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ITT1 Industrial Temperature Transmitter for Resistance Temperature Sensors (RTD)

FEATURES

- Linearization of temperature measurement of Pt100 ... Pt1000 or Ni100 ... Ni1000 sensors
- Reliable conversion of a resistance value change into a standard analog current signal
- Cable compensation for 3-wire inputs
- Suitable for various head types
- Easy and fast programmable
- Programmable sensor error detection

TYPICAL USES

- Chemical and petrochemical industry
- Machine and apparatus construction
- Food and beverage industry
- Pulp and paper industry

ITT1
Head-Transmitter

MECHANICAL SPECIFICATIONS

Dimensions:	Ø 44 x 20,2 mm	
Weight:	50 g	
Max. Wire Size:	1 x 1.5 mm² stranded wire	
Torque Terminal Screw:	0,4 Nm	

ENVIRONMENTAL SPECIFICATIONS

Temperature Limits:	Storage:	-40 °C to +85 °C (-40 °F to 185 °F)
	Operating:	-40 °C to +85 °C (-40 °F to 185 °F)
	Calibration:	+20 °C to +28 °C (68 °F to 82 °F)
Humidity:	< 95 % R.H. (non-condensing)	
Ingress Protectection:	Enclosure:	IP68
	Terminals:	IP00

ACCURACY SPECIFICATIONS

Absolute Accuracy:	≤ ±0.1 % of span	
Temperature Coefficient:	≤ ±0.01 % of span / K	
Basic Accuracy:	RTD:	≤ ±0.3 K
	Ohm (linear R):	≤ ±0.2 Ω
Temperature Coefficient:	RTD:	≤ ±0.01 K / K
	Ohm (linear R):	≤ ±20 mΩ / K
Effect of EMC:	≤ ±0.5 % of span	

ELECTRICAL SPECIFICATIONS

Supply Voltage:	8.0 ... 35 Vdc	
Internal Power Dissipation:	25 mW ... 0.8 W	
Voltage Drop:	8 Vdc	
Warm-up Duration:	5 minutes	
Programming:	Loop Link	
Signal / Noise Ratio:	60 dB (minimum)	
Response Time: (programmable)	0.33 ... 60 s	
Signal Dynamics:	Input:	19 bit
	Output:	16 bit
Effect of Supply Voltage Variation:	< 0,005 % of span / Vdc	

KEY BENEFITS

- **Easy install and programming**
- **High accuracy in your measurement setup**
- **Programmable error value correction of sensor**
- **RTD or Ohm input**

INPUT SPECIFICATIONS

Max. Span:	Pt100 ... Pt1000:	-200 °C to +850 °C
	Ni100 ... Ni1000:	-60 °C to +250 °C
	Linear resistance:	0 Ω to 10000 Ω
Min. Span:	Pt100 ... Pt1000:	25 °C
	Ni100 ... Ni1000:	25 °C
	Linear resistance:	30 Ω
Max. Offset:	50 % of selected max. value	
Max. Cable resistance: (per wire)	10 Ω	
Sensor Current:	0.2 mA < I < 0.4 mA	
Effect of Sensor Cable Resistance:	< 0.002 Ω / Ω	

OUTPUT SPECIFICATIONS

Signal Range:	4 ... 20 mA with min. range 16 mA
Update Time:	135 ms
Load Resistance:	≤ (V_{supply} - 8.0) / 0.023 [Ω]
Load Stability:	< ±0.01 % of span / 100 Ω

SENSOR ERROR DETECTION SPECIFICATIONS

Programmable:	3.5 ... 23 mA
NAMUR NE43 High Level:	23 mA
NAMUR NE43 Low Level:	3.5 mA

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Ordering Code	Example:	ITT1	1	42	2	N100	0200	C	NE43U
Mode									
ITT1	Digital programmable RTD temperature transmitter	ITT1							
Sensor Types									
1	RTD type Pt100		1						
2	RTD type Pt1000								
3	RTD type Ni100								
Output Signal									
42	4–20 mA			42					
Sensor Wiring									
2	RTD 2 wires				2				
3	RTD 3 wires								
Temperature Range, low (within min. span)									
N100	-100					N100			
Temperature Range, high (within max. span)									
0200	200						0200		
Engineering Unit									
C	°C							C	
F	°F								
Alarm Level Configuration									
NE43U	NAMUR alarm and saturation levels, high alarm, 23mA								NE43U
NE43D	NAMUR alarm and saturation levels, low alarm, 3.5mA								

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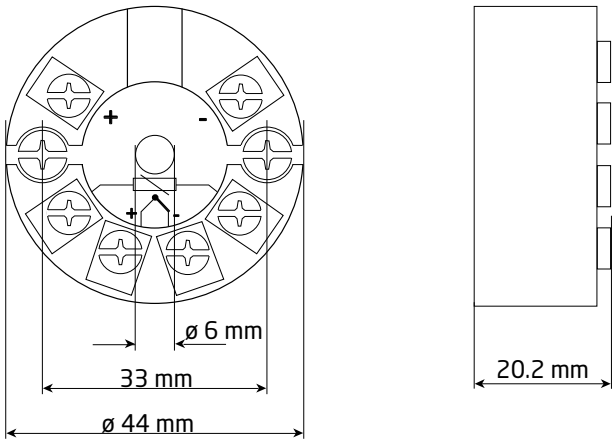
DIMENSIONS IN MM

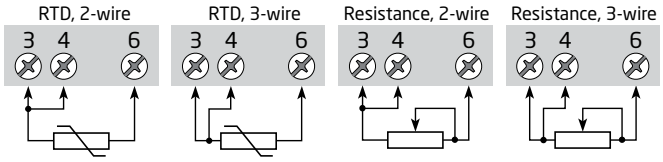
For reference only, consult Ashcroft for specific dimensional drawings



ELECTRICAL CONNECTION AND SCHEMES

For reference only, consult Ashcroft for specific dimensional drawings

Input:



Output: