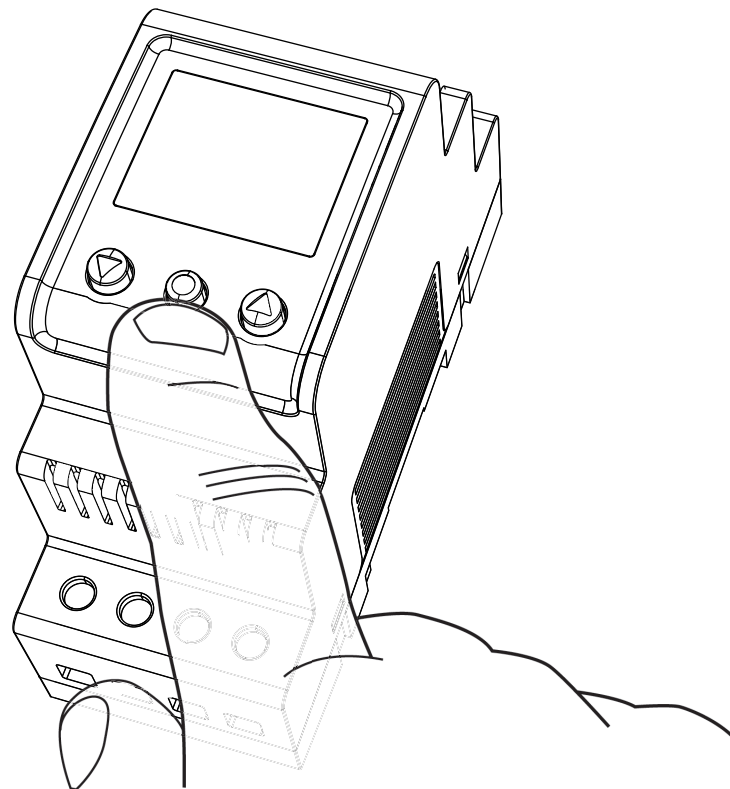




# EB-Therm 800

4 in 1 Digital thermostat with fuzzy technology for DIN rail mounting



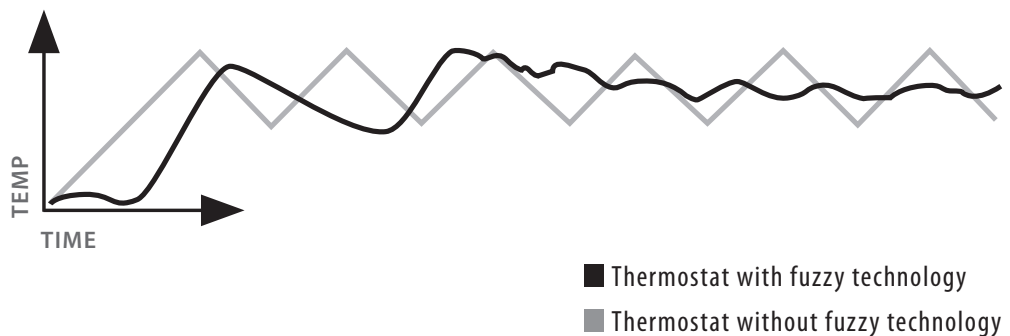
## EB-Therm 800

*Thank you for choosing EB-Therm 800, which we hope you will use and enjoy for many years to come.*

This is a microprocessor controlled thermostat intended for a DIN rail mounting with a backlit LCD display. The front is fitted with three control buttons. There are four operational modes and a number of temperature reduction programs to choose between for energy-smart control. There is also the option of basing the programming entirely on your own temperature requirements.

For the guarantee to be valid, the product must be installed and handled as indicated in this manual. Please read it carefully. This applies both to those installing the thermostat and to those who will use it.

Temperature control is done with help of an algorithm that uses fuzzy technology. The technology entails the thermostat testing and collecting data from start-up, and based on this, computing when to switch on and off. This technology reduces temperature variations and thus provides a more constant temperature and lower energy consumption.







You will also find technical data and information on troubleshooting in the manual. If you have any questions, you are of course always welcome to contact us.

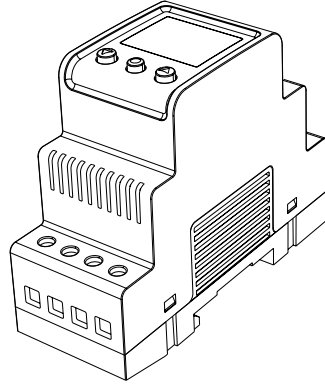


**This is a mains voltage device and must therefore be installed in accordance with the current regulations and under the supervision of a qualified electrician.**

# Contents

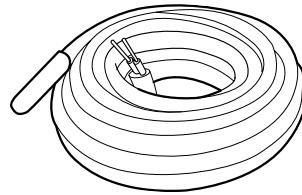
In the pack .....	4
Accessories .....	4
Installation .....	5
Thermostat .....	5
Sensor .....	5
Introduction .....	6
Four different operational modes .....	6
Menu navigation .....	7
Start menu .....	8
Display mode .....	9
Display mode functions .....	9
 Operational mode heating .....	11
Main menu .....	11
Temperature menu .....	11
Program menu .....	12
System settings menu .....	14
 Operational mode cooling .....	18
Main menu .....	18
Temperature menu .....	18
Program menu .....	18
System settings menu .....	21
 Operational mode industrial .....	24
Main menu .....	24
Temperature menu .....	24
Program menu .....	26
System settings menu .....	27
 Operational mode Max/Min .....	29
Main menu .....	29
Temperature menu .....	29
Program menu .....	30
System settings menu .....	31
Troubleshooting .....	33
Technical specifications .....	34
Guarantee .....	35

## In the pack



**1. Thermostat E 85 816 10**

**2. Quick guide**

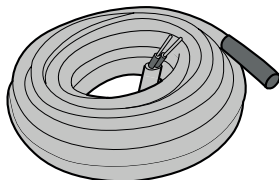


**3. Sensor cable 3 m E 85 816 71**

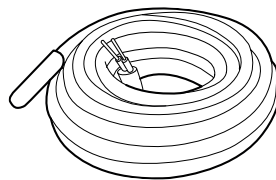


## Accessories

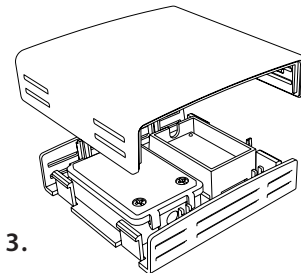
*Depending on how the thermostat is used there may be a need to supplement it with any of the articles below.*



**1.**



**2.**



**3.**

**1. Sensor cable 3 m (High temperature sensor) E 85 816 73**

*You need to supplement with this article if you want to control temperatures above +75 °C.*

**2. Sensor cable 3 m (Low temperature sensor) E 85 816 71**

**3. Enclosed sensor IP20/ IP54 E 85 816 22**

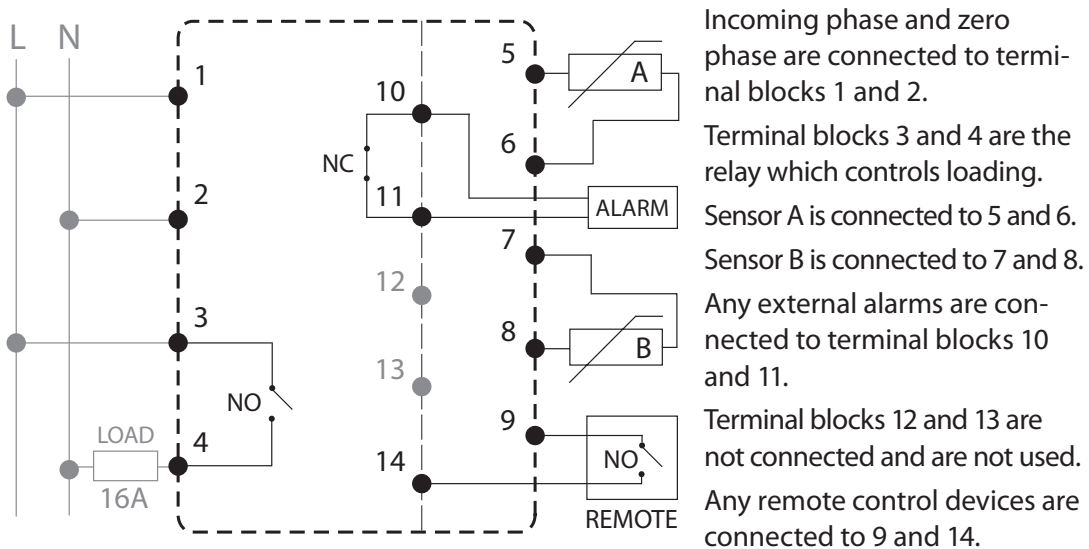
*You need to supplement with this article if you want to use the thermostat as a room thermostat or a Max/Min thermostat for roof installations.*

# Installation

## Thermostat

The EB-Therm 800 must be fitted on a DIN standard rail (EN 50022-35) in a standard cabinet available for the applicable enclosure protection class. The EB-Therm 800 with protection class IP20 is intended for installation in environments with a temperature interval of -20 °C to +45 °C.

