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Wydanie – 5.
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Transformer temperature control device RTT4.

(connectors' numeration corrected at: 19.07.1995)

1. Introduction.

Electronic device RTT4 is ment to control temperature of both dry and resinblock transformers equipped with PTC or NTC sensors.

2. Use.

Device is able to control maximum three temperature thresholds. The relay with switching contacts is applied as the device outputs for each temperature threshold. The third relay can work as the time relay, which switched on with 10 sec. delays after power turning on.

3. Technical data.

Supply voltage	42-220VAC or 42-220VDC
Max. power consuption	6VA
Number of inputs	3 PTC or NTC sensors
	or 2 PTC or NTC sensors and time
Nominal threshold resistance	1kΩ
Time relay delay (typical)	10 sec.
Number of outputs	3 switching contacts
Switching current max.	8A AC
Switching voltage max.	380VAC or 500VDC
Operating temperature range	-25 to 55 °C
Storing temperature range	-25 to 80 °C

Isolation:	
Power supply to housing	3,5kV
Inputs to housing	1,0kV
Inputs to housing	5,0kV
Protection	IP 42
Width	260mm
Length	130mm
Height	110mm
Weight	0,5kg

4.Instalation.

Fasten the device to a basement with three M4 screws through the holes in the bottom part of housing (see Fig.3 and Fig.4). Set the configuration jumpers on PCB, according to the description below. Connect protective earth, power supply, and the sensors. Connect output's contacts in a needed way. No regulation or conservation is required by the device. Any working position is allowed.

5.Construction.

Maximum three sensors with 1kΩ nominal resistance can be connected to the device's inputs. Each sensor is proved in measuring bridge by its own comparator with hysteresis. The comparator controls the output relay RM96. The third channel (C) can control the temperature or switch on the relay with 10 sec. delay after power up. If the third channel (C) is used as the time relay , Z1-1 and Z1-2 contacts should be short connected. If the third channel (C) is used as the temperature control relay , Z1-3 and Z1-2 contacts should be short connected.The switching power supply, applied in the RTT4, can work within supply voltage range from 42 to 220VAC or DC without any reconfiguration. The output connection diagram is shown on figure inside the housing and below.

6. Work modes .

a) Two temperature sensors and one time relay:

The RTT4 can be supplied from protected transformer in this configuration. All relay's connectors are situated in position shown on figure below, when power supply is off. After power up, A and B connector's positions are depended on the sensor's resistance. C connector starts to work with 10 sec. delay after power up.

b) Three temperature sensors:

In this configuration all three channels are depended on temperature.

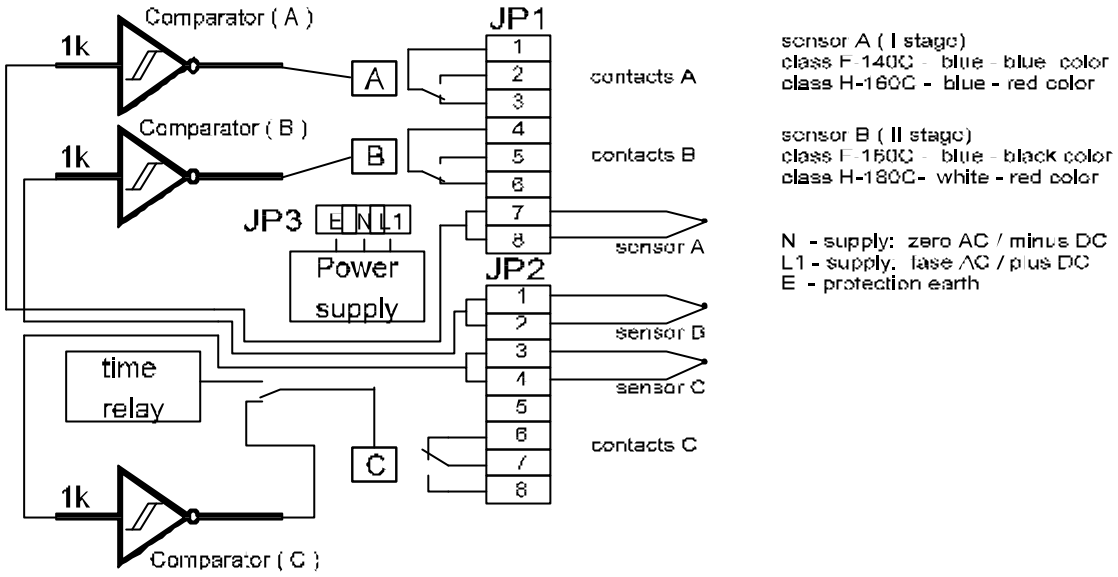

Fig. 1 - RTT4 block diagram.

7. Programming.

The suitable configuration is chosen by Z1, Z2 and Z3 switches.

The Z1 switch is used to choose work mode of C channel .

When the Z1:2 and Z1:3 are connected, the C channel works as time relay.

When the Z1:2 and Z1:1 are connected, the C channel works as temperature controller.

The Z2 and Z3 switches allow to configure sensor's work mode. The four configurations giving below are available.

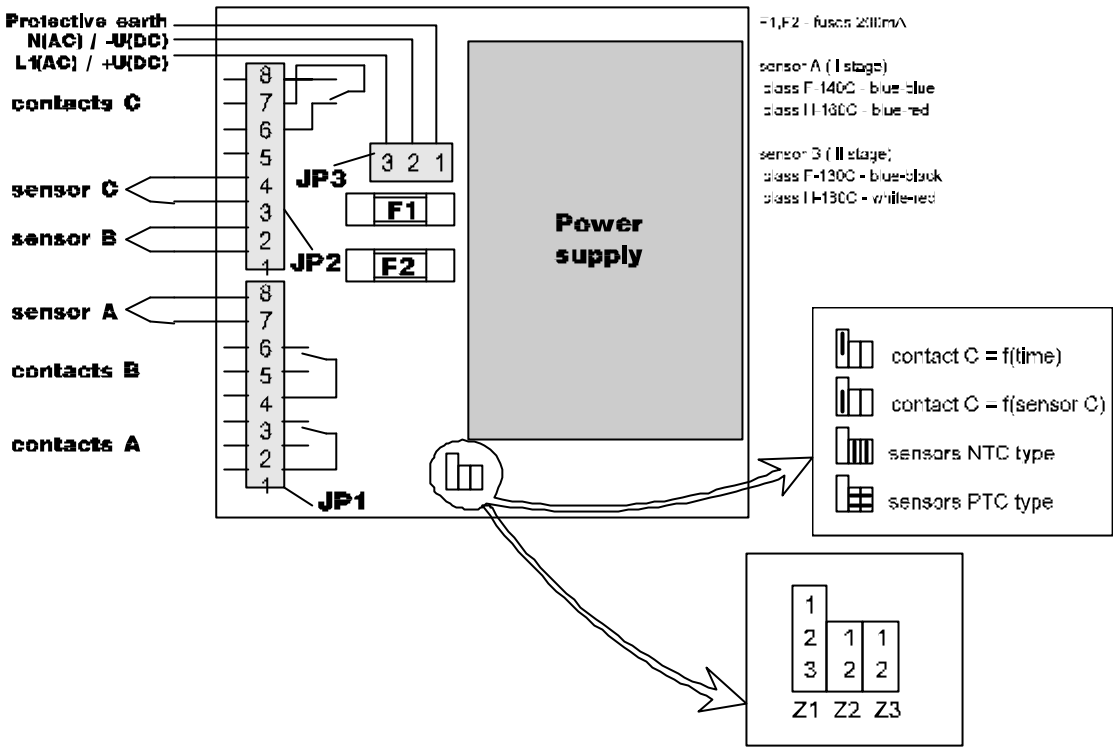

Fig.2 Connecting and programming diagram.

7.1. For PTC sensors.

a) The Z2 and Z3 switches are short connected. Relays are switched off when temperature is correct. The relays are switched on when temperature is too high. This configuration is permitted, but not recommended.

b) The Z2:1 is short connected with Z1:1 and Z2:2 with Z1:2 . Relays are switched on when temperature is correct. The relays are switched off when temperature is too high. This configuration is recommended.

7.2. For NTC sensors.

a) The Z2 and Z3 switches are short connected. Relays are switched on when temperature is correct. The relays are switched off when temperature is too high. This configuration is recommended.

b) The Z2:1 is short connected with Z1:1 and Z2:2 with Z1:2 . Relays are switched off when temperature is correct. The relays are switched on when temperature is too high. This configuration is permitted, but not recommended.

