

# MACX MCR-EX-SL-RPSS-2I-2I-SP - Repeater power supply



2924676

<https://www.phoenixcontact.com/us/products/2924676>

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.



Ex i measuring transducer repeater power supply, 2-channel, HART-transparent. Supplies Ex i 2-conductor measuring transducers and transmits the 4...20 mA signal from the Ex area to the safe area. 5-way electrical isolation, Push-in connection, up to SIL 3, PL.

## Your advantages

- 2-channel
- Input: 4 mA ... 20 mA, intrinsically safe, [Ex ia], powered
- Output: 4 mA ... 20 mA, active
- HART-compatible
- Error indication according to NAMUR NE 43
- Up to SIL 3 according to IEC/EN 61508
- 5-way electrical isolation
- Power supply possible via DIN rail connector
- Installation in Ex zone 2 permitted
- Plug-in connection terminals, push-in connection technology
- Housing width: 12.5 mm
- Minimal power dissipation
- High transmission accuracy

## Commercial data

Item number	2924676
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	C430
Product key	DK1211
GTIN	4046356665483
Weight per piece (including packing)	233 g
Weight per piece (excluding packing)	212.7 g
Customs tariff number	85437090
Country of origin	DE

# MACX MCR-EX-SL-RPSS-2I-2I-SP - Repeater power supply



2924676

<https://www.phoenixcontact.com/us/products/2924676>

## Technical data

### Product properties

Product type	Repeater power supply
Product family	MACX Analog
Application	Analog IN
No. of channels	2

### Electrical properties

Electrical isolation	5-way isolation
Electrical isolation between input and output	yes
Signal transmission behavior	In = Out
Step response (10-90%)	< 1.3 ms (for 4 mA ... 20 mA step)
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 <sub>rms</sub>
Test voltage	2.5 kV AC (50 Hz, 60 s)
Insulation	Safe isolation

#### Electrical isolation Input/output IEC/EN 60079-11

Standards/regulations	IEC/EN 60079-11
Rated insulation voltage	265 V <sub>rms</sub>

#### Electrical isolation Input/power supply IEC/EN 60079-11

Standards/regulations	IEC/EN 60079-11
Rated insulation voltage	265 V <sub>rms</sub>

#### Electrical isolation Output 1/output 2/ power supply

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

#### Supply

Nominal supply voltage	24 V DC -20 % ... +25 %
Supply voltage range	19.2 V DC ... 30 V DC
Max. current consumption	< 100 mA (24 V DC / 20 mA)
Power dissipation	< 1.4 W (24 V DC / 20 mA)
Power consumption	≤ 2.4 W

## Input data

# MACX MCR-EX-SL-RPSS-2I-2I-SP - Repeater power supply



2924676

<https://www.phoenixcontact.com/us/products/2924676>

## Signal: Current

Description of the input	intrinsically safe
Number of inputs	2
Input signal	Current
Current input signal	4 mA ... 20 mA
Transmitter supply voltage	> 16 V (20 mA)
Underload/overload signal range	0 mA ... 24 mA

## Output data

### Signal: Current

Output description	Current output
Number of outputs	2
Current output signal	4 mA ... 20 mA (active)
Load/output load current output	≤ 450 Ω (20 mA)
	≤ 375 Ω (24 mA)
Output behavior in the event of an error	< 3.6 mA (In the event of cable break at the input (as per NE 43))
	> 22.5 mA (In the event of cable short circuit at the input (as per NE 43))
Underload/overload signal range	0 mA ... 24 mA

## Connection data

Connection method	Push-in connection
Stripping length	10 mm
Conductor cross-section rigid	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 flexible (2 conductors with same cross section)	0.25 mm <sup>2</sup> ... 0.34 mm <sup>2</sup> (TWIN ferrule without plastic sleeve)
	0.5 mm <sup>2</sup> ... 1.5 mm <sup>2</sup> (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
Ex i circuits (EPL)	[Ga]
	[Da]
	[Ma]
	[Div. 1]

## Safety data

Max. output voltage $U_o$	25.2 V
Max. output current $I_o$	93 mA
Max. output power $P_o$	587 mW
Safety-related maximum voltage $U_m$	253 V AC

# MACX MCR-EX-SL-RPSS-2I-2I-SP - Repeater power supply



2924676

<https://www.phoenixcontact.com/us/products/2924676>

	125 V DC
I (simple circuit): Max. external inductivity $L_o$ / Max. external capacitance $C_o$	40 mH / 4.8 $\mu$ F
IIA (simple circuit): Max. external inductivity $L_o$ / Max. external capacitance $C_o$	26 mH / 2.9 $\mu$ F
IIB (simple circuit): Max. external inductivity $L_o$ / Max. external capacitance $C_o$	14 mH / 820 nF
IIC (simple circuit): Max. external inductivity $L_o$ / Max. external capacitance $C_o$	3 mH / 107 nF
IIA (mixed circuit): Max. external inductivity $L_o$ / Max. external capacitance $C_o$	26 mH / 470 nF, 20 mH / 570 nF, 1 mH / 630 nF, 0.5 mH / 720 nF, 0.1 mH / 1.1 $\mu$ F, 0.005 mH / 2.9 $\mu$ F
IIB/III (mixed circuit): Max. external inductivity $L_o$ / Max. external capacitance $C_o$	16 mH / 370 nF, 500 $\mu$ H / 510 nF, 200 $\mu$ H / 660 nF, 100 $\mu$ H / 820 nF
IIC (mixed circuit): Max. external inductivity $L_o$ / Max. external capacitance $C_o$	2.2 mH / 47 nF, 2 mH / 49 nF, 1 mH / 63 nF, 500 $\mu$ H / 80 nF, 200 $\mu$ H / 107 nF
I (mixed circuit): Max. external inductivity $L_o$ / Max. external capacitance $C_o$	37 mH / 0.54 $\mu$ F, 0.35 mH / 1 $\mu$ F, 0.009 mH / 2.9 $\mu$ F, 0.001 mH / 4.15 $\mu$ F

## Interfaces

Data communication (bypass)

HART function	HART transparency
Protocols supported	HART

## 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

# MACX MCR-EX-SL-RPSS-2I-2I-SP - Repeater power supply



2924676

<https://www.phoenixcontact.com/us/products/2924676>

## 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)

## 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 <sub>PP</sub> (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

### ATEX

Identification	⊕ II (1) G [Ex ia Ga] IIC
	⊕ II (1) D [Ex ia Da] IIIC
	⊕ II 3(1) G Ex ec [ia Ga] IIC T4 Gc
	⊕ I (M1) [Ex ia Ma] I
Certificate	BVS 10 ATEX E 143 X

# MACX MCR-EX-SL-RPSS-2I-2I-SP - Repeater power supply



2924676

<https://www.phoenixcontact.com/us/products/2924676>

## IECEEx

Identification	[Ex ia Ga] IIC
	[Ex ia Da] IIIC
	Ex ec [ia Ga] IIC T4 Gc
	[Ex ia Ma] I
Certificate	IECEEx BVS 10.0097X

## CCC / China-Ex

Identification	[Ex ia Ga] IIC
	[Ex ia Da] IIIC
	Ex ec [ia Ga] IIC T4 Gc
Certificate	2022122316115972

## UL, USA/Canada

Identification	IS for Class I, II, III Div 1
	Class I, Div. 2
Certificate	UL C.D.-No 83104549

## KC-s

Identification	[Ex ia] IIC/IIB
Certificate	17-KA4BO-0401X

## Shipbuilding approval

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

## Safety Integrity Level (SIL, IEC 61508)

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

## Performance Level (ISO 13849)

Identification	d
----------------	---

## INMETRO

Identification	[Ex ia Ma] I
	[Ex ia Ga] IIC
	[Ex ia Da] IIIC
	Ex ec [ia Ga] 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

# MACX MCR-EX-SL-RPSS-2I-2I-SP - Repeater power supply



2924676

<https://www.phoenixcontact.com/us/products/2924676>

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

## Standards and regulations

Electrical isolation	5-way isolation
----------------------	-----------------

## GB Standard

Standards/regulations	GB/T 3836.1
	GB/T 3836.3
	GB/T 3836.4

## Mounting

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

# MACX MCR-EX-SL-RPSS-2I-2I-SP - Repeater power supply



2924676

<https://www.phoenixcontact.com/us/products/2924676>

## Drawings

Dimensional drawing



Diagram



Signal transmission analog and digital at the same time

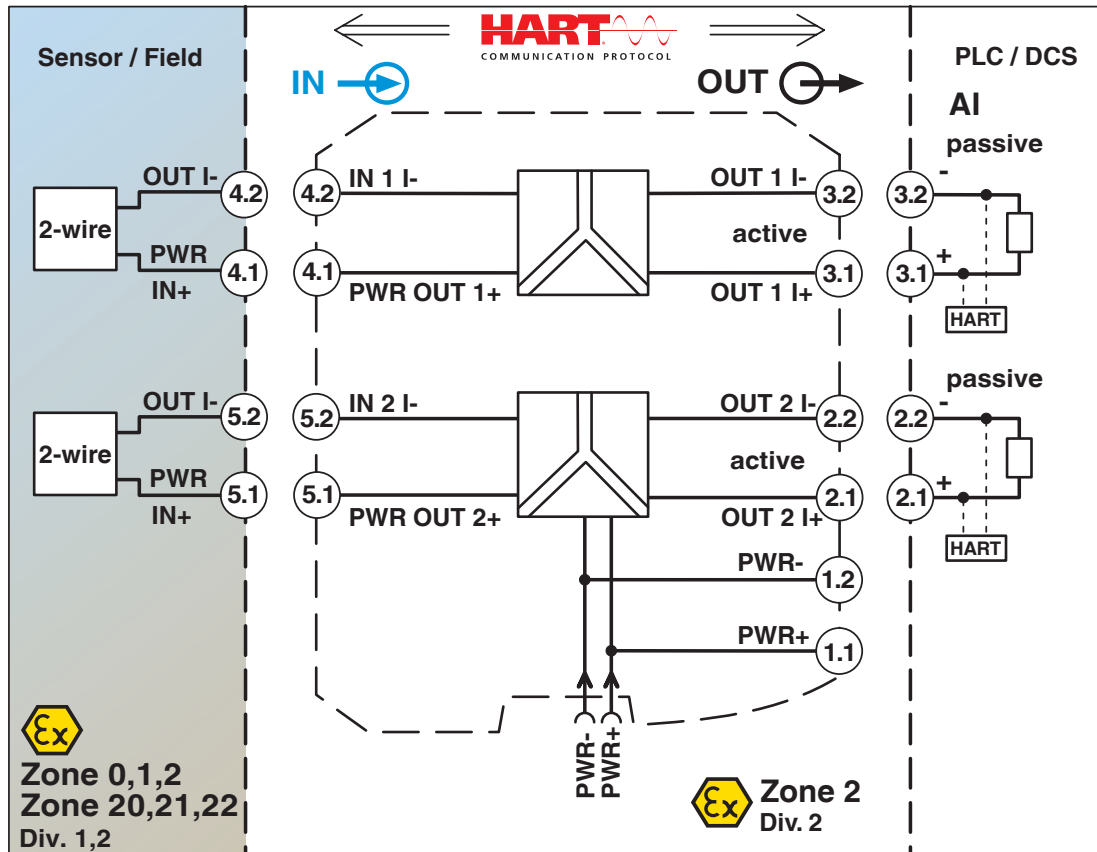
# MACX MCR-EX-SL-RPSS-2I-2I-SP - Repeater power supply



2924676

<https://www.phoenixcontact.com/us/products/2924676>

Block diagram



# MACX MCR-EX-SL-RPSS-2I-2I-SP - Repeater power supply



2924676

<https://www.phoenixcontact.com/us/products/2924676>

## Approvals


To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/2924676>


 **UL Listed**  
Approval ID: E330267

**Functional Safety**  
Approval ID: BVS Pb 04/13


**DNV**  
Approval ID: TAA000020C


**ECAS**  
Approval ID: 163685 E25 08 169500


 **EAC Ex**  
Approval ID: RU C-DE.AB72.B.00093

 **IECEX**  
Approval ID: IECEX BVS 10.0097X

 **cUL Listed**  
Approval ID: E199827

 **UL Listed**  
Approval ID: E199827

 **ATEX**  
Approval ID: BVS 10 ATEX E143 X

 **KC-s**  
Approval ID: 17-KA4BO-0401X

**INMETRO**  
Approval ID: DNV 18.0139 X

# MACX MCR-EX-SL-RPSS-2I-2I-SP - Repeater power supply



2924676

<https://www.phoenixcontact.com/us/products/2924676>



CCC

Approval ID: 2022122316115972

# MACX MCR-EX-SL-RPSS-2I-2I-SP - Repeater power supply



2924676

<https://www.phoenixcontact.com/us/products/2924676>

## Classifications

### ECLASS

ECLASS-13.0	27210120
ECLASS-15.0	27210120
ECLASS-15.0 ASSET	27250101

### ETIM

ETIM 10.0	EC002653
-----------	----------

### UNSPSC

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

# MACX MCR-EX-SL-RPSS-2I-2I-SP - Repeater power supply



2924676

<https://www.phoenixcontact.com/us/products/2924676>

## 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: 7439-92-1)
	2,2',6,6'-tetrabromo-4,4'-isopropylidenediphenol(CAS: 79-94-7)
SCIP	4b1784af-c57c-4294-afb7-5a03033a1c6d

### EF3.1 Climate Change

CO2e kg	9.332 kg CO2e
---------	---------------

Phoenix Contact 2026 © - all rights reserved  
<https://www.phoenixcontact.com>

Phoenix Contact USA  
586 Fulling Mill Road  
Middletown, PA 17057, United States  
(+717) 944-1300  
[info@phoenixcon.com](mailto:info@phoenixcon.com)