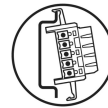


# MACX MCR-EX-SL-RPSSI-2I

Order No.: 2865366



Measuring transducer power supply and input isolating amplifier, HART-transparent. Transfers supplied or active 0/4-20 mA signals from the Ex area galv. isolated to two loads in the safe area. Galvanic 4-way isolation, SIL 2 according to IEC 61508, screw connection



## Commercial data

EAN	4  046356 160384
Pack	1
Customs tariff	85438997
Product key	09720
Country of Origin	DE
Catalog page information	Page 442 (IF-2011)

## Product notes

WEEE/RoHS-compliant since: 02/08/2006



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## 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

### Technical data

#### 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)
Voltage drop	< 3.9 V (in input isolating amplifier operation)
Signal input	Isolating amplifier operation
Current input signal	0 mA ... 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 $\Omega$ (at 20 mA)
	< 380 $\Omega$ (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)
	$\geq$ 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 $\Omega$ (at 20 mA)
	< 380 $\Omega$ (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)

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**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.	2.5 mm <sup>2</sup>
Conductor cross section stranded min.	0.2 mm <sup>2</sup>
Conductor cross section stranded max.	2.5 mm <sup>2</sup>
Conductor cross section AWG/kcmil min.	24
Conductor cross section AWG/kcmil max	14
Stripping length	7 mm
Screw thread	M3
Connection method	Screw connection
Tightening torque, min	0.5 Nm
Tightening torque max	0.6 Nm

**General data**

Maximum transmission error	< 0.1 % (of final value)
Transmission error, typical	< 0.05 % (of final value)
Maximum temperature coefficient	< 0.01 %/K
Ambient temperature (operation)	-20 °C ... 60 °C (Any mounting position)
Ambient temperature (storage/transport)	-40 °C ... 80 °C
Maximum altitude	2000 m (Above sea level)
Permissible humidity (operation)	10 % ... 95 % (no condensation)
Step response (10-90%)	< 1.3 ms (for 4 mA ... 20 mA step)
Status display	Green LED (PWR supply voltage)
Width	12.5 mm
Height	99 mm
Depth	114.5 mm
Inflammability class according to UL 94	V0
Housing material	PA 66-FR
Degree of protection	IP20
Color	green
Electrical isolation input / output / supply	2.5 kV (50 Hz, 1 min., test voltage)

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Electrical isolation input / output	375 V (Peak value in accordance with EN 60079-11)
Electrical isolation input / supply	375 V (Peak value in accordance with EN 60079-11)
Electrical isolation of output 1/output 2	1.5 kV AC (50 Hz, 1 min., test voltage)
Conformance	CE-compliant, additionally EN 61326
ATEX	Ex II (1)G [Ex ia] IIC/IIB
	Ex II (1) D [Ex iaD]
	Ex II 3 (1)G Ex nA [ia] IIC/IIB T4
IECEX	[Ex ia] IIC/IIB; [Ex iaD]; Ex nA [ia] IIC/IIB T4
Functional safety (SIL)	SIL 2 according to EN 61508

#### Data communication (bypass)

HART function	Yes
Protocols supported	HART

#### Safety data

Operation	Repeater power supply operation
Max. voltage $U_o$	25.2 V
Max. current $I_o$	93 mA
Max. power $P_o$	587 mW
Gas group	II C
Max. external inductivity $L_o$	2 mH
Max. external capacity $C_o$	107 nF
Gas group	II B
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
Max. voltage $U_i$	30 V
Max. current $I_i$	150 mA
Max. inductance $L_i$	Negligible
Max. capacitance $C_i$	Negligible

#### Certificates

Certification Ex: IECEx

## Drawings

### Block diagram

