Control System **THE**TA

Operating Instructions
Room control unit RSC and RSC-OT

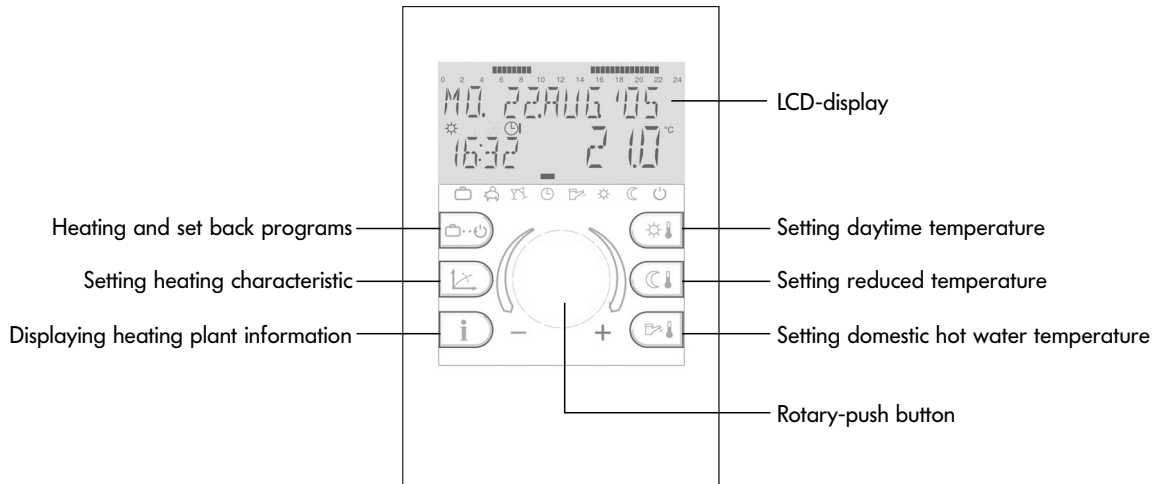# Table of contents

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PROGRAMMING LEVEL

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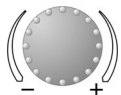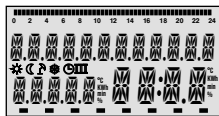
Operation

Symbolism used in this manual:

Turn: select parameters, change values

Press once: confirm, store

Display test

Language selection

Country code

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
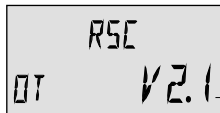
```
  RSC
OT    V2.1
```
Device identification
Interface and software version

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

Basic display

```
0 2 4 6 8 10 12 14 16 18 20 22 24
MO. 22.AUG. '05
☼
 16:32    62.5 ℃
```
— Heating cycles

Standard display
Actual boiler temperature resp. room temperature

Provided that there is not any error message, the basic display indicates the date, time, heating mode (☼ = daytime temperature , ℂ = 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.

```
0 2 4 6 8 10 12 14 16 18 20 22 24
MO. 22.AUG. '05
 16:32    22.5 ℃
```
Standard display
Summer switching-off activated

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

```
0 2 4 6 8 10 12 14 16 18 20 22 24
MO. 22.AUG. '05
❄
 16:32    22.5 ℃
```
Standard display
Frost protection activated

With acting frost protection function an ice crystal symbol appears in the basic display (❄).

Temperature settings

Required daytime room temperature	Required set back room temperature	Domestic hot water temperature

set

temperature

accept

ROOM-DAY	ROOM-NIGHT	DHW
20.0℃	16.0℃	DAY 50.0℃

Setting range: 5.0...30℃
Factorypreset: 20℃

Setting range: 5.0...30℃
Factory preset: 16℃

Setting range: 10...80℃
Factory preset: 50℃
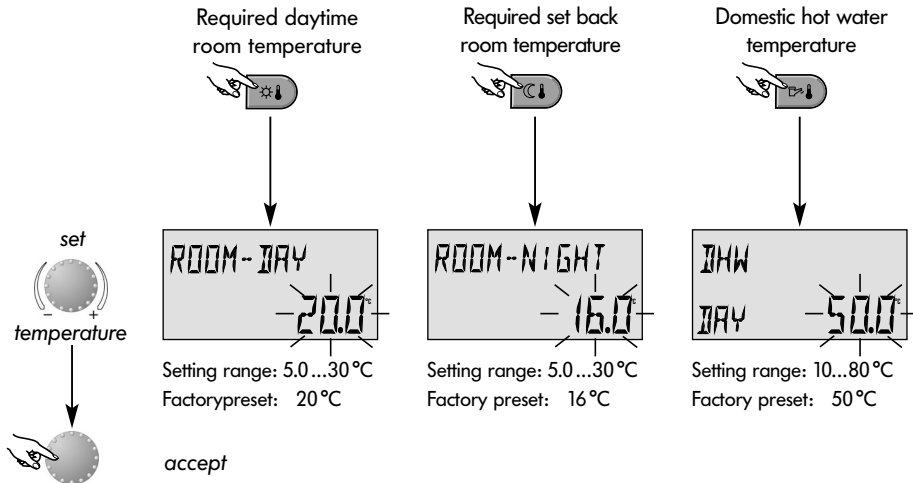
This button is used to set the required daytime room temperature

