MINI MCR-2-T-REL - Temperature limit switch

2905632

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CRA-READY



Universally configurable temperature limit value switch with N/O relay output for the connection of 2, 3, and 4-conductor resistance thermometers and thermocouples. Configurable via DIP switch or software, screw connection technology

Product description

Universally configurable temperature limit value switch with relay output and plug-in connection technology for switching temperature limit values. 2, 3, 4-conductor RTD and TC sensors can be processed on the input side. A relay with N/O contact is available on the output side. It is then possible to switch loads up to 250 V AC/DC and max. 6 A. You can configure the device using one of the free software solutions available or your smartphone. Default settings can also be made directly on the device by simply using the DIP switches (see configuration table). The temperature limit value switch supports fault monitoring and NFC communication.

Commercial data

Item number	2905632
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	C404
Product key	DK1127
GTIN	4046356999830
Weight per piece (including packing)	71.8 g
Weight per piece (excluding packing)	128.8 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.

Utilization restriction

EMC note	EMC: class A product, see manufacturer's declaration in the download area

Product properties

Product type	Limit value switch
Product family	MINI Analog Pro
No. of channels	1
Configuration	DIP switches
	Software
	App

System properties

Functionality

Configuration	DIP switches
	Software
	App

Electrical properties

Electrical isolation	3-way isolation
Electrical isolation between input and output	yes
Switching point accuracy	< 0.1 %
Step response (0–99%)	300 ms
	570 ms
	380 ms
	300 ms
	570 ms
Maximum temperature coefficient	0.01 %/K

Electrical isolation

Overvoltage category	II
Pollution degree	2

Electrical isolation Input/output/power supply IEC/EN 61010-1

Standards/regulations	IEC/EN 61010-1
Rated insulation voltage	300 V_{rms}

Test voltage	3 kV AC (50 Hz, 60 s)
Insulation	Reinforced insulation

Supply

Nominal supply voltage	24 V DC
Supply voltage range	9.6 V DC ... 30 V DC (The DIN rail connector (ME 6,2 TBUS-2 1,5/5-ST-3,81 GN, item no. 2869728) can be used to bridge the supply voltage. It can be snapped onto a 35 mm DIN rail in accordance with EN 60715)
Typical current consumption	44 mA (12 V DC)
	22 mA (24 V DC)
Power consumption (I output)	570 mW

Input data

Signal

Number of inputs	1

Measurement

Number of inputs	1
Configurable/programmable	Yes
Sensor types (RTD) that can be used	Pt, Ni, Cu sensors
Sensor types that can be used (TC)	B, E, J, K, N, R, S, T, L, U, A-1, A-2, A-3, M, L
Available input sources	Resistance thermometers
	Thermocouples
Temperature measuring range	-250 °C ... 2500 °C (RTD)
Temperature measuring range	≥ 20 K (RTD)
Temperature measuring range: B	500 °C ... 1820 °C
Temperature measuring range: E	-230 °C ... 1000 °C
Temperature measuring range: J	-210 °C ... 1200 °C
Temperature measuring range: K	-250 °C ... 1372 °C
Temperature measuring range: N	-200 °C ... 1300 °C
Temperature measuring range: R	-50 °C ... 1768 °C
Temperature measuring range: S	-50 °C ... 1768 °C
Temperature measuring range: T	-200 °C ... 400 °C
Temperature measuring range: L	-200 °C ... 900 °C
Temperature measuring range: U	-200 °C ... 600 °C
Temperature measuring range: A-1	0 °C ... 2500 °C
Temperature measuring range: A-2	0 °C ... 1800 °C
Temperature measuring range: A-3	0 °C ... 1800 °C
Temperature measuring range: M	-200 °C ... 100 °C
Temperature measuring range: L	-200 °C ... 800 °C
Sensor input current	≈ ⎍⎍⇂ µA (RTD)
Max. permissible overall conductor resistance	≤ 25 Ω (Per line, RTD in 3- or 4-conductor technology)
	≤ 50 Ω (adjustable, RTD in 2-conductor technology)
Linear resistance measuring range	0 Ω ... 4000 Ω (RTD)

