

# Repeater power supply - MACX MCR-EX-SL-RPSSI-2I-SP - 2924236

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's documentation. Our General Terms of Use for Downloads are valid (<http://download.phoenixcontact.com>)



Ex i measuring transducer power supply and input isolating amplifier, HART. Transfers supplied or active 0/4 - 20 mA electrically isolated signals from the Ex area to two loads in the safe area. 4-way electrical isolation, SIL 2 according to IEC 61508, Push-in Technology.

## Product description

Repeater power supply and input isolating amplifier for the operation of intrinsically safe (Ex-i) 2-wire measuring transducers, 4-wire measuring transducers, and mA current sources installed in Ex areas.

- 0/4 ... 20 mA, [Ex ia] IIC input (powered or not powered)
- Two electrically isolated 0/4 ... 20 mA (active) outputs
- Bidirectional transmission of digital HART communication signals (both outputs)
- Plug-in screw or spring-cage connection method, with integrated sockets for HART communicators
- 4-way electrical isolation
- Energy can be supplied via DIN rail connector
- Up to SIL 2 according to EN 61508
- Installation in zone 2, protection type "n" (EN 60079-15) permitted

## Why buy this product

- Power supply possible via DIN rail connector
- Up to SIL 2 according to EN 61508
- Installation in zone 2, protection type "n" (EN 60079-15) permitted
- 0/4 ... 20 mA input, [Ex ia] IIC (powered or not powered)
- Two electrically isolated 0/4 ... 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
- 4-way electrical isolation



## Key commercial data

Packing unit	1 pc
GTIN	
Weight per Piece (excluding packing)	161.2 g
Custom tariff number	85437090
Country of origin	Germany

# Repeater power supply - MACX MCR-EX-SL-RPSSI-2I-SP - 2924236

## Technical data

### Note:

Utilization restriction	EMC: class A product, see manufacturer's declaration in the download area
-------------------------	---

### Dimensions

Width	12.5 mm
Height	99 mm
Depth	114.5 mm

### Ambient conditions

Ambient temperature (operation)	-20 °C ... 60 °C (Any mounting position)
Ambient temperature (storage/transport)	-40 °C ... 80 °C
Maximum altitude	≤ 2000 m
Permissible humidity (operation)	10 % ... 95 % (non-condensing)
Degree of protection	IP20

### Input data

Signal input	Repeater power supply operation
Current input signal	4 mA ... 20 mA
Transmitter supply voltage	> 16 V (at 20 mA)
	> 15.1 V (at 23 mA)
Signal input	Isolating amplifier operation
Current input signal	0 A ... 20 mA
	4 mA ... 20 mA
Voltage drop	approx. 3.9 V

### Output data

Signal output	Repeater power supply operation
Current output signal	4 mA ... 20 mA (active)
Load/output load current output	< 450 Ω (at 20 mA)
	< 380 Ω (at 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)
Signal output	Isolating amplifier operation
Current output signal	0 mA ... 20 mA (active)
	4 mA ... 20 mA (active)
Load/output load current output	< 450 Ω (at 20 mA)
	< 380 Ω (at 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)

### Power supply

# Repeater power supply - MACX MCR-EX-SL-RPSSI-2I-SP - 2924236

## Technical data

### Power supply

Supply voltage range	19.2 V DC ... 30 V DC (24 V DC (-20% ... +25%))
Max. current consumption	< 75 mA (24 V DC/ 20 mA)
Power consumption	< 1.45 W (24 V DC/ 20 mA)

### Connection data

Conductor cross section solid min.	0.2 mm <sup>2</sup>
Conductor cross section solid max.	1.5 mm <sup>2</sup>
Conductor cross section stranded min.	0.2 mm <sup>2</sup>
Conductor cross section stranded max.	1.5 mm <sup>2</sup>
Conductor cross section AWG/kcmil min.	24
Conductor cross section AWG/kcmil max.	16
Stripping length	8 mm
Connection method	Spring-cage connection

### General

Maximum transmission error	< 0.1 % (of final value)
Transmission error, typical	< 0.05 % (of final value)
Maximum temperature coefficient	< 0.01 %/K
Step response (10-90%)	< 600 µs (for 4 mA ... 20 mA step)
Status display	Green LED (PWR supply voltage)
Inflammability class according to UL 94	V0
Housing material	PA 66-FR
Color	green
Name	Input/output/power supply
Electrical isolation	300 V <sub>rms</sub> (Rated insulation voltage (surge voltage category II; pollution degree 2, safe isolation as per EN 61010-1))
	2.5 kV (50 Hz, 1 min., test voltage)
Name	Input/output
Electrical isolation	375 V (Peak value in accordance with EN 60079-11)
Name	Input/power supply
Electrical isolation	375 V (Peak value in accordance with EN 60079-11)
Name	Output 1/output 2
Electrical isolation	1.5 kV AC (50 Hz, 1 min., test voltage)
Conformance	CE-compliant, additionally EN 61326
ATEX	# II (1) G [Ex ia Ga] IIC/IIB
	# II (1) D [Ex ia Da] IIIC
	# II 3 (1) G Ex nA [ia Ga] IIC/IIB T4 Gc
IECEX	[Ex ia Ga] IIC/IIB
	[Ex ia Da] IIIC
	Ex nA [ia Ga] IIC/IIB T4 Gc
Functional safety (SIL)	SIL 2 according to EN 61508

### Data communication (bypass)

# Repeater power supply - MACX MCR-EX-SL-RPSSI-2I-SP - 2924236

## Technical data

### Data communication (bypass)

HART function	Yes
Protocols supported	HART

### Safety data

Operation	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
Group	IIC
Max. external inductivity $L_o$	2 mH
Max. external capacity $C_o$	107 nF
Group	IIB
Max. external inductivity $L_o$	4 mH
Max. external capacity $C_o$	820 nF
Safety-related maximum voltage $U_m$	253 V AC (125 V DC)
Operation	Isolating amplifier operation
Input voltage $U_i$	$\leq 30$ V
Input current $I_i$	$\leq 150$ mA
Max. internal inductance $L_i$	(negligible)
Max. internal capacitance $C_i$	(negligible)

## Classifications

### eCl@ss

eCl@ss 4.0	27210120
eCl@ss 4.1	27210120
eCl@ss 5.0	27210120
eCl@ss 5.1	27210120
eCl@ss 6.0	27210120
eCl@ss 7.0	27210120
eCl@ss 8.0	27210120

### ETIM

ETIM 2.0	EC001485
ETIM 3.0	EC001485
ETIM 4.0	EC001485
ETIM 5.0	EC002653

### UNSPSC

UNSPSC 6.01	30211506
UNSPSC 7.0901	39121008

# Repeater power supply - MACX MCR-EX-SL-RPSSI-2I-SP - 2924236

## Classifications

### UNSPSC

UNSPSC 11	39121008
UNSPSC 12.01	39121008
UNSPSC 13.2	39121008

## Approvals

### Approvals

---

### Approvals

### Functional Safety

---

### Ex Approvals

### IECEX / ATEX

---

### Approvals submitted

---

## Approval details

Functional Safety
-------------------

## Drawings

Block diagram