This button is used to set the required set back 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.
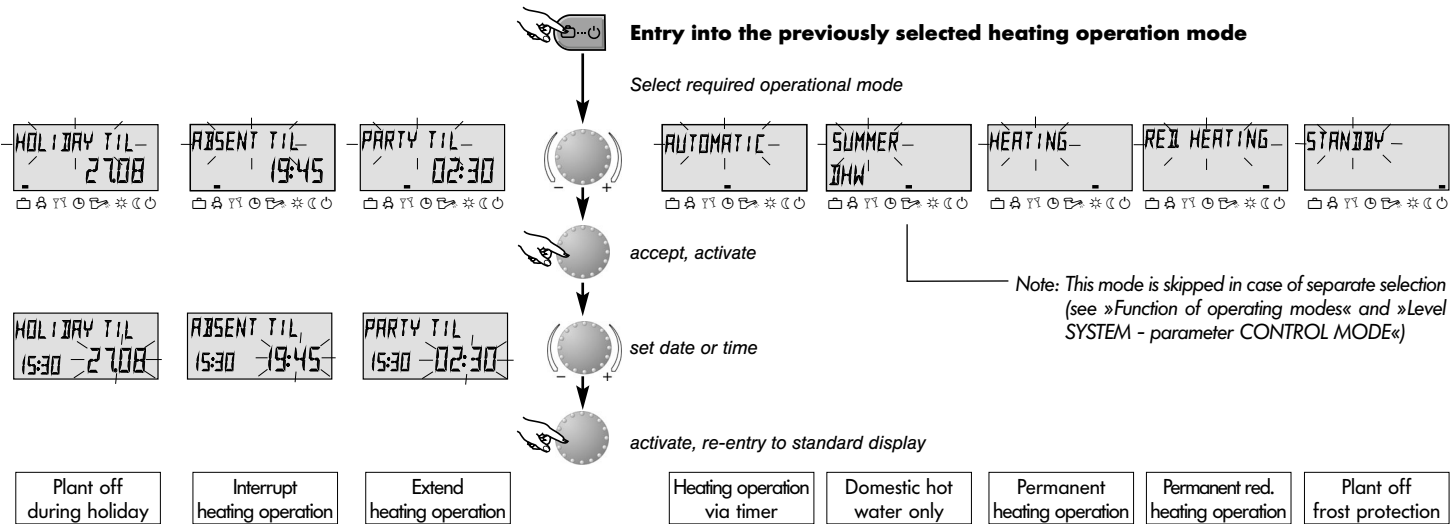
Re-entry into the standard display is done by pressing the rotary-push button or the corresponding temperature button or automatically after approx. 60 seconds.

Operational mode selection for heating and hot water

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

Select: Pressing the button, 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

HOLIDAY TIL 2708	ABSENT TIL 19:45	PARTY TIL 02:30		AUTOMATIC	SUMMER DHW	HEATING	RED HEATING	STANDBY

accept, activate

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

set date or time

HOLIDAY TIL 15:30 2708	ABSENT TIL 15:30 19:45	PARTY TIL 15:30 02:30

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

Functions of operational modes

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
`HOLIDAY TIL` `19:27  24.09`	`ABSENT TIL` `10:27  19.30`	`PARTY TIL` `19:27  02.27`	`MO. 22.AUG. '05` `19:27 _ 56.5°`	`SUMMER` `10:27  _24.0°`	`HEATING` `19:27  72.0°`	`RED. HEATING` `19:27  45.0°`	`STANDBY` `19:27  19.0°`

⌂ 𝄐 ⏲ ⏱ 🕭 ☀ ☾ ⏻ (below each display)

<u>Setting range:</u> Actual 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* ⌨ *, select required operational mode with rotary-push button and press again to activate.*	<u>Setting range:</u> P1: Heating operation is interrupted until next switching-on time of current operating time program (see level *TIME PROGRAMS)* 0.5 … 24h: Heating operation is interrupted until set time of return. *Earlier termination:* *Press button* ⌨ *, select required operational mode with rotary-push button and press again to activate.*	<u>Setting range:</u> P1: Heating operation is continued until next switching-on time of current operating time program (see level *TIME PROGRAMS)* 0.5 … 24h: Heating operation is continued until end of party. *Earlier termination:* *Press button* ⌨ *, select required operational mode with rotary-push button and press again to activate.*	<u>Operating times:</u> (see level *TIME PROGRAMS)* Heating and domestic hot water operation automatically according to settings of temperature values (see *Temperature settings*) and selected operating times program. Programming of individual operating times see level *TIME PROGRAMS).*	<u>Operating times:</u> (see level *TIME PROGRAMS)* Only hot water operation according to settings of hot water temperature (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 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 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*).	Heating and hot water plant completly switched off except for frost protection mode.

