Control System THETA

Operating Instructions
Room control unit RSC and RSC-OT
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PROGRAMMING LEVEL

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General operation
Operating instruments

- Heating and set back programs
- Setting heating characteristic
- Displaying heating plant information
- LCD-display
- Setting daytime temperature
- Setting reduced temperature
- Setting domestic hot water temperature
- Rotary-push button
The center-positioned rotary-push button and the labeled keys guarantee a simple and easy operation. It is however recommended to read this manual attentively to be informed about the repeating steps.

- Each value in the display appears flashing and can be modified with the rotary-push button.
  A flashing display is appropriately marked in this manual.
  - Turn to the right (+): Increase values
  - Turn to the left (-): Decrease values
- Press once: Acceptance of the selected and indicated value, store.
- Keep pressed: Entry into the programming level (level selection),

The last operation step will be stored automatically after approx. 60 seconds if it was not stored by means of the rotary-push button.

Start-up
In case of initiation of the plant or after every power failure a display test of the large display is carried out with automatic error diagnosis. At that all available segments and symbols will be displayed.

Language selection
In case of first initiation the desired language can be chosen after the display test. The languages D (German), GB (English), F (French) and I (Italian) can be selected.

Note: This display appears after every restart on day of first initiation until midnight. After that the language can only be changed in the level SYSTEM - parameter LANGUAGE.
Device identification

After the display test and/or the language selection the device identification momentarily appears with device type, interface and the corresponding number of software version.

Basic display

Provided that there is not any error message, the basic display indicates the date, time, heating mode (\(\bigstar = \) daytime temperature, \(\bigcirc = \) reduced set back temperature) as well as the current boiler temperature or, if released, the room temperature. Response time program. The cursor below (\(\_\)) indicates the current operating mode (see function of operating modes). The upper time bar shows the heating periods and the corresponding operating times of the current weekday.

Standard display

An activated summer switch-off is represented in the basic display by a sunshade symbol (\(\bigcirc\)). The heating mode symbols \(\bigstar\) or \(\bigcirc\) will be suppressed during an activated summer switch-off.

Standard display

With acting frost protection function an ice crystal symbol appears in the basic display (\(\bigstar\)).
Temperature settings

This button is used to set the required daytime room temperature

This button is used to set the required setback room temperature

This button is used to set the required domestic hot water temperature

Adjustment (standard display mode only):
After pressing the button for the required temperature the current value appears flashing and can be adjusted directly with the rotary pushbutton.

Re-entry into the standard display is done by pressing the rotary-push button or the corresponding temperature button or automatically after approx. 60 seconds.
Operational mode selection for heating and hot water

With this button the required operational mode is selected. It appears in plaintext on the display, simultaneously a cursor at the lower edge of the display points to the appertaining program symbol.

Select: Pressing the button \( \text{G162} \), the previously selected operational mode appears flashing. The other operational modes can be selected and activated with the rotary-push button according to the following scheme.

Entry into the previously selected heating operation mode

Select required operational mode

set date or time

accept, activate

activate, re-entry to standard display

Plant off during holiday
Interrupt heating operation
Extend heating operation
Heating operation via timer
Domestic hot water only
Permanent heating operation
Permanent red. heating operation
Plant off frost protection

Note: This mode is skipped in case of separate selection (see »Function of operating modes« and »Level SYSTEM - parameter CONTROL MODE«)
### Functions of operational modes

<table>
<thead>
<tr>
<th>Plant off during holiday</th>
<th>Interrupt heating operation</th>
<th>Extend heating operation</th>
<th>Heating operation via timer</th>
<th>Domestic hot water only</th>
<th>Permanent heating operation</th>
<th>Permanent reduced heating operation</th>
<th>Plant off frost protection</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>HOLIDAY TIL</strong> 1927 24.09°</td>
<td><strong>ABSENT TIL</strong> 1027 19.30°</td>
<td><strong>PARTY TIL</strong> 1927 02.27°</td>
<td><strong>MO. 22.AUG ’05</strong> 1927 56.5°</td>
<td><strong>SUMMER</strong> 1927 24.0°</td>
<td><strong>HEATING</strong> 1927 72.0°</td>
<td><strong>RED HEATING</strong> 1927 45.0°</td>
<td><strong>STANDBY</strong> 1927 19.0°</td>
</tr>
</tbody>
</table>

**Setting range:**
- Actural date...actual date + 250 days

Return to the previously selected operational mode at 0.00 o’clock of the set return date.

