

Signal conditioner - MINI MCR-SL-SHUNT-UI-NC - 2810780

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MCR 3-way isolating amplifier, with configurable input/output, for electrical isolation and conversion of analog signals in the mV range, single-pos. as well as 2-pos. with screw connection, pre-configured

Your advantages

- ✓ Power supply possible via the foot element (TBUS)
- ✓ Ideal for converting signals for shunt measurements
- ✓ Low power consumption
- ✓ Highly-compact isolating amplifier for electrical isolation, conversion, amplification, and filtering of mV signals to create standard analog signals
- ✓ Up to 280 signal combinations can be configured using DIP switches
- ✓ 3-way isolation



Key Commercial Data

Packing unit	1 pc
GTIN	 4 046356 305341
GTIN	4046356305341

Technical data

Note

Utilization restriction	EMC: class A product, see manufacturer's declaration in the download area
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Dimensions

Width	6.2 mm
Height	93.1 mm
Depth	101.2 mm

Ambient conditions

Ambient temperature (operation)	-20 °C ... 65 °C
Ambient temperature (storage/transport)	-40 °C ... 85 °C
Maximum altitude	≤ 2000 m

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Ambient conditions

Permissible humidity (operation)	5 % ... 95 % (non-condensing)
Degree of protection	IP20
Noise immunity	EN 61000-6-2 When being exposed to interference, there may be minimal deviations.

Input data

Number of inputs	1
Configurable/programmable	Yes, unconfigured
Voltage input signal	-50 mV ... 50 mV
	-60 mV ... 60 mV
	-75 mV ... 75 mV
	-80 mV ... 80 mV
	-100 mV ... 100 mV
	-120 mV ... 120 mV
	-150 mV ... 150 mV
	-200 mV ... 200 mV
	-240 mV ... 240 mV
	-300 mV ... 300 mV
	-500 mV ... 500 mV
	-600 mV ... 600 mV
	-750 mV ... 750 mV
	-800 mV ... 800 mV
	-1 V ... 1 V
	-1.2 V ... 1.2 V
	-1.5 V ... 1.5 V
	-2 V ... 2 V
	-2.4 V ... 2.4 V
	-3 V ... 3 V
	0 mV ... 50 mV
	0 mV ... 60 mV
	0 mV ... 75 mV
	0 mV ... 80 mV
	0 mV ... 100 mV
	0 mV ... 120 mV
	0 mV ... 150 mV
	0 mV ... 200 mV
	0 mV ... 240 mV
	0 mV ... 300 mV
	0 mV ... 500 mV
	0 mV ... 600 mV
	0 mV ... 750 mV

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Input data

	0 mV ... 800 mV
	0 V ... 1 V
	0 V ... 1.2 V
	0 V ... 1.5 V
	0 V ... 2 V
	0 V ... 2.4 V
	0 V ... 3 V
max. input voltage	approx. 3 V DC
Input resistance of voltage input	approx. 10 kΩ

Output data

Number of outputs	1
Configurable/programmable	Yes, unconfigured
Voltage output signal	0 V ... 10 V
	2 V ... 10 V
	0 V ... 5 V
	1 V ... 5 V
	-10 V ... 10 V (The bi-polar output can be used only for bi-polar input signals.)
	-5 V ... 5 V (The bi-polar output can be used only for bi-polar input signals.)
Current output signal	0 mA ... 20 mA
	4 mA ... 20 mA
Load/output load voltage output	≥ 10 kΩ
Load/output load current output	< 500 Ω (at 20 mA)
Ripple	< 20 mV _{PP} (at 500 Ω)
	< 20 mV _{PP} (at 10 kΩ)

Power supply

Nominal supply voltage	24 V DC
Supply voltage range	19.2 V DC ... 30 V DC
Max. current consumption	< 25 mA
Power consumption	< 450 mW (Current output)

Connection data

Connection method	Screw connection
Connection technology	2-wire
Stripping length	12 mm
Screw thread	M3
Conductor cross section solid	0.2 mm ² ... 2.5 mm ²
Conductor cross section flexible	0.2 mm ² ... 2.5 mm ²
Conductor cross section AWG	26 ... 12

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Technical data

General

No. of channels	1
Maximum transmission error	≤ 0.2 %
	< 0.4 % (Without adjustment)
Maximum temperature coefficient	< 0.01 %/K
Temperature coefficient, typical	< 0.002 %/K
Limit frequency (3 dB)	100 Hz / 30 Hz switchable
Step response (10-90%)	3.5 ms (At 100 Hz)
Electrical isolation	Basic insulation according to EN 61010
Overvoltage category	II
Degree of pollution	2
Rated insulation voltage	30 V AC
Test voltage, input/output/supply	1.5 kV (50 Hz, 1 min.)
Electromagnetic compatibility	Conformance with EMC directive
Noise emission	EN 61000-6-4
Noise immunity	EN 61000-6-2 When being exposed to interference, there may be minimal deviations.
Color	green
Housing material	PBT
Mounting position	any
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.
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

