



T20

INSTALLATION AND USER MANUAL

1. INTRODUCTION

Read this manual carefully and keep it with other warranty documents. Connection must be carried out by a qualified installer in accordance with local regulations. Before installing or disassembling the thermostat and display, always switch off the electricity in the meter cupboard. This thermostat can be installed in a single fush-mounting box 50 mm deep, according to standard DIN formats.

2. TECHNICAL SPECIFICATIONS

Supply voltage	: 85-265 VAC 50/60 Hz
Load	: max.16 A (resistive load)
Setpoint range	: +5 to +40°C / +41 to +104°F
Temperature range	: +5 to +45°C / +41 to +113°F
Floor sensor type	: NTC B=3740 12k
Cover	: IP21
Approvals	: CE/UKCA
Warranty	: 2 years
Manufacturer	: MHG BV, The Netherlands

3. INSTALLATION

WARNING:
Disconnect the main power supply before wiring. Installation needs to be done by a qualified electrician in accordance with all current wiring and building regulations. 2.Electric floor heating cable/ mat must be in accordance with the supply voltage. The terminals are designed to handle a cross-section of wire measuring 12-22AWG.

1

Make sure the power is turned off. Remove the display frame by gently pulling it.

2

Connection schedule:

L/N: Mains power connection
HEATING N1+ L1: Heating cable (Max. 16A)
FLOOR SENSOR: Floor sensor
PILOT: Connection for pilot wire fuction

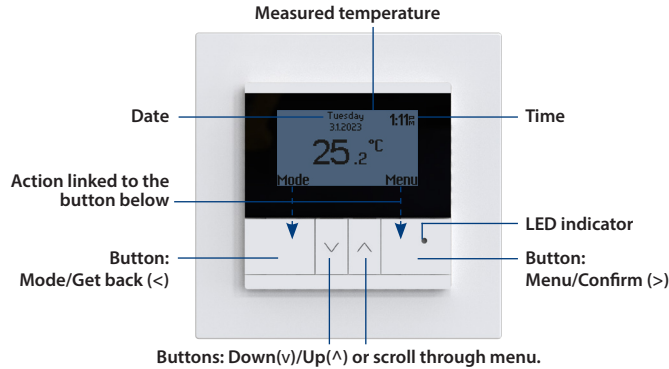
3

Position the thermostat and install onto the back box (not supplied).

4

Place the outer frame and display frame back into position by pushing it softly.

4. OPERATION AND LED



KEY OPERATION

Middle buttons:

- Adjustment up and down.
- To scroll through settings.

Left button:

Go straight to Mode functions (Point 6)

- To get back to last screen or main screen.
- Action linked to the icon above.

(Always go back to the main screen after making changes).

Right button:

Go straight to Menu settings (Point 7)

- Action linked to the icon above.
- Select an option or confirming a choice.

EXPLANATION OF LED COLOURS / SIGNALS

Red	: Heating
Green	: System operation (standard or Costum)
Red light flashing	: Sensor fault

5. START UP WIZARD

1. LANGUAGE

Choose your language.

2. UNITS

Clock:
12 (am/pm) or 24 hour clock time.

Temperature:
°C or °F scale.

3. DATE

Year:
Set current year.

Month:
Set current month.

Day number:
Set current day.

4. TIME

Set the current time

5. INTELLIGENCE

This function enables the thermostat to calculate when it needs to switch on so that the required temperature is reached at the set time (see point 7.7.3).

6. HEATING SYSTEM

Floor heating or different heating system. If you choose a different heating system the question will be whether the system needs to function on the internal room sensor or external sensor.

7. SURFACE

Floor heating:
Wood or other surface.

Other heating:
Is there is a floor sensor installed?

8. SENSOR

Floor or room sensor.
If you choose floor heating, we advise you to control the floor temperature by using the floor sensor.

9. SUMMARY

Summary of the current settings.

10. TEMPERATURE

Program desired temperature for a heating period. Standard temperature is pre-programmed at 23°C

11. OVERVIEW

Containing the selected heating periods according the standard program.

12. SLOW HEATING

Explanation of this option: Mode selection point 6.7.

6. MODE SELECTION

To choose a mode: Press “MODE”
Use “^” or “v” to scroll through the options.
Select an option by pressing the right button “>”

6.1. AUTOMATIC MODE

According to the weekly program, the thermostat automatically adjusts the set temperature operation.

6.2. TEMPORARY TEMPERATURE

To temporarily override the temperature in the automatic program. The override will operate until the next automatic event.

6.3. MANUAL MODE

The thermostat runs continuously according to the set temperature.

6.4. OFF

Manually turn off all functions of the thermostat. When you want to reactivate the thermostat, just select the mode you want.

6.5. ANTI-FROST MODE

Range is set from 5°C -15°C (41°F to 59°F) in this mode. This mode is used when you want to keep your room at a lower temperature when you are on vacation.

6.6. TIMER

Use this mode when you are on holidays etc.The thermostat will be off for the chosen period. After this period, the thermostat will return to the standard or the custom time settings.

6.7. SLOW HEATING

To be used for new floors only. The thermostat will slowly raise the temperature of the floor over a 20 day period. After this period the thermostat automatically starts the standard or the custom time programme. If you need to stop or restart the slow start up mode, press the left button.

