

Installation and Operating instructions

AWT

Weather-compensated
analog control thermostat
with day program
for gas fired boilers

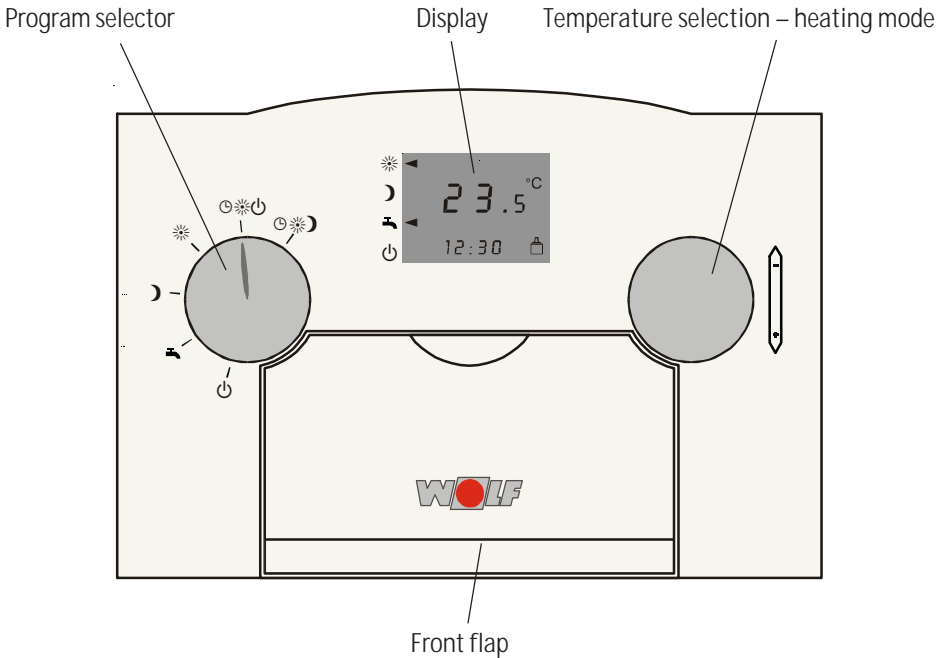
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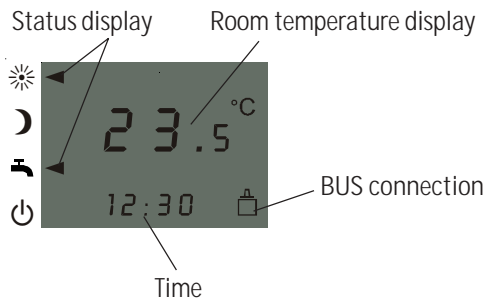
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Summary of functions



Standard display



Outside temperature (with connected outside temperature sensor)
The outside temperature display changes with the time display in 10 s intervals

Terminology / Standards and regulations

Terminology

Heating water temperature

The heating water temperature is the radiator flow temperature. The higher the heating water temperature, the higher the heat transfer to radiators.

Boiler

Gas fired boiler, which can be combined with a DHW cylinder.

Combination boiler

Gas fired boiler with an instantaneous water heater and DHW QuickStart.

DHW loading

Heating up the DHW cylinder.

DHW QuickStart

The heating water in the boiler will be held at a certain temperature during summer mode. to be able to supply hot water as rapidly as possible from the instantaneous water heater of the combination boiler. The day program switches this function ON and OFF during summer mode.

Heating program

Subject to program selection, the day program switches the gas fired boiler from heating to economy mode or from heating mode to heating OFF and vice versa.

Domestic hot water program

In a combination boiler, the day program controls the DHW QuickStart, and for a boiler with a DHW cylinder, it switches the cylinder loading ON and OFF.

Winter mode

Central heating and DHW according to the day program.

Summer mode

Central heating OFF, DHW according to the day program.

Heating mode/economy mode

In winter mode, two room temperatures can be selected. One for central heating mode and one for economy mode, when the room temperature will be setback to economy temperature.

The day program changes over between heating and economy mode.

