

MACX MCR-EX-AP-IDS-2I-2I-LP-SP - Output signal conditioner



1291983

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Ex i-Output isolator isolates and transmits 0 mA / 4 mA ... 20 mA signals with intrinsic safety in potentially explosive areas. Suitable for fire and gas detectors. number of channels: 2, HART-transparent, open-circuit voltage: 25 V, Standard configuration, Loop-powered, 4-way isolation, Safety Integrity Level (SIL, IEC 61508): 3, Push-in connection

Commercial data

Item number	1291983
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	C430
Product key	DK121W
GTIN	4063151524937
Weight per piece (including packing)	188.2 g
Weight per piece (excluding packing)	160 g
Customs tariff number	85437090
Country of origin	DE

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1291983

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Technical data

Notes

Note on application	Accuracy, typically specified as a percentage of the measuring span (20 mA) at U_N , 23°C
Notes on operation	Installation conditions influence the ambient temperature. Please refer to the operating instructions.

Product properties

Product type	Output signal conditioner
Product family	MACX Analog
No. of channels	2

Electrical properties

Electrical isolation	4-way isolation
Electrical isolation between input and output	yes
Linearity error	$\leq 0.25\%$ (at load = 0 Ω)
Signal transmission behavior	In = Out
Temperature coefficient, typical	$\leq 0.1\%$ (10 K)
Reverse polarity protection	yes

Electrical isolation Input/output

Rated insulation voltage	375 V _{PP}
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Electrical isolation Output 1/output 2

Test voltage	350 V (50 Hz, 60 s)
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Electrical isolation Input 1 / input 2

Test voltage	500 V (50 Hz, 60 s)
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Supply

Supply voltage range	loop-powered, no external supply necessary
Power dissipation	≤ 0.2 W (at 20 mA, per channel)
	≤ 0.6 W (at 40 mA, per channel)

Input data

Signal: Current

Number of inputs	2
Current input signal	0 mA ... 20 mA
	4 mA ... 20 mA (with HART)
	0 mA ... 40 mA (Function area)
Voltage drop	1 V (constant)

Output data

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Signal: Current

Output description	intrinsically safe
Number of outputs	2
Current output signal	0 mA ... 20 mA
	4 mA ... 20 mA (with HART)
	0 mA ... 40 mA (Function area)
Load/output load current output	$\leq 800 \Omega$ (20 mA)
Open-circuit voltage	25 V
Line fault detection	0 mA (Line break)
	≤ 1 mA (Input current behavior)

Connection data

Connection method	Push-in connection
Stripping length	8 mm
Conductor cross-section rigid	0.2 mm ² ... 1.5 mm ²
Conductor cross-section flexible	0.2 mm ² ... 1.5 mm ²
Conductor cross-section AWG	24 ... 16

Ex data

Ex installation (EPL)	Gc
Ex i circuits (EPL)	Ga
	Da
	Ma

Safety data

Max. internal inductance L_i	negligible
Max. internal capacitance C_i	negligible
Max. output voltage U_o	25 V
Max. output current I_o	99 mA
Max. output power P_o	613 mW
Safety-related maximum voltage U_m	253 V AC
IIA (simple circuit): Max. external inductivity L_o / Max. external capacitance C_o	28 mH / 2.97 μ F
IIB (simple circuit): Max. external inductivity L_o / Max. external capacitance C_o	11 mH / 840 nF
IIC (simple circuit): Max. external inductivity L_o / Max. external capacitance C_o	2.5 mH / 110 nF
I (simple circuit): Max. external inductivity L_o / Max. external capacitance C_o	46 mH / 4.87 μ F

Interfaces

Data communication (bypass)

Protocols supported	HART-transparent
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Dimensions

Dimensional drawing		
Width		17.5 mm
Height		107.8 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

