

## 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
Weight per Piece (excluding packing)	80.000 g
Custom tariff number	85437090
Country of origin	Germany

### Technical data

#### Note

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

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

### Technical data

#### 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
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

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### Technical data

#### Input data

	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. input voltage	approx. 3 V DC
Input resistance of voltage input	approx. 10 k $\Omega$

#### 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	$\geq 10$ k $\Omega$
Load/output load current output	< 500 $\Omega$ (at 20 mA)
Ripple	< 20 mV <sub>PP</sub> (at 500 $\Omega$ )
	< 20 mV <sub>PP</sub> (at 10 k $\Omega$ )

#### Power supply

Nominal supply voltage	24 V DC
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### Technical data

#### Power supply

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 <sup>2</sup> ... 2.5 mm <sup>2</sup>
Conductor cross section flexible	0.2 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>
Conductor cross section AWG	26 ... 12

#### 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.
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

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### Technical data

#### General

Certificate of classification	DNV GL TAA00000N1
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
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
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	Class I, Div. 2, Groups A, B, C, D T4
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

#### Environmental Product Compliance

REACH SVHC	Lead 7439-92-1
China RoHS	Environmentally Friendly Use Period = 50

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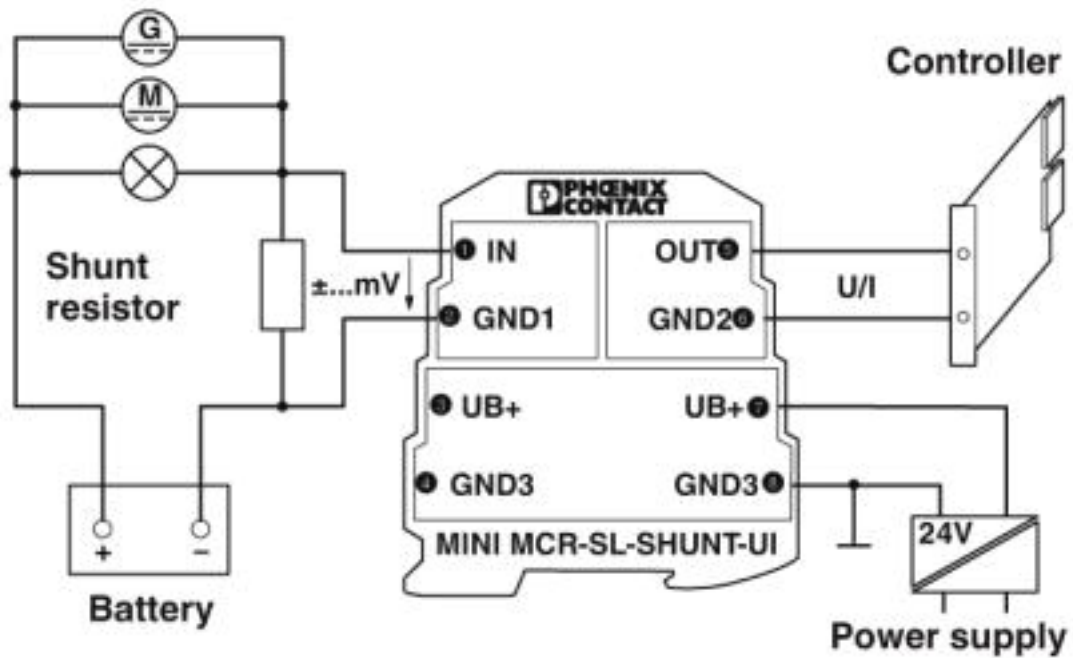
Technical data

Environmental Product Compliance

	For details about hazardous substances go to tab "Downloads", Category "Manufacturer's declaration"
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## Drawings

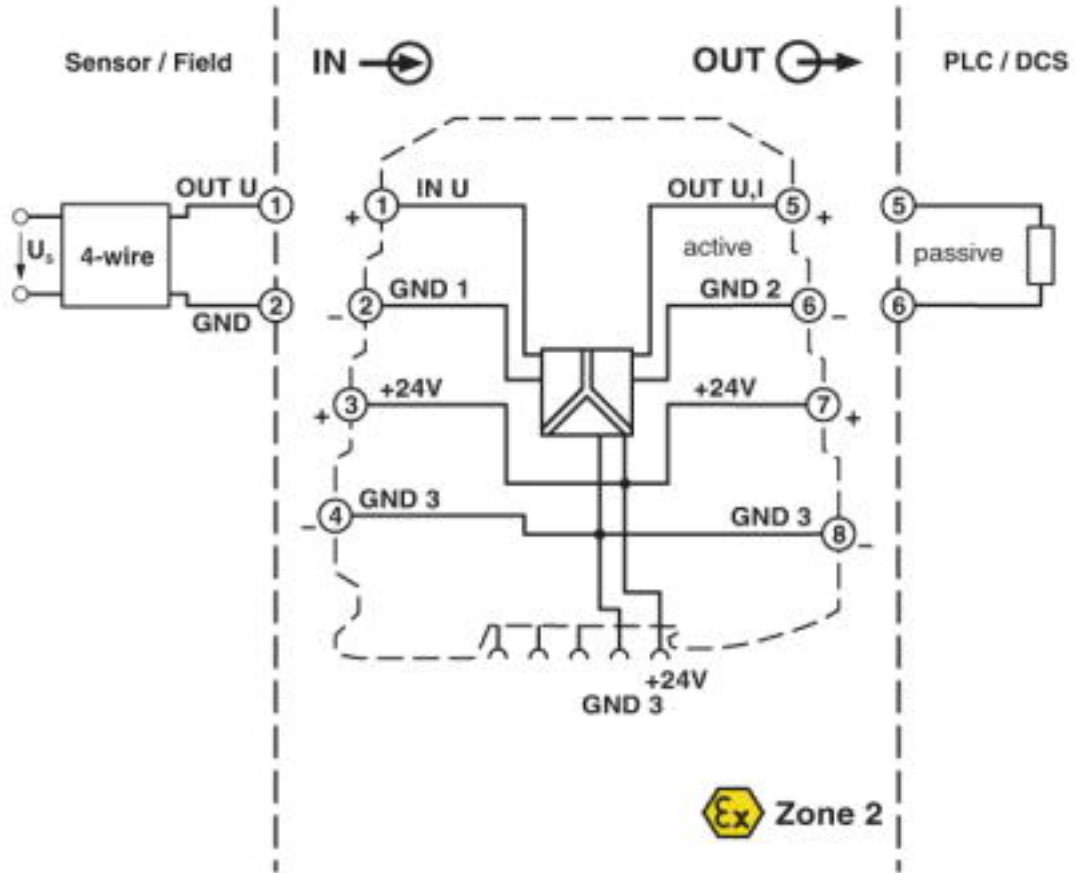
Application drawing



Monitoring of loading and unloading currents

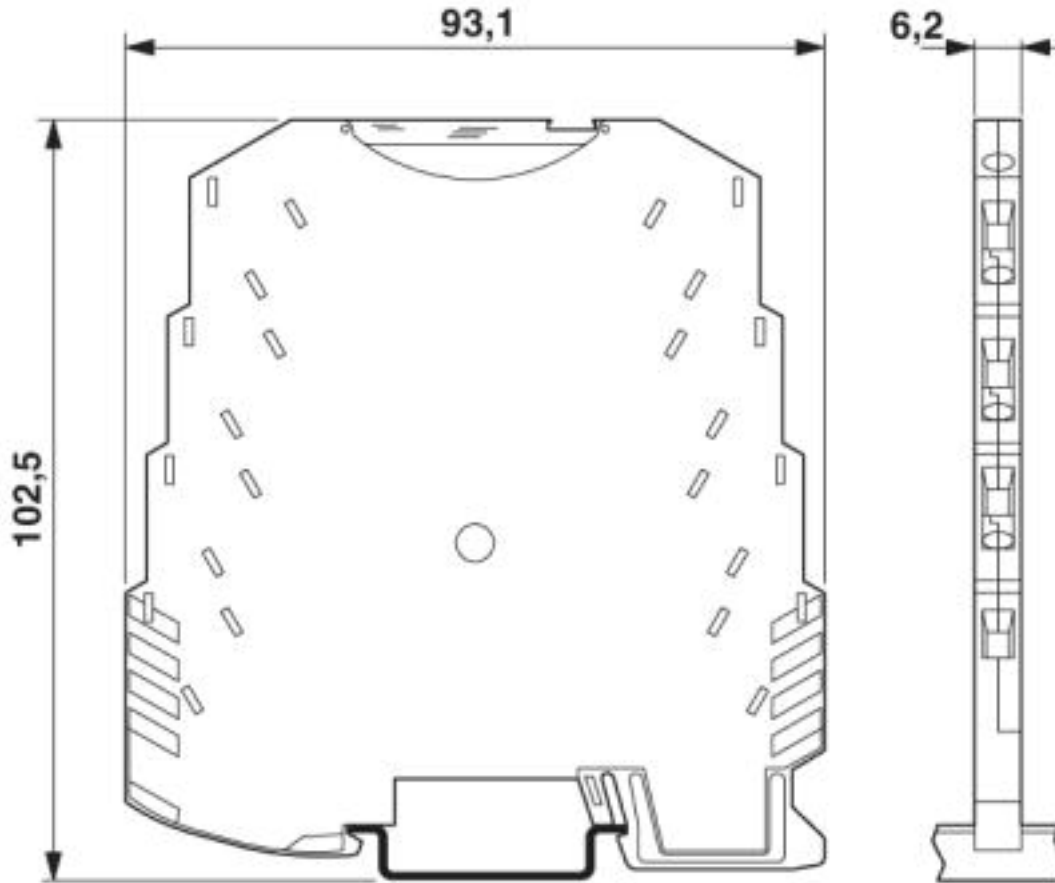
# Signal conditioner - MINI MCR-SL-SHUNT-UI-NC - 2810780

Block diagram



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

Dimensional drawing



## Classifications

eCl@ss

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

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### Classifications

#### ETIM

ETIM 6.0	EC002653
ETIM 7.0	EC002653

#### UNSPSC

UNSPSC 6.01	30211506
UNSPSC 7.0901	39121008
UNSPSC 11	39121008
UNSPSC 12.01	39121008
UNSPSC 13.2	39121008

### Approvals

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DNV GL / UL Recognized / cUL Recognized / cULus Recognized


#### Ex Approvals

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

#### Approval details

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