Thermal Protection Relay – EP4 – Slim - Catalog

ANSI – 23/ 26/49

Technical Catalog

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ANSI – 23/ 26/49

TECHNICAL CATALOG

INDEX

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ANSI – 23/ 26/49

INTRODUCTION

The Thermal Protection Relay EP4 – Slim was designed to control until four (4) temperature channels simultaneously, it is used to protect and monitor dry transformer as define in the table ANSI 23, 26 and 49. The EP4 it is a high precision protection instrument, control heating (on/off), alarms and trip.

The EP4 was built obeying strict standards of quality and use electronics components (SMD) of the last generation. Your hardware was designed to support severe working conditions and can be directly installed in dry transformers or panels of power substations. Meets requirement levels, supportability and reliability in accordance with standards IEC, DIN, IEEE and ABNT.

The EP4 has four temperature sensors Pt100, one configurable universal analog output between 0 to 10, 0 to 20 or 4 to 20 mA, reflects the highest temperature in the moment or any channels. For this, just configure set in the display or through digital output (RS485) with Modbus RTU or DNP 3.0 that allows access to all parameters and remote command relays in real time. Also has three independent temperature setpoints for each sensor, three independents relays (NAF) can be used for alarm, trip, drive fans, pumps and has one (one) relay for fails (watchdog).

The mode of exhibition in EP4 display is totally configurable, can show the highest temperature at the time, or fix the desired channel temperature, or you can use the mode scan, to do a complete check of all the channels continuously.

Through indicative front Led's and also through the communication data port is possible to identify which of the channels caused the alarm, shutdown or actuation of fans, all functions and parameterizations are easily configured directly in the instrument panel or by RS485 communication port.

The Relay Thermal Protection EP4-Slim is built in aluminum enclosure highly resistant measuring 3,8x3,8x1,4 inch (98x98x37mm), according with the standards DIN for fixation on the panel.

MAIN FATURES

- Compact equipment with 1.4 inch (37mm) of enclosure's profundity;
- High brightness display with 3 LED digit
- Accuracy of 0.5% (FS);
- Measurement range of temperature from 0 to 200 º C (32 to 392ºF);
- Input for Pt100 sensors with 3 wires;
- Universal power supply 24-275 Vdc / Vac;
- Digital output with Modbus RTU RS485;
- Analog Output (Active 15 Vdc) of 0A1, 0to5, 0to10, 0to20 and 4to20 mA configurable to any of the channels measured;
- Drive fans directly at the front, automatic or through of the communication protocol;
- Stores in memory the maximum temperatures reached;
- Alarm contact for NOC temperature reaches the set value, configured by the operation;
- NOC Contact Shutdown Timer for temperature to reach the set value;
- NOC Contact ventilation drive with programmable hysteresis;
- Contact for Fault Indication (watchdog);
- Easy to use and parameterization;
- 2 year warranty.

Thermal Protection Relay – EP4 – Slim - Catalog

ANSI – 23/ 26/49

THECNICAL DATA

Temperature Monitor	
Operation of Tension	24 to 275 Vdc/Vac 50/60 Hz
Operation of Temperature	-40ºC to + 85°C (-40º to 185ºF)
Energy Consuption	< 15 W
Input of measurement of temperature	4 - Pt100 Ohm to 0°C with 3 wires
Measurement range	0ºC a 200°C (32 to 392ºF)
Options of the Analog outputs (on) and Maximum Load*	0 ... 1mA - 8000 Ohms
	0 ... 5mA - 1600 Ohms
	0 ... 10mA - 800 Ohms
	0 ... 20mA - 400 Ohms
	4 ... 20mA - 400 Ohms
Maximum Error of the measurement inputs	0,5% end of the scale
Maximum Error of the Analog Output	0,5% end of the scale
Contact Outputs	4 relays – Potencial free
Maximum power of switching	70 W / 250 VA
Maximum voltage of switching	250 Vac/125Vdc
Maximum current of conduction	10 Amperes
Serial Comunication Ports	RS 485 – 2 wire
Comunication Protocol	Modbus RTU or DNP 3.0 L1
Auto Baud Rate (automatic detection and selection)	2,400 to 57,600 bps
Enclousure	3.8 x 3.8 x 1.4 inch (98 x 98 x 37 mm)
Fixation	Fixed at the door panel

