

MACX MCR-EX-IDS-I-I - Output signal conditioner



2908060

<https://www.phoenixcontact.com/us/products/2908060>

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.



Ex i output signal conditioner, HART-transparent. Isolates and transmits 0/4 mA ... 20 mA signals with intrinsic safety to a load in the Ex area. 3-way electrical isolation, line fault detection (can be switched off via DIP switch), SIL 2 (SC3) in accordance with IEC 61508, screw connection.

Commercial data

Item number	2908060
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	C430
Product key	DK1212
GTIN	4055626274584
Weight per piece (including packing)	170 g
Weight per piece (excluding packing)	160 g
Customs tariff number	85437090
Country of origin	DE

2908060

<https://www.phoenixcontact.com/us/products/2908060>

Technical data

Product properties

Product type	Output signal conditioner
Product family	MACX Analog
No. of channels	1
Configuration	DIP switches

System properties

Functionality

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%)	< 140 μ 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 _{rms}
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 _{rms}
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 _{rms}
Test voltage	2.5 kV AC (50 Hz, 60 s)
Insulation	Safe isolation

Electrical isolation Output/input IEC/EN 60079-11

MACX MCR-EX-IDS-I-I - Output signal conditioner



2908060

<https://www.phoenixcontact.com/us/products/2908060>

Standards/regulations	IEC/EN 60079-11
Rated insulation voltage	375 V _{PP}

Electrical isolation Output/supply IEC/EN 60079-11

Standards/regulations	IEC/EN 60079-11
Rated insulation voltage	375 V _{PP}

Supply

Nominal supply voltage	24 V DC -20 % ... +25 %
Supply voltage range	19.2 V DC ... 30 V DC
Max. current consumption	< 45 mA (24 V DC / 20 mA)
Power dissipation	< 0.8 W (24 V DC / 20 mA)
Power consumption	≤ 1.1 W (24 V DC / 20 mA)

Input data

Signal: Current

Input signal	Current
Current input signal	0 mA ... 20 mA (Function (short-circuit detection off))
	0.2 mA ... 20 mA (Function (short-circuit detection on))
	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

Output description	intrinsically safe
Number of outputs	1
Current output signal	0 mA ... 20 mA (Function (short-circuit detection off))
	0.2 mA ... 20 mA (Function (short-circuit detection on))
	4 mA ... 20 mA (Safety)
	0 mA ... 24 mA (Underload/overload range)
Load	100 Ω ... 700 Ω (20 mA (short-circuit detection on))
	100 Ω ... 650 Ω (20.5 mA (short-circuit detection on))
	100 Ω ... 500 Ω (24 mA (short-circuit detection on))
	0 Ω ... 700 Ω (20 mA (short-circuit detection off))
	0 Ω ... 650 Ω (20.5 mA (short-circuit detection off))
	0 Ω ... 500 Ω (24 mA (short-circuit detection off))
Output ripple	< 20 mV _{rms}
Open-circuit voltage	≤ 27 V
Line fault detection	> 10 kΩ (Line break)
	< 50 Ω (Short circuit)

MACX MCR-EX-IDS-I-I - Output signal conditioner



2908060

<https://www.phoenixcontact.com/us/products/2908060>

Connection data

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

COMBICON connection

Max. diameter	2 mm
---------------	------

Ex data

Ex installation (EPL)	Gc
	Div. 2
Ex i circuits (EPL)	[Ga]
	[Da]
	[Ma]
	[Div. 1]

Safety data

Max. internal inductance L_i	negligible
Max. internal capacitance C_i	negligible
Max. output voltage U_o	25.2 V
Max. output current I_o	93 mA
Max. output power P_o	586 mW
Safety-related maximum voltage U_m	253 V AC
	125 V DC
IIA (simple circuit): Max. external inductivity L_o / Max. external capacitance C_o	10 mH / 2.9 μ F
IIB (simple circuit): Max. external inductivity L_o / Max. external capacitance C_o	4 mH / 817 nF
IIC (simple circuit): Max. external inductivity L_o / Max. external capacitance C_o	2 mH / 104 nF
IIA (mixed circuit): Max. external inductivity L_o / Max. external capacitance C_o	10 mH / 587 nF, 1 mH / 627 nF, 500 μ H / 717 nF, 200 μ H / 907 nF, 100 μ H / 1.1 μ F
IIB (mixed circuit): Max. external inductivity L_o / Max. external capacitance C_o	4 mH / 367 nF, 1 mH / 427 nF, 500 μ H / 507 nF, 200 μ H / 657 nF, 100 μ H / 817 nF
IIC (mixed circuit): Max. external inductivity L_o / Max. external capacitance C_o	2 mH / 46 nF, 1 mH / 60 nF, 500 μ H / 77 nF, 200 μ H / 104 nF

Interfaces

Data communication (bypass)

HART function	HART transparency
Protocols supported	HART

MACX MCR-EX-IDS-I-I - Output signal conditioner



2908060

<https://www.phoenixcontact.com/us/products/2908060>

Signaling

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

Dimensions

Dimensional drawing	
Width	12.5 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 (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
Safety-related maximum voltage U_m	253 V AC 125 V DC
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
Safety-related maximum voltage U_m	190 V AC 110 V DC

MACX MCR-EX-IDS-I-I - Output signal conditioner



2908060

<https://www.phoenixcontact.com/us/products/2908060>

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
Safety-related maximum voltage U_m	60 V AC
	60 V DC
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
Safety-related maximum voltage U_m	60 V AC
	60 V DC
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
-------------	--------------

MACX MCR-EX-IDS-I-I - Output signal conditioner



2908060

<https://www.phoenixcontact.com/us/products/2908060>

Note	and EN 61326
------	--------------

ATEX

Identification	Ⓢ I (M1) [Ex ia Ma] I
	Ⓢ II (1) G [Ex ia Ga] IIC
	Ⓢ II (1) D [Ex ia Da] IIIC
	Ⓢ II 3(1) G Ex ec [ia Ga] IIC T4 Gc
Certificate	BVS 20 ATEX E 004 X

IECEX

Identification	[Ex ia Ma] I
	[Ex ia Ga] IIC
	[Ex ia Da] IIIC
	Ex ec [ia Ga] IIC T4 Gc
Certificate	IECEX BVS 20.0003X

CCC / China-Ex

Identification	[Ex ia Ga] IIC
	[Ex ia Da] IIIC
	Ex ec [ia Ga] IIC T4 Gc
Certificate	2021122316114080

UL, USA/Canada

Identification	UL 61010 Listed
	Class I Div 2; IS for Class I, II, III Div 1
Certificate	Ⓢ.C.D.-No 83104549

Shipbuilding approval

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

Safety Integrity Level (SIL, IEC 61508)

Identification	2
----------------	---

Systematic Capability

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

INMETRO

Identification	[Ex ia Ma] I
	[Ex ia Ga] IIC
	[Ex ia Da] IIIC
	Ex ec [ia Ga] IIC T4 Gc
Certificate	DNV 21.0092 X

Shipbuilding data

Temperature	B
Humidity	B
Vibration	A
EMC	B

MACX MCR-EX-IDS-I-I - Output signal conditioner



2908060

<https://www.phoenixcontact.com/us/products/2908060>

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.

