REL board MR07-PLC module controller

SCHNEID MR07-PLC REL terminal board

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

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.

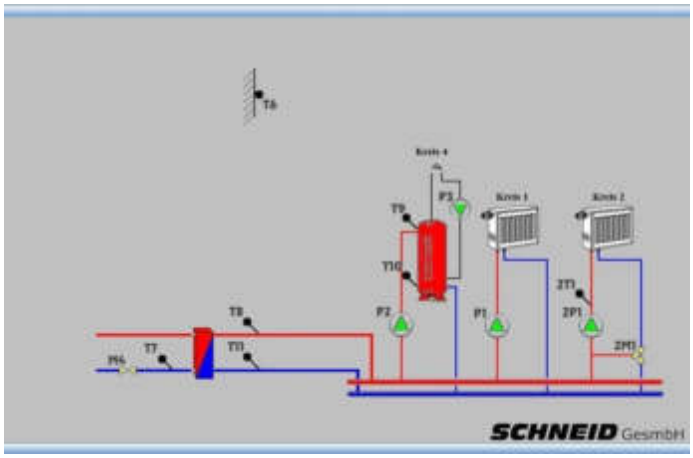
The MR-07 module controller is also equipped with an MMC card, which can be used as program memory, parameter memory or trend memory. This makes commissioning standard systems a simple matter because MMC cards can be preprogrammed using a notebook.
The MMC card can also be used as a data memory for various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

REL terminal board module controller MR07-PLC:

Supply and Outputs 230V~

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 CLOSE district heating valve
N M1 district heating valve N
PE M1 district heating valve PE

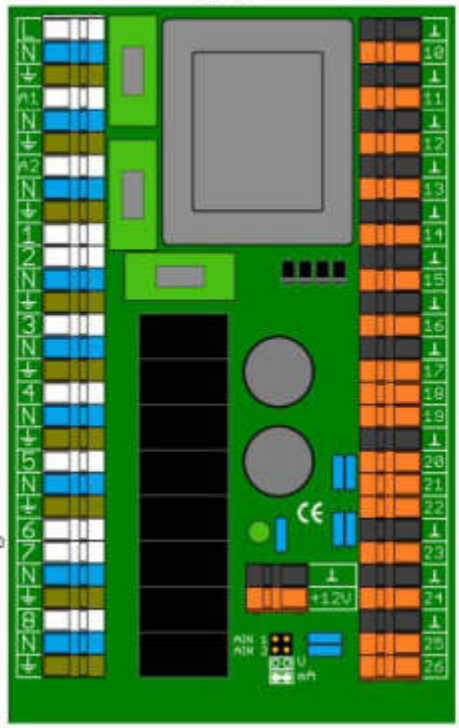
3 P1 heating pump circuit 1
N P1 heating pump circuit 1 N
PE P1 heating pump circuit 1 PE

4 P2 boiler pump
N P2 boiler pump N
PE P2 boiler pump PE

5 P3 circulation pump
N P3 circulation pump N
PE P3 circulation pump PE

6 M2 mixing valve circuit 2 OPEN
7 M2 mixing valve circuit 2 CLOSED
N M2 mixing valve circuit 2 N
PE M2 mixing valve circuit 2 PE

8 P4 heating pump circuit 2
N P4 heating pump circuit 2 N
PE P4 heating pump circuit 2 PT



GND Ground
10 T10 outside temperature

GND Ground
11 T11 Primary return temperature

GND Ground
12 T12 Secondary flow temperature

GND Ground
13 T13 boiler temperature above

GND Ground
14 T14 boiler temperature below

GND Ground
15 T15 Secondary return temperature

GND Ground
16 T16 flow temperature circuit 2

GND Remote control signals and Ground
17 T17 remote control heating circuit 1 temperature
18 T18 heating circuit remote control 1 signal
19 T19 remote control heating circuit 1 VCC

GND Remote control signals and Ground
20 T20 remote control heating circuit 2 temperature
21 T21 remote control heating circuit 2 signal
22 T22 remote control heating circuit 2 VCC

GND Ground
23 T23 temperature reserve

GND Ground
24 T24 temperature reserve

GND Ground
25 T25 analog input 1 (0-10V / 4-20mA)
26 T26 analog input 1 (0-10V / 4-20mA)

Supply feed 115VAC
L Phase
N Neutral Conductor
PE Protective Conductor

Output for HC-Module 1/2/3 115VAC
L Phase
N Neutral Conductor
PE Protective Conductor

Output for HC-Module 4/5/6 115VAC
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

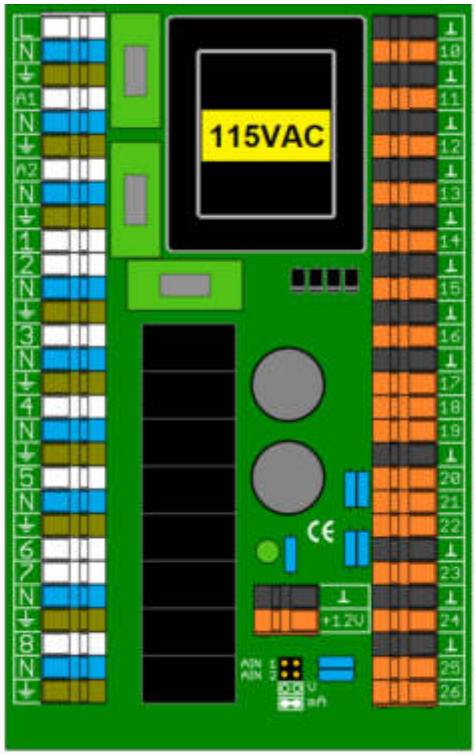
3 P1 Heating Pump Circuit 1
N P1 Heating Pump Circuit 1 N
PE P1 Heating Pump Circuit 1 PE

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)

Scope of delivery:

MR07-PLC REL terminal board (with connection cable 500mm)
Order number: 170.12066
Order code: MR07-SPS Anklemmplatine

MR07-PLC REL terminal board 115VAC (with connection cable 500mm)
Order number: 170.12928
Order code: MR07-SPS Anklemmplatine 115VAC

Technical specifications:

Intrastat number:	8537.10.91.90
Country of origin	EU/AT
Height, width, depth (in mm)	REL-Platine 100x164x42
Weight (in kg)	REL-Platine: 0,528
Degree of protection	IP-20
Ambient temperature	0°C....+40°C
Operating voltage	230VAC oder 115VAC
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