

MCR-FL-HT-T-I-EX - Head-mounted transducer



2864532

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MCR head-mounted temperature transducers, programmable, intrinsically safe, for resistance thermometers, thermocouples, resistance-type sensors and voltage sensors. For Pt 100 resistance thermometers

Your advantages

- Input for resistance thermometers, thermocouples, and linear mV signals, Ex ia IIC
- Configuration via software
- Can be installed in zone 0
- 2-way electrical isolation
- Loop-powered
- 1-channel
- Output: 4 ... 20 mA/20 ... 4 mA

Commercial data

Item number	2864532
Packing unit	1 pc
Note	Made to order (non-returnable)
Sales key	C430
Product key	CK3322
Catalog page	Page 190 (C-5-2017)
GTIN	4017918893231
Weight per piece (including packing)	84.8 g
Weight per piece (excluding packing)	82.3 g
Customs tariff number	85437090
Country of origin	DE

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Technical data

Product properties

Product type	Temperature transmitter
Application	Temperature
Configuration	Using MCR-PI-CONF-WIN configuration software package

Electrical properties

Switch-on delay	6 s
Line monitoring	NE 43
Test voltage input/output	2 kV AC (50 Hz, 60 s)
Step response (10-90%)	< 2 s
Transmission error voltage sensor	±20 µV (-10 mV ... 100 mV)
Transmission error thermocouples	typ. 0.5 K (K, J, T, E, L, U), 1.0 K (N, C, D), 2.0 K (S, B, R)
Transmission error resistance-type sensor	±0.1 Ω (10 ... 400 Ω), ±1.5 Ω (10 ... 2000 Ω)
Transmission error resistance thermometer	0.2 K (Pt 100, Ni 100), 0.5 K (Pt 500, Ni 500), 0.3 K (Pt 1000, Ni 1000)

Supply

Designation	Loop-powered
Supply voltage range	8 V DC ... 30 V DC
Max. current consumption	< 3.5 mA

Input data

Signal

Number of inputs	1
Input signal	Temperature

Measurement

Configurable/programmable	Yes, programmable
Sensor types (RTD) that can be used	Pt, Ni (100, 500, 1000); min. measurement range 10 K
Sensor types that can be used (TC)	B, C, D, E, J, K, L, N, R, S, T, U; min. measurement range 50 K/500 K
Sensor type:	-200 °C ... 850 °C (freely adjustable)
	-200 °C ... 250 °C (freely adjustable)
	-200 °C ... 250 °C (freely adjustable)
	-60 °C ... 250 °C (freely adjustable)
	-60 °C ... 150 °C (freely adjustable)
	-60 °C ... 150 °C (freely adjustable)
	50 °C ... 1820 °C (freely adjustable)
	0 °C ... 2320 °C (freely adjustable)
	0 °C ... 2495 °C (freely adjustable)
	-270 °C ... 1000 °C (freely adjustable)
	-210 °C ... 1200 °C (freely adjustable)

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	-270 °C ... 1372 °C (freely adjustable)
	-200 °C ... 900 °C (freely adjustable)
	-270 °C ... 1300 °C (freely adjustable)
	-50 °C ... 1768 °C (freely adjustable)
	-50 °C ... 1768 °C (freely adjustable)
	-270 °C ... 400 °C (freely adjustable)
	-200 °C ... 600 °C (freely adjustable)
Connection technology	2-, 3-, 4-conductor
Linear resistance measuring range	10 Ω ... 400 Ω (min. measurement range 10 Ω)
	10 Ω ... 2000 Ω (min. measurement range 100 Ω)
Linear mV signal range	-10 mV ... 100 mV (min. measurement range 5 mV)

Output data

Switching:

Configurable/programmable	no
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Signal

Number of outputs	1
Configurable/programmable	Yes, programmable
Current output signal	4 mA ... 20 mA
	20 mA ... 4 mA
Max. current output signal	≤ 25 mA
Output current with short-circuit	≤ 3.6 mA or ≥ 21 mA (adjustable, not for thermocouples)
Output current with wire break	≤ 3.6 mA or ≥ 21 mA (adjustable)
Output current range with overrange/underrange	3.8 mA ... 20.5 mA (linear increase/decrease)
Load/output load current output	≤ 720 Ω (For $U_V = 24 \text{ V}$; $U_{\text{supply}} - 8 \text{ V} / 0.025 \text{ A}$)

Connection data

Connection method	Screw connection
Stripping length	8 mm
Screw thread	M3
Conductor cross section rigid	0.2 mm ² ... 1.75 mm ²
Conductor cross section flexible	0.2 mm ² ... 1.75 mm ²
Conductor cross section AWG	24 ... 15
Tightening torque	0.5 Nm ... 0.6 Nm

Ex data

Safety data

Max. voltage U_i	30 V
Max. current I_i	100 mA
Max. power P_i	750 mW
Max. output voltage U_o	8.2 V DC
Max. output current I_o	4.6 mA
Max. output power P_o	9.35 mW