Standards and regulations

In gas fired combination boilers, the analog room thermostat AWT complies with the following Directives:

- Low Voltage Directive: 73/23/EEC
- EMC guideline: 89/336/EEC

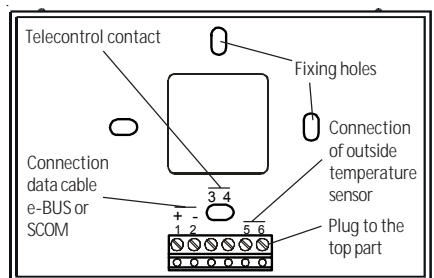
Installation

- Install the AWT on an internal wall at a height of approx. 1.5 m.
 - Install the AWT in a room, which is representative of the entire living accommodation.
 - The AWT must not be subject to draughts or radiated heat.
 - The AWT must not be blocked by furniture or curtains.
 - In this room, all radiator valves must be fully opened.
-
- Lever the AWT top from its base using a screwdriver.
In doing so, insert the screwdriver into the lower cutout of the base, and lever the base at the terminal strip.



Remove the AWT from its base using a screwdriver

- Secure the base through the fixings holes.



BUS interface setting

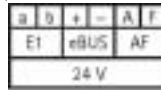
BUS interface setting

Wolf boilers are equipped either with an e-BUS or a SCOM interface for control accessories. The interface can be selected with the DIP switches on the back of the AWT.

Connection to Wolf boilers with eBUS interface

For boilers with eBUS interface, the BUS terminals are marked "+" and "-" together with "eBUS".

Push the DIP switch 4 into the "ON" position. Switches 1 to 3 remain "OFF", if only one accessory controller is connected.



Setting the eBUS address

Using the DIP switches 1 - 3, set one address for every AWT in systems with several AWT controllers (multi-boiler system with DWTM).

eBUS settings	
Address 0 (factory setting)	■ ■ ■ ■ ■
Address 1	■ ■ ■ ■ ■
Address 2	■ ■ ■ ■ ■
Address 3	■ ■ ■ ■ ■
Address 4	■ ■ ■ ■ ■
Address 5	■ ■ ■ ■ ■
Address 6	■ ■ ■ ■ ■
Address 7	■ ■ ■ ■ ■
SCOM settings	
SCOM master	■ ■ ■ ■ ■

Address list at the back of the controller PCB

Connection to Wolf boilers with SCOM interface

For boilers with SCOM interface, the BUS terminals are marked "+" and "-" in accordance with connection diagrams together with "(Wolf) Accessory". Push the switches 1 to 4 into the "OFF" position.



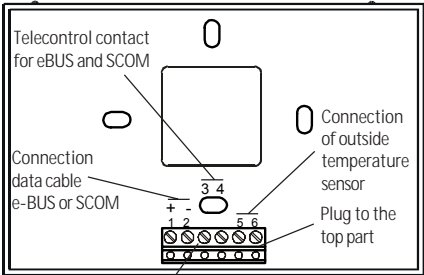
Please note: All accessory controllers (BUS users) must be set to the same boiler interface.

Electrical connection

The electrical connection must only be carried out by a qualified electrician.

Warning Do not route these cables with mains supply cables.

Wire the AWT with 2-core cable (minimum cross-section 0.5 mm²) to the gas fired boiler. Subject to boiler terminal strip, select one of the adjacent wiring diagrams.

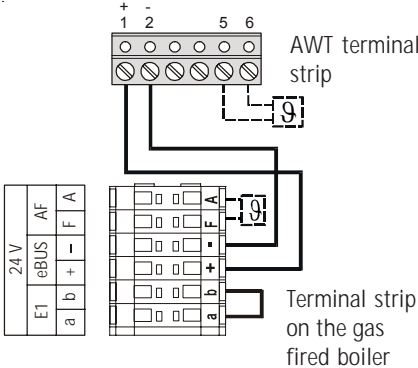


Terminal strip inside the AWT base

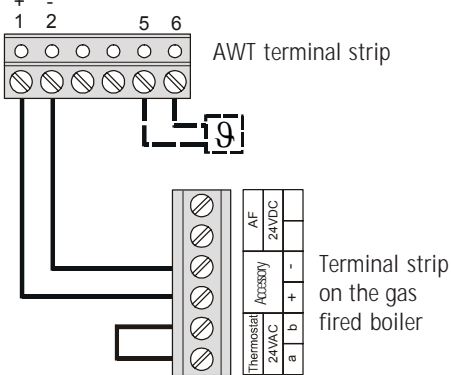
Replace the AWT onto its base and click into place. When refitting the housing ensure, that the contact pins on the thermostat are not bent.