Quick operational mode selection

3 sec	3 sec	3 sec	3 sec
Automatic mode	Party mode	Absence mode	Manual hot water loading

modify

if required

activate

MO. 22.AUG '05	PARTY TIL	ABSENT TIL	1 TIME DHW
16:32 62.5°	-02:50-	-19:45-	-0.0-

Setting range: 0...240 min
Factory preset: 0.0 min
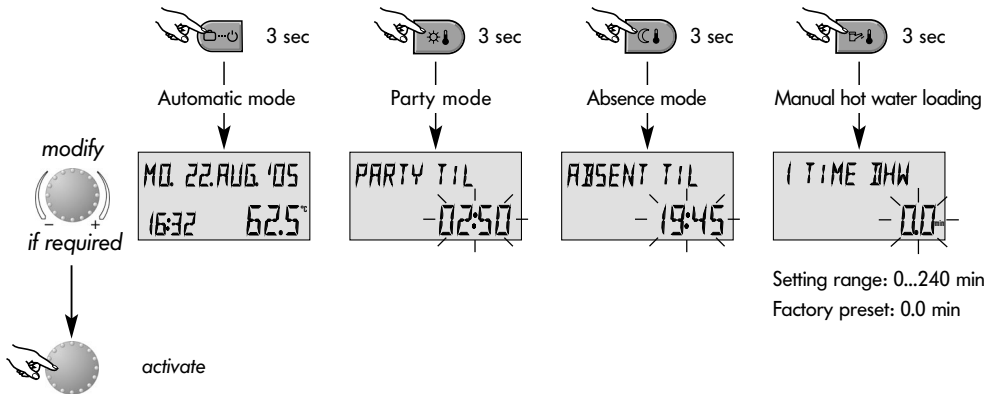
Short-time operational modes

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.
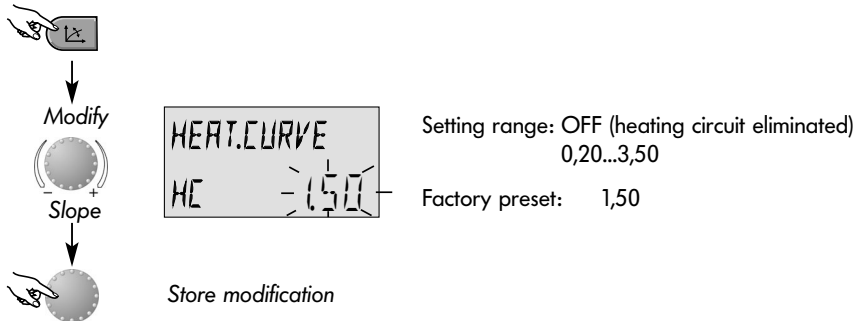
Direct automatic mode

Pressing button ⌂ 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 outdoor of operation times the button 🗝 has to be pressed for about 3 seconds. This turns on hot water preparation at any time for a period which may to 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)

Modify

Slope

Store modification

HEAT.CURVE

HC   1.50

Setting range: OFF (heating circuit eliminated)
0,20...3,50

Factory preset: 1,50

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 intervalls of 0.1
every 1 or 2 days.

This button regulates the heating characte-
ristics of the heating circuit in relation to out-
door 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
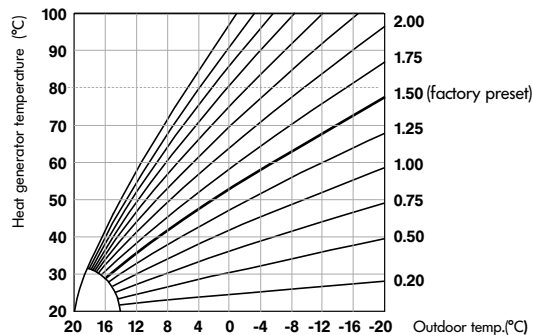
Re-entry into the standard display is done be pressing
the button again or automatically after approx.
60 seconds.