The thermostat is fitted with 14 terminal blocks numbered according to the wiring diagram below:



## Sensor

If EB-Therm 800 is used as an underfloor heating thermostat, the room sensor is connected as A, and the floor sensor as B. If you install a floor that requires overheating protection, the room sensor is installed as A and the overheating protection as B.

The floor sensor must be mounted in a spiral hose laid in the floor. The hose endings must be sealed so that the floor sensor can easily be replaced.

The room sensor (E85 816 22) must be positioned so it is not exposed to direct sunlight or draughts. If the room sensor is fitted in an appliance box, incoming pipes must be sealed so the air temperature is not affected by draughts.

The sensor can be installed as either A or B for all other operational modes and controls other than the floor heating thermostat. Enter details in the **START MENU** where the sensor is installed. It is possible to install two sensors, A and B, but you can only use one at a time for control. We recommend the high temperature sensor (E85 816 73) for temperatures above +75 °C. Only one high temperature sensor can be connected. It must always be connected as B, to terminal blocks 7 and 8.

## Introduction

*The manual, like the thermostat, is divided into four different operational modes so you will only need to read about the functions that you will use. The thermostat's operational mode can only be set in the start menu which appears the first time the thermostat is started (read more about the start menu on page 8) or after it has been reset.*

### Four different operational modes

#### HEATING



The **HEATING** operational mode is used in living areas, offices, warehouses and likewise. This operational mode allows you to control the heating in the temperature interval from +5 °C to +45 °C. The thermostat can be used as a floor thermostat, a room thermostat or a room thermostat with overheating protection for wooden floors. The energy saving programs are primarily customised for residential and office environments, but can also be used to control the heating of warehouses for instance.

#### COOLING



The **COOLING** operational mode is used in living areas, offices, warehouses and likewise. With this operational mode, the thermostat functions as a room thermostat that allows you to control the air conditioning or other cooling in the temperature interval from +5 °C to +45 °C. The energy saving programs are primarily designed for residential and office environments, but can also be used to cool warehouses for instance.

#### INDUSTRIAL



The **INDUSTRIAL** operational mode is used for controlling temperatures in industrial processes, high temperatures or provide frost protection in sensitive installations. This operational mode allows you to control heating in the -15 °C to +75 °C and +60 °C to +170 °C intervals, or limit the range to -10 °C and +15 °C to provide frost protection. It is also possible to adjust the temperature hysteresis and set upper and lower temperature alarms.

#### MAX/MIN



The **MAX/MIN** operational mode is primarily used to keep roofs and small ground areas free of snow and ice. The temperature interval is adjustable between +10 °C and -10 °C. It is also possible to control the heating with a timer to further reduce operational costs.




## Menu navigation

The functions in the EB-Therm 800 are arranged in a system of menus and sub-menus. In the MAIN MENU there are always three submenus, **TEMP**, **PROGRAM** and **SYSTEM**. There are further menu selections under each of these.

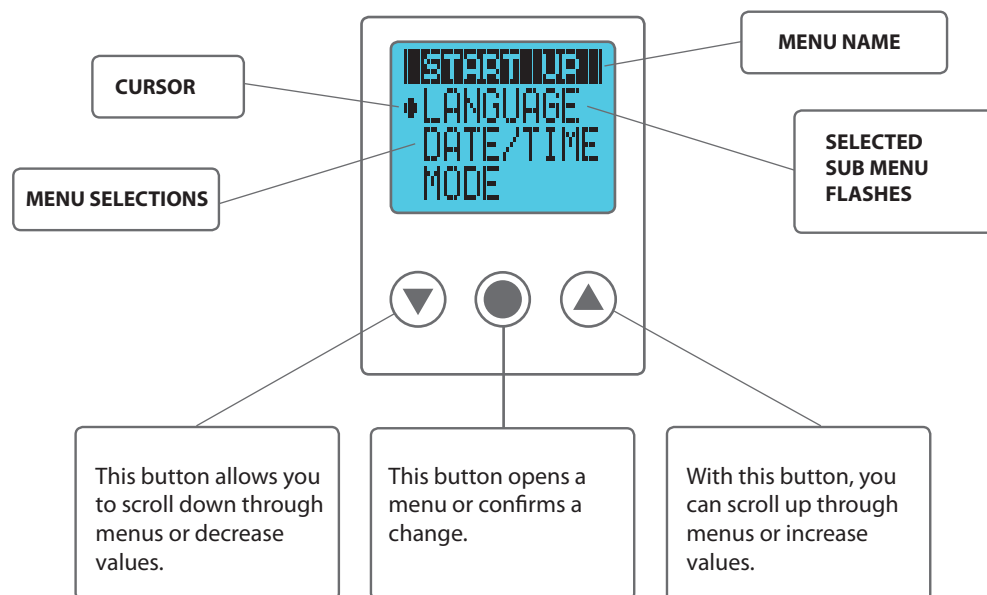
The first time the thermostat starts, you can set a number of critical values in the **START** menu (see page 8). The **START** menu is never displayed again and the thermostat always starts in the display mode (see page 9).

The thermostat has two backlit modes; full and half strength. The backlit display returns to half strength if no buttons are pressed for 30 seconds. The backlit display goes to full strength by pressing any of the three buttons but the thermostat remains in the display mode.

You can access the menus by pressing once on  in the display mode.

The top row always indicates which menu you are in. Using  or , the round cursor can be moved and the selected row with the cursor flashes. Press  to select the option that is highlighted. There is an **EXIT** option to take you back to the previous menu at the bottom of all menus.




To reset the thermostat to factory settings, there is a **RESET** function of which you can read more on page 16.



## Start menu




The Start menu is designed to quickly and easily set three required basic settings. It only appears the first time the thermostat is turned on (or if the thermostat is reset entirely using the reset function). You begin by selecting language, continue with date and time settings and conclude with operational mode and sensor settings. The grey headings indicates the menu name used in the thermostat.

### 1 Language setting LANGUAGE

You can select from a number of languages – the factory setting is English. Set your required language by scrolling among the different language selections using the  or  button and confirm your selection with .

### 2 Date & time DATE/TIME




You need to set the date and time for certain software features to work correctly. The thermostat itself calculates what day it is and automatically adjusts to daylight saving time (this function can later be turned off if required).

You can increase or decrease the value that flashes using the  or  buttons. When you have made your selection, confirm with  and the next value will flash. Repeat this process until all values are set. Begin first by setting the current date, and then the month and year. Continue by setting the hours and minutes.

### 3 Operational mode OPERATIONAL MODE

There are four different operational modes to choose from: **HEATING**, **COOLING**, **INDUSTRIAL** or **MAX/MIN**. The operational mode can only be set in the start menu and cannot be changed once you exit the startup menu.

The heating and cooling modes are intended to control the temperature in living areas, offices, warehouses or similar. The industrial mode allows you to control industrial processes, high temperatures or protect sensitive installations from frost. Max/Min is mainly used to keep roofs and smaller ground areas free of snow and ice.

You set the required operational mode by scrolling through the available options with the  or  button and confirm your selection with . Configure the sensors for your installation once you have selected the mode that best meets your needs. Learn more about the sensor settings in the section describing the selected operational mode.

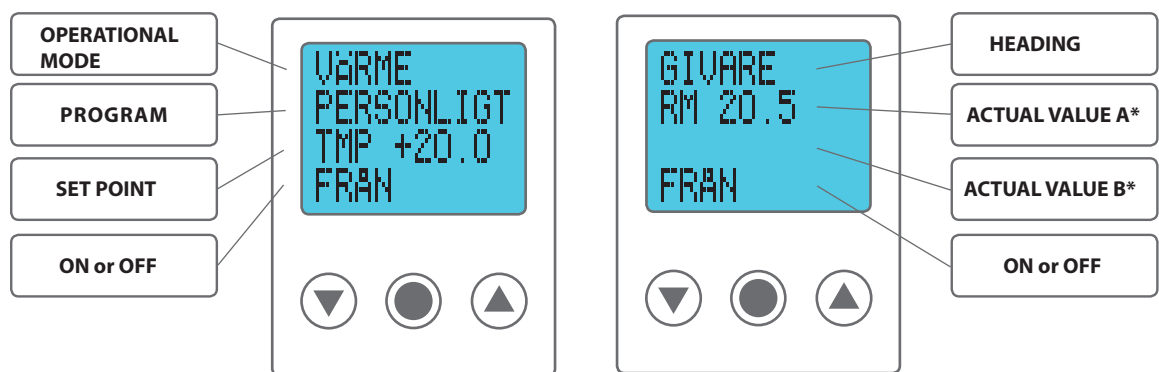
### 4 Exit the Start menu EXIT

When all settings are made, select **EXIT** and exit the Start menu by selecting **YES** to go straight to the **DISPLAY MODE** which is the normal mode for the thermostat.



