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

2864545

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Measurement and control temperature transducer, for resistance thermometers, thermocouples, resistance-type sensors, and voltage sensors. For Pt 100 resistance temperature detectors. Replacement part: 2908742 FA MCR-HT-TS-I-OLP-PT.

Your advantages

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

Commercial data

Item number	2864545
Packing unit	1 pc
Note	Made to order (non-returnable)
Sales key	C430
Product key	DK1XXX
GTIN	4017918893200
Weight per piece (including packing)	83.6 g
Weight per piece (excluding packing)	78.2 g
Customs tariff number	85437090
Country of origin	DE

Technical data

Product properties

Product type	Temperature transmitter
Application	Temperature
Configuration	With HART protocol

System properties

Functionality

Configuration	With HART protocol

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 ... 75 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	12 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
Temperature measuring range: Pt 100	-200 °C ... 850 °C (freely adjustable)
Temperature measuring range: Pt 500	-200 °C ... 250 °C (freely adjustable)
Temperature measuring range: Pt 1000	-200 °C ... 250 °C (freely adjustable)
Temperature measuring range: Ni 100	-60 °C ... 250 °C (freely adjustable)
Temperature measuring range: Ni 500	-60 °C ... 150 °C (freely adjustable)
Temperature measuring range: Ni 1000	-60 °C ... 150 °C (freely adjustable)
Temperature measuring range: Thermoelement Typ B	50 °C ... 1820 °C (freely adjustable)

Temperature measuring range: Thermoelement Typ C	0 °C ... 2320 °C (freely adjustable)
Temperature measuring range: Thermoelement Typ D	0 °C ... 2495 °C (freely adjustable)
Temperature measuring range: Thermoelement Typ E	-270 °C ... 1000 °C (freely adjustable)
Temperature measuring range: Thermoelement Typ J	-210 °C ... 1200 °C (freely adjustable)
Temperature measuring range: Thermoelement Typ K	-270 °C ... 1372 °C (freely adjustable)
Temperature measuring range: Thermoelement Typ L	-200 °C ... 900 °C (freely adjustable)
Temperature measuring range: Thermoelement Typ N	-270 °C ... 1300 °C (freely adjustable)
Temperature measuring range: Thermoelement Typ R	-50 °C ... 1768 °C (freely adjustable)
Temperature measuring range: Thermoelement Typ S	-50 °C ... 1768 °C (freely adjustable)
Temperature measuring range: Thermoelement Typ T	-270 °C ... 400 °C (freely adjustable)
Temperature measuring range: Thermoelement Typ U	-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 ... 75 mV (min. measurement range 5 mV)

Output data

Switching:

Configurable/programmable	no

Signal

Number of outputs	1
Configurable/programmable	Yes, programmable
Current output signal	4 mA ... 20 mA
	20 mA ... 4 mA
Max. current output signal	≤ 23 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	≤ 630 Ω (At UV = 24 V; U_{supply} - 10 V / 0.023 A)

Connection data

Connection method	Screw connection
Stripping length	8 mm
Screw thread	M3
Conductor cross-section rigid	0.2 mm² ... 1.75 mm²
Conductor cross-section flexible	0.2 mm² ... 1.75 mm²
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	5 V DC
Max. output current I_o	5.4 mA
Max. output power P_o	6.6 mW
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
IIA: Max. external inductivity L_o / Max. external capacitance C_o	100 mH / 9.9 µF
IIB: Max. external inductivity L_o / Max. external capacitance C_o	100 mH / 9.9 µF
IIC: Max. external inductivity L_o / Max. external capacitance C_o	100 mH / 2 µF

Material specifications

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

ATEX

Identification	Ⓔx II 1 G bzw. II 2 G Ex ia IIC T6/T5/T4

UL, USA/Canada

Identification	cULus

Safety Integrity Level (SIL, IEC 61508)

