

I/O module - AXL SE UTH4 EF



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	DRIB43
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

Technical Data

Dimensions

Dimensional drawing	
Width	14.9 mm
Height	62.2 mm
Depth	62 mm

Notes

Utilization restriction

EMC note	EMC: class A product, see manufacturer's declaration in the download area
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Material specifications

Color	traffic grey A 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

Input data

Analog

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

Type	modular
Product type	I/O component
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

Potentials: Communications power supply of the Smart Elements (U_{SE})

Supply voltage	using card edge connectors
Current draw	max.

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
Current consumption	min. 16 mA (without connected peripherals)
Power consumption	max. 0.67 W
Power consumption	min. 0.38 W (without connected peripherals)
Protective circuit	Surge protection; See the system in which the Smart Element is used.
	Reverse polarity protection; Polarity protection diode

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.

Conductor connection

Connection method	Push-in connection
Conductor cross section solid	0.25 mm ² ... 1.5 mm ²

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Conductor cross section flexible	0.25 mm ² ... 1.5 mm ²
Conductor cross section AWG	24 ... 16
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

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, with ferrule without plastic sleeve	0.25 mm ² ... 1.5 mm ²
Stripping length	8 mm

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)

Standards and regulations

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

Mounting type	Smart Element slot
Mounting position	See the system in which the Smart Element is used.

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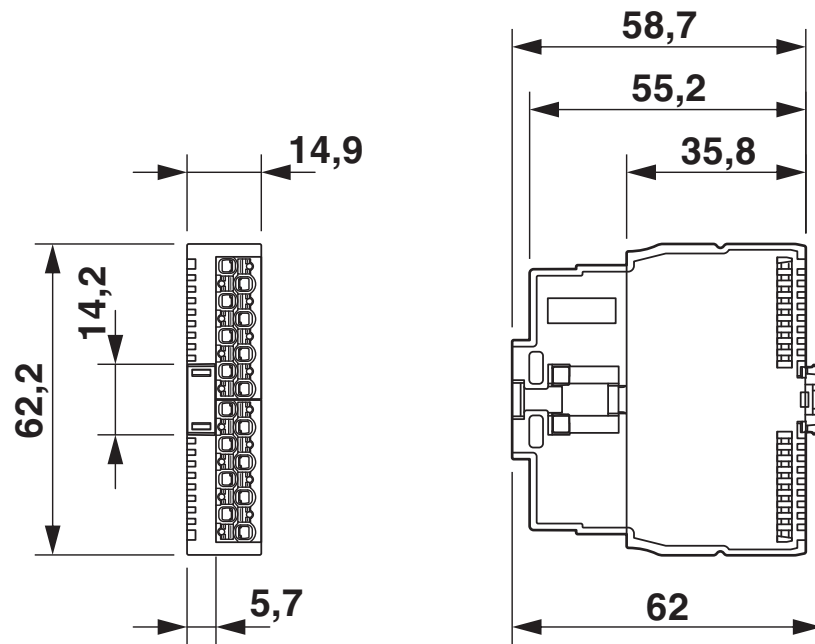
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Drawings

Dimensional drawing

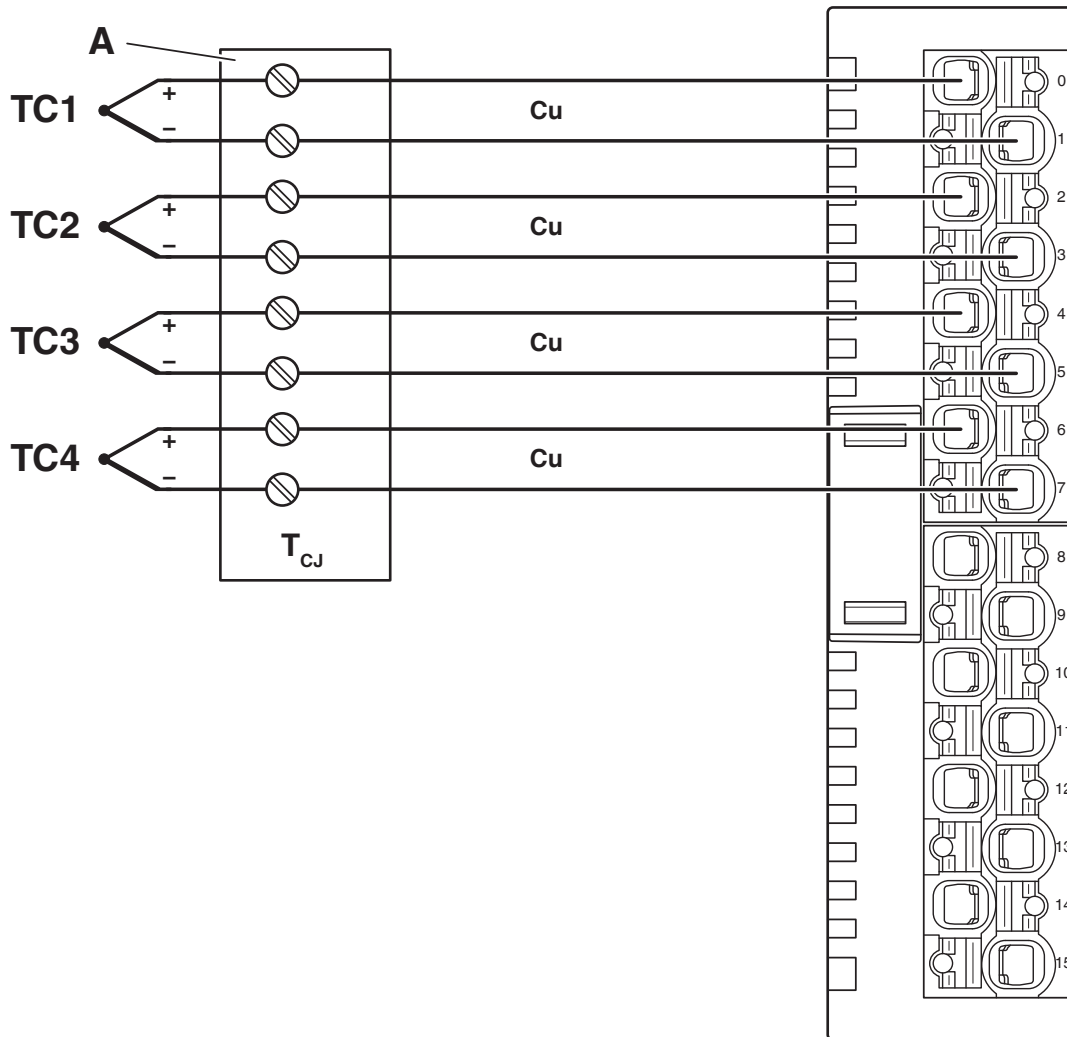


Dimensions

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Connection diagram



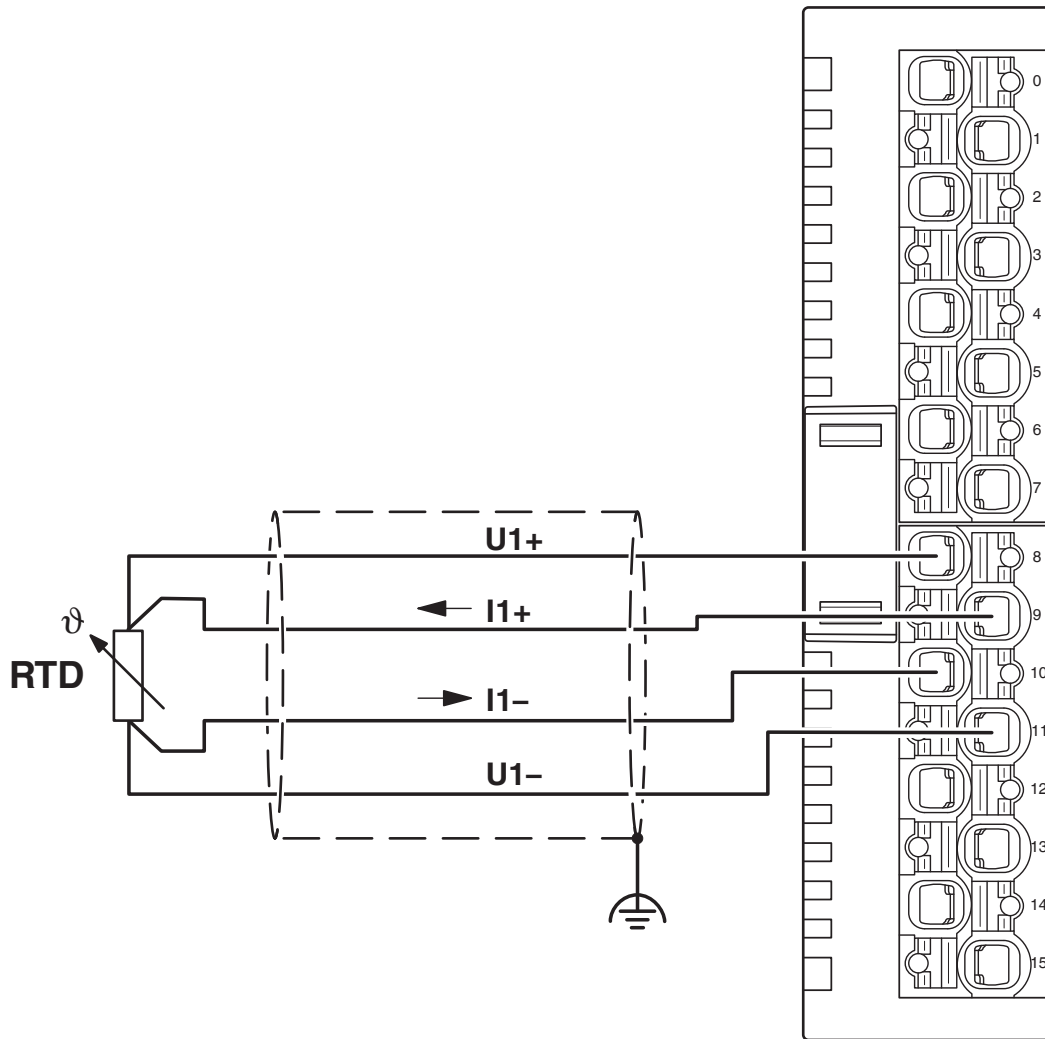
Thermocouple detection with cold junction temperature specification via process data

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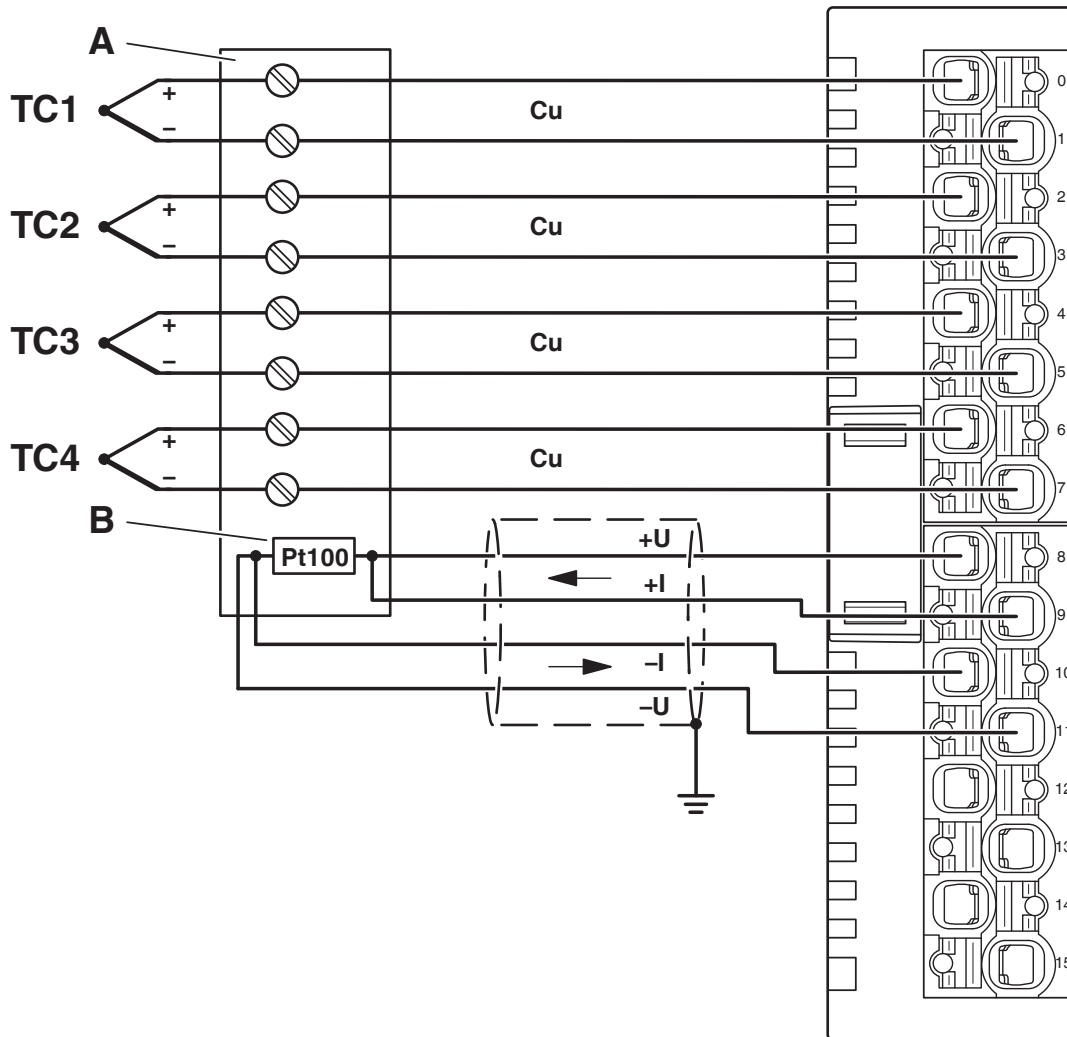
<https://www.phoenixcontact.com/gb/products/1182068>

Connection diagram



Pt 100 detection

Connection diagram



Thermocouple detection with external cold junction compensation at channel 1

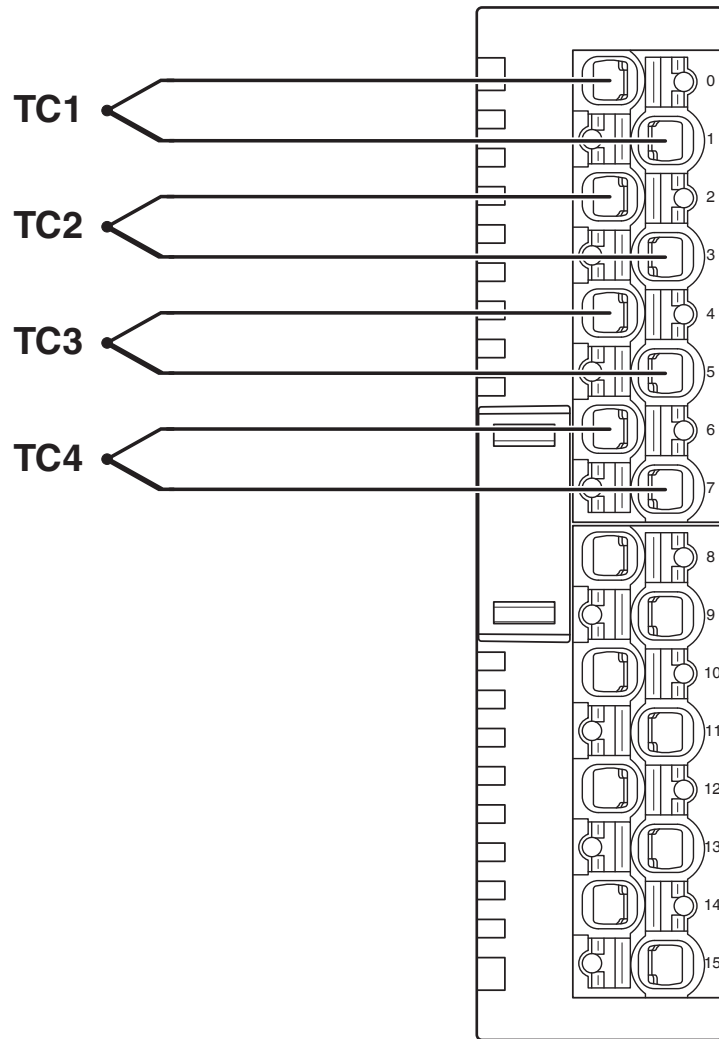
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Connection diagram

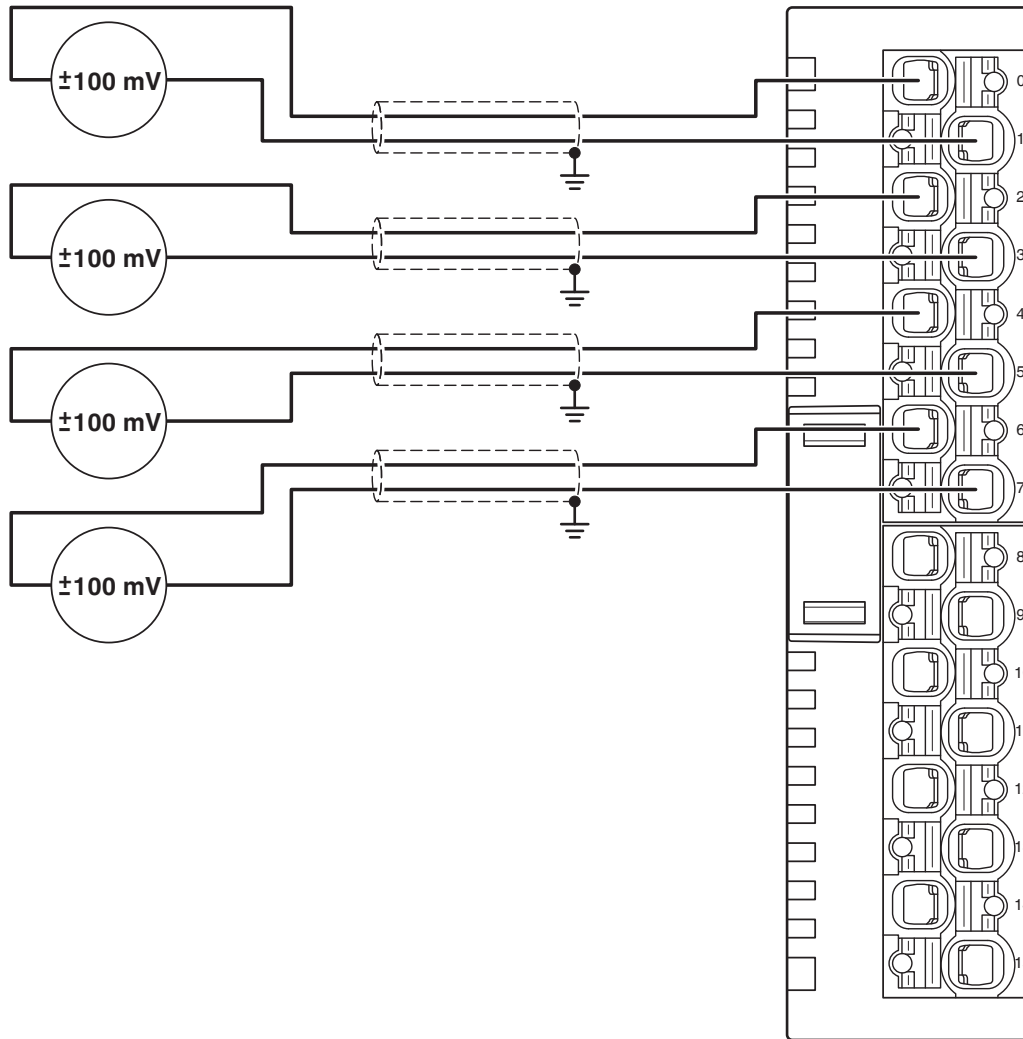


Connection example: absolute temperature measurement

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Connection diagram

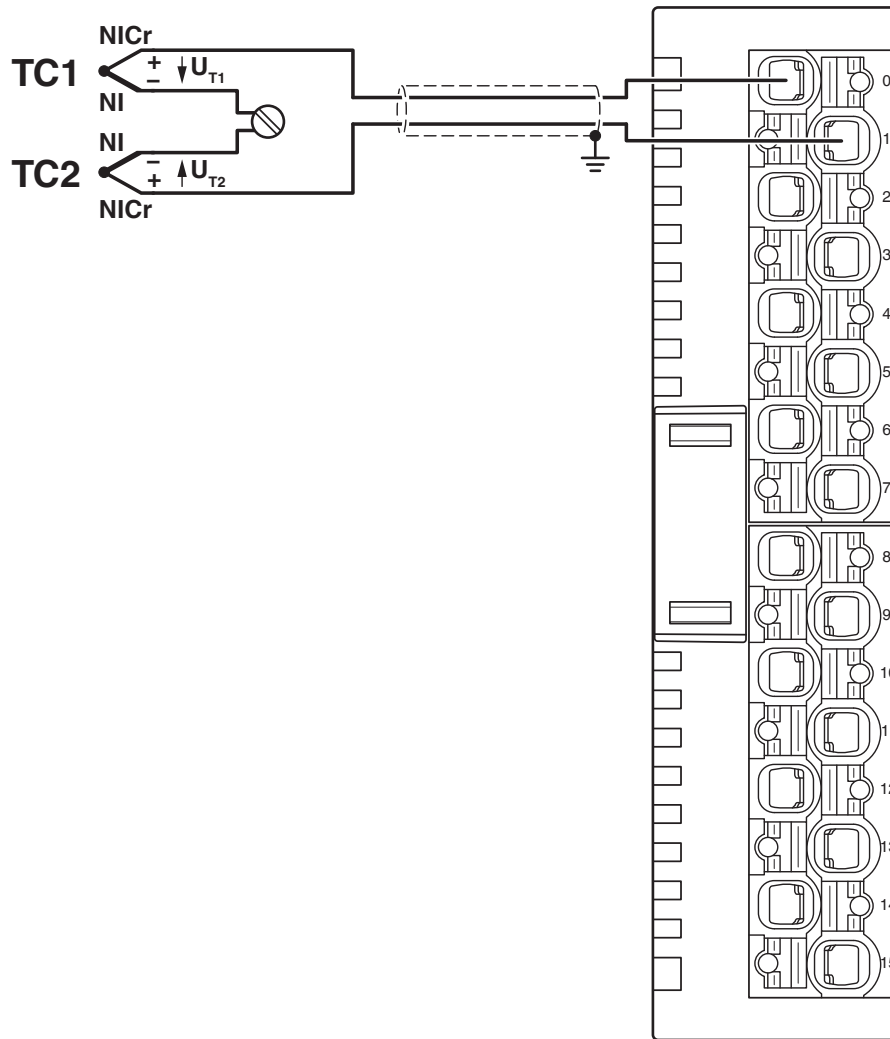


Measurement of linear voltages $\pm 100 \text{ mV}$

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Connection diagram



Differential temperature measurement

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Classifications

ECLASS

ECLASS-9.0	27242601
ECLASS-10.0.1	27242601
ECLASS-11.0	27242601
ECLASS-12.0	27242601

ETIM

ETIM 8.0	EC001596
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UNSPSC

UNSPSC 21.0	32151600
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Environmental Product Compliance

REACH SVHC	Lead 7439-92-1
China RoHS	Environmentally Friendly Use Period = 50 years
	For information on hazardous substances, refer to the manufacturer's declaration available under "Downloads"

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Mandatory Accessories

Module carrier

Module carrier - AXL F BP SE4 - 1088135

<https://www.phoenixcontact.com/gb/products/1088135>

Axioline F, Backplane, 4 slots for Axioline Smart Elements, transmission speed in the local bus: 100 Mbps, degree of protection: IP20



Module carrier

Module carrier - AXL F BP SE6 - 1088136

<https://www.phoenixcontact.com/gb/products/1088136>

Axioline F, Backplane, 6 slots for Axioline Smart Elements, transmission speed in the local bus: 100 Mbps, degree of protection: IP20



Accessories

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Screwdriver

Screwdriver - SZS 0,4X2,5 VDE - 1205037

<https://www.phoenixcontact.com/gb/products/1205037>



Screwdriver, slot-headed, VDE insulated, size: 0.4 x 2.5 x 80 mm, 2-component grip, with non-slip grip

Crimping pliers

Crimping pliers - CRIMPFOX 6 - 1212034

<https://www.phoenixcontact.com/gb/products/1212034>



Crimping pliers, for ferrules without insulating collar according to DIN 46228 Part 1 and ferrules with insulating collar according to DIN 46228 Part 4, 0.25 mm² ... 6.0 mm², lateral entry, trapezoidal crimp

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Crimping pliers

Crimping pliers - CRIMPFOX DUO 10 - 1031721

<https://www.phoenixcontact.com/gb/products/1031721>



Crimping pliers, type of contact: Insulated and uninsulated ferrules, min. cross section: 0.14 mm^2 , max. cross section: 10 mm^2 , for TWIN ferrules up to $2 \times 4 \text{ mm}^2$, automatic cross section adjustment, rotating die, lateral and frontal insertion, compression: Trapezoidal crimp, black/green

Crimping pliers

Crimping pliers - CRIMPFOX 10T-F - 1134913

<https://www.phoenixcontact.com/gb/products/1134913>



Crimping pliers, type of contact: Insulated and uninsulated ferrules, standards/specifications: DIN 46228-1, DIN 46228-4, min. cross section: 0.14 mm^2 , max. cross section: 10 mm^2 , For TWIN ferrules up to $2 \times 4 \text{ mm}^2$, automatic cross section adjustment, frontal insertion, compression: Trapezoidal crimp, black

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Label

Label - MM-TML (EX4,2)R C1 TR/BK - 0803979

<https://www.phoenixcontact.com/gb/products/0803979>



Label, Roll, transparent, unlabeled, can be labeled with: THERMOFOX, THERMOMARK GO, THERMOMARK GO.K, mounting type: adhesive, for terminal block width: 8000 mm, lettering field size: continuous x 3.2 mm

Marker strip

Marker strip - SK 5,0 WH:REEL - 0805221

<https://www.phoenixcontact.com/gb/products/0805221>



Marker strip, Roll, white, unlabeled, can be labeled with: THERMOMARK ROLL 2.0, THERMOMARK ROLL, THERMOMARK ROLL X1, THERMOMARK ROLLMASTER 300/600, THERMOMARK X1.2, mounting type: adhesive, for terminal block width: 5 mm, lettering field size: continuous x 5 mm, Number of individual labels: 90000

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Marker for terminal blocks

Marker for terminal blocks - UM6M-TM (5X12) - 0830928

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Markers for marking terminal blocks from ABB/Entelec, 24-section, unmarked, can be marked with THERMOMARK CARD and BLUEMARK, color: white



Marker for terminal blocks from the SNK series from ABB

Marker for terminal blocks from the SNK series from ABB - UCT6M-TM 5 - 0830756

<https://www.phoenixcontact.com/gb/products/0830756>

Marker for terminal blocks from the SNK series from ABB, Sheet, white, unlabeled, can be labeled with: THERMOMARK CARD, THERMOMARK CARD 2.0, THERMOMARK PRIME, BLUEMARK ID, BLUEMARK ID COLOR, TOPMARK LASER, TOPMARK NEO, mounting type: snapped, for terminal block width: 5.2 mm, lettering field size: 4.17 x 11.3 mm



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Thermoelectric voltage terminal block pair

Thermoelectric voltage terminal block pair - MTKD-CU/CUNI - 3100059

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Thermoelectric voltage terminal block pair, TC type T, nom. voltage: 400 V, nominal current: 1 A, connection method: Screw connection, 1 level, cross section: 0.2 mm² - 4 mm², mounting type: NS 35/7,5, NS 35/15, NS 32, color: gray

Thermoelectric voltage terminal block pair

Thermoelectric voltage terminal block pair - MTKD-FE/CUNI - 3100046

<https://www.phoenixcontact.com/gb/products/3100046>



Thermoelectric voltage terminal block pair, TC type J, nom. voltage: 400 V, nominal current: 1 A, connection method: Screw connection, 1 level, cross section: 0.2 mm² - 4 mm², mounting type: NS 35/7,5, NS 35/15, NS 32, color: gray

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Thermoelectric voltage terminal block pair

Thermoelectric voltage terminal block pair - MTKD-NICR/CUNI - 3100075

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Thermoelectric voltage terminal block pair, TC type E, nom. voltage: 400 V, nominal current: 1 A, connection method: Screw connection, 1 level, cross section: 0.2 mm² - 4 mm², mounting type: NS 35/7,5, NS 35/15, NS 32, color: gray

Thermoelectric voltage terminal block pair

Thermoelectric voltage terminal block pair - MTKD-NICR/NI - 3100062

<https://www.phoenixcontact.com/gb/products/3100062>



Thermoelectric voltage terminal block pair, TC type K, nom. voltage: 400 V, nominal current: 1 A, connection method: Screw connection, 1 level, cross section: 0.2 mm² - 4 mm², mounting type: NS 35/7,5, NS 35/15, NS 32, color: gray

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Thermoelectric voltage terminal block pair

Thermoelectric voltage terminal block pair - MTKD-E-CU/A-CU - 3100091

<https://www.phoenixcontact.com/gb/products/3100091>



Thermoelectric voltage terminal block pair, TC type R, nom. voltage: 400 V, nominal current: 1 A, connection method: Screw connection, 1 level, cross section: 0.2 mm² - 4 mm², mounting type: NS 35/7,5, NS 35/15, NS 32, color: gray

Thermoelectric voltage terminal block pair

Thermoelectric voltage terminal block pair - MTKD-S-CU/E-CU - 3100101

<https://www.phoenixcontact.com/gb/products/3100101>



Thermoelectric voltage terminal block pair, TC type B, nom. voltage: 400 V, nominal current: 1 A, connection method: Screw connection, cross section: 0.2 mm² - 4 mm², mounting type: NS 35/7,5, NS 35/15, NS 32, color: gray

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