

IT

Insulated Transducer



The Insulated Transducer (IT) is used in monitoring and protection systems for power transformers and reactors. Its function is to convert analog signals from temperature sensors (RTD), position of taps (potentiometric transmitters of on-lap tap changers), or current loop (signals in mA) into output values proportional to the input values.

In the case of a RTD input, the IT performs the linearization of the sensor curve to obtain increased accuracy.

The IT was designed with a universal power input (85 to 265 Vdc/Vac, 50/60 Hz), in order to comply with all types of power supply commonly used in auxiliary systems of substations.

It is provided with galvanic insulation between the input, output, and power supply circuits.

In addition to the current loop output, the IT has also a N.O. contact to signal any input sensor loss of signal (for temperature and tap position versions only). Two LED's provide local visualization.

A green light to signal transducer on, and a red light to signal an alarm contact actuation due to a sensor loss.



IT

Technical Characteristics

Power Supply: 85 to 265 Vdc/Vac, 50/60 Hz
Consumption: < 5 W
Operation Temperature: -10 to 70 °C

Inputs: Pt 100 at 0°C , Cu 10 at 25°C , Potentiometric transmmiter or mAdc current

Outputs:
• 1 Contact NO: Sensor loss:
Maximum Switching Power: 60W/62.5VA
Maximum Switching Voltage: 220 Vdc/250 Vac
Maximum Conduction Current: 2.0 A

• Current Loop: Higher temperature

Output Current (mA)	Maximum Load ()
1	10000
5	2000
10	1000
20	500

Class of Accuracy: 0.5 % end of scale
Measuring Range: 0 ~ 150 °C ¹⁾
Response Time: < 50 ms
Voltage Drop at Inputs: ²⁾ 1 V
LED's: Green: ON,
Red: Sensor Fail

Enclosure: 16 pins type needle (2x2,5 mm2), ABS
Mounting: Rail U

1) In case of Temperature Transducer
2) In case of Signal Transducers (input mA)

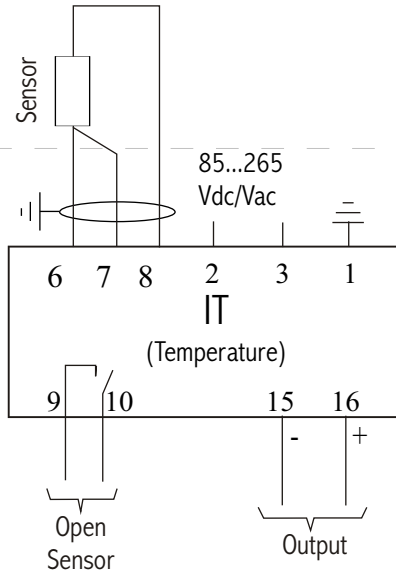


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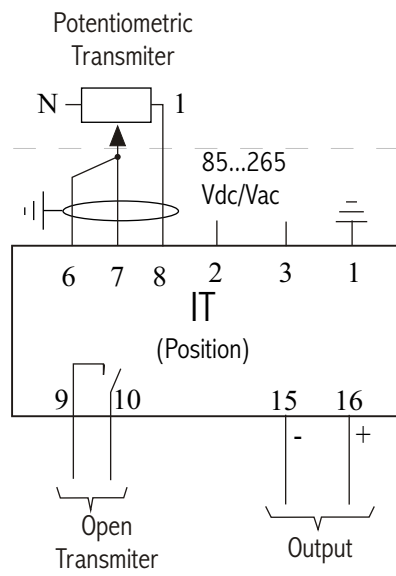
Connection Diagrams



