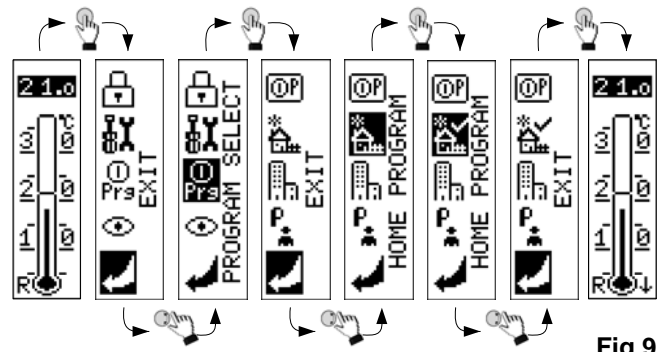


Fig 9

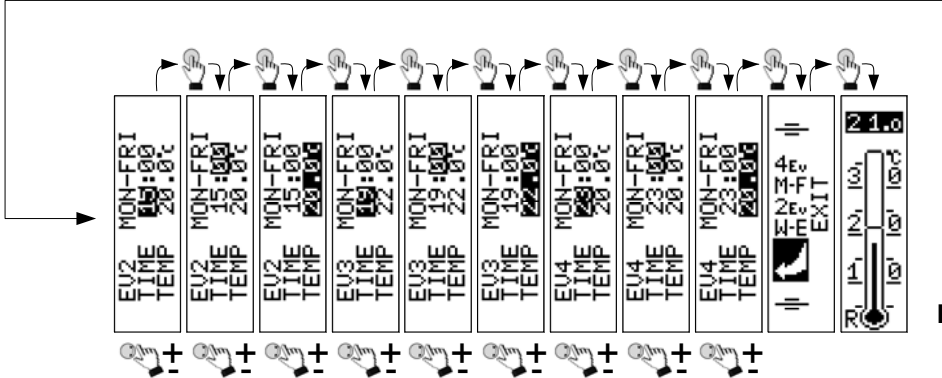
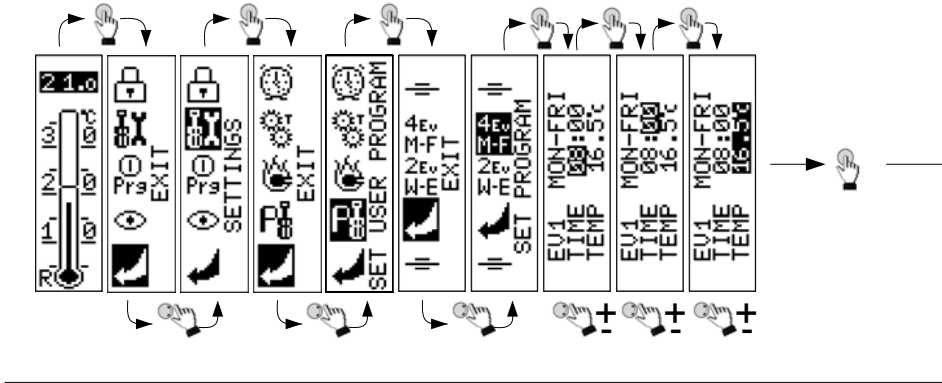


Fig 10

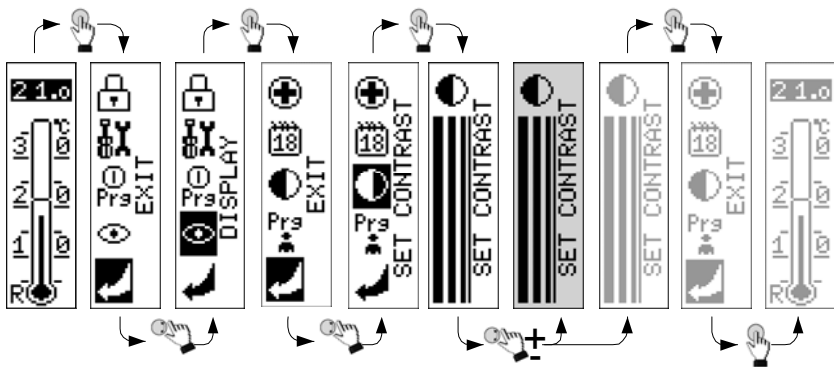


Fig 11

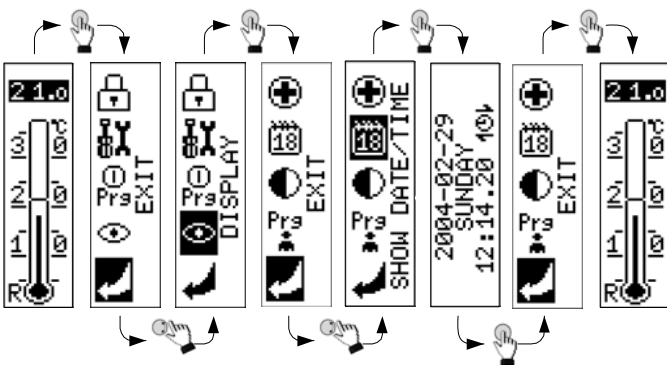


Fig 12

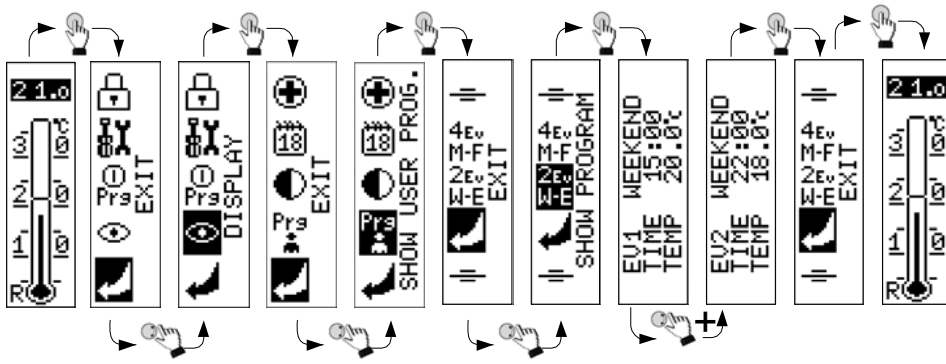


Fig 13

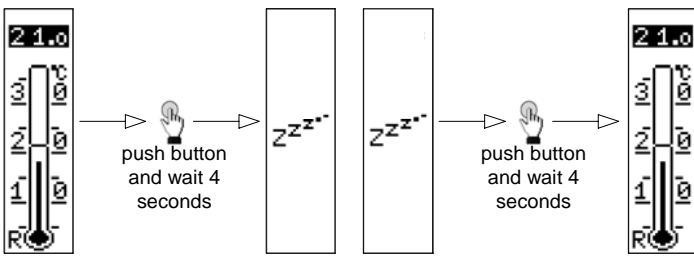


Fig 14

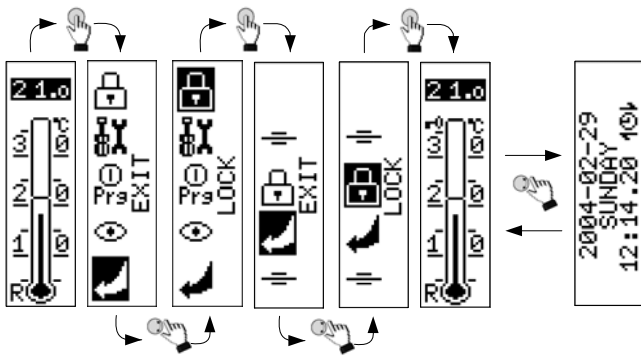


Fig 15

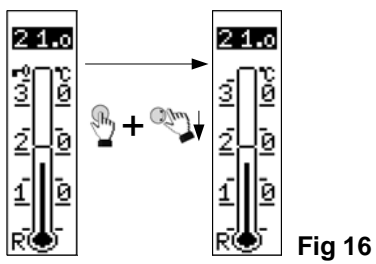


Fig 16

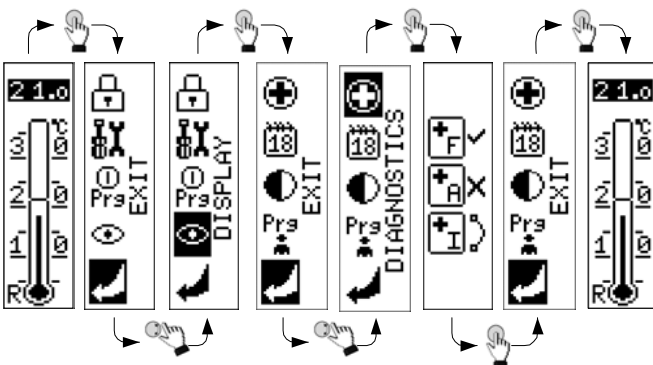


Fig 17

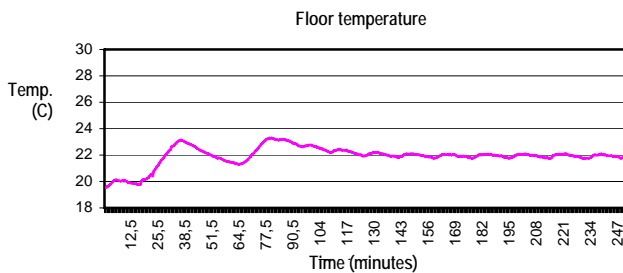
Installation instructions

Description

EB-Therm 300 is an electronic thermostat with LCD display. The thermostat has three separate temperature control functions. You can choose between room thermostat, floor thermostat or room thermostat with overheat protection in the floor. The thermostat has three temperature setback programs: two of them are pre-programmed (for homes or offices) and one is for user settings. The EB-Therm 300 is approved for installation in wet rooms, SEMKO-certified and CE-marked. The thermostat is designed for flush or surface mounting. The front panel has an LCD display (Fig 1a), a dual-function LED (Fig 1b) and a dual-function knob (Fig 1c). Settings and temperature readings are shown digitally and graphically on the display (Fig 1a).

Fuzzy technology

Temperature regulation is based on an algorithm, which uses fuzzy technology. This means that the thermostat collects data from the start and calculates when it should switch on and off on the basis of that data. This approach reduces temperature fluctuations, providing a more uniform temperature and lower energy consumption. The temperature in the floor varies by less than +/- 0.2 degrees. See the diagram below.



Installation

Flush mounting - EB-Therm mounts in a standard 65 mm mounting box. The location should be chosen so that the thermostat is protected from direct sunlight and draughts. The floor sensor must be installed in a conduit laid in the floor. The end of the conduit must be sealed to make it easy to change the floor sensor. All incoming conduits to the mounting box must be sealed so that the air temperature sensor is not affected by draughts.

1. Make sure that the mounting box is flush with the wall.
2. Remove the setting knob. Press the latch (Fig 2a) and lift of the front cover and the frame.
3. Connect 230 V AC electric power, the load and the floor sensor cable. If the floor sensor cable needs to be extended, use power wiring. Connect the protective conductor for the incoming supply and for the heating cable with a terminal block in the box (Fig 3).
4. Place the thermostat in the mounting box and secure it with the screws provided.
5. Refit the frame, front cover and setting knob.

Mounting with distance frame - (E 85 816 68), (Fig 4). Fix the distance frame to the wall with screws. Then install the thermostat, following the instructions above.

Mounting in a wet room - Install the IP 21 gasket (21 066 57) (Fig 5).

Settings

General

To return to the main menu from any menu, press **EXIT**. Exception: when choosing the lock.

