

II. Installation Guide

Warning!

Switch off mains supply before removing an existing room thermostat or installing this controller.

Caution!

The device must only be opened by a competent electrician and installed according to the wiring diagram in the housing cover or this guide. The existing safety regulations must be complied with.

Appropriate installation measures must be taken to achieve protection class II.

This electronic device which can be installed independently may only be used to control the temperature in dry and enclosed rooms in a normal environment. The device is radio-interference suppressed according to VDE 0875 T.14 resp. EN 55014 and functions according to method of operation 1C (EN 60730).

1. Applications:

The electronic thermostat *INSTAT+ 2R7* or *INSTAT+ 3R7* can be used for temperature controls together with:

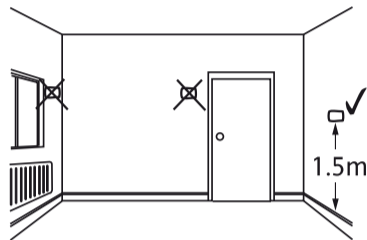
- Actuators of floor heating systems or radiators
- Oil and gas warm water heating
- Circulating pumps
- Heat pumps
- Electric radiators

2. Installation:

Installation location:

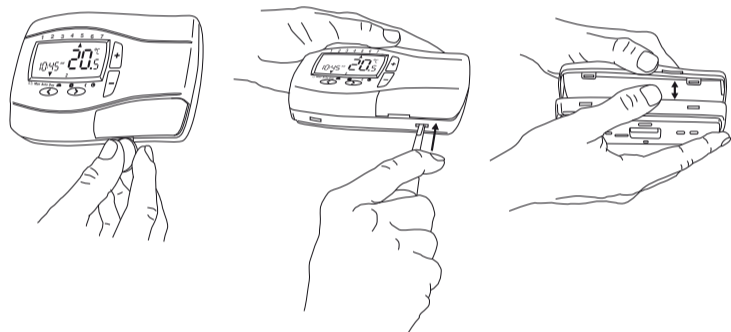
The device should be installed in a location in the room which:

- is easily accessible for operation
- is free of curtains, cabinets, shelves, etc.
- allows for free air circulation
- is not subject to direct sunlight
- is not subject to draught (e.g. when windows/doors are opened)
- is not subject to direct influence from the heating sources
- is not on an outside wall
- is about 1.5 m above the floor



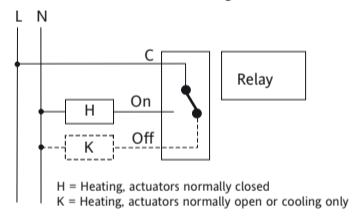
The controller must be installed directly onto the wall or on a flush-mounting socket.

1. Remove battery cover using a coin (Battery model only).
2. Remove the front cover using a flat screwdriver and separate from back plate.

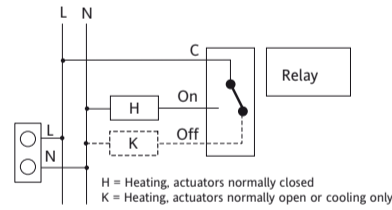


3. Attach the back plate to a flush-mounting socket using suitable wall plugs and screws.
4. Complete the wiring to the heating source according to the wiring diagram inside the product or below.

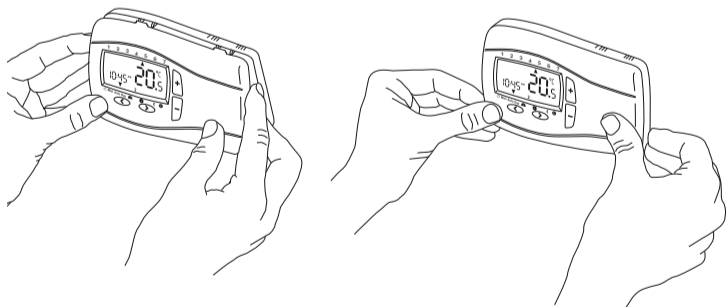
for INSTAT+2R7 (Battery)



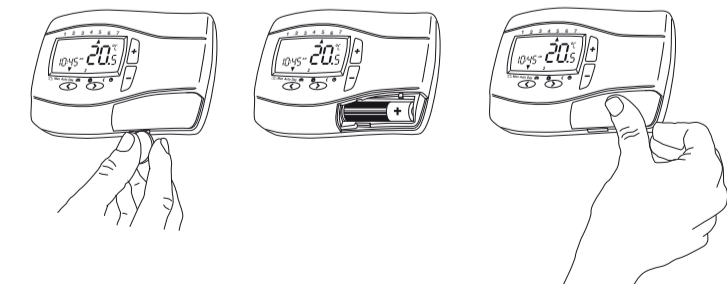
for INSTAT+3R7 (Mains)



5. Replace the front cover by pushing it fully onto the back plate.



6. Install the 2 AA batteries provided (Battery model only).
7. Reattach the battery cover (Battery model only).



The controller is now installed and will automatically start to control the room temperature according to the pre-set program 1 (refer to User Guide).

All important functions are set ex-factory. If you wish to change any of the settings, please refer to the options in the User Guide.

According to the heating type, refer to item 3.9 (option 10).

3. Installer options

Attention: The settings should only be carried out by the installer only, as settings may affect the functions and security of the heating system. List of Installer options see Table 2.

To activate the menu, press the < and + buttons simultaneously for 5 seconds
Select an option by pressing the < or > button

Change an option by pressing the +/- button

Press < or > to accept each change.

