



II Programmes and Switching Times table When you select a programme, Programme Switching Times Main Application -3 the previously set "Number of P1 21°C 18°C 15°C Switching Times" and tempera-Room heating P2 21°C 18°C 15°C Floor heating with temperature limit tures will be overwritten with the new settings of this pro-P3 4 28°C 18°C 18°C Floor heating, for example in the bathroom gramme. P4 4 21°C 18°C 18°C Room heating The switching times will remain unchanged.

18°C

Programme selection, see 6.3 The standard programms are factory pre-set. They shall simplify programming.

18°C

21°C

P5

2

	Weekly Programme 👿							Daily Programme 🔳				Number of Switching Times					
Dav	Start time		Temperature			Start time		Temperature		Start time Temperature			c	Λ	2		
Day	(Mon, lue, Wed, lhu)	(Fri)	P1,P2	٢3,	P4,P5	(Sdl)	(Sun)	PT,PZ	٢3,	P4,P3		P1,P2	٢3,	P4,P5	6	4	2
JMorning	6.00	6.00	21°C	28°C	21°C	7.00	7.00	21°C	28°C	21°C	7.00	21°C	28°C	21°C	•	•	•
🗠 Forenoon	8.30	8.30	18°C	18°C	18°C	10.00	10.00	18°C	18°C	18°C	10.00	18°C	18°C	18°C	•	•	
空 Noon	12.00	12.00	21°C			12.00	12.00	21°C			12.00	21°C			•		
_≟ Afternoon	14.00	14.00	18°C			14.00	14.00	21°C			14.00	21°C			•		
Evening	17.00	17.00	21°C	28°C	21°C	17.00	17.00	21°C	28°C	21°C	17.00	21°C	28°C	21°C	•	•	
▲ Night	22.00	23.00	15°C	18°C	18°C	23.00	22.00	15°C	18°C	15°C	23.00	15°C	18°C	18°C	•	•	•

Room heating

Use \bigcirc to select the operating modes \boxed{w} \boxed{d} \boxed{w} \bigcirc \boxed{f}

1.1 Manual operation These functions allowe manipulating the temperature without changing the

Manual operation can be carried out in two ways:

Temporary changing temperature

- . Press key $\overline{\bigcirc}$ or $\stackrel{\bullet}{\bigcirc}$ till needed temperature is displayed. (To check the temperature without changing exit by pressing) . Press ⇔ to confirm. Otherwise after 5 sec here will be a auto-accept. The actual temperature is displayed again.
- This temperature is used until the next program step. This procedure is valid only when the Weekly programme \overline{w} , the Daily programme \overline{d} or

Permanent changing temperature by programming the manual operation 🕿

The set temperature is permanently maintained. You can exit this mode by selecting another operation modes w d </



- Press 👸 untill the arrow selects 🖄
- 2. Use $\overline{\bigcirc}$ or $\stackrel{+}{\bigcirc}$ to set the temperature. Press \bigcirc^{\sim} to confirm. Otherwise after 5 sec here will be a auto-accept.

1.2 Going out / Returning home function

If you leave the house it is possible to decrease the temperature by simply pressing key 🖱. If you press it again the control will switch back to the programme (this function has to be previously set up- see 6.1). It is enabled only in operating modes \overline{w} and \overline{d} . The Night temperature $\lfloor \frac{1}{2} \rfloor$ is always used as setback temperature

- key Õ or Õ is pressed again, or
- the switching time (6:00) of the next day,
- then the automatic programme takes over again.
- 6.11 Switching between heating and cooling
- 6.13 Displaying room or setpoint temperature

Only sections 1, 2 and 3 are intended for users. All other remaining sections are for the installer.



Press 💍 .

The pre set temperature appears for few seconds. The arrow is by **(** 2. Use $\overline{\bigcirc}$ or $\stackrel{+}{\bigcirc}$ to set the temperature (if required) 3. Press 🖱 to confirm. Otherwise after 5 sec here will be a auto-accept

When you return home and the set-back temperature

- is enabled: Press 💍 .
- The temperature of the actual event is displayed for a few seconds.
- The arrow is on the current programme step. . Use $ar{\bigcirc}$ or $ar{\bigcirc}$ to change the temperature (if required)
- . Press 🖱 to confirm. Otherwise after 5 sec here will be a auto-accept.