**Hot water operation is set to frost protection temperature of 5 °C.**

**Earlier termination:**
- Press button [G162/G162], select required operational mode with rotary-push button and press again to activate.

**Operating times:**
- (see level TIME PROGRAMS)

Heating and domestic hot water operation according to settings of temperature values (see Temperature settings) and selected operating times program. The heating operation is interrupted and frost protected.

**Programming of individual operating times:**
- See level TIME PROGRAMS.

**Permanent reduced heating and reduced hot water operation round the clock according to the settings of set back temperature (see Temperature settings), reduced heating mode (see level UNMIXED CIRCUIT) and hot water economic temperature (see level DHW).**

**Permanent reduced heating and reduced hot water operation round the clock according to the settings of daytime room temperature and domestic hot water temperature (see Temperature settings).**

**Permanent heating and reduced hot water operation round the clock according to the settings of daytime room temperature and domestic hot water temperature (see Temperature settings).**

**Heating and hot water plant completely switched off except for frost protection mode.**
Quick operational mode selection

**Manual hot water loading**
To activate manual hot water loading outside of operation times the button /G167/G167 has to be pressed for about 3 seconds. This turns on hot water preparation at any time for a period which may be adjusted with the rotary pushbutton between 0...240 minutes. Pushing the rotary pushbutton activates loading. Afterwards the controller returns to program operation.

At adjustment 0.0 the loading is independent of any time period. The tank will be loaded up to the set DHW-temperature value once.

**Short-time operational modes**
Frequently used operating modes such as PARTY or ABSENT or reloading the hot water tank during set back mode can be selected quickly according to the left scheme.

**Direct automatic mode**
Pressing button /G162/G162 for approx. 3 seconds activates the automatic mode via timer inevitably. Functions and setting range see Operational mode selection for heating and hot water - Function of operational modes.

**Manual hot water loading**
To activate manual hot water loading outside of operation times the button /G167/G167 has to be pressed for about 3 seconds. This turns on hot water preparation at any time for a period which may be adjusted with the rotary pushbutton between 0...240 minutes. Pushing the rotary pushbutton activates loading. Afterwards the controller returns to program operation.

At adjustment 0.0 the loading is independent of any time period. The tank will be loaded up to the set DHW-temperature value once.
Setting the heating characteristics (heating curve)

This button regulates the heating characteristics of the heating circuit in relation to outdoor temperature.

The adjustment is dependent of the plant installation and shows the relation between outdoor temperature and heat generator (boiler) temperature.

The slope sets the change of the supply temperature, if the outdoor temperature changes for 1 K.

Diagram of heating curves

Re-entry into the standard display is done by pressing the button again or automatically after approx. 60 seconds.

Note: The heating slope should be modified only in small steps and left for a while until steady condition can be obtained. Changes to the slope should be made in intervals of 0.1 every 1 or 2 days.
This button displays all plant temperatures and states of all circuits. The information can be requested according to the direction with the rotary-push button.

**Turning rotary-push button clockwise**
- displays from all plant-specific temperatures
- the actual values and
- the nominal values (pressing rotary-push button)
- meter readings such as consumption data etc.

