

MACX MCR-SL-RPSSI-2I-SP - Repeater power supply



2924838

<https://www.phoenixcontact.com/us/products/2924838>

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.



Measuring transducer repeater power supply and input signal conditioner transmits supplied or active 0 mA/4 mA ... 20 mA electrically isolated signals from the field to two loads. number of channels: 1, HART-transparent, Standard configuration, 3-way isolation, Safety Integrity Level (SIL, IEC 61508): 2, Performance Level (ISO 13849): d / KAT 2, Systematic Capability: 3, Push-in connection

Your advantages

- Power supply possible via DIN rail connector
- Up to SIL 2 in accordance with EN 61508
- Installation in zone 2, protection type "n" (EN 60079-15) permitted
- Two electrically isolated 0/4 mA ... 20 mA (active) outputs
- Bidirectional transmission of digital HART communication signals (both outputs)
- Plug-in screw or spring-cage connection technology (Push-in technology), with integrated sockets for HART communicators
- Input: 0/4 mA ... 20 mA (powered or not powered)
- 4-way electrical isolation

Commercial data

Item number	2924838
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	C402
Product key	DK1111
GTIN	4046356572057
Weight per piece (including packing)	230.7 g
Weight per piece (excluding packing)	153 g
Customs tariff number	85437090
Country of origin	DE

Technical data

Product properties

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

Electrical properties

Electrical isolation	3-way isolation
Electrical isolation between input and output	yes
Maximum power dissipation for nominal condition	1.45 W (24 V DC / 20 mA)
Signal transmission behavior	In = Out
Step response (10-90%)	1.3 ms (for jump 4 mA ... 20 mA, typical)
Maximum temperature coefficient	< 0.01 %/K
Maximum transmission error	< 0.1 % (of final value 20 mA)
Transmission error, typical	< 0.05 % (of final value 20 mA)

Electrical isolation

Overvoltage category	II
Pollution degree	2

Electrical isolation Input/output/power supply IEC/EN 61010-1

Standards/regulations	IEC/EN 61010-1
Rated insulation voltage	300 V _{rms}
Test voltage	2.5 kV AC (50 Hz, 60 s)
Insulation	Safe isolation

Electrical isolation Output 1/output 2

Test voltage	1.5 kV AC (50 Hz, 60 s)
--------------	-------------------------

Supply

Designation	Repeater power supply operation
Nominal supply voltage	24 V DC -20 % ... +25 %
Supply voltage range	19.2 V DC ... 30 V DC
Max. current consumption	< 75 mA (24 V DC / 20 mA)
Power dissipation	< 1.45 W (24 V DC / 20 mA)
Power consumption	≤ 1.8 W

Supply

Designation	Signal conditioner operation
Nominal supply voltage	24 V DC -20 % ... +25 %
Supply voltage range	19.2 V DC ... 30 V DC
Max. current consumption	< 46 mA (24 V DC / 20 mA)
Power dissipation	< 1.2 W (24 V DC / 20 mA)

Input data

MACX MCR-SL-RPSSI-2I-SP - Repeater power supply



2924838

<https://www.phoenixcontact.com/us/products/2924838>

Signal: Repeater power supply operation

Description of the input	Repeater power supply operation
Number of inputs	1
Current input signal	4 mA ... 20 mA
Transmitter supply voltage	> 21.5 V (20 mA) > 21 V (23 mA)
Underload/overload signal range	0 mA ... 24 mA (Extended transmission range for diagnostics)

Signal: Signal conditioner operation

Description of the input	Signal conditioner operation
Current input signal	0 mA ... 20 mA 4 mA ... 20 mA
Voltage drop	< 3.9 V (in input isolating amplifier operation)
Underload/overload signal range	0 mA ... 24 mA (Extended transmission range for diagnostics)

Output data

Signal: Repeater power supply operation

Output description	Repeater power supply operation
Number of outputs	2
Current output signal	4 mA ... 20 mA (active) 0 mA ... 20 mA
Load/output load current output	< 450 Ω (20 mA) < 380 Ω (23 mA)
Output ripple	< 20 mV _{rms}
Output behavior in the event of an error	0 mA (Cable break in the input) $\geq$ 23 mA (Cable short-circuit in the input)
Underload/overload signal range	0 mA ... 24 mA (Extended transmission range for diagnostics)

Signal: Signal conditioner operation

Output description	Signal conditioner operation
Current output signal	0 mA ... 20 mA (active) 4 mA ... 20 mA (active)
Load/output load current output	< 450 Ω (20 mA) < 380 Ω (23 mA)
Output ripple	< 20 mV _{rms}
Output behavior in the event of an error	0 mA (Cable break in the input) 0 mA (Cable short-circuit in the input)
Underload/overload signal range	0 mA ... 24 mA (Extended transmission range for diagnostics)

Connection data

Connection method	Push-in connection
Stripping length	10 mm
Conductor cross-section rigid	0.2 mm ² ... 2.5 mm ²
Conductor cross-section flexible	0.2 mm ² ... 2.5 mm ²

MACX MCR-SL-RPSSI-2I-SP - Repeater power supply



2924838

<https://www.phoenixcontact.com/us/products/2924838>

Conductor cross-section flexible (2 conductors with same cross section)	0.25 mm² ... 0.34 mm² (TWIN ferrule without plastic sleeve)
	0.5 mm² ... 1.5 mm² (TWIN ferrule with plastic sleeve)
Conductor cross-section AWG	24 ... 14
	24 ... 22 (TWIN ferrule without plastic sleeve)
	20 ... 16 (TWIN ferrule with plastic sleeve)

Ex data

Ex installation (EPL)	Gc
	Div. 2

Interfaces

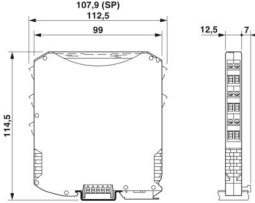
Data communication (bypass)

HART function	Yes
Protocols supported	HART-transparent

Signaling

Status display	Green LED (supply voltage)
----------------	----------------------------

Dimensions

Dimensional drawing	
Width	12.5 mm
Height	107.9 mm
Depth	113.7 mm
Depth NS 35/7,5	114.5 mm (Snapped onto DIN rail NS 35/7,5 in accordance with EN 60715)

Material specifications

Color	gray (RAL 7042)
Flammability rating according to UL 94 (Housing)	V0 (Housing)
Housing material	PA 6.6-FR

Environmental and real-life conditions

Ambient conditions

Degree of protection	IP20 (not assessed by UL)
Ambient temperature (operation)	-40 °C ... 60 °C (Any mounting position)
	-40 °C ... 70 °C (Derating)
Ambient temperature (storage/transport)	-40 °C ... 80 °C
Permissible humidity (operation)	10 % ... 95 % (non-condensing)

MACX MCR-SL-RPSSI-2I-SP - Repeater power supply



2924838

<https://www.phoenixcontact.com/us/products/2924838>

Altitude range (≤ 2000 m)

Altitude	≤ 2000 m (The technical data refers to altitudes ≤ 2000 m above mean sea level. For altitudes > 2000 m above mean sea level, refer to the data sheet.)
Ambient temperature (operation)	-40 °C ... 60 °C -40 °C ... 70 °C (Derating)
Rated insulation voltage	375 V _{PP} (Power supply, input / output)

Altitude range (≤ 3000 m)

Height range	> 2000 m ... 3000 m
Ambient temperature (operation)	-40 °C ... 54 °C -40 °C ... 63 °C (Derating)
Rated insulation voltage	190 V AC (Power supply, input / output) 110 V DC (Power supply, input / output)

Altitude range (≤ 4000 m)

Height range	> 3000 m ... 4000 m
Ambient temperature (operation)	-40 °C ... 48 °C -40 °C ... 56 °C (Derating)
Rated insulation voltage	60 V AC/DC (Power supply, input / output)

Altitude range (≤ 5000 m)

Height range	> 4000 m ... 5000 m
Ambient temperature (operation)	-40 °C ... 42 °C -40 °C ... 49 °C (Derating)
Rated insulation voltage	60 V AC/DC (Power supply, input / output)

Approvals

CE

Certificate	CE-compliant
Note	and EN 61326-1

ATEX

Identification	Ex II 3 G Ex ec IIC T4 Gc X
Certificate	PxCCIF11ATEX2924825

IECEx

Identification	Ex ec IIC T4 Gc
Certificate	IECEx BVS 10.0097X

CCC / China-Ex

Identification	Ex ec IIC T4 Gc
Certificate	2022122316115971

UL, USA/Canada

Identification	UL 508 Listed UL 61010 Listed
----------------	----------------------------------

MACX MCR-SL-RPSSI-2I-SP - Repeater power supply



2924838

<https://www.phoenixcontact.com/us/products/2924838>

	Class I, Div. 2, Groups A, B, C, D T4
	Class I, Zone 2, Groups IIC, IIB, IIA T4

Shipbuilding approval

Certificate	DNV GL TAA000020C
-------------	-------------------

Safety Integrity Level (SIL, IEC 61508)

Identification	2
Certificate	IN-AT-AS-MRL-23-00432A

Systematic Capability

Identification	3
----------------	---

Performance Level (ISO 13849)

Identification	d / KAT 2
----------------	-----------

INMETRO

Identification	Ex ec IIC T4 Gc
Certificate	DNV 18.0139 X

Shipbuilding data

Temperature	B
Humidity	B
Vibration	A
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 immunity	EN 61000-6-2
Note	When being exposed to interference, there may be minimal deviations.

Noise emission

Standards/regulations	EN 61000-6-4
-----------------------	--------------

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 %

Conducted interference

Designation	Conducted interferences
-------------	-------------------------

MACX MCR-SL-RPSSI-2I-SP - Repeater power supply



2924838

<https://www.phoenixcontact.com/us/products/2924838>

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

Standards and regulations

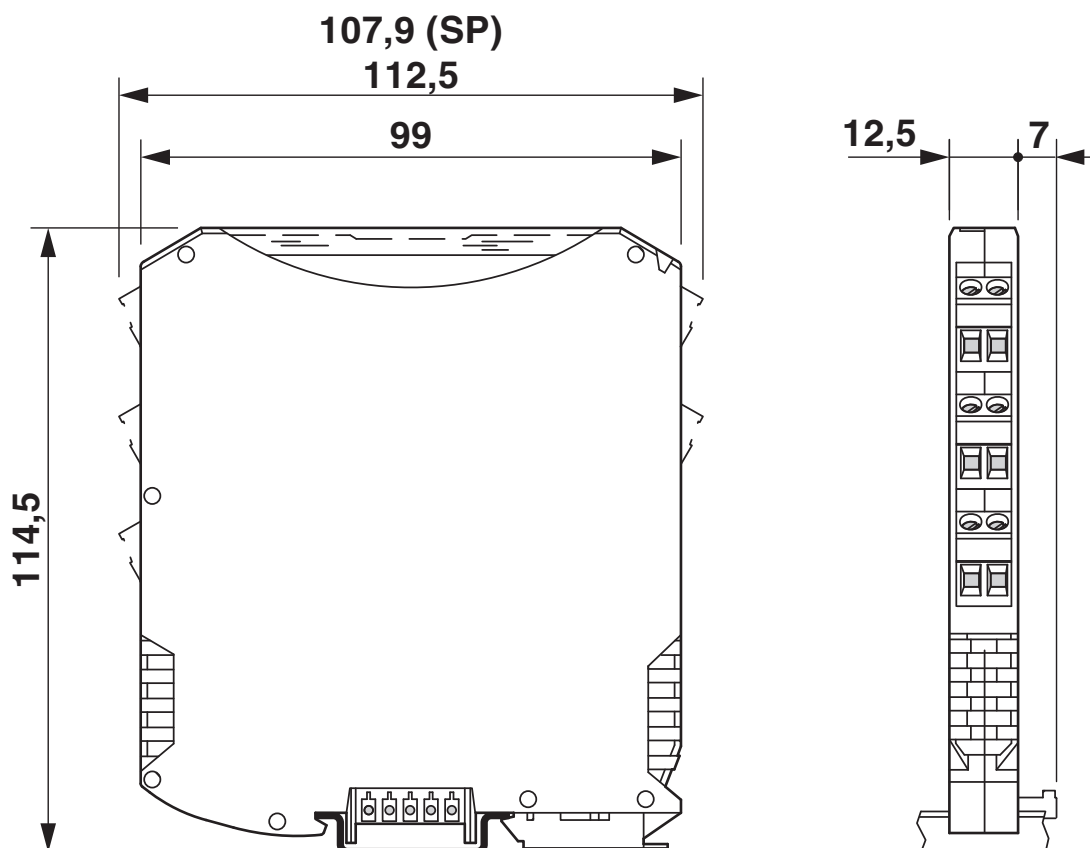
Electrical isolation	3-way isolation
----------------------	-----------------

Mounting

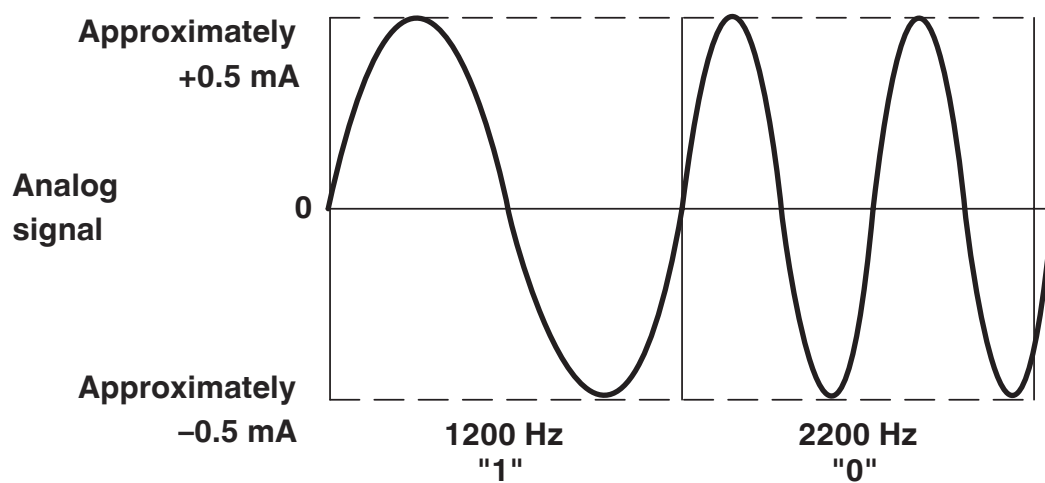
Mounting type	DIN rail mounting
---------------	-------------------

Drawings

Dimensional drawing

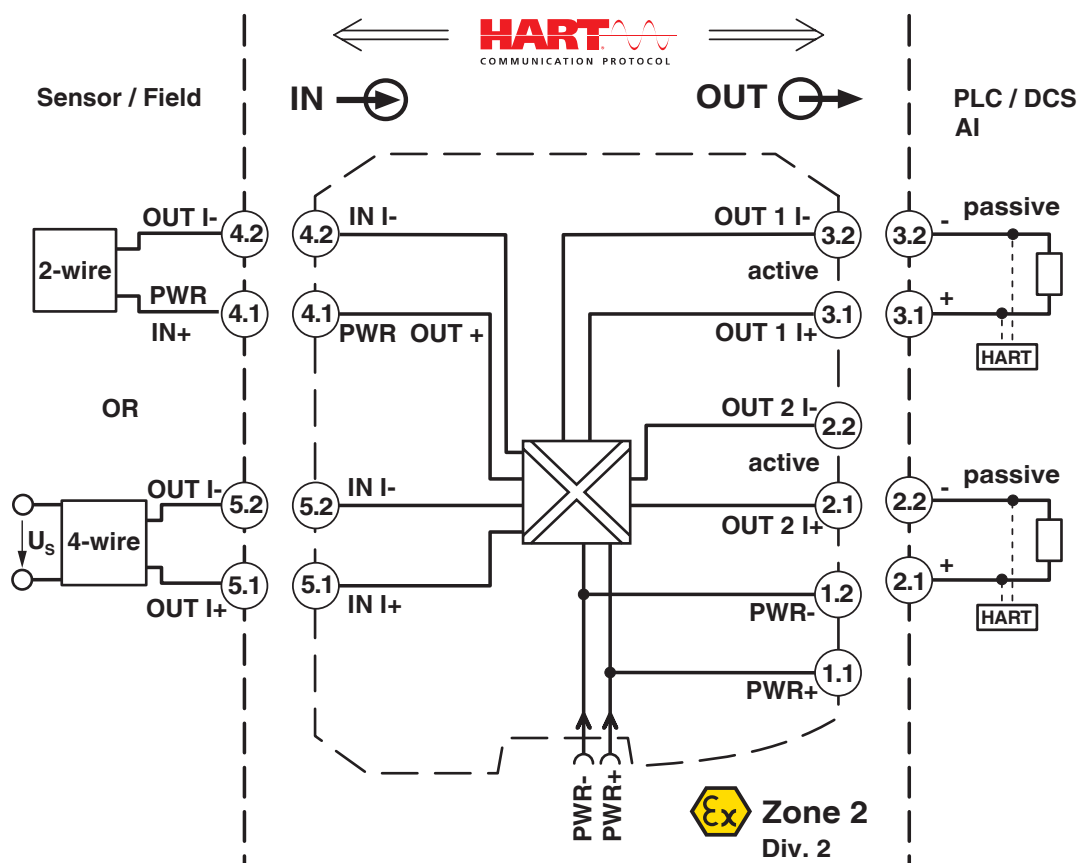


Diagram



Signal transmission analog and digital at the same time

Block diagram



MACX MCR-SL-RPSSI-2I-SP - Repeater power supply



2924838

<https://www.phoenixcontact.com/us/products/2924838>

Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/2924838>



UL Listed

Approval ID: E330267



cUL Listed

Approval ID: E330267

Functional Safety

Approval ID: BVS PB 13-10-04

DNV

Approval ID: TAA000020C



EAC Ex

Approval ID: TP012 103.01 00078



cUL Listed

Approval ID: FILE E 199827



UL Listed

Approval ID: FILE E 199827



IECEx

Approval ID: IECEx BVS 10.0097X



CCC

Approval ID: 2022122316115971

MACX MCR-SL-RPSSI-2I-SP - Repeater power supply



2924838

<https://www.phoenixcontact.com/us/products/2924838>

Classifications

ECLASS

ECLASS-13.0	27210120
ECLASS-15.0	27210120

ETIM

ETIM 9.0	EC002653
----------	----------

UNSPSC

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

Environmental product compliance

EU RoHS

Fulfills EU RoHS substance requirements	Yes
Exemption	6(c), 7(a), 7(c)-I

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.)	Lead(CAS: n/a)
SCIP	f14a7259-76c2-44b8-b736-209837a72a63