

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



2908066

<https://www.phoenixcontact.com/us/products/2908066>

Please be informed that the data shown in this PDF document is generated from our online catalog. Please find the complete data in the user documentation. Our general terms of use for downloads are valid.



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.

## Commercial data

Item number	2908066
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	C402
Product key	DK1112
GTIN	4055626275338
Weight per piece (including packing)	172.8 g
Weight per piece (excluding packing)	160 g
Customs tariff number	85437090
Country of origin	DE

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



2908066

<https://www.phoenixcontact.com/us/products/2908066>

## Technical data

### 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
Signal transmission behavior	In = Out
Step response (10-90%)	< 140 $\mu$ s (for 4 mA ... 20 mA step)
Maximum temperature coefficient	0.01 %/K
Temperature coefficient, typical	$\leq$ 0.005 %/K
Maximum transmission error	0.1 % (of final value 20 mA)
Transmission error, typical	$\leq$ 0.05 % (of final value 20 mA)

#### Electrical isolation

Overvoltage category	II
Pollution degree	2

#### Electrical isolation Input/output IEC/EN 61010-1

Standards/regulations	IEC/EN 61010-1
Rated insulation voltage	300 V <sub>rms</sub>
Test voltage	2.5 kV AC (50 Hz, 60 s)
Insulation	Safe isolation

#### Electrical isolation Input/power supply IEC/EN 61010-1

Standards/regulations	IEC/EN 61010-1
Rated insulation voltage	50 V <sub>rms</sub>
Test voltage	1.5 kV AC (50 Hz, 60 s)
Insulation	Basic insulation

#### Electrical isolation Output/supply IEC/EN 61010-1

Standards/regulations	IEC/EN 61010-1
Rated insulation voltage	300 V <sub>rms</sub>
Test voltage	2.5 kV AC (50 Hz, 60 s)
Insulation	Safe isolation

#### Electrical isolation Input 1/input 2, output 1/output 2

Test voltage	1.5 kV AC (50 Hz, 60 s)
--------------	-------------------------

#### Supply

Nominal supply voltage	24 V DC -20 % ... +25 %
Supply voltage range	19.2 V DC ... 30 V DC
Max. current consumption	< 85 mA (24 V DC / 20 mA)

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



2908066

<https://www.phoenixcontact.com/us/products/2908066>

Power dissipation	< 1.4 W (24 V DC / 20 mA)
Power consumption	≤ 2 W (24 V DC / 20 mA)

## Input data

Signal: Current

Current input signal	0.2 mA ... 20 mA (Function)
	4 mA ... 20 mA (Safety)
	0 mA ... 24 mA (Underload/overload range)
Input current	≤ 30 mA
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

Signal: Current

Number of outputs	2
Current output signal	0.2 mA ... 20 mA (Function)
	4 mA ... 20 mA (Safety)
	0 mA ... 24 mA (Underload/overload range)
Load	100 Ω ... 700 Ω (20 mA)
	100 Ω ... 650 Ω (20.5 mA)
	100 Ω ... 500 Ω (24 mA)
Output ripple	< 20 mV <sub>rms</sub>
Open-circuit voltage	≤ 27 V
Line fault detection	> 10 kΩ (Line break)
	< 50 Ω (Short circuit)

## Connection data

Connection method	Push-in connection
Stripping length	10 mm
Conductor cross-section rigid	0.2 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>
Conductor cross-section flexible	0.2 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>
Conductor cross-section flexible (2 conductors with same cross section)	0.25 mm <sup>2</sup> ... 0.34 mm <sup>2</sup> (TWIN ferrule without plastic sleeve)
	0.5 mm <sup>2</sup> ... 1.5 mm <sup>2</sup> (TWIN ferrule with plastic sleeve)
Conductor cross-section AWG	24 ... 14
	24 ... 22 (TWIN ferrule without plastic sleeve)
	20 ... 16 (TWIN ferrule with plastic sleeve)

## Ex data

Ex installation (EPL)	Gc
	Div. 2

## Interfaces

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



2908066

<https://www.phoenixcontact.com/us/products/2908066>

## Data communication (bypass)

HART function	HART transparency
Protocols supported	HART

## Signaling

Status display	Green LED (supply voltage)
----------------	----------------------------

## Dimensions

Dimensional drawing	
Width	12.5 mm
Height	107.9 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 (Housing)	V0 (Housing)
Housing material	PA 6.6-FR

## Environmental and real-life conditions

### Ambient conditions

Degree of protection	IP20
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)

### Altitude range (≤ 2000 m (Ex))

Description	Ex applications
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 ... 70 °C
Rated insulation voltage	320 V (Power supply, input / output)

### Altitude range (≤ 3000 m (Ex))

Description	Ex applications
Height range	> 2000 m ... 3000 m
Ambient temperature (operation)	-40 °C ... 60 °C

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



2908066

<https://www.phoenixcontact.com/us/products/2908066>

Rated insulation voltage	190 V (Power supply, input / output)
--------------------------	--------------------------------------

## Altitude range (≤ 4000 m (Ex))

Description	Ex applications
Height range	> 3000 m ... 4000 m
Ambient temperature (operation)	-40 °C ... 55 °C
Rated insulation voltage	63 V (Power supply, input / output)

## Altitude range (≤ 5000 m (Ex))

Description	Ex applications
Height range	> 4000 m ... 5000 m
Ambient temperature (operation)	-40 °C ... 45 °C
Rated insulation voltage	63 V (Power supply, input / output)

## Altitude range (≤ 2000 m)

Description	Non-Ex applications (EN 61010-1)
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 ... 70 °C
Rated insulation voltage	300 V (Power supply, input / output)

## Altitude range (≤ 3000 m)

Description	Non-Ex applications (EN 61010-1)
Height range	> 2000 m ... 3000 m
Ambient temperature (operation)	-40 °C ... 60 °C
Rated insulation voltage	150 V (Power supply, input / output)

## Altitude range (≤ 4000 m)

Description	Non-Ex applications (EN 61010-1)
Height range	> 3000 m ... 4000 m
Ambient temperature (operation)	-40 °C ... 55 °C
Rated insulation voltage	150 V (Power supply, input / output)

## Altitude range (≤ 5000 m)

Description	Non-Ex applications (EN 61010-1)
Height range	> 4000 m ... 5000 m
Ambient temperature (operation)	-40 °C ... 45 °C
Rated insulation voltage	150 V (Power supply, input / output)

## Approvals

### CE

Certificate	CE-compliant
Note	and EN 61326

### ATEX

Identification	⊕ II 3 G Ex ec IIC T4 Gc
----------------	--------------------------

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



2908066

<https://www.phoenixcontact.com/us/products/2908066>

Certificate	BVS 20 ATEX E 003 X
-------------	---------------------

## UKCA Ex (UKEX)

Identification	Ⓜ II 3 G Ex ec IIC T4 Gc
Certificate	PxCIF21UKEx2908065X

## IECEX

Identification	Ex ec IIC T4 Gc
Certificate	IECEX BVS 20.0003X

## CCC / China-Ex

Identification	Ex ec IIC T4 Gc
Certificate	2021122304114079

## UL, USA/Canada

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

## Shipbuilding approval

Certificate	DNV GL TAA00000AG
-------------	-------------------

## Safety Integrity Level (SIL, IEC 61508)

Identification	3
----------------	---

## Systematic Capability

Identification	3
----------------	---

## INMETRO

Identification	Ex ec IIC T4 Gc
Certificate	DNV 21.0092 X

## EAC

Identification	2Ex e IIC T4 Gc X
Certificate	RU C-DE.HB49.B.00145/21

## Shipbuilding data

Temperature	B
Humidity	B
Vibration	A
EMC	B
Enclosure	Required protection according to the Rules shall be provided upon installation on board

## EMC data

Electromagnetic compatibility	Conformance with EMC directive
Noise immunity	EN 61000-6-2
Note	When being exposed to interference, there may be minimal deviations.

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



2908066

<https://www.phoenixcontact.com/us/products/2908066>

## Noise emission

Standards/regulations	EN 61000-6-4
-----------------------	--------------

## Standards and regulations

Electrical isolation	4-way isolation
----------------------	-----------------

## GB Standard

Standards/regulations	GB/T 3836.1
	GB/T 3836.3

## Mounting

Mounting type	DIN rail mounting
---------------	-------------------

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



2908066

<https://www.phoenixcontact.com/us/products/2908066>

## Drawings

Dimensional drawing



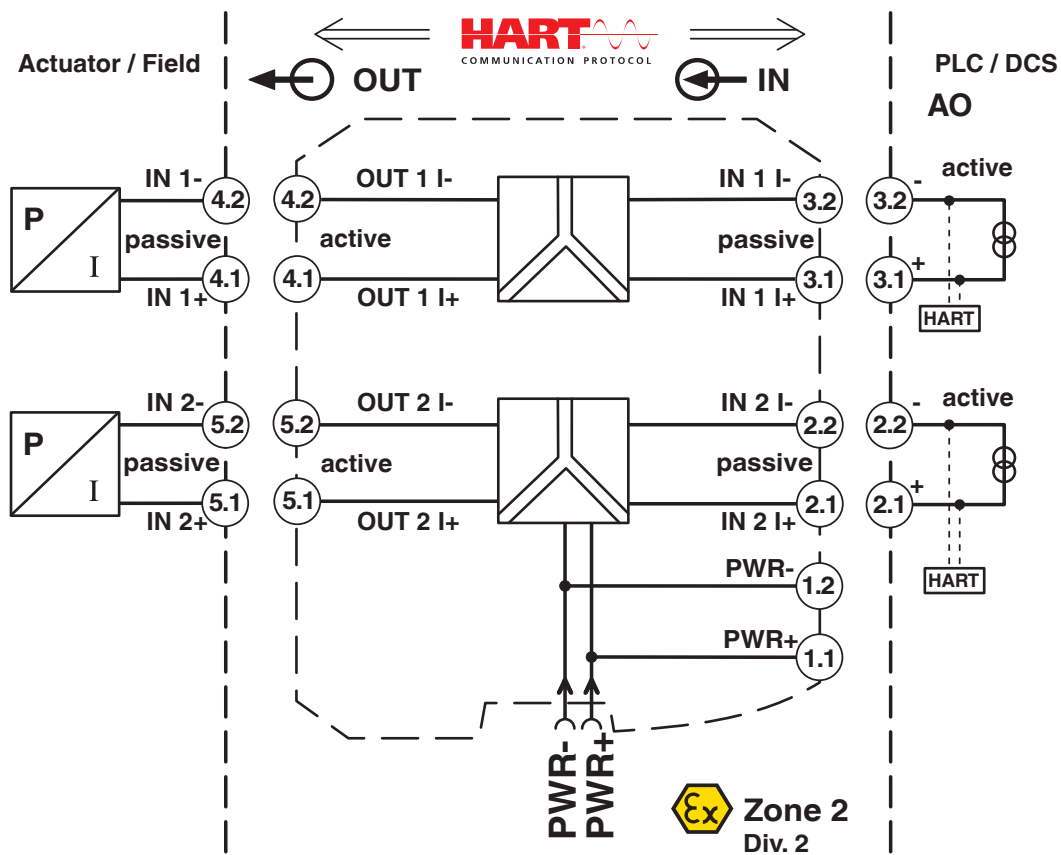
# MACX MCR-IDS-2I-2I-SP - Output signal conditioner



2908066

<https://www.phoenixcontact.com/us/products/2908066>

Block diagram



2908066

<https://www.phoenixcontact.com/us/products/2908066>

## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/2908066>



**DNV GL**

Approval ID: TAA00000AG



**UL Listed**

Approval ID: E330267



**cUL Listed**

Approval ID: FILE E 330267

**Functional Safety**

Approval ID: ZP/C002/20

**DNV**

Approval ID: TAA00000AG



**IECEX**

Approval ID: IECEX BVS 20.0003X



**cUL Listed**

Approval ID: E199827



**UL Listed**

Approval ID: E199827



**ATEX**

Approval ID: BVS 20 ATEX E 003 X



**EAC Ex**

Approval ID: RU C-DE.HB49.B.00145

**INMETRO**

Approval ID: DNV 21.0092 X

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



2908066

<https://www.phoenixcontact.com/us/products/2908066>



CCC

Approval ID: 2021122304114079

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



2908066

<https://www.phoenixcontact.com/us/products/2908066>

## Classifications

### ECLASS

ECLASS-13.0	27210120
ECLASS-15.0	27210120

### ETIM

ETIM 10.0	EC002653
-----------	----------

### UNSPSC

UNSPSC 21.0	39121000
-------------	----------

2908066

<https://www.phoenixcontact.com/us/products/2908066>

## 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)
	2,2',6,6'-tetrabromo-4,4'-isopropylidenediphenol(CAS: 79-94-7)
SCIP	348568a1-341b-4c98-a257-bac118167830

### EF3.1 Climate Change

CO2e kg	11.214 kg CO2e
---------	----------------

Phoenix Contact 2026 © - all rights reserved  
<https://www.phoenixcontact.com>

Phoenix Contact USA  
 586 Fulling Mill Road  
 Middletown, PA 17057, United States  
 (+717) 944-1300  
[info@phoenixcon.com](mailto:info@phoenixcon.com)