MINI MCR-2-POT-UI - Resistance/potiposition transducer

2902016

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Configurable potiposition transducer with plug-in connection technology for connecting potentiometers from 0 Ω ... 100 Ω to 0 kΩ ... 100 kΩ. Configurable via DIP switch or software. Screw connection technology, standard configuration

Product description

Configurable, 3-way isolated potentiometer measuring transducer with plug-in connection technology. The measured values are converted into a linear and freely adjustable current or voltage signal. You can configure the device using one of the free software solutions. Default settings can also be made directly on the device by simply using the DIP switches (see configuration table). If it is not possible to fully utilize the potentiometer range, you can specify the upper and lower potentiometer values in the software. The measuring transducer supports fault monitoring and NFC communication.

Commercial data

Item number	2902016
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	CK1432
Product key	CK1432
Catalog page	Page 90 (C-5-2019)
GTIN	4046356649551
Weight per piece (including packing)	123.5 g
Weight per piece (excluding packing)	110 g
Country of origin	DE

Technical data

Notes

Utilization restriction

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

Product properties

Product type	Potiposition transducer
Product family	MINI Analog Pro
No. of channels	1
Configuration	DIP switches
	Software
	App

Insulation characteristics

Overvoltage category	II
Pollution degree	2

System properties

Functionality

Configuration	DIP switches
	Software
	App

Electrical properties

Electrical isolation	3-way isolation
Protective circuit	Transient protection
Step response (0–99%)	< 60 ms
Maximum temperature coefficient	0.01 %/K
Temperature coefficient, typical	0.01 %/K
Maximum transmission error	< 0.1 % (R < 240 Ω = < 0,2 %)

Electrical isolation Input/output/power supply

Rated insulation voltage	300 V_{rms}
Test voltage	3 kV AC (50 Hz, 60 s)
Insulation	Reinforced insulation according to IEC/EN 61010-1

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	33 mA (24 V DC)

	68 mA (12 V DC)
Power consumption	≤ 850 mW (at I_{OUT} = 20 mA, 9.6 V DC, 600 Ω load)

Input data

Signal: Resistance

Number of inputs	1
Available input sources	3-wire potentiometer
Resistance range	0 Ω ... 100 Ω
	0 Ω ... 100 kΩ

Output data

Signal: Voltage/current

Number of outputs	1
Voltage output signal	1 V ... 5 V (via DIP switch)
	10 V ... 0 V (via DIP switch)
	0 V ... 5 V (via DIP switch)
	0 V ... 10 V (via DIP switch)
	0 V ... 10.5 V (can be set via software)
Max. voltage output signal	≈ V
Non-load voltage	< 17.5 V
Current output signal	0 mA ... 20 mA (via DIP switch)
	4 mA ... 20 mA (via DIP switch)
	20 mA ... 0 mA (via DIP switch)
	20 mA ... 4 mA (via DIP switch)
	0 mA ... 21 mA (can be set via software)
Max. current output signal	24.6 mA
Short-circuit current	< 31.5 mA
Load/output load voltage output	≥ 10 kΩ
Load/output load current output	≤ 600 Ω (20 mA)
Ripple	< 20 mV_{PP}
	< 20 mV_{PP} (10 kΩ)
Resolution, outputs (voltage)	1 mV
Resolution, outputs (current)	2 µA
Behavior in the event of a sensor error	configurable

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

Operating voltage display	Green LED
Error indication	Red LED

Dimensions

Width	6.2 mm
Height	109.81 mm
Depth	119.2 mm

Material specifications

Color	gray (RAL 7042)
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
Housing material	PBT

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 3 G Ex ec IIC T4 Gc
Certificate	BVS 20 ATEX E 024 X

UKCA Ex (UKEX)

Identification	Ⓔx II 3 G Ex ec IIC T4 Gc

Certificate	PxCIF21UKEX2902049X

IECEx

Identification	Ex ec IIC T4 Gc
Certificate	IECEx BVS 20.0017X

UL, USA/Canada

Identification	UL 508 Listed
	Class I, Div. 2, Groups A, B, C, D T5
	Class I, Zone 2, Group IIC T5

Shipbuilding approval

Certificate	DNV GL TAA00002UA

EAC Ex

Identification	Ex ec IIC T4 Gc
Certificate	BY/112 02.01 TP012 103.01 00079

DNV GL 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

Noise immunity	EN 61000-6-2
Note	When being exposed to interference, there may be minimal deviations.
Electromagnetic compatibility	Conformance with EMC directive
Noise emission	EN 61000-6-4

Electrostatic discharge

Standards/regulations	EN 61000-4-2

Electrostatic discharge

Comments	Safety measures must be taken to prevent electrostatic discharge.

Electromagnetic HF field

Designation	Electromagnetic RF field
Standards/regulations	EN 61000-4-3
Typical deviation from the measuring range final value	0.2 %

Fast transients (burst)

Designation	Fast transients (burst)
Standards/regulations	EN 61000-4-4
Typical deviation from the measuring range final value	0.4 %

Surge current load (surge)

Standards/regulations	EN 61000-4-5

Conducted interference

Designation	Conducted interferences
Standards/regulations	EN 61000-4-6
Typical deviation from the measuring range final value	0.2 %

Standards and regulations

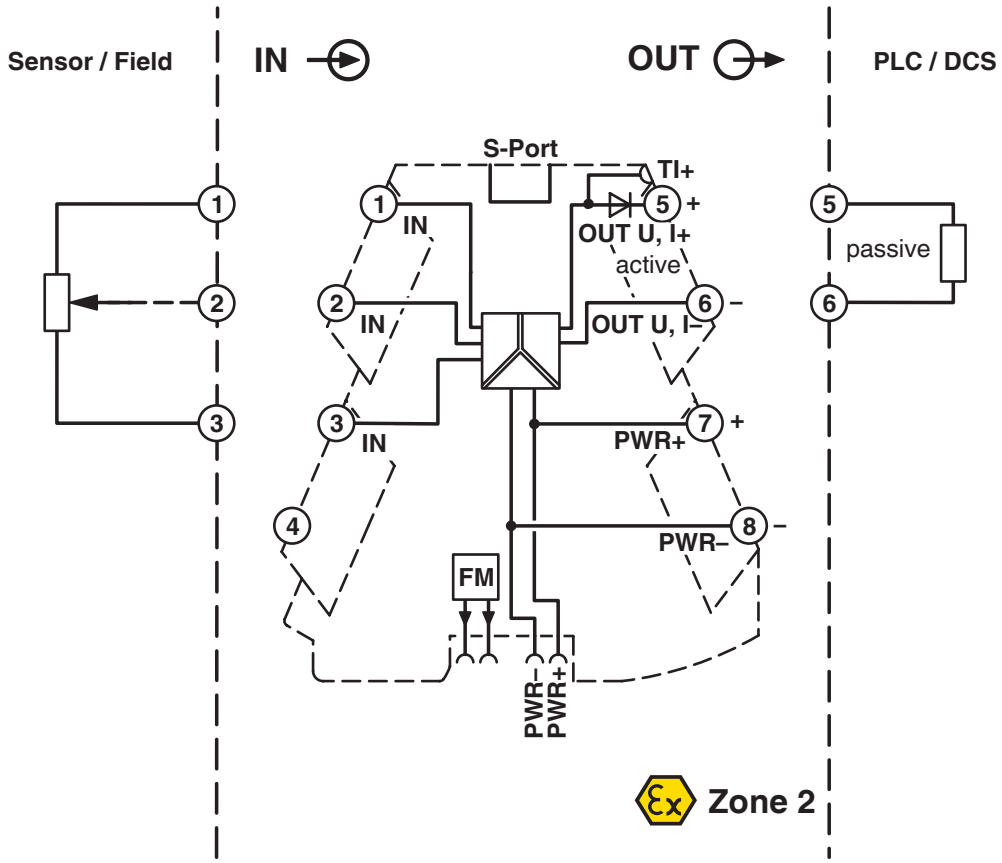
Electrical isolation	3-way isolation

Mounting

Mounting type	DIN rail mounting
Assembly instructions	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/nz/products/2902016

DNV GL
Approval ID: TAA00002UA

UL Listed
Approval ID: FILE E 238705

cUL Listed
Approval ID: FILE E 238705

IECEx
Approval ID: IECEx_BVS_20.0017X

cUL Listed
Approval ID: FILE E 196811

UL Listed
Approval ID: FILE E 196811

ATEX
Approval ID: BVS 20 ATEX E 024 X

cULus Listed

cULus Listed

Classifications

ECLASS

ECLASS-11.0	27210120
ECLASS-12.0	27210120
ECLASS-13.0	27210120

ETIM

ETIM 9.0	EC002653

UNSPSC

UNSPSC 21.0	39121000

Environmental product compliance

REACh SVHC	Lead 7439-92-1

China RoHS	Environmentally Friendly Use Period = 50 years
	For information on hazardous substances, refer to the manufacturer’s declaration available under “Downloads”

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