MR07-PLC module controller with AKP base board

and control unit in top hat rail

Order number:	**170.xxxxx**
Order code:	**MR07-SPS-xxx**

Overview:

Microprocessor-controlled control device for controlling district heating transfer stations with the option of modular expansion to a total of ten heating circuits and additional recording of the heat meter data and forwarding of all data to a higher-level network optimization computer in the boiler house.
The controller has a modular design and can control and regulate a direct heating circuit, seven mixer circuits, a boiler circuit and a circulation circuit in its maximum configuration.

The MR-07 module controller is equipped with a graphic display with 128x64 pixels. To support menu selection and parameter input, there are also four symmetrically arranged buttons.

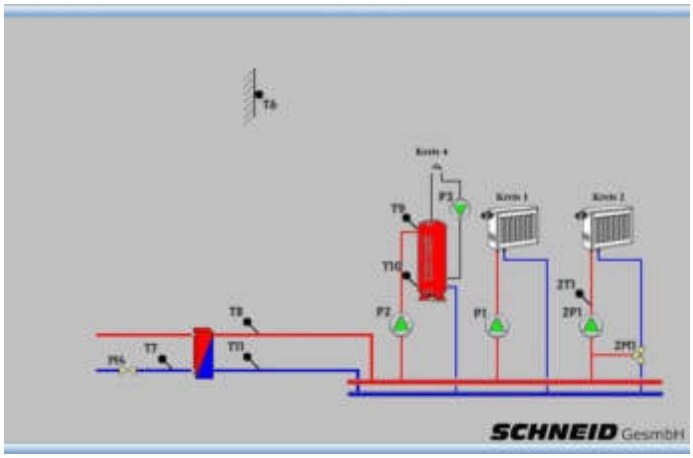
The MR-07 module controller is also equipped with an MMC card, which can be used as program memory, parameter memory or trend memory. This makes commissioning standard systems a simple matter because MMC cards can be preprogrammed using a notebook.
The MMC card can also be used as a data memory for various bitmaps for graphic display on the controller and as a foreign language memory.

There are three ways to upload new application programs:

- Installation of a new MMC card
- Upload the program via programming adapter
- Upload a program via data interface and boiler house computer

HEATING CONTROLLER base unit

- Three-point output for primary valve
- Two-point output for boiler 1
- Two-point output for boiler 2 (or circulation circuit)
- Two-point output for a direct heating circuit
- Three-point output for a mixer heating circuit#
- six mixer heating circuit modules can also be connected
- A remote control can be connected to each heating circuit
- two analog inputs for the set temperature via 0-10V (4-20mA)
- Additional detection of the secondary return temperature
- two temperature inputs for visualization purposes



General regulatory specifications:

- Power limited heat transfer
- Heat transfer dependent on outside temperature
- Heat absorption-controlled heat transfer
- Return temperature-dependent return limitation
- Connection option for 6 heating circuit modules
- Regulation of a direct heating circuit and 7 direct / mixer heating circuits
- Heating curve control dependent on outside temperature
- Pump shutdown dependent on outside temperature
- Pump temperature cut-off depending on the room temperature
- three daily heating times per heating circuit
- Heating time inversion as reduction times
- blackout times
- Outside temperature averaging up to nine hours
- building coefficient (= building storage capacity)
- Optimization of the on / off times with a room sensor
- Control via room sensor
- Regulation via adjustable room influence
- Room control via thermostat function
- Remote control for each heating circuit
- Two external 0-10V setpoint specifications with additional print
- Control of boiler circuits in various designs
- Boiler priority circuit / parallel boiler operation
- Different boiler hydraulic variants such as loading module / with mixer / primary etc.
- Various boiler loading criteria such as periods / minimum temperature / setpoint charging
- various boiler shutdown criteria such as setpoint above / below / loading time etc.
- Boiler load locks after temperature / if target values are not reached

Equipment variants:

