

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



2810780

<https://www.phoenixcontact.com/za/products/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

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Commercial Data

Item number	2810780
Packing unit	1 pc
Minimum order quantity	1 pc
Sales Key	095
Product Key	CK1211
Catalog Page	Page 94 (C-7-2015)
GTIN	4046356305341
Weight per Piece (including packing)	117,8 g
Weight per Piece (excluding packing)	117,7 g
Customs tariff number	85437090
Country of origin	DE

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
Configuration	DIP switches

Insulation characteristics

Overvoltage category	II
Pollution degree	2

Electrical properties

No. of channels	1
Electrical isolation	Basic insulation according to EN 61010
Electrical isolation between input and output	yes
Limit frequency (3 dB)	100 Hz / 30 Hz switchable
Step response (10-90%)	3.5 ms (100 Hz)
Maximum temperature coefficient	< 0.01 %/K
Temperature coefficient, typical	< 0.002 %/K
Maximum transmission error	≤ 0.2 % < 0.4 % (Without adjustment)

Electrical isolation Input/output/power supply

Rated insulation voltage	30 V AC
	50 V DC
Test voltage	1.5 kV AC (50 Hz, 60 s)

Supply

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

Input data

Signal: Voltage input

Number of inputs	1
Configurable/programmable	Yes, unconfigured

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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 (additional areas can be configured, see table)
	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
	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. voltage input signal	approx. 3 V DC
Input resistance of voltage input	approx. 10 kΩ

Output data

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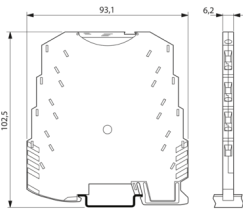
Signal: Voltage/current

Output name	Voltage output / current output
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	$\geq 10 \text{ k}\Omega$
Load/output load current output	$< 500 \Omega$ (at 20 mA)
Ripple	$< 20 \text{ mV}_{PP}$ (at 500 Ω) $< 20 \text{ mV}_{PP}$ (at 10 k Ω)

Connection data

Connection method	Screw connection
Connection technology	2-conductor
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

Dimensions

Dimensional drawing	
Width	6.2 mm
Height	93.1 mm
Depth	102.5 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
Ambient temperature (operation)	-20 °C ... 65 °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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UKCA

Certificate	UKCA-compliant
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UL, USA / Canada

Identification	UL 508 Recognized
	Class I, Div. 2, Groups A, B, C, D T4

Shipbuilding approval

Certificate	DNV GL TAA000020N
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DNV GL data

Temperature	B
Humidity	B
Vibration	B
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
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Standards/regulations	EN 61000-4-3
Typical deviation from the measuring range final value	6 %

Fast transients (burst)

Designation	Fast transients (burst)
Standards/regulations	EN 61000-4-4
Typical deviation from the measuring range final value	6 %

Surge current load (surge)

Standards/regulations	EN 61000-4-5
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Surge current load (surge)

Comments	Criterion B
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Conducted interference

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

Standards and regulations

Electrical isolation	Basic insulation according to EN 61010
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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

