



Application

Control of up to three control circuits

- Control of a primary heat exchanger or boiler with up to two mixing heating circuit and one non-mixing heating circuit (both outdoor-temperature-compensated) and control of DHW heating in the secondary circuit
- Outdoor-temperature-compensated buffer storage tank control with up to two mixing heating circuits and continuous-flow hot water module
- Control of two outdoor-temperature-compensated heating circuits and a DHW heating with three valves in the primary circuit
- Control of three outdoor-temperature-compensated heating circuits with three valves in the primary circuit
- Linking of a maximum six control circuits with optional TROVIS I/O expansion modules using a device bus possible
- To control systems with larger numbers of control circuits, several controllers can be linked using a device bus.

Special features

- Rotary switch for direct access to the operating modes and key parameters of the control circuits
- Intuitive data retrieval and input by pressing and turning the pushbutton
- 365-day time switch with up to four time schedules and automatic summer time/winter time changeover; up to three times-of-use per day (input in steps of 15 minutes)
- Max. three room panels connected to individual heating circuits to override operating mode and the set point (rated room temperature).
- Demand-driven control by set point demand by subsequent controllers over a device bus or using 0 to 10 V signal: the primary circuit controls the maximum flow temperature demand plus adjustable boost.
- Heating characteristics optionally based on the gradient or based on four points; variable return flow temperature limitation



Fig. 1: TROVIS 5578 Heating and District Heating Controller

- Adaptation: automatic adaptation of the heating characteristic (room temperature sensor required)
- Optimization: calculation of the best possible activation and deactivation times for the heating (room temperature sensor required)
- Drying of jointless floors function with adjustable parameter settings
- Alarms and setting changes including time stamp shown in tables
- Graphical display of operating values of the past 14 days at one-minute intervals

- Data logging function:
 - Operating data can be saved to a data logging module
 - Data can be displayed in the data log viewer on a computer

Communication

- Configuration and parameterization either using memory module or online using USB converter 3 and the TROVIS-VIEW software
- Updatable flash memory in controller (operating system)

Optional interfaces for communication

RS-485 communication module

Design and principle of operation

The TROVIS 5578 Heating and District Heating Controller is adapted to the specific system by setting the appropriate system code number. Additional sensors and/or functions which are not part of the system's basic configuration can be selected over function blocks. The switch positions \diamond and entry of the key number allow access to the corresponding levels. For trained staff, the configuration levels used to set function blocks are indicated by "CO" and the parameter levels are indicated by "PA". Data is retrieved and entered at the controller using a rotary pushbutton. This process is facilitated by icons and plain text displayed on the LCD. The rotary switch is used to set the operating mode and the key parameters required for each circuit.

M-bus interface

A maximum of three meters conforming to EN 1434-3 can be connected for data transfer. In addition, heat meter WMZ1 for control circuit RK1, heat meter WMZ2 for control circuit RK2 and heat meter WMZ3 for control circuit RK3 are available for flow rate and/or capacity limitation. Various limits can be adjusted for the different operating modes "Heating control only", "Heating control with DHW heating" and "DHW heating only" in control circuit RK1. Outdoor-temperature-compensated flow rate or capacity limitation can also be implemented.

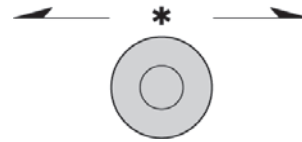
Mounting

For wall mounting, the base of the housing is screwed to the wall. After wiring the controller, the controller housing is placed on the back of the housing and fastened with two screws.

Two adjustable fixing clamps attached to the controller are used for panel mounting.

Operation

The controller is operated using the operating controls on the front. The rotary pushbutton (see Fig. 2) is used to select readings, parameters and function blocks. The rotary switch (see Fig. 3) is used to set the operating mode and the key parameters for each control circuit.



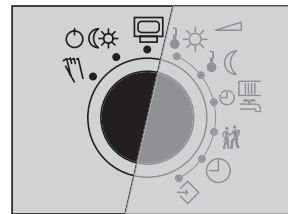
Turn [\odot]:


Select readings, parameters and function blocks

Press [*]:

Confirm adjusted selection or settings

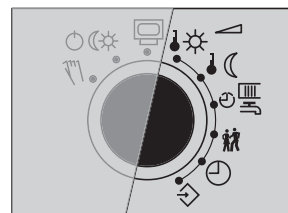
Fig. 2: Rotary pushbutton




 Information level


 Operating modes

 Manual level



 Day set point (rated room temperature)

 Night set point (reduced room temperature)

 Times-of-use for heating/DHW

 Special time-of-use

 Time/date

 Settings

Fig. 3: Switch positions and their meaning

Electrical connection

The controller consists of the housing containing the electronics and a separate base with terminals for electrical connection. Two wires with a cross-section of max. 1.5 mm² can be connected to each terminal. The sensor connection lines must be installed separately from the lines carrying the power supply.

