Output signal conditioner - MACX MCR-IDS-2I-2I-SP - 2908066

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2-channel output signal conditioner, HART-transparent. Isolates and transmits 0/4 mA ... 20 mA signals to a load in the safe area. 4-way electrical isolation, line fault detection, SIL 2 (SC3) in accordance with IEC 61508, Push-in connection.

Key Commercial Data

Packing unit	1 pc
GTIN	4 055626 275338
GTIN	4055626275338

Technical data

Dimensions

Width	12.5 mm
Height	116 mm
Depth	113.7 mm
	114.5 mm (Snapped onto DIN rail NS 35/7,5 in accordance with EN 60715)
Width	12.5 mm
Height	116 mm
Depth	114.5 mm

Ambient conditions

Ambient temperature (operation)	-40 °C ... 70 °C (Any mounting position)
Ambient temperature (storage/transport)	-40 °C ... 85 °C
Permissible humidity (operation)	5 % ... 95 % (non-condensing)
Degree of protection	IP20
Noise immunity	EN 61000-6-2 When being exposed to interference, there may be minimal deviations.
Description	Ex applications
Altitude	≤ 2000 m (For use at altitudes ≥2000 m above sea level, see data sheet.)

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Technical data

Ambient conditions

Ambient temperature (operation)	-40 °C ... 70 °C
Rated insulation voltage	320 V (Power supply, input / output)
Description	Ex applications
Altitude	≤ 3000 m
Ambient temperature (operation)	-40 °C ... 60 °C
Rated insulation voltage	190 V (Power supply, input / output)
Description	Ex applications
Altitude	≤ 4000 m
Ambient temperature (operation)	-40 °C ... 55 °C
Rated insulation voltage	63 V (Power supply, input / output)
Description	Ex applications
Altitude	≤ 5000 m
Ambient temperature (operation)	-40 °C ... 45 °C
Rated insulation voltage	63 V (Power supply, input / output)
Description	Non-Ex applications (EN 61010-1)
Altitude	≤ 2000 m (For use at altitudes ≥2000 m above sea level, see data sheet.)
Ambient temperature (operation)	-40 °C ... 70 °C
Rated insulation voltage	300 V (Power supply, input / output)
Description	Non-Ex applications (EN 61010-1)
Altitude	≤ 3000 m
Ambient temperature (operation)	-40 °C ... 60 °C
Rated insulation voltage	150 V (Power supply, input / output)
Description	Non-Ex applications (EN 61010-1)
Altitude	≤ 4000 m
Ambient temperature (operation)	-40 °C ... 55 °C
Rated insulation voltage	150 V (Power supply, input / output)
Description	Non-Ex applications (EN 61010-1)
Altitude	≤ 5000 m
Ambient temperature (operation)	-40 °C ... 45 °C
Rated insulation voltage	150 V (Power supply, input / output)

Input data

Designation	Current input
Current input signal	0.2 mA ... 20 mA (Function)
	4 mA ... 20 mA (Safety)
	0 mA ... 24 mA (Underload/overload range)
Input impedance	> 1 MΩ (If there is a line fault)
Line fault detection	> 0.2 mA (Response threshold of input current)
Voltage drop	< 2.4 V (at 20 mA)

Output data

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Technical data

Output data

Designation	Current output
Current output signal	0.2 mA ... 20 mA (Function)
	4 mA ... 20 mA (Safety)
	0 mA ... 24 mA (Underload/overload range)
Transmission Behavior	1:1 to input signal
Output ripple	< 20 mV_{rms}
Non-load voltage	≤ 27 V

Power supply

Nominal supply voltage	24 V DC
Supply voltage range	19.2 V DC ... 30 V DC (24 V DC, -20 % ... +25 %)
Max. current consumption	< 85 mA (at 24 V DC / 20 mA)
Power dissipation	< 1.4 W (at 24 V DC / 20 mA)
Power consumption	≤ 2 W (at 24 V DC / 20 mA)

Connection data

Connection method	Push-in connection
Stripping length	8 mm
Conductor cross section solid	0.2 mm² ... 1.5 mm²
Conductor cross section flexible	0.2 mm² ... 1.5 mm²
Conductor cross section AWG	24 ... 16

Connection data 2

Connection name	COMBICON connection
Max. diameter	2 mm

General

No. of channels	2
Maximum transmission error	0.1 % (of final value)
Transmission error, typical	≤ 0.05 % (of final value)
Maximum temperature coefficient	0.01 %/K
Temperature coefficient, typical	≤ 0.005 %/K
Step response (10-90%)	< 140 µs (for 4 mA ... 20 mA step)
Status display	Green LED (supply voltage)
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
Designation	Input/output
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

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Technical data

General

Altitude	≤ 2000 m
Designation	Input/power supply
Rated insulation voltage	50 V_{rms}
Test voltage	1.5 kV AC (50 Hz, 1 min.)
Insulation	Basic insulation in accordance with IEC/EN 61010-1
Altitude	≤ 2000 m
Designation	Output/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
Altitude	≤ 2000 m
Designation	Input 1/input 2, output 1/output 2
Test voltage	1.5 kV AC (50 Hz, 1 min.)
Altitude	≤ 2000 m

Data communication (bypass)

HART function	Yes
Protocols supported	HART

Standards and Regulations

Electromagnetic compatibility	Conformance with EMC directive
Noise emission	EN 61000-6-4
Designation	GB Standard
Standards/regulations	GB 3836.1
	GB 3836.8
Electrical isolation	3-way isolation

Conformance/approvals

Designation	CE
Certificate	CE-compliant
Additional text	and EN 61326
Designation	ATEX
Identification	# II 3 G Ex ec IIC T4 Gc
Certificate	BVS 20 ATEX E 003 X
Designation	UKCA Ex (UKEX)
Identification	# II 3 G Ex ec IIC T4 Gc
Certificate	PxCIF21UKEx2908065X
Designation	IECEx
Identification	Ex ec IIC T4 Gc
Certificate	IECEx BVS 20.0003X
Designation	CCC / China-Ex
Identification	Ex nA IIC T4 Gc

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Technical data

Conformance/approvals

Designation	INMETRO
Identification	Ex ec IIC T4 Gc
Certificate	DNV 21.0092 X
Designation	UL, USA / Canada
Identification	UL 61010 Listed
	Class I, Div. 2, Groups A, B, C, D T4
	Class I, Zone 2, Group IIC T4
Designation	Shipbuilding approval
Certificate	DNV GL TAA00000AG
Designation	EAC
Identification	2Ex e IIC T4 Gc X
Certificate	RU C-DE.HB49.B.00145/21
Designation	Safety Integrity Level (SIL, IEC 61508)
Identification	3
Designation	Systematic Capability
Identification	3
Temperature	B
Humidity	B
Vibration	A
EMC	B
Enclosure	Required protection according to the Rules shall be provided upon installation on board

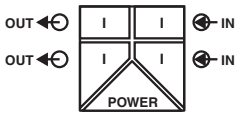
Environmental Product Compliance

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”

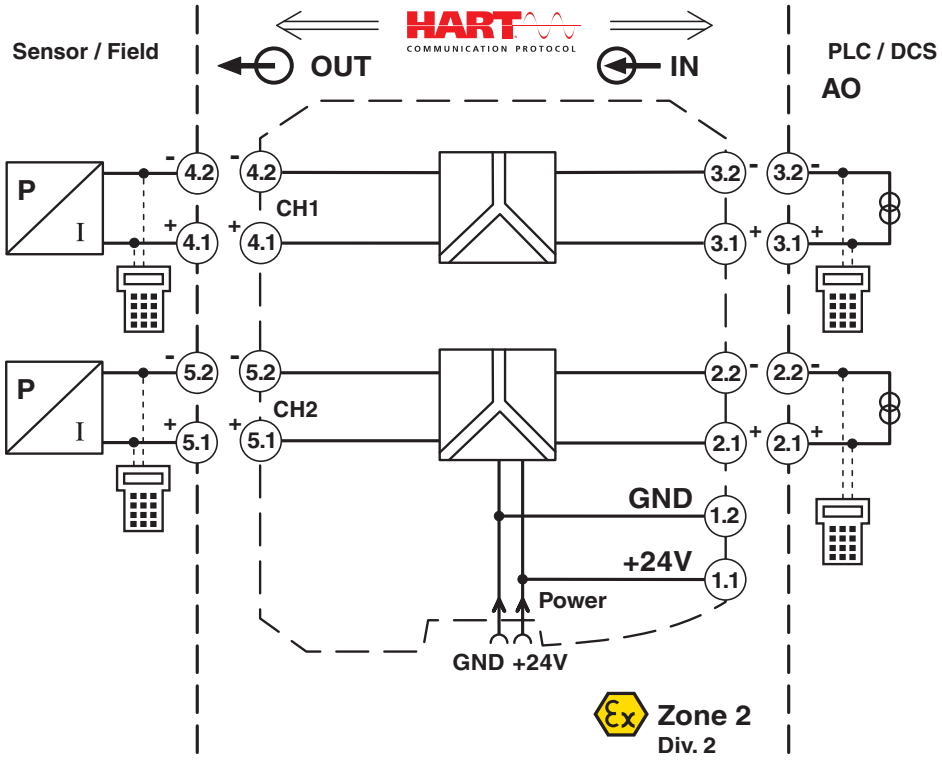
Drawings

Output signal conditioner - MACX MCR-IDS-2I-2I-SP - 2908066

Pictogram



Block diagram



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
ETIM 6.0	EC002653
ETIM 7.0	EC002653

UNSPSC

UNSPSC 18.0	39121008
UNSPSC 19.0	39121008
UNSPSC 20.0	39121008

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Classifications

UNSPSC

UNSPSC 21.0	39121008

Approvals

Approvals

Approvals

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

Ex Approvals

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

Approval details

DNV GL	https://approvalfinder.dnvgl.com/	TAA00000AG
DNV GL	https://approvalfinder.dnvgl.com/	TAA00000AG
UL Listed	http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm	FILE E 330267
cUL Listed	http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm	FILE E 330267
CCC		2021122304114079
Functional Safety		ZP/C002/20
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

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

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Accessories

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

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

DIN rail connector

DIN rail bus connectors - ME 6,2 TBUS-2 1,5/5-ST-3,81 GY - 2695439



DIN rail connector (TBUS), 5-pos., for bridging the supply voltage, can be snapped onto NS 35/... DIN rails according to EN 60715

Insulating sleeve

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Accessories

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



Insulating sleeve - MPS-IH YE - 0201692

Insulating sleeve, color: yellow



Insulating sleeve - MPS-IH GN - 0201702

Insulating sleeve, color: green



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Accessories

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

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

Module carrier

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Accessories

Module carrier - TC-D37SUB-AIO16-EX-PS-UNI - 2902932



Universal termination carrier for connecting 16 MACX Analog Ex i signal conditioners to digital or analog I/O cards, via D-SUB connector, 37-pos. (1:1 connection), with HART multiplexer connection

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Module carrier - TC-D37SUB-ADIO16-EX-P-UNI - 2924854



Universal termination carrier for connecting 16 MACX Analog Ex i signal conditioners to digital or analog I/O cards, via D-SUB connector, 37-pos. (1:1 connection)

Power module

Power and error message module - MACX MCR-PTB - 2865625



Power and fault signaling module with screw connection, including corresponding ME 17,5 TBUS 1,5/ 5-ST-3,81 GY DIN rail connector

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Power and error message module - MACX MCR-PTB-SP - 2924184



Power and fault signaling module with Push-in connection, including corresponding ME 17,5 TBUS 1,5/ 5-ST-3,81 GY DIN rail connector

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Power supply

Power supply unit - QUINT4-SYS-PS/1AC/24DC/2.5/SC - 2904614



Primary-switched power supply unit, QUINT POWER, Screw connection, DIN rail mounting, input: 1-phase, output: 24 V DC / 2.5 A

Test plug terminal block

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Accessories

Test plugs - MPS-MT - 0201744



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

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