MACX MCR-EX-TS-I-OLP-SP - Temperature measuring transducer

2908661

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CRA-READY



Ex i-Output loop-powered temperature transducer for transmitting up to 2 sensor signals from RTD and TC sensors, as well as from resistance and voltage sensors via 4 mA ... 20 mA. HART, Ex i signal conditioners with SIL functional safety, Standard configuration, Safety Integrity Level (SIL, IEC 61508): 2, Systematic Capability: 3, Push-in connection

Commercial data

Item number	2908661
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	C430
Product key	DK1243
GTIN	4055626355436
Weight per piece (including packing)	205.7 g
Weight per piece (excluding packing)	205.7 g
Customs tariff number	85437090
Country of origin	DE

Technical data

Notes

Note on application

Note on application	As things stand now, we are preparing the product so that, as of December 11, 2027, it will comply with the requirements of the EU Cyber Resilience Act (CRA) based on the information currently available regarding the CRA.

Product properties

Product type	Temperature transmitter
Product family	Field Analog
No. of channels	2
Configuration	Software
	HART

Insulation characteristics

Overvoltage category	II
Pollution degree	2

System properties

Functionality

Configuration	Software
	HART

Electrical properties

Electrical isolation between input and output	yes
Step response (0–99%)	0.8 s (TC)

Electrical isolation Input/output

Test voltage	2 kV AC (50 Hz, 60 s)

Supply

Supply voltage range	loop-powered, no external supply necessary
	12 V DC ... 42 V DC (Standard)
	12 V DC ... 32 V DC (SIL active)
	12 V DC ... 30 V DC (Ex)

Input data

Signal

Input signal	Temperature

Measurement

Number of inputs	2

Input voltage range	-20 mV ... 100 mV (Minimum measuring span: 5 mV)
Sensor types (RTD) that can be used	Pt, Ni, Cu sensors: 2, 3, 4-wire
Sensor types that can be used (TC)	A, B, C, D, E, J, K, L, N, R, S, T, U
Temperature measuring range	-250 °C ... 2500 °C (Range depending on the sensor type)
	-200 °C ... 850 °C (Pt 100)
Temperature measuring range	> 10 K (RTD)
	> 50 K (TC)
Linear resistance measuring range	10 Ω ... 2000 Ω (Minimum measuring span: 10 Ω)

Output data

Signal: Current

Configurable/programmable	no
Current output signal	4 mA ... 20 mA
	20 mA ... 4 mA
Max. current output signal	23 mA
Load	(U_L - 11 V) / 0,023 A
HART coding	FSK ± 0.5 mA
HART version	7
Transmission speed	1200 Baud
Mains frequency filter	50/60 Hz
Communication resistance	≥ 250 Ω
Switch-on delay	≈ s (HART)
	≈ s (Measured value)

Connection data

Connection method	Push-in connection
Stripping length	8 mm
Conductor cross-section rigid	0.2 mm² ... 1.5 mm²
Conductor cross-section flexible	0.2 mm² ... 1.5 mm²
Conductor cross-section AWG	24 ... 16

Ex data

Ex installation (EPL)	Gb
	Div. 1
Ex i circuits (EPL)	Ga
	Div. 1

Interfaces

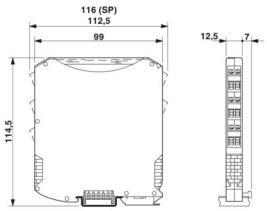
Data communication (bypass)

Protocols supported	HART

Signaling

Status display	LED (red)

Dimensions

Dimensional drawing	
Width	12.5 mm
Height	116 mm
Depth	113.7 mm
Depth NS 35/7,5	114.5 mm (Snapped onto DIN rail NS 35/7,5 in accordance with EN 60715)

Material specifications

Color	gray (RAL 7042)

Environmental and real-life conditions

Ambient conditions

Degree of protection	IP20 (not assessed by UL)
Ambient temperature (operation)	-40 °C ... 85 °C
	-40 °C ... 70 °C (SIL active)
Ambient temperature (storage/transport)	-40 °C ... 100 °C
Altitude	≤ 4000 m (Above sea level)
Climatic class	B2
Permissible humidity (operation)	5 % ... 95 % (non-condensing)