## Display mode

The display mode is the thermostat's normal mode, which shows the most important settings and function status. The display alternates between set points and actual values, and it always shows the thermostat's operational mode and if the installation is on or off. The set point describes the required temperature while the actual value describes the actual temperature.



*\* ACTUAL VALUE A indicates the temperature at sensor A and ACTUAL VALUE B indicates the temperature at sensor B. The actual value is only shown on sensors which are installed and activated.*

## Display mode functions

Six different functions can be accessed from the display mode: **OVERVIEW**, **MAIN MENU**, **OPERATION TIME**, shortcut to the **TEMP** menu and set point, shortcut to the **LANGUAGE** menu and **STANDBY MODE**.

30 seconds after the last button is pressed, the thermostat always returns to the display mode regardless of where you are in the menus. If you are ever unsure if you are in the right menu or setting, you can always allow the thermostat to return to the display mode. No settings are saved (if you do not press the confirm button) and you can start again.

### Overview [press 3s]

To quickly and easily obtain a thermostat setting overview, you can press for three seconds to activate the overview function. You can then scroll through all thermostat settings using and . To return to the display mode, press or wait for thirty seconds.

### Main menu [press

When the thermostat is in the display mode, press to access the main menu. The main menu gives you access to all settings (read more about the main menu in the section dealing with your selected operational mode). To return to the display mode you can wait for thirty seconds or select **EXIT**.

**Operation time** [press ▲]

To see the total and momentary operation time\*, press ▲ when the thermostat is in the display mode. The counter counts both the total number of hours the thermostat has been in operation and the momentary time i.e. like a car's speedometer, it counts the number of hours the installation is switched on since the counter was reset. The operation time is used to calculate energy consumption in the installation\*\*.

The momentary counter is reset in the **SYSTEM MENU** under **RESET** and **COUNTER**. Both counters are reset if the thermostat is reset to the factory settings. To return to the display mode, press ● or wait for thirty seconds.

\*Operation time = the time the thermostat has been in operation, i.e. how long the heating or cooling system has been switched on.

\*\*Energy consumption (kWh) = Installed output (kW) x Operation time (h)

**Shortcut to language setting** [press ▼]

To change the language setting without going through the menu system, press ▼ when the thermostat is in the display mode. This will take you directly to the language selection menu (read more about the language selection menu in the section dealing with your selected operational mode).

**Shortcut to temperature setting** [press ▼ 3s]

To quickly change the temperature setting without going through the main menu, one can press ▼ in the display mode and hold it down for three seconds to directly access the temperature setting (set point).

**Standby mode** [press ● 3s]

When the thermostat is in standby mode, the temperature is not regulated and the screen is not active, but the clock runs as normal and all settings are saved in the memory. *Note that the thermostat is still running and connected to the mains.*

The standby mode is accessed from the display mode by holding ● pressed in for three seconds. You will then be asked if you want to turn off the thermostat. If you select **YES**, the standby mode is activated, and selecting **NO** (or wait for thirty seconds), the thermostat will return to the display mode. Press any key to exit standby. This will take you directly to the display mode.

You have now gone through everything required to go directly to the operational mode to be used by the thermostat. There you can read more about all its functions and how to set them to make the most out of your thermostat.

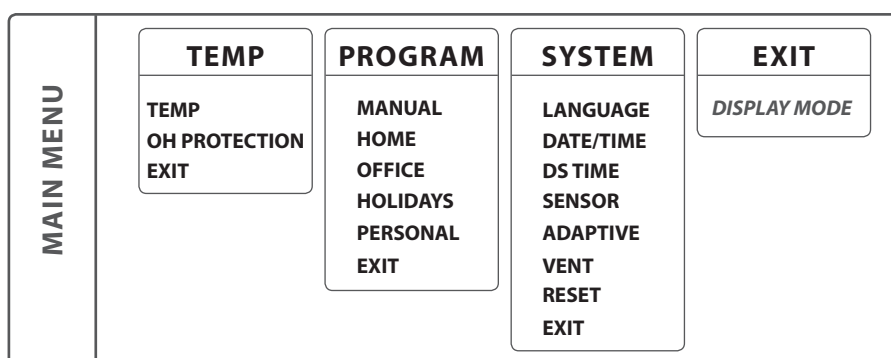


## Operational mode heating

The Heating operational mode is used in living areas, offices, warehouses and likewise. This operational mode allows you to control the heating in the temperature interval from +5 °C to +45 °C. The thermostat can be used as a floor thermostat, a room thermostat or a room thermostat with overheating protection for wooden floors. The energy saving programs are primarily customised for residential and office environments, but can also be used to control the heating of warehouses for instance.

### Main menu MAIN MENU

The MAIN MENU contains three submenus: TEMP, PROGRAM, SYSTEM and with EXIT you are taken back to the display mode.



### Temperature menu TEMP

The temperature menu contains those functions that are linked with directly controlling the temperature in any way. The set point and any overheating protection is configured here. The temperature menu is accessed by selecting TEMP in the MAIN MENU.

#### Set point TEMP

You can find set point settings under TEMP in the temperature menu. The required temperature is set here by pressing or and then confirmed with . The set point can be set to within half a degree of accuracy between +5 °C and +45 °C, where the default is +22 °C.

#### Overheating protection OH PROTECTION

The overheating protection functions as a floor temperature limiter; if you have wooden or laminate flooring, always use a room temperature sensor and overheating protection to make sure not to overheat and damage the flooring material.

You can find the overheating protection under OH PROTECTION under TEMP. The limitation can be set to between +5 °C and +45 °C. The factory setting of +35 °C gives a surface temperature of approx. +27 °C.






The surface temperature is an average value and varies slightly depending on material and thickness. Denser (harder) types of wood provide less insulation compared to softer types of wood which results in a higher surface temperature. A thinner floor results in a higher surface temperature compared to a thicker floor.

The overheating protection works only if two sensors are installed: a room temperature sensor (sensor A) and an overheating protection (sensor B).


### **Program menu PROGRAM**

A smart way to save energy is to adapt the heating to your actual daily requirements and, for example, lower the temperature when the house is empty. There are four program options for temperature reduction in the thermostat: two preset programs for home and office environments, one program which is based entirely on personal settings, and one other program. You don't need to think about the heating time when you are programming because the thermostat has an adaptive function which takes this into account automatically.

You can find the different programs in the **MAIN MENU** under **PROGRAM**. To change programs, scroll using  or , and select with . The thermostat is set to manual program when it leaves the factory, i.e. you set the required temperature (set point) and the thermostat then maintains this temperature.

#### **Program for home environment HOME**


The temperature is automatically reduced by 5 °C during the following periods: Monday-Friday 8.30 am to 3 pm and all days between the hours of 11 pm and 5 am.

The home environment program can be found under **PROGRAM** in the **MAIN MENU**. Select **HOME** with  and the thermostat displays a message for two seconds confirming that the program is activated. You can already see in the display mode that the program is active as **HOME** is displayed on the second line.

The temperature can be set between +5 °C and +45 °C. The thermostat operates based on the temperature selected in the manual program, where the factory setting is +22 °C. If you change the temperature in the manual program, or set point in the **TEMP** menu, the thermostat operates based on the new temperature and decreases by 5 °C according to the temperature now set.

#### **Program for office environment OFFICE**

The temperature is automatically reduced by 5 °C except during the following periods: Monday-Friday, 6 am-6 pm.

The office environment program can be found under **PROGRAM** in the **MAIN MENU**. Select **OFFICE** with  and the thermostat displays a message for two seconds confirming that the program is activated. You will then see in the display mode that the program is active as **OFFICE** is displayed on the second line.



The temperature can be set between +5 °C and +45 °C. The thermostat operates based on the temperature selected in the manual program, where the factory setting is +22 °C. If you change the temperature in the manual program, or set point in the TEMP menu, the thermostat operates based on the new temperature and decreases by 5 °C according to the temperature now set.

#### **Holiday program HOLIDAY**

This program is ideal for when you want to save energy and protect against frost damage in premises which are standing empty or unused for long periods, such as holiday homes and warehouses, or when you will be away from your main home for longer than usual. The holiday program can be controlled with a remote control device if required. There are three menu options to select from under HOLIDAY: **ACTIVATE**, **CHANGE** and **RESET**.

HOLIDAY can be found under PROGRAM in the MAIN MENU. Temperature can be set between +5 °C and +20 °C, and the factory setting is +12 °C.

