

# MINI MCR-SL-RPSS-I-I-SP - Repeater power supply



2810230

<https://www.phoenixcontact.com/us/products/2810230>

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MCR repeater power supply with HART transmission, input signal: 4 mA...20 mA, output signal: 4 mA...20 mA, with spring-cage connection. Replacement part: 2902015 MINI MCR-2-RPSS-I-I-PT.

## Your advantages

- Power supply possible via the foot element (TBUS)
- Bidirectional HART transmission as an option
- Can be used as an isolator with passive input
- Supply of 2-conductor and passive 3-conductor sensors
- 3-way isolation
- Highly-compact repeater power supplies for electrical isolation, amplification, and filtering of standard analog signals

## Commercial data

Item number	2810230
Packing unit	1 pc
Note	Made to order (non-returnable)
Sales key	C403
Product key	DK1131
GTIN	4046356009959
Weight per piece (including packing)	112.9 g
Weight per piece (excluding packing)	65 g
Customs tariff number	85437090
Country of origin	DE

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## Technical data

### Product properties

Product type	Repeater power supply
Product family	MINI Analog
No. of channels	1

### Insulation characteristics

Overvoltage category	II
Pollution degree	2

### Electrical properties

Rated insulation voltage	50 V AC/DC
Electrical isolation	Basic insulation in accordance with EN 61010
Electrical isolation between input and output	yes
Limit frequency (3 dB)	175 Hz (typ.)
Test voltage, input/output/supply	1.5 kV AC (50 Hz, 60 s)
Protective circuit	Transient protection
Signal transmission behavior	In = Out
Step response (10-90%)	< 2 ms
Maximum temperature coefficient	< 0.005 %/K
Temperature coefficient, typical	< 0.002 %/K
Maximum transmission error	≤ 0.2 % (of final value)
Transmission error, typical	≤ 0.1 % (of final value)

### Supply

Nominal supply voltage	24 V DC
Supply voltage range	20.4 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)
Power consumption	< 900 mW (at 24 V DC and in repeater power supply operation) < 600 mW (at 24 V DC and in isolator operation)

### Input data

#### Signal

Description of the input	Current input (sensor circuit)
Number of inputs	1
Current input signal	4 mA ... 20 mA (repeater power supply and isolator operation) 0 mA ... 20 mA (isolator operation)
Input resistance current input	approx. 50 Ω
Transmitter supply voltage	16.5 V

### Output data

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## Signal: Current

Number of outputs	1
Open-circuit voltage	approx. 12.5 V
Current output signal	0 mA ... 20 mA (isolator operation) 4 mA ... 20 mA (repeater power supply and isolator operation)
Max. current output signal	> 21 mA (22.5 mA, typical)
Load/output load current output	$\leq 500 \Omega$ ( $I = 20 \text{ mA}$ )
Ripple	$< 20 \text{ mV}_{\text{rms}}$ (at $500 \Omega$ )

## Connection data

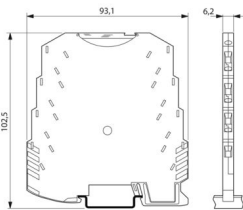
Connection method	Spring-cage connection
Stripping length	8 mm
Conductor cross-section rigid	$0.2 \text{ mm}^2 \dots 2.5 \text{ mm}^2$
Conductor cross-section flexible	$0.2 \text{ mm}^2 \dots 2.5 \text{ mm}^2$
Conductor cross-section AWG	24 ... 12

## Interfaces

### Data communication (bypass)

HART function	Yes
Limit frequency (3 dB)	approx. 2.5 Hz

## Dimensions

Dimensional drawing	
Width	6.2 mm
Height	93.1 mm
Depth	102.5 mm

## Material specifications

Color	green (RAL 6021)
Housing material	PBT
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 and real-life conditions

### Ambient conditions

Degree of protection	IP20
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Ambient temperature (operation)	-20 °C ... 60 °C
Ambient temperature (storage/transport)	-40 °C ... 85 °C

## Approvals

### CE

Certificate	CE-compliant
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### ATEX

Identification	⊕ II 3 G Ex nA IIC T4 Gc X
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### UL, USA/Canada

Identification	UL 508 Listed
	Class I, Div. 2, Groups A, B, C, D T4
	Class I, Zone 2, Group IIC

### Shipbuilding approval

Identification	BBBAA
Certificate	DNV GL TAA00000N1

## 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
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### 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
Standards/regulations	EN 61000-4-3
Typical deviation from the measuring range final value	3 %

### Fast transients (burst)

Designation	Fast transients (burst)
Standards/regulations	EN 61000-4-4
Typical deviation from the measuring range final value	3 %

### Surge current load (surge)

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

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Comments	Criterion B
Conducted interference	
Designation	Conducted interferences
Standards/regulations	EN 61000-4-6
Typical deviation from the measuring range final value	3 %

## Standards and regulations

Electrical isolation	Basic insulation in accordance with EN 61010
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## Mounting

Mounting type	DIN rail mounting
Assembly note	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.
Mounting position	any

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## Drawings

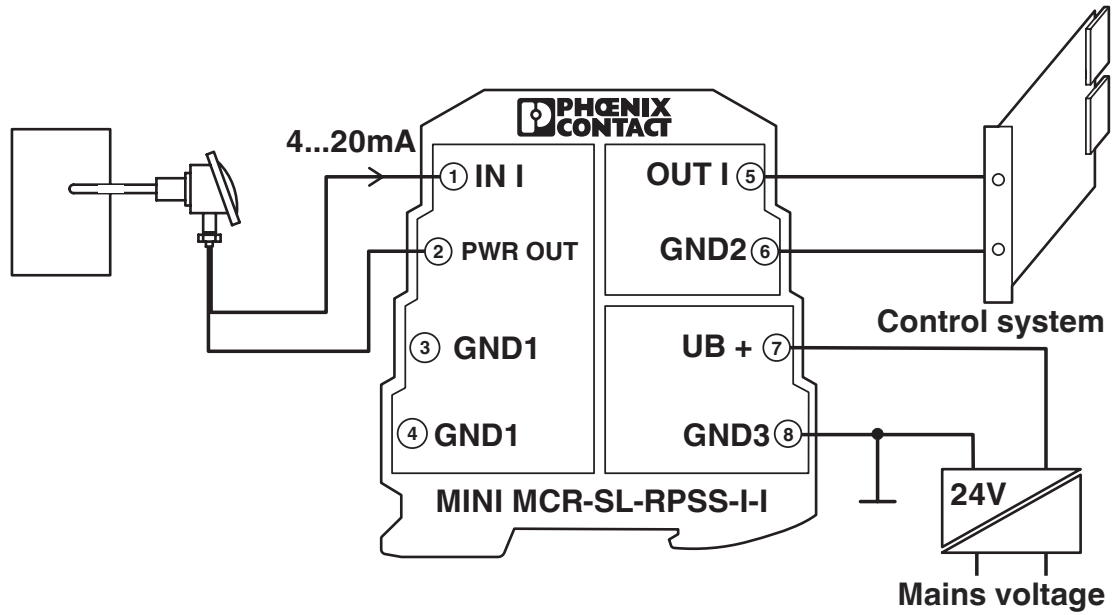


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Application drawing



Repeater power supply operation with a passive sensor

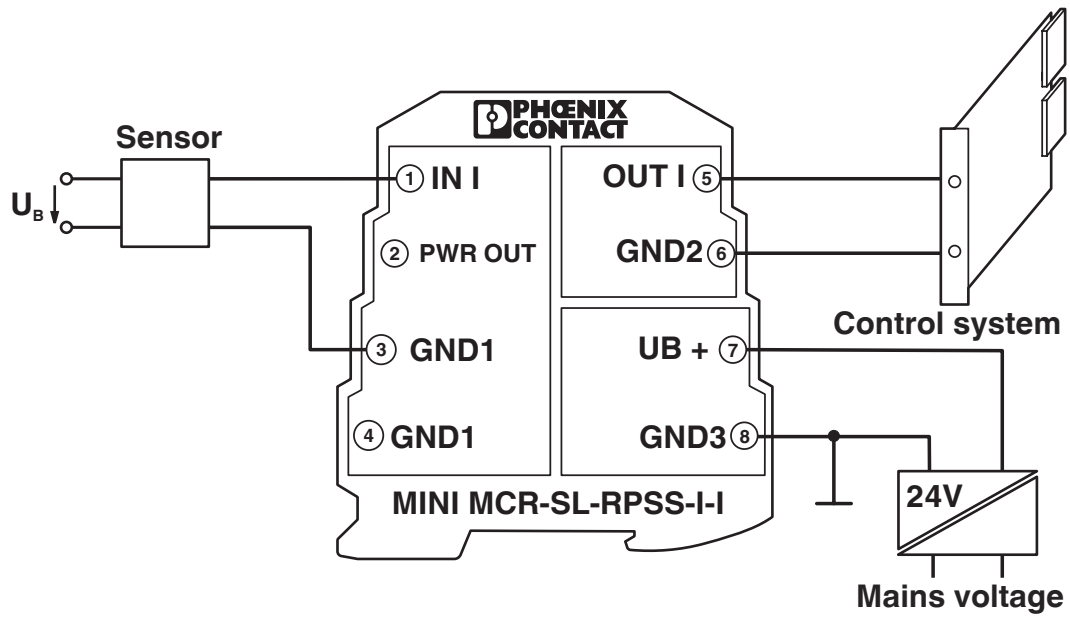
# MINI MCR-SL-RPSS-I-I-SP - Repeater power supply



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Application drawing



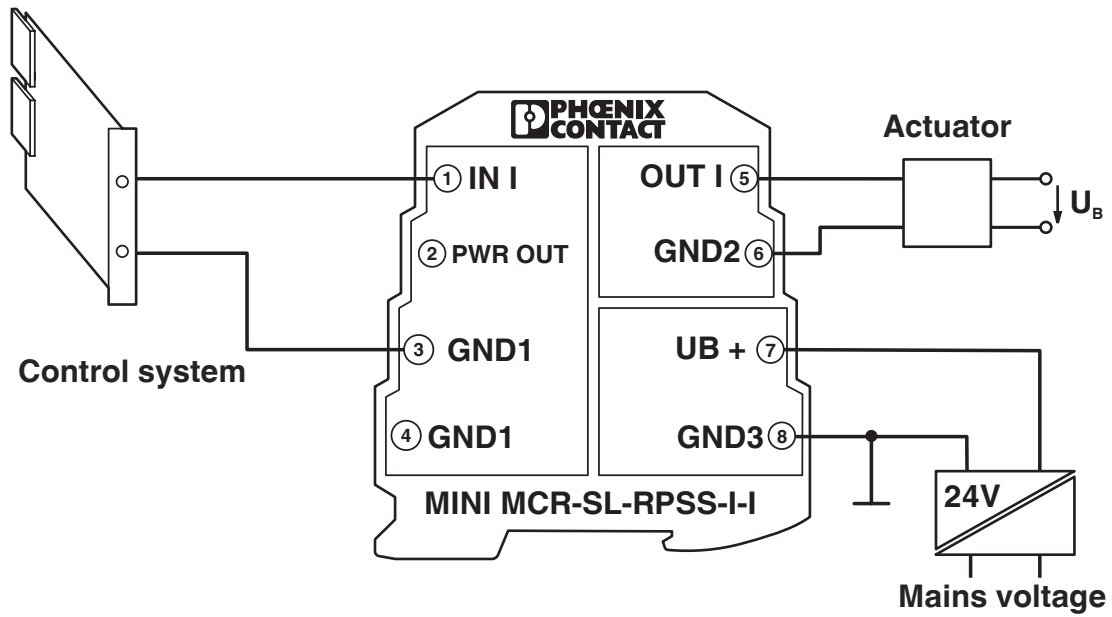
Isolator operation with an active sensor

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Application drawing



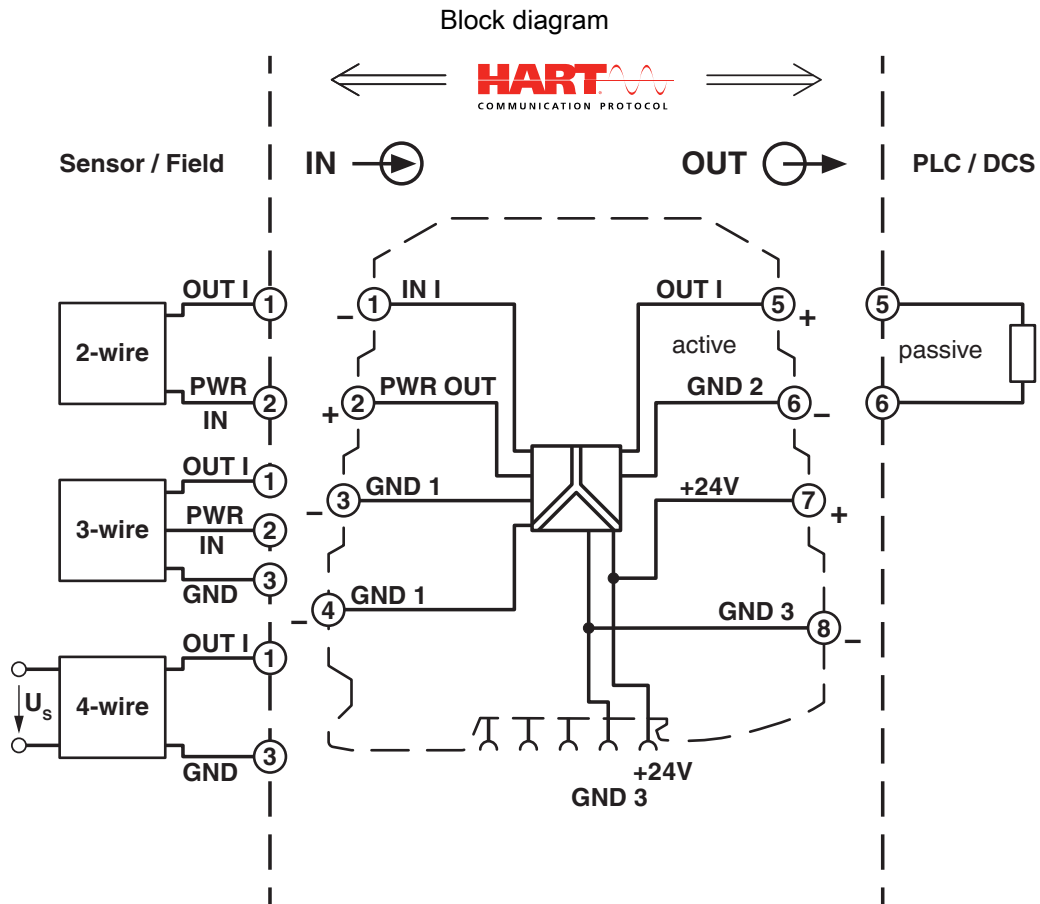
Isolator operation at the analog output module

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## Classifications

### UNSPSC

UNSPSC 21.0	39121008
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## 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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