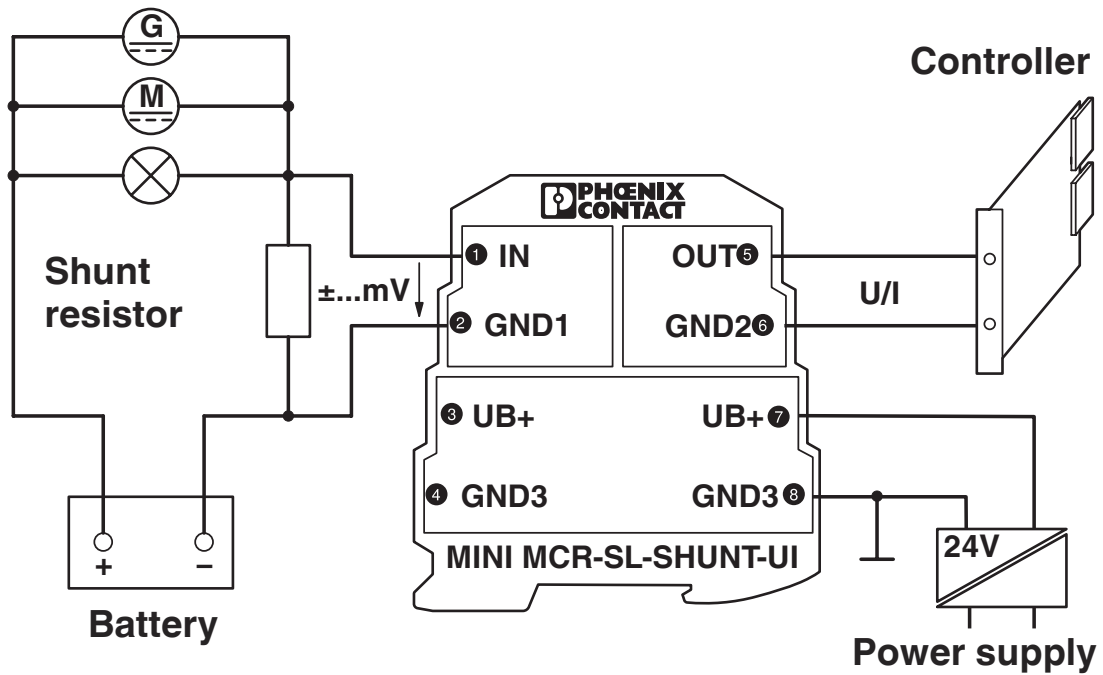
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Drawings

Application drawing



Monitoring of loading and unloading currents

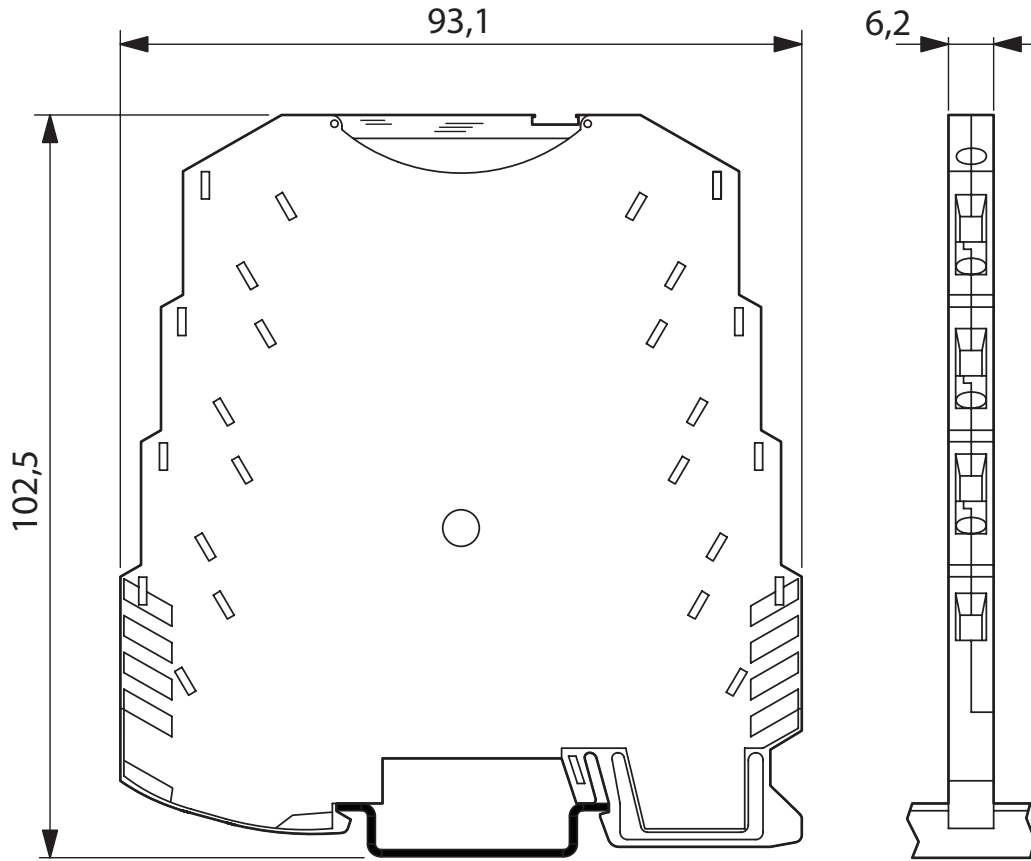
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Dimensional drawing