To exit the menu, press the < and + buttons simultaneously for 5 seconds.

If no button is pressed within 2 minutes, the controller will return to the auto mode.

3.1 Access protection lock / child lock (option 1, table 2)

When this function is activated, all buttons will be locked.

To switch off the protection lock, enter the installer options and set option 1 to OFF.

3.2 Frost protection (option 2, table 2)

The frost protection of the controller can be activated via this option.

Frost protection will switch on the heating if the room temperature falls to 5°C and will then control the temperature at 7°C.

When in Off mode frost protection will still be active.

3.3 Low and high limit set points (option 3, 4, table 2)

These limits can be-used to prevent temperatures from being set too high or too low.

The set point default values are 32°C (high limit) and 7°C (low limit).

3.4 Optimum start (option 5, table 2)

If this function is activated, the controller will automatically calculate the warm up time for the heating system in order to achieve the desired temperature for each event.

This function is a major energy saving factor.

Note: This function is only possible in the AUTO mode.

After commissioning, it takes a couple of days for the controller to gather enough information to correctly calculate this function.

3.5 Heating/cooling (option 6, table 2)

Use this function to select whether the controller is used exclusively for either heating or cooling applications.

HEATING: The relay will switch on when the temperature falls below the set point.

COOLING: The relay will switch on when the temperature rises above the set point.

3.6 Valve protection (option 7, table 2)

If valve protection is selected, the controller's relay will be switched on once a day at 10 o'clock.

This function is designed to prevent the valves and pumps from getting stuck during the summer months.

If this is required, select On in the installer options.

The operating period can be chosen via option 8.

3.7 Valve protection time (option 8, table 2)

The valve protection time can be set between 1 and 5 minutes (default: 3 minutes).

3.8 Emergency heating in case of sensor failures (option 9, table 2)

The following message is shown in case of sensor failures:

E1 for an internal sensor failure

A sensor failure can have the following effects:

1. If this function is activated, the heating is switched on for 30% of the time (this prevents the room from being too cold or overheating)
2. When this function is not activated, the heating is switched off

3.9 Application type (option 10, table 2)

This function is used to select the application type of the controller.

0 = Radiator Control or Electric Heat (= Default)

1 = Water floor heating control

4. Technical data

For INSTAT+2R7

Order Type	INSTAT+ 2R7
Supply voltage	2 x AA 1,5V alkaline batteries
Switching current	10mA 16(2)A; AC 24 ... 250 V~
Battery life	3 years (typically)
Weight (with batteries)	~ 200 g

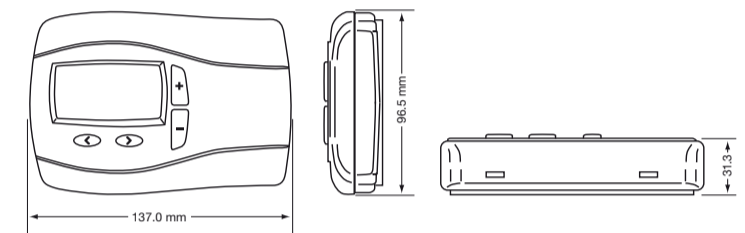
For INSTAT+3R7

Order type	INSTAT+3R7
Supply voltage	230 V AC 50 Hz (195...253 V)
Switching current	10mA 16(2)A; AC 230 V~
Weight	~ 180g

For INSTAT+2R7 and INSTAT+3R7

Temperature setting range	7°C to 32°C
Temperature resolution	0,1°C
Output	Relay change over contact, voltage free
Output signal	Pulse width modulation (PWM)
Timing resolution	1 minute
Accuracy of clock	< 4 Min / year
Ambient temperature	Operating 0°C bis 40°C Storage -20°C bis 85°C
Ambient humidity	Operating 25% to 85% (without condensation) Storage 15% to 95%
Rated impulse voltage	2,5 kV
Ball pressure test	75°C
Voltage and Current for the for purposes of interference measurements	230 V, 0,1 A
Pollution degree	2 (see Caution)
Degree of protection	IP 30
Software class	A

Dimensions



5. Troubleshooting:

1. It is getting warm too late

- a. Are clock and program events set correctly?
- b. Is the Optimum Start switched on (see 3.4)?
- c. Did the thermostat have enough time (some days) to determine the room data?

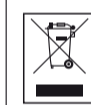
2. The thermostat does not accept any changes

Is the access protection lock switched on (see 3.1)?

3. E1 is shown in the display:

Sensor failure (see 3.8)

6. Battery handling



Batteries, rechargeable or not, should not be disposed of into ordinary household waste. Instead, they must be recycled properly to protect the environment and cut down the waste of precious resources. Your local waste management authority can supply details concerning the proper disposal of batteries.

In compliance with the EU Directive 2006/66/EC, the button cell battery located on the printed circuit board inside this product, can be removed at the end of the product life, by professional personnel only.

Table 2 Installer Options

Installer-Options	Descriptions	Select between		Default
		ON	OFF	
1	Access protection lock (child lock)	ON	OFF	OFF
2	Frost protection	ON	OFF	ON
3	Low limit set point °C	7	High limit	7
4	High limit set point °C	Low limit	32	32
5	Optimum start	ON	OFF	ON
6	Heating /Cooling	Heat	Cool	Heat
7	Valve protection	ON	OFF	ON
8	Valve protection time	1 ... 5		3
9	Emergency heating (sensor failure)	ON	OFF	OFF
10	Application type	Radiator (0)	Water Floor heating (1)	0