##### **ACTIVATE**

The program is started with **ACTIVATE**, and here you can select to use the **TIMER SETTING**. If you want to start the program without a timer function, select **NO** and the program will be active until you decide to start another program. If you select **YES** the program will be active during the selected time period to then return to the latest run program.

The first time the program is run you need to set times and temperatures under **CHANGE**. All settings are saved in the memory and are not lost even if there is a power stoppage, but you will need to set the clock for it to work normally again.

##### **CHANGE**

If you want to make changes to settings, select **CHANGE**. Under **TEMP** the temperature you want the thermostat to maintain when the program is activated is set, under **TIMER** the set start and stop times can be changed, and under **REMOTE** the remote control function can be activated if one is installed.

##### **RESET**

There is also a reset function that resets the program to the factory setting of +12 °C and erases all time settings.

##### **REMOTE CONTROL**

The holiday program can be activated/deactivated using a remote control device. The device is connected to designated terminal blocks. See the wiring diagram. The holiday program is activated when the remote control device's port is closed and deactivated when the port is opened again. The thermostat will then return to the previous setting.



### **Personal program [PERSONAL]**

By programming the thermostat yourself, you can optimise energy consumption according to your needs by setting four events each day: **WAKEUP**, **OUT**, **HOME** and **NIGHT**. There are three menu options to choose from: **ACTIVATE**, **CHANGE** and **RESET**.

The personal program **PERSONAL** is found under **PROGRAM** in the **MAIN MENU**. Temperatures can be set between +5 °C and +45 °C, and the factory setting is +22 °C.






#### **ACTIVATE**

The program is started with **ACTIVATE** and the program will be active until you decide to start another program. All settings are saved in the memory and they are not lost even if there is a power stoppage for longer than two days, but you will need to set the clock for it to work normally again.

#### **CHANGE**

To set up your personal program, go to the **CHANGE** menu. You can set the various program events in different ways. You can choose to program on a day to day basis, for the weekend (Saturday and Sunday) or for the whole week. It is usually easiest to set up for a whole week first and then make changes for any days with different requirements.

Once you have selected on which day/days the events are to occur, you need to set the time of day they will occur and what temperature you want the floor to have at that time.

You start by setting the time, which flashes. Scroll with the  or  button until you reach the time you want the **WAKEUP** event to occur. First set the hours and confirm with , followed by minutes and confirm with . Scroll to the required temperature for **WAKEUP**. Confirm with  and **OUT** is shown. Repeat the steps above to set time and temperature and **HOME** is shown. Repeat the steps above to set time and temperature until **NIGHT** is shown. Repeat the steps above to set time and temperature.

#### **RESET**

There is also a reset function that resets the program to the factory setting of +22 °C and erases all time settings.




### **System settings menu SYSTEM**


Under system settings you can find settings options such as language and date, but also restore functions for the counter and a master reset to factory settings. The system settings can be found under **SYSTEM** in the **MAIN MENU**.



#### **Language LANGUAGE**




You can select from a number of different languages – the factory setting is English.

Set your required language by scrolling among the different language selections using the  or  button and confirm your selection with .

You can also use the shortcut commando in the display mode (hold  pressed in for three seconds). This will take you directly to the language menu. A useful feature if you set the wrong language by mistake and then find it difficult to get back to the language menu.

#### **Date and time DATE/TIME**

The set time and date can be changed if you need to do so, for example, if the thermostat has been without power for more than fifty hours. The setting function will then appear automatically.

You can find the date and time setting in the **MAIN MENU** under **SYSTEM** and **DATE/TIME**. The value that flashes can be changed using either  or  and confirmed with .




#### **Summer and winter time DS TIME**

The thermostat's calendar and clock automatically adjust to daylight saving time but the function can be turned off if required.

You can find the summer and winter time setting in the **MAIN MENU** under **SYSTEM** and select **DS TIME**. Disable this function under **ON/OFF** in the menu and there select **OFF**, and a message appears briefly in the display if the function is turned off. You can enable this function in the same way by selecting **ON**.

#### **Sensor settings SENSOR**

The thermostat can control the temperature in three different ways to both provide a comfort temperature and any temperature requirements for flooring materials.

You can find the sensor setting in the **SYSTEM** menu under **SENSOR** and there select which sensor you want to use by scrolling with  or  and confirm with .

#### **Adaptive function ADAPTIVE**

The thermostat has a function which works out when the heating should start to give the correct temperature at the correct time. This function is activated on delivery, but it can be turned off.

You can find the setting for the adaptive function in the **MAIN MENU** under **SYSTEM** and there select **ADAPTIVE**. Disable this function under **ON/OFF** in the menu and there select **OFF**, and a message appears briefly in the display if the function is turned off. You can enable this function in the same way by selecting **ON**.



#### **Ventilation mode VENT**

If the room temperature falls by more than 3 °C in a single minute, e.g. when airing the room, the ventilation mode is activated. Then the thermostat stops the heat for 15 minutes and returns to the previous mode. If the ventilation mode is activated, it is shown in the display mode. The function is activated on delivery, but it can be turned off.

You can find the setting for the ventilation mode in the **MAIN MENU** under **SYSTEM** and there select **VENT**. Disable this function under **ON/OFF** in the menu and there select **OFF**, and a message appears briefly in the display if the function is turned off. You can enable this function in the same way by selecting **ON**.

#### **FLOOR THERMOSTAT**

The most common setting that suits most rooms and needs. A sensor placed in the floor measures the temperature and regulates the heat.

Note that the sensor measures the temperature under the floor; if the thermostat is set as a floor thermostat, this is the temperature you set in the **TEMP** menu and not the temperature in the room or at the floor surface.

#### **ROOM THERMOSTAT**

It can sometimes be better to regulate the heat with a room sensor if you have a very large room or a room with large glass surfaces. You need to supplement with a sensor (E 85 816 22). When the thermostat is used as a room thermostat, the room temperature is set in the **TEMP** menu.

#### **ROOM THERMOSTAT WITH OVERHEATING PROTECTION**

If you have wooden or laminate flooring, you have to use this setting to make sure not to overheat and damage the flooring material. The preset value for the temperature limit is +35 °C. Read more about the overheating protection in the *Temperature menu* section. You need to supplement with a sensor (E 85 816 22).



#### **Reset RESET**

There are three options in the reset menu: **OPERATION TIME**, **OPERATIONAL MODE** and **FACTORY SETTING**. You can find the **RESET** menu under **SYSTEM** in the **MAIN MENU**.

#### **Reset operation time OPERATION TIME**

The operation time is counted in hours, like a car's speedometer it counts the number of hours the installation has been run since the last reset. This is useful if you want to calculate energy consumption for a certain time period. The thermostat also has a counter for the display of the total number of operational hours that cannot be reset.

When the thermostat is in display mode, press to view the total and momentary operation time.



You can find the reset function in the **SYSTEM** menu under **RESET** and there select **OPERATION TIME**. **NO** is the preset value and you can change this to **YES** by pressing  and confirming with .





#### **Reset operational mode settings OPERATIONAL MODE**



You can reset the settings in **OPERATIONAL MODE HEATING**. All programs are reset and temperature and sensor settings return to the default values. A reset does not have effect on the selection of **OPERATIONAL MODE**, **LANGUAGE** or set **DATE/TIME**.

You can find the reset function in the **SYSTEM MENU** under **RESET** and there select **OPERATIONAL MODE**. **NO** is the preset value and you can change to **YES** by pressing  and confirming with .

#### **Return to factory settings FACTORY SETTING**

You can reset the thermostat completely to its factory settings. All programmed data is lost and one is returned to the startup menu. If you choose to reset the thermostat, it is important to know in which mode it is being used and how the sensors are configured.

The only way to change the operational mode of the thermostat is by restoring the factory settings.

You can find the reset function in the **SYSTEM MENU** under **RESET** and select there **FACTORY SETTING**. **NO** is the preset value and you can change to **YES** by pressing  and confirming with .

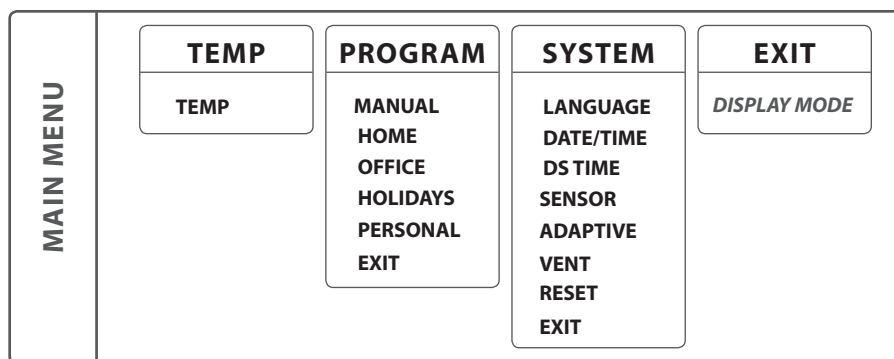


## Operational mode cooling

The cooling operational mode is used in living areas, offices, warehouses and likewise. With this operational mode, the thermostat functions as a room thermostat that allows you to control the air conditioning or other cooling in the temperature interval from +5 °C to +45 °C. The energy saving programs are primarily designed for residential and office environments, but can also be used to cool warehouses for instance.

