ASHCROFT®
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ITT2 Industrial Temperature Transmitter for Thermocouple Sensors (TC)

FEATURES

- Linearization of temperature measurement of all termocouple types
- Reliable amplification of the bipolar mV or TC signal into a standard analog current signal
- Cold junction compensation with a built-in temperature sensor
- 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

ITT2
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:	≤ ±0.05 % of span	
Temperature Coefficient:	≤ ±0.01 % of span / K	
Basic Accuracy:	Volt:	≤ ±10 µV
	Type E, J, K, L, N, T and U	≤ ±1 K
	Type B, R, S, W3, W5, Lr	≤ ±2 K
Temperature Coefficient:	Volt:	≤ ±1 µV / K
	Type E, J, K, L, N, T and U	≤ ±0,05 K / K
	Type B, R, S, W3, W5, Lr	≤ ±0,2 K / K
Effect of EMC:	≤ ±0.5 % of span	

ELECTRICAL SPECIFICATIONS

Supply Voltage:	7.2 ... 35 Vdc	
Internal Power Dissipation:	25 mW ... 0.8 W	
Voltage Drop:	7.2 Vdc	
Warm-up Duration:	5 minutes	
Programming:	Loop Link	
Signal / Noise Ratio:	60 dB (minimum)	
Response Time: (programmable)	1 ... 60 s	
Signal Dynamics:	Input:	18 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**
- **mV or TC signal input**

INPUT SPECIFICATIONS

Max. Span:	See table 1 at page 2	
Min. Span:	See table 1 at page 2	
Max. Offset:	50 % of selected max. value	
Cold Junction Compensation:	≤ ± 1 K	
Sensor Error Current:	Failure mode:	33 µA
	No failure mode:	0 µA
Measurement Range:	-12 to 150 mV	
Min. Span (Voltage):	5 mV	
Input Resistance:	10 MΩ	

OUTPUT SPECIFICATIONS

Signal Range:	4 ... 20 mA with min. range 16 mA
Update Time:	440 ms
EEprom Error Signal:	≤ 3.5 mA
Load Resistance:	≤ (V_{supply} - 7.2) / 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:	ITT2	K	N100C	200C	1	CJC	42	OFF	42	XNH
Model											
ITT2	Digital programmable TC temperature transmitter	ITT2									
Sensor											
K	TC type K		K								
J	TC type J										
N	TC type N										
B	TC type B										
S	TC type S										
O	Other sensor type										
Temperature Range, low (within temperatur span, check table 1 below)											
N100C	-100 °C			N100C							
Temperature Range, high (within temperatur span, check table 1 below)											
200C	200 °C				200C						
Response Time (in seconds, any value from 1 to 60)											
1	1 s					1					
Compensation											
CJC	Cold Junction Compensation (CJC)						CJC				
VSK	Constant compensation										
Output Signal											
42	4-20 mA							42			
24	20-4 mA										
Sensor Error Detection											
OFF	Inactive								OFF		
NE43U	NAMUR NE43, high level, 23 mA										
NE43D	NAMUR NE43, low level, 3.5 mA										
Output Signal Limits											
42	4-20 mA									42	
USER	Adjustable in the limits from 3,5 to 23 mA										
NE43	NAMUR NE43 3,8 to 20,5 mA										
MAX	Maximum limit 3,5 to 23 mA										
Options (If choosing an option(s) must include a "X")											
Tagging											
NH	Tag number programmed										NH

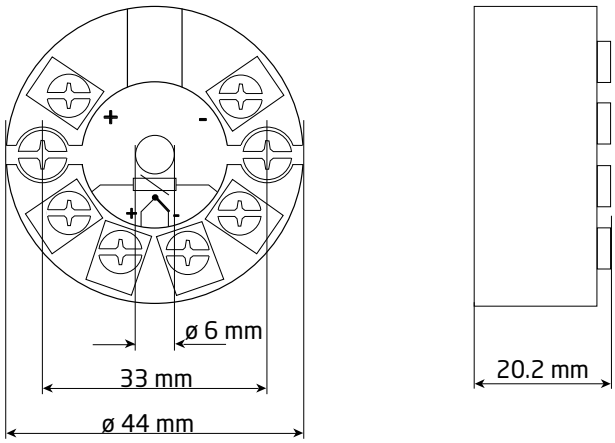
TABLE 1: TC INPUT AND MAX. RANGES

TYPE	MIN. TEMPERATURE	MAX. TEMPERATURE	MIN. SPAN	STANDARD
B	+400°C	+1820°C	100°C	IEC584
E	-100°C	+1000°C	50°C	IEC584
J	-100°C	+1200°C	50°C	IEC584
K	-180°C	+1372°C	50°C	IEC584
L	-100°C	+900°C	50°C	DIN 43710
Lr	-200°C	+800°C	50°C	GOST 3044-84
N	-180°C	+1300°C	50°C	IEC584
R	-50°C	+1760°C	100°C	IEC584
S	-50°C	+1760°C	100°C	IEC584
T	-200°C	+400°C	50°C	IEC584
U	-200°C	+600°C	50°C	DIN 43710
W3	0°C	+2300°C	100°C	ASTM E988-90
W5	0°C	+2300°C	100°C	ASTM E988-90

ITT2 Industrial Temperature Transmitter for Thermocouple Sensors (TC)

DIMENSIONS IN MM

For reference only, consult Ashcroft for specific dimensional drawings



ELECTRICAL CONNECTION AND SCHEMES

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