8. Failures.

a) The relays do not switch on , although the sensors work correctly:

check supply voltage

if supply voltage is correct , check the fuses inside RTT4

if the device is still out of order contact with our service.

b) If any failure is occurred after montage in transformer:

check the sensors' resistance.

RTT4 unit.
Housing dimensions.

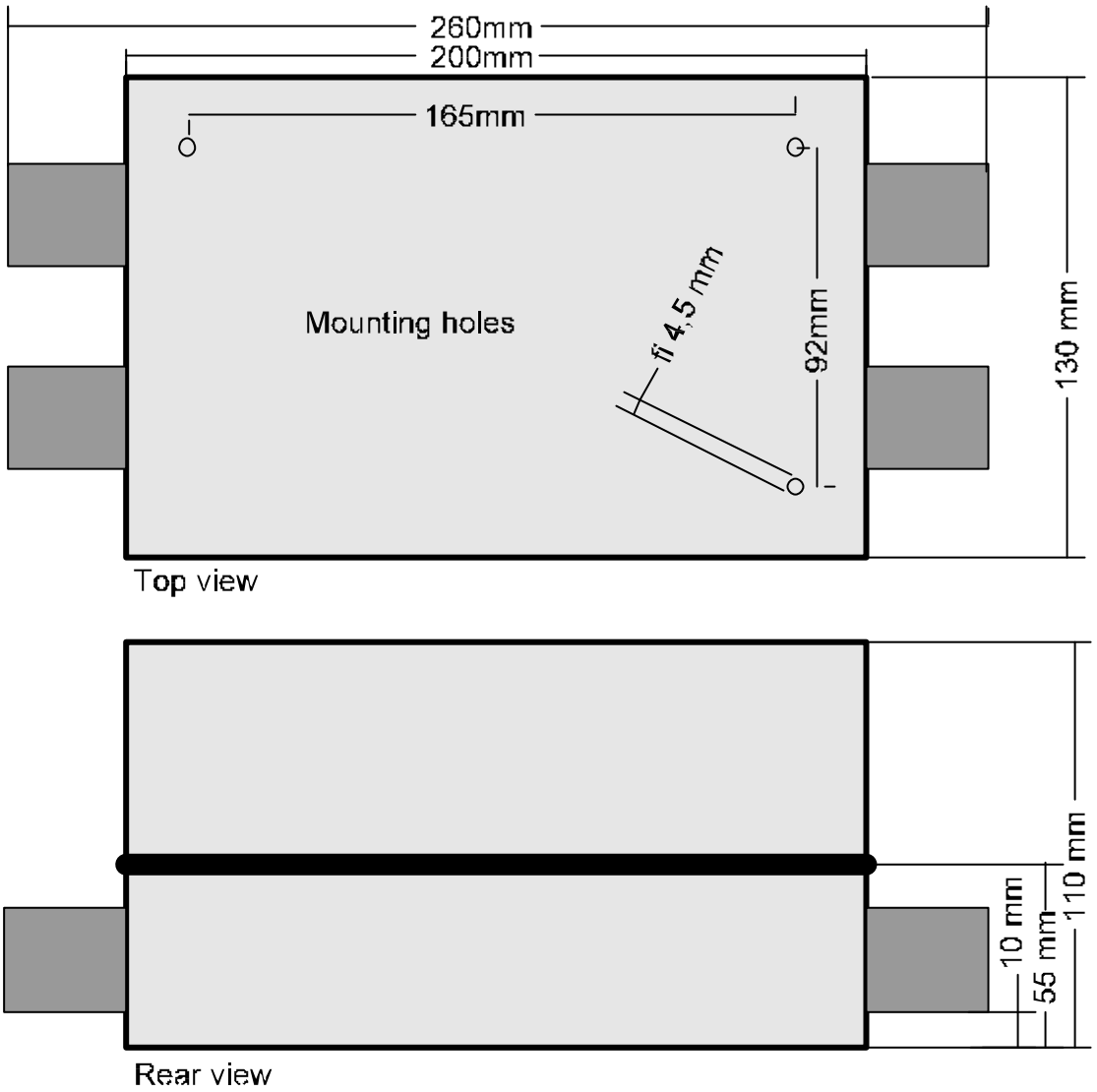

Fig.3 Dimensional details diagram.