Linear mV signal range	-500 mV ... 500 mV (RTD)
Connection technology	2-, 3-, 4-conductor

Output data

Switching: Relay

Number of outputs	1
Contact switching type	1 N/O contact
Contact material	$AgSnO_2$, hard gold-plated
Maximum switching voltage	250 V AC
	30 V DC
	240 V AC (UL)
Limiting continuous current	6 A AC
	4 A DC
Min. switching current	100 mA (12 V DC)
Max. switching current	6 A AC (250 V AC)
	4 A DC (30 V DC)
Mechanical service life	$2x\ 10^7$ cycles
Setting range of the response delay	0 s ... 10 s (can be set freely via software)
Internal hysteresis	can be set freely via software

Connection data

Connection method	Screw connection
Stripping length	10 mm
Screw thread	M3
Conductor cross-section rigid	0.2 mm² ... 1.5 mm² (with ferrule)
	0.14 mm² ... 2.5 mm² (without ferrule)
Conductor cross-section flexible	0.14 mm² ... 2.5 mm²
Conductor cross-section AWG	24 ... 12 (flexible)
Tightening torque	0.5 Nm ... 0.6 Nm

Ex data

Ex installation (EPL)	Gc
	Div. 2

Interfaces

Data: IFS interface

Connection method	Micro USB type B

Signaling

Status display	Green LED (supply voltage)
	Yellow LED (switching output)
Error indication	Red LED

Dimensions

Width	6.2 mm
Height	109.81 mm
Depth	119.2 mm

Material specifications

Color	gray (RAL 7042)
Housing material	PBT
Fire protection for rail vehicles (DIN EN 45545-2) R22	HL 1 - HL 2
Fire protection for rail vehicles (DIN EN 45545-2) R23	HL 1 - HL 2
Fire protection for rail vehicles (DIN EN 45545-2) R24	HL 1 - HL 2

Environmental and real-life conditions

Ambient conditions

Degree of protection	IP20 (not assessed by UL)
Ambient temperature (operation)	-40 °C ... 70 °C
Ambient temperature (storage/transport)	-40 °C ... 85 °C
Altitude	≤ 2000 m
Permissible humidity (operation)	5 % ... 95 % (non-condensing)

Approvals

CE

Certificate	CE-compliant

ATEX

Identification	Ⓔx II 3G Ex ec ic nC IIC T4 Gc
Certificate	BVS 18 ATEX E 071 X

IECEx

Identification	Ex ec ic nC IIC T4 Gc
Certificate	IECEx BVS 18.0060X

CCC / China-Ex

Identification	Ex ic ec nC IIC T4 Gc
Certificate	2022122304115965

UL, USA/Canada

Identification	UL 508 Listed
	Class I, Div. 2, Groups A, B, C, D T4A
	Class I, Zone 2, Group IIC T4A

Shipbuilding approval

Certificate	DNV GL TAA000021E Rev. 1

EAC Ex

Identification	EAC Ex Ex ec ic nC IIC T4 Gc
Certificate	BY/112 02.01 TP012 103.01 00081

Shipbuilding data

Temperature	B
Humidity	B
Vibration	A
EMC	A
Enclosure	Required protection according to the Rules shall be provided upon installation on board

EMC data

Electromagnetic compatibility	Conformance with EMC directive
Noise immunity	EN 61000-6-2
Note	When being exposed to interference, there may be minimal deviations.