Identification	2

Standards and regulations

Standards

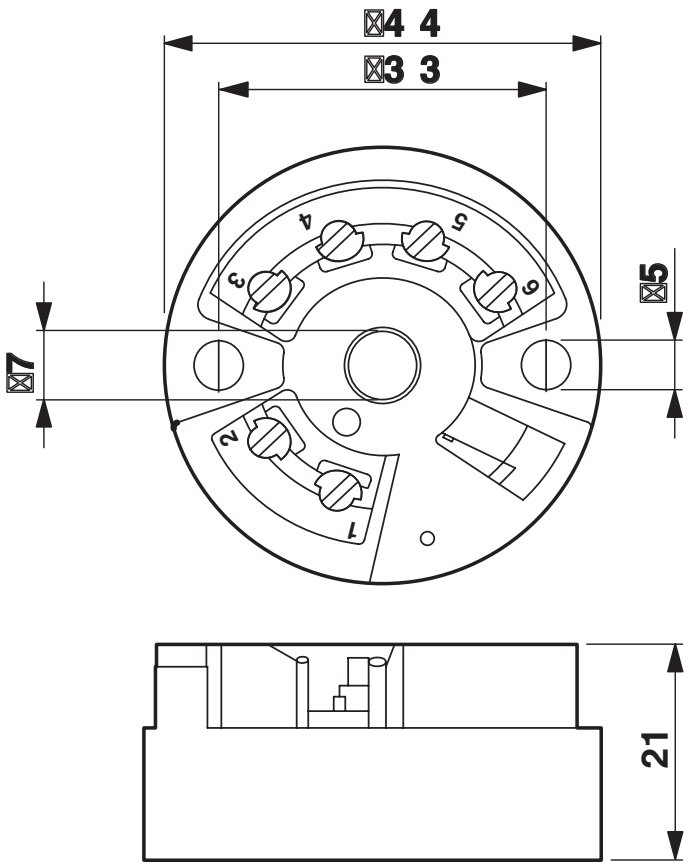
Standards/regulations	NAMUR recommendation NE 21

