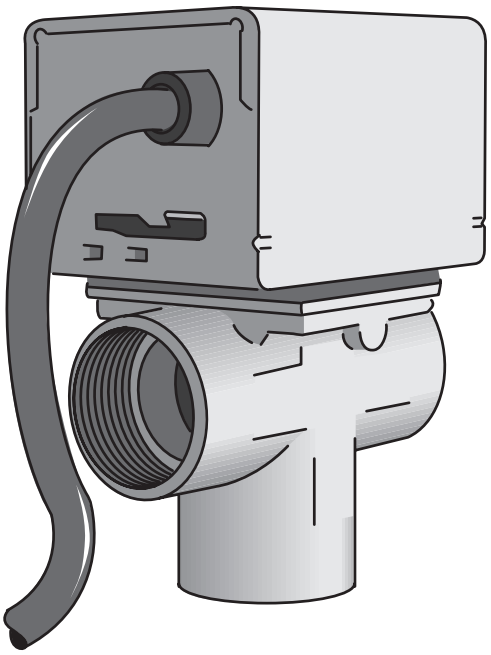
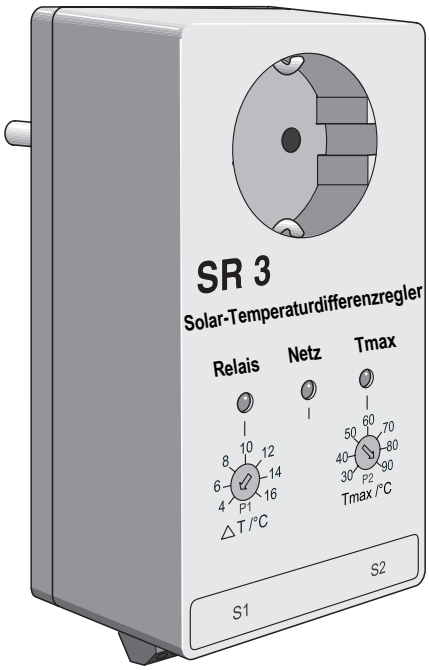
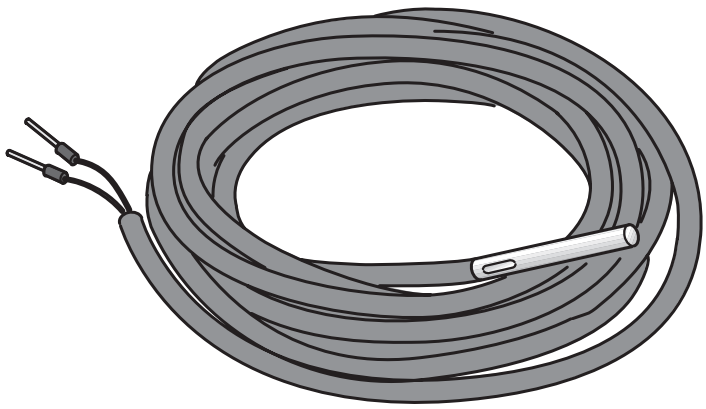
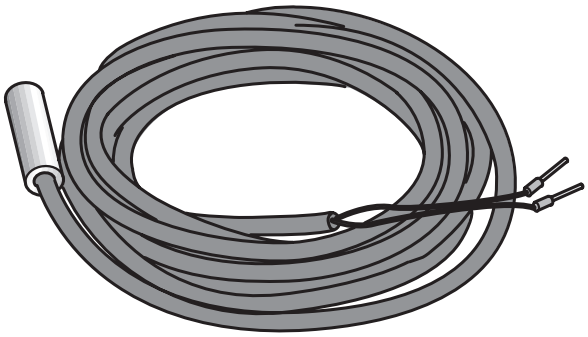
Installation instructions

Return temperature controller DN 25









Production

CE

This device meets all basic requirements of relevant standards and guidelines.

Its conformity has been verified. The manufacturer holds the corresponding documentation and declaration of conformity.