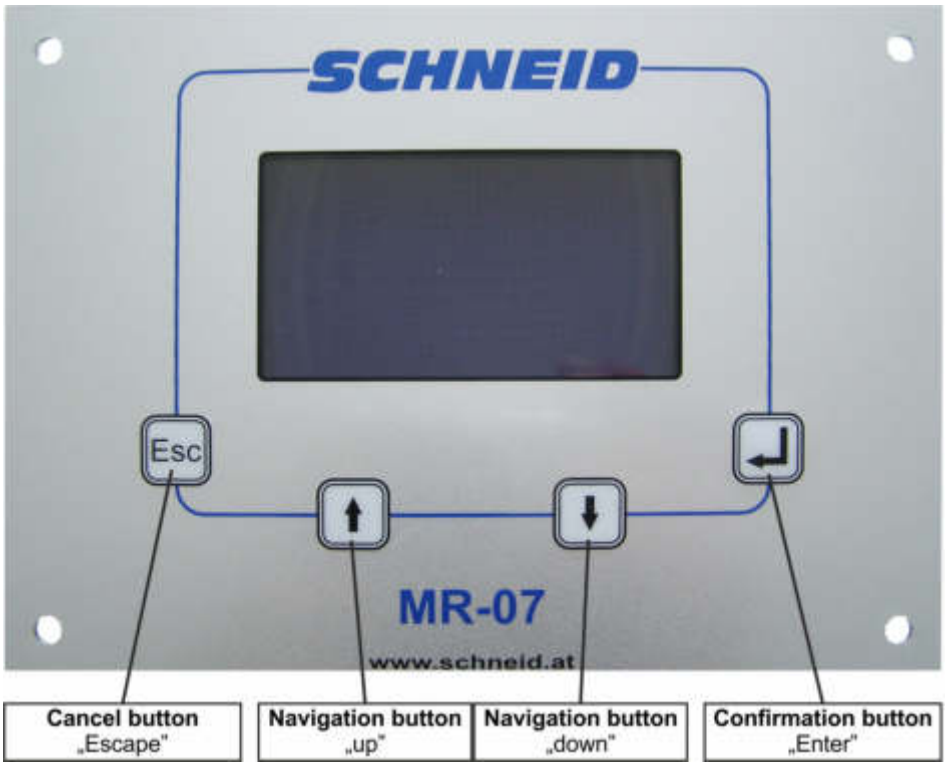
MR07 PLC basic controller
in top hat rail including control panel
Order number: 170.11884
Order code: MR07-SPS-Basisregler

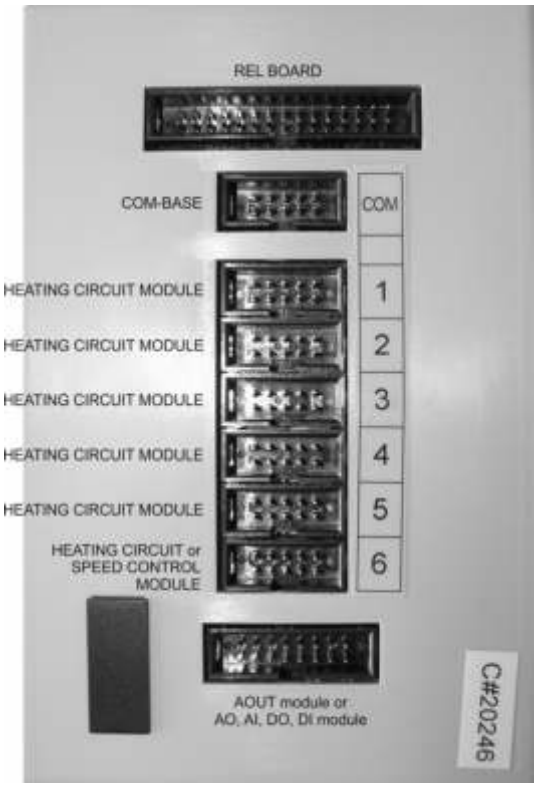
MR07-PLC complete assembly
in top hat rail including control panel
Order number: 170.10893
Order code: MR07-SPS Komplettbestückung

MR07 ventilation controller complete assembly
in top hat rail including control panel
Order number: 170.15264
Order code: MR07- Lüftungsregler Komplettbestückung

Control unit module controller MR07:

Key assignment





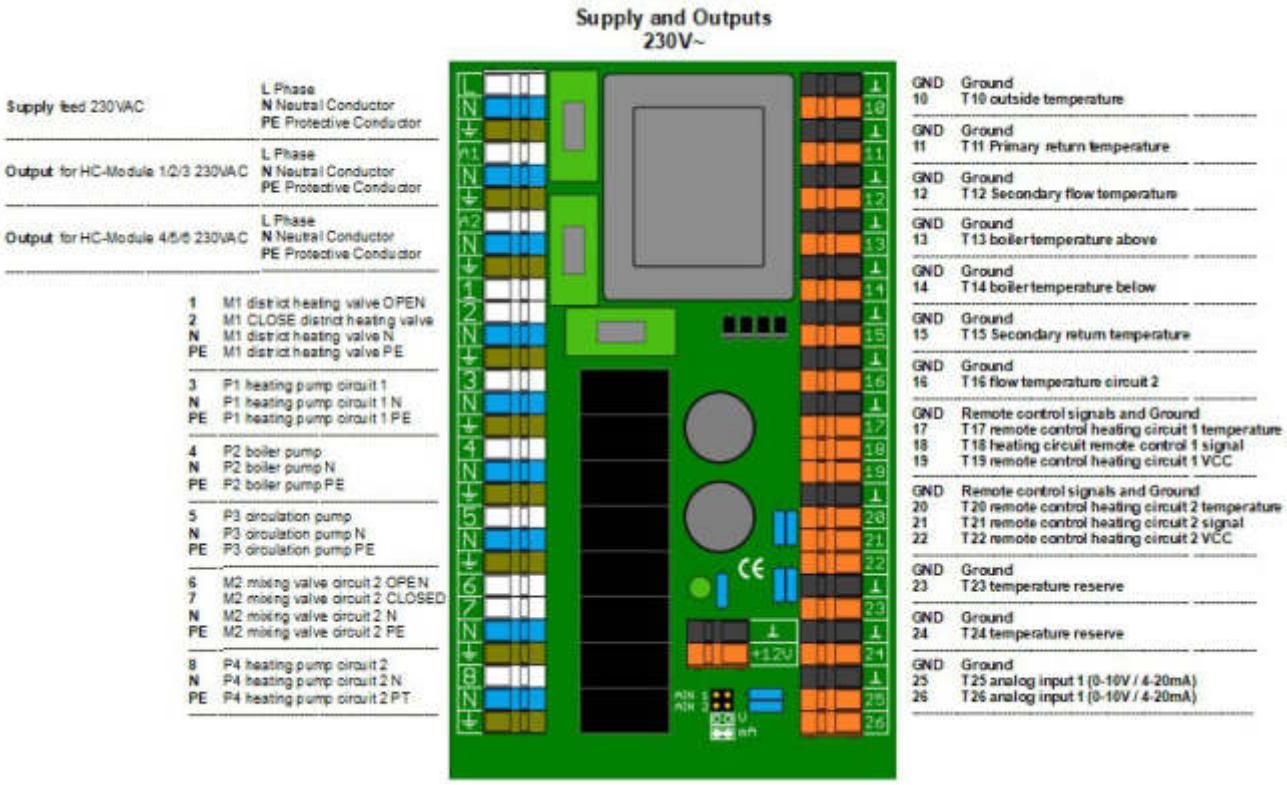
The MR07-PLC is an electronic control device for flush mounting.

The REL board (BASIS board) is connected directly to the control unit.

If a communication board (COM-BASIS) is available, this is also connected directly to the control unit, as well as a possible extension with additional modules for analog or digital inputs and outputs. The cables are routed in the DIN rail.

The heating circuit expansion modules 1-6 are connected to the control panel.

REL board module controller MR07:



MR07-PLC module controller

Supply feed 230VAC
L Phase
N Neutral Conductor
PE Protective Conductor

Output for HC-Module 1/2/3 230VAC
L Phase
N Neutral Conductor
PE Protective Conductor

Output for HC-Module 4/5/6 230VAC
L Phase
N Neutral Conductor
PE Protective Conductor

1 M1 District Heating Valve OPEN
2 M1 District Heating Valve CLOSE
N M1 District Heating Valve N
PE M1 District Heating Valve PE

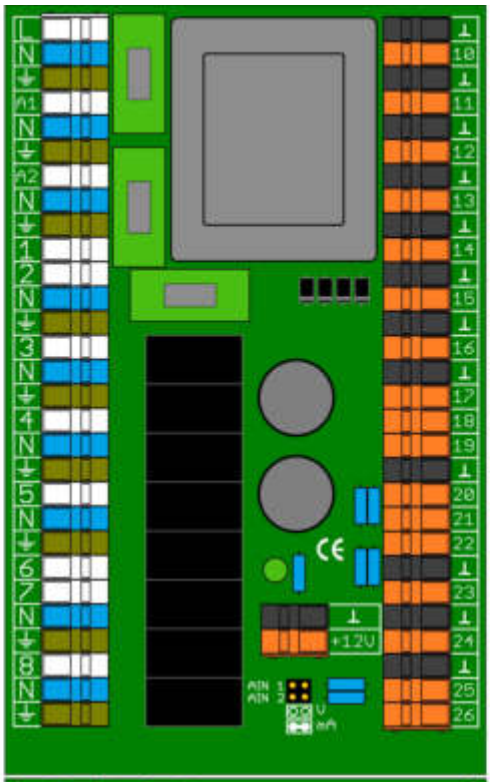
3 P1 Heating Pump Circuit 1
N P1 Heating Pump Circuit 1 N
PE P1 Heating Pump Circuit 1 PE