Flammability rating according to UL 94	V0
Housing material	PA 6.6

Environmental and real-life conditions

Ambient conditions

Degree of protection	IP20 (Terminal blocks)
	IP30 (Housing)
Ambient temperature (operation)	-20 °C ... 70 °C (Stand-alone device: any mounting position)
	-20 °C ... 70 °C (Group assembly: vertical DIN rail without circulating air)
	-20 °C ... 70 °C (Group assembly: vertical DIN rail with circulating air)
	-20 °C ... 70 °C (Group assembly: horizontal DIN rail without circulating air)
	-20 °C ... 70 °C (Group assembly: horizontal DIN rail with circulating air)
Ambient temperature (storage/transport)	-40 °C ... 80 °C
Altitude	≤ 2000 m
Permissible humidity (operation)	≤ 95 % (non-condensing)

Approvals

ATEX

Identification	⚡ II (1) G [Ex ia Ga] IIC
	⚡ II (1) D [Ex ia Da] IIIC
	⚡ II 3 (1) G Ex nA [ia Ga] IIC T4 Gc
	⚡ I (M1) [Ex ia Ma] I

IECEx

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Identification	[Ex ia Ga] IIC
	[Ex ia Da] IIIC
	Ex nA [ia Ga] IIC T4 Gc
	[Ex ia Ma] I

Safety Integrity Level (SIL, IEC 61508)

Identification	3
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EMC data

Electromagnetic compatibility	Tested in accordance with the following standards and regulations: EN 61326-1 For industrial use, NAMUR NE 21
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Standards and regulations

Electrical isolation	4-way isolation
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Mounting

Mounting type	NS 35/15, NS 35/7,5
Mounting position	vertical, horizontal

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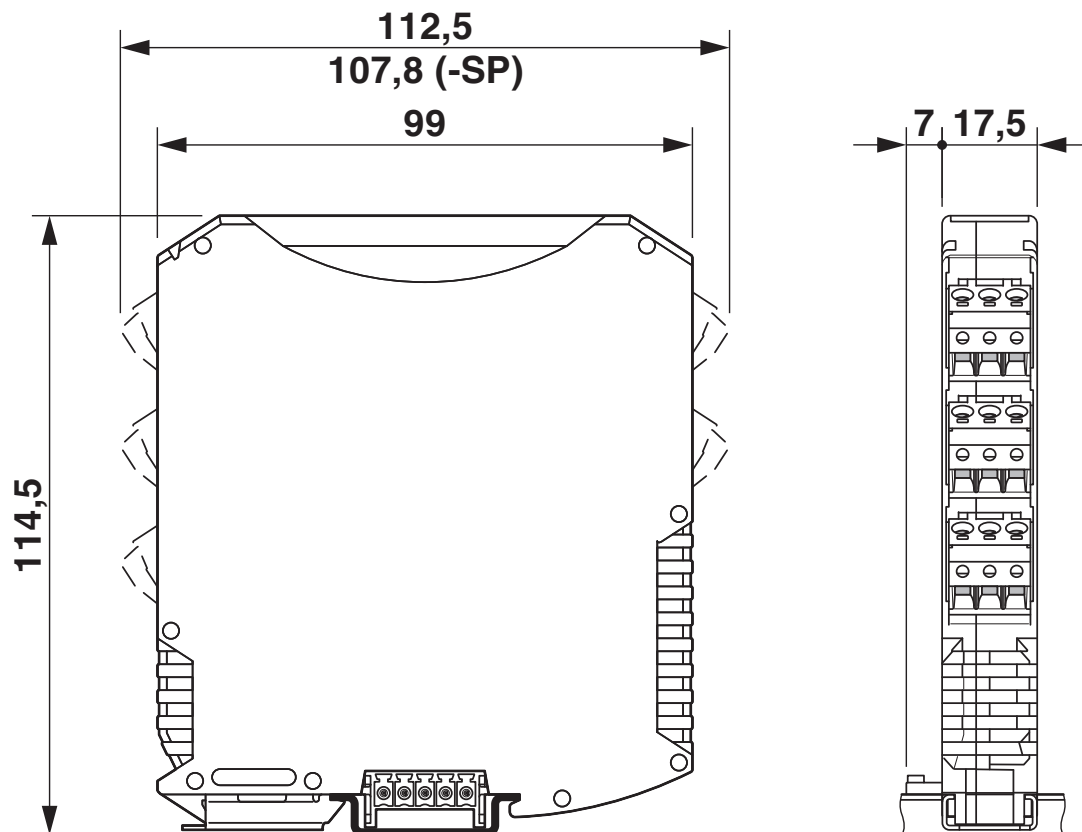


1291983

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Drawings

Dimensional drawing

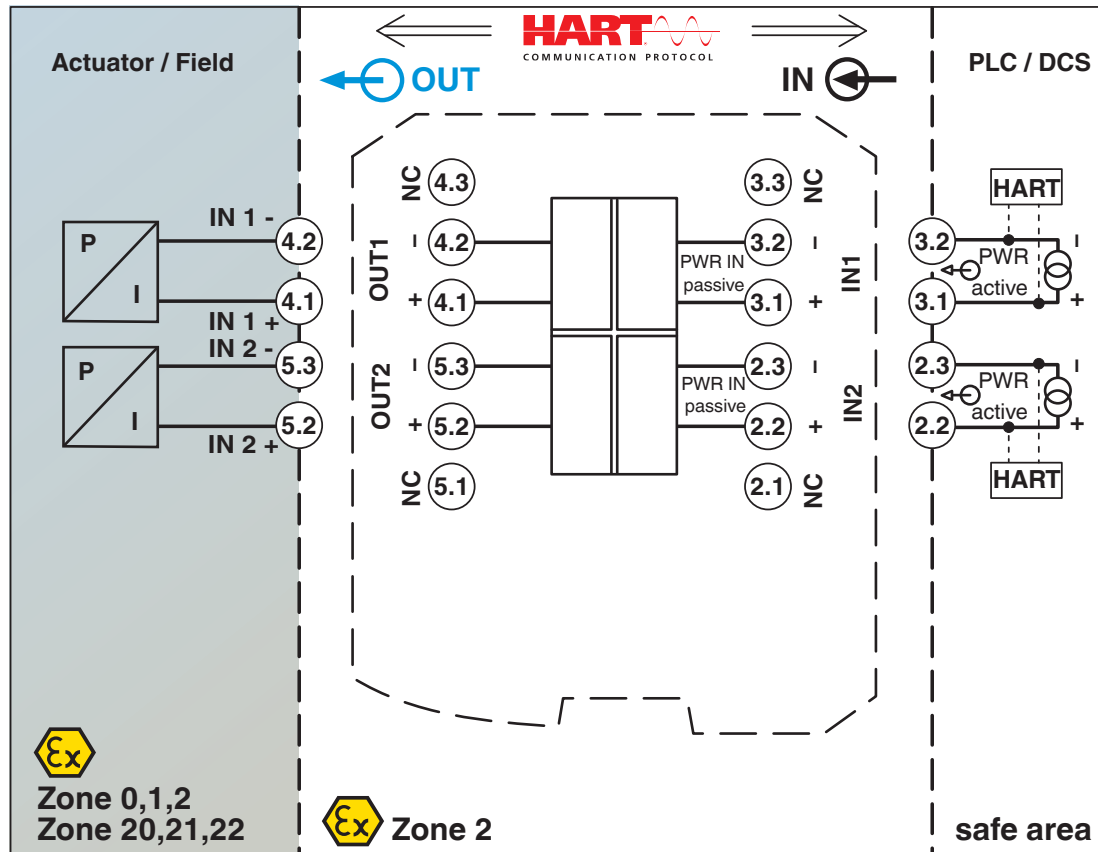


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Block diagram



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Approvals

 To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/1291983>

Functional Safety

Approval ID: 22/05-248 R031 V1R0



IECEx

Approval ID: IECEx BVS 21.0034X



ATEX

Approval ID: BVS 21 ATEX E 032X

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Classifications

ECLASS

ECLASS-13.0	27210120
ECLASS-15.0	27210120

ETIM

ETIM 9.0	EC002653
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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)
SCIP	66d0bc47-7b83-4df2-b289-76d7f37655de

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