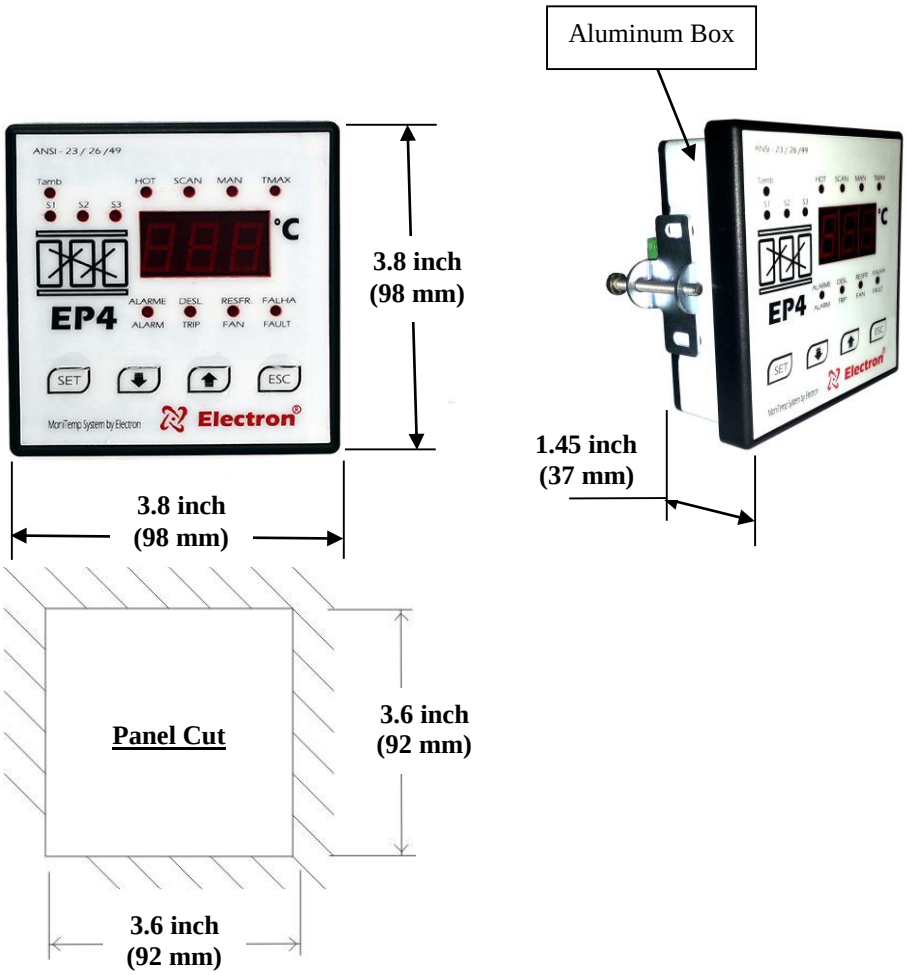
TYPE TESTS PERFORMED

- Insulation Voltage (IEC 60255-5): 2 kV 60Hz 1 min. to ground;
- Voltage Impulse (IEC 60255-5): 1.2 / 50µs. / 5kV / 3 neg. and 3 pos / 5 seg. Interval;
- Electrostatic Discharge (IEC 60255-22-2 and IEEE C37.90.3): Air mode = 8kV / Contact mode = 6 kV;
- Irradiated electromagnetic field Immunity (IEC 60255-22-3 / IEC 61000-4-3): 80 to 1000 Mhz / 10V/m;
- Fast electrical transient immunity (IEC60255-22-4): Power/Input/Output=4Kv/Serial Port 2Kv;
- Surge Immunity (IEC 60255-22-5): phase/neutral 1Kv, 5 per polar. (+/-) - Phase-ground/neutral-ground 2Kv, 5 per polar. (+/-);
- Conduced electromagnetic perturbations immunity IEC 60255-22-6): 0,15 to 80 Mhz / 10V/m;
- Climatic test: (IEC 60068-2-14):-10ºC + 70ºC / 72 hours;
- Vibration resistance: (IEC 60255-21-1): 3 axis / 10 to 150Hz / 2G / 160min/axis;
- Vibration response: (IEC 60255-21-1): 3 axis / 0,075mm-10 to 58 Hz / 1G de 58 to 150 Hz / 8min/axis;

