

# MACX MCR-EX-SL-RPSSI-2I - Repeater power supply



2865366

<https://www.phoenixcontact.com/us/products/2865366>

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

## Your advantages

- 0/4 mA ... 20 mA input, intrinsically safe, [Ex ia], powered and not powered
- Measuring transducer supply voltage > 16 V
- Two electrically isolated 0/4 mA ... 20 mA (active) outputs
- Bidirectional HART transmission (both outputs)
- Error indication according to NAMUR NE 43
- SIL 2 according to IEC/EN 61508
- Safe electrical isolation between input, outputs, and supply
- Power supply possible via DIN rail connector
- Installation in zone 2 permitted
- Plug-in connection terminal blocks, screw connection technology, with integrated sockets for HART communicators
- Housing width: 12.5 mm
- Minimal power dissipation
- High transmission accuracy

## Commercial data

Item number	2865366
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	C430
Product key	DK1211
GTIN	4046356160384
Weight per piece (including packing)	245.8 g
Weight per piece (excluding packing)	170.7 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
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 <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

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

2865366

<https://www.phoenixcontact.com/us/products/2865366>

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

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	> 16 V (20 mA)
	> 15.1 V (23 mA)
Polarization and surge protection	Yes
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 (Output 1 and output 2 active)
Load/output load current output	< 450 Ω (20 mA)
	< 380 Ω (23 mA)
Output ripple	< 20 mV <sub>rms</sub>
Output behavior in the event of an error	0 mA (Cable break in the input)
	≥ 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 <sub>rms</sub>
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	Screw connection
Stripping length	7 mm
Screw thread	M3
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 AWG	24 ... 14
Tightening torque	0.5 Nm ... 0.6 Nm

## Test socket

Max. diameter	2.3 mm
---------------	--------

## Ex data

Ex installation (EPL)	Gc
	Div. 2
Ex i circuits (EPL)	[Ga]
	[Da]
	[Ma]
	[Div. 1]

## Safety data: Repeater power supply operation

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
	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/IIC (mixed circuit): Max. external inductivity $L_o$ / Max. external capacitance $C_o$	16 mH / 370 nF, 1 mH / 430 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, 0.2 mH / 1.1 $\mu$ F, 10 $\mu$ H / 2.8 $\mu$ F, 0.001 mH / 4.15 $\mu$ F

## Safety data: Signal conditioner operation

Input voltage $U_i$	$\leq 30$ V
Input current $I_i$	$\leq 150$ mA

2865366

<https://www.phoenixcontact.com/us/products/2865366>

Max. internal inductance $L_i$	negligible
Max. internal capacitance $C_i$	negligible
Safety-related maximum voltage $U_m$	253 V AC
	125 V DC

## 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	112.5 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)

### Altitude range ( $\leq 2000$ m)

Altitude	$\leq 2000$ m (The technical data refers to altitudes $\leq 2000$ 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

2865366

<https://www.phoenixcontact.com/us/products/2865366>

	-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

### IECEX

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

### CCC / China-Ex

Identification	[Ex ia Ga] IIC
	[Ex ia Da] IIIC
	Ex ec [ia Ga] IIC T4 Gc
Certificate	2022122316115971

# MACX MCR-EX-SL-RPSSI-2I - Repeater power supply



2865366

<https://www.phoenixcontact.com/us/products/2865366>

## UL, USA/Canada

Identification	IS for Class I,II,III, Division 1 and Zone 0 Installation in Class I, Division 2 and Zone 2
Certificate	UL-C.D.-No 83104549

## 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 ia Ga] IIC [Ex ia Da] IIIC Ex ec [ia Ga] IIC T4 Gc [Ex ia Ma] I
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
-----------------------	--------------

## Standards and regulations

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

## GB Standard

Standards/regulations	GB/T 3836.1 GB/T 3836.3
-----------------------	----------------------------

# MACX MCR-EX-SL-RPSSI-2I - Repeater power supply



2865366

<https://www.phoenixcontact.com/us/products/2865366>

	GB/T 3836.4
--	-------------

## Mounting

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

2865366

<https://www.phoenixcontact.com/us/products/2865366>

## Drawings

Dimensional drawing



Diagram



Signal transmission analog and digital at the same time

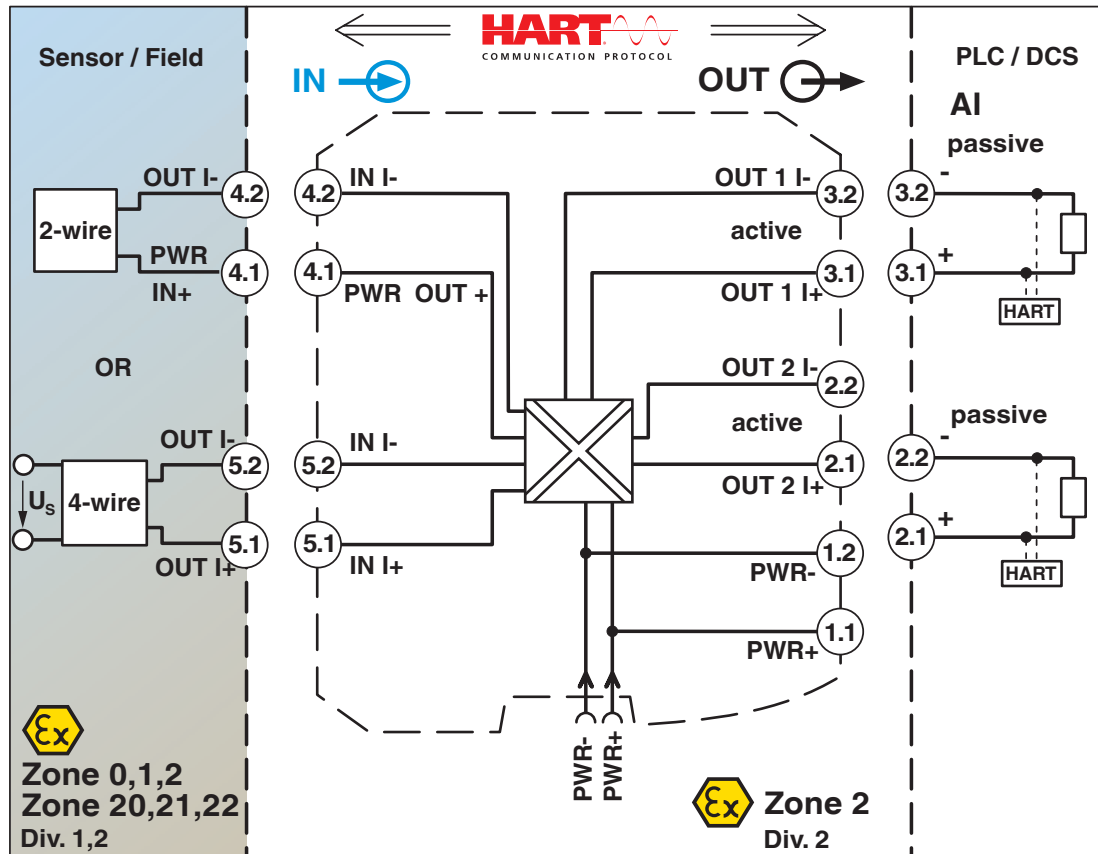
# MACX MCR-EX-SL-RPSSI-2I - Repeater power supply



2865366

<https://www.phoenixcontact.com/us/products/2865366>

Block diagram



2865366

<https://www.phoenixcontact.com/us/products/2865366>

## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/2865366>

### DNV

Approval ID: TAA000020C



### UL Listed

Approval ID: E330267



### cUL Listed

Approval ID: E330267

### Functional Safety

Approval ID: BVS PB 13-10-04

### TUEV Austria FS

Approval ID: INATAS-MRL-23-00432A

### ECAS

Approval ID: 163685 E25 08 169500



### EAC Ex

Approval ID: RU C-DE.AB72.B.00093



### IECEx

Approval ID: IECEx BVS 10.0097X



### CCC

Approval ID: 2022122316115971



### cUL Listed

Approval ID: E199827



### UL Listed

Approval ID: E199827

# MACX MCR-EX-SL-RPSSI-2I - Repeater power supply



2865366

<https://www.phoenixcontact.com/us/products/2865366>



**ATEX**

Approval ID: BVS 10 ATEX E143 X



**ATEX**

Approval ID: BVS 10 ATEX E143 X



**IECEx**

Approval ID: IECEx BVS 10.0097X

**INMETRO**

Approval ID: DNV 18.0139 X

2865366

<https://www.phoenixcontact.com/us/products/2865366>

## Classifications

### ECLASS

ECLASS-13.0	27210120
ECLASS-14.0 ASSET	27250101
ECLASS-15.0	27210120
ECLASS-15.0 ASSET	27250101

### ETIM

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

### UNSPSC

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

2865366

<https://www.phoenixcontact.com/us/products/2865366>

## 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	7763beb8-0e3e-4035-ba01-67afccd2bddd

### EF3.1 Climate Change

CO2e kg	6.847 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)