

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



1105681

<https://www.phoenixcontact.com/us/products/1105681>

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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	CK3322
GTIN	4055626988863
Weight per piece (including packing)	190.4 g
Weight per piece (excluding packing)	192.1 g
Customs tariff number	85437090
Country of origin	DE

Technical data

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

Electrical properties

Step response (0–99%)	0.8 s (TC)
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Electrical isolation Input/output

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

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HART version	7
Transmission speed	1200 Baud
Mains frequency filter	50/60 Hz
Communication resistance	$\geq 250 \Omega$
Switch-on delay	$\approx \text{⏏} \downarrow \text{s (HART)}$
	$\approx \text{⏏} \uparrow \text{s (Measured value)}$

Connection data

Connection method	Screw connection
Stripping length	8 mm
Screw thread	M3
Conductor cross section rigid	0.2 mm ² ... 2.5 mm ²
Conductor cross section flexible	0.2 mm ² ... 2.5 mm ²
Conductor cross section AWG	24 ... 14
Tightening torque	0.35 Nm

Ex data

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

Interfaces

Data communication (bypass)

Protocols supported	HART
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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
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ATEX

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

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IECEEx

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

UL, USA/Canada

Identification	UL 61010 Recognized
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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
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Shipbuilding approval

Certificate	DNV GL TAA00002GX
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Safety Integrity Level (SIL, IEC 61508)

Identification	2
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Systematic Capability

Identification	3
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DNV GL data

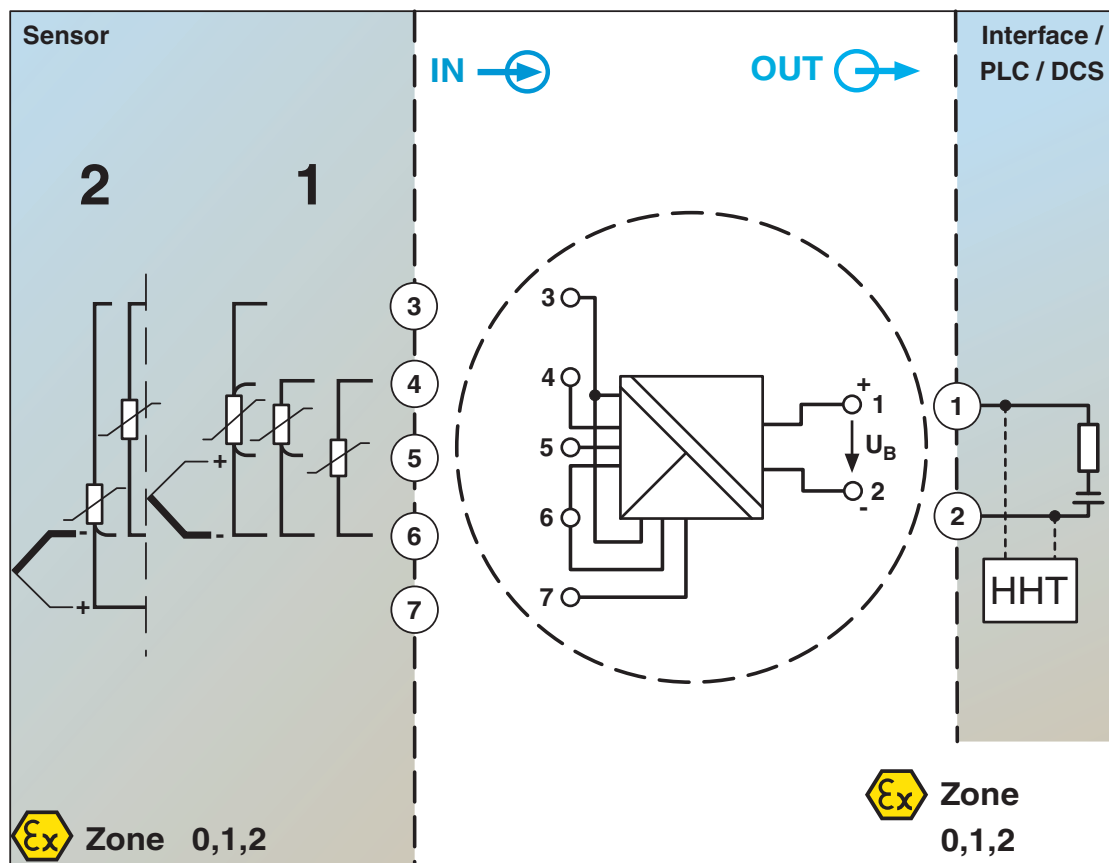
Temperature	D
Humidity	B
Vibration	B
EMC	B
Enclosure	C

Mounting

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

Drawings

Block diagram



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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

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1105681

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ATEX

Approval ID: EPS 17 ATEX 1 130 X

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Classifications

ECLASS

ECLASS-11.0	27210129
ECLASS-12.0	27210129
ECLASS-13.0	27210129

ETIM

ETIM 9.0	EC002919
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UNSPSC

UNSPSC 21.0	41112100
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Environmental product compliance

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.)	No substance above 0.1 wt%
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Accessories

MCR-PAC-T-USB - Programming adapter

2309000

<https://www.phoenixcontact.com/us/products/2309000>

Programming adapter with USB and T port interface, 2.4 m for programming FA MCR-..., MCR-...-LP-..., and MCR-...-HT-... modules



GW HART USB MODEM - Cable adapter

1003824

<https://www.phoenixcontact.com/us/products/1003824>

USB HART modem cable for communication between a PC and HART devices, cable length: 1 m.



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MCR-DIN-RAIL-ADAPTER HT - Adapter

2864671

<https://www.phoenixcontact.com/us/products/2864671>

DIN rail adapter for head-mounted transducers. Suitable for 35 mm DIN rails in accordance with EN 60715.



FA MCR-HT-D - Display

2908735

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Display unit for plugging directly into the FA MCR-... head transmitter



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FA MCR-HT-FH - Electronics housing

2908736

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Field housing for the installation of head transmitters with or without display unit.
For direct connection to the process.

FA MCR-HT-FH-WM - Mounting kit

2908737

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Wall fastening for FA MCR-HT-FH field housing

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FA MCR-HT-FH-PM - Mounting kit

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Pipe fastening for FA MCR-HT-FH field housing



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