1.3 The weekly programme \overline{w}



This programme allows you to repeat the same programme every week

To set up the weekly programme press $\stackrel{\text{\tiny MOS}}{\bigcirc}$ till the arrow selects \overline{w} The screen indicates the current actual temperature and the time The current actual temperature and the time of day are displayed. The arrows indicate the day of the week (1..7), the current day time range

1.4 The daily programme \square



This programme allows you to repeat the same program on a day-by-day basis d

To set up the daily programme press $\stackrel{\scriptscriptstyle{\rm MOS}}{\bigcirc}$ untill the arrow selects $\overline{{}_{\rm d}}\rangle$

The screen indicates the current actual temperature and the time.

1.5 Party / Boost programme 🍫

To override the programmed temperature for a period of 3 hours. After 3 hours the control will return to the weekly programme



Enabling the party function

1. Press 🖱 untill the arrow selects 🔦 Now the evening temperature is activated for 3 hours

2. Press $\overline{\bigcirc}$ or $\stackrel{+}{\bigcirc}$ to set the temperature (if required). 3. Press 🖔 to confirm. Otherwise after 5 sec here will be a auto-accept.

1.6 Holiday function 🌐

This function allows the selection of a temperature (5...40°C) for a certain

number of days (1...199) Once such period has elapsed, the control will switch to the weekly programme at 00:00 h (midnight) of the last day





Press 👸 till the arrow selects 👘 The pre-set number of days is displayed, e.g. 1 (1 day).

- 2. Use $\overline{\bigcirc}$ or $\stackrel{+}{\bigcirc}$ to change the day counter.
- 3. Press 💍.
- The temperature blinks
- 4. Use $\overline{\bigcirc}$ or $\stackrel{+}{\bigcirc}$ to change the temperature (if required). . Press $\stackrel{\sim}{ o}$ to confirm. Otherwise after 5 sec here will be a auto-accept.
- The number of set days is displayed. The selected temperature is enabled immediately for the number of days

you have set. veryday at 00:00 h the day counter will decrease by 1. When the value is 1 the function will end at 00:00 h and the weekly programme will be enabled.

To terminate this function earlier, select another operation mode Note:

In the event of a power failure, the day counter will turn off. As soon as power is restored, the counter will start operating again from the moment when it was interrupted.

2. Programmin

(desired room temperature)

• Other Functions

The switching times and temperatures should be programmed only if you need to vary the factory pre-set standard programme. (See Table II)

ogramming allows se	etting the following:
Time	Ð
Switching Times	\oslash
when the set temper	rature should be reached)
Temperatures	\bigcirc

2.1 General programming function

For settable functions 🕘 🧭 🕕 the following procedure applies: Press this key untill the required function is selected. The arrow blinks at the feature.

- Ö or Ö Use these keys to change the blinking feature (arrow or
- digit). O Use this key to confirm the value. The arrow blinks by the next feature.
- During programming, this sequence is often repeated: Use \bigcirc or \bigcirc to change, then confirm with \bigcirc .
- If you have finished setting a certain function, the arrow is on \overline{w} .

To exit press

- Holding down $ar{\bigcirc}$ or $ar{\bigcirc}$ will cause a fast run of the digits e.g when setting the clock
- To exit the current setting press O. No input for ~1 Min. will cancel the

setting without saving. Then the weekly program will be activated

2.2 Setting time/day



- Here you can set the time and day of the week
- . Press Ö untill the arrow selects ⊘.
- 2. Use $\overline{\bigcirc}$ or $\stackrel{+}{\bigcirc}$ to select the current day 1...7.
- 3. Press 🖔
- an hour position blinks. 4. Use $\overline{\bigcirc}$ or. $\stackrel{+}{\bigcirc}$ to set the hour.
- 5. Repeat steps 3 and 4 to set hours and minutes.

2.3 Setting switching times ⊘



If you need to change the standard programme, here you can set 2, 4 or 6 switching times per day. One of the 3 temperatures can be assigned to these switching times (see Table II – Switching times or 2.4 "Setting temperatures").

Setting switching times for the weekly programme	
The weekly programme is repeated week by week.	
See also 2.5 Brief Tutorial	

The arrow is blinking in the Day Time Range at 🚣 (Morning).

The switching time and temperature for this event are displayed

4. Use $\overline{\bigcirc}$ or \bigcirc to select the desired switching time (4

 \rightarrow

If only 2 or 4 Switching Times are set, some switching times are skipped

11. If the arrow blinks on the last icon by **(**, the setting of the following

a) In addition to single days of the week, you can also set blocks of days.

