FA MCR-EX-HT-TS-I-OLP - Head-mounted transducer

1105681

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CRA-READY



Ex i-Output loop-powered head transmitter 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, Standard configuration, Safety Integrity Level (SIL, IEC 61508): 2, Systematic Capability: 3, Screw connection

Commercial data

Item number	1105681
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	C430
Product key	DK1242
GTIN	4055626988863
Weight per piece (including packing)	194.6 g
Weight per piece (excluding packing)	192.1 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
	11 V DC ... 42 V DC (Standard)
	11 V DC ... 32 V DC (SIL active)
	11 V DC ... 30 V DC (Ex)

Input data

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

Current output signal	4 mA ... 20 mA (HART)
	20 mA ... 4 mA (HART)
Max. current output signal	23 mA
Load	$(U_B – 11 V) / 0.023 A$
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	Screw connection
Stripping length	8 mm
Screw thread	M3
Conductor cross-section rigid	0.2 mm² ... 2.5 mm²
Conductor cross-section flexible	0.2 mm² ... 2.5 mm²
Conductor cross-section AWG	24 ... 14
Tightening torque	0.35 Nm

Ex data

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

Interfaces

Data communication (bypass)

Protocols supported	HART

Environmental and real-life conditions

Ambient conditions

Degree of protection	IP00 (upon installation in field housing IP66/67, NEMA 4X)
Ambient temperature (operation)	-40 °C ... 85 °C

	-40 °C ... 70 °C (SIL active)
Ambient temperature (storage/transport)	-50 °C ... 100 °C
Altitude	≤ 4000 m (Above sea level)
Climatic class	C1
Permissible humidity (operation)	5 % ... 95 % (condensation permitted)

Approvals

CE

Certificate	CE-compliant

ATEX

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

IECEx

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

UL, USA/Canada

Identification	UL 61010 Recognized

FM

Identification	NI / Class I / Div. 1, 2 / Group ABCD T6/T5/T4
	IS / Class I / Div. 1, 2 / Group ABCD

CSA

Identification	Exia / Class I / Group 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	B
EMC	B
Enclosure	C

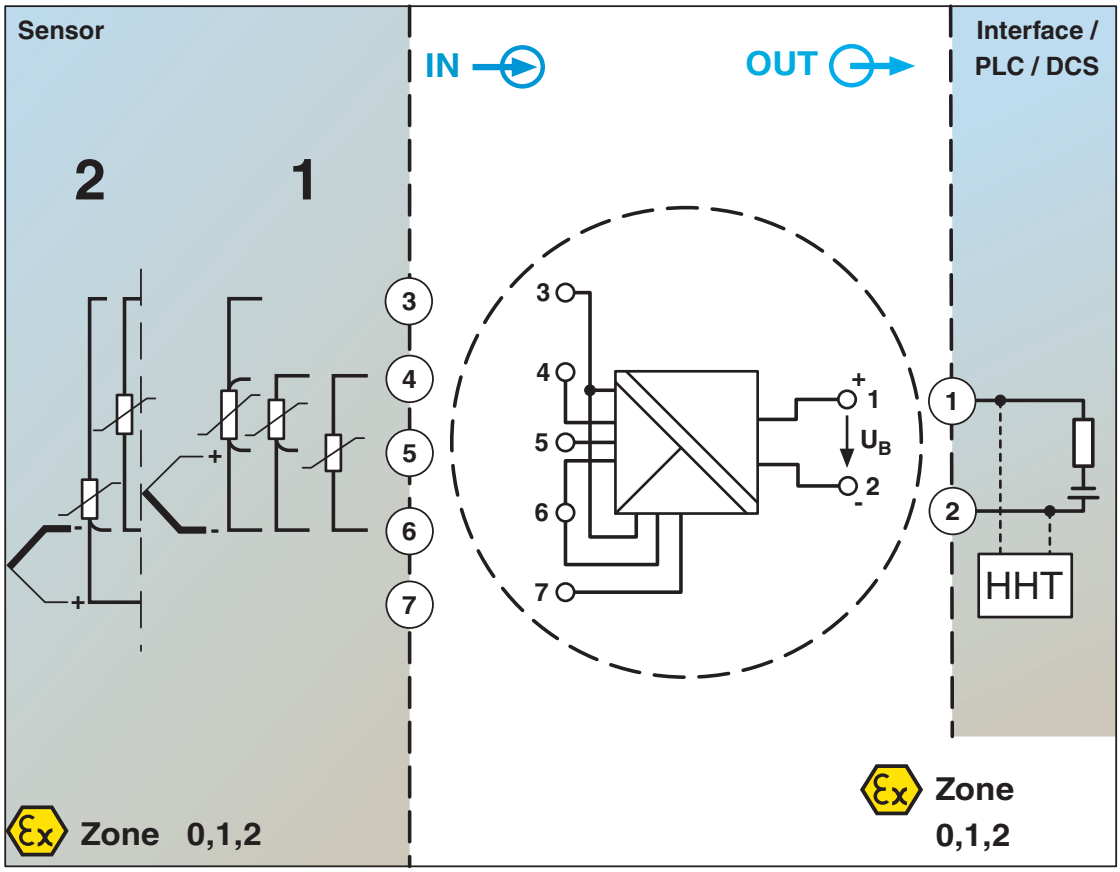
Mounting

Mounting type	Installation

	DIN rail mounting
Assembly note	Installation in connection head according to DIN 43729 form B

Drawings

Block diagram



Approvals

To download certificates, visit the product detail page: https://www.phoenixcontact.com/us/products/1105681

cUL Recognized
Approval ID: FILE E 198586

UL Recognized
Approval ID: FILE E 198586

EAC
Approval ID: RU*DE.*08.B.01522/19

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

IECEx
Approval ID: IECEx EPS 17.0076X

ATEX
Approval ID: EPS 17 ATEX 1 130 X

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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