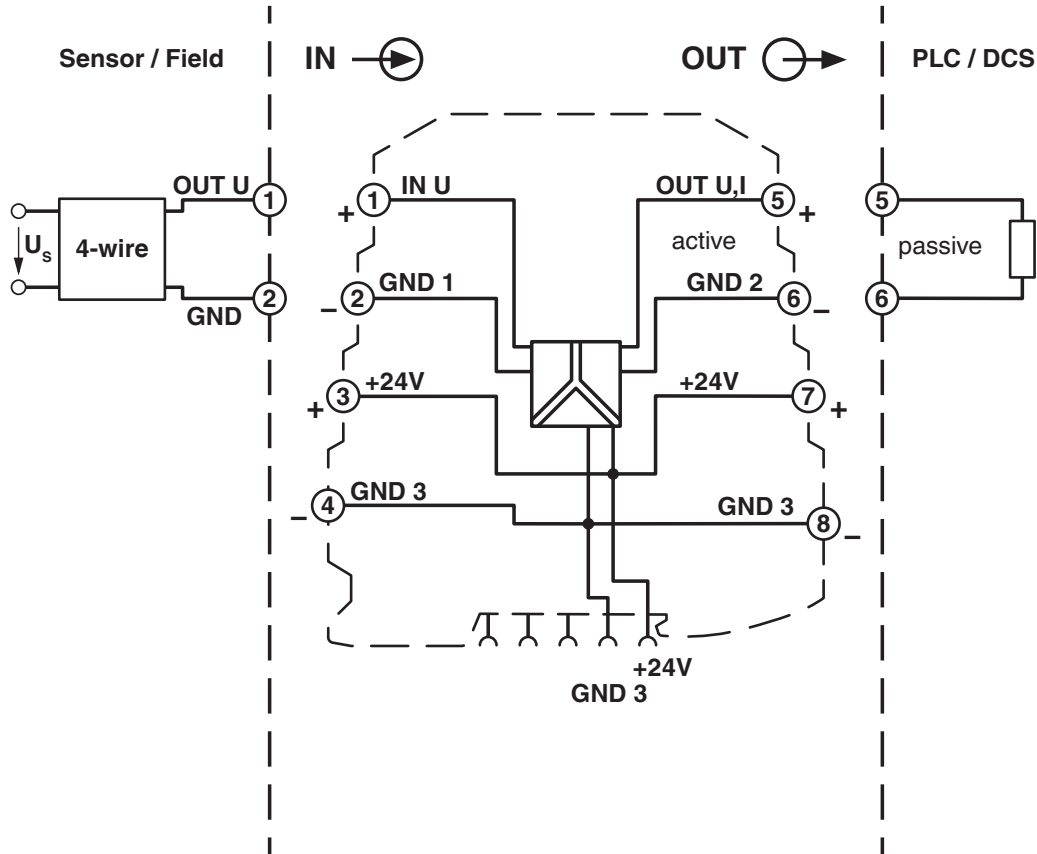


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Block diagram



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Approvals



cUL Recognized
Approval ID: FILE E 238705



UL Recognized
Approval ID: FILE E 238705



DNV GL
Approval ID: TAA00000N1



cUL Listed
Approval ID: FILE E 199827



UL Listed
Approval ID: FILE E 199827

cULus Recognized

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	39121000
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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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Accessories

Transparent cover

Transparent cover - MINI MCR DKL - 2308111

<https://www.phoenixcontact.com/za/products/2308111>

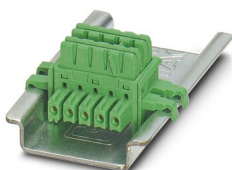


Fold up transparent cover for MINI MCR modules with additional labeling option using insert strips and flat Zack marker strip 6.2 mm

DIN rail bus connectors

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

<https://www.phoenixcontact.com/za/products/2869728>



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

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Power terminal block

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

<https://www.phoenixcontact.com/za/products/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

Marking label

Marking label - MINI MCR-DKL-LABEL - 2810272

<https://www.phoenixcontact.com/za/products/2810272>



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

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Power supply unit

Power supply unit - QUINT4-SYS-PS/1AC/24DC/2.5/SC - 2904614

<https://www.phoenixcontact.com/za/products/2904614>



Primary-switched power supply unit, QUINT POWER, Screw connection, DIN rail mounting, input: 1-phase, output: 24 V DC / 2.5 A

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