Plant information

👆 **i** Entry into information level

```
OUTSIDE
        13.5°
```
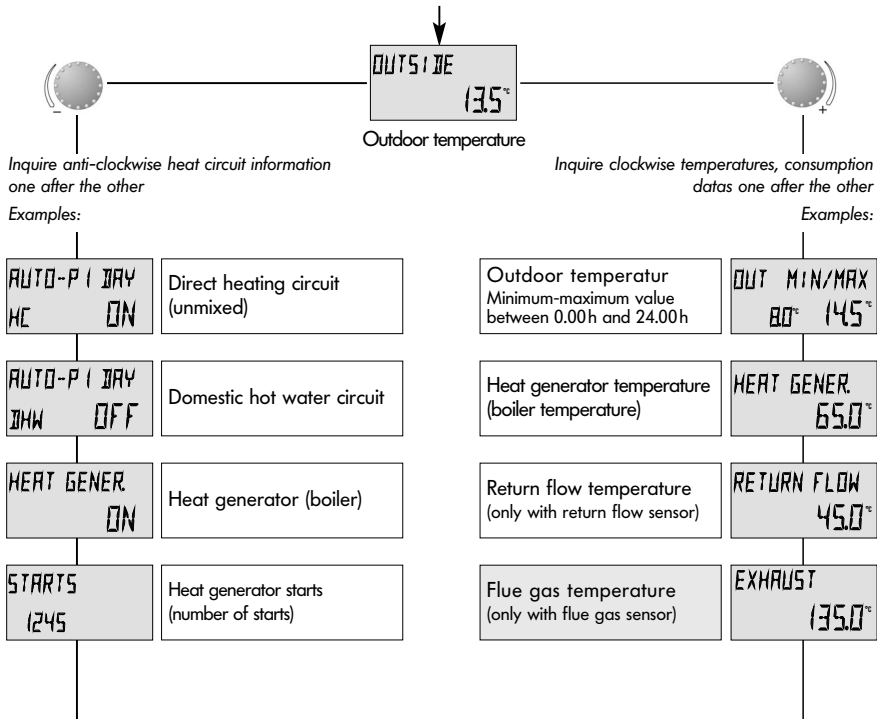Outdoor temperature

i 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.

Inquire anti-clockwise heat circuit information one after the other
Examples:

Inquire clockwise temperatures, consumption datas one after the other
Examples:

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

displays from direct heating circuit resp. DHW circuit

– *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)*

Display	Description
`AUTO-P1 DAY` `HC    ON`	Direct heating circuit (unmixed)
`AUTO-P1 DAY` `DHW   OFF`	Domestic hot water circuit
`HEAT GENER.` `ON`	Heat generator (boiler)
`STARTS` `1245`	Heat generator starts (number of starts)

Description	Display
Outdoor temperatur Minimum-maximum value between 0.00h and 24.00h	`OUT MIN/MAX` `8.0°  14.5°`
Heat generator temperature (boiler temperature)	`HEAT GENER.` `65.0°`
Return flow temperature (only with return flow sensor)	`RETURN FLOW` `45.0°`
Flue gas temperature (only with flue gas sensor)	`EXHAUST` `135.0°`

| OPER. HOURS 258 | Heat generator run time
number of service hours | Hydraulic pressure [1]
(only it pressure sensor is present) | HYDRAU. PRESS 1.4 |

shows
- *operating status (on, off)*
- *number of service hours*
- *number of starts*
of heat generator, boiler etc.

| THERMOSTAT HC OFF | Room thermostat function [2]
room max. temp. delimitation | Hot-water temperature
(electronically controlled) | DHW 52.0° |

resp.

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

| ROOMTEMP HC 21.0° | Room temperature [2]
Direct heating circuit | Hot-water thermostat [1]
(mechanically controlled) | THERMOSTAT DHW OFF |

shows
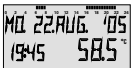- *water pressure*
if pressure sensor is present

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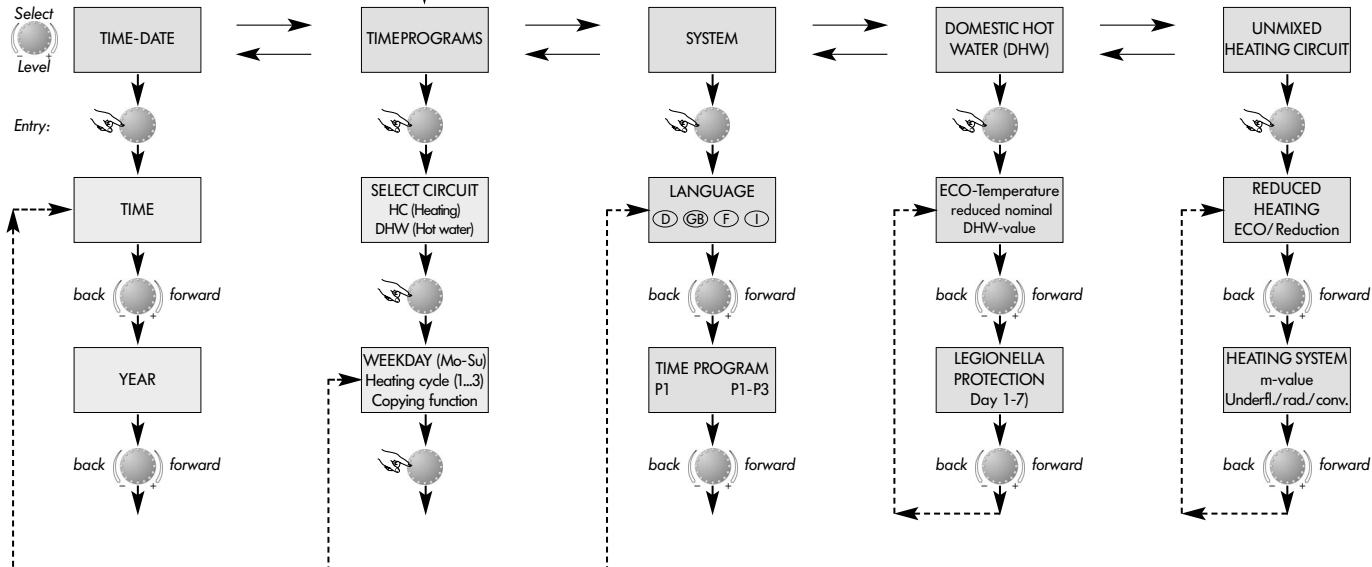
Programming level - Level summary
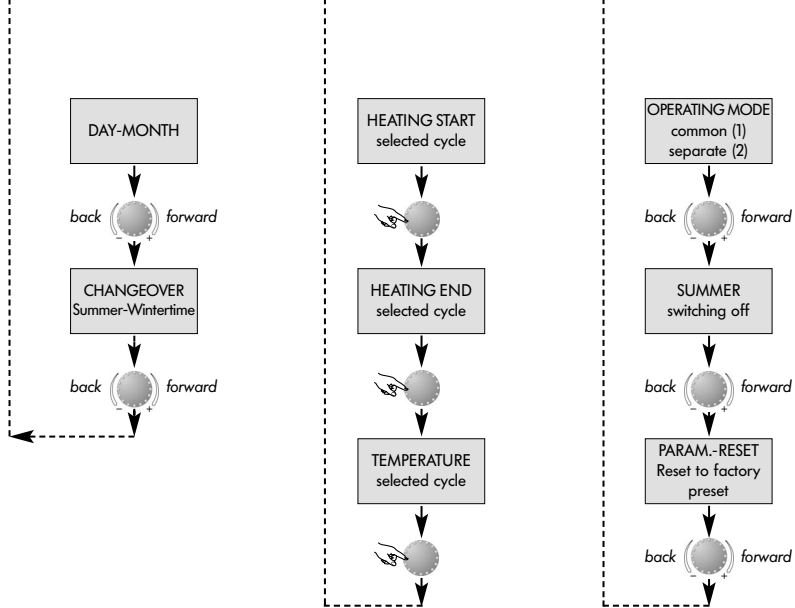
Schematic block diagram