### Main menu MAIN MENU

The MAIN MENU contains three submenus: TEMPERATURE, PROGRAM, SYSTEM and with EXIT you can return to the display mode.



### Temperature menu TEMP

The temperature menu contains those functions that are linked with directly controlling the temperature in some way; set points are set here. The temperature menu is accessed by selecting TEMP in the MAIN MENU.

#### Set point TEMP

You can find set point settings under TEMP in the temperature menu. The required temperature is set here by pressing ▼ or ▲ and then confirmed with ●. The set point can be set to within half a degree of accuracy between +5 °C and +45 °C, where the default is +22 °C.

### Program menu PROGRAM

A smart way to save energy is to adapt the air conditioning to your actual daily requirements and, for example, raise the temperature when the house is empty. There are four program options for temperature increase in the thermostat: two preset programs for home and office environments, one program which is based entirely on personal settings, and one holiday program.

You don't need to think about the cooling time when you are programming because the thermostat has an adaptive function which takes this into account automatically.



You can find the different programs in the **MAIN MENU** under **PROGRAM**. To change programs, scroll using  $\blacktriangledown$  or  $\blacktriangle$ , and select with  $\bullet$ . The thermostat is set to manual program when it leaves the factory, i.e. you set the required temperature (set point) and the thermostat then maintains this temperature.

#### **Program for home environment HOME**

The temperature is automatically increased by 5 °C during the following periods: Monday-Friday 8.30 am to 3 pm and all days between the hours of 11 pm and 5 am.

The home environment program can be found under **PROGRAM** in the **MAIN MENU**. Select **HOME** with  $\bullet$  and the thermostat displays a message for two seconds confirming that the program is activated. You can already see in the display mode that the program is active as **HOME** is displayed on the second line.

The temperature can be set between +5 °C and +45 °C. The thermostat operates based on the temperature selected in the manual program, where the factory setting is +22 °C. If you change the temperature in the manual program, or the set point in the **TEMP** menu, the thermostat operates according to the new temperature and increases or reduces it by 5 °C based on the new temperature.

#### **Program for office environment OFFICE**

The temperature is automatically increased by 5 °C except during the following periods: Monday–Friday, 6 am–6 pm.

The office environment program can be found under **PROGRAM** in the **MAIN MENU**. Select **OFFICE** with  $\bullet$  and the thermostat displays a message for two seconds confirming that the program is activated. You will then see in the display mode that the program is active as **OFFICE** is displayed on the second line.

The temperature can be set between +5 °C and +45 °C. The thermostat operates based on the temperature selected in the manual program, where the factory setting is +22 °C. If you change the temperature in the manual program, or the set point in the **TEMP** menu, the thermostat operates according to the new temperature and increases or reduces it by 5 °C based on the new temperature.

#### **Holiday program HOLIDAY**

This program is ideal for when you want to protect against overheating damage in for instance electronic equipment or to simply save energy in premises which are standing empty or unused for long periods, such as holiday homes and warehouses, or when you will be away from your main home for longer than usual. The holiday program can be controlled with a remote control device if required. There are three menu options to select from under **HOLIDAY**: **ACTIVATE**, **CHANGE** and **RESET**.

**HOLIDAY** can be found under **PROGRAM** in the **MAIN MENU**. Temperatures can be set to between +20 °C and +40 °C, and the factory setting is +27 °C.



#### **ACTIVATE**

The program is started with **ACTIVATE**, and here you can select to use the **TIMER SETTING**. If you want to start the program without a timer function, select **NO** and the program will be active until you decide to start another program. If you select **YES** the program will be active during the selected time period to then return to the latest run program.

The first time the program is run you need to set times and temperatures under **CHANGE**. All settings are saved in the memory and are not lost even if there is a power stoppage, but you will need to set the clock for it to work normally again.

#### **CHANGE**

If you want to make changes to settings, select **CHANGE**. Under **TEMP** the temperature you want the thermostat to maintain when the program is activated is set, under **TIMER** the set start and stop times can be changed, and under **REMOTE** the remote control function can be activated if one is installed.

#### **RESET**

There is also a reset function that resets the program to the factory setting of +27 °C and erases all time settings.

#### **REMOTE CONTROL**

The holiday program can be activated/deactivated using a remote control device. The device is connected to designated terminal blocks. See the wiring diagram. The holiday program is activated when the remote control device's port is closed and deactivated when the port is opened again. The thermostat will then return to the previous setting.

#### **Personal program PERSONAL**

By programming the thermostat yourself, you can optimise energy consumption according to your needs by setting four events each day: **WAKEUP**, **OUT**, **HOME** and **NIGHT**. There are three menu options to choose from: **ACTIVATE**, **CHANGE** and **RESET**.

The personal program **PERSONAL** is found under **PROGRAM** in the **MAIN MENU**. Temperatures can be set between +5 °C and +45 °C, and the factory setting is +22 °C.

#### **ACTIVATE**

The program is started with **ACTIVATE** and the program will be active until you decide to start another program. The first time the program is run you need to set times and temperatures under **CHANGE**. All settings are saved in the memory and they are not lost even if there is a power stoppage for longer than two days, but you will need to set the clock for it to work normally again.

#### **CHANGE**

To set up your personal program, go to the **CHANGE** menu. You can set the various program events in different ways. You can choose to program on a day to day basis, for the weekend (Saturday and Sunday) or for the whole week. It is usually easiest to set up for a whole week first and then make changes for any days with different requirements.



Once you have selected which day/days the events are to occur, you need to set the time of day they will occur and what temperature you want the floor to have at that time.

You start by setting the time, which flashes. Scroll with the  $\blacktriangledown$  or  $\blacktriangle$  button until you reach the time you want the **WAKEUP** event to occur. First set the hours and confirm with  $\bullet$ , followed by minutes and confirm with  $\bullet$ . Scroll to the required temperature for **WAKEUP**. Confirm with  $\bullet$  and **OUT** is shown. Repeat the steps above to set time and temperature and **HOME** is shown. Repeat the steps above to set time and temperature until **NIGHT** is shown. Repeat the steps above to set time and temperature.

#### **RESET**

There is also a reset function that resets the program to the factory setting of +22 °C and erases all time settings.

### **System settings menu SYSTEM**

Under system settings you can find settings options such as language and date, but also restore functions for the counter and a master reset to factory settings. The system settings can be found under **SYSTEM** in the **MAIN MENU**.

#### **Language LANGUAGE**

You can select from a number of different languages – the factory setting is English.

Set your required language by scrolling among the different language selections using the  $\blacktriangledown$  or  $\blacktriangle$  button and confirm your selection with  $\bullet$ .

You can also use the shortcut commando in the display mode (hold  $\blacktriangle$  pressed in for three seconds). This will take you directly to the language menu. A useful feature if you set the wrong language by mistake and then find it difficult to get back to the language menu.

#### **Date and time DATE/TIME**

The set time and date can be changed if you need to do so, for example, if the thermostat has been without power for more than fifty hours. The setting function will then appear automatically.

You can find the date and time setting in the **MAIN MENU** under **SYSTEM** and **DATE/TIME**. The value that flashes can be changed using either  $\blacktriangledown$  or  $\blacktriangle$  and confirmed with  $\bullet$ .




#### **Summer and winter time DS TIME**

The thermostat's calendar and clock automatically adjust to daylight saving time but the function can be turned off if required.



You can find the summer and winter time setting in the **MAIN MENU** under **SYSTEM** and select **DS TIME**. Disable this function under **ON/OFF** in the menu and there select **OFF**, and a message appears briefly in the display if the function is turned off. You can enable this function in the same way by selecting **ON**.

#### **Sensor settings** SENSOR

You can find the sensor setting in the **SYSTEM** menu under **SENSOR** and there select which sensor you want to use by scrolling with  or  and confirm with .

The thermostat acts as a room thermostat and measures the temperature with a room sensor. When the thermostat is used to regulate cooling, the room sensor can be installed either as **A** or **B**. You can only use one sensor at a time but if there are two sensors installed, you can alternate between **A** and **B**.

#### **Adaptive function** ADAPTIVE

The thermostat has a function which works out when the heating should start to give the correct temperature at the correct time. This function is activated on delivery, but it can be turned off.

You can find the setting for the adaptive function in the **MAIN MENU** under **SYSTEM** and there select **ADAPTIVE**. Disable this function under **ON/OFF** in the menu and there select **OFF**, and a message appears briefly in the display if the function is turned off. You can enable this function in the same way by selecting **ON**.

