

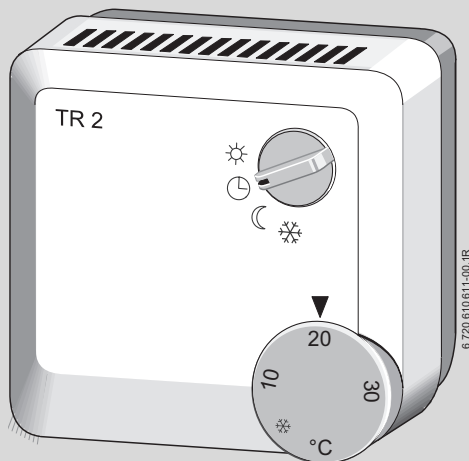
Room thermostat

TR 2

7744 901 137



for boilers with Optimum Start-compatible Bosch Heatronic units



Order no. 7 744 901 137

6 720 610 616 GB (01.05) OSW

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Safety instructions

General

- ▶ Follow the instructions in order to ensure that the unit functions correctly.
- ▶ The TR 2 should only be installed and commissioned by an approved installer.
- ▶ Install and commission the boiler in accordance with the appropriate instructions.

Usage

- ▶ Only use the TR 2 in conjunction with the gas central heating boilers specified. Make connections as shown in the wiring diagram.

Electrics

- ▶ Never connect the TR 2 to the 230-V mains power supply.
- ▶ Before fitting the TR 2: disconnect the boiler from the electricity power supply (230 V AC).
- ▶ Do not install the TR 2 in damp rooms.

Symbols



Safety instructions in this document are identified by a warning-triangle symbol and are printed on a grey background.

Signal words indicate the seriousness of the hazard in terms of the consequences of not following the safety instructions.

- **Caution** indicates that minor damage to property could result.
- **Warning** indicates that minor personal injury or serious damage to property could result.
- **Danger** indicates that serious personal injury could result. In particularly serious cases, lives could be at risk.



Notes are identified by the symbol shown on the left. They are bordered by horizontal lines above and below the text.

Notes contain important information in cases where there is no risk of personal injury or damage to property.

1 Details of Unit



The TR 2 may only be connected to a central heating boiler with an Optimum Start-compatible Bosch Heatronic unit.

1.1 Standard specifications

- TR 2 room thermostat
- Drilling template
- Quick operating instructions (inserted in right side of base).

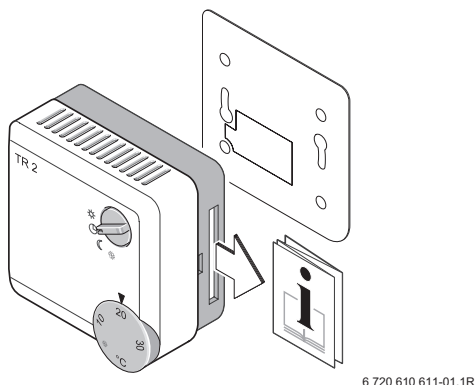


Fig. 1 Standard specifications

1.2 Technical data


Height x Width x Depth	82x82x42 mm
Modulation range	approx. 5...30°C
Permissible ambient temperature	0... +40 °C
Enclosure class	III
Enclosure rating	IP 20
	CE

Table 1 Technical data

1.3 Description of function

- The **desired room temperature** for “On (Comfort)” mode can be set to between 5°C and 30°C using the control (f, Fig. 7).
- The built-in temperature sensor signals the **current room temperature** to the central heating boiler (if the boiler has a text display, the room temperature is displayed).

Optimum Start

This function is only active if the mode selector switch (e, Fig. 7) is set to Automatic mode .

The following conditions must also be met:

- Central heating boiler has text display
or
- Central heating boiler has room-temperature (economy /night)-unit TR 212 E fitted and timer DT 2.

The function can only be deactivated on boilers with text display (see boiler operating instructions).

The Optimum Start function delays the time at which central **On (Comfort)** mode starts (according to the current and desired room temperatures).

The desired room temperature is reached approx. 1 hour after the programmed “heating” on time.

Example:

- If the room temperature has fallen 6°C or more from the set position, the heating comes on straight away.
- If the temperature has fallen only 3°C then the boiler is prevented from firing 30 minutes.
- The length of delay is therefore 10 minutes per degree below set temperature.

2 Installation

2.1 Fitting



Danger: risk of electric shock!

- ▶ Disconnect the central heating boiler from the power supply before making the electrical connections.

Balance the radiator system by adjusting the radiator valves. If thermostatic valves are fitted in the primary room set to maximum.

In that way, the primary room will heat up in the same way as the other rooms.

2.1.1 Installation position

The effectiveness with which the TR 2 is able to control the room temperature depends on where it is sited.

Requirements for the installation site:

- The room in which it is fitted (= primary room) must be suitable for regulating the temperature of the heating system as a whole.
- Internal wall (if possible) out of the way of draughts and direct heat (the effects of piping, hollow walls, etc.).
- Unrestricted circulation of air through the vents on the top and bottom of the TR 2 (shaded area in Fig. 2 should be kept clear).

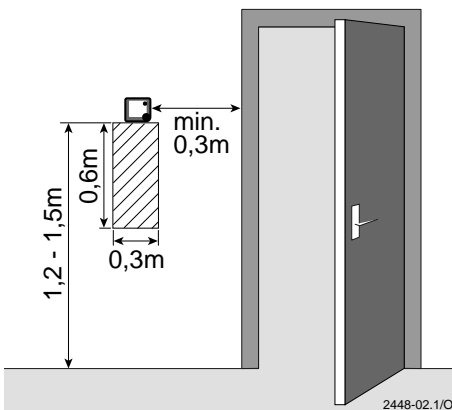


Fig. 2 Recommended installation site for TR 2

Installation

2.1.2 Fitting

- ▶ Remove top section (a) of unit from base (b).

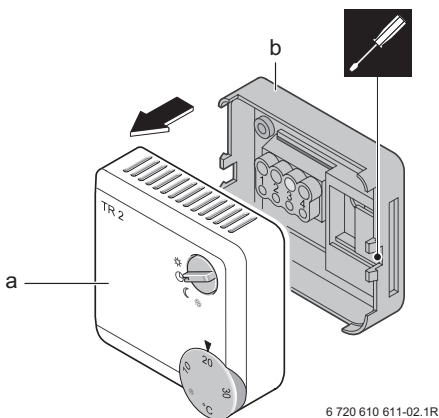


Fig. 3

- ▶ Turn base so that the terminal labelling is legible.
- ▶ Fit base (b) to a standard mounting box or directly to the wall using the four screws (drilling template supplied).

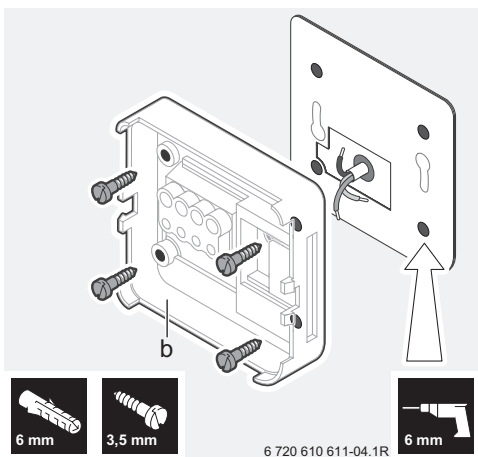


Fig. 4

- ▶ Make the electrical connections (refer to Section 2.2).
- ▶ Refit top section (a).

2.1.3 Fitting accessory units

- ▶ Fit accessory units for boilers **without** text display unit according to the statutory requirements and the installation instructions provided:
 - Room-temperature (economy/night) unit TR 212 E
 - timer DT 2.

2.2 Electrical connections

- ▶ Connection from TR 2 to boiler:
 - Use electrical cable that conforms to BS 6500:
 - up to 20 m cable length: 0.75 to 1.5 mm²
 - up to 30 m cable length: 1.0 to 1.5 mm²
 - over 30 m cable length: 1.5 mm²
- ▶ All low-voltage wiring (instrument wiring) should be routed separately from cables carrying 230 V in order to prevent inductive interference (minimum separation 100 mm).
- ▶ If there are external sources of inductive interference (e.g. high-power cables, overhead tram cables, transformer substations, radio and TV equipment, amateur radio equipment, microwaves, etc.): use screened cable.

