

AXL SE UTH4 EF - Temperature module



1182068

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Axioline Smart Elements, Temperature recording module, Analog inputs: 4 (Inputs for thermocouples or linear voltage), connection technology: 2-conductor (shielded, twisted pair), External cold junction (can also be used as an additional Pt 100 sensor input): 1, connection technology: 4-conductor, degree of protection: IP20

Product description

You can integrate Axioline Smart Elements into systems with the Smart Element interface. This Smart Element acquires signals from standard thermocouples in industrial applications. The Smart Element supports various types of thermocouple conforming to DIN EN 60584-1 and DIN 46710 as well as linear voltages from -100 mV to +100 mV. You can use the Pt 100 input as a sensor input or as an external cold junction.

Your advantages

- 4 analog input channels to connect thermocouples or linear voltages from -100 mV to +100 mV
- Connection of sensors in 2-conductor technology
- A Pt 100 sensor with 4-conductor technology can be connected as an external cold junction sensor or additional RTD measuring channel
- Internal detection and compensation of cold junction temperature (can be parameterized)
- Device rating plate stored

Commercial data

Item number	1182068
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	DR05
Product key	DRIB43
GTIN	4063151371005
Weight per piece (including packing)	40.75 g
Weight per piece (excluding packing)	38.05 g
Customs tariff number	85437090
Country of origin	DE

AXL SE UTH4 EF - Temperature module



1182068

<https://www.phoenixcontact.com/us/products/1182068>

Technical data

Dimensions

Dimensional drawing	
Width	14.9 mm
Height	62.2 mm
Depth	62 mm

Notes

Note on application

Note on application	Only for industrial use
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Material specifications

Color (Housing)	gray (RAL 7042)
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Interfaces

Smart Element interface

Number of interfaces	1
Connection method	Card edge connector
Transmission speed	See system in which you use the Smart Element.
Start time until ready to operate	< 500 ms

System properties

Programming data (LocalbusSlave)

Process data channel	80 bit
Input address area	10 Byte
Output address area	10 Byte

Fieldbus data telegram

Required parameter data	21 Byte
Required configuration data	6 Byte

Input data

Analog:

Input name	Analog inputs
Description of the input	Inputs for thermocouples or linear voltage

AXL SE UTH4 EF - Temperature module



1182068

<https://www.phoenixcontact.com/us/products/1182068>

Number of inputs	4 (Inputs for thermocouples or linear voltage)
Connection method	Push-in connection
Connection technology	2-conductor (shielded, twisted pair)
Sensor types that can be used (TC)	B, C, E, J, K, L, N, R, S, T, U, W, HK, mV input
Tolerance, relative	typ. 0.01 % (Thermocouple type K, NiCr-Ni) see tables for tolerance values
Tolerance, absolute	typ. ± 0.27 K (Thermocouple type K, plus tolerance of cold junction) see tables for tolerance values
Measured value representation	16 bits (15 bits + sign bit)
Input filter time	40 ms 60 ms 100 ms 120 ms (adjustable)
Protective circuit	Surge protection Transient protection

Analog:

Input name	External cold junction (can also be used as an additional Pt 100 sensor input)
Number of inputs	1
Connection method	Push-in connection
Connection technology	4-conductor
Sensor types (RTD) that can be used	Pt 100
Input filter time	120 ms

Product properties

Product type	I/O component
Product family	Axioline Smart Elements
Type	modular
Mounting position	See the system in which the Smart Element is used.

Insulation characteristics

Overvoltage category	II (IEC 60664-1, EN 60664-1)
Pollution degree	2 (IEC 60664-1, EN 60664-1)

Electrical properties

Maximum power dissipation for nominal condition	0.75 W
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Potentials: Communications power supply of the Smart Elements (U_{SE})

Supply voltage	using card edge connectors
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Potentials: I/O supply (U_P)

Supply voltage	24 V DC (using card edge connectors)
Supply voltage range	19.2 V DC ... 30 V DC (including all tolerances, including ripple)
Current draw	max. 28 mA typ. 22 mA

AXL SE UTH4 EF - Temperature module



1182068

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Current consumption	min. 16 mA (without connected peripherals)
Protective circuit	Surge protection; See the system in which the Smart Element is used.
Protection	Reverse polarity protection; Polarity protection diode
Protection	See the system in which the Smart Element is used.