Standard display
(Example: Operational mode *AUTOMATIC*)

MO 22.AUG. '05
19:45 58.5 °C

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

Select / *Level*

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

Entry: 🖐️

| TIME | | SELECT CIRCUIT HC (Heating) DHW (Hot water) | | LANGUAGE D GB F I | | ECO-Temperature reduced nominal DHW-value | | REDUCED HEATING ECO/Reduction |

back (⊖⊕) *forward*

| YEAR | | WEEKDAY (Mo-Su) Heating cycle (1...3) Copying function | | TIME PROGRAM P1   P1-P3 | | LEGIONELLA PROTECTION Day 1-7) | | HEATING SYSTEM m-value Underfl./rad./conv. |

back (⊖⊕) *forward*

```
┌─────────────┐
│ DAY-MONTH   │
└─────────────┘
      │
      ▼
back (  ) forward
      │
      ▼
┌──────────────────┐
│ CHANGEOVER       │
│ Summer-Wintertime│
└──────────────────┘
      │
      ▼
back (  ) forward
      │
      ▼
```

```
┌──────────────┐
│ HEATING START│
│ selected cycle│
└──────────────┘
      │
      ▼
     👆
      │
      ▼
┌──────────────┐
│ HEATING END  │
│ selected cycle│
└──────────────┘
      │
      ▼
     👆
      │
      ▼
┌──────────────┐
│ TEMPERATURE  │
│ selected cycle│
└──────────────┘
      │
      ▼
     👆
      │
      ▼
```

```
┌──────────────┐
│ OPERATING MODE│
│ common (1)   │
│ separate (2) │
└──────────────┘
      │
      ▼
back (  ) forward
      │
      ▼
┌──────────────┐
│ SUMMER       │
│ switching off│
└──────────────┘
      │
      ▼
back (  ) forward
      │
      ▼
┌──────────────┐
│ PARAM.-RESET │
│ Reset to factory│
│ preset       │
└──────────────┘
      │
      ▼
back (  ) forward
      │
      ▼
```

