

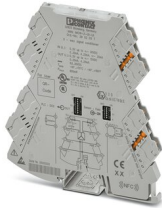
Signal conditioner - MINI MCR-2-UI-UI



2902037

<https://www.phoenixcontact.com/gb/products/2902037>

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3-way signal conditioner with plug-in connection technology and calibrated measuring range changeover for the electrical isolation of unipolar and bipolar analog signals. Input/output configurable via DIP switch. Screw connection technology, standard configuration.

Product Description

The 3-way signal conditioner with plug-in connection technology and calibrated measuring range changeover can be configured using DIP switches and is used for the electrical isolation, conversion, amplification, and filtering of unipolar and bipolar standard and normalized signals. On the input side, the standard analog signals 0 ... 20 mA, 4 ... 20 mA, 0 ... 10 V, 0 ... 5 V, 1 ... 5 V or -10 ... 10 V, and signals 2 ... 10 V, 0 ... 20 V, 4 ... 20 V, 0 ... 24 V, 0 ... 30 V, -5 ... 5 V, -20 ... 20 V, -24 ... 24 V, -30 ... 30 V and -20 ... 20 mA are available. On the output side, 0 ... 20 mA, 4 ... 20 mA, 0 ... 10 V, 0 ... 5 V, 1 ... 5 V, -10 ... 10 V and -5 ... 5 V are possible. There is no need for adjustment following a measuring range changeover. The measuring transducer supports fault monitoring and NFC communication.

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Commercial Data

Item number	2902037
Packing unit	1 pc
Minimum order quantity	1 pc
Sales Key	CK1411
Product Key	CK1411
Catalog Page	Page 72 (C-5-2019)
GTIN	4046356649728
Weight per Piece (including packing)	123.2 g
Weight per Piece (excluding packing)	103.9 g
Customs tariff number	85437090
Country of origin	DE

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Technical Data

Notes

Utilization restriction

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

Product type	Signal conditioner
No. of channels	1
Type	Signal conditioner
Configuration	DIP switches

Insulation characteristics

Overvoltage category	II
Pollution degree	2

Electrical properties

No. of channels	1
Electrical isolation	3-way isolation
Electrical isolation between input and output	yes
Limit frequency (3 dB)	30 Hz (via DIP switch) 5 kHz (via DIP switch)
Protective circuit	Transient protection
Step response (10-90%)	< 8.5 ms (with 30 Hz filter)
Maximum temperature coefficient	0.01 %/K
Temperature coefficient, typical	0.01 %/K
Maximum transmission error	≤ 0.1 % (of final value) ≤ 0.15 % (of final value, at IN: 4 ... 20 mA / OUT: -10 V ... 10 V)

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 bus 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 according to EN 60715))
Typical current consumption	25 mA (Current output, at 24 V DC incl. load) 54 mA (Current output, at 12 V DC incl. load)
Power consumption	≤ 800 mW (at I _{OUT} = 20 mA, 9.6 V DC, 600 Ω load)

Input data

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Signal: Voltage/current input

Number of inputs	1
Configurable/programmable	Yes
Voltage input signal	0 V ... 5 V (via DIP switch) 1 V ... 5 V (via DIP switch) -5 V ... 5 V (via DIP switch) 0 V ... 10 V (via DIP switch) 2 V ... 10 V (via DIP switch) -10 V ... 10 V (via DIP switch) 0 V ... 20 V (via DIP switch) 4 V ... 20 V (via DIP switch) -20 V ... 20 V (via DIP switch) 0 V ... 24 V (via DIP switch) 4.8 V ... 24 V (via DIP switch) -24 V ... 24 V (via DIP switch) 0 V ... 30 V (via DIP switch) 6 V ... 30 V (via DIP switch) -30 V ... 30 V (via DIP switch)
Max. voltage input signal	33 V
Current input signal	0 mA ... 20 mA (via DIP switch) 4 mA ... 20 mA (via DIP switch) -20 mA ... 20 mA (via DIP switch)
Max. current input signal	24 mA
Input resistance of voltage input	> 1000 k Ω
Input resistance current input	approx. 63 Ω (+0.7 V for test diode)

