

# Automation System TROVIS 5500

## Heating and District Heating Controller TROVIS 5576



### Application

Control of max. two control circuit. For a larger number of control circuits, several controllers can be linked by a device bus. The controller may communicate with up to six heat meters via the retrofittable meter bus plug-in module.



The TROVIS 5576 Heating and District Heating Controller is used to control max. two control circuits:

- Control of a primary heat exchanger or boiler  
Max. one mixing and one non-mixing heating circuit (both weather-compensated) as well as control of DHW heating in the secondary circuit.
- Control of a weather-compensated heating circuit and DHW heating with two valves in primary circuit
- Control of two weather-compensated heating circuits with two valves in the primary circuit

### Special features

- Direct access to the operating modes and essential parameters of the control circuits using rotary switches
- Intuitive data retrieval and input by pressing and turning the rotary pushbutton
- Illuminated display
- 365-day clock with max. four time schedules and automatic summertime/wintertime changeover; max. three times-of-use per day (input in steps of 15 minutes)
- Room panels may be connected for each heating circuit:
  - Convenient room panel for adjustment of operating mode, day and night set points, heating times-of-use, controller clock and party mode. Additional display of outdoor and room temperatures. Connection via device bus
  - Room panel to override operating mode and day set point
- Demand-driven control via set point request of subsequent control circuits using a device bus or 0 to 10 V signal. The primary circuit controls the maximum flow temperature required plus adjustable boost
- Applications with solar thermal DHW heating available
- Instantaneous heating systems with water flowmeter configurable
- Heating characteristics either according to gradient or four points; variable limitation of the return flow temperature
- Adaptation: automatic adaptation of the heating characteristic (room temperature sensor required)
- Optimization: calculation of the best possible activation and deactivation times of the heating (room temperature sensor required)



Fig. 1 · TROVIS 5576 Heating and District Heating Controller

- Drying of jointless floors function with adjustable parameter settings
- Pump management function: speed changeover for a heating circuit pump available
- Data logging function:
  - Operating data can be saved internally and/or saved to a data logging module
  - Data can be displayed in the data log viewer on the PC

### Inputs and outputs

- 15 configurable inputs for Pt 1000/ Pt 100, PTC/Pt 100, NTC/Pt 100, Ni 1000/Pt 100 or Ni 500/Pt 100 temperature sensors and binary inputs
- Three-step, on/off or continuous-action outputs (0 to 10 V) configurable with PID control algorithm

### Communication

- RS-232 interface for modem or point-to-point connection to a PC
- Exchange of configuration data and parameters using a memory pen
- Configuration and parameterization using TROVIS-VIEW software
- Fault alarms sent by text messages (SMS; modem required)
- Flash EPROM of the controller (operating system) can be updated via the RS-232 system bus interface (also via modem) and the RS-485 interface (via cable converter)
- RS-232/RS-485 cable converter for communication with the bus (optional)
- Meter bus plug-in module for communication with up to six heat meters (optional)

### Operation

The TROVIS 5576 Heating and District Heating Controller is adapted to the specific plant by setting the appropriate system code number. To select the code number, refer to the plant schematics described in the associated mounting and operating instructions. Additional sensors and/or functions which are not part of the plant's basic configuration may be selected over function blocks.

Press the changeover key  $\rightleftarrows$  to access the different levels. For experts, configuration levels used to set function blocks are indicated by "CO" and parameter levels are indicated by "PA". There is, for example, a clear distinction between two heating circuit levels, a DHW level and a communication level.

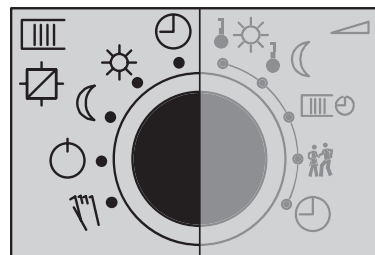
Data are retrieved and entered at the controller using a rotary pushbutton. This process is facilitated by icons displayed on the LCD. The three rotary switches are used to set the operating mode (left) and the parameters required for each circuit (right) as illustrated in Fig. 2.

### Meter bus plug-in module

The meter bus plug-in module enables you to conveniently connect heat or energy meters as well as water meters to the controller. According to EN 1434-3, a maximum of six meters may be connected for data transfer.

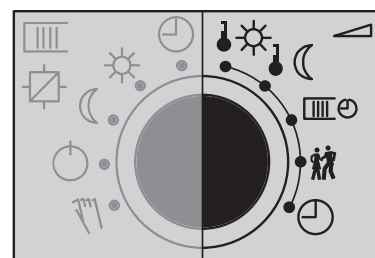
A heat meter – provided it supplies high-resolution measuring accuracy – can be used to limit flow and/or capacity. Different flow and capacity limits can be set for the operating states "Heating control only", "Heating control and DHW heating" and "DHW heating only".