**Turning rotary-push button anti-clockwise**
- operational mode (holiday, absence, party, auto etc.)
- timer programm P1 (P2 and P3 only when released)
- heating mode (daytime-, reduced-, ECO-mode)
- identification (direct circuit HC, hot water circuit DHW)
- status of heating- and DHW charging pump (on, off)
- operating status (on, off)
- number of service hours
- number of starts
of heat generator, boiler etc.

shows

- room thermostat function (heating on, off)
- current room temperature
if room sensor is activated

shows

- water pressure
if pressure sensor is present

1) display dependent on the type of heat generator
2) will be displayed only if the room sensor was activated before
Programming level - Level summary
Schematic block diagram

Entry into the level selection press knob for approx. 5 seconds

Select
Level
Entry:

TIME-DATE
TIMEPROGRAMS
SYSTEM
DOMESTIC HOT WATER (DHW)
UNMIXED HEATING CIRCUIT

TIME
SELECT CIRCUIT
HC (Heating)
DHW (Hot water)
WEEKDAY (Mo-Su)
Heating cycle (1...3)
Copying function

EVENTS
TIME
YEAR
WEEKDAY (Mo-Su)
Heating cycle (1...3)
TIME PROGRAM P1-P3
LEGIONELLA PROTECTION
DAY 1-7)

TIME
YEAR
WEEKDAY (Mo-Su)
Heating cycle (1...3)
TIME PROGRAM P1-P3
LEGIONELLA PROTECTION
DAY 1-7)

TIME
YEAR
WEEKDAY (Mo-Su)
Heating cycle (1...3)
TIME PROGRAM P1-P3
LEGIONELLA PROTECTION
DAY 1-7)

TIME
YEAR
WEEKDAY (Mo-Su)
Heating cycle (1...3)
TIME PROGRAM P1-P3
LEGIONELLA PROTECTION
DAY 1-7)

TIME
YEAR
WEEKDAY (Mo-Su)
Heating cycle (1...3)
TIME PROGRAM P1-P3
LEGIONELLA PROTECTION
DAY 1-7)

TIME
YEAR
WEEKDAY (Mo-Su)
Heating cycle (1...3)
TIME PROGRAM P1-P3
LEGIONELLA PROTECTION
DAY 1-7)

TIME
YEAR
WEEKDAY (Mo-Su)
Heating cycle (1...3)
TIME PROGRAM P1-P3
LEGIONELLA PROTECTION
DAY 1-7)

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YEAR
WEEKDAY (Mo-Su)
Heating cycle (1...3)
TIME PROGRAM P1-P3
LEGIONELLA PROTECTION
DAY 1-7)

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WEEKDAY (Mo-Su)
Heating cycle (1...3)
TIME PROGRAM P1-P3
LEGIONELLA PROTECTION
DAY 1-7)

TIME
YEAR
WEEKDAY (Mo-Su)
Heating cycle (1...3)
TIME PROGRAM P1-P3
LEGIONELLA PROTECTION
DAY 1-7)

TIME
YEAR
WEEKDAY (Mo-Su)
Heating cycle (1...3)
TIME PROGRAM P1-P3
LEGIONELLA PROTECTION
DAY 1-7)

TIME
YEAR
WEEKDAY (Mo-Su)
Heating cycle (1...3)
TIME PROGRAM P1-P3
LEGIONELLA PROTECTION
DAY 1-7)

TIME
YEAR
WEEKDAY (Mo-Su)
Heating cycle (1...3)
TIME PROGRAM P1-P3
LEGIONELLA PROTECTION
DAY 1-7)

TIME
YEAR
WEEKDAY (Mo-Su)
Heating cycle (1...3)
TIME PROGRAM P1-P3
LEGIONELLA PROTECTION
DAY 1-7)

TIME
YEAR
WEEKDAY (Mo-Su)
Heating cycle (1...3)
TIME PROGRAM P1-P3
LEGIONELLA PROTECTION
DAY 1-7)

TIME
YEAR
WEEKDAY (Mo-Su)
Heating cycle (1...3)
TIME PROGRAM P1-P3
LEGIONELLA PROTECTION
DAY 1-7)
Selection and modification of parameters and setting values

Entering into the programming level, principally the operating times level (TIME PROGRAMS) appears at first. All other levels, such as
- SYSTEM
- DHW
- UNMIXED CIRCUIT
- DATE-TIME
can be selected directly via rotary-push button

By pressing the rotary-push button, the selected flashing level is activated; the first value resp. parameter appears flashing. If necessary, it can be modified via the rotary-push button and accepted by pressing again. If necessary, the following parameters can be treated in the same way.

