

# 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	CK3322
Catalog page	Page 188 (C-5-2017)
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

### 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
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 ... 75 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	≤ 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 <sub>supply</sub> - 10 V / 0.023 A)

## Connection data

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

## Ex data

Safety data

Max. voltage U <sub>i</sub>	30 V
Max. current I <sub>i</sub>	100 mA
Max. power P <sub>i</sub>	750 mW
Max. output voltage U <sub>o</sub>	5 V DC
Max. output current I <sub>o</sub>	5.4 mA
Max. output power P <sub>o</sub>	6.6 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
IIA: Max. external inductivity $L_o$ / Max. external capacitance $C_o$	100 mH / 9.9 $\mu$ F
IIB: Max. external inductivity $L_o$ / Max. external capacitance $C_o$	100 mH / 9.9 $\mu$ F
IIC: Max. external inductivity $L_o$ / Max. external capacitance $C_o$	100 mH / 2 $\mu$ F

## 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 bzw. II 2 G Ex ia IIC T6/T5/T4
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### UL, USA/Canada

Identification	cULus
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### Safety Integrity Level (SIL, IEC 61508)

Identification	2
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## Standards and regulations

### Standards

Standards/regulations	NAMUR recommendation NE 21
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## Mounting

Assembly instructions	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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## Classifications

### ECLASS

ECLASS-11.0

27210129

### ETIM

ETIM 9.0

EC002919

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## Environmental product compliance

China RoHS	Environmentally friendly use period: unlimited = EFUP-e
	No hazardous substances above threshold values

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