

Power/input isolating amplifier - MACX MCR-EX-SL-RPSSI-I-UP - 2865793

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Ex i repeater power supply and input isolating amplifier, HART Sends fed or active 0/4-20 mA signals from the Ex area to a load (active or passive) to the safe area. Electrical 3-way isolation; SIL 2, wide range power supply.

Your advantages

- ✓ 250 Ω resistor that can be activated via DIP switches to increase HART impedance for low-resistance systems
- ✓ Installation in zone 2, protection type "n" (EN 60079-15) permitted
- ✓ Up to SIL 2 according to EN 61508
- ✓ 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
- ✓ 0/4 ... 20 mA input, [Ex ia] IIC (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



Key Commercial Data

Packing unit	1 pc
GTIN	 4 046356 324694
GTIN	4046356324694
Weight per Piece (excluding packing)	180.000 g
Custom tariff number	85437090
Country of origin	Germany

Technical data

Note

Power/input isolating amplifier - MACX MCR-EX-SL-RPSSI-I-UP - 2865793

Technical data

Note

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

Width	17.5 mm
Height	112.5 mm
Depth	113.7 mm
	114.5 mm (Snapped onto DIN rail NS 35/7,5 in accordance with EN 60715)

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 (not assessed by UL)
Noise immunity	EN 61000-6-2 When being exposed to interference, there may be minimal deviations.

Input data

Signal input	Active current input, intrinsically safe
Current input signal	4 mA ... 20 mA
Transmitter supply voltage	> 16 V (20 mA)
	> 15.3 V (22.5 mA)
Signal input	Passive current input, intrinsically safe
Current input signal	0 mA ... 20 mA
	4 mA ... 20 mA
Voltage drop	< 3.5 V (in input isolating amplifier operation)

Output data

Signal output	Current output
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)
Transmission Behavior	1:1 to input signal
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)

Power/input isolating amplifier - MACX MCR-EX-SL-RPSSI-I-UP - 2865793

Technical data

Output data

Signal output	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)

Power supply

Designation	Repeater power supply operation
Supply voltage range	24 V ... 230 V AC/DC (-20 %/+10 %, 50/60 Hz)
Max. current consumption	< 80 mA (24 V DC / 20 mA)
Power dissipation	< 1.6 W (24 V DC / 20 mA)
Designation	Signal conditioner operation
Nominal supply voltage range	24 V ... 230 V AC/DC (-20 %/+10 %, 50/60 Hz)
Max. current consumption	< 45 mA (24 V DC / 20 mA)
Power dissipation	< 1.1 W (24 V DC / 20 mA)

Connection data

Connection method	Screw connection
Stripping length	7 mm
Screw thread	M3
Conductor cross section solid	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
Torque	0.5 Nm ... 0.6 Nm

General

No. of channels	1
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 (supply voltage)

Power/input isolating amplifier - MACX MCR-EX-SL-RPSSI-I-UP - 2865793

Technical data

General

Degree of pollution	2
Overvoltage category	II
Electromagnetic compatibility	Conformance with EMC directive
Interference emission	EN 61000-6-4
Housing material	PA 6.6-FR
Color	gray
Designation	Input/output/power supply
Rated insulation voltage	300 V _{rms}
Test voltage	2.5 kV AC (50 Hz, 1 min.)
Insulation	Safe isolation in accordance with IEC/EN 61010-1
Designation	Input/output
Electrical isolation	375 V (Peak value in accordance with IEC/EN 60079-11)
Designation	Input/power supply
Electrical isolation	375 V (Peak value in accordance with IEC/EN 60079-11)

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 capacitance C _o	107 nF
Additional text	simple circuit
Group	IIB
Max. external inductivity L _o	4 mH
Max. external capacitance C _o	820 nF
Additional text	simple circuit
Safety-related maximum voltage U _m	253 V AC/DC (Supply terminals)
Operation	Signal conditioner operation
Input voltage U _i	≤ 30 V
Input current I _i	≤ 150 mA
Max. internal inductance L _i	negligible
Max. internal capacitance C _i	negligible

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Technical data

Safety data

Safety-related maximum voltage U_m	253 V AC/DC (Supply terminals)
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EMC data

Designation	Electromagnetic RF field
Standards/regulations	EN 61000-4-3
Typical deviation from the measuring range final value	1 %
Designation	Fast transients (burst)
Standards/regulations	EN 61000-4-4
Typical deviation from the measuring range final value	1 %
Designation	Conducted interferences
Standards/regulations	EN 61000-4-6
Typical deviation from the measuring range final value	1 %

Standards and Regulations

Electromagnetic compatibility	Conformance with EMC directive
Noise emission	EN 61000-6-4
Designation	Electromagnetic RF field
Standards/regulations	EN 61000-4-3
	EN 61000-4-4
Designation	Conducted interferences
Standards/regulations	EN 61000-4-6
Designation	GB Standard
Standards/regulations	GB 3626.20
	GB 3836.1
	GB 3836.4
	GB 3836.8
	GB 12476.1
	GB 12476.4
Group	IIC
	IIB

Conformance/approvals

Designation	CE
Certificate	CE-compliant
Additional text	and EN 61326
Designation	ATEX
Identification	# 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

Power/input isolating amplifier - MACX MCR-EX-SL-RPSSI-I-UP - 2865793

Technical data

Conformance/approvals

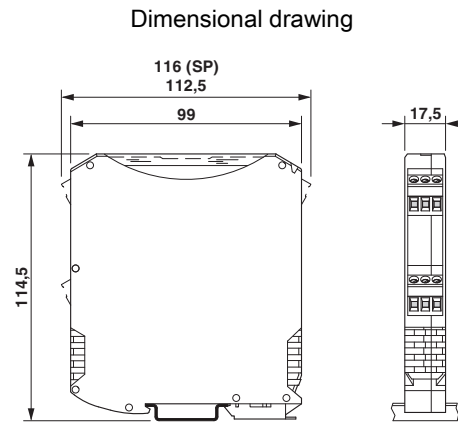
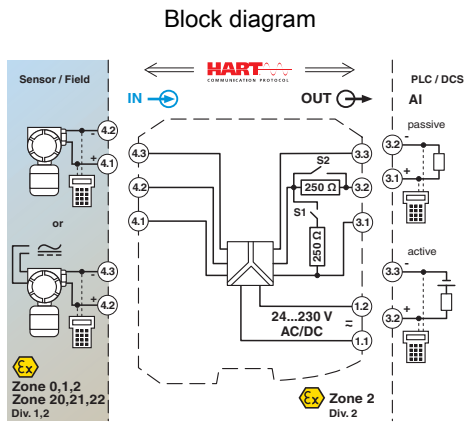
Certificate	BVS 08 ATEX E 094 X
Designation	IECEX
Identification	[Ex ia Ga] IIC/IIB
	[Ex ia Da] IIIC
	Ex nA [ia Ga] IIC/IIB T4 Gc
Certificate	IECEX BVS 08.0035X
Designation	CCC / China-Ex
Identification	[Ex ia Ga] IIC
	[Ex iaD]
	Ex nA [ia Ga] IIC/IIB T4 Gc
Certificate	NEPSI GYJ20.1310X
Designation	UL, USA/Canada
Identification	Class I Div 2; IS for Class I, II, III Div 1
Certificate	#, C.D.-No 83104549
Designation	Safety Integrity Level (SIL / SILCL, IEC 61508)
Identification	2
Additional text	ZP/C031/20
Designation	Systematic Capability (SC / SILCL)
Identification	3
Designation	EAC Ex
Identification	# [Ex ia Ga] IIC
	# [Ex ia Da] IIIC
Certificate	RU C-DE.AB72.B.00093/19
Designation	INMETRO
Identification	[Ex ia Ga] IIC/IIB
	[Ex ia Da] IIIC
	Ex nA [ia Ga] IIC/IIB T4 Gc
Certificate	DNV 18.0138 X

Environmental Product Compliance

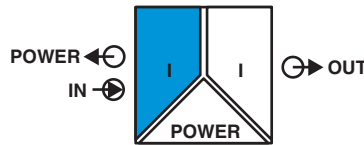
REACH SVHC	Lead 7439-92-1
China RoHS	Environmentally Friendly Use Period = 50 years
	For details about hazardous substances go to tab "Downloads", Category "Manufacturer's declaration"

Drawings

Power/input isolating amplifier - MACX MCR-EX-SL-RPSSI-I-UP - 2865793



Pictogram



Classifications

eCl@ss

eCl@ss 10.0.1	27210120
eCl@ss 11.0	27210120
eCl@ss 4.0	27210100
eCl@ss 4.1	27210100
eCl@ss 5.0	27210100
eCl@ss 5.1	27210100
eCl@ss 6.0	27210100
eCl@ss 7.0	27210120
eCl@ss 9.0	27210120

ETIM

ETIM 4.0	EC002653
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Classifications

ETIM

ETIM 6.0	EC002653
ETIM 7.0	EC002653

UNSPSC

UNSPSC 6.01	30211506
UNSPSC 7.0901	39121008
UNSPSC 11	39121008
UNSPSC 12.01	39121008
UNSPSC 13.2	39121008
UNSPSC 18.0	39121008
UNSPSC 19.0	39121008
UNSPSC 20.0	39121008
UNSPSC 21.0	39121008

Approvals

Approvals

Approvals

UL Listed / cUL Listed / Functional Safety / UL Listed / cUL Listed / Functional Safety / CCC / cULus Listed

Ex Approvals

IECEX / ATEX / UL Listed / cUL Listed / EAC Ex / IECEX / UL Listed / cUL Listed / EAC Ex / ATEX / INMETRO / INMETRO / ATEX / cULus Listed

Approvals submitted

GL

Approval details

UL Listed		http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm	FILE E 330267
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cUL Listed		http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm	FILE E 330267
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Approvals

Functional Safety	BVS PB 09/08
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UL Listed		http://database.ul.com/cgi-bin/XYVV/template/LISEXT/1FRAME/index.htm	FILE E 330267
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cUL Listed		http://database.ul.com/cgi-bin/XYVV/template/LISEXT/1FRAME/index.htm	FILE E 330267
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Functional Safety	BVS PB 09/08
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CCC		2020322 316001383
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cULus Listed	
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Accessories

Accessories

Device marking

Plastic label - UC-EMLP (11X9) - 0819291



Plastic label, Sheet, white, unlabeled, can be labeled with: BLUEMARK ID COLOR, BLUEMARK ID, BLUEMARK CLED, PLOTMARK, CMS-P1-PLOTTER, mounting type: adhesive, lettering field size: 11 x 9 mm, Number of individual labels: 10

Plastic label - UC-EMLP (11X9) YE - 0822602



Plastic label, Sheet, yellow, unlabeled, can be labeled with: BLUEMARK ID COLOR, BLUEMARK ID, BLUEMARK CLED, PLOTMARK, CMS-P1-PLOTTER, mounting type: adhesive, lettering field size: 11 x 9 mm, Number of individual labels: 10

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Accessories

Plastic label - UC-EMLP (11X9) SR - 0828094



Plastic label, Sheet, silver, unlabeled, can be labeled with: BLUEMARK ID COLOR, BLUEMARK ID, BLUEMARK CLED, PLOTMARK, CMS-P1-PLOTTER, mounting type: adhesive, lettering field size: 11 x 9 mm, Number of individual labels: 10

Plastic label - US-EMLP (11X9) - 0828789



Plastic label, Card, white, unlabeled, can be labeled with: BLUEMARK ID COLOR, BLUEMARK ID, THERMOMARK PRIME, THERMOMARK CARD 2.0, THERMOMARK CARD, mounting type: adhesive, lettering field size: 11 x 9 mm, Number of individual labels: 135

Plastic label - US-EMLP (11X9) YE - 0828871



Plastic label, Card, yellow, unlabeled, can be labeled with: BLUEMARK ID COLOR, BLUEMARK ID, THERMOMARK PRIME, THERMOMARK CARD 2.0, THERMOMARK CARD, mounting type: adhesive, lettering field size: 11 x 9 mm, Number of individual labels: 135

Plastic label - US-EMLP (11X9) SR - 0828872



Plastic label, Card, silver, unlabeled, can be labeled with: BLUEMARK ID COLOR, BLUEMARK ID, THERMOMARK PRIME, THERMOMARK CARD 2.0, THERMOMARK CARD, mounting type: adhesive, lettering field size: 11 x 9 mm, Number of individual labels: 135

Device marker - LS-EMLP (11X9) WH - 0831678



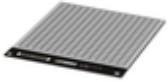
Device marker, Sheet, white, unlabeled, can be labeled with: TOPMARK NEO, TOPMARK LASER, mounting type: adhesive, lettering field size: 11 x 9 mm, Number of individual labels: 255

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Accessories

Device marker - LS-EMLP (11X9) SR - 0831705

Device marker, Sheet, silver, unlabeled, can be labeled with: TOPMARK NEO, TOPMARK LASER, mounting type: adhesive, lettering field size: 11 x 9 mm, Number of individual labels: 255



Device marker - LS-EMLP (11X9) YE - 0831732

Device marker, Sheet, yellow, unlabeled, can be labeled with: TOPMARK NEO, TOPMARK LASER, mounting type: adhesive, lettering field size: 11 x 9 mm, Number of individual labels: 255



Insulating sleeve

Insulating sleeve - MPS-IH WH - 0201663

Insulating sleeve, color: white



Insulating sleeve - MPS-IH RD - 0201676

Insulating sleeve, color: red



Insulating sleeve - MPS-IH BU - 0201689

Insulating sleeve, color: blue



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Accessories

Insulating sleeve - MPS-IH YE - 0201692

Insulating sleeve, color: yellow



Insulating sleeve - MPS-IH GN - 0201702

Insulating sleeve, color: green



Insulating sleeve - MPS-IH GY - 0201728

Insulating sleeve, color: gray



Insulating sleeve - MPS-IH BK - 0201731

Insulating sleeve, color: black



Labeled device marker

Plastic label - UC-EMLP (11X9) CUS - 0824547

Plastic label, can be ordered: by sheet, white, labeled according to customer specifications, mounting type: adhesive, lettering field size: 11 x 9 mm



Power/input isolating amplifier - MACX MCR-EX-SL-RPSSI-I-UP - 2865793

Accessories

Plastic label - UC-EMLP (11X9) YE CUS - 0824548



Plastic label, can be ordered: by sheet, yellow, labeled according to customer specifications, mounting type: adhesive, lettering field size: 11 x 9 mm

Plastic label - UC-EMLP (11X9) SR CUS - 0828098



Plastic label, can be ordered: by sheet, silver, labeled according to customer specifications, mounting type: adhesive, lettering field size: 11 x 9 mm, Number of individual labels: 10

Programming cable

Cable adapter - GW HART USB MODEM - 1003824



USB HART modem cable for communication between a PC and HART devices, cable length: 1m.

Test plug terminal block

Test plugs - MPS-MT - 0201744



Test plugs, with solder connection up to 1 mm² conductor cross section, color: gray