MINI MCR-2-U-UI-C - Input signal conditioner

2902018

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3-way signal conditioner, with configurable input/output, for electrical isolation and conversion of analog signals in the mV and V range, unipolar as well as bipolar. Screw connection technology, order configuration.

Commercial data

Item number	2902018
Packing unit	1 pc
Minimum order quantity	1 pc
Note	Made to order (non-returnable)
Sales key	DK1121
Product key	DK1121
Weight per piece (including packing)	124 g
Weight per piece (excluding packing)	108.9 g
Customs tariff number	85437090
Country of origin	DE

Technical data

Product properties

Product type	Input signal conditioner
Product family	MINI Analog Pro
No. of channels	1
Configuration	DIP switches

System properties

Functionality

Configuration	DIP switches

Electrical properties

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
Maximum transmission error	≤ 0.1 % (of final value)

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	25 mA (Current output, at 24 V DC incl. load)
	54 mA (Current output, at 12 V DC incl. load)
Power consumption (I output)	≤ 800 mW (at I_{OUT} = 20 mA, 9.6 V DC, 600 Ω load)

Input data

Signal: Voltage

Number of inputs	1

Configurable/programmable	Yes
Input signal	Voltage
Voltage input signal	-50 mV ... 50 mV (via DIP switch)
	0 mV ... 50 mV (via DIP switch)
	-60 mV ... 60 mV (via DIP switch)
	0 mV ... 60 mV (via DIP switch)
	-75 mV ... 75 mV (via DIP switch)
	0 mV ... 75 mV (via DIP switch)
	-80 mV ... 80 mV (via DIP switch)
	0 mV ... 80 mV (via DIP switch)
	-100 mV ... 100 mV (via DIP switch)
	0 mV ... 100 mV (via DIP switch)
	-120 mV ... 120 mV (via DIP switch)
	0 mV ... 120 mV (via DIP switch)
	-150 mV ... 150 mV (via DIP switch)
	0 mV ... 150 mV (via DIP switch)
	-200 mV ... 200 mV (via DIP switch)
	0 mV ... 200 mV (via DIP switch)
	-240 mV ... 240 mV (via DIP switch)
	0 mV ... 240 mV (via DIP switch)
	-300 mV ... 300 mV (via DIP switch)
	0 mV ... 300 mV (via DIP switch)
	-500 mV ... 500 mV (via DIP switch)
	0 mV ... 500 mV (via DIP switch)
	-600 mV ... 600 mV (via DIP switch)
	0 mV ... 600 mV (via DIP switch)
	-750 mV ... 750 mV (via DIP switch)
	0 mV ... 750 mV (via DIP switch)
	-800 mV ... 800 mV (via DIP switch)
	0 mV ... 800 mV (via DIP switch)
	-1 V ... 1 V (via DIP switch)
	0 V ... 1 V (via DIP switch)
	-1.2 V ... 1.2 V (via DIP switch)
	0 V ... 1.2 V (via DIP switch)
	-1.5 V ... 1.5 V (via DIP switch)
	0 V ... 1.5 V (via DIP switch)
	-2 V ... 2 V (via DIP switch)
	0 V ... 2 V (via DIP switch)
	-2.4 V ... 2.4 V (via DIP switch)
	0 V ... 2.4 V (via DIP switch)
	-3 V ... 3 V (via DIP switch)
	0 V ... 3 V (via DIP switch)
	-5 V ... 5 V (via DIP switch)
	0 V ... 5 V (via DIP switch)

	-6 V ... 6 V (via DIP switch)
	0 V ... 6 V (via DIP switch)
	-7.5 V ... 7.5 V (via DIP switch)
	0 V ... 7.5 V (via DIP switch)
	-8 V ... 8 V (via DIP switch)
	0 V ... 8 V (via DIP switch)
	-10 V ... 10 V (via DIP switch)
	0 V ... 10 V (via DIP switch)
	-12 V ... 12 V (via DIP switch)
	0 V ... 12 V (via DIP switch)
	-15 V ... 15 V (via DIP switch)
	0 V ... 15 V (via DIP switch)
	-20 V ... 20 V (via DIP switch)
	0 V ... 20 V (via DIP switch)
	-24 V ... 24 V (via DIP switch)
	0 V ... 24 V (via DIP switch)
	-30 V ... 30 V (via DIP switch)
	0 V ... 30 V (via DIP switch)
Max. voltage input signal	33 V
Input resistance of voltage input	> 10 kΩ