All the days in a block are set to the same switching times and tem

Setting is carried out as described in above step 2. Press $\bar{\bigcirc}$ or $\stackrel{+}{\bigcirc}$ until the

If only few days are different from the other days of the week, you can

programme the whole week first by means of the Mon...Sun block (all

c) Switching off times do not need to be entered. The next start time

e) The night switching time 🧕 can also be set after midnight (until 5:50

f) It is possible to select among three pre-set temperatures, which can be

changed as discussed under section 2.4 "Setting temperature". Settings

of temperatures and switching times are independent. If one of the

Temperatures $[\![\,]\,]$ is changed, such change will affect all settings the

Carry out the above procedure, with the exception of item 11. In this way,

a.m.), for example, switching time = 2:30; the temperature will be

day can be changed using $\overset{\bullet}{\bigcirc}$. If the arrow blinks on the first icon $\overset{\bullet}{\smile}$, the setting of the following

After [™] is pressed to confirm the minutes, the arrow blinks

Afternoon

Evening

Night

Mon...Fri Working days

Mon...Sun All days

Weekends

Sat...Sun

. Press 💍 untill the arrow selects 🕗.

2. Use $\overline{\bigcirc}$ or $\stackrel{+}{\bigcirc}$ to set the day.

3. Press ().

 \checkmark

Å.

9. Press [™] to confirm.

peratures

6. Use $\overline{\bigcirc}$ or $\stackrel{+}{\bigcirc}$ to set the digit.

The arrow blinks by number 1 = Monday

Morning

Forenoon

Noon

by []], so that you can set the temperatures.

8. Use $\overline{\bigcirc}$ or $\stackrel{+}{\bigcirc}$ to set one of the 3 temperatures \square

The arrow blinks by 4 4 4 4

10. Repeat steps from 4 to programme more switching times

5. Press Ŏ. The switching time digits blink.

7. Repeat steps 5 and 6 for each digit

day can be changed using $\overline{\bigcirc}$.

Additional Programming Details

12. Press ot exit programming mode.

The following blocks are available:

(Arrows blink on all these days)

Then you can change the different days.

automatically is set as the previous switch-off time.

d) If several switching times use the same temperature

Set all these switching times to the same temperature.

corresponding temperature was assigned to under 2.3.8.

b) The unit of minutes cannot be set, ->Resolution = 10 Minutes.

required range blinks.

To set 6, switching times

decreased at 2:30. To set 8, temperatures

Setting switching times

for an additional daily programme

weekly programme settings won't be affected.

The daily programme is repeated on a day by day basis. Select \overline{d} as described above under section 2.3 step 2.

To determine which switching times are set:

- . Select the required day of the week, or the extra daily programme \overline{a} (the blocks can only be checked as individual days).
- 2. Use $\overline{\bigcirc}$ or $\stackrel{+}{\bigcirc}$ to select the "Switching Time" (上 按 按 小 () (don't press ())
- 3. Press ot exit.

2.4 Setting temperatures ()

If you need to change the pre-set temperature, here you can set 3 temperatures. These temperatures can be assigned to the respective times (see II Switching Times Table, 2.3 "Setting Switching Times").

- Press ö untill the arrow selects ().
- The arrow blinks in the temperature group
- 2. Use $\overline{\bigcirc}$ or $\overset{+}{\bigcirc}$ to select one of the 3 temperatures. The corresponding temperature is displayed.
- 3. Press [∞]. The temperature blinks.
- 4. Use $\overline{\bigcirc}$ or $\stackrel{*}{\bigcirc}$ to set the temperature.
- 5. Press \bigcirc . The arrow blinks in the group temperature.
- 6. To programme more temperatures
- repeat all steps starting from 2. Press öto exit programming mode.

Note:

Settings of temperatures and switching times are independent. If one of the temperatures [1,1] is changed, this change will affect any setting the corresponding temperature was assigned to, as described under 2.3 "Setting switching times"

Checking temperatures

Carry out steps 1 and 2 above to determine which temperatures are set. Press 👸 to exit.

2.6 Reset

Reset:

When unexpected results occur, the reset key should be pressed. All data are maintained, except for clock time and day of the week To activate Reset

Use a pointed object to press the hole between the $e^{-\frac{1}{2}}$ keys. Then enter the time and day again.

