



TAIK ELECTRIC
Metering Solutions

T249T

SAFEGUARDING YOUR POWER DISTRIBUTION



- ⊙ Temperature rise on the LV windings
- Temperature rise on the magnetic core
- ▲ Temperature rise in the cabinet

ANSI PROTECTION NUMBERING 49T

Instant protection against overloads

The assessment for the lifetime expectancy of the cast resin transformer is mainly dependent on several negative influences like thermal effect, aging, mechanical structure, electrical deterioration and protection device malfunctioning. However, the most significant factor affecting overload is fundamentally associated to the temperature rise.

The load loss of the transformer is directly reflected by the load variation in unexpected condition. As the load increases, the loss and temperature of the transformer are increased proportionally. To ensure the cast resin transformer against the failure, the most effective and instant method is approached by means of measuring the temperature.

An intelligent temperature relay installed for instant monitoring is followed by the IEC standards compliance for conducting the related scopes of the dry-type transformer, and consequently the operation and setting of the temperature relay are respectively carried out by the followings.

Monitoring & Protection



Setup on T249T Relay for monitoring room temperature

IEC 60076-1 & 11, Clause 4.2.3 Temperature of cooling air

- **Temperature of cooling air not exceeding**

40°C at any time
30°C monthly average of the hottest month
20°C yearly average



Setup on T249T Relay for energizing the forced air cooling ventilation

IEC 60076-11, Clause 10 Identification according to cooling method
Clause 10.1 Identification symbols & 10.2 Arrangement of symbols

- **Type of circulation**

AN (Air Natural)

AF (Air Forced)



Setup on T249T Relay for monitoring the LV windings temperature

IEC 60076-11

Clause 11 Temperature-rise limits & Clause 23 Temperature-rise test (type test)
Relevant requirements are applicable to IEC 60076-12 & IEC 60085

- **Winding temperature-rise limits**

155°C (Class F)
180°C (Class H)

- **Average winding-temperature rise**

100K
125K

- **Temperature sensors**

Standard: Platinum RTD, PT100
Option: Thermistor, PTC



*Connecting your Power Distribution
Always here for your Metering Solutions*

FEATURES

- 1 4 Platinum RTD, PT100 inputs
- 2 4 designated relay contact outputs (Alarms/Trip/Fault)
- 3 Extra 2 programmable relay contacts to be energized for starting up the cross flow fan
- 4 1 analog output of DC 4-20mA corresponding to the designated temperature channel
- 5 The measured temperature unit available in either Fahrenheit or Celsius
- 6 Communication interface via RS 485, Modbus RTU
- 7 Auto self-diagnostics for monitoring the internal faults caused on T249T
- 8 Intelligent auto or manual operation
- 9 All temperature measurements to be indicated simultaneously on the main displaying page

Product Specifications

General Data

Temperature input	Max 4 channel RTD PT100, option for Thermistor, PTC		
Dielectric strength	IEC 61010-1, IEC 60688 AC 2KV 1 min. between input/output/power AC 3KV 1 min. between all terminals/case		
Power consumption	5-15VA, it varies accordingly with the desired connected relay contacts		
Sampling time	0.3 sec	Max humidity	95%
IP enclosure	IP54 front, IP20 rear	Auxiliary power supply	AC/DC 85 ~ 265V, 45 ~ 70 Hz
Operating temperature	0 - 60 °C	Accuracy	±1 °C
Storage temperature	-10 - 70 °C		

LCD graphical display

Format	3" large graphical backlit LCD		
Temp.	4 rows of 3 digits represented for Channel 1 to 4		
Temp. setup	3 digits represented for the cross fan operation		
DC 4-20mA	Dual 3 digits respectively represented for the measured channel and the measured value		
Icons and symbols	RS 485 transmission, analog output, temp. units, temp. channels, inner fault, alarm, trip, and fan start-up		

Relay contact

Rated capacity	Form A relay (N.O.), AC 250V 5A, DC 30V 5A. Available for max 4 relay contacts Form A relay (N.O.), AC 250V 10A, DC 30V 7A. Available for max 2 relay contacts		
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Analog output

Output signal	DC 4-20mA
Output resistance	≤350Ω

RS 485 Communication interface

Protocol	Modbus RTU
Baud rate	1200 ~ 38400
Address range	1 ~ 199
Data format	N.8.1, N.8.2, O.8.1, E.8.1

Certificate

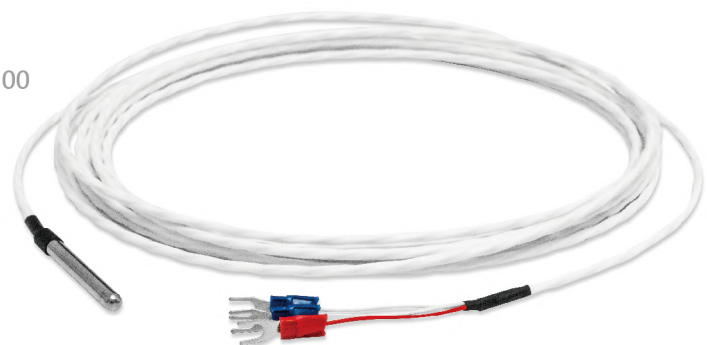
CE

Electromagnetic compatibility (EMC)