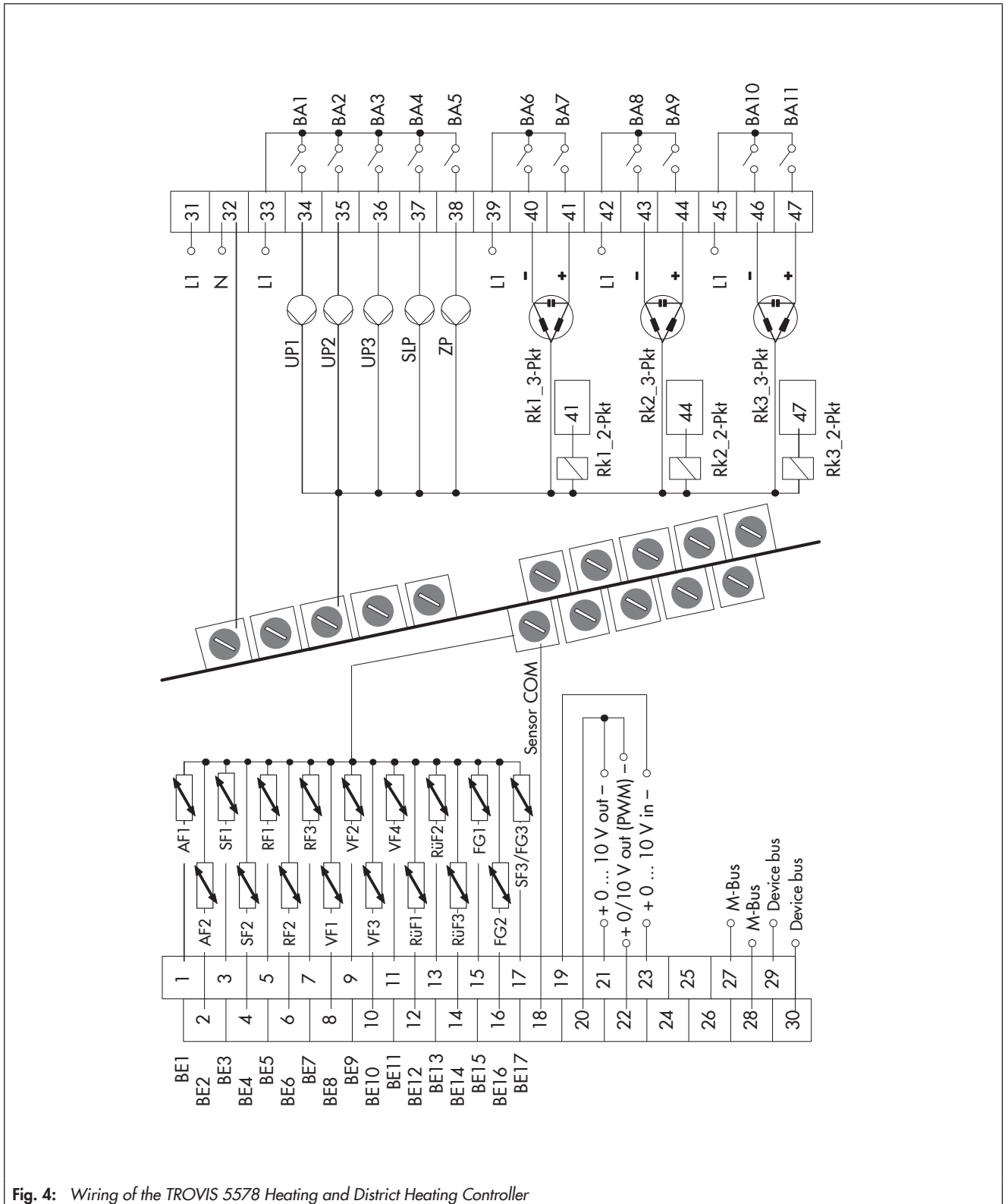


Fig. 4: Wiring of the TROVIS 5578 Heating and District Heating Controller

Legend:

AF	Outdoor sensor	RF	Room sensor	SLP	Storage tank charging pump
BA	Binary output	RK	Control circuit	UP	Circulation pump (heating)
BE	Binary input	RüF	Return flow sensor	VF	Flow sensor
FG	Potentiometer	SF	Storage tank sensor	ZP	Circulation pump (DHW)

Technical data

Inputs	17x Pt 1000, PTC or Ni 1000 sensor inputs, alternatively configurable for binary inputs 1x 0 to 10 V input (e.g. for external demand or outdoor temperature signal) Input 17 for a pulse signal (3 to 800 pulses/h) of a heat meter for capacity limitation in RK1
Outputs	3x three-step signal: rating max. 250 V AC, 2 A, alternatively 3x on/off signal: rating max. 250 V AC, 2 A 5x pump output: rating max. 250 V AC, 2 A; all outputs are relay outputs with varistor suppression 1x 0 to 10 V output (e.g. for continuous closed loop control, outdoor temperature, signal for external demand or pump speed control), load >5 kΩ 1x 0 to 10 V output for PWM signal for pump speed control
Interfaces	M-bus for max. 3 M-bus units, protocol according to EN 1434-3 Device bus interface (RS-485) for max. 32 bus devices (two-wire bus, reverse polarity protection)
Optional interfaces	Modbus RS-485 interface for two-wire bus using RS-485 communication module (Modbus RTU protocol, data format 8N1, RJ-45 connector socket at the side)
Supply voltage	165 to 250 V, 48 to 62 Hz, max. 7 VA
Permissible ambient temperature range	0 to 40 °C (operation), -10 to +60 °C (storage and transport)
Degree of protection	IP 40 according to EN 60529
Class of protection	II according to EN 61140
Degree of contamination	2 according to EN 61010-1
Overvoltage category	II according to EN 60664
Noise immunity	According to EN 61000-6-1
Noise emission	According to EN 61000-6-3
Conformity	CE
Weight	Approx. 0.5 kg

Dimensions

Panel cut-out 138x92

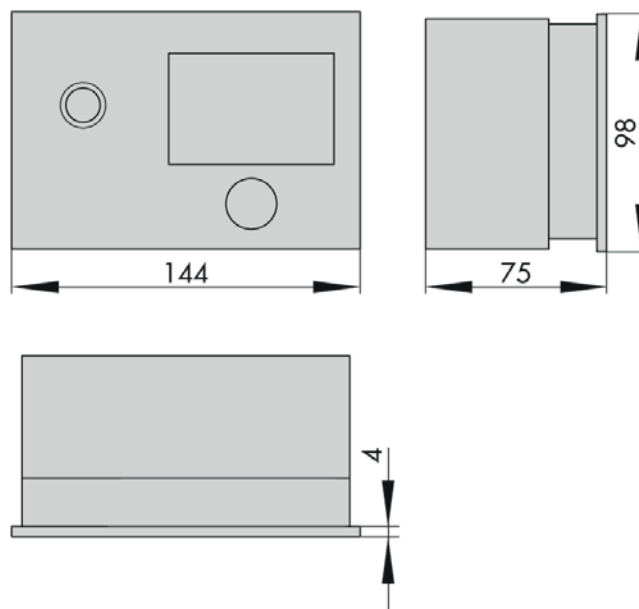


Fig. 5: Dimensions in mm

Accessories

Memory module	Order no. 1400-9379
Mini module	Order no. 1400-7436
Data logging module	Order no. 1400-9378
USB converter 3 together with data log viewer software	Order no. 1400-9377
TROVIS-VIEW software (free of charge)	▶ www.samsunggroup.com > SERVICE & SUPPORT > Downloads > TROVIS-VIEW
RS-485 communication module	Order no. 8812-2002
Surge arrester SA 5000	Order no. 1400-9868
▶ SAM HOME Gateway	Type 5660
▶ SAM MOBILE Gateway	Type 5655
▶ SAM LAN Gateway	Type 5650
Sensors and room panels	▶ T 5200 (Information Sheet: Temperature Sensors and Thermostats)
SAM DISTRICT ENERGY	▶ www.samsunggroup.com > Products & Applications > Digital solutions > SAM DISTRICT ENERGY ▶ EB 6901

Ordering text

TROVIS 5578 Heating and District Heating Controller

Associated mounting and operating instructions

- For TROVIS 5578: ▶ EB 5578
- For TROVIS-VIEW: ▶ EB 6661