Key to symbols in diagrams:



Description of display

See the diagram below for a description of the display functions.

a, b – set temperature (set point)

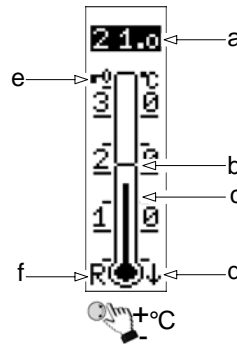
c – measured temperature (actual value)

d – the arrow indicates that the temperature setback program is running

e – the key indicates that the temperature settings are locked

f – the symbol shows which thermostat function is set:

- "&" – room thermostat with overheat protection in the floor
- "F" – floor thermostat
- "R" – room thermostat



Temperature

Turning the knob clockwise increases the desired temperature (set point); turning it anticlockwise reduces it. The actual value reading (the current temperature of the floor or of the room) may differ from a thermometer reading, owing to the properties of the room (underfloor heating design, room insulation, etc.).

Time and date

The thermostat shows the time and the date. The calendar adjusts automatically for leap years and for summer/winter time. Before the temperature setback program can be used, the time and date must be set. This is done as follows (Fig 6):

- press the knob once
- turn, choose **SETTINGS** and press
- turn , choose **SET CLOCK** and press
- set year, month, day, time and summer/winter time by turning and pressing the knob

Thermostat settings

The EB-Therm can provide three distinct functions.

- **"R&F"** = room and floor thermostat - a built-in sensor regulates the room temperature between 5°C and 37°C. The external floor sensor operates as a floor temperature limiter. The limit can be set from 5°C to 45°C. The factory setting is 27°C.
- **"F"** - floor thermostat (factory setting) – The external floor sensor regulates the floor temperature. The preset value is 22°C.
- **"R"** - room thermostat – A built-in sensor regulates the room temperature. This function cannot be chosen when the floor sensor is connected. If the floor sensor is not connected when the system is switched on for the first time, the thermostat chooses this function automatically.

Functions are chosen as follows (Fig 7):

- press the knob once
- turn, choose **SETTINGS** and press
- turn, choose **THERMOSTAT MODE** and press
- choose the required function (**R&F/F/R**) and press

Overheat protection – This function protects the floor from overheating. The factory setting of the overheat protection (27°C) can be changed. This is how to set the temperature limiter for an external floor sensor (Fig 8):

- press the knob once
- turn, choose **SETTINGS** and press
- turn, choose **OVERHEAT PROTECT** and press
- set the required temperature by turning and pressing the knob.

Programming - preset programs

The thermostat has two built-in temperature setback programs which are suitable for the home or office environment.

Program for the *home environment*. The temperature is reduced automatically by 5 degrees C at the following times:
 Mon - Fri 08:30 - 15:00
 Mon - Sun 23:00 - 05:00

Program for the *office environment*. The temperature is reduced automatically by 5 degrees C all the time except:
 Mon - Fri 05:00 - 18:00

The temperature setback program is chosen as follows (Fig 9):

- press the knob once
- turn, choose **PROGRAM SELECT** and press
- turn, choose the desired function **HOME/OFFICE/USER** (home, office or user) and press.

Programming - user settings

EB-Therm 300 also has programs for user settings. You can set four events during Monday to Friday and two events during Saturday and Sunday. If the required temperature is changed manually when a function is active, the program resumes operating after the setting at the next event. This is how to do user settings (Fig 10):

- press the knob once
- turn, choose **SETTINGS** and press
- turn, choose **SET USER PROGRAM** and press
- turn, choose period **4EV M-F** for Mon-Fri or **2EV W-E** for Sat-Sun
- set time and required temperature **TIME/TEMP** when each event is to begin, by turning and pressing the knob.

Display

The display contrast can be set to suit individual preference as follows (Fig 11):

- press the knob once
- turn, choose **DISPLAY** and press
- turn, choose **SET CONTRAST** and press
- set the required contrast by turning the knob, then press.