Noise emission

Standards/regulations	EN 61000-6-4

Standards and regulations

Electrical isolation	3-way isolation

GB Standard

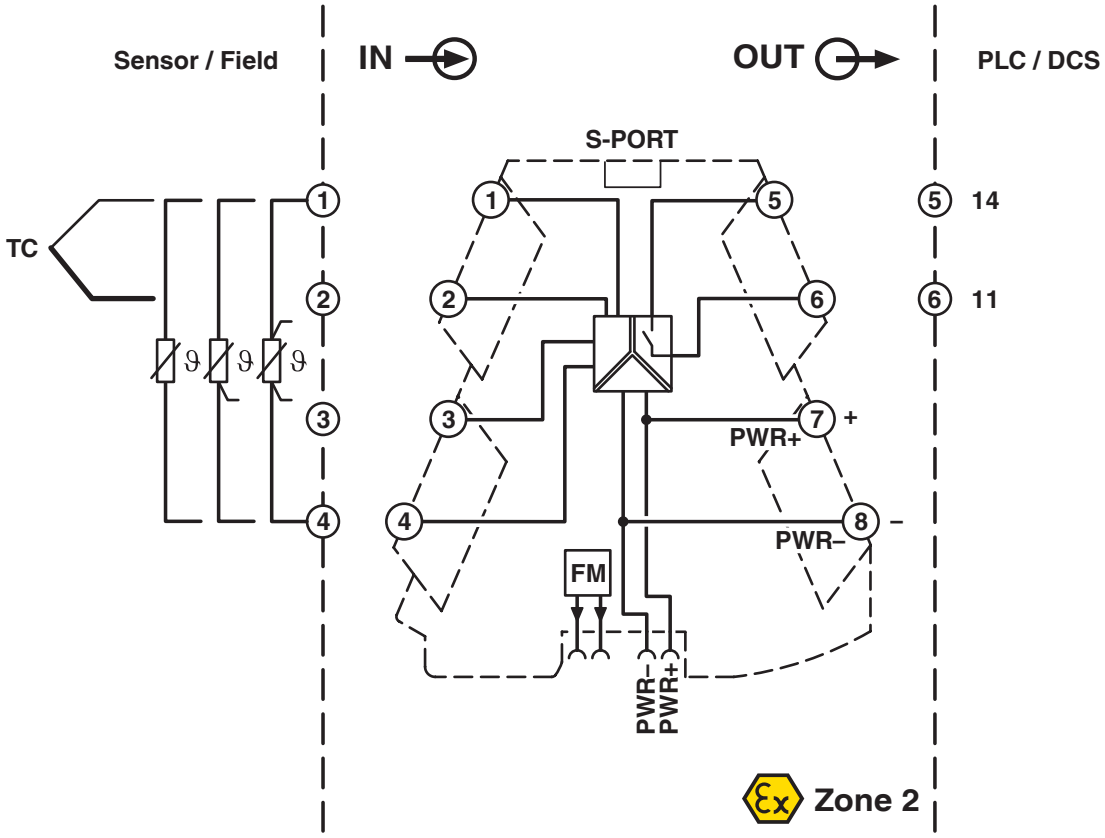
Standards/regulations	GB/T 3836.1
	GB/T 3836.3
	GB/T 3836.4
	GB/T 3836.8

Mounting

Mounting type	DIN rail mounting
Assembly note	The DIN rail connector can be used for bridging the supply voltage. It can be snapped onto a 35 mm EN 60715 DIN rail.
Mounting position	any

Drawings

Block diagram



Approvals

To download certificates, visit the product detail page: https://www.phoenixcontact.com/us/products/2905632

UL Listed
Approval ID: FILE E 238705

cUL Listed
Approval ID: FILE E 238705

DNV
Approval ID: TAA000021E

IECEx
Approval ID: IECEx BVS 18.0060X

cUL Listed
Approval ID: E196811

UL Listed
Approval ID: E196811

ATEX
Approval ID: BVS 18 ATEX E 071 X

CCC
Approval ID: 2022122304115965

Classifications

ECLASS

ECLASS-13.0	27210120
ECLASS-15.0	27210120

ETIM

ETIM 10.0	EC002653

UNSPSC

UNSPSC 21.0	39121000

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)
SCIP	298b7a6c-f047-4e45-a8b0-f9b3fa517d84

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