#### **Ventilation mode** VENT

If the room temperature increases by more than 3 °C in a single minute, e.g. when airing the room, the ventilation mode is activated. Then the thermostat stops the heat for 15 minutes and returns to the previous mode. If the ventilation mode is activated, it is shown in the display mode. The function is activated on delivery, but it can be turned off.

You can find the setting for the ventilation mode in the **MAIN MENU** under **SYSTEM** and there select **VENT**. Disable this function under **ON/OFF** in the menu and there select **OFF**, and a message appears briefly in the display if the function is turned off. You can enable this function in the same way by selecting **ON**.



#### **Reset** RESET

There are three options in the reset menu: **OPERATION TIME**, **OPERATIONAL MODE** and **FACTORY SETTING**. You can find the **RESET** menu under **SYSTEM** in the **MAIN MENU**.

#### **Reset operation time** OPERATION TIME



The operation time is counted in hours, like a car's speedometer it counts the number of hours the installation has been run since the last reset. This is useful if you want to calculate energy consumption for a certain time period. The thermostat also has a counter for the display of the total number of operational hours that cannot be reset.

When the thermostat is in display mode, press to view the total and momentary operation time.

You can find the reset function in the **SYSTEM** menu under **RESET** and there select **OPERATION TIME**. **NO** is the preset value and you can change this to **YES** by pressing  and confirming with .

#### **Reset operational mode settings** OPERATIONAL MODE



It is possible to reset the settings in **OPERATIONAL MODE COOLING**. All programs are reset and temperature and sensor settings return to the default values. A reset does not have effect on the selection of **OPERATIONAL MODE**, **LANGUAGE** or set **DATE/TIME**.

You can find the reset function in the **SYSTEM MENU** under **RESET** and there select **OPERATIONAL MODE**. **NO** is the preset value and you can change to **YES** by pressing  and confirming with .

#### **Return to factory settings** FACTORY SETTING

You can reset the thermostat completely to its factory settings. All programmed data is lost and one is returned to the startup menu. If you choose to reset the thermostat, it is important to know in which mode it is being used and how the sensors are configured.

The only way to change the operational mode of the thermostat is by restoring the factory settings.

You can find the reset function in the **SYSTEM MENU** under **RESET** and select there **FACTORY SETTING**. **NO** is the preset value and you can change to **YES** by pressing  and confirming with .



## Operational mode industrial

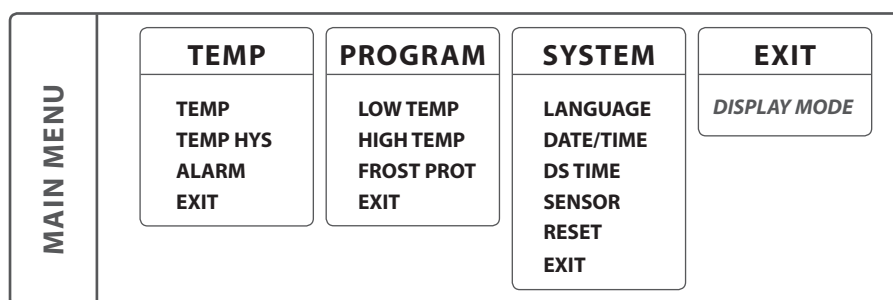
The industrial mode is used for temperature control of industrial processes, high temperatures or to protect sensitive installations from frost. This operational mode allows you to control heating in the -15 °C to +75 °C and +60 °C to +170 °C intervals, or limit the range to -10 °C and +15 °C to provide frost protection. It is also possible to adjust the temperature hysteresis\* and set upper and lower temperature alarms.

### Main menu MAIN MENU

The MAIN MENU contains three submenus: TEMPERATURE, PROGRAM and SYSTEM.

You can access the MAIN MENU from the display mode by pressing once, With the or buttons, you can scroll between the menu options and confirm with .

If you do not press a button for 30 seconds, the thermostat returns to the display mode. You can also go back to the display mode by selecting EXIT.



### Temperature menu TEMP

The temperature menu contains those functions that are linked with directly controlling the temperature in any way. Set points, hysteresis values and temperature alarms are set here. The temperature menu is accessed by selecting TEMP in the MAIN MENU.

#### Set point TEMP

The set point can be set with half a degree of accuracy, and is set in two overlapping intervals. The lower temperature interval extends from -15 °C to +75 °C and the upper one is between +60 °C and +170 °C. Depending on which temperature interval is selected, the factory setting is +40 °C or +100 °C.

You will find the set point setting under TEMP in the TEMP menu. The required temperature is set by pressing or and then confirming with .

\*Read more about the temperature hysteresis and how you set it up on page 23.








#### **Temperature hysteresis TEMP HYS**


You can increase the temperature hysteresis to prevent the thermostat from alternating between on and off too often.

The hysteresis is the value that the actual value is allowed to deviate from the set point without turning the thermostat on or off. A set hysteresis value of 0.3 °C and a set point of 40.0 °C means that the temperature (actual value) is allowed to vary between 39.7 and 40.3 °C.

You can increase the hysteresis if the system seems unstable, i.e. the thermostat continually alternates between on and off. An unstable system means increased wear on the relay and reduces the thermostat's lifetime significantly.


You can find the setting for the hysteresis in the **TEMP** menu under **TEMP HYS** and increase or reduce the value with  or  and then confirm with . The factory setting is 0.8 °C and is adjusted in 0.5 °C increments. The maximum value is 10.3 °C and the minimum value is 0.3 °C.

#### **Temperature alarm ALARM**

The EB-Therm 800 is equipped with both over and under temperature alarms. If the temperature goes above or below the set temperature, the installation turns off, an alarm circuit opens and the display shows an alarm message while the background lighting flashes. You can still access the menu settings as usual by pressing .

Temperature alarms are disabled at the factory. You can find the function in the **ALARM** menu under **TEMP** in the **MAIN MENU**. The temperature alarm is activated in the **ALARM** menu under **OFF/ON** and there select **ON** if you wish to activate it. Select **OFF** to deactivate it. The thermostat displays for two seconds a confirmation that the alarm is off or turned on.

##### **UNDERTEMPERATURE ALARM UNDERTEMP**

If the temperature (actual value) drops below the set alarm temperature, the installation turns off, the alarm circuit opens and the display shows **UNDER TEMP ALARM** while the background lighting flashes. You can still access the menu settings as usual by pressing . If the temperature rises again above the set alarm temperature, or if the alarm temperature drops below the actual value, the alarm circuit is closed and the installation returns to normal operation.

The factory setting is +40 °C for the lower temperature interval and +100 °C for the upper one.

##### **OVERTEMPERATURE ALARM OVERTEMP**




If the temperature (actual value) exceeds the set alarm temperature, the installation turns off, the alarm circuit opens and the display shows **OVERTEMP ALARM** while the background lighting flashes. If the temperature drops again below the set alarm temperature, or if the alarm temperature is increased above the actual value, the alarm circuit is closed and the installation returns to normal operation.

The factory setting is +60 °C for the lower temperature interval and +150 °C for the upper one.



### Program menu PROGRAM

In order to as accurately as possible measure the temperature, there are two different temperature intervals, one from -15 °C to +75 °C, and one from +60 °C to +170 °C. There is also a frost protection program to simply keep sensitive installations free of frost.

You can find the low temperature and frost protection programs in the MAIN MENU under PROGRAM. To change programs, scroll using  or , and select with . The thermostat is set to the low temperature program when it leaves the factory.

If you want to activate the high temperature program, the high temperature sensor (see below) must be connected and activated. If the high temperature sensor is not activated in the start menu, you can activate the high temperature sensor in the MAIN MENU under SYSTEM and SENSOR and there select B: HIGH TEMP.



**IMPORTANT** - The sensor supplied with the EB-Therm 800 is designed for the low temperature and frost protection program, and should not be used for the high temperature program. The sensor for the high temperature program is not included in the package, but must be ordered separately and has the article number E 85 816 73. Only one high temperature sensor can be connected. It must always be connected as B, at terminal blocks 7 and 8.

#### Low temperature program LOW TEMP

A program that limits the temperature interval between -15 °C and +75 °C. This program is available for two reasons, partly to minimise the risk of using the wrong sensor with damage to the installation as a result, but also because the different temperature intervals require sensors with different characteristics.

You can select the lower temperature interval in the MAIN MENU under PROGRAM and LOW TEMP. This program is preset but you can change to the frost protection or the high temperature program at any time.

#### Frost protection program FROST PROT

A program intended to be used for frost protection of installations or pipes and limit the adjustable temperature interval from -10 °C to +15 °C. The values can be set to within half a degree of accuracy and the factory setting is +5 °C.

You can select this program in the MAIN MENU under PROGRAM and FROST PROT. This program is not preset but you can change to the high or low temperature program at any time.