Electrical isolation/isolation of the voltage ranges

Test voltage: Communications supply / 24 V supply (I/O)	500 V AC, 50 Hz, 1 min
Test voltage: Communications supply / functional ground	500 V AC, 50 Hz, 1 min
Test voltage: 24 V supply (I/O) / functional ground	500 V AC, 50 Hz, 1 min

Connection data

Connection technology

Connection name	I/O
Note on the connection method	Please observe the information provided on conductor cross-sections in the "AxioLine Smart Elements" user manual.

I/O

Connection method	Push-in connection
Note on the connection method	Please observe the information provided on conductor cross-sections in the "AxioLine Smart Elements" user manual.
Conductor cross-section, rigid	0.25 mm ² ... 1.5 mm ²
Conductor cross-section, flexible	0.25 mm ² ... 1.5 mm ²
Conductor cross-section AWG	24 ... 16
Conductor cross-section, flexible, with ferrule, with plastic sleeve	0.25 mm ² ... 1.5 mm ²
Conductor cross-section, flexible, with ferrule, without plastic sleeve	0.25 mm ² ... 1.5 mm ²
Conductor cross-section, flexible, with ferrule, with plastic sleeve	0.25 mm ² ... 1.5 mm ²
Stripping length	8 mm

Environmental and real-life conditions

Ambient conditions

Ambient temperature (operation)	-25 °C ... 60 °C
Degree of protection	IP20
Air pressure (operation)	70 kPa ... 106 kPa (up to 3000 m above sea level)
Air pressure (storage/transport)	70 kPa ... 106 kPa (up to 3000 m above sea level)
Ambient temperature (storage/transport)	-40 °C ... 85 °C
Permissible humidity (operation)	5 % ... 95 % (non-condensing)
Permissible humidity (storage/transport)	5 % ... 95 % (non-condensing)

Mechanical test

Vibration resistance in accordance with EN 60068-2-6/IEC 60068-2-6	5g
Shock in accordance with EN 60068-2-27/IEC 60068-2-27	30g
Continuous shock in accordance with EN 60068-2-27/IEC 60068-2-27	10g

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Standards and regulations

Protection class	III (IEC 61140, EN 61140, VDE 0140-1)
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Mounting

Mounting type	Plug-in mounting (Smart Element slot)
Mounting position	See the system in which the Smart Element is used.

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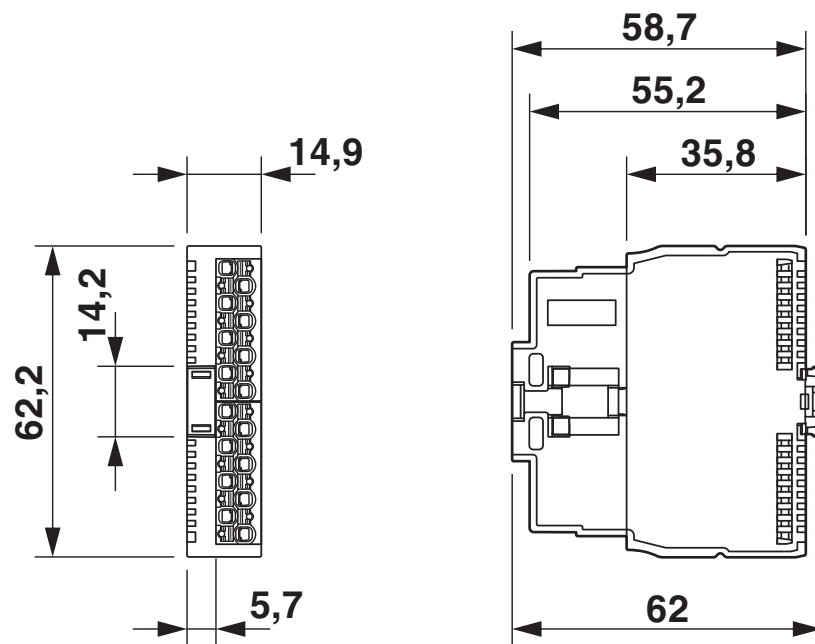
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Drawings