1 Standard delivery

- Check whether all listed components have been delivered before commencing the installation.

The standard delivery comprises (Fig. 1)

Item 1:	Cylinder sensor FRY 6	1 ×
Item 2:	Motorised 3-way valve 1"	1 ×
Item 3:	Socket controller SR 3	1 ×
Item 4:	Pipe contact sensor FRY 20	1 ×
	Various small parts	

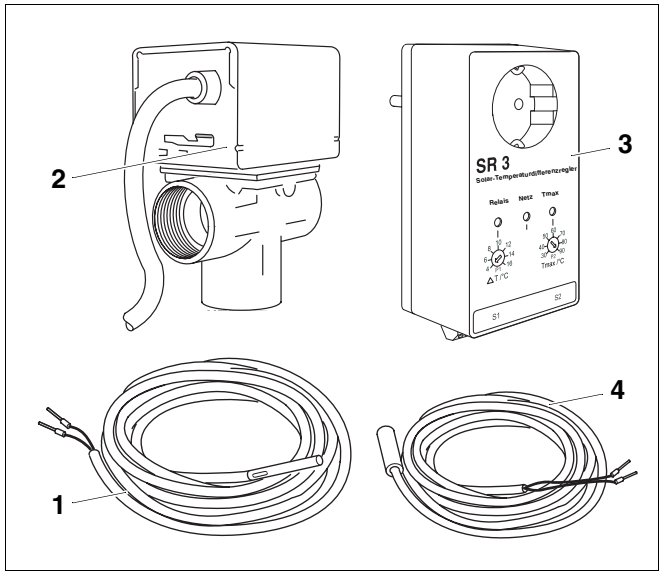


Fig. 1 The standard delivery comprises

2 Function

The socket controller SR 3 is used as return temperature controller in conjunction with the motorised 3-way valve.

The socket controller SR 3 constantly compares the heating return and the cylinder temperature.

Subject to the return temperature, the return temperature controller (the motorised 3-way valve) channels the heating return volume flow, either through the cylinder, or directly to the boiler.

When the switch-on temperature differential of 4 Kelvin (Fig. 2, **item 2**) is reached, the motorised 3-way valve (Fig. 1, **item 2**) is activated – the LED "Relais" ("Relay") (Fig. 2, **item 4**) illuminates.

The volume flow is channelled to the cylinder, if the temperature differential between the cylinder and the heating return is greater than 4 K.

The volume flow is channelled to the boiler, if the temperature differential falls to half the switch-on temperature differential (here: 2 Kelvin) – the LED "Relais" ("Relay") (Fig. 2, **item 4**) illuminates.

NOTE FOR USERS

The switch-on temperature is factory-set to 4 K. Do **not** change this setting.

The Tmax setting (here irrelevant) is factory set to 90 °C. Do **not** change this setting either.

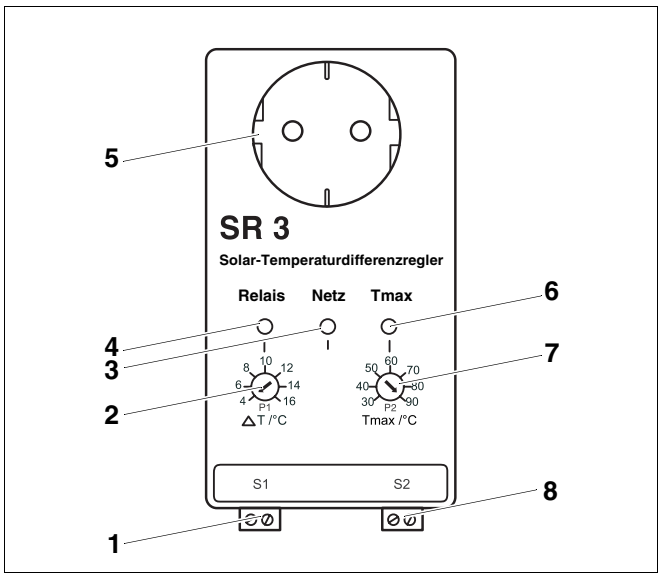


Fig. 2 Socket controller SR 3

Item 1: *Connection terminal S1 for the cylinder sensor FRY6*

Item 2: *Setting potentiometer P1 for the ΔT control*

Item 3: *LED "Netz" ("Mains") – operating state (ON/OFF)*

Item 4: *LED "Relais" "(Relay") – operating state of the motorised 3-way valve*

Item 5: *Socket for the motorised 3-way valve*

Item 6: *LED "Tmax" – maximum cylinder temperature*

Item 7: *Setting potentiometer P2 for Tmax setting*

Item 8: *Connection terminal S2 for the pipe contact sensor FRY 20*

3 Installation

NOTE FOR USERS

Observe any standards and guidelines applicable to the installation and operation of this system, as may apply in your country.

3.1 Observation of the notes regarding the mains connection

Ensure that the power supply of the socket controller SR 3 is permanently safeguarded.

Do not connect the socket controller SR 3 to the power supply of the heating system, as that could be interrupted by the mains isolator of the heating system.

DANGER TO LIFE

from risk of electric shock.

WARNING

- Before you work on the system: Isolate the system from the electrical mains.

3.2 Installation of the motorised 3-way valve

- Install the motorised 3-way valve into the return line between the buffer storage unit (Fig. 3) or the combination cylinder (Fig. 4) and the boiler. Please observe the connection instructions on the motorised 3-way valve.

SYSTEM DAMAGE

through damaged valve body.

CAUTION

- When installing the motorised 3-way valve, please note that you do not use the actuator housing as counter pressure point. Position your spanner at the spanner faces on the connection.

PLEASE NOTE: FOR USERS

The short descriptions (Fig. 3 and Fig. 4) correspond to those in the installation instructions of each cylinder.

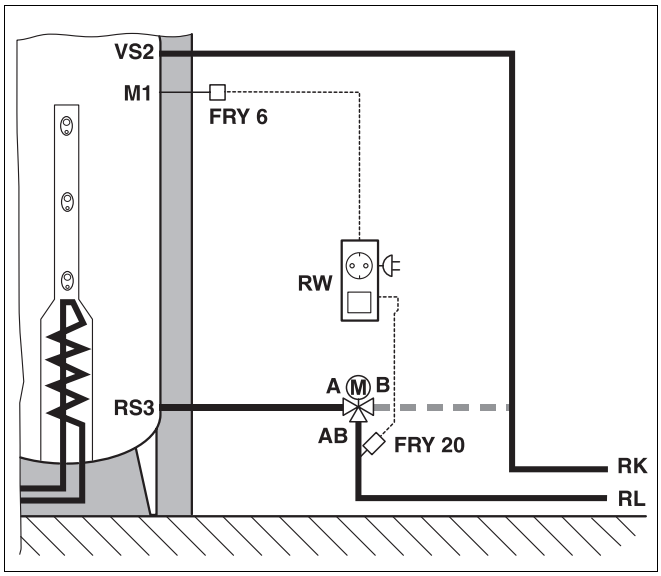


Fig. 3 Installation diagram – return temperature controller - buffer storage unit

Explanations:

VS2	=	Boiler return connection (RK)
M1	=	Test point for sensor FRY 6
RS3	=	Heating return connection (RL)
RW	=	Return temperature controller