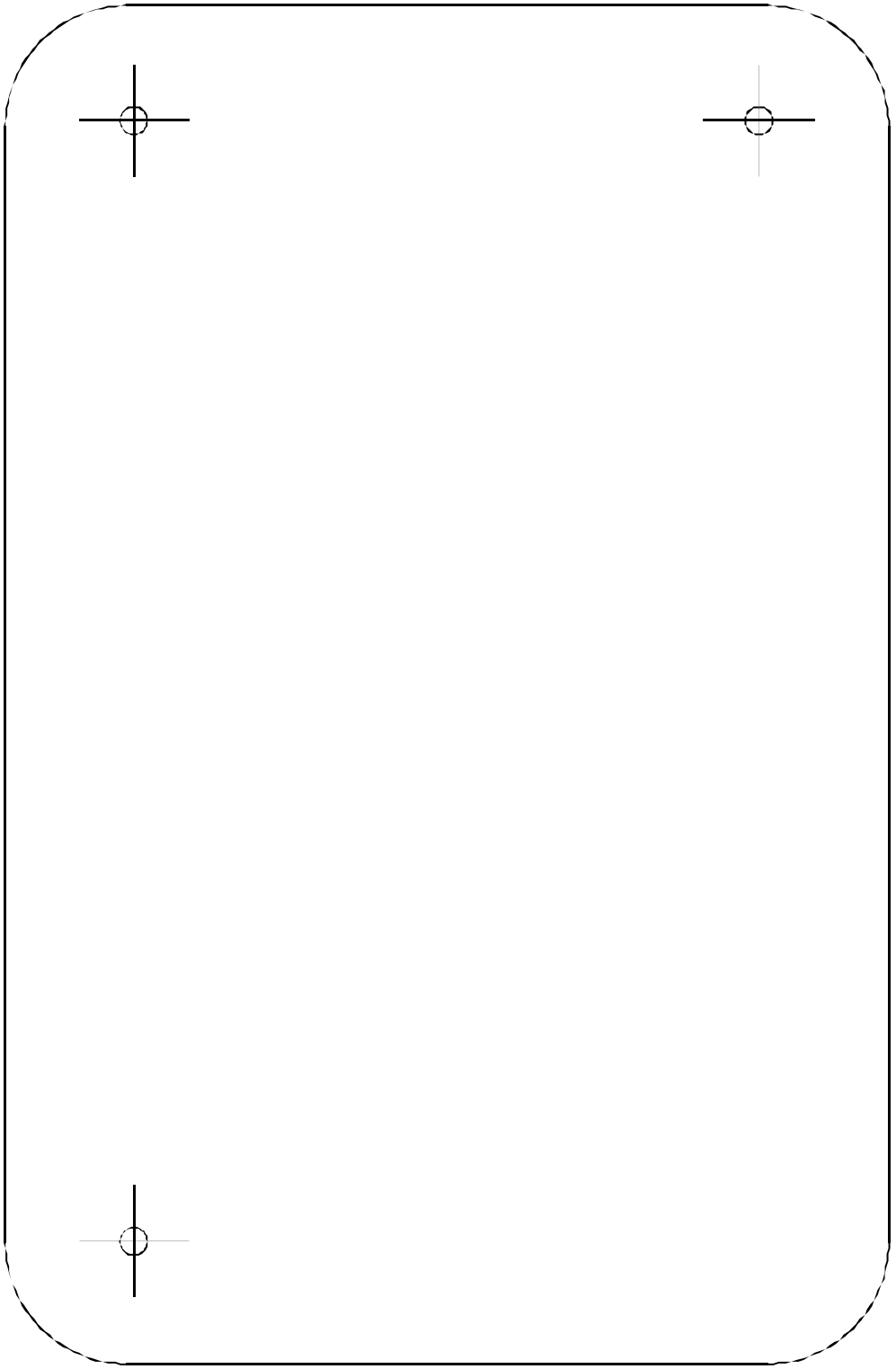

Fig.4 - Mountig holes dimension (scale 1:1)