7. MENU SELECTION (LEFT BUTTON)

To choose one of the items: Press “MENU”
Use “^” or “v” to scroll through the options.
Select an option by pressing the right button “>”

7.1. TEMPERATURE SETTINGS:

You can change the programmed temperature (comfort or set-back).

Attention: In the case of floor heating, it is not necessary to program the setback temperature. The setback temperature is controlled by the thermostat automatically.

7.2. PROGRAMMING:

The standard comfort temperature and times can be changed here.

Standard	Monday to Sunday	Temperature
Period 1	06:00-09:00	23°C
Period 2	17:00-22:00	23°C

Set the thermostat into “custom” program mode:

1. Press the right button (“MENU”) and select the function ‘program’.
2. You enter the screen with the schedule.
3. Press “v” and press the pencil symbol with the right key “>”
4. Change the option ‘Standard’ into option ‘Custom’ and confirm with “>”.
5. Go back by pressing the left “<” button.

When in “custom” program mode:

1. Press “MENU” and select the function “Program”. You enter the screen with the schedule.
2. Press the pencil symbol with the right key “>”
3. Choose a day to costumize and confirm the right key “>”.
4. Choose “Set” and confirmwith the right key “>”.
5. Choose 1 or 2 heating periods per day.
6. Enter the “P1 Start time” (Hours first then minutes).
7. Enter the “P1 End time” (Hours first then minutes).
8. Set the desired temperature.
9. Repeat this with the period 2.

Copy/Paste to other day's:

Simply select the day you want to copy and choose “Copy”.
Go to any other day and choose “Paste”.

7.3. CONSUMPTION

The thermostat calculates the average time it has been switched on allowing you to monitor your energy consumption. The total switched on time is by percentage (%) shown over the last 30 and 365 days.

Calculation:
30 days: 24 hours x 30 days x total installed power x % = Consumption.
365 days: 24 hours x 365 days x total installed power x % = Consumption

Example: The thermostat gives a percentage of 26% over 30days, and the power installed in the floor is 700 Watt.
24 hours x 30 days = 720 hours.
720 hours x 0.7 kW = **504 kWh**.

7.4. CHILD LOCK

The thermostat is locked with this function. Mode and menu settings cannot be used. To switch the child lock function on or off, push the right key and hold it for a few seconds. When the child lock is switched on, a padlock appears on the display.

7.5. INFORMATION

Gives information about the current software and hardware version of the thermostat.

7.6.SETTINGS

With this function you can change settings related with the operating of the thermostat. The following options can be changed:
Date and time: Summer and winter time change automatically.
Language: Choose your language .
Contrast: Display contrast: 0-20.
Brightness: Display brightness: 0-10.
Back light delay: Can be adjusted from 0 till 250 seconds. (0 =always on)
LED info: When it is switched on, it indicates the current heating period.
Temp unit: Celsius or Fahrenheit.

7.7.ADVANCED FUNCTIONS

WARNING: The thermostat provides advanced settings to suit a range of special situations. Settings in this menu may only be adjusted in consultation with the supplier in order to avoid undesired results.

7.7.1. Heating system:

- 1. Type of heating system (floor heating or other heating)
- 2. Surface material: wood or other
- 3. Temperature to control: floor or room

7.7.2. Calibration:

A correction can be made here on the temperature in the display and the measured room temperature. Consult your supplier before changing calibration setting. Setpoint range: ±5°C.

7.7.3. Intelligence:

Switch the intelligent function on or off. The thermostat has a self thinking and adaptive system. This function enables the thermostat to calculate when it needs to switch on so that the required temperature is reached at the set time. (i.e. if the set time is 08:00, the thermostat will switch on earlier so that the set temperature is reached at 08:00).

7.7.4. Difference:

Example: Set the value to 1°C. The difference between switch on and off period during heating time. The thermostat starts when the room temperature is 1°C lower than set temperature and stops when the room temperature is 1°C higher than the set temperature.

7.7.5. Pilot wire:

Can be used to operate the thermostat through an external source. This can be a central source or a smart home system. This function can be turned on or off.

7.7.6. Sensor type:

Gives the possibility to adjust the sensor value. This is not required in a standard situation. Consult your supplier before changing sensor type.

7.7.7. Open window:

This function only works when room sensor or both sensors is selected. The thermostat with this function will shut off automatically for 15 min when the window opens, as it can detect that the room temp plummets.

7.7.8. Factory defaults:

All parameters are restored to default value. You need to right-click and hold down for 5 seconds to perform this operation.

8. EXPLANATION OF TEXT / SYMBOLS

	Comfort period
	Limited floor temperature achieved (28°C) (See 8.1)
	Child lock activated
	Electrical use for heating
	Set back: Standard set back temperature (pilot wire) (See 8.2)
	Set back: Anti frost + 7°C (pilot wire)

8.1. Floor temperature limiter.

Some floor coverings must be limited at a certain maximum temperature (for example wooden floors). When the option ‘Wooden’ is selected (in the start up wizard), the floor will not exceed 28°C.

8.2. Set back mode.

The setback mode is when the thermostat ‘sets back’ to a lower temperature during the off time periods. This is the most economical and efficient way to achieve the best energy consumption.

9. WIFI CONNECTION

