

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



2810780

<https://www.phoenixcontact.com/pc/products/2810780>

Please be informed that the data shown in this PDF document is generated from our Online Catalog. Please find the complete data in the user documentation. Our General Terms of Use for Downloads are valid.



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

Commercial Data

Item number	2810780
Packing unit	1 pc
Minimum order quantity	1 pc
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
----------	---

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 in accordance with 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 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)
Max. current consumption	< 25 mA
Power consumption	< 450 mW (Current output)

Input data

Signal: Voltage

Number of inputs	1
Configurable/programmable	Yes, unconfigured

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



2810780

<https://www.phoenixcontact.com/pc/products/2810780>

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

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

2810780

<https://www.phoenixcontact.com/pc/products/2810780>

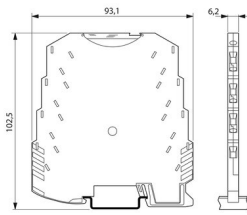
Signal: Voltage/current

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
-------------	--------------

UKCA

Certificate	UKCA-compliant
-------------	----------------

UL, USA / Canada

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

Shipbuilding approval

Certificate	DNV GL TAA000020N
-------------	-------------------

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
-----------------------	--------------

Electrostatic discharge

Comments	Safety measures must be taken to prevent electrostatic discharge.
----------	---

Electromagnetic HF field

Designation	Electromagnetic RF field
-------------	--------------------------

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



2810780

<https://www.phoenixcontact.com/pc/products/2810780>

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
-----------------------	--------------

Surge current load (surge)

Comments	Criterion B
----------	-------------

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 in accordance with EN 61010
----------------------	--

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

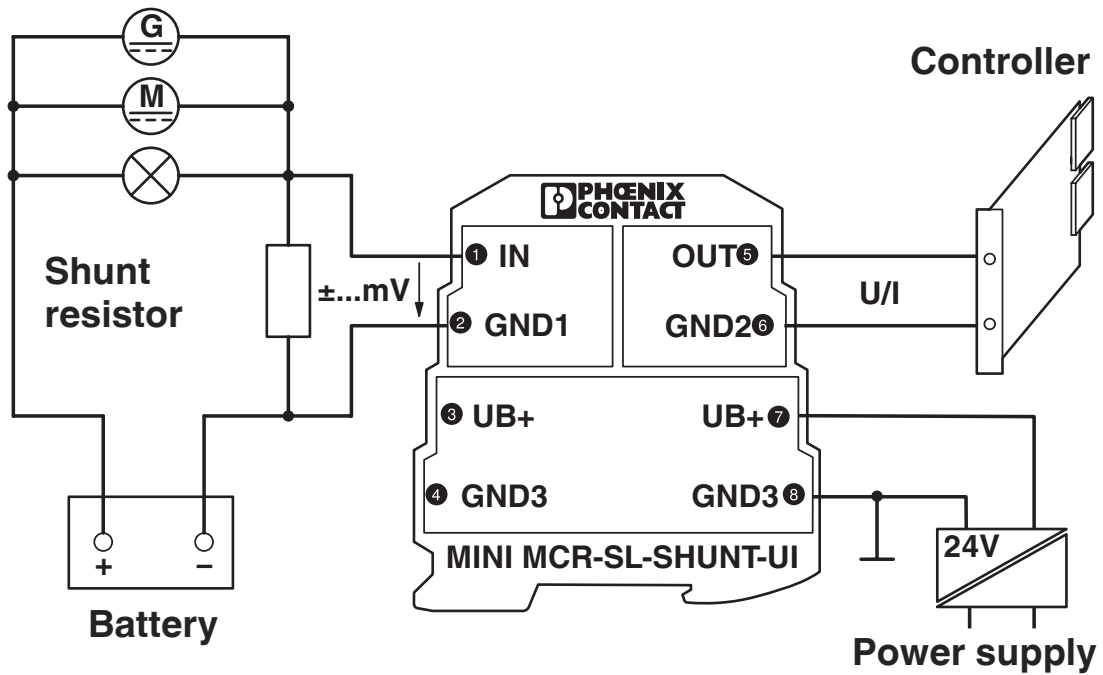
Signal conditioner - MINI MCR-SL-SHUNT-UI-NC

2810780

<https://www.phoenixcontact.com/pc/products/2810780>

Drawings

Application drawing



Monitoring of loading and unloading currents

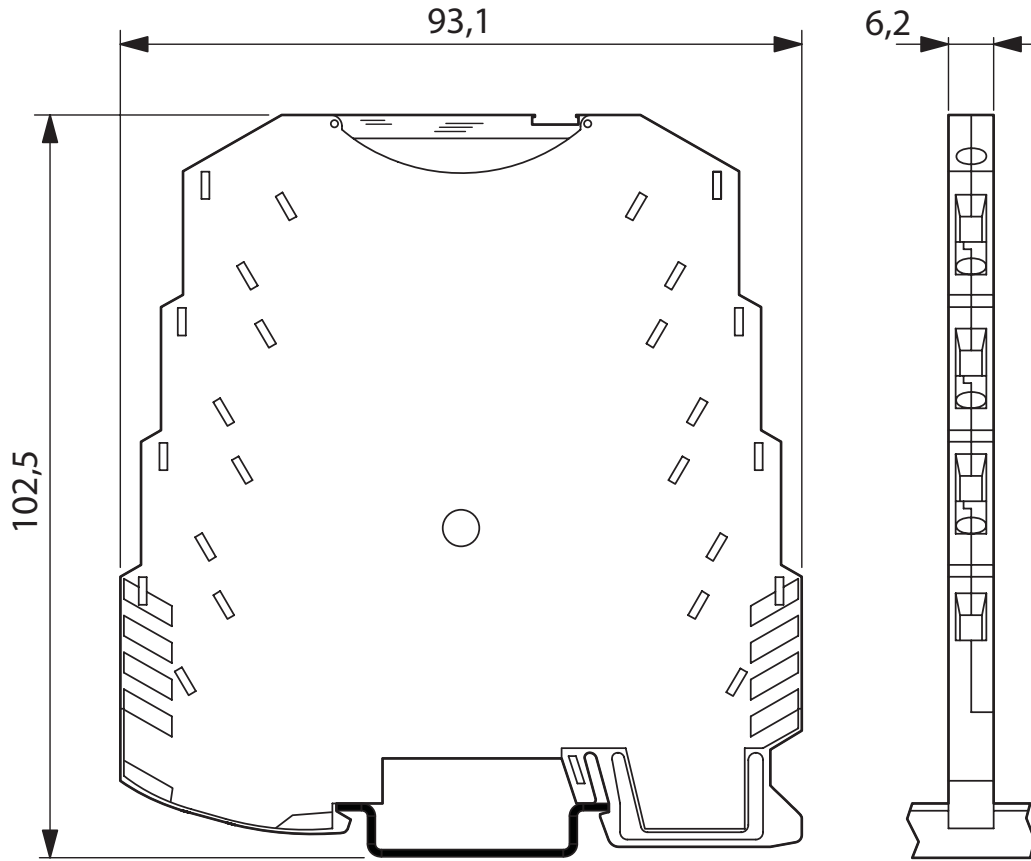
Signal conditioner - MINI MCR-SL-SHUNT-UI-NC

2810780

<https://www.phoenixcontact.com/pc/products/2810780>



Dimensional drawing

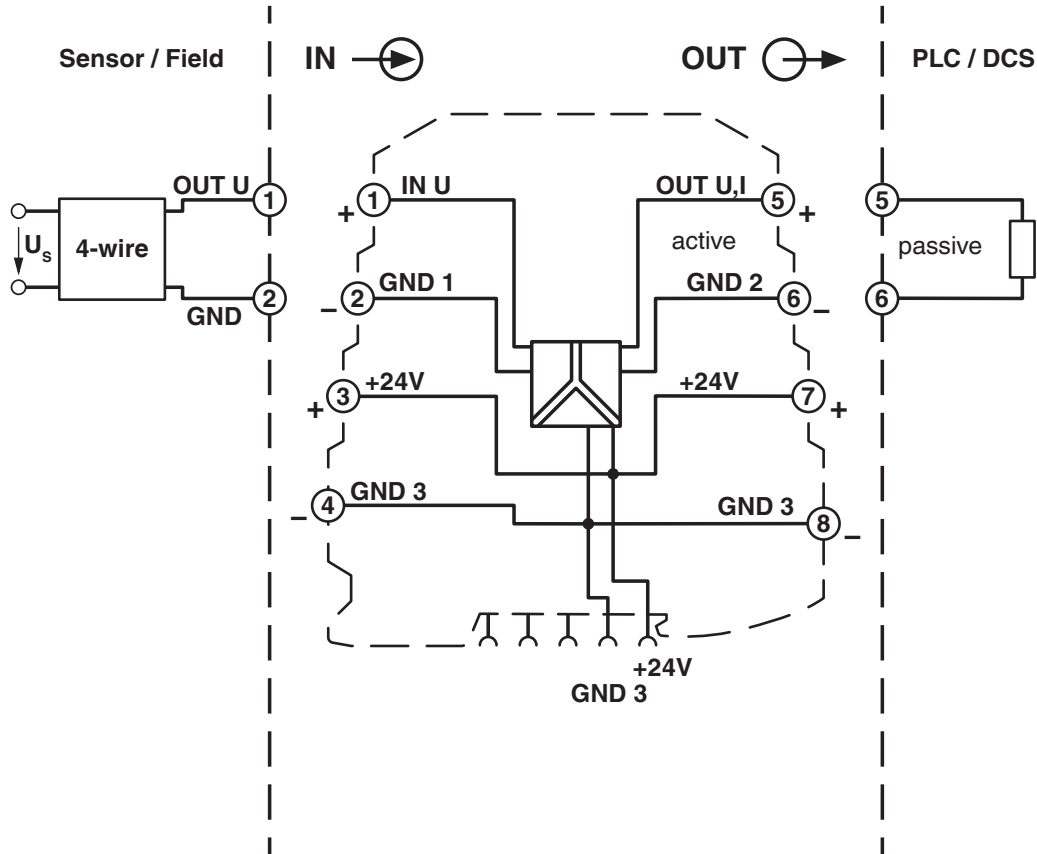


Signal conditioner - MINI MCR-SL-SHUNT-UI-NC

2810780

<https://www.phoenixcontact.com/pc/products/2810780>

Block diagram



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



2810780

<https://www.phoenixcontact.com/pc/products/2810780>

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

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



2810780

<https://www.phoenixcontact.com/pc/products/2810780>

Classifications

ECLASS

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

ETIM

ETIM 8.0	EC002653
----------	----------

UNSPSC

UNSPSC 21.0	39121000
-------------	----------

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



2810780

<https://www.phoenixcontact.com/pc/products/2810780>

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"

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



2810780

<https://www.phoenixcontact.com/pc/products/2810780>

Accessories

Power terminal block

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

<https://www.phoenixcontact.com/pc/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

Power supply unit

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

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



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

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

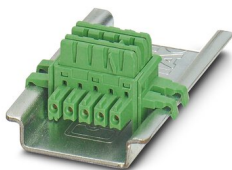
2810780

<https://www.phoenixcontact.com/pc/products/2810780>

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/pc/products/2869728>



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

Transparent cover

Transparent cover - MINI MCR DKL - 2308111

<https://www.phoenixcontact.com/pc/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

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



2810780

<https://www.phoenixcontact.com/pc/products/2810780>

Marking label

Marking label - MINI MCR-DKL-LABEL - 2810272

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

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



Phoenix Contact 2022 © - all rights reserved

<https://www.phoenixcontact.com>

PHOENIX CONTACT GmbH & Co. KG

Flachsmarktstraße 8

D-32825 Blomberg

+49 (0) 5235-3 00

info@phoenixcontact.com