#### High temperature program HIGH TEMP

A program that limits the temperature interval between +60 °C and +170 °C. This program is available for two reasons, partly to minimise the risk of using the wrong sensor with damage to the installation as a result, but also because the different temperature intervals require sensors with different characteristics.







### **System settings menu SYSTEM**

Under system settings you can find settings options such as language and date, but also restore functions for the counter and a master reset to factory settings. The system settings can be found under **SYSTEM** in the **MAIN MENU**.

#### **Language LANGUAGE**




You can select from a number of different languages – the factory setting is English.

Set your required language by scrolling among the different language selections using the  or  button and confirm your selection with .

You can also use the shortcut commando in the display mode (hold  pressed in for three seconds). This will take you directly to the language menu. A useful feature if you set the wrong language by mistake and then find it difficult to get back to the language menu.

#### **Date and time DATE/TIME**

The set time and date can be changed if you need to do so, for example, if the thermostat has been without power for more than fifty hours. The setting function will then appear automatically.

You can find the date and time setting in the **MAIN MENU** under **SYSTEM** and **DATE/TIME**. The value that flashes can be changed using either  or  and confirmed with .




#### **Summer and winter time DS TIME**

The thermostat's calendar and clock automatically adjust to daylight saving time but the function can be turned off if required.

You can find the summer and winter time setting in the **MAIN MENU** under **SYSTEM** and select **DS TIME**. Disable this function under **ON/OFF** in the menu and there select **OFF**, and a message appears briefly in the display if the function is turned off. You can enable this function in the same way by selecting **ON**.

#### **Sensor settings SENSOR**

The thermostat uses external sensors which can be installed as either **A** or **B**. You can only use one sensor at a time but if there are two sensors installed, you can alternate between **A** and **B**.

You can find the sensor setting in the **SYSTEM MENU** under **SENSOR** and here you can select which sensor you want to use by scrolling with  or  and confirming with .





### **Reset RESET**

There are three options in the reset menu: **OPERATION TIME**, **OPERATIONAL MODE** and **FACTORY SETTING**. You can find the **RESET** menu under **SYSTEM** in the **MAIN MENU**.

### **Reset operation time OPERATION TIME**



The operation time is counted in hours, like a car's speedometer it counts the number of hours the installation has been run since the last reset. This is useful if you want to calculate energy consumption for a certain time period. The thermostat also has a counter for the display of the total number of operational hours that cannot be reset.

When the thermostat is in display mode, press to view the total and momentary operation time.

You can find the reset function in the **SYSTEM** menu under **RESET** and there select **OPERATION TIME**. **NO** is the preset value and you can change this to **YES** by pressing  and confirming with .

### **Reset operational mode settings OPERATIONAL MODE**



The settings can be reset in **OPERATIONAL MODE industrial**. All programs are reset and temperature and sensor settings return to the default values. A reset does not have effect on the selection of **OPERATIONAL MODE**, **LANGUAGE** or set **DATE/TIME**.

You can find the reset function in the **SYSTEM MENU** under **RESET** and there select **OPERATIONAL MODE**. **NO** is the preset value and you can change to **YES** by pressing  and confirming with .

### **Return to factory settings FACTORY SETTING**

You can reset the thermostat completely to its factory settings. All programmed data is lost and one is returned to the startup menu. If you choose to reset the thermostat, it is important to know in which mode it is being used and how the sensors are configured.

The only way to change the operational mode of the thermostat is by restoring the factory settings.

You can find the reset function in the **SYSTEM MENU** under **RESET** and select there **FACTORY SETTING**. **NO** is the preset value and you can change to **YES** by pressing  and confirming with .



## Operational mode Max/Min





The Max/Min operational mode is primarily used to keep small areas on roofs and the ground snow and ice-free. The temperature interval is adjustable between +10 °C and -10 °C. It is also possible to control the heating with a timer to further reduce operational costs.



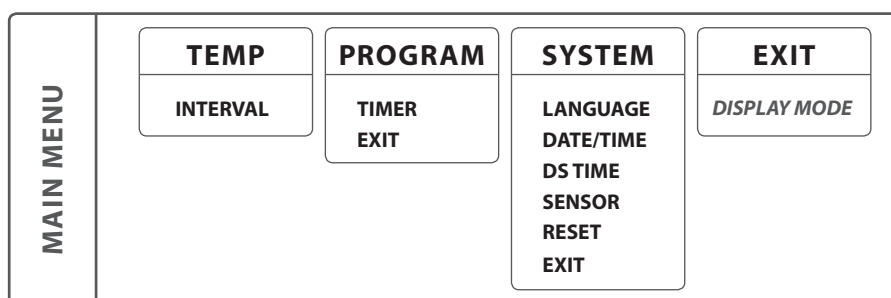
You need to supplement with an IP54 outdoor enclosure (E 85 816 22) to be able to use the thermostat in the Max/Min mode for roof installations.

### Main menu MAIN MENU

The MAIN MENU contains three submenus: TEMPERATURE, PROGRAM and SYSTEM.

You can access the MAIN MENU from the display mode by pressing  once. With the  or  buttons, you can scroll between the menu options and confirm with .

If you do not press a button for 30 seconds, the thermostat returns to the display mode. You can also go back to the display mode by selecting EXIT.



### Temperature menu TEMP

The temperature menu contains those functions that are linked with directly controlling the temperature in any way. The temperature interval and temperature hysteresis is set here. The temperature menu is accessed by selecting TEMP in the MAIN MENU.

#### Temperature interval INTERVAL

You can find the temperature interval setting under TEMP in the temperature menu. Use this function to check the temperatures between which you want the thermostat to operate. The maximum value is the upper temperature in the interval and the minimum value is the lower one.

If you set the maximum value to +3 °C and the minimum value to -6 °C, it means that when the temperature drops to +3 °C, the thermostat is activated, and if the temperature drops further to below -6 °C, the thermostat will switch off again until the temperature increases again to the set range.



The required maximum temperature is set by pressing ▼ or ▲ and then confirming with ●, and the minimum temperature can then be set in the same way. The values can be set to within half a degree of accuracy and the factory setting is a maximum of +2 °C and a minimum of -6 °C. Both max and min temperatures can be set from +10 °C to -10 °C.

### **Program menu PROGRAM**

In the operational mode MAX/MIN, there is a timer program that makes it possible to customise the snow melting capacity further to save energy.

The **TIMER** is found under **PROGRAM** in the **MAIN MENU**.

#### **Timer TIMER**

A smart way to save energy is to adapt the snow melting capacity to your actual daily requirements. The timer program enables you to easily program up to four on-and-off settings on the thermostat, i.e. it will only be active during certain times of day, or on certain days. There are three menu options to choose from: **ACTIVATE**, **EVENTS** and **RESET**.

You can find the **TIMER** function under **PROGRAM** in the **MAIN MENU**. To start the timer program select **TIMER** and then **ON**, and select **OFF** if you want to turn off the timer. After selecting **OFF** or **ON**, a message is shown for two seconds confirming that the function is turned off or activated. The function is turned off when leaving the factory.

#### **ACTIVATE**

The program starts with the activate function, and the program will be active until you decide to start another program. You have to set times under **EVENTS** the first time the program is run. All settings are saved in the memory and are not lost even if there is a power stoppage, but you will need to set the clock for it to work normally again.

#### **EVENTS**

To set the **TIMER** program, select under **CHANGE** and **EVENTS**. You can set the various program events in different ways: You can choose to program on a day to day basis, for the weekend (Saturday and Sunday) or for the whole week. It is usually easiest to set up for a whole week first and then make changes for any days with different requirements.

Once you have selected which day/days, you need to set the number of events (maximum 4) and time of day they have to occur. Scroll with the ▼ or ▲ buttons to change the number of events and confirm with ●.

To set an event, start by setting the time, which flashes. Scroll with the ▼ or ▲ button until you reach the time you want the event **ON** to occur. First set the hours and confirm with ●, followed by minutes and confirm with ●. Repeat the steps above to set the **OFF** option.



Example: You want to turn off the snow melting installation at night between 10pm and 4am and in the middle of the day between 11am and 3pm seven days a week, i.e. the installation must be active from 4am to 11am and from 3pm to 10pm. Select first **WEEK** and then **2 EVENTS**. The first event is **ON** at 4am and **OFF** at 11am. The second event is **ON** at 3pm and **OFF** at 10pm.

#### **RESET**




There is a reset function which resets the program to the factory setting, Max +2 °C and Min -6 °C, and erases all set events.


### **System settings menu SYSTEM**

Under system settings you can find settings options such as language and date, but also restore functions for the counter and a master reset to factory settings. The system settings can be found under **SYSTEM** in the **MAIN MENU**.

#### **Language LANGUAGE**




You can select from a number of different languages – the factory setting is English.

Set your required language by scrolling among the different language selections using the  or  button and confirm your selection with .

You can also use the shortcut commando in the display mode (hold  pressed in for three seconds). This will take you directly to the language menu. A useful feature if you set the wrong language by mistake and then find it difficult to get back to the language menu.

#### **Date and time DATE/TIME**

The set time and date can be changed if you need to do so, for example, if the thermostat has been without power for more than fifty hours. The setting function will then appear automatically.

You can find the date and time setting in the **MAIN MENU** under **SYSTEM** and **DATE/TIME**. The value that flashes can be changed using either  or  and confirmed with .

#### **Summer and winter time DS TIME**




The thermostat's calendar and clock automatically adjust to daylight saving time but the function can be turned off if required.

You can find the summer and winter time setting in the **MAIN MENU** under **SYSTEM** and select **DS TIME**. Disable this function under **ON/OFF** in the menu and there select **OFF**, and a message appears briefly in the display if the function is turned off. You can enable this function in the same way by selecting **ON**.



#### **Sensor settings** SENSOR

The thermostat uses external sensors which can be installed as either A or B. You can only use one sensor at a time but if there are two sensors installed, you can alternate between A and B.

You can find the sensor setting in the **SYSTEM MENU** under **SENSOR** and there select which sensor you want to use by scrolling with  or  and confirm with .



#### **Reset** RESET

There are three options available in the reset menu: **OPERATION TIME**, **OPERATIONAL MODE** and **FACTORY SETTING**. You can find the **RESET** menu under **SYSTEM** in the **MAIN MENU**.

#### **Reset operation time** OPERATION TIME



The operation time is counted in hours, like a car's speedometer it counts the number of hours the installation has been run since the last reset. This is useful if you want to calculate energy consumption for a certain time period. The thermostat also has a counter for the display of the total number of operational hours that cannot be reset.

When the thermostat is in display mode, press to view the total and momentary operation time.

You can find the reset function in the **SYSTEM** menu under **RESET** and there select **OPERATION TIME**. **NO** is the preset value and you can change this to **YES** by pressing  and confirming with .

#### **Reset operational mode settings** OPERATIONAL MODE



It is possible to reset the settings in the **OPERATIONAL MODE** max/min. All programs are reset and temperature and sensor settings are reset to the default values. A reset does not have effect on the selection of **OPERATIONAL MODE**, **LANGUAGE** or set **DATE/TIME**.

You can find the reset function in the **SYSTEM MENU** under **RESET** and there select **OPERATIONAL MODE**. **NO** is the preset value and you can change to **YES** by pressing  and confirming with .

#### **Return to factory settings** FACTORY SETTING

You can reset the thermostat completely to its factory settings. All programmed data is lost and one is returned to the startup menu. If you choose to reset the thermostat, it is important to know in which mode it is being used and how the sensors are configured.

The only way to change the operational mode of the thermostat is by restoring the factory settings.

You can find the reset function in the **SYSTEM MENU** under **RESET** and select there **FACTORY SETTING**. **NO** is the preset value and you can change to **YES** by pressing  and confirming with .



## Troubleshooting

Message	Reason
<i>BREAKDOWN IN SENSOR A</i>	The sensor installed on terminal blocks 5 and 6 is not connected properly or is damaged.
<i>BREAKDOWN IN SENSOR B</i>	The sensor installed on terminal blocks 7 and 8 is not connected properly or is damaged.
<i>SHORT CIRCUIT IN SENSOR A</i>	The sensor installed on terminal blocks 5 and 6 is not connected properly or is damaged.
<i>SHORT CIRCUIT IN SENSOR B</i>	The sensor installed on terminal blocks 7 and 8 is not connected properly or is damaged. If the sensor has to be replaced, you can order it.  High temperature sensor: E 85 816 73 Low temperature sensor: E 85 816 71
<i>DATE/TIME</i> <i>[the setting flashes]</i>	The reserve power has run out if the thermostat has been without power for more than 50 hours. This means that the processor running the clock has stopped and the date and time must be reset. All other settings are saved in the memory. Set the date and time so that the thermostat runs as normal again.
<i>SETTING: LANGUAGE</i> <i>- DATE/TIME - OPERATIONAL MODE - SENSOR</i>	If you forget in the startup menu to make any setting, you have to go back to the menu and do this before you can leave the startup mode.
<i>OVERTEMP ALARM</i> <i>[flashing display]</i>	This means that the actual value has exceeded the set alarm temperature. The thermostat interrupts the load but it works normally otherwise until the actual value falls below the set alarm temperature or the alarm temperature is set above the actual value.
<i>UNDERTEMP ALARM</i> <i>[flashing display]</i>	This mean that the actual value has fallen below the set alarm temperature. The thermostat interrupts the load but it works normally otherwise until the actual value rises above the set alarm temperature or the alarm temperature is set below the actual value.
<i>OVERHEATING PROTECTION ACTIVE</i>	If the text appears in the display mode, it means that the actual value in the floor has exceeded the set temperature for overheating protection. The thermostat interrupts the load but it works normally otherwise until the actual value falls below the set alarm temperature or the alarm temperature is set above the actual value.

## Technical specifications

Voltage	230VAC +/- 10% ~ 50Hz
Breaking capacity	3,680W/16A/230VAC
Power consumption	2.5 W
Range of application	-15 °C to +170 °C, divided in two areas
Low temperature range	-15 °C to +75 °C – NTC sensor
High temperature range	+60 °C to +170 °C – PTC sensor
Connection cable	max 2.5 mm <sup>2</sup>
Load	cos φ = 1
Hysteresis	Adjustable +/- 0.3 to 10.3 °C
Protection class	IP20
Power reserve	50 hours
Max. length sensor cable	50 m, 2 x 1.5 mm <sup>2</sup>
Alarm relay	2 A/120 VAC Normally closed
Installation	Standard DIN rail, EN 50022-35
Ambient temperature	-20 °C to +45 °C

### Test values for NTC sensor

10°C	18,0 kΩ
15°C	14,7 kΩ
20°C	12,1 kΩ
25°C	10,0 kΩ
30°C	8,3 kΩ

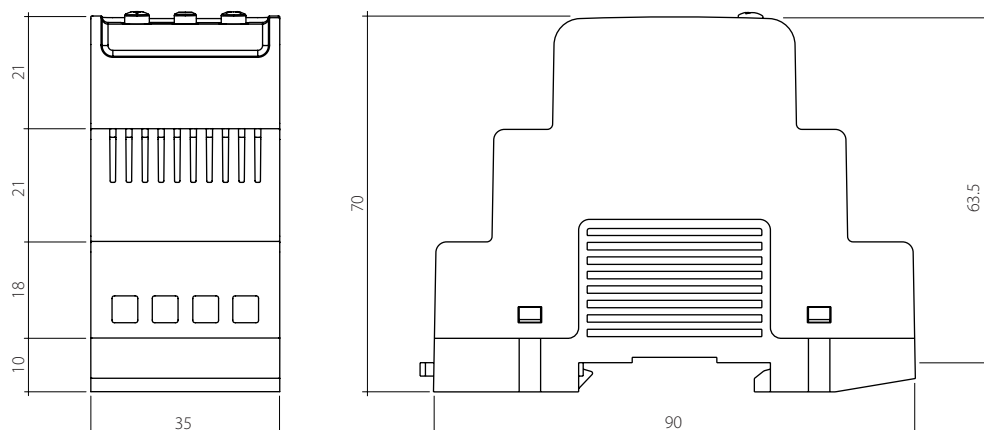
### Test values for PTC sensor

70°C	1,392 kΩ
90°C	1,591 kΩ
110°C	1,805 kΩ
130°C	2,023 kΩ
150°C	2,211 kΩ

Certifications: EMC/2500 VAC RoHS WEEE CB



### Measure diagram for the unit



## **WARRANTY**

The Company Fenix warrants this product, excluding battery, to be free from defects in the workmanship or materials, under normal use and service provided by an authorized service company, for a period of 24 months from the date of purchase by the consumer.

If at any time during the warranty period the product is determined to be defective or malfunctions, contact an authorized service company which will arrange to remove the product and return it with a bill of sale or other dated proof of purchase to the place from which the product was purchased (seller).

The seller reserves the right to consider if the warranty return is accepted or not and to determine whether the product should be repaired or whether a replacement product can be sent to you.

The warranty provided by the seller (sale of product without its installation) does not cover any removal, reinstallation and transportation costs. This warranty shall not apply if it is shown by seller that the defect or malfunction was caused by damage that occurred while the product was in the possession of a consumer.

The complete text of "Guarantee Terms and Conditions" and "Guarantee Guidelines for Consumers for Goods Supplied by FENIX Trading, spol. s r.o." is available on the Internet page [www.fenixgroup.cz](http://www.fenixgroup.cz)

If you have any other questions about the installation, setting or operation of this product, please contact our technical support.

***Electrical installation carried out by:***

-----  
***according to the attached materials specification.***

***Date:*** -----

***Signature:*** -----

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