4 P2 DHW Boiler Pump
N P2 DHW Boiler Pump N
PE P2 DHW Boiler Pump PE

5 P3 Circulation Pump
N P3 Circulation Pump N
PE P3 Circulation Pump PE

6 M2 3-way Valve Circuit 2 OPEN
7 M2 3-way Valve Circuit 2 CLOSE
N M2 3-way Valve Circuit 2 N
PE M2 3-way Valve Circuit 2 PE

8 P4 Heating Pump Circuit 2
N P4 Heating Pump Circuit 2 N
PE P4 Heating Pump Circuit 2 PE



GND Ground
10 T10 Outdoor Temperature

GND Ground
11 T11 Primary Supply Temperature

GND Ground
12 T12 Secondary SupplyTemperature

GND Ground
13 T13 Temperature DHW top

GND Ground
14 T14 Temperature DHW bottom

GND Ground
15 T15 Secondary Return Temperature

GND Ground
16 T16 Supply Temperature Circuit 2

GND Remote Control Signal and GND
17 Remote Control Heating Circuit 1 Temperature
18 Remote Control Heating Circuit 1 Signal
19 Remote Control Heating Circuit 1 VCC

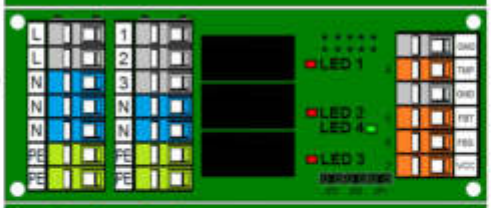
GND Remote Control Signal and GND
20 Remote Control Heating Circuit 2 Temperature
21 Remote Control Heating Circuit 2 Signal
22 Remote Control Heating Circuit 2 VCC

GND Ground
23 T25 Temperature Reserve

GND Ground
24 T26 Temperature Reserve

GND Ground
25 AIN1 Analog Input 1 (0-10V/4-20mA)
26 AIN2 Analog Input 2 (0-10V/4-20mA)

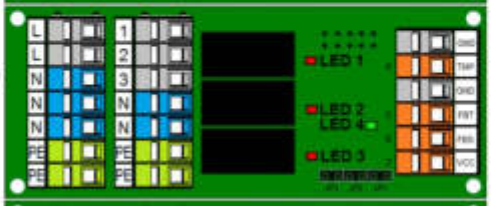
Outputs 230VAC 3A
1 1P1 Pump of Heating Circuit 3
2 1M1 Circuit 3 of mixed valve OPEN
3 1M1 Circuit 3 of mixed valve CLOSED



Temperatures PT1000
Signal and GND (2-pole shielded)
TMP **1T1** Flow temperature Circuit 3

Remote Control
Signal and GND (4-pole shielded)
FBT Remote control circuit 3 temperature
FBS Remote control circuit 3 signal
VCC Remote control circuit 3 VCC

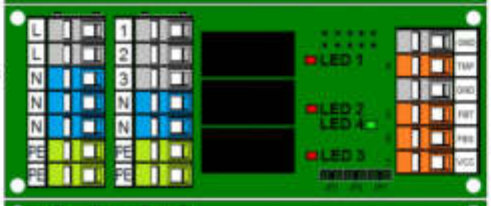
Outputs 230VAC 3A
1 2P1 Pump of Heating Circuit 4
2 2M1 Circuit 4 of mixed valve OPEN
3 2M1 Circuit 4 of mixed valve CLOSED



Temperatures PT1000
Signal and GND (2-pole shielded)
TMP 2T1 Flow temperature Circuit 4

Remote Control
Signal and GND (4-pole shielded)
FBT Remote control circuit 4 temperature
FBS Remote control circuit 4 signal
VCC Remote control circuit 4 VCC

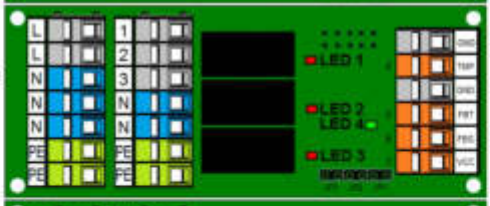
Outputs 230VAC 3A
1 3P1 Pump of Heating Circuit 5
2 3M1 Circuit 5 of mixed valve OPEN
3 3M1 Circuit 5 of mixed valve CLOSED