EMC data

Designation	Electromagnetic RF field
Standards/regulations	EN 61000-4-3
Typical deviation from the measuring range final value	6 %
Designation	Fast transients (burst)
Standards/regulations	EN 61000-4-4
Typical deviation from the measuring range final value	6 %
Designation	Conducted interferences
Standards/regulations	EN 61000-4-6
Typical deviation from the measuring range final value	6 %

Standards and Regulations

Electromagnetic compatibility	Conformance with EMC directive
Noise emission	EN 61000-6-4
Connection in acc. with standard	CUL
Standards/regulations	EN 61000-4-2
Designation	Electromagnetic RF field

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Technical data

Standards and Regulations

Standards/regulations	EN 61000-4-3
	EN 61000-4-4
	EN 61000-4-5
Designation	Conducted interferences
Standards/regulations	EN 61000-4-6
Electrical isolation	Basic insulation according to EN 61010
Conformance	CE-compliant
ATEX	# II 3 G Ex nA IIC T4 Gc X
UL, USA/Canada	UL 508 Recognized
	Class I, Div. 2, Groups A, B, C, D T4

Conformance/approvals

Designation	CE
Identification	CE-compliant
Designation	ATEX
Identification	# II 3 G Ex nA IIC T4 Gc X
Designation	UL, USA/Canada
Identification	UL 508 Recognized
	Class I, Div. 2, Groups A, B, C, D T4
Designation	Shipbuilding approval
Identification	BBBAA
Certificate	DNV GL TAA00000N1

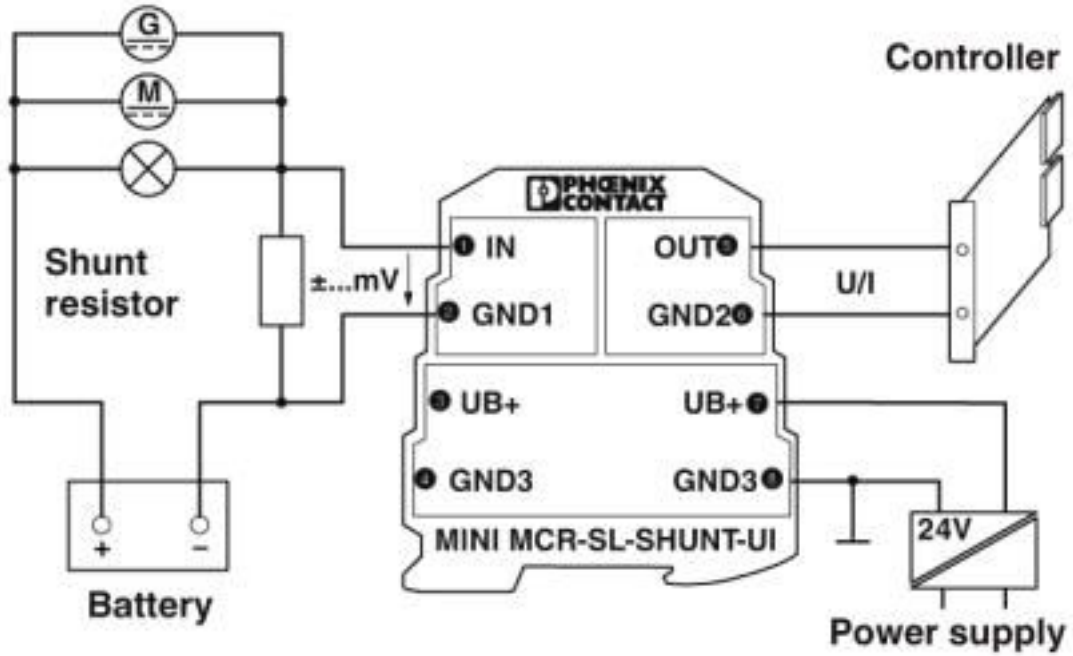
Environmental Product Compliance

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"