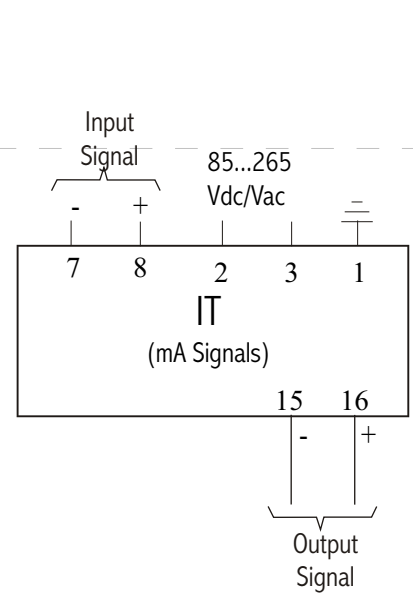
Temperature



Position

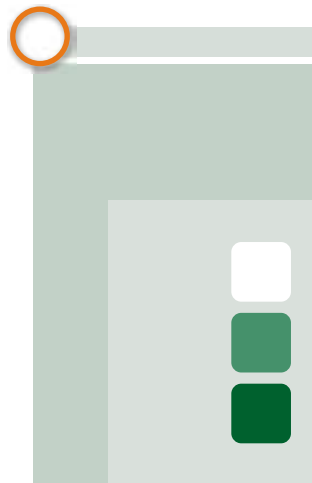
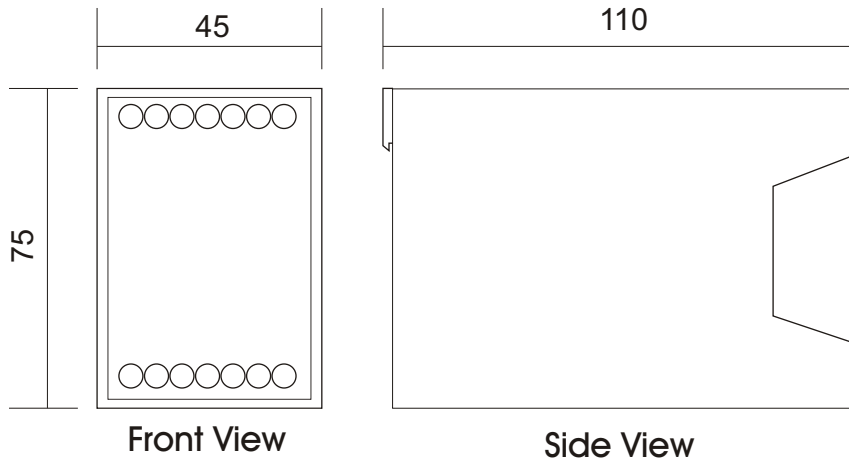


Signal



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Dimensions



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Accomplished Tests



Surges and transients (IEC 60255-6)

Peak value 1 st cycle:	2.5 kV
Frequency:	1.1 MHz
Time:	2 s
Repetition Rate:	400 (surges/s)
Declining to 50%:	5 cycles

Impulse (IEC 60255-5)

Wave form:	1.2/50 s
Amplitude:	5 kV
Number of pulses:	3 negative and 3 positive with interval of 5 seconds between pulses.
Energy:	0.5J

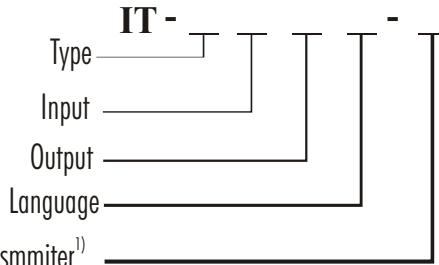
Insulation Test (IEC 60255-5)

Insulation voltage nominal at industrial frequency:	2.0 kVrms. 60 Hz. for 1 minute between circuits and mounting panel.
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IT

Ordering Information



Total resistance of the potentiometric transmitter¹⁾

1) Applicable only to Position Transducer,
 Total resistance of the potentiometric transmitter =
 $(N-1) \cdot R$, where N = number of taps and
 R = resistance of the step.

Type	Inputs ²	Output Current	Language
1 - Temperature		1 - 0...1 mA	1 - Portuguese
2 - Position		2 - 0...5 mA	2 - English
3 - Signals (mA)		3 - 0...10 mA	3 - Spanish
		4 - 0...20 mA	4 - Other
		5 - 4...20 mA	

² See table below

Inputs		
Temperature Transducer	Position Transducer	Signals Transducer (mA)
1 - PT 100	0 - Not applicable	1 - 0...1 mA
2 - Cu 10		2 - 0...5 mA
		3 - 0...10 mA
		4 - 0...20 mA
		5 - 4...20 mA

Example: IT – 2052 - 320
 Position Transducer for total resistance of the potentiometric transmitter of 320 , with output from 4 to 20 mA and English language.





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