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Operating manual - Archive document

MSF 220 S

Application

The PTC-resistor trip device MSF 220 S monitors and protects ventilation equipment designed to turn on with a rise in temperature. An efficient separate ventilation prevents equipment from switching off.

Features:

- two PTC-resistor circuits with different temperatures and separate sensitivities can be connected.
- separate switching of control circuit ventilation if the temperature of the main measuring circuit is exceeded (Alarm 1)
- interlocked and latched switching if the temperature in the second measuring circuit is exceeded (Alarm 2)
- integrated test key for both measuring circuits
- integrated reset key
- LED display of switching state for each measuring circuit
- 2 separate relays (1 CO) for warning circuit and main circuit
- Alarm 1 relay, operating current principle
- Alarm 2 relay, closed current principle

Functional descriptions

PTC-resistors with different response temperatures are connected to the ZIEHL PTCresistor trip devices model MSF 220 S. Relay K2 is switched on at operation temperature. When the admissible temperature is exceeded, relay K1 switches on the separate ventilation and indicates this state by the intetgraded LED. The relay switches off again as soon as the equipment has cooled down to operation temperature. If, however, the temperature rise continues, relay K2 switches off and interlocks the equipment. This state is displayed by a red LED. The equipment can be restarted after having pressed the integrated reset key. A switching on of the mains is recognized as automatic reset.

At both relay outputs potentialfloating change-over contacts are available. The funktion of the two outputs can be tested with the integrated test key.

Note

Thanks to the connection of PTC- resistors with different response temperatures, this device can handle two switching points at equipment overload. This permits an early warning, switching on a separate ventilation if the operation temperature is exceeded. This is important for any equipment that must not be switched off immediateley, e.g. motors of elevators or in case of high switching frequency.

Technical Data

Order number: see type plate Supply voltage Us: frequency: on the device ------- 15 % ... +10 % Tolerance Us **Tolerance frequency Us** 48 ... 62 Hz 2 x 1 ... 6 PTC in series PTC-resistor connection Cut-out point 1.65 kΩ ... 4 kΩ Collective resistance of cold sensors ≤ 1.65 kΩ Terminal voltage (sensors) -20 °C ... NTR - 20 °C ≤ 2.5 V NTR + 15 °C ≤ 7.5 V Relay output 1 CO Contact elements Switching voltage max. 400 V Switching current max. 6 A Switching power AC max. 1100 VA DC 24 V max. 120 W Rated operational current le 400 V 2A AC15 4A AC15 230V 2 A DC 13 24 V **Testing conditions** VDE 0660 / VDE 0160 VDE 110, AC 415 V Gr. C Isolation VDE 0550 Transformer Test voltage between supply voltage, relay outputs and sensor side 2.5 kV On period 100 % max. ambient temperature -20 ... +55 °C Climatic category F (according to DIN 40 040) Housing: design S-12, plug-in housing Dimensions $(H \times W \times D)$ 82 x 42 x 121 mm 12-pole, max. 2 x 1.5 mm² each Line connection Protection Housing IP 50 IP 20 Protection contacts Panel inclination any Mounting snapable on 35 mm standard rail according to DIN or assembly with screws M 4 Weight app. 300 g

Installation - Putting into operation

The plug base can be mounted either with

- 35 mm mounting rail according to DIN 50 002 or
- M4 screws

Wiring directly to plug base

- Connect wires as per wiring scheme
- Plug in electronics and fix with knurled screw

Attention!

Do not plug in device alive nor detach it from socket.

When installing the device into the switch-gear cabinet, please observe the max. admissible temperature. Care for both sufficient clearance to other devices or sources of heat or enough forced draught. Generally recommended mininum clearance: 2 cm.

Before switching on make sure that the operational voltage Us of the lateral type plate and the mains voltage are the same.

- Apply mains voltage to terminals 11 and 12.
- When device is ready for operation, relay K2 picks up, terminals 4 6 are connected, both LED's off.
- Push test key. Relay K1 piks up (Alarm 1), terminals 7 9 are connected. Relay K2 release (Alarm 2), terminals 4 5 are connected. Both LED's light on.
- Pull test key. Relay K1 release. Relay K2 is interlocked. Red LED lights on.
- Push reset key. Relay K2 piks up (Alarm 2). Red LED off.

Trouble-shooting and remedies

- Relays are not switched on.
 Check whether supply voltage U_S at terminal 11, 12 is available and corresponds to the voltage indicated on the lateral type plate of the device.
- LED's light up continuously. Check whether PTC's at terminals 8, 10 and 9, 10 are connected correctly. Both PTC's must be connected and low-resistive.

Attention! Check PTC's only with measuring voltages of < 2.5 V.

• In case of any other malfunctions, replace device and send it in together with a description of the occurred malfunction.



Design S 12



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Subject to technical modifications.

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