- The outside temperature sensor may be connected either at the gas fired boiler or at the AWT.
- Install the outside temperature sensor at a North or North Eastern wall at a height of 2 - 2.5m above the ground (cable grommet pointing downwards).
- Wire the AWT with 2-core cable (minimum cross-section 0.5 mm²) in accordance with the diagram shown.

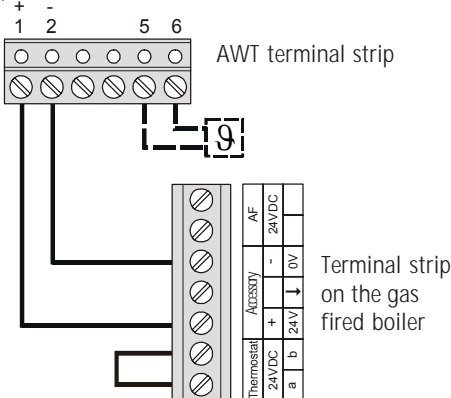
Connection version a)



Connection version b)




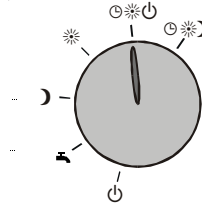
Connection version c)









Program selector

Program selector (l.h. rotary selector)

Important: This must be set to  on gas fired boilers with program selector.



AWT program selector

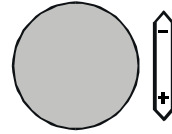
Operating mode	Program display	Central heating	Domestic hot water Boiler	Domestic hot water Combination boiler
Standby		Central heating OFF / Frost protection	DHW loading OFF, DHW cylinder frost protection ensured	DHW QuickStart OFF
Summer mode		Central heating OFF / Frost protection	DHW cylinder loading acc. to the day program	DHW QuickStart acc. to the day program
Winter mode		Economy mode	DHW loading OFF, DHW cylinder frost protection ensured	
		Heating mode	Enable DHW loading	
		Heating or economy mode acc. to day program	DHW cylinder loading acc. to the day program	
		Heating mode or central heating OFF acc. to day program	DHW cylinder loading acc. to the day program	

Temperature selection heating mode / status display

Temperature selection – heating mode (r.h. rotary selector)

Turning the selector changes the display from current room temperature to set room temperature.





Then you can change the desired room temperature for heating mode. If no change is made after more than 2 s, the display will again show the current room temperature.



Temperature selection – heating mode

Note: The set value only applies to the room temperature of the room where the AWT is installed in case of room temperature dependent heating mode (heating curve = 0) or for weather-compensated heating mode with room influence (see room influence). The set temperature is only an approximate value for purely weather-compensated control (heating curve 0.2 – 3.0 and room influence = 0).

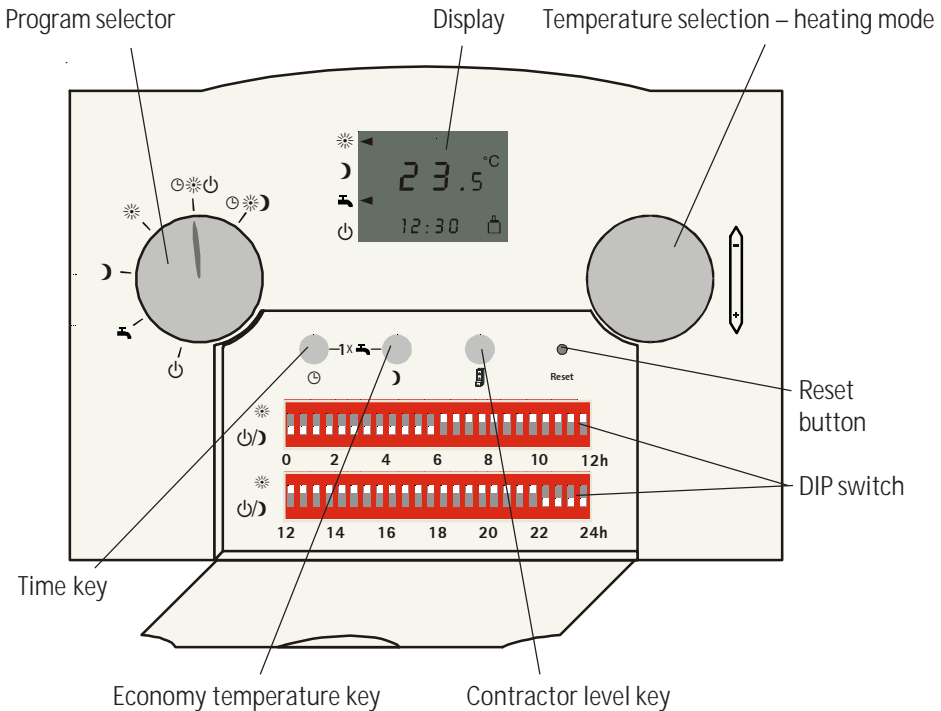
Status (display)