Re-entry into the level selection is done via the info button \( \square \), re-entry into the standard display via the program-selection button \( \square \) or automatically after approx. 60 seconds.
**Programming of operating times**

With this mode of operation individual programs, other than standard programs for heating and hot-water mode can be set up. For this purpose after selecting the heating- resp. hot-water circuit the factory preset standard program (P1) is called and can be overwritten individually.

For programming the operation times, for each week day maximum three heating cycles with one switch-on and switch-off time each are available. Furthermore, the heating- resp. hot-water cycle can be combined with a required room temperature resp. hot-water temperature for the duration of the cycle.

- **Press for approx. 3 seconds**
- **Enter operating times level**
- **Select heating circuit**
  - For example unmixed heating circuit HC
- **Select program P1...P3, if released**
Select ( ) day and cycle
For example Tuesday - heating cycle 1
accept

Modify ( ) switching-on time
Setting range: 0.00...24.00 h
accept

Modify ( ) switching-off time
Setting range: 0.00...24.00 h
accept

Modify ( ) temperature
For heating circuit: Room temperature
Setting range: 5.0...30.0 °C
For hot-water circuit: Hot-water temperature
Setting range: 10.0...80.0 °C (resp. DHW-max)
accept

Note: The 3rd heating cycle is skipped if the 2nd heating cycle does not include any operating times.

Modify - Exit:
Confirm the selected flashing value by pressing the rotary-push button. Then set the new required value and take over by pressing the rotary-push button again.

Re-entry into the former step is done by pressing the button , exit into the standard display via the button or automatically after approx. 60 seconds.
Copy operating times

Programming of operating times includes an extensive copying function which allows to copy any day of the week to other days (Mo..Su) resp. to the whole week (1-7) or parts of a week such as workdays (1-5) or weekends (6-7).

Select

Push for approx. 3 seconds

Enter operating times level

accept

Select heating circuit

For example unmixed heating circuit HC

accept

select program P1...P3, if available

Select copy function

Standard display

06:00-22:00

M0-1-  20.0° C
Select ( ) source
Example: Monday
accept

Select ( ) first destination
Example: Monday to Friday

Copy

Confirmation
Source and destination are identical

Select ( ) next destination
Example: Saturday and Sunday
etc..

Setting range: Monday (MO) ... Sunday (SU)

Setting range:
- Days (MO...SU), whole week (1-7),
- Working days (1-5), weekend (6-7)

/G67/G67/G79/G79/G80/G80/G89/G89

Select next destination
Example: Monday to Friday

Modify - Exit:
Confirm the selected flashing value by pressing the rotary-push button. Then set the new required value and take over by pressing the rotary-push button again.

Re-entry into the former step is done by pressing the button 1, exit into the standard display via the button 2 or automatically after approx. 60 seconds.
Reloading of standard time programs - deleting of individual time programs

The standard programs do not get lost by overwriting with individual programs. Individual programs however are cancelled at a later call of the corresponding standard programs and have to be set up again. For this purpose individual switching-on and switching-off times should always be noted (see level TIME PROGRAMS - table for individual programs).

**Modify - Exit:**

Confirm the selected flashing value by pressing the rotary-push button. Then set the new required value and take over by pressing the rotary-push button again.

Re-entry into the former step is done by pressing the button \( \text{G}^{164} \), exit into the standard display via the button \( \text{G}^{162} \) or automatically after approx. 60 seconds.