Temperatures PT1000
Signal and GND (2-pole shielded)
TMP 3T1 Flow temperature Circuit 5

Remote Control
Signal and GND (4-pole shielded)
FBT Remote control circuit 5 temperature
FBS Remote control circuit 5 signal
VCC Remote control circuit 5 VCC

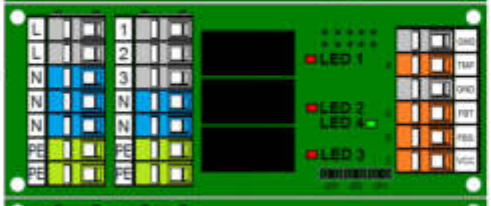
Outputs 230VAC 3A
1 4P1 Pump of Heating Circuit 6
2 4M1 Circuit 6 of mixed valve OPEN
3 4M1 Circuit 6 of mixed valve CLOSED



Temperatures PT1000
Signal and GND (2-pole shielded)
TMP 4T1 Flow temperature Circuit 6

Remote Control
Signal and GND (4-pole shielded)
FBT Remote control circuit 6 temperature
FBS Remote control circuit 6 signal
VCC Remote control circuit 6 VCC

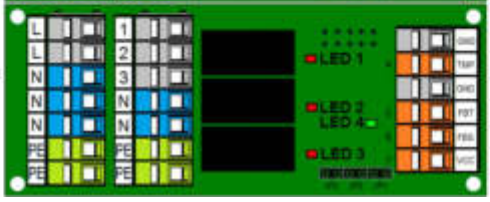
Outputs 230VAC 3A
1 5P1 Pump of Heating Circuit 7
2 5M1 Circuit 7 of mixed valve OPEN
3 5M1 Circuit 7 of mixed valve CLOSED



Temperatures PT1000
Signal and GND (2-pole shielded)
TMP 5T1 Flow temperature Circuit 7

Remote Control
Signal and GND (4-pole shielded)
FBT Remote control circuit 7 temperature
FBS Remote control circuit 7 signal
VCC Remote control circuit 7 VCC

Outputs 230VAC 3A
1 6P1 Pump of Heating Circuit 8
2 6M1 Circuit 8 of mixed valve OPEN
3 6M1 Circuit 8 of mixed valve CLOSED



Temperatures PT1000
Signal and GND (2-pole shielded)
TMP 6T1 Flow temperature Circuit 8

Remote Control
Signal and GND (4-pole shielded)
FBT Remote control circuit 8 temperature
FBS Remote control circuit 8 signal
VCC Remote control circuit 8 VCC

SCHNEID Modern Life - Modern Solutions
www.schneid.at EN

Scope of delivery MR07-PLC basic module controller:

MR07-PLC control panel
Order number: 170.12067
Order code: MR07-SPS Bedienteil

MR07 REL terminal board (with connection cable 500mm)
Order number: 70.12066
Order code: MR07-SPS Anklemmplatine

DIN rail 600mm for MR07
Order number: 400.13548
Order code: DINRail-Schiene 600MM für MR07

DIN rail cover for MR07 / MR08 / MR12 - 2 pieces
Order number: 400.13542
Order code: DINRail-Cover für MR07/MR08/MR12

DIN rail clip - 2 pieces
Order number: 400.13544
Order code: DINRail-Clip

Technical specifications:

Intrastat number:	8537.10.91.90
Country of origin	EU/AT
Height, width, depth (in mm)	Control unit: 119x164x38 REL board 100x164x42 DIN-Rail basic controller (with 2 x cover and 2 x clip): 420x104x35 MR07-PLC complete assembly: 600x104x87 (DIN rail)
Weight (in kg)	Control unit: 0.420 REL board: 0.528 MR07-PLC complete assembly: 2.18
Degree of protection	IP-20
Ambient temperature	0°C....+40°C
Operating voltage	230VAC
Power consumption	Max. 10VA
Max. Nominal current "A1 + A2"	Je 2 A
Max. Total nominal current	3,15A
Max. Nominal current per output	2A continuous current // max. 15A inrush current
Relay output life	50 x 10^3 switching cycles
Connection type	Fixed wiring terminals
Connection technology	Spring clamp
Cable cross section	Max. 2.5mm²
Mounting type	DIN-RAIL TS35
Operating time	Continuous operation
Degree of pollution	2
Rated impulse voltage	1kV
Sensor type temperature sensor	PT1000