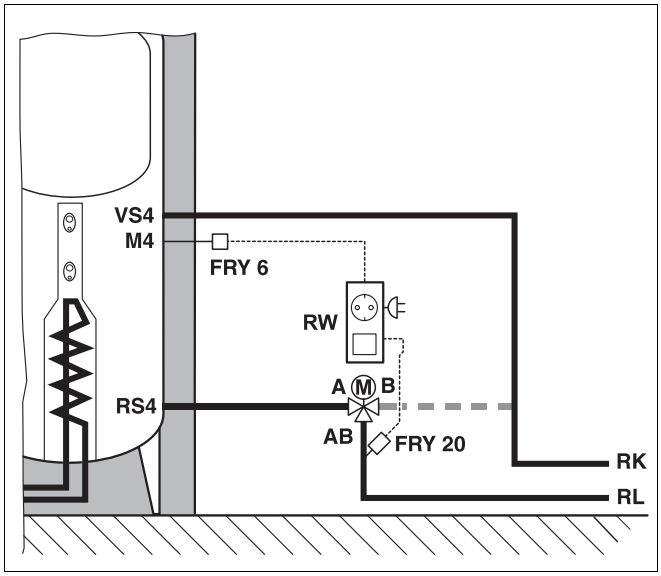


Fig. 4 Installation diagram – return temperature controller – combination cylinder

Explanations:

VS4	=	Boiler return connection (RK)
M4	=	Test point for sensor FRY 6
RS4	=	Heating return connection (RL)
RW	=	Return temperature controller

Actuator lever "AUTO/MAN"

Use the "MAN" position to fill the system, to vent or to drain it or as a safety position in case of power failure.

The valve plunger is in mid stroke, when the lever is in the "MAN" position (Fig. 5, **item 1**). This creates an even medium flow to both outlets A and B. When the valve is switched on, the drive positions the control lever back to the "AUTO" position (Fig. 5, **item 2**).

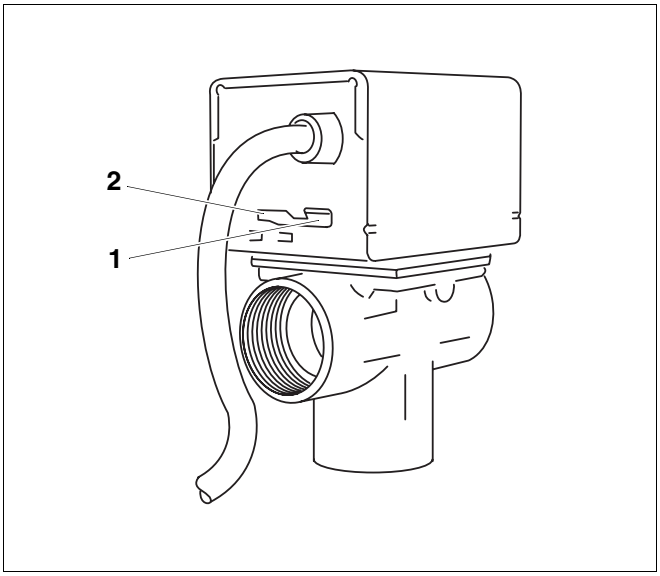


Fig. 5 Motorised 3-way valve, actuator lever "AUTO/MAN"

Item 1: *"MAN" position*

Item 2: *"AUTO" position*

3.3 Installation of the pipe contact sensor FRY 20 and the cylinder sensor FRY 6

- Install the pipe contact sensor FRY 20 on the return pipe using the pipe cleat supplied – approx. 20 cm in front of the motorised 3-way valve (Fig. 3, Fig. 4, page 6).
- Coat the sensor with heat transfer paste before installing it on the pipe.
- Install the cylinder sensor FRY 6 (Fig. 3, Fig. 4, page 6) in the appropriate location provided on the cylinder.
- Connect the sensor cables to the control device (Fig. 6, **item 1 and 2**). These connections are not pole-specific.