Output data

Signal: Voltage/current

Output name	Voltage output / current output
Number of outputs	1
Configurable/programmable	Yes
Voltage output signal	0 V ... 5 V (via DIP switch) 1 V ... 5 V (via DIP switch) -5 V ... 5 V (via DIP switch) 0 V ... 10 V (via DIP switch) 2 V ... 10 V (via DIP switch) -10 V ... 10 V (via DIP switch)
Non-load voltage	< 17 V
Current output signal	0 mA ... 20 mA (via DIP switch) 4 mA ... 20 mA (via DIP switch)
Max. current output signal	22 mA
Short-circuit current	< 32 mA
Load/output load voltage output	\geq 10 k Ω

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Load/output load current output	≤ 600 Ω (at 20 mA)
Ripple	< 20 mV _{PP} (at 600 Ω)
	< 20 mV _{PP} (at 600 Ω)

Connection data

Connection method	Screw connection
Stripping length	10 mm
Screw thread	M3
Conductor cross section solid	0.2 mm ² ... 1.5 mm ² (with ferrule)
	0.14 mm ² ... 2.5 mm ² (without ferrule)
Conductor cross section flexible	0.14 mm ² ... 2.5 mm ²
Conductor cross section AWG	24 ... 12 (flexible)
Torque	0.5 Nm ... 0.6 Nm

LED signaling

Status display	Green LED (supply voltage)
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Dimensions

Width	6.2 mm
Height	109.81 mm
Depth	119.2 mm

Material specifications

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)

Approval data

CE

Certificate	CE-compliant
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ATEX

Identification	□ II 3 G Ex ec ic IIC T4 Gc
Certificate	BVS 19 ATEX E 047 X

UKCA Ex (UKEX)

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Identification	<input type="checkbox"/> II 3 G Ex ec ic IIC T4 Gc
Certificate	PxCIF21UKEX2902000X

IECEX

Identification	Ex ec ic IIC T4 Gc
Certificate	IECEX BVS 19.0041X

CCC / China-Ex

Identification	Ex nA ic IIC T4 Gc
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UL, USA / Canada

Identification	UL 508 Listed
	Class I, Div. 2, Groups A, B, C, D T6
	Class I, Zone 2, Group IIC T6

Shipbuilding approval

Certificate	DNV GL TAA00002UA
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EAC Ex

Identification	<input type="checkbox"/> 2Ex ec ic 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

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

Electrostatic discharge

Standards/regulations	EN 61000-4-2
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Electrostatic discharge

Comments	Safety measures must be taken to prevent electrostatic discharge.
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Electromagnetic HF field

Designation	Electromagnetic RF field
Standards/regulations	EN 61000-4-3

Fast transients (burst)

Designation	Fast transients (burst)
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Standards/regulations	EN 61000-4-4
Surge current load (surge)	
Standards/regulations	EN 61000-4-5
Conducted interference	
Designation	Conducted interferences
Standards/regulations	EN 61000-4-6

Standards and regulations

Electrical isolation	3-way isolation
GB Standard	
Standards/regulations	GB 3836.1
	GB 3836.4
	GB 3836.8

Mounting

Mounting type	DIN rail mounting
Assembly instructions	The T connector can be used to bridge the supply voltage. It can be snapped onto a 35 mm DIN rail according to EN 60715.
Mounting position	any

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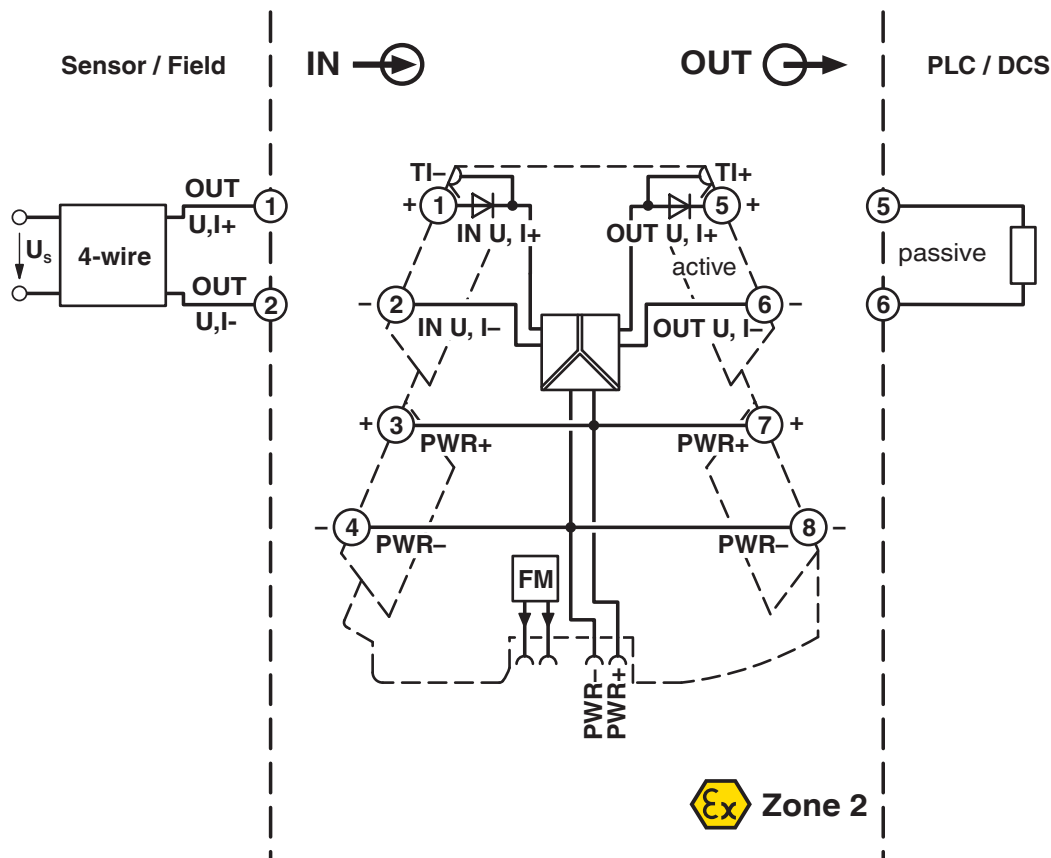


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Drawings

Block diagram



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Approvals

**DNV GL**

Approval ID: TAA00002UA

**UL Listed**

Approval ID: FILE E 238705

Nominal Voltage U_N Nominal Current I_N

Cross Section AWG

Cross Section mm^2

-

-

**CCC**

Approval ID: 2021322310003859

**cUL Listed**

Approval ID: FILE E 238705

Nominal Voltage U_N Nominal Current I_N

Cross Section AWG

Cross Section mm^2

-

-

**EAC Ex**

Approval ID: RU C-DE.AB72.B.02066

**IECEX**

Approval ID: IECEX BVS 19.0041X

**cUL Listed**

Approval ID: FILE E 196811

Nominal Voltage U_N Nominal Current I_N

Cross Section AWG

Cross Section mm^2

-

-

**UL Listed**

Approval ID: FILE E 196811

Nominal Voltage U_N Nominal Current I_N

Cross Section AWG

Cross Section mm^2

-

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**ATEX**

Approval ID: BVS 19 ATEX E 047 X

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ATEX

Approval ID: 2902037_Ex-n

cULus Listed

cULus Listed

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Classifications

ECLASS

ECLASS-9.0	27210120
ECLASS-10.0.1	27210120
ECLASS-11.0	27210120

ETIM

ETIM 8.0	EC002653
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UNSPSC

UNSPSC 21.0	39121008
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Environmental Product Compliance

REACH SVHC	Lead 7439-92-1
China RoHS	Environmentally Friendly Use Period = 50 years For details about hazardous substances go to tab "Downloads", Category "Manufacturer's declaration"

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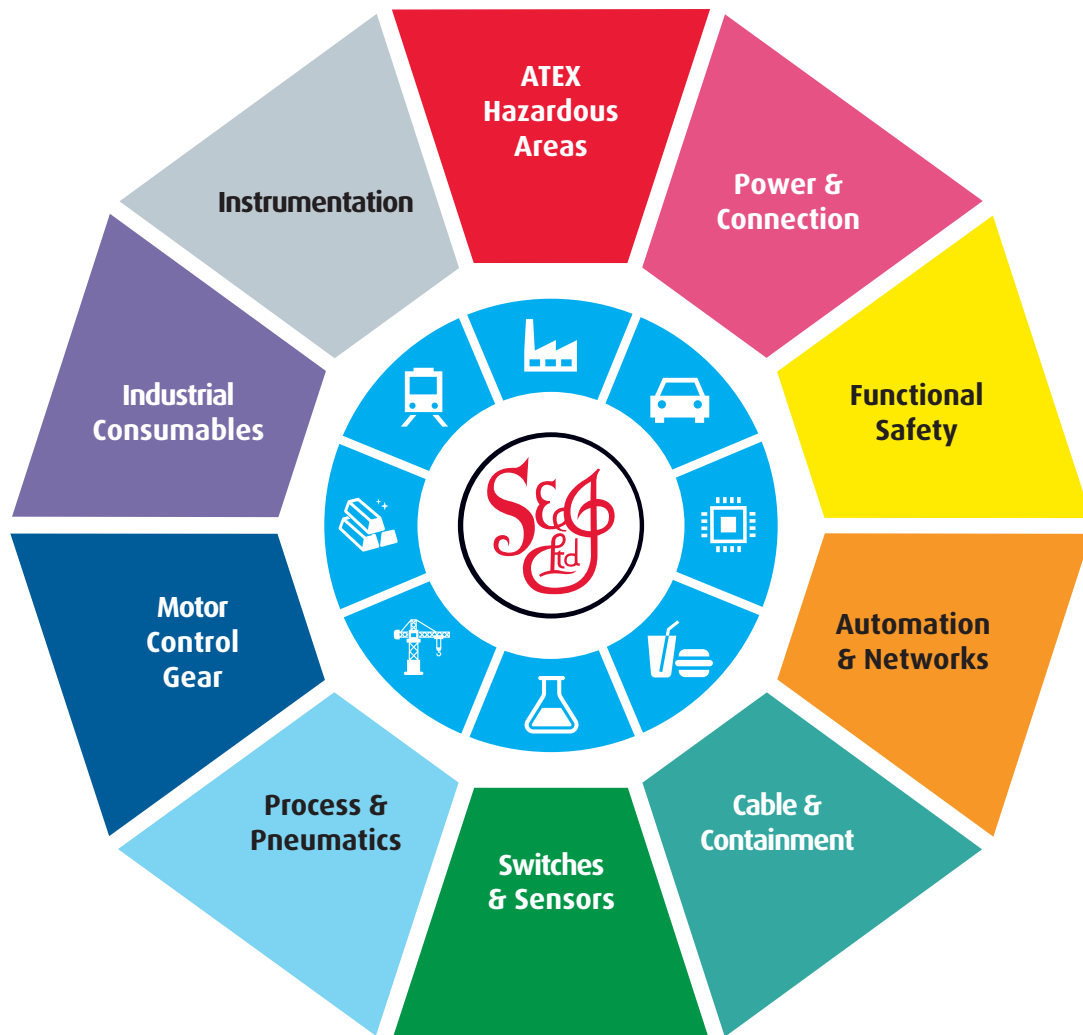
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