Mounting

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

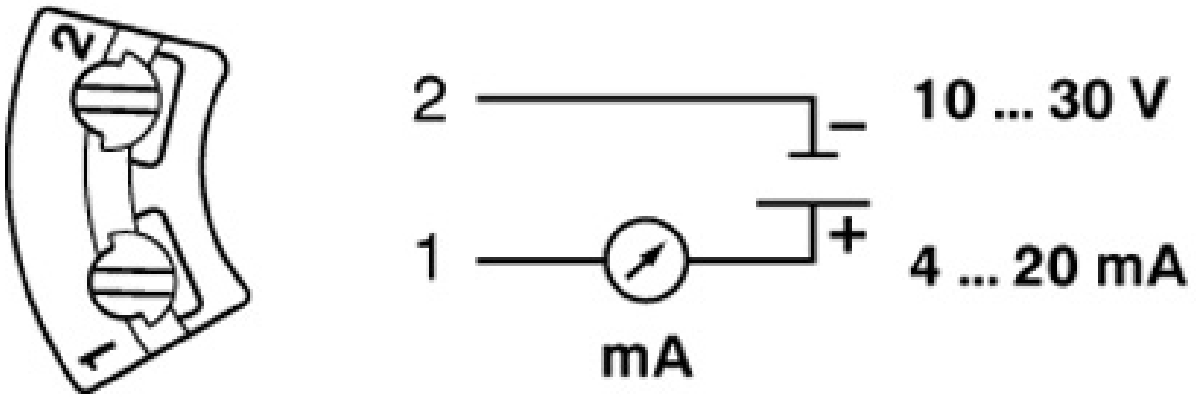
Drawings

Dimensional drawing

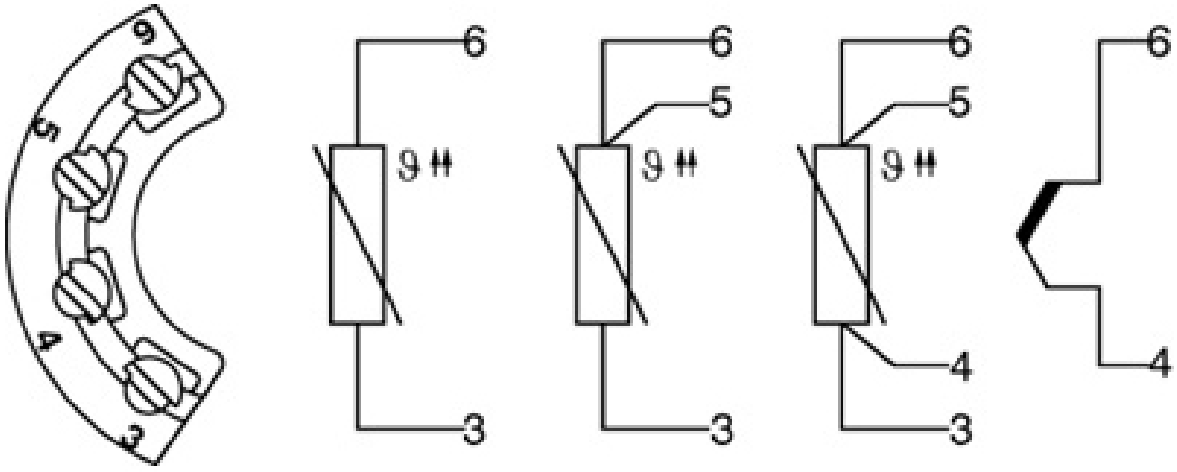


Dimensional drawing

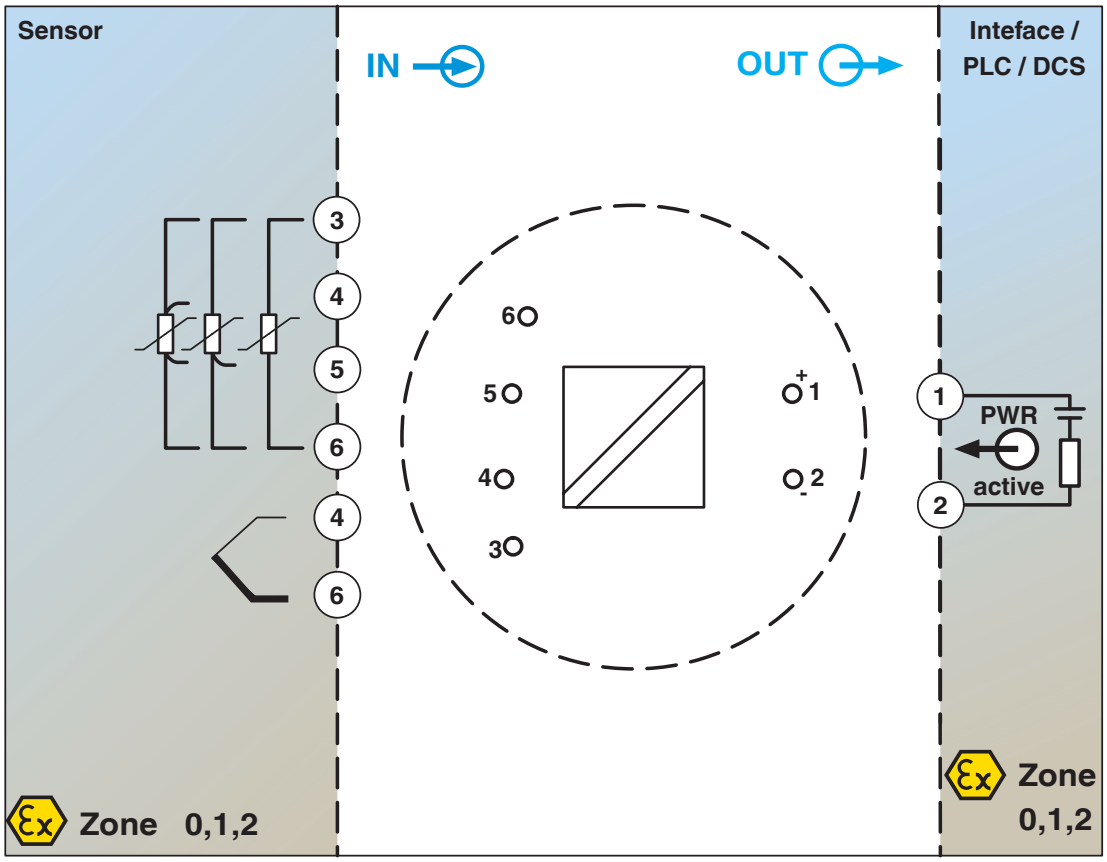
Connection diagram



Connection diagram



Block diagram



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

Classifications

ETIM

ETIM 9.0	EC002919

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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