Approvals

CE

Certificate	CE-compliant

ATEX

Identification	Ⓔx II 2 (1) G Ex ib [ia Ga] IIC T6...T4 Gb
Certificate	EPS 17 ATEX 1 130 X

IECEx

Identification	Ex ib [ia Ga] IIC T6...T4 Gb
Certificate	IECEx EPS 17.0076X

UL, USA/Canada

Identification	UL 61010 Recognized

FM

Identification	Exia / Class I / Div. 1, 2 / Group ABCD
	NI, Class I, Div. 2, Groups A, B, C, D

CSA

Identification	AIS / Class I / Div. 1 / ABCD
	NI / Class I / Div. 2 / ABCD T6/T5/T4

Shipbuilding approval

Certificate	DNV GL TAA00002GX

Safety Integrity Level (SIL, IEC 61508)

Identification	2

Systematic Capability

Identification	3

Shipbuilding data

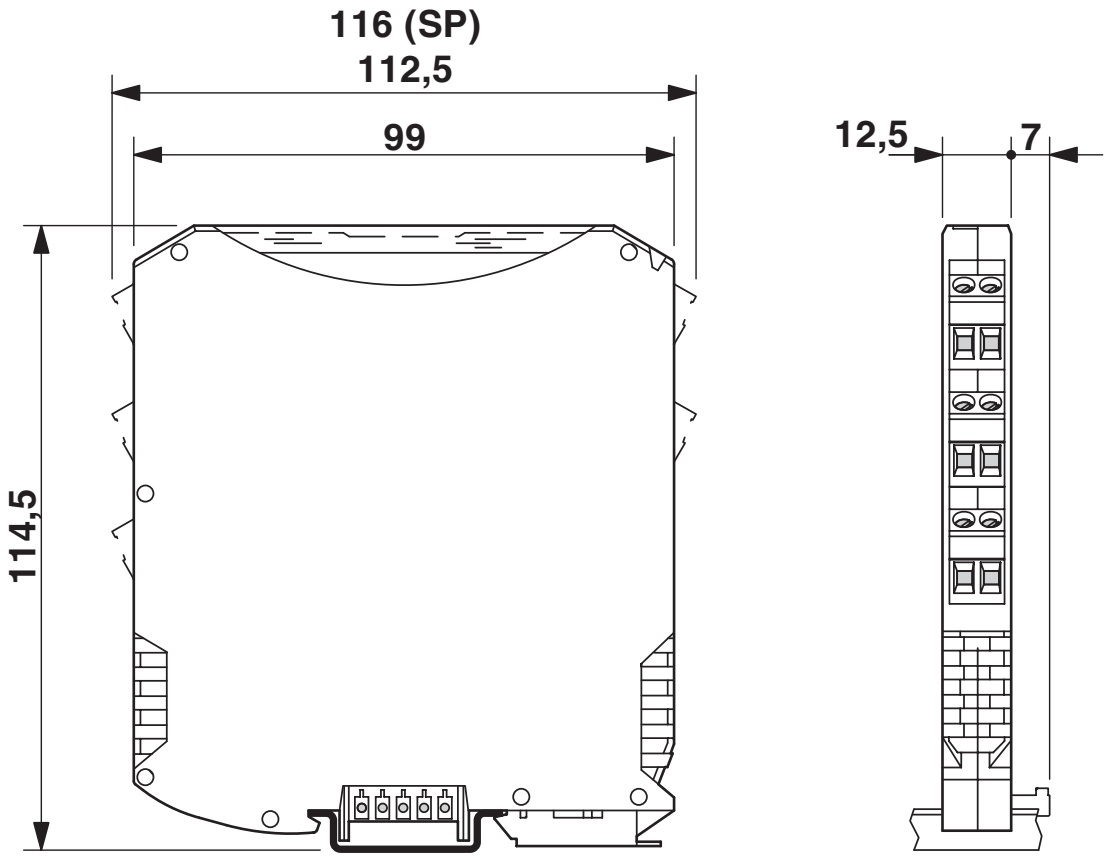
Temperature	D
Humidity	B
Vibration	A
EMC	B
Enclosure	A