Dimensional drawing



Dimensions

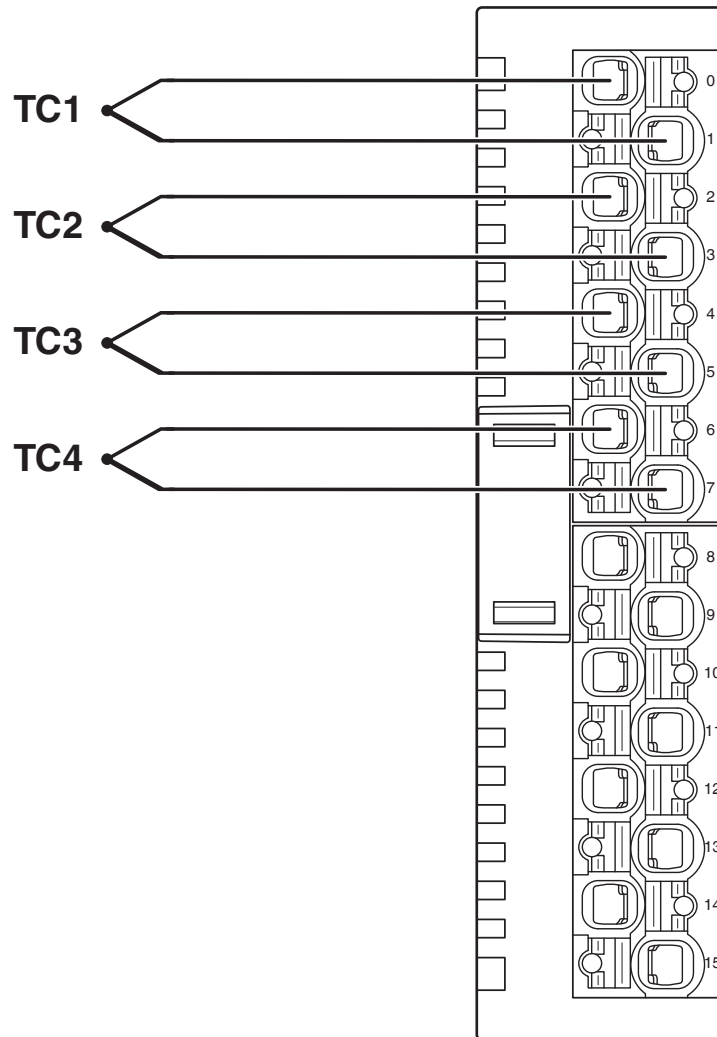
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Connection diagram



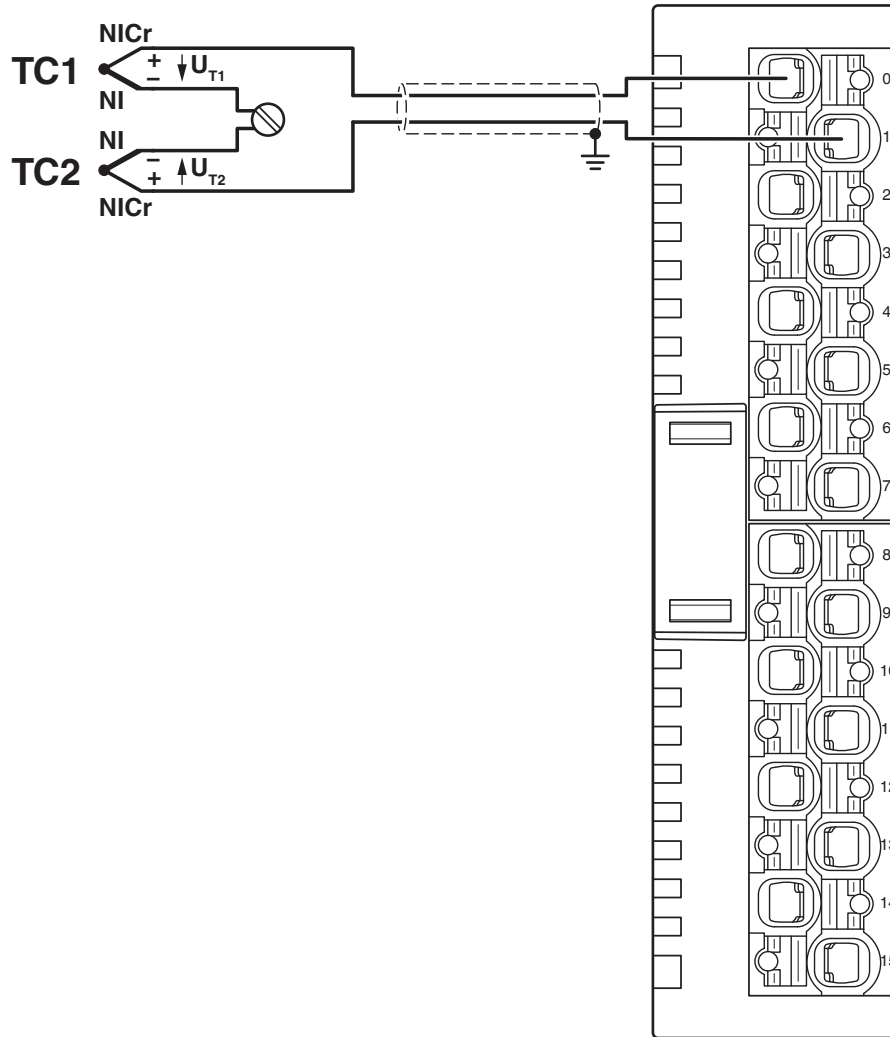
Connection example: absolute temperature measurement

