

MACX MCR-SL-RPSSI-I-UP - Repeater power supply



2865968

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Repeater power supply for supplying 2- and 3-conductor transmitters with Hart transparency and wide-range power supply, SIL 2 (1oo1)/SIL 3 (1oo2), screw connection

Your advantages

- 250 Ω resistor that can be activated via DIP switches to increase HART impedance for low-resistance systems
- Up to SIL 2 in accordance with EN 61508
- Installation in zone 2, protection type "n" (EN 60079-15) permitted
- Wide-range power supply of 19.2 ... 253 V AC/DC
- 3-way electrical isolation
- 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)
- Bidirectional transmission of digital HART communication signals
- 0/4 ... 20 mA output (active or passive), 0/1 ... 5 V, can be selected via DIP switches

Commercial data

Item number	2865968
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	C402
Product key	CK1111
Catalog page	Page 122 (C-5-2019)
GTIN	4046356448321
Weight per piece (including packing)	181.7 g
Weight per piece (excluding packing)	150.5 g
Customs tariff number	85437090
Country of origin	DE

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Technical data

Product properties

Product type	Repeater power supplies
Product family	MACX Analog
Application	Analog IN
No. of channels	1
Type	Signal conditioners with SIL functional safety
Configuration	DIP switches

Electrical properties

Electrical isolation	3-way isolation
Electrical isolation between input and output	yes
Signal transmission behavior	In = Out
Step response (10-90%)	< 600 μ s (for 4 mA ... 20 mA step)
Maximum temperature coefficient	< 0.01 %/K
Maximum transmission error	< 0.1 % (of final value)
Transmission error, typical	< 0.05 % (of final value)

Electrical isolation

Test voltage	2.5 kV AC (50 Hz, 60 s)
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}
Insulation	Safe isolation

Supply

Designation	Repeater power supply operation
Nominal supply voltage range	24 V AC/DC ... 230 V AC/DC -20 % ... +10 % (50/60 Hz)
Supply voltage range	19.2 V AC/DC ... 253 V AC/DC (50/60 Hz)
Max. current consumption	< 75 mA (24 V DC / 20 mA)
Power dissipation	< 1.6 W (24 V DC / 20 mA)
Power consumption	< 1.9 W

Supply

Designation	Signal conditioner operation
Nominal supply voltage range	24 V AC/DC ... 230 V AC/DC -20 % ... +10 % (50/60 Hz)
Supply voltage range	19.2 V AC/DC ... 253 V AC/DC (50/60 Hz)
Max. current consumption	< 45 mA (24 V DC / 20 mA)
Power dissipation	< 1.1 W (24 V DC / 20 mA)
Power consumption	< 1.1 W

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Input data

Signal: Repeater power supply operation

Description of the input	Active current input
Number of inputs	1
Current input signal	4 mA ... 20 mA
Transmitter supply voltage	> 16 V (20 mA) > 15.3 V (22.5 mA)

Signal: Signal conditioner operation

Description of the input	Passive current input
Current input signal	0 mA ... 20 mA 4 mA ... 20 mA
Voltage drop	< 3.5 V (in input isolating amplifier operation)

Output data

Signal: Repeater power supply operation

Output description	Current output (active and passive)
Number of outputs	1
Voltage output signal	1 V ... 5 V (internal resistance, 250 Ω, 0.1%) Configurable via DIP switches
Current output signal	4 mA ... 20 mA (active) 4 mA ... 20 mA (14 ... 26 V ext. source voltage)
Load/output load current output	< 600 Ω (20 mA) < 525 Ω (22.5 mA)
Output ripple	< 20 mV _{rms}
Output behavior in the event of an error	0 mA (Cable break in the input) ≥ 22.5 mA (Cable short-circuit in the input)

Signal: Signal conditioner operation

Output description	Current output (active and passive)
Voltage output signal	0 V ... 5 V (internal resistance, 250 Ω, 0.1%) 1 V ... 5 V (internal resistance, 250 Ω, 0.1%)
Current output signal	0 mA ... 20 mA (active) 4 mA ... 20 mA (active) 0 mA ... 20 mA (14 ... 26 V ext. source voltage) 4 mA ... 20 mA (14 ... 26 V ext. source voltage)
Load/output load current output	< 600 Ω (20 mA) < 525 Ω (22.5 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)

Connection data

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Connection method	Screw connection
Stripping length	7 mm
Screw thread	M3
Conductor cross section rigid	0.2 mm ² ... 2.5 mm ²
Conductor cross section flexible	0.2 mm ² ... 2.5 mm ²
Conductor cross section AWG	24 ... 14
Tightening torque	0.5 Nm ... 0.6 Nm

Test socket

Max. diameter	2 mm
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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)
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Dimensions

Dimensional drawing	
Width	17.5 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	V0 (Housing)
Housing material	PA 6.6-FR

Environmental and real-life conditions

Ambient conditions

Degree of protection	IP20 (not assessed by UL)
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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 _{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	Ⓜ II 3 G Ex ec IIC T4 Gc X
Certificate	PxCIF08ATEX2865968X

UKCA Ex (UKEX)

Identification	Ⓜ II 3 G Ex nA IIC T4 Gc
Certificate	PxCIF21UKEX2865968X

IECEX

Identification	Ex ec IIC T4 Gc
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Certificate	IECEX BVS 08.0035X
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UL, USA/Canada

Identification	UL 508 Listed
	UL 61010 Listed
	Class I, Div. 2, Groups A, B, C, D T4
	Class I, Zone 2, Group IIC T4

Safety Integrity Level (SIL / SILCL, IEC 61508)

Identification	2
Certificate	ZP/C031/20

Systematic Capability (SC / SILCL)

Identification	3
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EMC data

Noise immunity	EN 61000-6-2
Electromagnetic compatibility	Conformance with EMC directive
Noise emission	EN 61000-6-4

Standards and regulations

Electrical isolation	3-way isolation
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Mounting

Mounting type	DIN rail mounting
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Classifications

ECLASS

ECLASS-11.0	27210120
ECLASS-12.0	27210120
ECLASS-13.0	27210120

ETIM

ETIM 9.0	EC002653
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UNSPSC

UNSPSC 21.0	39121000
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Environmental product compliance

China RoHS	Environmentally Friendly Use Period = 50 years For information on hazardous substances, refer to the manufacturer's declaration available under "Downloads"
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