Mounting

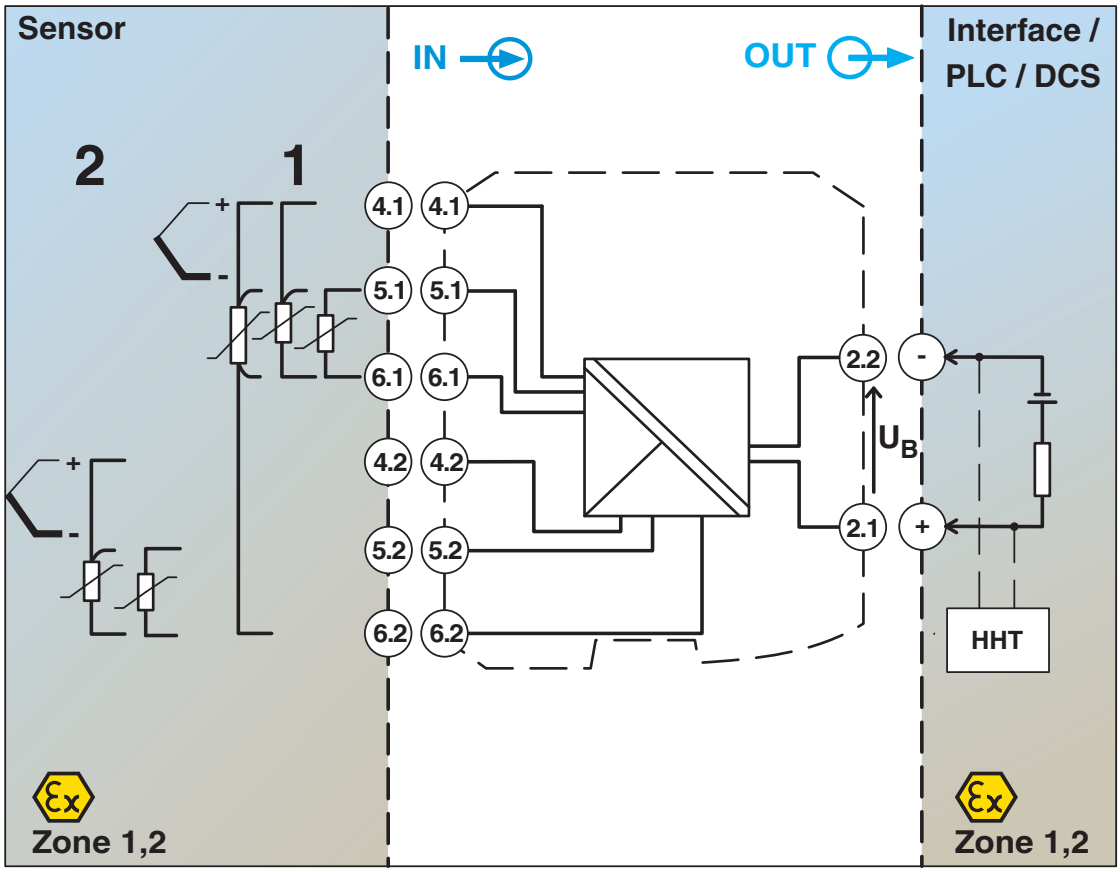
Mounting type	DIN rail mounting

Drawings

Dimensional drawing



Block diagram



Approvals

To download certificates, visit the product detail page: https://www.phoenixcontact.com/us/products/2908661

cUL Recognized
Approval ID: FILE E 198586

UL Recognized
Approval ID: FILE E 198586

DNV GL
Approval ID: TAA00002GX

Functional Safety
Approval ID: Z10 029429 0021

DNV
Approval ID: TAA00002GX

IECEx
Approval ID: IECEx EPS 17.0076X

CSA
Approval ID: 70107976

ATEX
Approval ID: EPS 17 ATEX 1 130 X

FM approved
Approval ID: FM17US0110X

Classifications

ECLASS

ECLASS-13.0	27210129
ECLASS-15.0	27210129

ETIM

ETIM 10.0	EC002919

UNSPSC

UNSPSC 21.0	41112100

Environmental product compliance

EU RoHS

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

China RoHS

Environment friendly use period (EFUP)	EFUP-50
	An article-related China RoHS declaration table can be found in the download area for the respective article under "Manufacturer declaration". For all articles with EFUP-E, no China RoHS declaration table issued and required.

EU REACH SVHC

REACH candidate substance (CAS No.)	Lead(CAS: 7439-92-1)

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