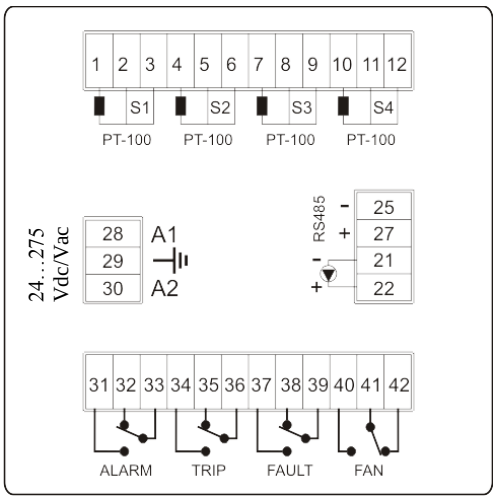
Thermal Protection Relay – EP4 – Slim - Catalog

ANSI – 23/ 26/49

MEASUREMENT



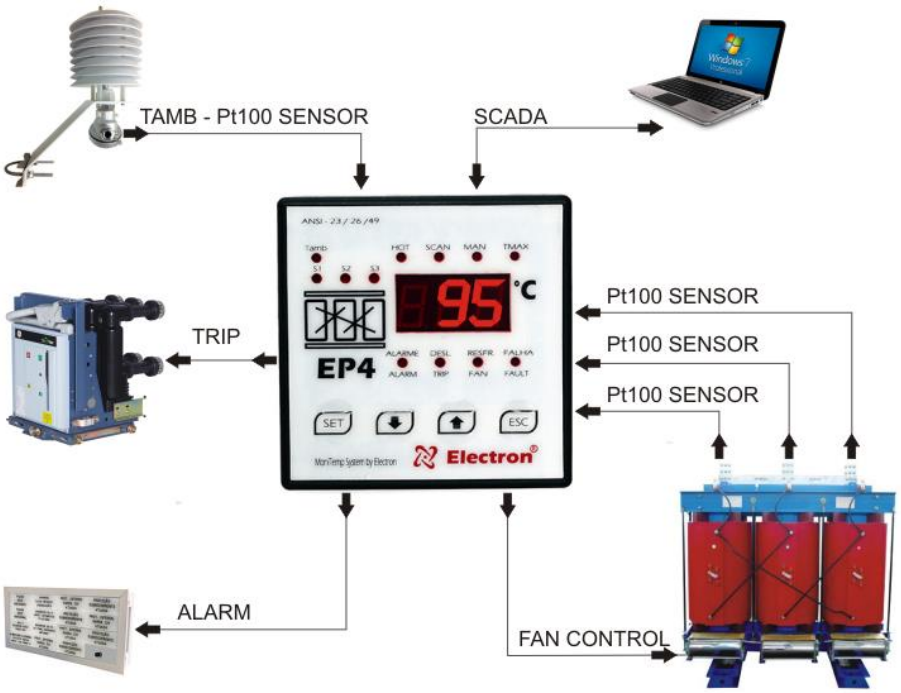
CONNECTION DIAGRAMS



Thermal Protection Relay – EP4 – Slim - Catalog

ANSI – 23/ 26/49

APPLICATION EXAMPLE



REQUEST ESPECIFICATION

Thermal Protection Relay – EP4 – Slim

Code Number: 110 11000-Slim

Thermal Protection Relay – EP4 – Slim - Catalog

ANSI – 23/ 26/49

ACCESSORY FOR INSTALLATION

Temperature Sensor Pt100 Inox or Teflon Bulb

Box for External Use