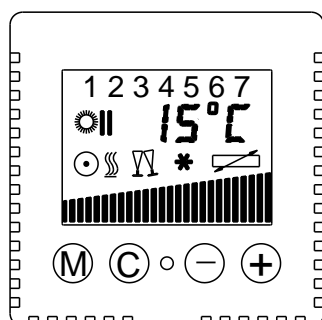


ECOTIMER M Floor temperature controller

HRT 6145-50



| | |
|----------------------------------|------------------------------|
| Setting range approx. | 10 to 40°C |
| Mains voltage: | 230 V ~ ± 10% , 50 Hz |
| Switching current (max.) approx. | 12 (4) A |
| Switching capacity | 2.7 kW |
| Switch temperature differential: | 0.7 K |
| Temperature sensor: | NTC to DIN 44574 4 m long |
| Perm. ambient temperature: | -10 to +40°C |
| Connection cables: | 2.5 mm ² |
| Energy class: | VII = 3.5% |

Function

ECOTIMER M is a 10 to 40 °C floor temperature controller with a timer. It enables one or two heating times a day. Example of one heating time: 6:00 to 22:00 for a living room, Example of two heating times: 6:00 to 9:00 and 17:00 to 22:00 for a bathroom. The reduced heating times with the setback temperature are in between. The set floor temperature is shown as a ramp at the bottom of the display. It can be changed at any time during heating times by pressing the + or - buttons. It is also displayed as a numerical value. The actual room temperature is shown as a numerical value on the display. The setback temperature by which the controller reduces the set floor temperature is programmed once. The timer can be switched off, and this causes the device to constantly regulate the heating temperature (continuous operation).

The M button (=Mode) is pressed to set the following operating modes:

| | |
|-----------------------------|---------------------------------------------------|
| Off | (empty circle shown on left of display) |
| Continuous operation | (circle with centre displayed on left of display) |
| Timer | (clock symbol displayed on left of display) |

Freeze stop is active in all operating modes (also in Off mode) and prevents the floor temperature from going below 5°C.

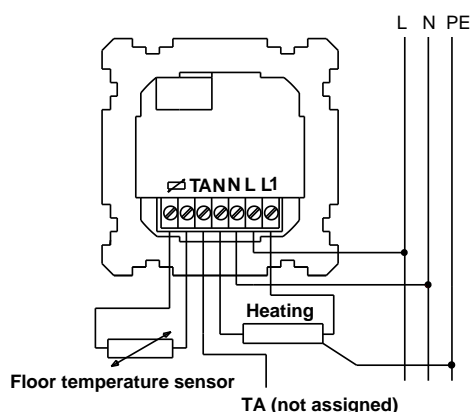
The device has the following factory settings for the timer and the setback temperature:

- Setback temperature** (temperature value by which the set temperature is reduced during the setback time) 3° C
- Start of 1st heating time** 6:00 each day
- End of 1st heating time** 22:00 each day
- No second heating time.**

Simultaneously pressing **M** and **C** resets the device to these factory settings regardless of the current operating mode.

Connecting and commissioning

ATTENTION: Work on the 230 V mains supply must only be carried out by authorised electricians. When connecting the device, the safety regulations of the VDE (German Association for Electrical, Electronic & Information Technologies) and the local utility companies must be observed. "Normally closed" valves are required for controlling hot water heating.



Mounting: The temperature controller is mounted in a standard Ø 55 mm conduit box (to DIN 49073, part 1). When using additional intermediate terminals, use of a deep conduit box is recommended. The device is connected according to the circuit diagram shown. The connection cables must be straight and must be stripped by approx. 5 mm. Mounting height approx. 1.5 m above the floor. Attention! Fit the support ring above the wallpaper and mount the controller on the conduit box using the self-tapping screws. Then place the frame on the conduit box.

Attention: Before pushing on the cover plate, ensure that the internal sensor (bottom left) is pointing diagonally downwards. The sensor should not touch the controller housing. The floor temperature sensor must be laid in a protective tube at heating mat level in the centre between the heating mats. The sensor cable must be laid in a separate protective tube and must not be laid together with the power supply cables

Danger: Avoid electric shock. Be aware that in the event of a fault, the power may be present on the sensor line.

Programming

Programming is always started by entering the time, weekday, and setback temperature. The switch times are then set. Do not start any programming (press button **C** briefly) before 88:88 (flashing) appears in the display. The programming can be cancelled at any point. If, for example, only the time needs to be adjusted for a DST time change, simply set the time and then stop any further programming. If no buttons are pressed for 10 s, the device accepts the new values automatically, leaves all other values and resumes normal operation. The controller operates either in **Block mode** or **Single day mode**. In Block mode, weekdays 1 to 5 (1 = Monday, 2 = Tuesday etc., see numbers on the top of the display) always the same time program, which therefore only has to be entered once. At weekends, days 6 and 7 (Saturday and Sunday) another time program can be entered. Operating in only two blocks considerably reduces the amount of programming required. During commissioning or after a Reset the device always starts in Block mode. The programming is carried out with the buttons **C** (= Control), as well as + and -. If you make a mistake or have lost your overview, wait 10 s and start from the beginning again

1. Block programming

Skip this section if you wish to operate the controller in Single day mode.

Press **C** briefly and set the time using the + and – buttons.

Press **C** briefly and use the + and – buttons to set the weekday (Monday = 1, Tuesday = 2 etc.)

Press **C** briefly and set the setback temperature (factory setting 3° C)

Press **C** briefly and set the start of the 1st heating period **weekdays** (factory setting 06:00)

Press **C** briefly and set the end of the 1st heating period **weekdays** (factory setting 22:00).

Press **C** briefly and set the start of the 2nd heating period **weekdays** (0, if not required).

Press **C** briefly and set the end of the 2nd heating period **weekdays** (0, if not required).

Press **C** briefly and set the start of the 1st heating period **weekend** (factory setting 6:00).

Press **C** briefly and set the end of the 1st heating period **weekend** (factory setting 22:00).

Press **C** briefly and set the start of the 2nd heating period **weekend** (0, if not required).

Press **C** briefly and set the end of the 2nd heating period **weekend** (0, if not required).

This completes the block programming. Pressing **C** once more or simply waiting for 10 seconds will cause the controller to accept the programmed values and resume operation.

2. Single day programming

The controller switches from Block to Single day mode and vice versa by holding down the **M** button for at least 10 seconds. Single day programming is carried out in the same way as for block programming. The individual weekdays are shown as numbers at the top of the display (1 = Monday, 2 = Tuesday etc.).

Press **C** briefly and set the time using the + and – buttons.

Press **C** briefly and use the + and – buttons to set the weekday (Monday = 1, Tuesday = 2 etc.)

Press **C** briefly and set the setback temperature (factory setting 3° C)

Press **C** briefly and set the start of the 1st heating period **Monday** (factory setting 06:00)

Press **C** briefly and set the end of the 1st heating period **Monday** (factory setting 22:00)

Press **C** briefly and set the start of the 2nd heating period **Monday** (factory setting 0:00)

Press **C** briefly and set the end of the 2nd heating period **Monday** (factory setting 0:00)

Press **C** briefly and set the start of the 1st heating period **Tuesday**...

and follow the same procedure for all other weekdays. You can abort programming at any time by simply not making any further settings. Any new settings are accepted whilst everything else is retained, and the controller switches to operation after 10 s.

3. Operating mode

During operation, you can switch seamlessly from **Block mode** to **Single day mode** and vice versa with the programmed values. To do this press the **M** button for at least 10 seconds. Block mode is indicated on the display by showing days 1 to 5 or 6 and 7, whilst only the current weekday is shown in single day mode, e.g. 3 = Wednesday. Other display elements provide you with an overview during programming and operation, see figure. You can reprogram the currently set operating mode at any time. To do this press the **C** button and continue as described above.

Special functions

Party switching: Hold down – and press + briefly to set the device to switch to the heating temperature for 6 hours in all operating modes. The sun symbol and two champagne glasses appear on the display. Repeating this starts the cycle from the beginning. You can stop the party function by holding down the + button and pressing – briefly.

Child lock: Press the + and – buttons simultaneously for at least 10 seconds. The controller will then no longer respond to button actuations. The activation of the child lock is indicated by the flashing point of the actual temperature in the display. To cancel the child lock, press the + and – buttons simultaneously for 10 seconds. The point no longer flashes and all buttons will respond to actuation.

The controller can be used as a **pilot controller (on request)**. For this it passes 230 V to the TA terminal during Setback mode, with a load of 0.2 A. **Satellite controllers** without a timer, as well as bimetal controllers can be connected to the TA terminal and run simultaneously with the master controller in Setback mode.

Reset: This function is normally not required, at worst after a lightning strike or after serious mains faults. This is triggered by pressing the indented button briefly. Programmed values are retained, the time and weekday have to be reset.

Troubleshooting

Diagnostics

Heating not working

Indicated in display:

Circle flashes (left of display)

Controller not responding to set temperature change

Controller not responding to pushbutton actuation

Err 1

Err 2

0.00°C

Controller switching too early/late

Actual temperature too high

Poss. Cause / Solution

- Switch on / check mains supply

- Mains failure

- Device operates in Setback mode

- Child lock active

- Room sensor faulty

- Floor sensor faulty or not connected

- Room temperature 0°C or below

- Check setting in the program

- Check the mounting position of the room sensor

Sensor characteristics

| Temp. °C | Resistance kΩ |
|----------|---------------|
| 10 | 3.66 |
| 20 | 2.43 |
| 30 | 1.66 |
| 40 | 1.15 |
| 50 | 0.82 |



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