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Connection diagram



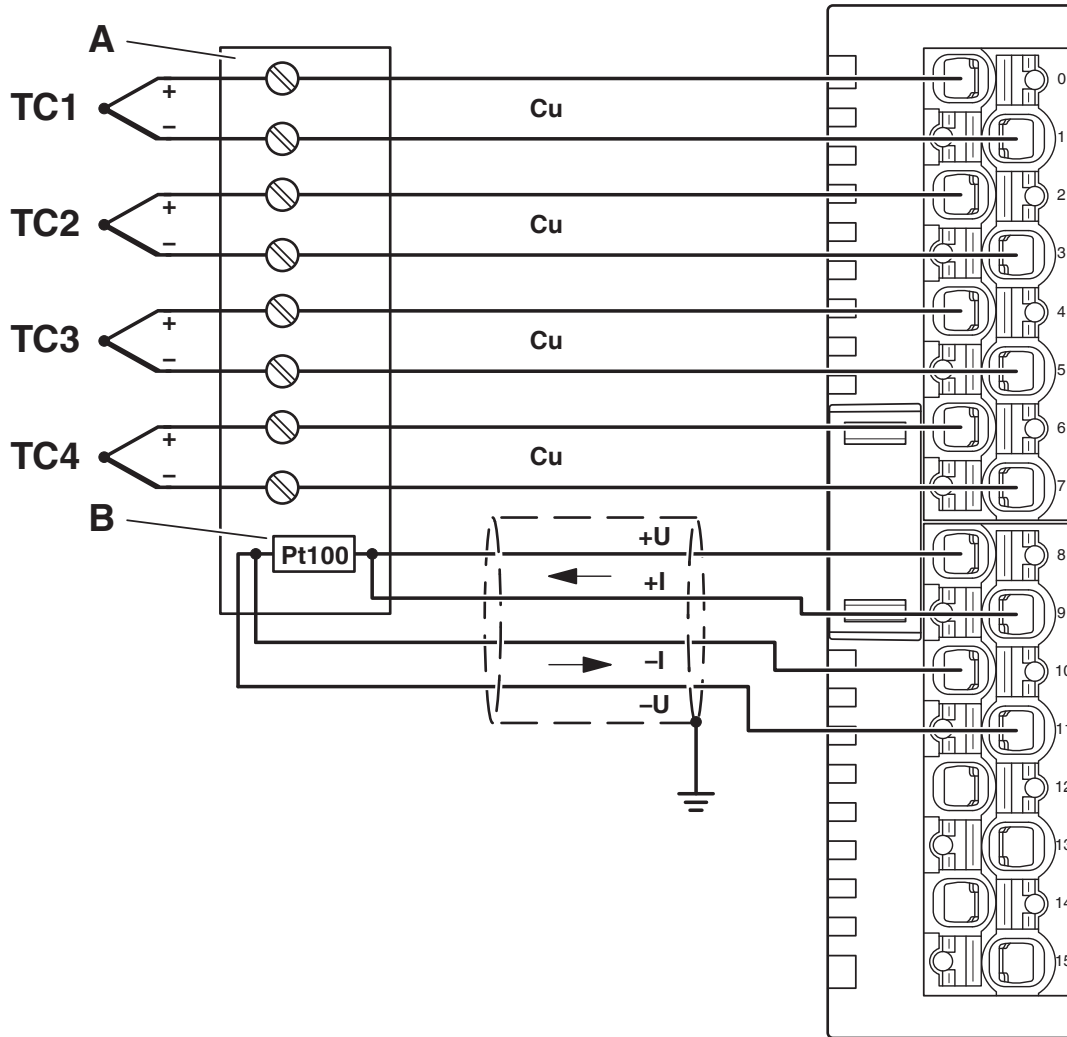
Differential temperature measurement

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Connection diagram



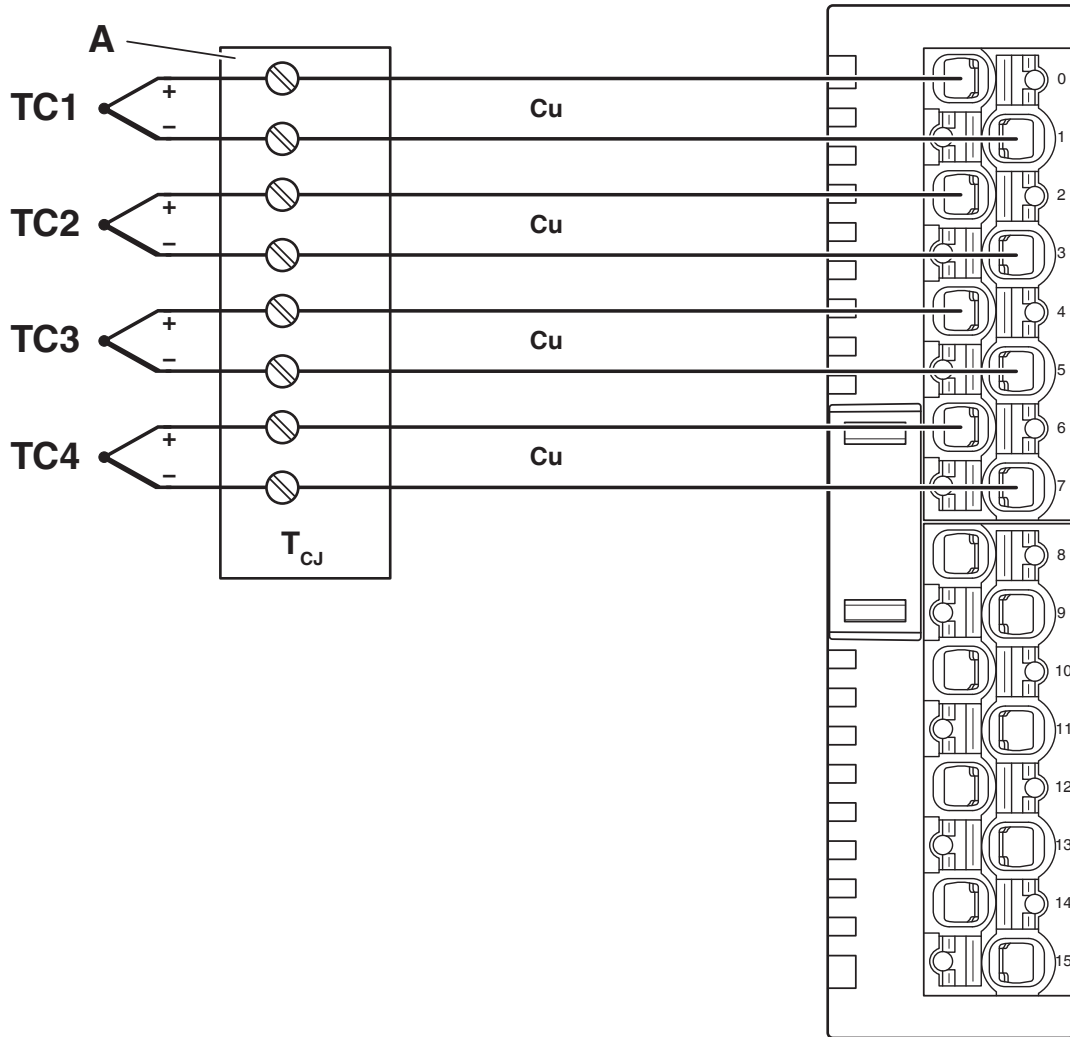
Thermocouple detection with external cold junction compensation at channel 1