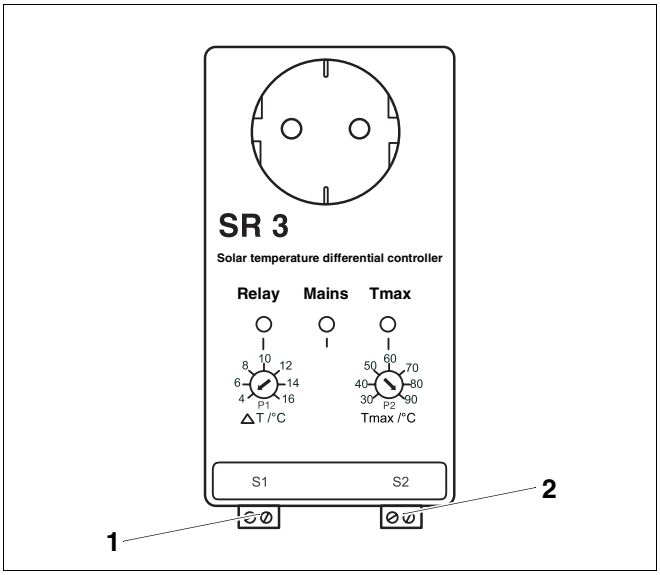


Fig. 6 Socket controller SR 3

Item 1: *Connection terminal for cylinder sensor FRY 6*

Item 2: *Connection terminal for pipe contact sensor FRY 20*

4 Commissioning the return temperature controller

- Check the potentiometer settings.

NOTE FOR USERS

The switch-on temperature differential (ΔT) is factory-set to 4 Kelvin (K). Do **not** change this setting.

- Plug the socket controller SR 3 into a standard mains socket. After connection to the mains, the LED "Netz" ("Mains") should illuminate.
- Plug the mains plug of the motorised 3-way valve into the control unit.

5 Specification

Motorised 3-way valve

Motorised 3-way valve	
maximum closure pressure	0.55 bar (55 kPa)
maximum static pressure	8.6 bar (860 kPa)
maximum throughput temperature	95 °C (short-term 110 °C)
K_{VS} value	8.2
Voltage	230 V, 50 Hz
maximum ambient temperature	50 °C

Tab. 1 Specification of the motorised 3-way valve

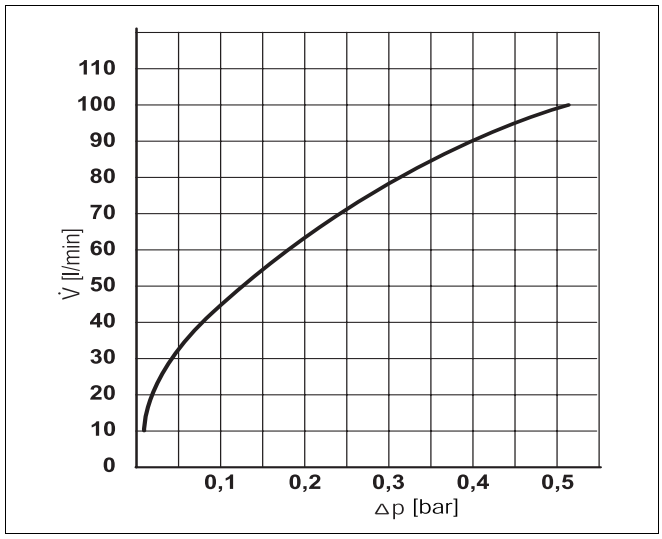


Fig. 7 Diagram of the pressure loss of the motorised 3-way valve

Socket controller SR 3

Socket controller SR 3	
Protection	IP 20
Breaking capacity	Fuse 2 A slow/250 V
Own consumption	approx. 3 VA
Ambient temperature	0–40 °C
Connected voltage	230 V AC, 50–60 Hz
ΔT setting	4–16 K
Tmax cylinder	30–90 °C

Tab. 2 Specification socket controller SR 3

Pipe contact sensor/cylinder sensor (sensor type: KTY) Ø 6 mm

NOTE FOR USERS

To measure the resistance, disconnect the pipe contact sensor FRY 20 and the cylinder sensor FRY 6 from the control unit.

T [°C]	R []	T [°C]	R []
-30	1266	50	2390
-20	1387	60	2555
-10	1513	70	2727
0	1645	80	2903
10	1783	90	3086
20	1926	100	3274
30	2075	110	3467

Setting and actual values – pipe contact sensor/cylinder sensor

Notes

Notes

Your local heating engineer: