

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



2864079

<https://www.phoenixcontact.com/in/products/2864079>

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MCR repeater power supply with HART transparency, input signal: 4 mA ... 20 mA, output signal: 4 mA ... 20 mA, with screw connection

Product Description

The 6.2 mm wide MINI MCR-SL-RPSS-I-I... repeater power supply supplies the transmitter in the field in case of simultaneous galvanic 3-way separation between input, output and supply.

HART data protocols can be transmitted bidirectionally. The module can be used in both isolator and repeater power supply operation.

On the input and output side, the analog standard signals 0...20 mA or 4...20 mA are available, electrically isolated.

Voltage (20.4 V DC to 30 V DC) can be supplied through connection terminal blocks on the modules or in conjunction with the DIN rail connector.

Your advantages

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

Commercial Data

Item number	2864079
Packing unit	1 pc
Minimum order quantity	1 pc
Sales Key	CK1
Product Key	CK1211
Catalog Page	Page 99 (C-7-2015)
GTIN	4046356046428
Weight per Piece (including packing)	87.8 g
Weight per Piece (excluding packing)	87.8 g
Customs tariff number	85437090
Country of origin	DE

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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	Repeater power supplies
Product family	MINI Analog
No. of channels	1

Insulation characteristics

Overvoltage category	II
Pollution degree	2

Electrical properties

No. of channels	1
Electrical isolation	3-way isolation
Electrical isolation between input and output	yes
Limit frequency (3 dB)	175 Hz (typ.)
Maximum power dissipation for nominal condition	700 mW (24 V DC) 400 mW (24 V DC)
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)

Electrical isolation Input/output/power supply

Rated insulation voltage	50 V AC/DC
Test voltage	1.5 kV AC (50 Hz, 60 s)
Insulation	Basic insulation in accordance with IEC/EN 61010

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

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Signal: Current

Description of the input	Sensor circuit
Number of inputs	1
Current input signal	0 mA ... 20 mA (isolator operation) 4 mA ... 20 mA (repeater power supply and isolator operation)
Max. current input signal	28 mA
Input resistance current input	approx. 50 Ω
Transmitter supply voltage	16.5 V

Output data

Signal: Current

Number of outputs	1
Non-load 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 mA)
Ripple	< 20 mV _{rms} (at 500 Ω)

Connection data

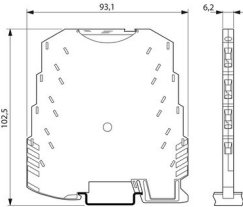
Connection method	Screw connection
Stripping length	12 mm
Screw thread	M3
Conductor cross section rigid	0.2 mm ² ... 2.5 mm ²
Conductor cross section flexible	0.2 mm ² ... 2.5 mm ²
Conductor cross section AWG	26 ... 12

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	101.2 mm

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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 ... 60 °C
Ambient temperature (storage/transport)	-40 °C ... 85 °C
Altitude	≤ 2000 m
Permissible humidity (operation)	5 % ... 95 % (non-condensing)

Approvals

CE

Certificate	CE-compliant
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UKCA

Certificate	UKCA-compliant
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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

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

Noise immunity	EN 61000-6-2
Note	When being exposed to interference, there may be minimal deviations.
Electromagnetic compatibility	Conformance with EMC directive
Noise emission	EN 61000-6-4

Electrostatic discharge

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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)

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	3 %

Standards and regulations

Electrical isolation	3-way isolation
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Mounting

Mounting type	DIN rail mounting
Assembly instructions	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

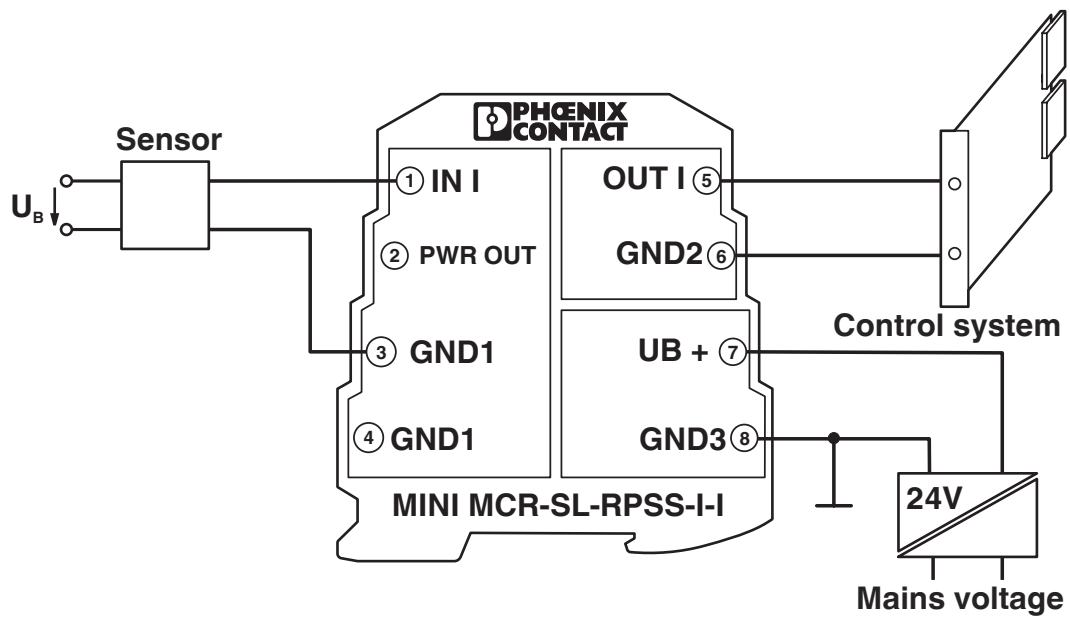
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Drawings

Application drawing



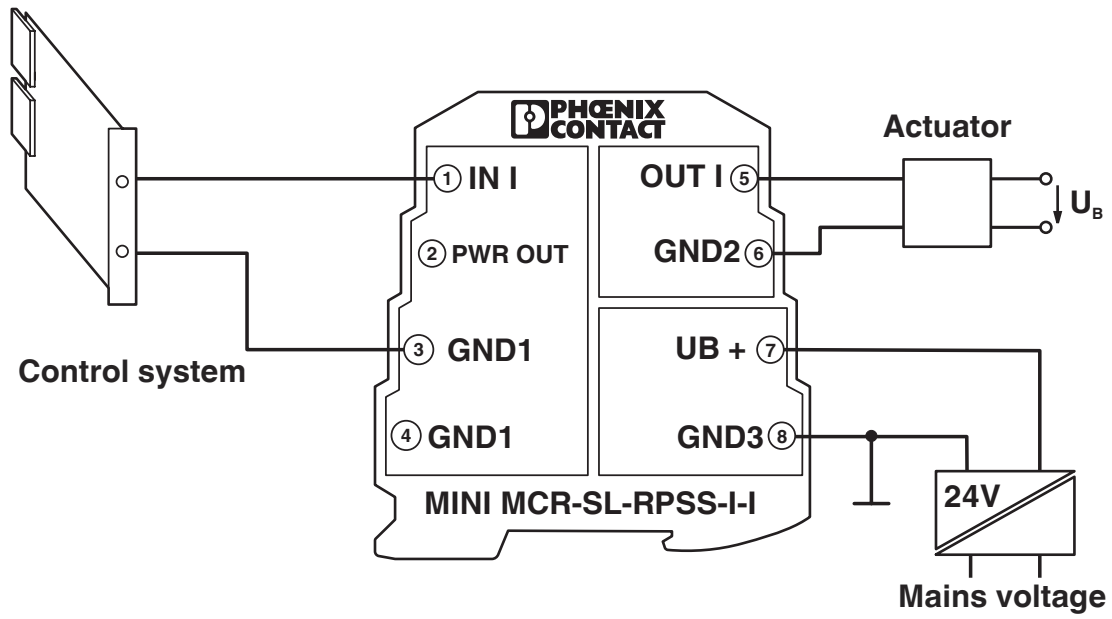
Isolator operation with an active sensor

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Application drawing



Isolator operation at the analog output module

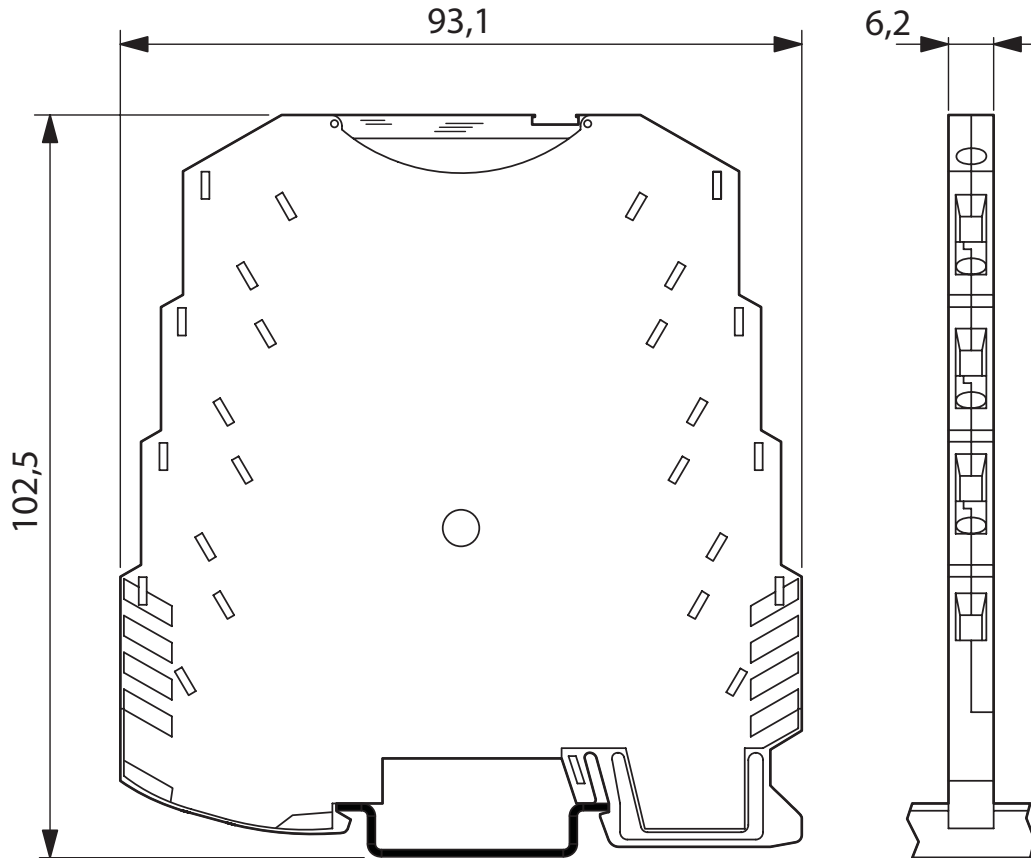
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Dimensional drawing

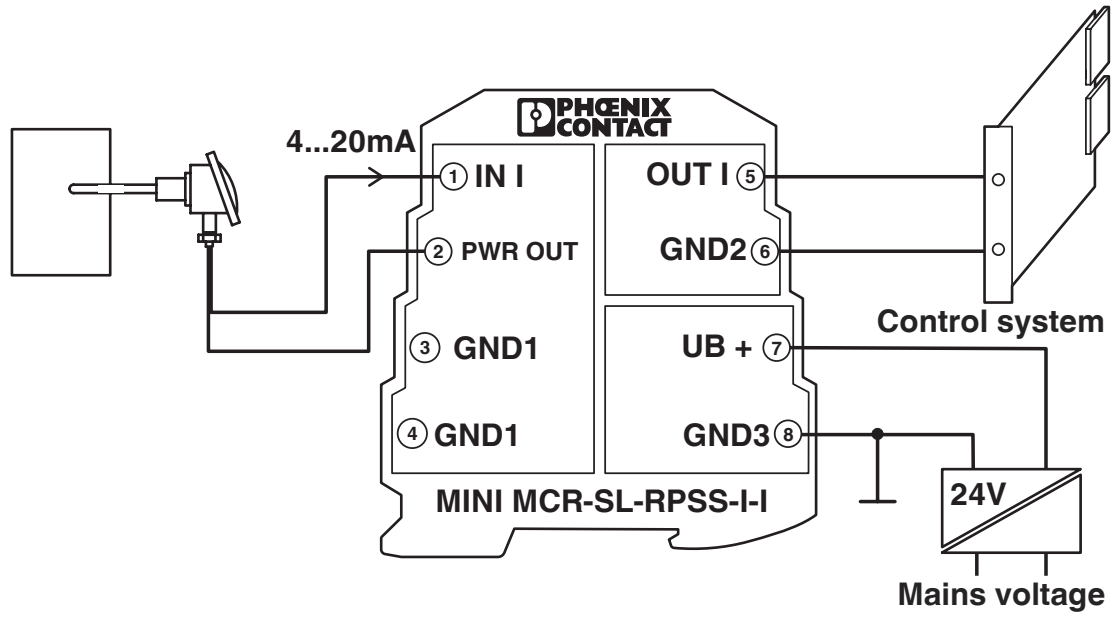


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Application drawing

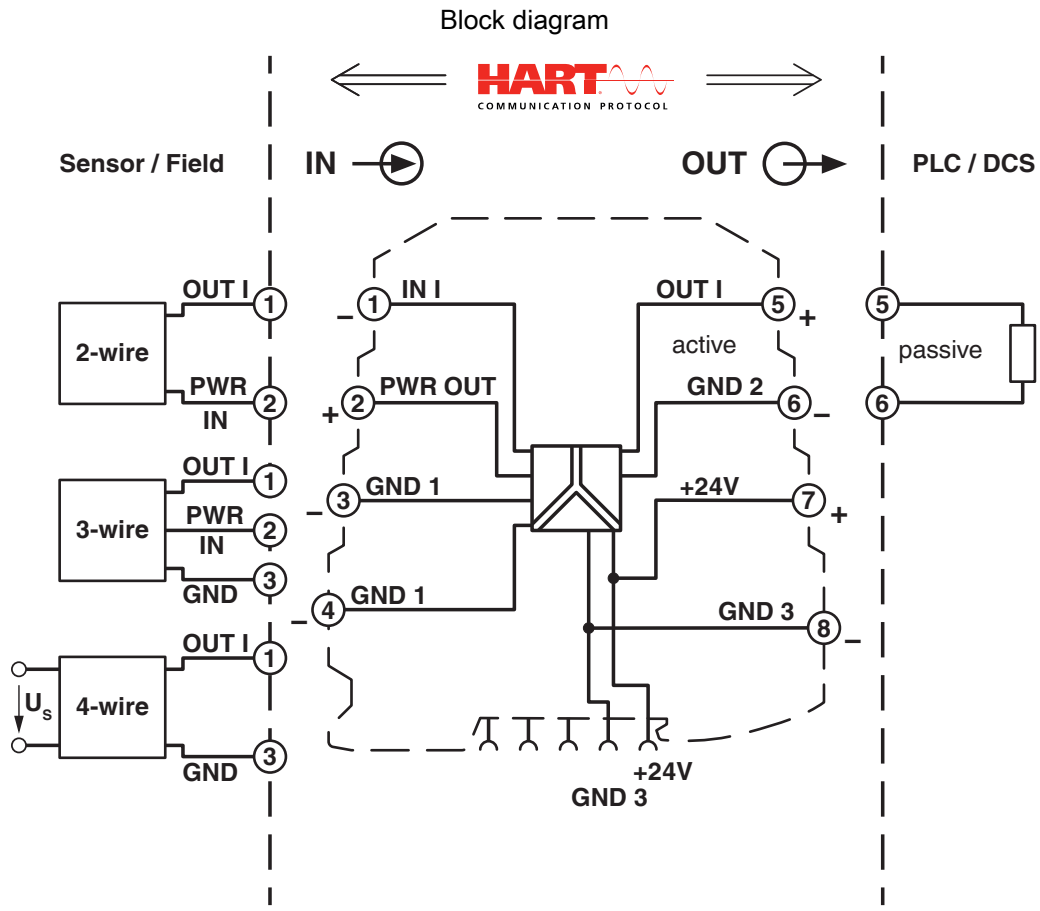


Repeater power supply operation with a passive sensor

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Approvals

 **UL Listed**
Approval ID: FILE E 238705

 **cUL Listed**
Approval ID: FILE E 238705

 **DNV GL**
Approval ID: TAA000020N

 **cUL Recognized**
Approval ID: FILE E 199827

 **UL Recognized**
Approval ID: FILE E 199827

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Classifications

ECLASS

ECLASS-11.0	27210120
ECLASS-12.0	27210120
ECLASS-13.0	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

TC-D37SUB-AIO16-M-PS-UNI - Module carrier

2902934

<https://www.phoenixcontact.com/in/products/2902934>



Universal termination carrier for connecting 16 MINI Analog signal conditioners to digital or analog I/O cards, via D-SUB connector, 37-pos. (1:1 connection), with HART multiplexer connection

TC-D37SUB-ADIO16-M-P-UNI - Module carrier

2902933

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Universal termination carrier for connecting 16 MINI Analog signal conditioners to digital or analog I/O cards, via D-SUB connector, 37-pos. (1:1 connection)

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GW HART USB MODEM - Cable adapter

1003824

<https://www.phoenixcontact.com/in/products/1003824>



USB HART modem cable for communication between a PC and HART devices, cable length: 1m.

MINI MCR-SL-PTB - Power terminal block

2864134

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

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

2904614

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

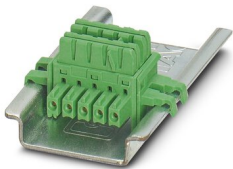


Primary-switched power supply, QUINT POWER, screw connection, DIN rail mounting, supply of devices possible via the TBUS DIN rail connector, protective coating, input: single-phase, output: 24 V DC/2.5 A

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

2869728

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



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

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MINI MCR DKL - Transparent cover

2308111

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

MINI MCR-DKL-LABEL - Marking label

2810272

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



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

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