Select **default time**

Select **heating circuit**

For example unmixed heating circuit HC
Standard time programs

Standard operating-times program P1

<table>
<thead>
<tr>
<th>Circuit</th>
<th>Day</th>
<th>Heating from...to</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unmixed heating circuit (HC)</td>
<td>Mo-Su</td>
<td>06.00 - 22.00 h</td>
</tr>
<tr>
<td>Domestic hot water (DHW)</td>
<td>Mo-Su</td>
<td>05.00 - 22.00 h</td>
</tr>
</tbody>
</table>

Standard operating-times program P1 ¹)

<table>
<thead>
<tr>
<th>Circuit</th>
<th>Day</th>
<th>Heating from...to</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unmixed heating circuit (HC)</td>
<td>Mo-Th</td>
<td>06.00-08.00 16.00-22.00h</td>
</tr>
<tr>
<td>Fr</td>
<td>06.00-08.00 13.00-22.00h</td>
<td></td>
</tr>
<tr>
<td>Sa-Su</td>
<td>07.00-23.00h</td>
<td></td>
</tr>
<tr>
<td>Domestic hot water (DHW)</td>
<td>Mo-Th</td>
<td>05.00-08.00 15.30-22.00h</td>
</tr>
<tr>
<td>Fr</td>
<td>05.00-08.00 12.30-22.00h</td>
<td></td>
</tr>
<tr>
<td>Sa-Su</td>
<td>06.00-23.00h</td>
<td></td>
</tr>
</tbody>
</table>

Standard operating-times program P3 ¹)

<table>
<thead>
<tr>
<th>Circuit</th>
<th>Day</th>
<th>Heating from...to</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unmixed heating circuit (HC)</td>
<td>Mo-Fr</td>
<td>07.00-18.00 h</td>
</tr>
<tr>
<td>reduced heating</td>
<td>Sa-Su</td>
<td>reduced heating</td>
</tr>
<tr>
<td>Domestic hot water (DHW)</td>
<td>Mo-Fr</td>
<td>06.00-18.00 h</td>
</tr>
<tr>
<td>reduced heating</td>
<td>Sa-Su</td>
<td>reduced heating</td>
</tr>
</tbody>
</table>

¹) see level SYSTEM - parameter PROGRAM

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## Table for individual operating times and programs

<table>
<thead>
<tr>
<th>Day</th>
<th>Unmixed heating circuit (HC)</th>
<th>Domestic hot-water circuit (DHW)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1&lt;sup&gt;st&lt;/sup&gt; cycle</td>
<td>2&lt;sup&gt;nd&lt;/sup&gt; cycle</td>
</tr>
<tr>
<td>Mon</td>
<td>From</td>
<td>till</td>
</tr>
<tr>
<td>Tue</td>
<td>From</td>
<td>till</td>
</tr>
<tr>
<td>Wed</td>
<td>From</td>
<td>till</td>
</tr>
<tr>
<td>Thu</td>
<td>From</td>
<td>till</td>
</tr>
<tr>
<td>Fri</td>
<td>From</td>
<td>till</td>
</tr>
<tr>
<td>Sat</td>
<td>From</td>
<td>till</td>
</tr>
<tr>
<td>Sun</td>
<td>From</td>
<td>till</td>
</tr>
</tbody>
</table>
TIME-DATE

Entry:

Current time
Setting range: 0.00 . . . 24.00 h

Calender year
Setting range: 2001 . . . 2099

Calender day-month-weekday
Setting range: 01.01 . . . 31.12.
Weekday is set automatically

Time changeover mode
Setting range:
Automatic: last Sunday in March & Oct.
Manual: no time reset

Entry: see » Programming level - Level summary « .
Exit: via button \( \boxed{\text{G162}} \) or automatically after 60 seconds
Modify: Confirm selected flashing parameter by pressing the rotary-push button. Then set the new required value via and accept by pressing the rotary-push button again. If necessary, correct the following parameters in the same way.