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.
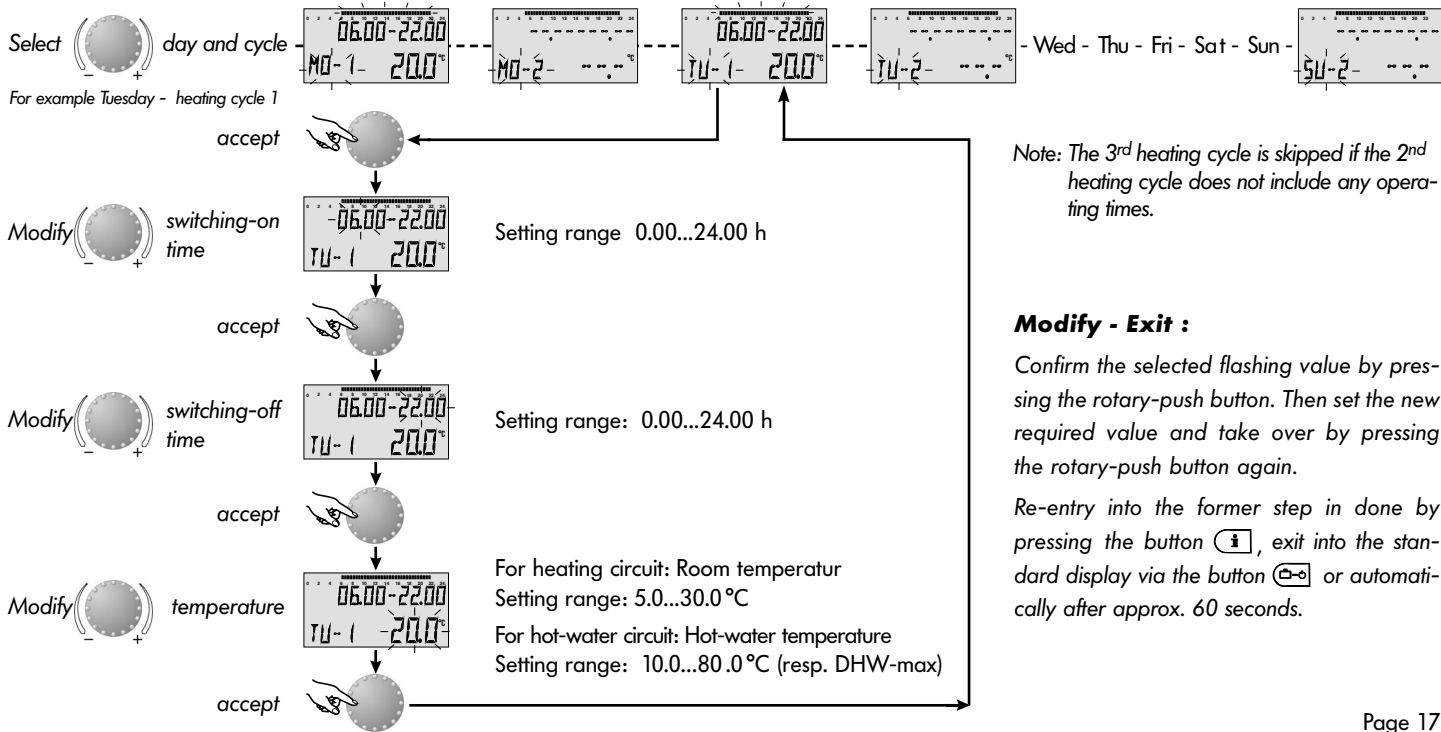
Re-entry into the level selection is done via the info button ⓘ, re-entry into the standard display via the program-selection button ⓘ or automatically after approx. 60 seconds.

Programming of operating times
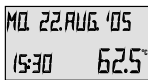
Standard display

MO. 22.AUG. '05
15:30   62.5°
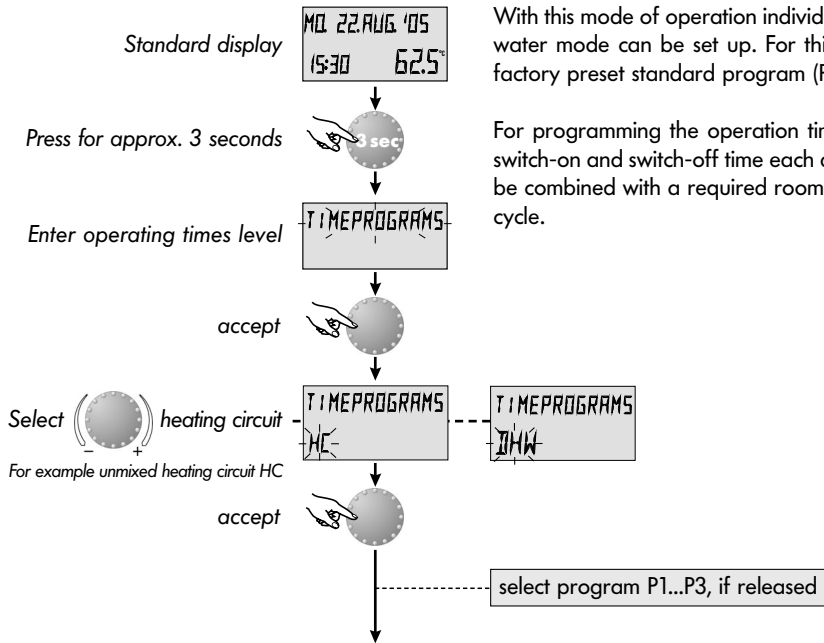
With this mode of operation individual programs, other than standard programs for heating and hot-water mode can be set up. For this purpose after selecting the heating- resp. hot-water circuit the factory preset standard program (P1) is called an can be overwritten individually.

