

# PI-EX-THC-I

Order No.: 2835079



<http://eshop.phoenixcontact.de/phoenix/treeViewClick.do?UID=2835079>

Ex-i thermocouple and mV input: Converts signals from thermocouples installed in Ex areas and mV sources and transmits a 4-20 mA signal to a load in a safe area. Freely programmable. Galvanic 3-way isolation. Custom-configured.



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## Commercial data

Note	Made-to-order
sales group	H711
Pack	1 pcs.
Customs tariff	85437090
Catalog page information	Page 384 (IF-2007)

## Technical data

### Input data

Input	Intrinsically safe
Configurable/programmable	Freely programmable, configured
Sensor types that can be used (TC)	J, K, T, E, R, S, B, N
Input signal range	-75 mV ... 75 mV (minimum measuring range span 3 mV)
Input accuracy	±15 µV or ± 0.05% of the input value, if this result is greater, at 20°C

### Output data

Signal output	Current output
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Current output signal	4 mA ... 20 mA
Load/output load current output	$\leq 600 \Omega$
Behavior in the event of a sensor error	upscale, downscale or off, LED flashes
Measuring accuracy	$\pm 11 \mu\text{A}$

**Power supply**

Supply voltage range	20 V DC ... 35 V DC
Max. current consumption	64 mA (24 V DC/ 20 mA)
Power consumption	1.5 W (24 V DC/ 20 mA)

**Connection data**

Conductor cross section solid min.	0.2 mm <sup>2</sup>
Conductor cross section solid max.	2.5 mm <sup>2</sup>
Conductor cross section stranded min.	0.2 mm <sup>2</sup>
Conductor cross section stranded max.	2.5 mm <sup>2</sup>
Conductor cross section AWG/kcmil min.	24
Conductor cross section AWG/kcmil max	14
Tightening torque, min	0.5 Nm
Tightening torque max	0.6 Nm

**General data**

No. of channels	1
Maximum transmission error	< 0.12 % (of end value 20 mA, at 20°C, -75...75 mV input range)
Temperature coefficient, typical	$\pm 0.003 \%$ (of input value /°C)
Typical cold point errors	1.5 °C
Ambient temperature (operation)	-20 °C ... 55 °C
Ambient temperature (storage/transport)	-40 °C ... 85 °C
Status display	Green LED, for power supply, flashes in the case of sensor defect
Width	12.4 mm
Height	145 mm
Depth	147 mm
Inflammability class acc. to UL 94	V0
Housing material	PBT and polyamide PA non-reinforced
Degree of protection	IP20
Color	green
Electrical isolation input / output	250 V
Electrical isolation input / supply	250 V

Electrical isolation output / supply	1.5 kV AC (50 Hz, 1 min., test voltage)
Conformance	CE-compliant
ATEX	Ex II (1) GD [EEx ia] IIC
UL, USA / Canada	cULus

**Safety data**

Max. voltage $U_o$	1.1 V
Max. current $I_o$	4 mA
Max. power $P_o$	1 mW
Gas group	II B
Max. external inductivity $L_o$	178.4 mH
Max. external capacity $C_o$	500 $\mu$ F
Gas group	II C
Max. external inductivity $L_o$	48.7 mH
Max. external capacity $C_o$	22 $\mu$ F
Safety-related maximum voltage $U_m$	250 V AC

**Configuration options**

Sensor type	Pt30Rh-Pt6Rh +500 ... +1820C [B] NiCr-CuNi -226C ... +1000C [E] TypeJ:Fe-CuNi -210C ... +1200C [J] TypeK:NiCr-Ni -200C ... +1372C [K] NiCrSi-NiSi -200C ... +1300C [N] Pt13Rh-Pt -50C ... +1768C [R] Pt10Rh-Pt -50C ... +1768C [S] Cu-CuNi -200C ... +400C [T] -75 mV ... +75 mV voltage [V02]
Cold point compensation	Switched off [0] Enabled [1]
Unit of measurement	Celsius [C] Fahrenheit [F] In millivolts [V]
Filter frequency	50 Hz [50] 60 Hz [60]
Alarm signal transmitter error	High [H] Low [L] Off [O]

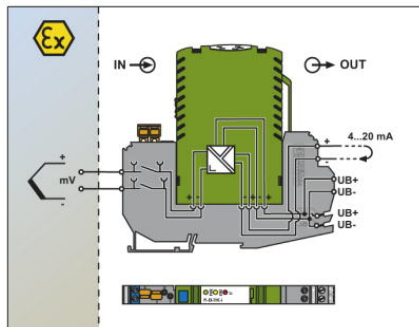
Alarm signal sensor break	High [H] Low [L] Off [O] 0 mA [I000] 3,5 mA [I035] 21,5 mA [I215]
Alarm sig. Ref. point fault	High [H] Low [L] Off [O]

### Additional products

Item	Designation	Description
<b>General</b>		
2835901	PI-EX-TB	Ex base terminal block for intrinsically safe signals with knife disconnection and test connections
2858344	TT-PI-EX-TB/T	Intrinsically safe basic terminal block with isolating connector, test connections and surge protection, with additional temperature measurement of the input terminal block for cold junction compensation, for mounting on NS 35/7.5

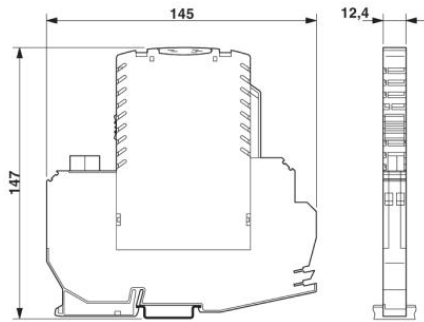
### Diagrams/Drawings

Block diagram



Dimensioned drawing

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