2.7 Access protection

This protection prevents control settings from being changed. It can be enabled only if the control is in one of the operation modes \overline{w} \overline{d} \overline{a} rffh.

Enabling the protection:

1. Press and hold down key \bigcirc , then press also \bigcirc . Release \bigcirc first, then \bigcirc . 2. 🕂 is displayed.

- Now the values can not be changed any more
- Disabling the protection:
- 1. Press and hold down key \bigcirc , then press also \bigcirc . Release \bigcirc , first, then \bigcirc . 2. A disappears Now you can enter values agair

2.5. Brief tutorial on INSTAT 8

Step 1 Setting switching times Select/Set Confirm

2.8 ON / OFF function

By pressing [™] for 5 Sec. the INSTAT 8 can be switched ON and OFF. In state OFF, the heating system will not be switched ON. The INSTAT 8 remains on power supply

Switching OFF

Press 💍 for 5 Sec. OFF will be displayed instead of the time

Switching ON

Press [™] for 5 Sec.

The time will be displayed instead of OFF.

Note: If heating system "Controlling room temperature" is selected, the floor temperature will be shown, not the room temperature

2.9 Power failure

In the event of a power failure, clock and day continuo to work for ~4 h (if the device had been charged for at least 3 hours). The display is off during this time. All other data remain saved. Later, clock and day has to be set again.

2.10 Cleaning

Use a soft, damp cloth and a mild detergent.

3. Tips, Tricks, Troubleshooting

- If you have certain days that don't fit the regular setting of the 1. weekly programme. In this case, use the separate daily programme d). There you can programme the switching times and temperatures required for this specific day. If you leave the house during these days, press () to switch to the
- daily programme \overline{d}). You would like to go on holidays and ensure the highest
- possible energy saving during this period. Use the Holiday function, see 1.6.
- 3. You would like to keep the temperature at a certain value till further notice. Use the Manual operation, see 1.1.
- 4. You would like to change the temperature for a limited period of 3 hours.
- Use the Party function, see 1.5. 5. You leave the house and would like that the temperature returns to your usual values at the next programmed time. Use the Manual operation, see 1.1
- 6. You would like to go out in the evening
- The function Going out/Returning home allows an immediate temperature setback, see 1.2.

Troubleshooting: 1. It gets warm too late:

- a) Do the programmed switching time and clock time agree?
- b) Is the Optimum Start enabled? See 6.7
- c) Did the control have enough time (a few days) to acquire data on d) Is the previous switching time sufficiently far to allow the warm-
- up time? The device won't accept any data input: 2.
- Is the Access protection switched off See 2.7
- If need be, activate Reset, see 2.6 The display shows 000, uuu or 🛕.
- 3. The temperature has exceeded the display range, see 6.9. Or the remote sensor is damaged, see 6.2.
 - $\underline{\wedge}$ also indicates the access protection see 2.7.

Step 2 Setting temperatures

4. Use

The electronic Room Temperature Control INSTAT 8 can be used to control the room temperature via:

- Actuators for floor and convector heating systems
- Oil and gas fired hot water heating systems
- Circulating pumps
- Heat pumps
- Electric space heaters
- Electric floor heating systems
- Room temperature control with floor temperature limit

5. Features

• Three different heating systems inside the same device (room control, floor control and room control with floor temp. limit)

- Fuzzy-Control, with PWM output (Pulse-Width-Modulation) · Optimum Start (the desired temperature is reached within the se
- time), can be disabled.
- 5 Pre-set programmes (with 2, 4, 6 switching times)
- 3 adjustable temperatures (comfort, standard, night) • 2, 4, 6 selectable times for each day, (each time can be assigned one of

the 3 temperatures), blocks of days can be used • An extra daily programme (for special cases, such as holidays) in addition to the weekly programme

- Manual Operation that enables:
- changing the temperature until the next programme step
- permanently changing the temperature · Going out/Returnig home function for a quick temperature setback ON/OFF function
- Access protection
- · Holiday function (a certain temperature can be selected for a settable number of days)
- · Party Function (the evening temperature is maintained for 3 more hours) with manual temperature change
- Runtime Counter (1 through 9999 hours, the heating requirement time is recorded)

• It can be also used as a ON/OFF-Controller (for example for oil or gas burners)

- Pump/Valve protection (the output is enabled every day for 3 minutes), can be disabled
- Room or setpoint temperature display, selectable

• Temperature display can be offset (to meet individual needs) • Manual output switch on/off (for a quick functional check)

· Changeover between heating and cooling (for floor cooling systems, there is no Optimum Start for cooling mode)

• LCD-Display with clear, simultaneous indication of Room Temperature, Time, Day, Operation Mode, Time Zone, Temperature Zone

• Menu-driven operation through 4 keys

Elegant design

6. Function Description

6.1 Setting controller features

The controller features can be set through menu items To access a menu, select one of the operation modes $\overline{(w)}$ $\overline{(w)}$ The relevant features are shown in Table III.

Note:

Record the selected settings on the graph below, for later tests. Hand over the instructions together with these records to your customer

Checking the features:

Call the menu by:

1. Press \bigcirc until the arrow is on the required icon \bigcirc \bigcirc \bigcirc \bigcirc \bigcirc \bigcirc), see Table III

2. Press and hold down 💭, then press also 👸.

- Release 👸 first, then Ĉ The currently valid settings are displayed (see Table III).
- 3. Press 💍 to exit.

Changing the settings:

Call the menu by:

- 1. Press \bigcirc until the arrow is on the required icon (w) = 2 (w), see Table III
- 2. Press and hold down \bigcirc , then press also \bigcirc . Release \bigcirc first, then \bigcirc
- 3. The currently valid settings are displayed, see Table III. The first position in the menu blinks
- Record these values on the graph below (if not already done). 4. Use $\stackrel{\propto}{\bigcirc}$ to move to the required position, re-adjust the previous values,

if required 5. Use $\overline{\bigcirc}$ or $\stackrel{+}{\bigcirc}$ to set the desired digit.

6. Press \bigcirc^{κ} until you exit the menu.

If you exit the menu by pressing \bigcirc , the settings will not be stored.

6.2 Setting heating systems

The INSTAT 8 supports 3 heating systems.

1. Controlling room temperature Either the INSTAT 8 built-in sensor or a remote sensor (if connected see

7.3) can be used to control room temperature. The default setting is Programme P1, see Table II

To select it, choose menu \overline{w} position 1 = 1

If the event of a remote sensor failure, the control will switch to the built

2. Controlling floor temperature

in sensor.

To connect it, see 7.3

The remote sensor is used to control floor temperature.

The floor temperature is displayed.

The default setting is Programme P3, see Table II

The valve protection is disabled

To select it, choose menu \overline{w} position 1 = 2

In the event of a remote sensor failure, with: floor will be heated with 30%

– ON/OFF control heating will be switched off The writing "ooo" or "uuu" will appear on the temperature display.

3. Controlling floor temperature with floor temperature limit

The INSTAT 8 controls room temperature preventing an excessive floor temperature. Heating is turned down when the floor reaches the pre-set temperature, even if the room temperature is still too low. A remote sensor is required for floor heating. To connect it, see 7.3 The default setting is Programme P2, see Table II

The valve protection is disabled

To select it, choose menu \overline{w} position 1 = 3 The highest floor temperature can be set in menu \overline{d} items 3 and 4.

The room temperature is displayed. To display the floor temperature:

set menu \overline{w}

- floor temperature will be displayed as long as the menu is active. While in the menu, the temperature will not be refreshed
- 2. Press () to exit. (Do not press the other keys, or you will change the settings.)
- In the event of a remote sensor failure, with: – PWM floor will be heated with max. 30% - ON/OFF control heating will be switched off
- The display will show Λ

6.3 Setting the programmes

The user can select one of these programmes to suit his or her way of life. If required, the switching times, temperatures and "number of switching times" can be adjusted. Selecting a heating system causes one of the programs to be automatically set, see Table II

Programme P3 with 28°C floor temperature is a special programme for electric floor heating. When you select a programme, the previously set "Number of Switching

Times" and temperatures will be overwritten with the new settings of this programme. The switching times will remain unchanged To select it, choose menu \overline{w} position 2

6.4 Setting no. of switching times per day

According to the user's way of life, 2, 4, 6 Switching Times per Day can be set. If, for example, P1 with 6 switching times is selected, the number of switching times can be adjusted, if required

2 switching times per day (only the switching times for \checkmark and $\underline{\mathbf{C}}$ are used).