The values to the left are factory presets and normally need not be updated. If in some exceptional cases corrections should be necessary, the values can be adapted to the real conditions.

The internal pre-programmed calender provides an automatic time changeover at the yearly repeating summer-wintertime dates.
If required, the automatic time changeover can be switched off (manual reset).
**SYSTEM**

This level includes general delimiting parameters and options referring to the corresponding heating system

**Language**

Setting range:  
D = GERMAN  
GB = ENGLISH  
F = FRENCH  
I = ITALIAN  

Factory preset: D

All information appearing on the display are available in the languages German, English, French and Italian. After entry as first parameter appears the language selection. The required language can be selected and accepted according to the above assignment.

**Operating times program**

Setting range: P1, P1-P3  
Factory preset: P1

This parameter specifies the number of the released time programs. With setting P1 only one operating-times program is available, with setting P1-P3 all three programs are released and can be selected for programming operating times.

**Entry:** see » Programming level - Level summary «.

**Exit:** via button or automatically after 60 seconds

**Modify:** Confirm selected flashing parameter by pressing the rotary-push button. Then set the new required value via and accept by pressing the rotary-push button again. If necessary, correct the following parameters in the same way.

**Application:** Use of the instrument at the corresponding language area.

**Application:** Shift work, different programs for summer, transition period, winter etc.
**Control mode**

Setting range: 1 = common mode 2 = separated mode  
Factory preset: 1

**Common control mode:**  
The selected operational mode (via button for Holiday, Absence, Party, Automatic etc.) applies to the heating circuit and to the hot-water circuit together.

**Separated control mode:**  
The heating- and hot-water circuit can be assigned with own operational mode.

**Application:** Objects with uniform seizure character (One-family houses etc).

**Application:** Objects with different use of heating and hot-water (for example heating operation in Holiday mode, hot-water permanently in reduced mode).

*Further operation see »Operational mode selection for heating and hot water« and »Temperature settings«*
**Summer switch-off**

Setting range: OFF, 10.0 to 30.0 °C  
Factory preset: 20.0 °C

This parameter specifies the heating delimiting value regarding the average resp. current outdoor temperature and puts the heating plant automatically out of service as soon as the outdoor temperature exceeds the set heating delimiting value. During summer switch-off the pump of the heating circuit is activated each day for approx. 10 seconds to protect it against corrosion.

With setting OFF the summer switch-off is not effective. Hot water preparation is not affected by summer switch-off.

**Note:** The active summer switch-off appears on the standard display with a sunshade symbol.

**Application:** All objects which do not require a heating operation during summertime

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**Parameter-reset**

This function resets all individually entered values in the programming level to factory preset.

**Exception:** Time-date, operating times

**Reset:** Press rotary-push button for approx. 5 sec. while indication SET is flashing, until standard display appears.

**Important:** Reset may only be executed if all individually entered values shall be replaced by the factory preset values!
DOMESTIC HOT WATER

This level includes the necessary parameters for programming the hot-water circuit except the hot-water operating-times.

**Hot-water economic temperature**
Setting range: 10.0 °C up to the required hot water temperature
Factory preset: 40.0 °C

This parameter determines the amount of the reduced hot-water temperature outside the hot-water operating times (between the hot-water cycles) as well as in the operational mode ABSENCE for the duration of absence.

**Legionella protection (day)**
Setting range: OFF, MO...SU, ALL
Factory preset: OFF

The legionella protection serves to avoid a legionella infestation inside the hot-water tank and is activated on the selected weekday (Mon to Sun) or every day at 2:00 o’clock. If the hot-water temperature should drop below 65 °C, the tank is reloaded. With setting OFF this function is not effective.

**Entry:** see » Programming level - Level summary « .
**Exit:** via button or automatically after 60 seconds
**Modify:** Confirm selected flashing parameter by pressing the rotary-push button. Then set the new required value via and accept by pressing the rotary-push button again. If necessary, correct the following parameters in the same way.