Time and date – This function shows the current time and date on the display as follows (Fig 12):

- press the knob once
- turn, choose **DISPLAY** and press
- turn, choose **SHOW DATE/TIME** and press.

Current settings – This function shows the current settings on the display as follows (Fig 13):

- press the knob once
- turn, choose **DISPLAY** and press
- turn, choose **SHOW USER PROG.** and press
- turn, choose **4EV M-F** (four events) or **2EV W-E** (two events) and press
- turn the knob to show each event with the set date and temperature, **SHOW PROGRAM.**
- press the knob once to return to the previous menu.

Power on/off

This function put the underfloor heating system in standby mode. It is activated as follows (Fig 14):

- press the knob and keep it pressed for about four seconds

Locking function

This is how to lock the chosen temperature and other settings (Fig 15):

- press the knob once
- turn, choose **LOCK** and press
- turn, choose **LOCK** and press
- a key which locks the temperature appears on the display with thermometer

This is how to unlock the temperature settings (Fig 16):

- press the knob and keep it pressed
- turn the knob clockwise until the key disappears

Fault message

This function indicated when faults have occurred. When faults occur, the thermostat contact opens and the LED starts to flash alternately green-red. You can also read the nature of the fault by using the diagnostic display of the thermostat, as shown in Figure 17.

- press the knob once
- turn, choose **DISPLAY** and press
- turn, choose **DIAGNOSTICS** and press

The diagnostic display shows the status of the sensors. Description of the diagnostic display:

a – floor sensor

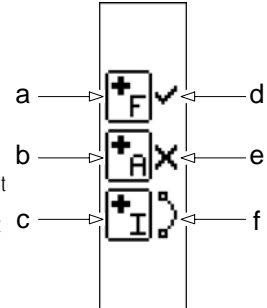
b – room sensor

c – internal sensor

d – sensor working properly

e – sensor not working – open circuit

f – sensor not working – short circuit



If a fault is indicated on sensor (b) or (c), replace the thermostat. If a fault is indicated on sensor (a), replace the floor sensor. If the floor sensor (a) is faulty, the thermostat can only work as a room thermostat, and only if the user changes the thermostat function from floor or floor/room thermostat to room thermostat. If a sensor is damaged or open circuit, the thermostat contact opens, the LED starts to flash (twice a second) and a fault message is displayed. If the floor sensor is faulty it must be replaced. If the room sensor is faulty, the thermostat must be replaced.

Technical data

Voltage	230 VAC±10% 50-60Hz
Air temperature range	+5°C to +37°C
Floor temperature range	+5°C to +37°C
Temperature limiter	+5°C to +45°C
Breaking capacity	250 V 16 A
Connecting cable	max 2.5 mm ²
Load	Cos φ = 0.3 max
Hysteresis	±0.5°C
Ambient temperature	0°C to +60°C
Degree of protection	IP21
Running reserve*	12 hours
Colour	Polar white
Max. length of sensor cable	50m, 2x1.5mm ²
Graphical LCD display	96x24 dots
Indication:	
230 V supply connected	Green LED
Heating cable operating	Red LED

Suitable for Eljo Trend, Elko RS, Strömfors and Merten frame systems. EMC certified. Withstands a surge of 2500 V AC.

* Time the programmed settings are preserved in the thermostat in the event of power failure, for instance

EB-Therm 300 with accessories

Art. no.	Article	Dimensions (mm)
E 85 816 65	EB-Therm 300*	81x81x40
E 85 816 68	Distance frame	81x81x18
E 85 816 71	Sensor cable*	3 m
21 066 48	Front cover for Eljo Trend*	
21 066 51	Front cover for Eljo RS*	
21 066 57	IP21 gasket*	
66 210 54	Frame for Eljo Trend*	
66 210 56	Frame for Strömfors*	
14 408 80	Terminal*	
E 85 816 76	Front cover, aluminium	
E 85 816 77	Front cover, bronze	

*Included in the pack