Output data

Signal: Voltage/current

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)
Open-circuit 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	≥ 10 kΩ
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 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

Signaling

Status display	Green LED (supply voltage)

Dimensions

Width	6.2 mm
Height	109.81 mm
Depth	119.2 mm

Material specifications

Color	gray (RAL 7042)
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
Permissible humidity (operation)	5 % ... 95 % (non-condensing)

Approvals

CE

Certificate	CE-compliant

ATEX

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

IECEx

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

CCC / China-Ex

Identification	Ex ec ic IIC T4 Gc

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

EAC Ex

Identification	Ex ec ic 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

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

Fast transients (burst)

Designation	Fast transients (burst)
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

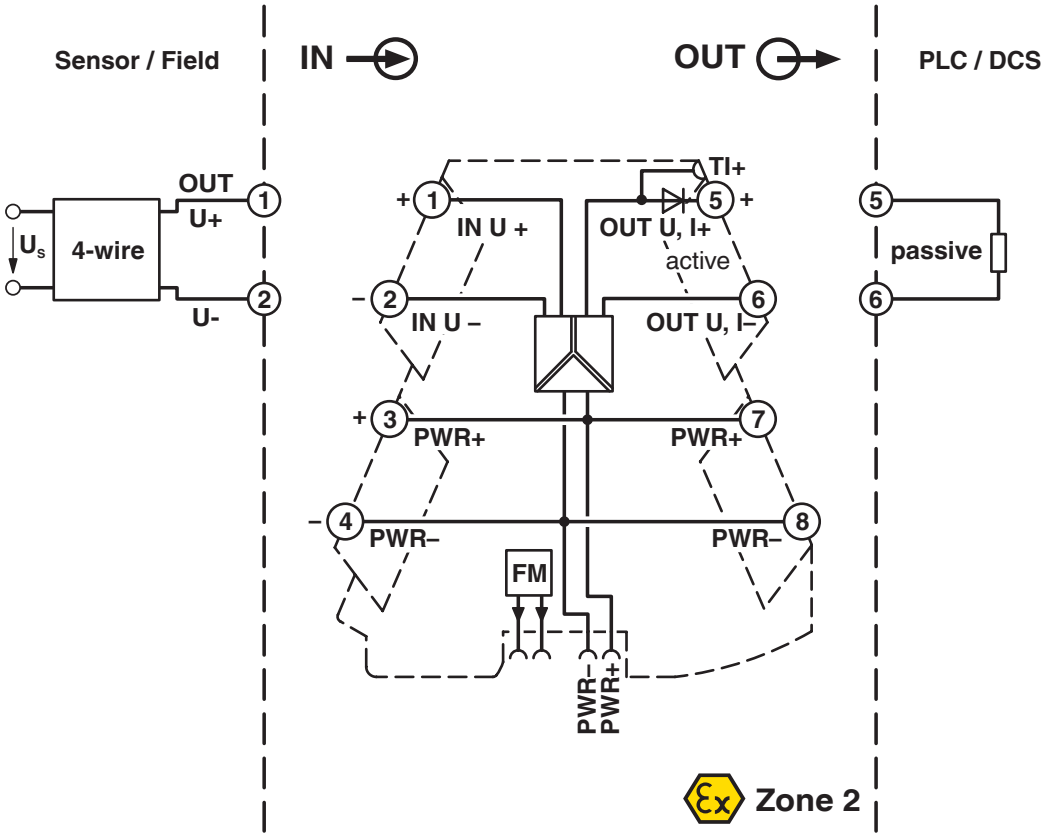
Standards/regulations	GB/T 3836.1
	GB/T 3836.3
	GB/T 3836.4

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



Classifications

ECLASS

ECLASS-13.0	27210120

ETIM

ETIM 9.0	EC002653

UNSPSC

UNSPSC 21.0	39121000

Environmental product compliance

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.)	No substance above 0.1 wt%

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