4 switching times per day

(the switching times for $\stackrel{\scriptstyle\frown}{x}$ and $\stackrel{\scriptstyle\frown}{x}$ are not used). 6 switching times per day (all switching times are used)

When programming the switching times, the unavailable switching times will not be displayed

To select it, choose menu \overline{w} position 3

6.5 Control action

For PWM (setting: \underline{a}) item 1 = 0, see 6.1)

The control calculates a control value from the difference between setpoint and actual temperature, according to an intelligent control algorithm. This value is output as variable Pulse/Pause ratio (Pulse-Width-Modulation).

The control algorithm used causes the room temperature to remain constant. For that purpose, a reduced amount of heat should be supplied even if the setpoint temperature has already been reached. The sum of Pulse and Pause times is constant and equal to 10 minutes

If temperature difference is greater, the control is permanently switched on or off, for example for temperature setback.

For ON/OFF control

III. Controller features

 \overline{w}

 \mathbb{W}

 \overline{w}

 \overline{w}

d)

_d >

d

<u>I</u>

<u>I</u>

ST /

<u> I</u>

s.

ŵ

Feature

Heating system

Programme

Switching times

Valve protection

per day

Control

display 555

Temp. limiter

Temperature

temp. display

Change-over

Temperature

Relay On/Off

Õ-key as

free

Offset

Runtime

counter

Optimum Start

Room or Setpoint

Heating/Cooling

Coming in/Going out

action

setting see: \underline{d} item 1 = 1, see 6.1

If the setpoint temperature is not reached, the output switches on if the setpoint temperature is exceed, the output switches off again. This changeover occurs at least every 10 minutes (if room temperature is constant).

1

2

3

4

2

3,4

1

2

3

4

1,2

3

4

Room

acc. to

acc. to

PWM

35°

On

Heating

disabled

Heating system

Heating system

don't show 555

Room/Floor-Temp.

On for room heat

Off for floor heat

6.7 Optimum start

programmed moment.

For ON/OFF control:

heating is switched off.

6.8 Valve protection

Setting: menu w position 4, see 6.1

6.9 Temperature display

sensor failure as well.

procedure:

3.2 Press key 💍.

To cancel the change

. Press ⇔to confirm.

3.4 Press [™] to confirm.

. Activate Reset. see 6.15.

temperature is displayed.

heating time is the previous switching time

For PWM:

Note

used.

Note

neat demand.

Setting: menu 🖄, position 1, see 6.1

Pulse-Width-Modulation is the best procedure, since it allows reaching a 'quasi constant" behaviour of the controlled system. PWM is specially suitable for electric heating, pump control or when electrotherma actuators are used

first and then an erase procedure.

6.16 Display the symbol **55**

It can be selected if the symbol is displayed or not.

To select: choose menu \underline{d} position 2 = 1, see 6.1

liance with all applicable safety regulations.

In mode heating, the symbol <u>\$\$</u> shows the state of the relay.

If "control action" = PWM, the symbol may change each 10 Min.

This device should be installed only by a qualified electrician,

according to the wiring diagram on the device and in comp-

To obtain compliance with the Protection Rating II, the

corresponding protection measures are to be applied at the

time of installation, refer to VDE 0100. This device, which can

be mounted independently, is used to control the temperature

only in dry rooms, under normal environmental conditions

This device is shielded according to VDE 0875 and EN 55014 and

operates according to the Performance class 1C (EN 60730).

The control should be mounted in a location of the room that:

• is not subject to air flows (for example window/door opening)

is easily accessible for operation purposes

is free from curtains, cabinets, shelves, etc.

• is not subject to direct sun radiation

is located at ~1.5 above the ground

• is not directly affected by heat sources

⇒ Mount it following the reverse procedure

Connecting according to Wiring Diagram, see item 10

for bulk conductors, cross-section 1 to 2.5 mm²

Insert the conductor 10 mm inside the terminals

Master Reset:

7 Installation

7.1 Mounting

allows free air circulatior

is not on an external wall

n a conduit box Ø 60 mm

remove the display cover

7.2 Electric connection

disconnect electric circuit from supply

remove the frame

Fitting

Warning!

In those cases where a frequent switching of the actuating element is to be avoided, such as direct burner control, or in those applications where the fact of exceeding or falling below a temperature is reported, the ON/OFF control should be used

The device automatically determines the time when the heating process

must begin in order to reach the required room temperature within the set

The control calculates the pre-heating time from the time of the last

heating-up based on the current temperature difference (see notes a, b).