Press for approx. 3 seconds

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

Enter operating times level

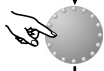TIMEPROGRAMS

accept

Select heating circuit
For example unmixed heating circuit HC

TIMEPROGRAMS
HC

TIMEPROGRAMS
DHW

accept

select program P1...P3, if released

Select (⊙) *day and cycle*

For example Tuesday - heating cycle 1

06.00-22.00	‑‑‑‑‑	06.00-22.00	‑‑‑‑‑	
MO-1- 20.0°	MO-2- ‑‑.‑°	TU-1- 20.0°	TU-2- ‑‑.‑°	SU-2- ‑‑.‑°

- Wed - Thu - Fri - Sat - Sun -

accept 👆

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

↓

Modify (⊙) *switching-on time*

06.00-22.00
TU-1 20.0°

Setting range 0.00...24.00 h

accept 👆

↓

Modify (⊙) *switching-off time*

06.00-22.00
TU-1 20.0°

Setting range: 0.00...24.00 h

accept 👆

↓

Modify (⊙) *temperature*

06.00-22.00
TU-1 -20.0°

For heating circuit: Room temperatur
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 👆

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 in done by pressing the button (i), exit into the standard display via the button (⊶) or automatically after approx. 60 seconds.

Copy operating times

Standard display

MO. 22.AUG. '05
15:30   62.5°

Push for approx. 3 seconds

3sec

Programming of operating times includes a 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).

Enter operating times level

TIMEPROGRAMS

accept

Select heating circuit

For example unmixed heating circuit HC

TIMEPROGRAMS
HC

TIMEPROGRAMS
DHW

accept

select program P1...P3, if available

Select copy function

COPY
DAY

06.00-22.00
MO-1-   20.0°

Select *source*	COPY
Example: Monday	FROM -MO-

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

accept

Select *first destination*	COPY MO
Example: Monday to Friday	TO -1-5-

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

Copy

Confirmation	COPY
	DAY OK

Source and destination are identical

Select *next destination*	COPY MO
Example: Saterday and Sunday	TO -6-7-

If necessary select and takte over further destinations in the same way.

etc..

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 in done by pressing the button ⓘ , exit into the standard display via the button ⌐⊙ or automatically after approx. 60 seconds.

Standard display

```
MO 22.AUG '05
15:30      62.5°
```

Push for approx. 3 seconds `3sec`

Enter operating times level `TIMEPROGRAMS`

accept

`DEFAULT-TIME` | `TIMEPROGRAMS`

Select default time `HC`

accept

Select heating circuit `DEFAULT-TIME` — `DEFAULT-TIME` — `DEFAULT-TIME`

For example unmixed heating circuit HC `HC` | `DHW` | `ALL`
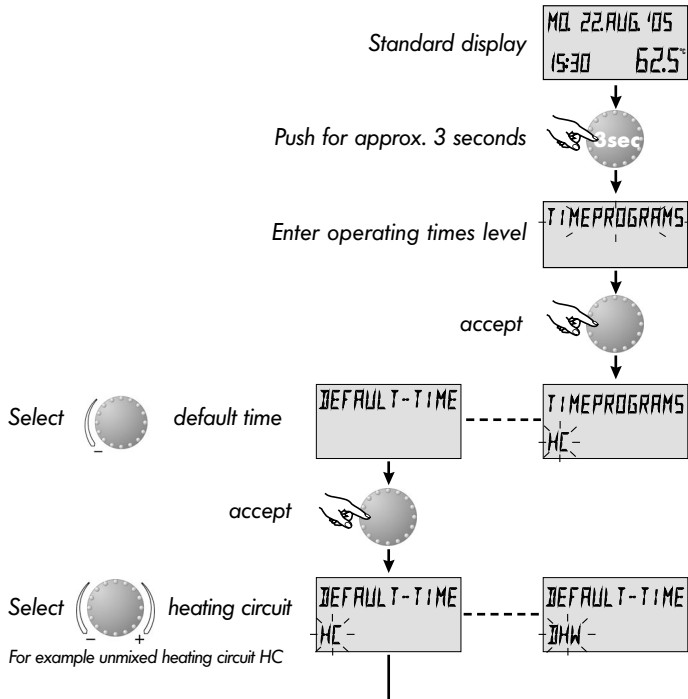
The standard programs do not get lost by overwriting with individual programs. Individual programs however are cancelled at a later call of the corresponding standard programs and have to be set up again. For this purpose individual switching-on and switching-off times should always be noted (see level *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 in done by pressing the button $\boxed{i}$, exit into the standard display via the button $\boxed{\frown}$ or automatically after approx. 60 seconds.

accept

RESET
HC

------- select program P1...P3, if released [1)

Reset **3sec** *press approx. 3 seconds*

⚠️

RESET
OK

Standard program was reloaded
Individual Program was deleted!

1) see level SYSTEM - parameter PROGRAM

Standard time programs

Standard operating-times program P1

Circuit	Day	Heating from...to
Unmixed heating circuit (HC)	Mo-Su	06.00 - 22.00 h
Domestic hot water (DHW)	Mo-Su	05.00 - 22.00 h

Standard operating-times program P1 [1)

Circuit	Day	Heating from...to	
Unmixed heating circuit (HC)	Mo-Th	06.00-08.00	16.00-22.00h
	Fr	06.00-08.00	13.00-22.00h
	Sa-Su	07.00-23.00h	
Domestic hot water (DHW)	Mo-Th	05.00-08.00	15.30-22.00h
	Fr	05.00-08.00	12.30-22.00h
	Sa-Su	06.00-23.00h	

Standard operating-times program P3 [1)

Circuit	Day	Heating from...to
Unmixed heating circuit (HC)	Mo-Fr	07.00-18.00 h
	Sa-Su	reduced heating
Domestic hot water (DHW)	Mo-Fr	06.00-18.00 h
	Sa-Su	reduced heating

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Table for individual operating times and programs

	Day	Operating times program P1						Operating times program P2						Operating times program P3					
		1st cycle		2nd cycle		3rd cycle		1st cycle		2nd cycle		3rd cycle		1st cycle		2nd cycle		3rd cycle	
		From	till	from	till	from	till	from	till	from	till	from	till	from	till	from	till	from	till
Unmixed heating circuit (HC)	Mon																		
	Tue																		
	Wed																		
	Thu																		
	Fri																		
	Sat																		
	Sun																		

	Day	1st cycle		2nd cycle 2		3rd cycle		1st cycle		2nd cycle		3rd cycle		1st cycle		2nd cycle		3rd cycle	
		from	till	from	till	from	till	from	till	from	till	from	till	from	till	from	till	from	till
Domestic hot-water circuit (DHW)	Mon																		
	Tue																		
	Wed																		
	Thu																		
	Fri																		
	Sat																		
	Sun																		

TIME-DATE

Entry:

—TIME-DATE—

set time

TIME —
18:45

Current time
Setting range:
0.00. . . 24.00 h

set year

YEAR—
2005

Calender year
Setting range:
2001. . . 2099

set day & month

DAY-MONTH—
MO   22.08

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

set changeover

CHANGE —
SU-WI AUTO

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

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.*

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.
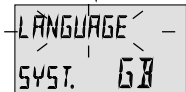
If required, the automatic time changeover can be switched off (manual reset).

SYSTEM

```
-SYSTEM-
 / | \
SYST.
```

Entry:

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

```
-LANGUAGE-
 / | \
SYST.    GB
```
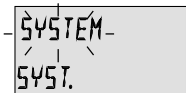
next parameter

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.

```
-PROGRAM-
 / | \
SYST.    P1
```

next parameter

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 <u>one</u> operating-times program is available, with setting P1-P3 <u>all thre</u>e 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
SYST.   1

next parameter
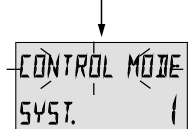
Control mode

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).

 Operational mode

Select

Circuit

OP. MODE
HC
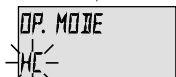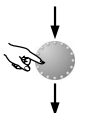
└─ *Unmixed circuit (HC), hot-water circuit (DHW)*

accept

further operation see »Operational mode selection for heating and hot water« and »Temperature settings«

Page 25

```
-SOMMER-
SYST.    20.0°
```

next parameter

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.

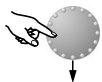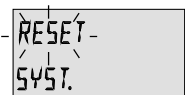With setting OFF the summer switch-off is not effective.

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.

```
MO. 22.AUG '05
16:32    63.5°
```

Summer switch-off activated

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

```
-RESET-
SYST.
```
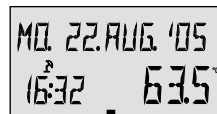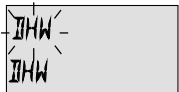
Parameter-reset

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

Exception: Time-date, operating times

```
RESET
SYST.    -SET-
```

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!
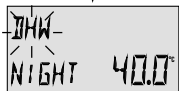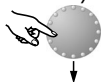
DOMESTIC HOT WATER

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

Entry:

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.

next parameter

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)

```
|UNMIXED CIRC-|
|HC           |
```

Entry:

```
|REDHEATING-  |
|HC      ECO  |
```

next parameter

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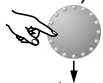
Reduced heating mode

Setting range: ECO, ABS
Factory preset: ECO

During the reduced operation the following modes can be selected:

ECO mode: At oudoor 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.

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: *Objects with high insulation values*

Application: *Objects with low insulation values*

```
─HEAT.SYSTEM─
HC        1.30
```

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

Setting value	Application
1.00. . . 1.10	Heating curve for underfloor heating systems or other static heating surfaces
1.30. . . 2.20	Normal standard heating curves for radiators
3.00. . . 4.00	Heating curves for convectors
4.00. . . 10.0	Special heating curves for ventilators with high starting temperatures

Error messages

```
OUTSIDE
ERROR  10-0
```

Example for error message »sensor«
(short or open circuit)
Error code 10...20

```
HEAT GEN.
ERROR  30-n
```

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

```
DHW
ERROR  50-4
```

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

```
BUS
ERROR  70-n
```

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 mm^2
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