Conducted emission	EN 55011	Electrical fast transient/burst immunity	IEC 61000-4-4
Radiated emission	EN 55011	Surge immunity	IEC 61000-4-5
Harmonic current emissions	EN 61000-3-2	Immunity to conducted disturbances	IEC 61000-4-6
Voltage changes, voltage fluctuations, and flicker	EN 61000-3-3	Power frequency magnetic field immunity	IEC 61000-4-8
Electrostatic discharge	IEC 61000-4-2	Short interruptions and voltage	IEC 61000-4-11
Electromagnetic field immunity	IEC 61000-4-3		

Temperature Probe Platinum RTD, PT100

- Round | 5 Ø x 50mm
- Cable | PTFE strand CuAg3 x 0.38 mm² insulated
- Cable length | 2.5 m (Standard), longer on request (5M)
- Dielectric strength | 30 KV/mm
- Max. operating temp. | -40 - 220°C
- Option | Thermistor, PTC

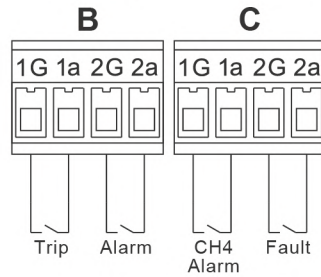


Wiring Connection

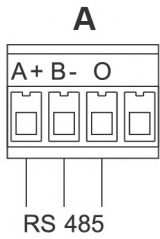
Outputs

Inputs

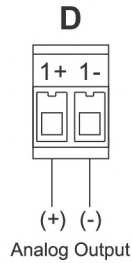
- 4 Relay Contacts



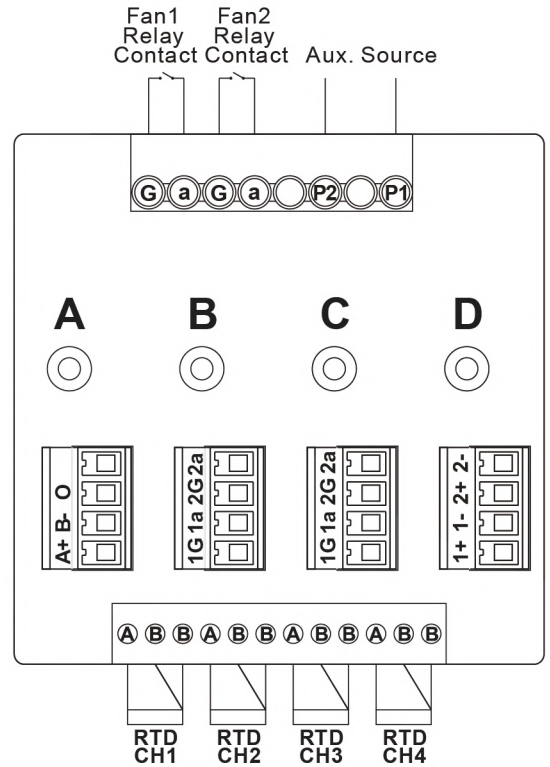
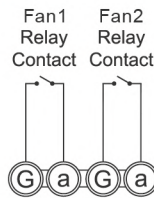
- RS 485



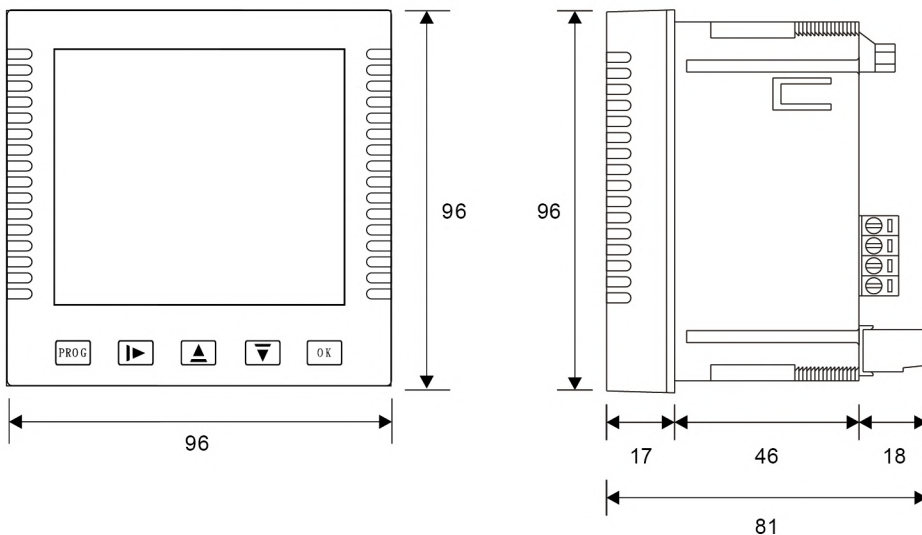
- DC 4-20mA



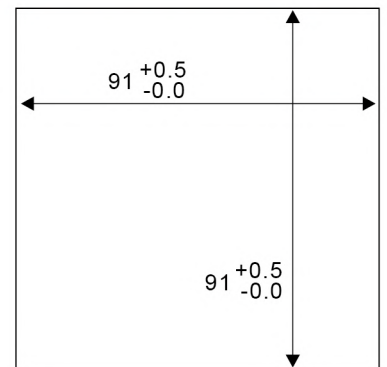
- 2 Relay Contacts



Dimension



Panel Cut-Out



Product Code

Robust RTD PT100

RTD PT100 2.5M length
RTD PT100 5M length

Code No.

TRR025
TRR050

TempSafeguard

Full functions

Code No.

T249T

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