The Optimum Start function applies only to the heating-up stage. The

device is switched off (in the lower temperature direction) at the

During the heating-up stage, 100% heat is required. Immediately before

reaching the setpoint temperature, the control changes to proportional

100% heat is supplied until the setpoint temperature is reached. After that

a) The maximum limit up to which the controller can extend the pre-

b) At the first start-up, after the function "Erase or Master-Reset" or at the

beginning of the heating period, the control still does not have any valid

parameters. For this reason, it is possible that during the first pre-heating

stage the setpoint temperature is not reached within the programmed

time. Adjusting to the specific room conditions can take several days.

The valve protection function prevents the valve from sticking (due to

deposits of particles), for example during summertime. Such function will

be enabled every day at 10.00 a.m. The valve will be turned on for ~3 min.

(heating) or 7 min. (cooling). This function is active also during the normal

heating operation. This function should be switched off if electric heating is

Vale protection is active if "Heating System = Controlling room

If the temperature exceeds the high or low limit of the display range, the

vriting "ooo" or "uuu" respectively will be displayed. This can indicate a

If the temperature displayed by the control does not meet the expectations.

it can be adjusted according to the relevant environmental conditions. (see

Reason: As the controller is flush-mounted, external factors, such as very

nsulated masonry or ventilated panelling, can affect measuring conditions

A variation in steps of 0.1 degrees for -4.0...+15 degrees is possible. Set-up

. Measure room temperature using a thermometer you trust (directly

Such influences can be avoided by using a remote sensor (see 6.2.1).

. Make sure the controller has been operating for at least 1 hour.

Set the INSTAT 8 temperature to the measured temperature by:

temperature" even if the controller is switched off via function 2.8.

Temperature is measured and displayed every 15 seconds.

6.10 Temperature display offset

nearby the INSTAT 8. ~1 cm away from the wall).

3.1 Select menu Set position 3 to 1 (See 6.1).

Room temperature is displayed and blinks.

3.3 Use $\overline{\bigcirc}$ or $\stackrel{+}{\bigcirc}$ to set the desired temperature.

While only the above row is displayed (no temperature),

The temperature display disappears. After ~2 minutes, the unchanged

3 = floor with temperature limit

2 = 2 sw. times, 4= 4 sw. times, 3

SS

0 = Room/Floor-temperature 9

1 = setpoint temperature

2

4

7

10

11

12,13

14

15

16

ne modified room temperature is displayed

set position 3 in Menu % to 1, see 6.1.

1 = Room

2 = floor

5 = P5

0 = Off

1 = On

0 = PWM,

1 = P1, 2 = P2

3 = P3, 4 = P4

6 = 6 sw. times

1 = ON/OFF control

0 = dont show

position 3 = 10th,

1 = show

position 4 = 1

0 = Off,

1 = On

0 = Heating

1 = Cooling

0 = disabled,

1 = enabled

1 = offset

0 = no offset

1 = Relay On,

0 = Relay off

Õis pressed

is displayed as long as

6.11 Switching between heating and cooling	7.3 Connecting the remote sensor		8 Start-up			
6.11 Switching between nearing and cooling The INSTAT 8 can be used also for cooling (for example, for floor cooling) (only cooling). The Optimum Start and the temperature limiting function are not available in this case. Setting: menu २, position 3, see 6.1 is displayed permanently indicating that cooling mode is active. 6.12 Output Manual Switching On/Off To carry out a quick test, the output relay can be manually switched on/off by pressing _ key. Setting: menu २, position 4, see 6.1	 The INSTAT 8 is fitted with a built-in temperature sensor application, a remote sensor may or will have to be connected and the wiring diagram, by means of wire bush The remote sensor can be extended using a 230 ~10 metres. Avoid narrowly laying sensor wires parallel wires, for example inside a raceway. Lay sensor inside a protective tube (for replacement). The remote sensor will be recognised after power on reset. 	Depending on the ected. (See 6.2). les V - cable, up to el to power mains or when pressing	 8 Start-up 1. Install the control, see 7. 2. Connect the remote sensor according to the heating system, see 6.2 3. Energise the control 4. Set the clock time, see 2.2 5. Set the control to the available heating system, see 6.2 6. Set the remaining features, see Table III 7. Customise the programme (if required) The control is now ready to operate It works according to the standard programme for the specific			
After exiting the function, the output is reset to normal operation within ~15 seconds.			 heating system see table II. Note: After ~1 minute, the room temperature is displayed. 			
You can select, if room or setpoint temperature should be permanently displayed.	• The exact room temperature is displayed after ~ half ar					
Setting: menu 🖄 , position 2, see 6.1	9. Technical Data					
6.14 Displaying nuntime	Ordering name	INSTAT 8				
6.14 Displaying runtime	EDV-No	052535				
I his display allows reading the number of nours, during which	Power supply	53 V) 50/60 Hz				
heat was requested by the control.	Power consumption					
Request: menu []], see 6.1	Reserve power about 4 hours (see 2.9)					
The hours will be displayed for as long as the keys are pressed. The hours are counted starting from the last "Erase" see 6.15.	Relay for load:	for load: 1 potential-driven c/o relay				
The counter is not affected by the display function.	Switching current	8 A $(\cos \varphi = 1)$ 2 A $(\cos \varphi = 0, 6)$				
Entire hours are displayed, for example 010 = 10 hours.	Capacity for electro thermal actuators 3 W	10 pcs				
6.15 Erase/Reset	air setpoint temperature	5 40°C in st	ans of 0.5 K			
Reset:	floor setpoint temperature	5 50°C in ste	$a_{\rm DS} \circ 10.5 \mathrm{K}$			
When unexplainable results occur, the reset key should be pressed	floor tomp limiter	10 40°C in ste	eps of 0.5 K			
All data are maintained, except for the time and day of the week.	Display range actual temperature	$10 \dots 49 \text{ C}$, in steps of 1 K				
To activate Reset:	Display range actual temperature 0 60°C, in steps of 0.1 K					
Use a pointed object to press the hole between the ${}_{\odot}$ \bullet_{\odot} keys.	Operating temperature 0 40°C					
Then enter the time and day again.	storage temperature	$-20 \dots 60 C$				
		Fuzzy (similar to	zzy (similar to PID) / ON/OFF			
Erase (reset of switching times and temperatures):	Measuring interval	15 seconds				
To reset the factory-set switching time and temperature settings.	Output signal	dulated PWM/ ON/OFF (selecta	ON/OFF (selectable)			
The following settings are affected:	PWM cycle duration	~10 min (sum o	~10 min (sum of on and off time of Pulse-Width-Modulation PWM)			
– runtime counter = 0	Holiday function 540°C, in steps of 0.5°					
- switching times and temperatures = standard values - time, day = 0:00. Mon	Timer	199 days				
– Optimum Start parameters = standard values	Display	LCD-display with	CD-display with simultaneous			
To activate the erase function:	indication of: cl		ock time, room temperature, day, operation mode time zone			
1. Use a pointed object to press the hole between the $e^{-\frac{1}{2}}$ keys, and press	and temperation		re zone			
O at the same time, then	Display size	29.7 x 21.5 mm	(w x h)			
2. release $\bigcirc^{\bullet}_{\odot}$ and after ~2 seconds release \bigcirc .	Digit size	erature, 6.5 mm for time				
Then enter the time and day again.	Clock:					
	Display mode	24-hour clock, 1	-minute steps			
Operating mode reset:	Precision	<10 minutes/yea	ar (at 20°C)			
wrong setting can damage the heating system. This instruction resets the	minimum switching time	10 minutes				
factory-set settings.	Temperature sensor	NTC (built-in)		Sensor values:		
All functions described in Table III Features are reset to the previous value	Remote sensor	Type 193 720, le	ngth 4m or	42 KΩ at 20 °C		
To activate this function:		F 190 021 for w	all mounting	26 KΩ at 30 °C		
1. Press $\overset{\text{hom}}{\bigcirc}$, ${\bigcirc}$ and $_{\ominus} \overset{\bullet}{\odot}$ simultaneously.		both extendable	e up to 10m			
2. Release ${}_{\ominus}\bullet_{\ominus}\bullet$, and then after 2 seconds release ${}_{\ominus}\bullet_{\ominus}\bullet$ and ${}_{\bigcirc}\bullet$.	Runtime counter	1 to 9999 hours	•			
Now, all icons on the display are active.	Housing protection rating	IP 40	P 40			
3. press ₀•.	Device protection class	II (see 7 Installa	Installation)			
WARNING	Humidity Class	Keen away from	dew			
Enter the settings relevant to the correct operation of the heating system	Weight					
again. (See 6.1 "Enter the set values here").	weight	100 8				

To reset everything to the initial state, carry out an <u>operating mode reset</u>

10. Wiring Diagram

Disassemble by slightly

pushing in from one Disassembling the wire side by means of a screwdriver