-  Heating mode active
-  Economy mode active
-  DHW loading or DHW QuickStart enabled
-  Central heating OFF (frost protection) and DHW loading or DHW QuickStart OFF



Arrows displaying the current operating status

Setting time / summer/winter / economy temperature



Setting the time / changing from summer to winter or vice versa

Note: When using a radio clock module, setting the time and summer/winter changes are made automatically.

Open the front flap on the AWT controller to set the current time or to change from summer to winter time or vice versa.

After pressing the time key ☉ the display changes to the time setting mode. Now adjust the time with the r.h. rotary selector.

The standard display will be shown again if no changes are made after more than 10 s or one of the three keys is pressed.

Setting the economy temperature

After pressing the economy temperature key ☾ the display changes to the setting mode for the required room temperature in economy mode.

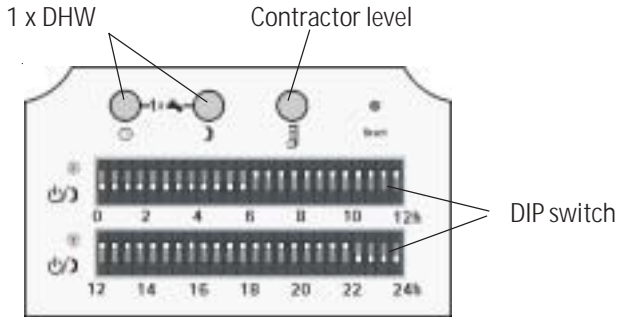
The current set temperature for economy mode will be displayed.

Turning the r.h. rotary selector (heating mode temperature selector) changes this value.

The standard display will be shown again if no changes are made after more than 10 s or one of the three keys is pressed.

Note: The set economy temperature is only an approximate value when the room influence = 0.

Day program setting / 1 x DHW



Day program setting

Day programs for central heating and DHW cylinder loading (for boilers with DHW cylinders) or DHW QuickStart are set using the DIP switches under the front flap.

Heating mode settings and enabling DHW cylinder loading/DHW QuickStart: Push the DIP switch ☼ up for the required period.

The set room temperature for heating mode will be used.

Economy mode or central heating OFF (subject to the program selector setting): push the DIP switches for the required period down ☽.

The selected set room temperature for economy mode is used or the central heating is switched OFF. DHW loading or DHW QuickStart are disabled.

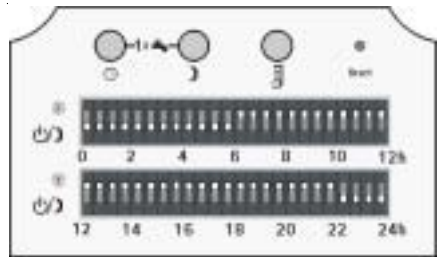
The shortest switching period is 30 minutes.

Note: The day program settings will only be active, if the program selector has been set in accordance with the day program ☼☽, ☼☽☼ or ☼☽☼☼.

1 x DHW

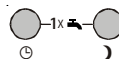
If DHW is required outside the period where DHW loading is enabled, the DHW cylinder can be heated to the set temperature by means of function "1 x DHW". Pressing keys ☽ and ☼ simultaneously either activates or deactivates this function. In the activated state, a flashing arrow appears on symbol ☼. Function "1 x DHW" will be deactivated automatically after one hour.

Day program example

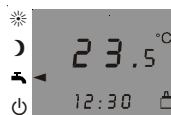


Heating ON from 06.00 - 22.00 h
 Heating OFF/economy from 22.00 - 06.00 h

For boilers with DHW cylinder loading enabled from 6.00 - 22.00 h
 DHW cylinder loading disabled from 22.00 - 06.00 h





Key combination for "1 x DHW"



Display during "1 x DHW"

Contractor level

Contractor level

Pressing key  changes the display to contractor level. The contractor level is segregated into display and parameter mode. Individual displays (e.g. A:01) and parameters (e.g. P:01) are shown in sequence after pressing .

In parameter mode you can change the values displayed above the r.h. rotary selector.



Display mode
e.g. current set
flow temperature



Parameter mode
e.g. gradient

List of displays and parameters

Display list:			
Index	Explanation	Unit	
A 01	Set flow temperature	°C	
A 02	Actual flow temperature	°C	
A 03	Actual DHW temperature	°C	
Parameter list			
Index	Explanation	Setting range	Factory setting
P 01	Heating curve gradient	0 - 3	1.2
P 02	Room influence	0 - 20	0
P 03	Set DHW temperature	15 - 65 °C for boilers type E 40 - 63 °C for boilers type K	60 °C 60 °C
P 04	Pasteurisation	00 - 01	00
GB 01	Flow temperature hysteresis	1 - 20	see installation instructions for gas fired boiler
GB 04	Upper fan speed - central heating	30 - 100	
GB 05	Frost protection outside temperature	-10 - 10	
GB 06	Heating circuit pump mode	0 - 1	
GB 07	Heating circuit pump run-on	1 - 30	
GB 08	Maximum set flow temperature	40 - 90	
GB 09	Cycle block	0 - 30	
GB 13	Input 1	0 - 5	
GB 14	Output 1	0 - 9	
GB 15	DHW cylinder hysteresis	1 - 15	

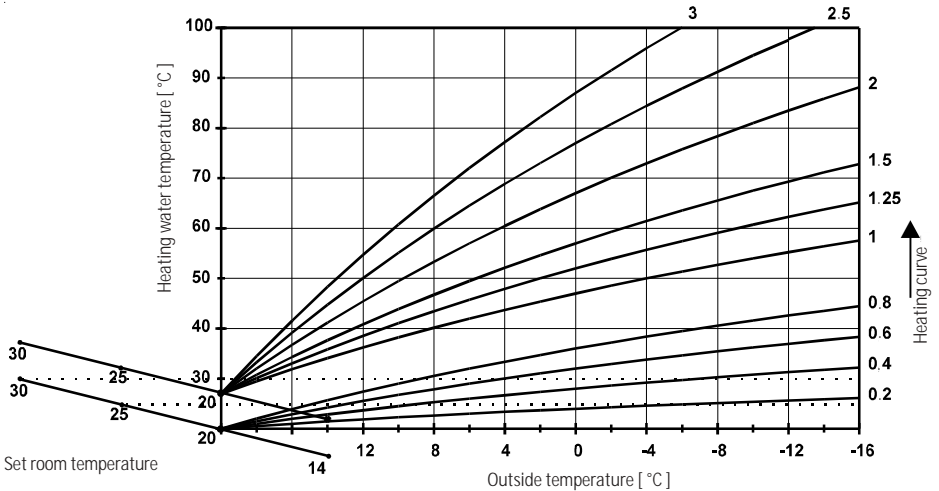
Note: Parameters GB01 to GB15 are only shown with the appropriate boilers; for descriptions see the installation instructions of the relevant boiler.

Warning Parameters GB 01 - 15 must only be modified by a heating contractor. Incorrect operation can lead to system faults.

Warning If the factory setting of parameter 5 is modified, please note that for values below 0, frost protection is no longer ensured, consequently the heating system may suffer damage.

Heating curve gradient (P 01)

The AWT calculates the heating water temperature for the heating system according to the current outside temperature, the set heating curve and the set room temperature. To obtain automatic matching to the system design, heating curves are subject to the adjusted gradient and indicate a more or less severe curvature. From heating curve gradient 1.0 upwards, the raised low end provides sufficient comfort for higher outside temperatures in rooms equipped with radiators.



Note: A purely room temperature dependent heating water temperature control results automatically, if the heating curve is set to 0.

Default settings for various heating systems:

Heating system flow/return	°C	40/30	50/40	70/50
Heating curve		0.6-0.8	0.8-1.0	1.2-1.4

Room influence (P 02)

The room temperature sensor integrated into the weather-compensated AWT controller can be included in the calculation of the heating water temperature. You can adjust the extent to which the room temperature sensor influences the calculation by various room temperature influencing factors ($K=0$, -20). The higher the selected factor, the greater the effect of the room temperature sensor. If no outside temperature sensor is installed or an outside temperature sensor break is recognised (resistance = infinite), the system will automatically operate purely as a room thermostat.

Room influence $K = 0 \rightarrow$ purely weather-compensated heating water temperature

Room influence $K = 20 \rightarrow$ purely room temperature dependent heating water temperature

Set DHW temperature (P 03)

Setting the desired DHW temperature for eBUS interfaces.

For SCOM interfaces, the DHW temperature will only be displayed.

Adjustments are made at the boiler.

Contractor level

Automatic summer and winter changeover

Heating mode / economy mode: The AWT will automatically change over to summer mode, if the outside temperature rises 1K above the set room temperature. The system automatically reverts to winter mode, when the outside temperature falls below the set room temperature.



Additional feature for heating mode with room influence ± 0 : The AWT will automatically change over to summer mode, if the room temperature rises 1K above the set room temperature for heating mode. The system automatically reverts to winter mode, when the room temperature falls below the set room temperature.

Additional feature for economy mode:


The AWT automatically switches to summer mode, if the set heating water temperature falls below 20 °C. The system automatically reverts to winter mode, when the set heating water temperature rises above 21 °C.

Special case: Heating curve = 0 (only room temperature control) for heating mode / economy mode.

The AWT will automatically change over to summer mode, if the room temperature rises 1K above the set temperature. The system automatically reverts to winter mode, when the room temperature falls below the set temperature.

Note: In summer mode, the status display shows  or .

Fault codes

Any fault of the gas fired boiler will be indicated by a flashing fault code number and the warning symbol  in the ART display.



Fault code display

Fault code	Explanation
15	Outside temp. sens. at ctrl. unit faulty
80	Outside temp. sens. at AWT faulty
91	Wrong address set - AWT

Fault code 15: Fault code 15 is displayed at the AWT if no outside temperature sensor is connected or the outside temperature sensor fitted to the control PCB is faulty.
=> The heating circuit pump runs permanently, the AWT acts a room controller.

Fault code 80: Fault code 80 will be displayed by the AWT, if the outside temperature sensor fitted to the AWT is faulty.
=> The heating circuit pump runs permanently, the AWT acts a room controller.

Fault code 91: In systems with several controllers, two (e.g. AWT, ART) are set to the same BUS address. Correct the address settings using the DIP switches on the respective controllers.

Check the installation instructions of the respective boiler for an explanation of all other fault codes.

If the device will not operate properly after the boiler has been reset twice, or if the boiler cannot be reset, inform your heating contractor of the fault code displayed.

Pasteurisation (P 04) (only with eBUS in conjunction with a boiler with DHW cylinder)

Pasteurisation is switched OFF when factory settings are active (parameter P 04 = 00).

Pasteurisation is active if parameter P 04 is set to 01.

The DHW cylinder will be heated to 65 °C once every day for one hour after DHW loading has been enabled, if pasteurisation has been activated.

Parameter P 04 will be displayed during eBUS communication.

Outside temperature dependent frost protection

The heating circuit pump and, if necessary, the burner will be switched ON if the outside temperature falls below the set frost protection level. Burner and heating circuit pump will be switched OFF again, if the temperature rises above the set frost protection level.


Room temperature dependent frost protection

An additional room temperature dependent frost protection function has been integrated into the AWT. The heating circuit pump and, if required, the burner are switched ON at +5 °C room temperature. Frost protection ends at + 6 °C.

Resetting the controller

The AWT processor is restarted by pressing "Reset". The display indicates the software number, version and all symbols in sequence.

Loading the standard configuration

Hold down key  and briefly press "Reset". The software number and version and then EEP are displayed. The AWT is then reset to its factory settings.

Accessories / Specification

Radio clock module (only eBUS)

The AWT time is adjusted via a radio signal received by the radio clock module with outside temperature sensor [where available]. The changeover between summer and winter time too is regulated by radio signal [where available].



Radio clock module
(part no. 27 92 325)

Telecontrol module

By connecting a telecontrol module, the heating and the DHW mode of the heating system can be activated via telephone, excluding the influence of the time channel.

Note the installation and operating instructions of the telecontrol module for connection and settings.



Telecontrol module
(part no. 27 91 044)

Specification

Supply voltage	18 VDC \pm 15%
Power consumption	max. 1VA
Protection according to DIN 60529	IP30
Protection class according to VDE 0100	III (max. 24V)
Time switch power reserve	min. 10 hrs.
Permissible ambient temperature in use	0 to 50 °C
Permissible ambient temperature during storage	-30 to +60 °C
Communication and power supply via 2-core cable, interchangeable (cross-section 0.5mm ²) to the gas fired boiler	