**Application:** Base temperature inside the hot-water tank in order to avoid a cooling down of the tank.
**Note:** This parameter is skipped if a hot-water thermostat is used instead of an electronic hot-water sensor.

**Note:** Other legionella protection times can be regulated exclusively by the heating plant specialist.

**Important:** Danger of scalding! Use thermostatic mixing valve on DHW outlet.
Unmixed heating circuit (direct circuit)

This level includes the parameters required for programming the heating circuit with the exception of the related operating-times programs.

Entry: see » Programming level - Level summary « .
Exit: via button or automatically after 60 seconds
Modify: Confirm selected flashing parameter by pressing the rotary-push button. Then set the new required value via and accept by pressing the rotary-push button again. If necessary, correct the following parameters in the same way.

Reduced heating mode

Setting range: ECO, ABS
Factory preset: ECO

During the reduced operation the following modes can be selected:
ECO mode: At outdoor temperatures above the set plant frost protection the heating circuit is switched off completely. At temperatures below frost protection the heating circuit is controlled with reduced heating characteristic according to the required reduced temperature (see »Temperature setting« ).
RED mode: During the reduced mode the heating circuit pump remains activated. The heating circuit is controlled according to the reduced heating characteristic, the temperature does not drop below the set minimum temperature value.

Application: Objects with high insulation values

Application: Objects with low insulation values
Adaptation to the heating system

Setting range: 1,00 to 10.0
Factory preset: 1,30

This parameter refers to the type of the heating system inside the heating circuit and has to be adapted to the exponents of the corresponding consumer (underfloor-radiator-convector). The setting value specifies the curvature of the heating curve of the weather dependent heating circuit and compensates the system-related efficiency losses at the lower temperature range by a progressive heating curve in conformity with the adjustment.

Applications:
The following setting values are recommended for the below-mentioned applications

<table>
<thead>
<tr>
<th>Setting value</th>
<th>Application</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.00 ... 1.10</td>
<td>Heating curve for underfloor heating systems or other static heating surfaces</td>
</tr>
<tr>
<td>1.30 ... 2.20</td>
<td>Normal standard heating curves for radiators</td>
</tr>
<tr>
<td>3.00 ... 4.00</td>
<td>Heating curves for convectors</td>
</tr>
<tr>
<td>4.00 ... 10.0</td>
<td>Special heating curves for ventilators with high starting temperatures</td>
</tr>
</tbody>
</table>
Example for error message »sensor«
(short or open circuit)
Error code 10...20

Example for error message »heat generator«
(flue gas temperature exceeded)
Error code 30...40... ¹)

Example for logical error messages
(control functions)
Error code 50...60

Example for error message »data bus«
(address error)
Error code 70

¹) For these error messages the error codes of the heat generator in the corresponding installation manuals have to be considered.

The instrument is equipped with an extensive error diagnostic features. The error displayed takes priority over other displays and varies dependent on the model in question.

For error messages from burner control (ERROR Xn:m) the error codes in the corresponding installation manuals have to be considered.

**Note:** Error messages only appear alternating with the standard display.

**In case of error messages the heating specialist always has to be informed!**
Personal notes
Technical specification

Supply voltage: Via data bus (DC-safety voltage by EN 60730)
Power consumption: 300 mW
Bus interface: T2B or OpenTherm according to model
Ambient temperature: 0...60 °C
Storage temperature: -25...60 °C
Protection type acc. to EN 60529: IP 30
Protection class acc. to EN 60730: III
Approval according to: VDE 60730
Casing dimensions (BxHxD): 90 x 138 x 28 mm
Casing material: ABS, antistatic
Electrical connections: 2-wire mode with plugable connection
Recommended cable: J-Y(St)Y 2 x 2 x 0.6 mm²
Max. length of cable: 50 m
Data and timer back up: Min. 5 years from date of delivery
Accuracy of the internal clock: ± 2s/day
Weight: Approx. 150 g