Drawings

Signal conditioner - MINI MCR-SL-SHUNT-UI-NC - 2810780

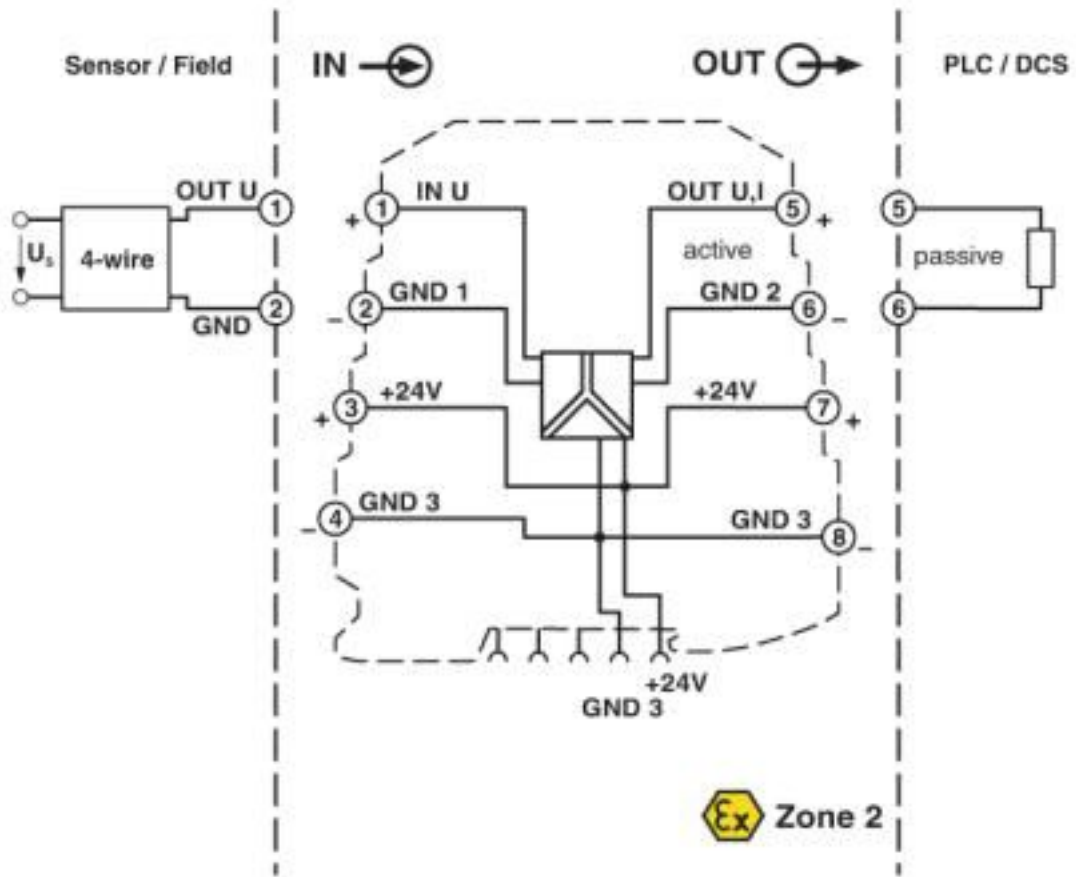
Application drawing



Monitoring of loading and unloading currents

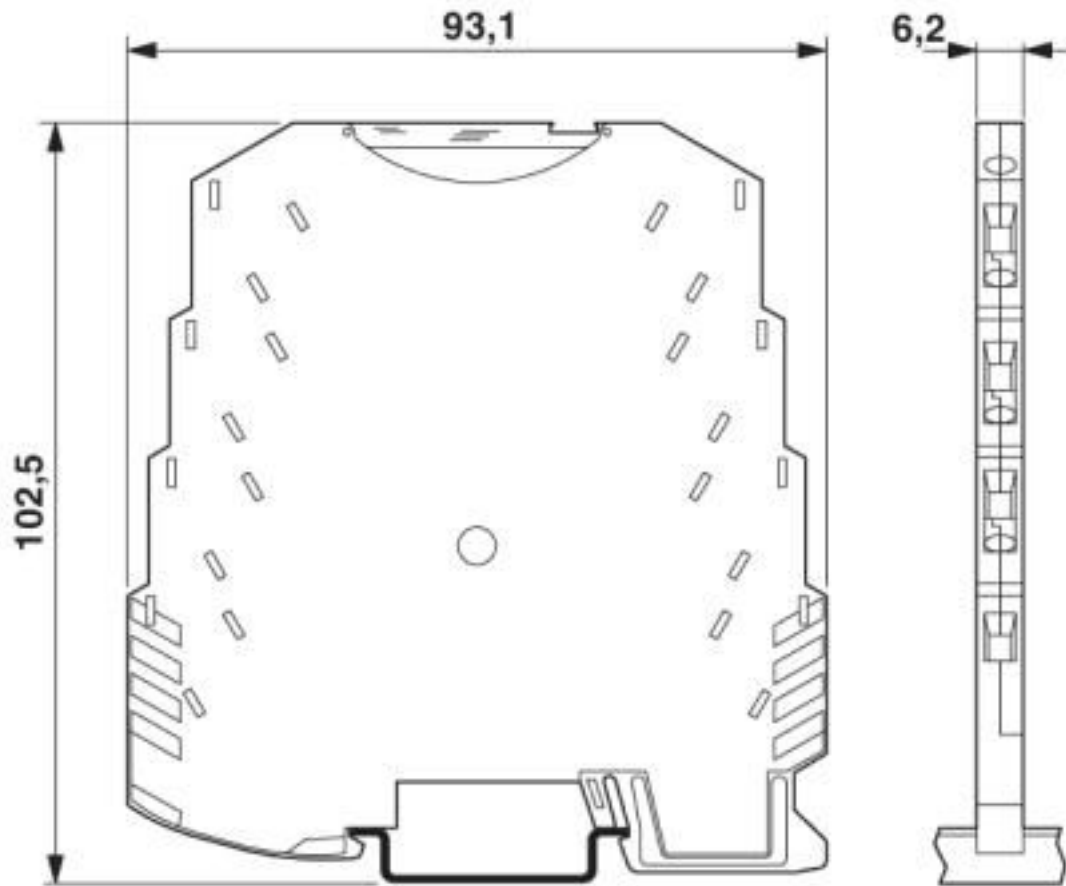
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Block diagram



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Dimensional drawing



Classifications

eCl@ss

eCl@ss 10.0.1	27210120
eCl@ss 4.0	27210100
eCl@ss 4.1	27210100
eCl@ss 5.0	27210100
eCl@ss 5.1	27210100
eCl@ss 6.0	27210100
eCl@ss 7.0	27210120
eCl@ss 8.0	27210120
eCl@ss 9.0	27210120

ETIM

ETIM 4.0	EC002653
ETIM 5.0	EC002653
ETIM 6.0	EC002653
ETIM 7.0	EC002653

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Classifications

UNSPSC

UNSPSC 6.01	30211506
UNSPSC 7.0901	39121008
UNSPSC 11	39121008
UNSPSC 12.01	39121008
UNSPSC 13.2	39121008
UNSPSC 18.0	39121008
UNSPSC 19.0	39121008
UNSPSC 20.0	39121008
UNSPSC 21.0	39121008

Approvals

Approvals

Approvals

DNV GL / UL Recognized / cUL Recognized / cULus Recognized

Ex Approvals

ATEX / UL Listed / cUL Listed / EAC Ex / cULus Listed

Approval details

DNV GL		https://approvalfinder.dnvgl.com/	TAA00000N1
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UL Recognized		http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm	FILE E 238705
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cUL Recognized		http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm	FILE E 238705
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cULus Recognized			
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Accessories

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Accessories

DIN rail connector

DIN rail bus connectors - ME 6,2 TBUS-2 1,5/5-ST-3,81 GN - 2869728



DIN rail connector for DIN rail mounting. Universal for TBUS housing. Gold-plated contacts, 5-pos.

Marking material

Transparent cover - MINI MCR DKL - 2308111



Fold up transparent cover for MINI MCR modules with additional labeling option using insert strips and flat Zack marker strip 6.2 mm

Marking label - MINI MCR-DKL-LABEL - 2810272



Label for extended marking of MINI MCR modules in connection with the MINI MCR-DKL

Multiplexer

Multiplexer - MINI MCR-SL-MUX-V8-FLK 16 - 2811815



MINI analog multiplexer, generates one analog output from 8 analog input signals, for MINI analog module with screw connection.

Power module

Power terminal block - MINI MCR-SL-PTB - 2864134



MCR power terminal block for supplying several MINI Analog modules via the DIN rail connector, with screw connection, maximum current consumption of up to 2 A

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Accessories

Power terminal block - MINI MCR-SL-PTB-SP - 2864147



MCR feed-in terminal for supplying several MINI Analog modules via a DIN rail connector, with spring-cage connection, maximum current consumption of up to 2 A. Replacement part: 2902067 MINI MCR-2-PTB-PT.

Power supply

Power supply unit - MINI-SYS-PS-100-240AC/24DC/1.5 - 2866983



Primary-switched MINI POWER supply for DIN rail mounting, input: 1-phase, output: 24 V DC/1.5 A

Power supply unit - MINI-PS-100-240AC/24DC/1.5/EX - 2866653



Primary-switched power supply MINI POWER for DIN rail mounting, input: 1-phase, output: 24 V DC/1,5 A, for the potentially explosive area

System adapter

System adapter - MINI MCR-SL-V8-FLK 16-A - 2811268



Eight MINI analog signal converters with screw connection method can be connected to a control system using a system adapter and system cabling with a minimum of wiring and very low error risk.