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Max. ambient temperature	Category 1: T4 = 60°C, T5 = 50°C, T6 = 40°C
	Category 2: T4 = 85°C, T5 = 70°C, T6 = 55°C
Safety-related maximum voltage U_m	250 V
IIB: Max. external inductivity L_o / Max. external capacitance C_o	8.5 mH / 1.9 μ F
IIC: Max. external inductivity L_o / Max. external capacitance C_o	4.5 mH / 974 nF

Material specifications

Color	green (RAL 6021)
Flammability rating according to UL 94	V0
Housing material	Polycarbonate, PC

Environmental and real-life conditions

Ambient conditions

Degree of protection	IP00
	IP66 (Installed in the connection head)
Ambient temperature (operation)	-40 °C ... 55 °C

Approvals

CE

Certificate	CE-compliant
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ATEX

Identification	Ⓔ II 1 G Ex ia IIC T6/T5/T4
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UL, USA/Canada

Identification	cULus
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Standards and regulations

Standards

Standards/regulations	NAMUR recommendation NE 21
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Mounting

Mounting type	DIN rail mounting
Assembly note	Installation in connection head according to DIN 43729 form B
Mounting position	Connecting head in acc. with DIN 43729 form B

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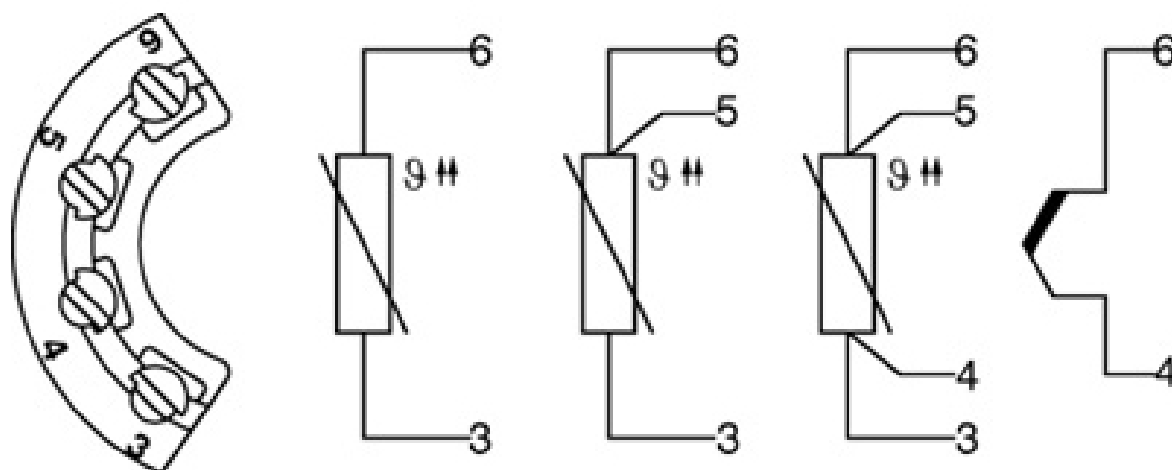
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Drawings

Connection diagram



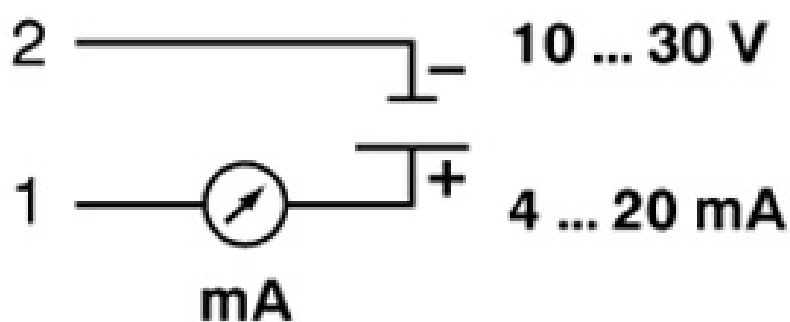
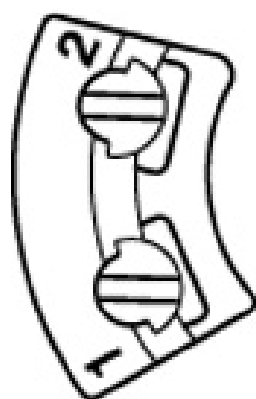
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Connection diagram



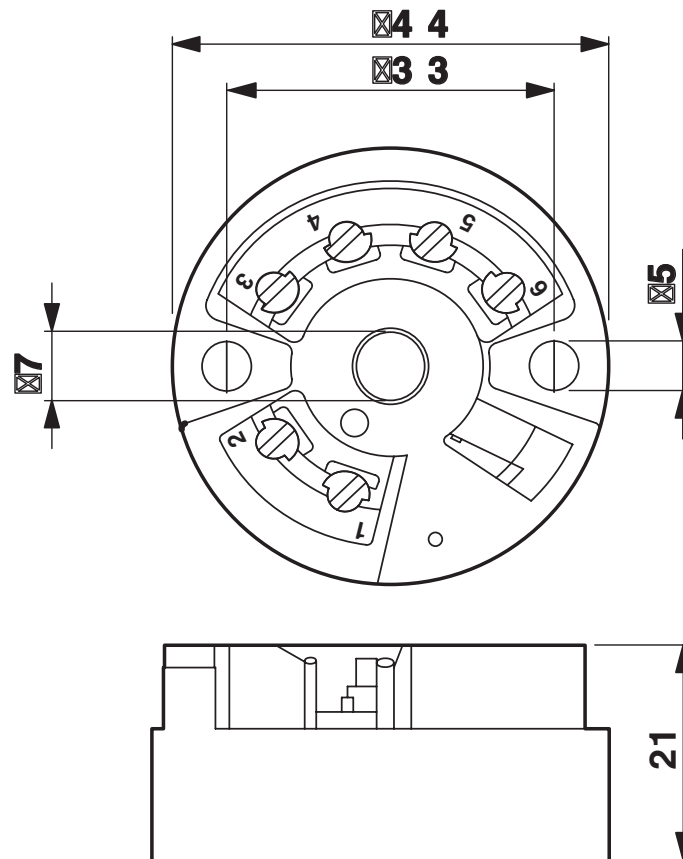
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Dimensional drawing



Dimensional drawing

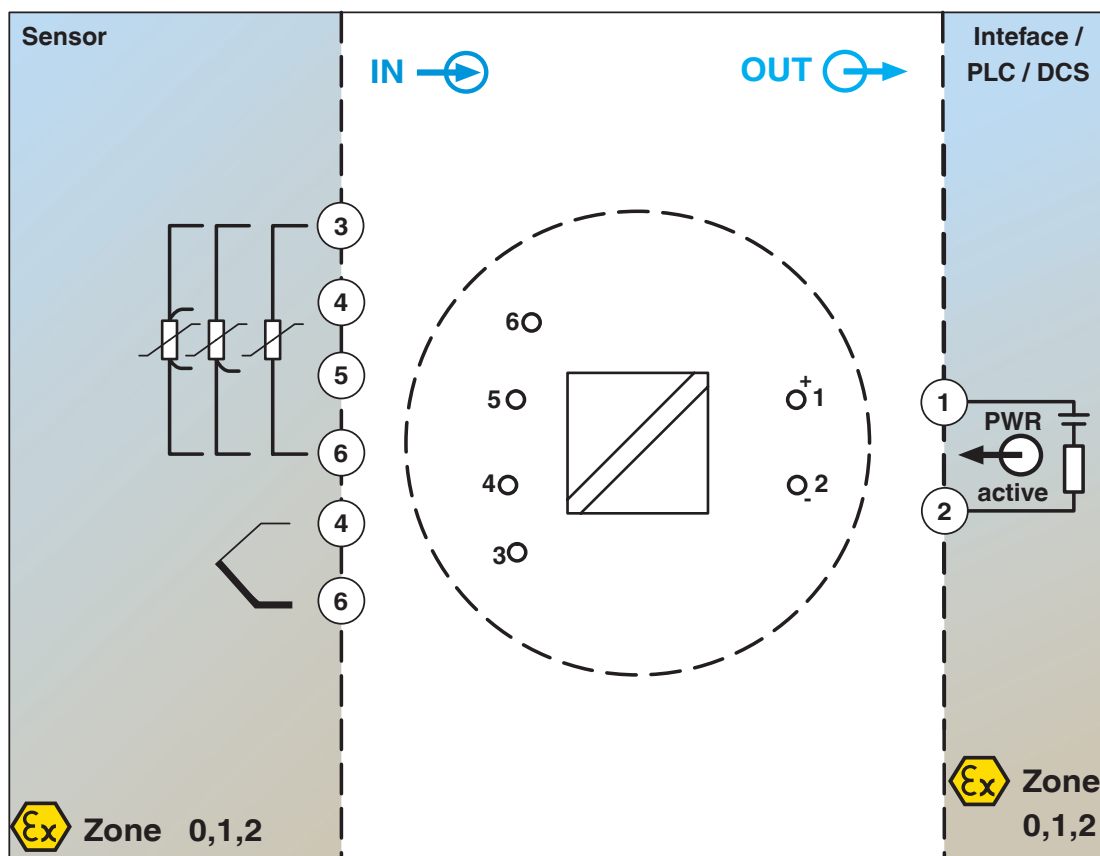
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Block diagram



Block diagram MCR-FL-HT-T-I-EX

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Classifications

ECLASS

ECLASS-11.0	27210129
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UNSPSC

UNSPSC 21.0	41112105
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Environmental product compliance

EU RoHS	
Fulfills EU RoHS substance requirements	Yes, No exemptions
China RoHS	
Environment friendly use period (EFUP)	EFUP-E
	No hazardous substances above the limits
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



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.



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