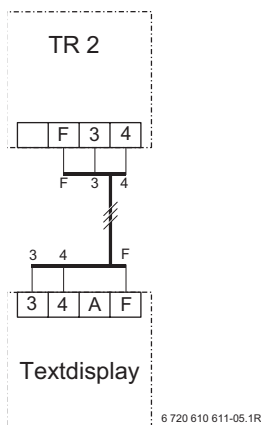


Fig. 5 Connecting the TR 2 to the text display unit

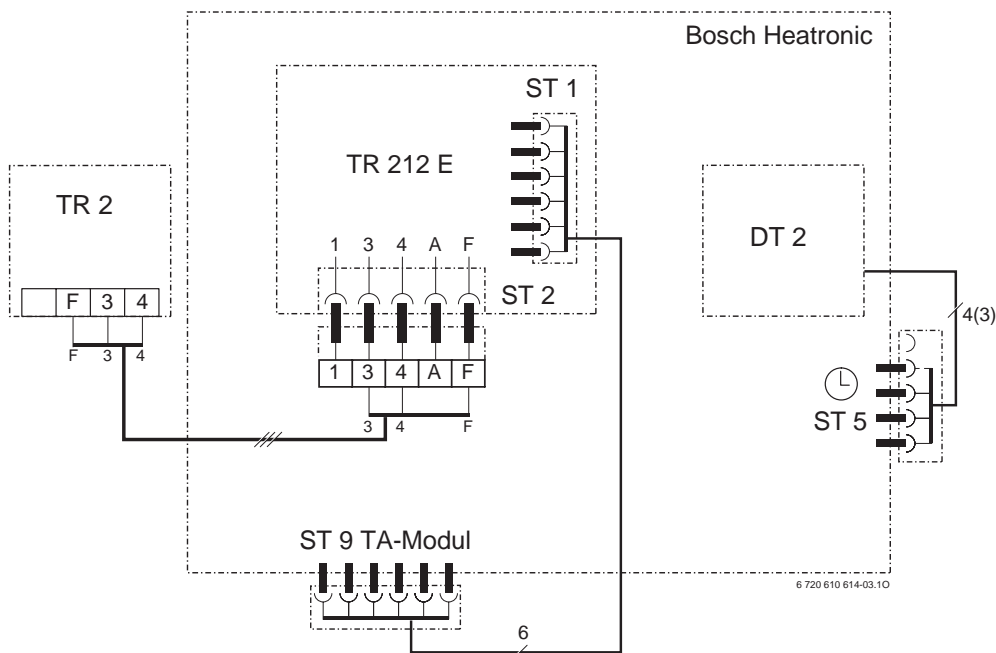
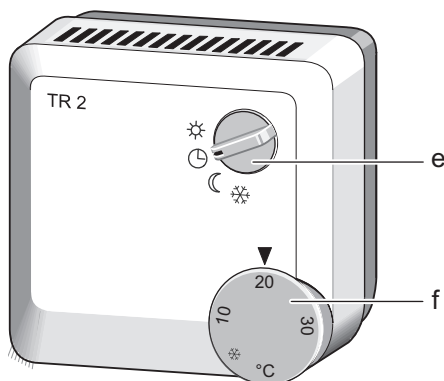


Fig. 6 Connecting the TR 2 to the TR 212 E.

3 Operation



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Fig. 7 Controls

- e Mode selector switch
- f Control for **On (Comfort)** mode; for setting the desired room temperature



Set the CH flow temperature control on the heating boiler to the maximum required CH flow temperature.

3.1 Setting the operating mode (e)

3.1.1 Automatic mode (basic setting)

Switches automatically between **On (Comfort)** and **Off (Economy)** modes according to the timer programme.

- **On (Comfort)** (=“Day”): the TR 2 modulates to the temperature set on the heating mode control (f).
- **Off (Economy)** (=“Night”): the TR 2 modulates to the temperature set on the text display unit or TR 212 E room-temperature (economy/night) unit.

3.1.2 ☀ **Constant “On (Comfort)” mode**

When the mode selector is set to position ☀ the TR 2 modulates continuously to the temperature set on the **On (Comfort)** heating mode control (f). The timer programme settings are ignored.

3.1.3 ☾ **Constant “Off (Economy)” mode**



Use this function when you go to bed earlier than usual or if you are going to be **away from home for a while**.

When the mode selector is set to position ☾ the TR 2 modulates continuously to the room temperature set on the text display unit or the TR 212 E room-temperature (economy/night) unit. The timer programme settings are ignored.

3.1.4 ❄ **Constant “Frost protection” mode**

When the mode selector is set to position ❄ the TR 2 modulates continuously to a room temperature of 5°C. This provides protection against frost in the room in which the TR 2 is fitted. If the ambient room temperature is above 5°C, the heating (pump) remains off.

The room temperature set on the heating mode control (f), text display unit or TR 212 E room-temperature (economy/night) unit is ignored. The timer programme settings are ignored.

3.2 Setting the room temperature for “On (Comfort)” mode (f)

- ▶ Set the control (f) to the desired room temperature between * (5°C) und 30°C. As soon as the TR 2 calls for heat, the heating switches on and continues running until the set room temperature has been reached.

3.3 Setting the room temperature for “Off (Economy)” mode

If the heating boiler **has a** text display unit:

- ▶ Set the desired room temperature for **Off (Economy)** mode on the text display unit (refer to boiler operating instructions).

If the heating boiler **does not have a** text display unit:

- ▶ Set the desired room temperature for **Off (Economy)** mode on the room-temperature (economy/night) unit TR 212 E (refer to operating instructions).

As soon as **Off (Economy)** mode calls for heat, the heating switches on and continues running until the set room temperature has been reached.

3.4 Frost protection

There are three possible frost protection modes:

- Continuous frost protection mode (mode selector switch (e) set to position *).
- Frost protection while **On (Comfort)** mode is active (control (f) set to position *).
- Frost protection while **Off (Economy)** mode is active:
 - Text display unit: **Off (Economy)** set to 5°C.
 - Room-temperature (economy/night) unit TR 212 E set to *.

In all frost protection modes, the room in which the TR 2 is fitted is protected against frost. If the ambient temperature is above 5°C, the heating (pump) remains switched off.

3.5 Entering the heating programme

- ▶ Enter the switching times for the heating programme on the text display unit (see boiler operating instructions).

-or-

- ▶ Enter the switching times for the heating programme on the fitted timer DT 2 (see timer operating instructions).

4 General instructions

... and tips on saving energy:

- The temperature in the primary room (room in which TR 2 is fitted) serves as the reference for the entire heating system. For that reason, the radiators must be adjusted to balance the system.
 - With **manual valves**, they should be pre-set.
 - With **thermostatic valves**, they should be set to maximum and the adjustment made using the return unions.
If the thermostatic valves in the primary room are not turned up to the maximum setting, they could restrict the supply of heat even though the TR 2 is calling for heat.
- Adjust the temperature in the remaining rooms by means of thermostatic valves.
- If the primary room is heated by external sources (e.g. sunshine, stove, etc.) the other rooms may not heat up adequately (central heating may not cut in).
- Save energy by reducing the room temperature during the day or at night: reducing the room temperature by 1 °C: can achieve up to 5% energy savings.
Energy-inefficient: allowing the temperature of rooms that are heated daily to fall below +15 °C because the walls will become cold, the room temperature will have to be raised and thus more energy consumed than if an even temperature were maintained.
- If the building is well insulated: the temperature may not drop as low as the set economy temperature. Nevertheless, you will still save energy because the heating will not switch on. In such cases, set the start time for “Off (Economy)” mode earlier.
- To air a room, do not leave windows constantly slightly open. This will result in continuous heat loss without significantly improving the quality of air in the room.
- Air the room for a short time, but thoroughly (windows fully open).
- While airing, turn off the thermostatic valve or set TR 2 to ☺ .

5 Fault finding

Problem	Cause	Remedy
Desired room temperature is not reached	Thermostatic valve(s) in primary room set too low	Turn up thermostatic valves to maximum or replace with manual valve(s)
	CH flow temperature control on boiler set too low	Turn up CH flow temperature control
	Air trapped in heating system	Bleed radiators and heating system
Desired room temperature is exceeded by large amount	Bad choice of installation site for TR 2, e.g. on external wall, near window, in draught, ...	Choose better installation site (see Section 2.1.1).
Excessive fluctuations in room temperature	Periodic effect of external source of heat on room, e.g. due to sunshine, lighting, TV, fire, etc.	Choose better installation site (see Section 2.1.1).
Temperature rises instead of falling	Time set incorrectly on timer	Check time setting
Room temperature too high in Economy mode	Building stores heat well	Set "Off (Economy)" mode to start earlier
Incorrect or non-existent modulation	TR 2 wired incorrectly	Check wiring conforms to wiring diagram and correct as necessary

EXCELLENCE COMES AS STANDARD

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