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Connection diagram



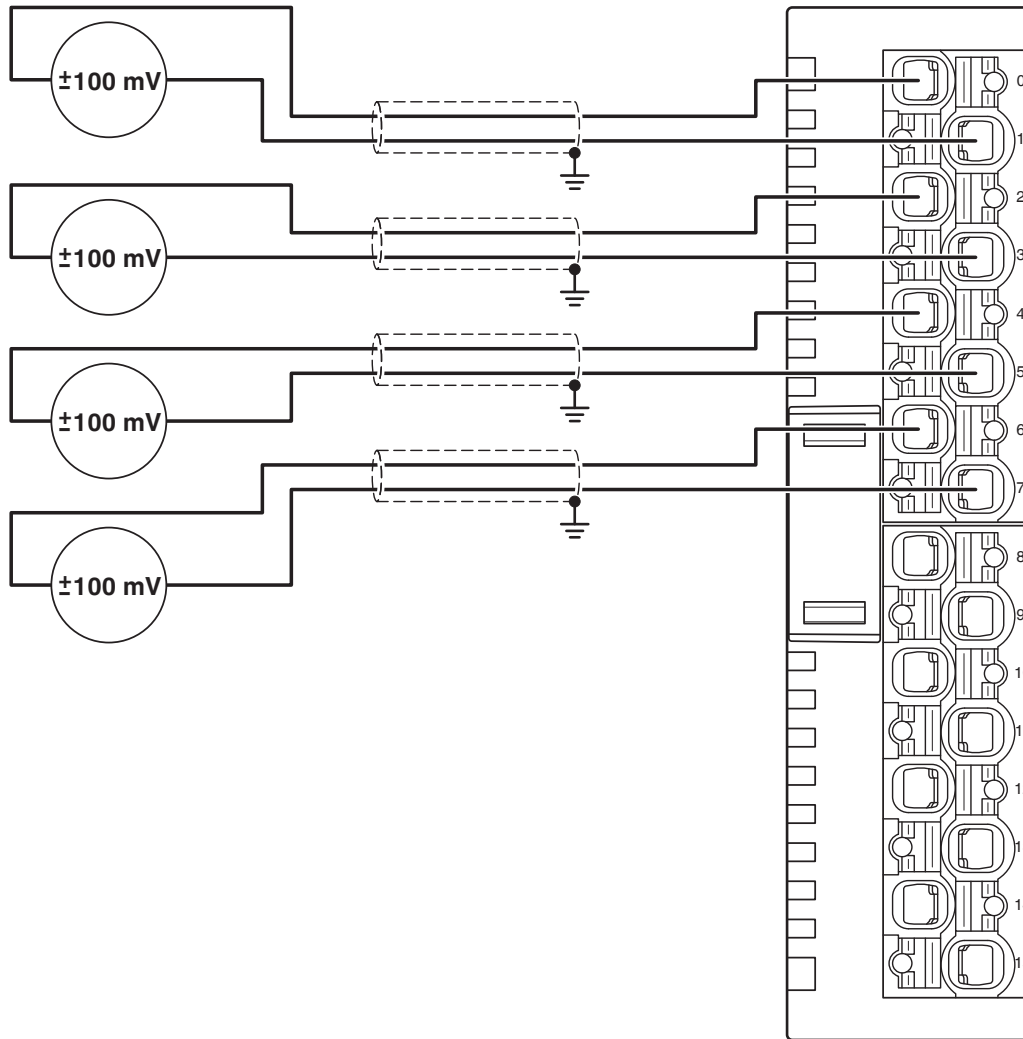
Thermocouple detection with cold junction temperature specification via process data