### Operating modes



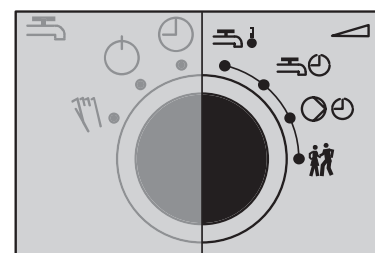
- Time-controlled operation
- Rated operation
- Reduced or standby operation
- No control operation, frost protection only
- Manual mode:  
Correction value adjusted in percent and pump activated/deactivated by "pressing" and "turning" the pushbutton

### Parameters



- Day set point
- Night set point
- Times-of-use for heating
- Party mode: setting of special times-of-use in steps of 15 minutes. Timer starts working immediately after it is set.
- Controller clock:  
Setting of time, date and year

### Domestic hot water circuit



- Domestic hot water temperature
- Times-of-use for domestic hot water
- Times-of-use for domestic hot water circulation pump
- Party mode: setting of one special time-of-use (one-time operation) in steps of 15 minutes. Timer starts working immediately after it is set.

Fig. 2 · Switch positions and their meaning

## Technical data

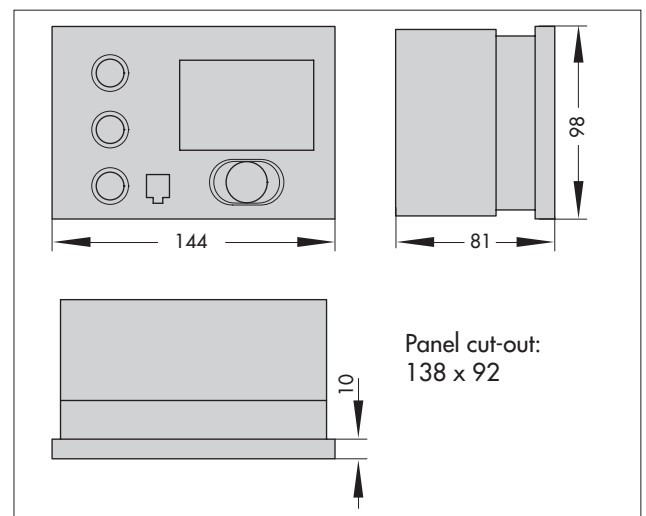
<b>Inputs</b>		15 configurable inputs for Pt 1000/Pt 100, PTC/Pt 100, NTC/Pt 100, Ni 1000/Pt 100, or Pt 500/Pt 100 temperature sensors and binary inputs, Input 17 alternatively for flow signal of heat meter or signal required by subsequent control circuits 4(0) to 20 mA with 50 $\Omega$ parallel resistor or 0 to 10 V (demand: 0 to 10 V correspond to 20 to 120 °C flow temperature)
<b>Outputs*</b>		2 x three-step signal: load max. 250 V AC, 2A Alternatively on/off signal: load max. 250 V AC, 2A Alternatively continuous-action output: 0 to 10 V, load > 5 k $\Omega$ 4 x pump output: Load max. 250 V AC, 2A; all outputs are relay outputs with varistor suppression 2 x semiconductor relay: load max. 24 V AC/DC, 50 mA
<b>Interfaces</b>	Device bus	RS-485 interface for max. 32 bus devices (2-wire system, polarity independent, connection to terminals 29/30 as required or together with the two-wire system bus via 1400-8800 cable converter)
	System bus	RS-232 Modbus interface for modem or point-to-point connection to a PC (Modbus RTU protocol, data format 8N1, RJ-45 jack at the side)  Optional: – RS-485 Modbus interface for four-wire bus using a 1400-7308 cable converter – RS-485 Modbus interface for two-wire bus using a 1400-8800 cable converter
	Meter bus	Optional: – Meter bus plug-in module, protocol according to EN 1434-3 (also suitable for retrofitting)
Operating voltage		165 to 250 V, 48 to 62 Hz, max. 5 VA
Ambient temperature		0 to 40 °C (operation), –10 °C to 60 °C (storage and transport)
Degree of protection		IP 40 according to IEC 529
Class of protection		II according to VDE 0106
Degree of contamination		2 according to VDE 0110
Overvoltage category		II according to VDE 0110
Humidity rating		F according to VDE 40040
Noise immunity		According to EN 61000-6-1
Noise emission		According to EN 61000-6-3
Weight		Approx. 0.5 kg

\* For plants with 2 control circuits and 5 pumps, the second heating circuit can only use the 0 to 10 V output.

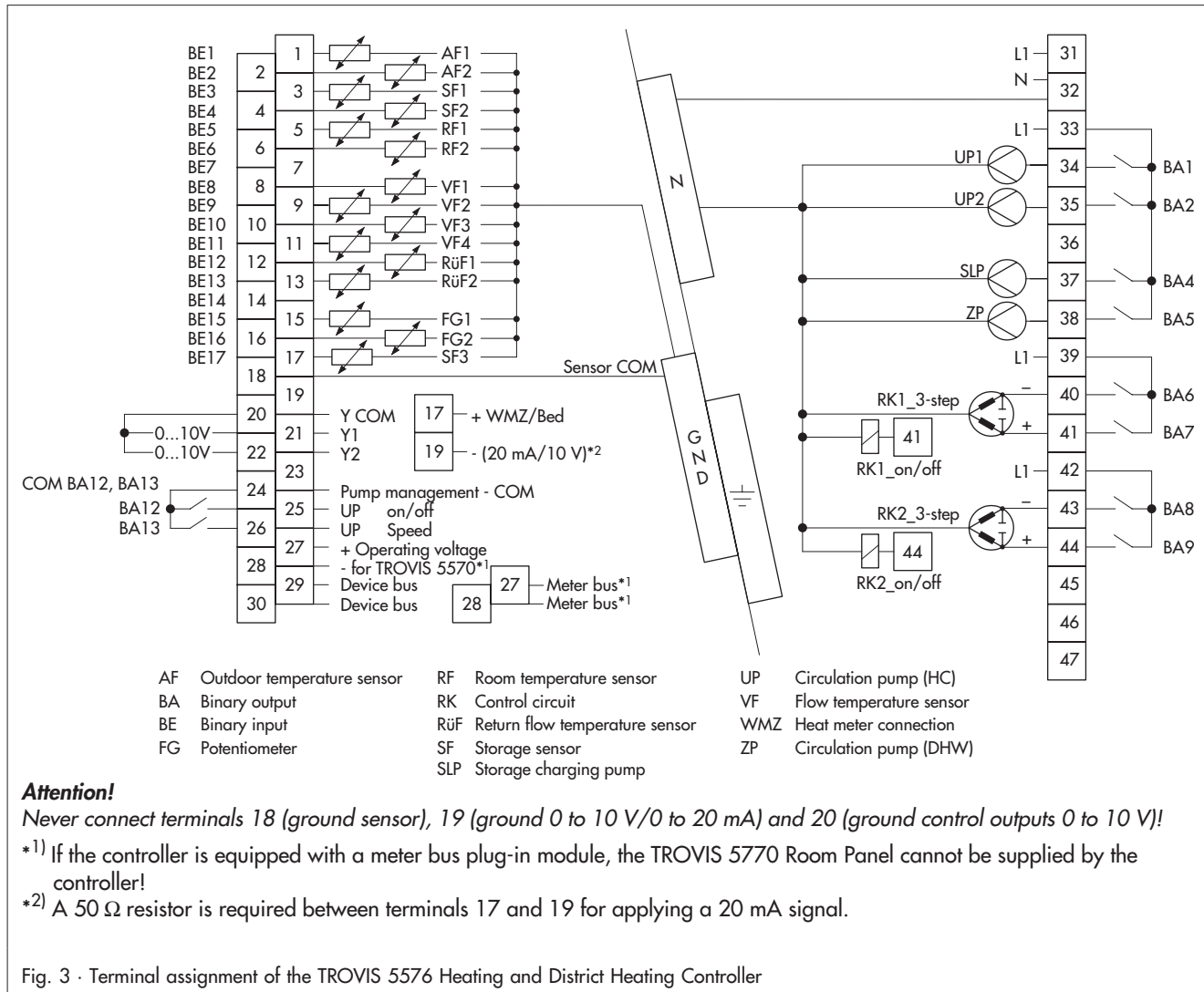
## Electrical connection and installation

The controller consists of the housing containing the electronics and a separate terminal board for electrical connection. Two wires of max. 1.5 mm<sup>2</sup> may be connected to each terminal. The sensor connection lines must be installed separately from the lines carrying the operating voltage. For wall mounting, screw the terminal board to the wall. After the electrical connections have been installed, plug the controller housing onto the terminal board and fasten it with two screws. Two fastening elements for panel mounting are delivered with the controller.

## Dimensions in mm



## Terminal assignment



### Ordering text

TROVIS 5576 Heating and District Heating Controller with RS-232 system bus interface for modem or point-to-point connection to a PC

### Options:

- Cable converter 1400-8800 for RS-485 two-wire system bus
- Cable converter 1400-7308 for RS-485 four-wire system bus
- Meter bus plug-in module 1400-8975
- Visualization and operator interface 55Viewer 1400-9770

### Accessories:

- Room panels
  - Type 5244 · PTC sensor with room panel
  - Type 5257-5 · Pt 1000 sensor with room panel
  - TROVIS 5570 · room panel with display
- Memory module 1400-9379
- Mini module 1400-7436
- Data logging module 1400-9378
- USB converter 3 together with data logging viewer software 1400-9377
- TROVIS-VIEW 6661-1012 Operator Interface for TROVIS 5576

Specifications subject to change without notice.