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Connection diagram



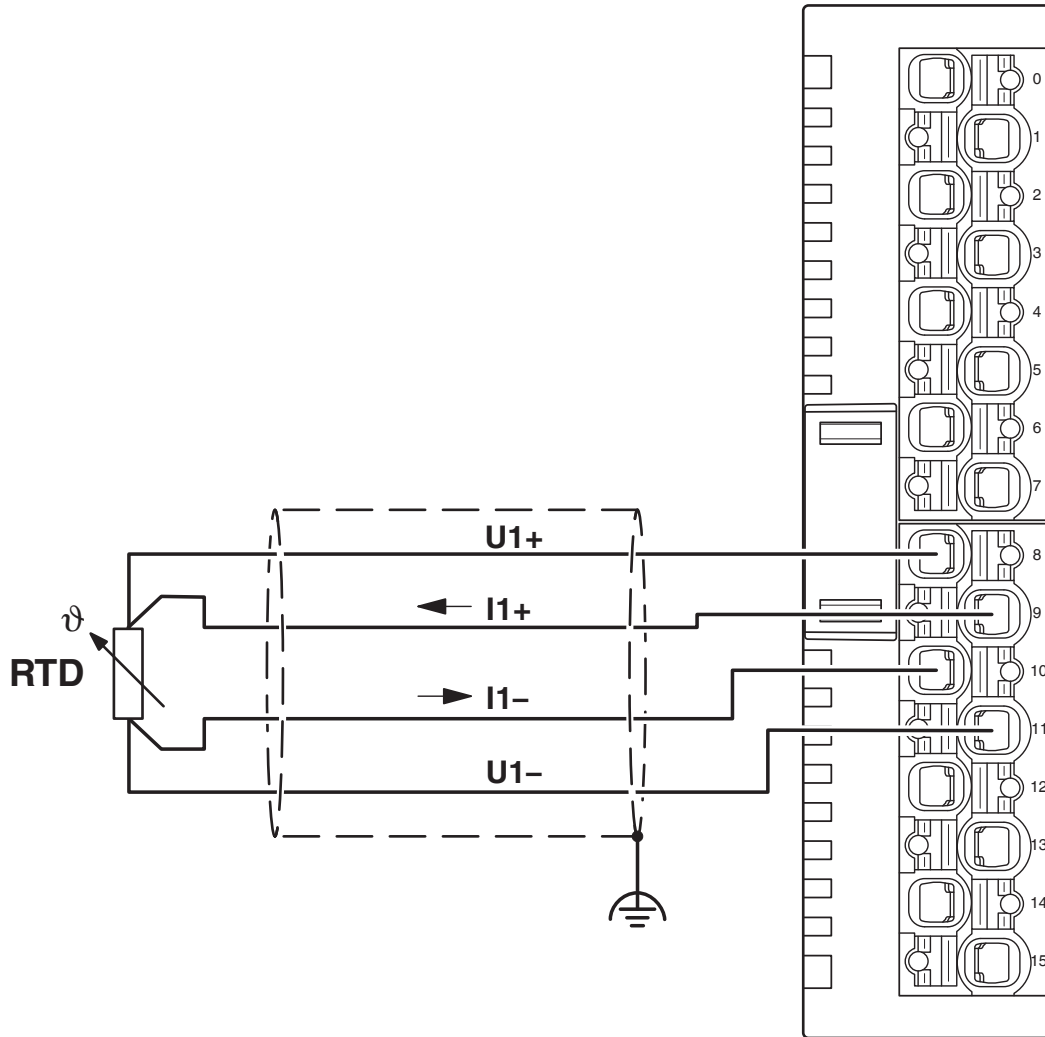
Measurement of linear voltages $\pm 100 \text{ mV}$

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Connection diagram



Pt 100 detection

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Approvals

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cULus Listed

Approval ID: E238705

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1182068

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Classifications

ECLASS

ECLASS-13.0	27242601
ECLASS-15.0	27242601

ETIM

ETIM 10.0	EC001596
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UNSPSC

UNSPSC 21.0	32151600
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Environmental product compliance

EU RoHS

Fulfills EU RoHS substance requirements	Yes
Exemption	7(a), 7(c)-I, 7(c)-II

EU REACH SVHC

REACH candidate substance (CAS No.)	Lead(CAS: 7439-92-1)
SCIP	4620093b-64a4-4650-9de3-5faee94a7b21

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Phoenix Contact USA
586 Fulling Mill Road
Middletown, PA 17057, United States
(+717) 944-1300
info@phoenixcon.com