Noise emission

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

Standards and regulations

Electrical isolation	3-way isolation
----------------------	-----------------

GB Standard

Standards/regulations	GB/T 3836.1
	GB/T 3836.3
	GB/T 3836.4

Mounting

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

MACX MCR-EX-IDS-I-I - Output signal conditioner

2908060

<https://www.phoenixcontact.com/us/products/2908060>



Drawings

Dimensional drawing



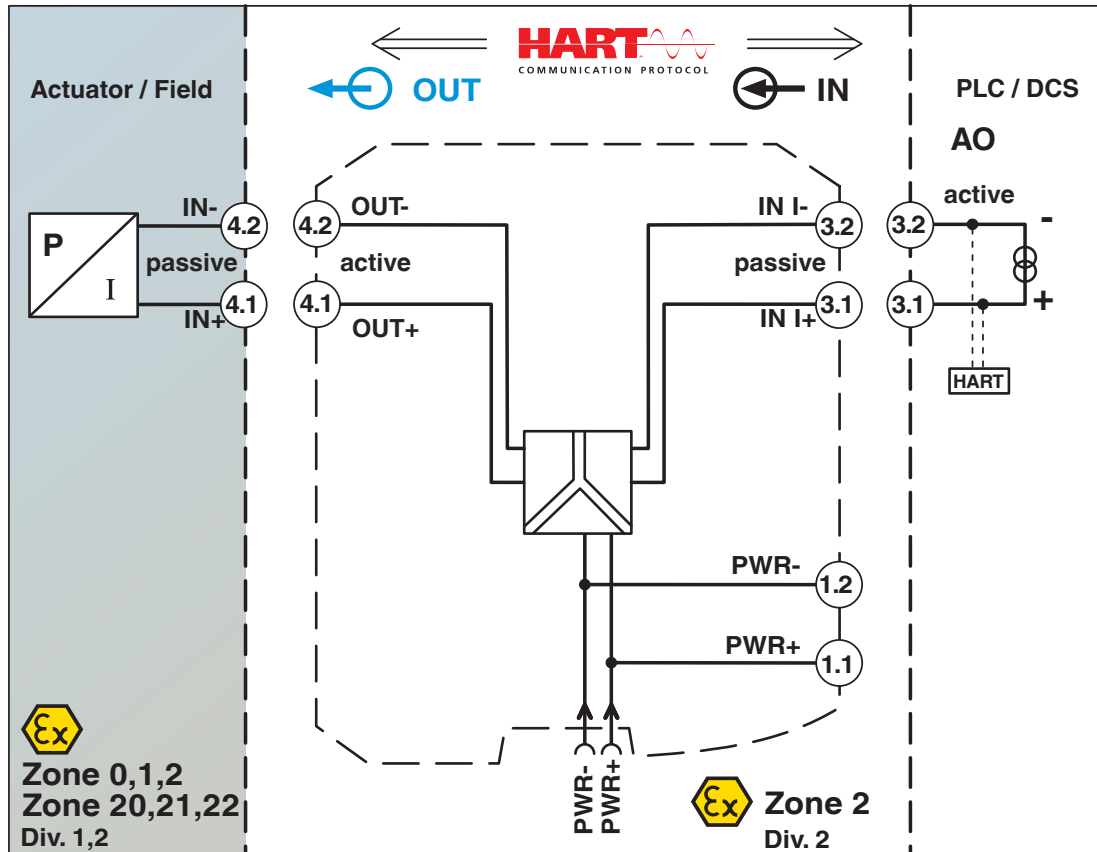
MACX MCR-EX-IDS-I-I - Output signal conditioner



2908060

<https://www.phoenixcontact.com/us/products/2908060>

Block diagram



MACX MCR-EX-IDS-I-I - Output signal conditioner



2908060

<https://www.phoenixcontact.com/us/products/2908060>

Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/2908060>



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

ECAS

Approval ID: 163684 E25 08 169501



IECEx

Approval ID: IECEx BVS 20.0003X



cUL Listed

Approval ID: FILE E 199827



UL Listed

Approval ID: E199827



ATEX

Approval ID: BVS 20 ATEX E 004 X

INMETRO

Approval ID: DNV 21.0092 X

MACX MCR-EX-IDS-I-I - Output signal conditioner



2908060

<https://www.phoenixcontact.com/us/products/2908060>



EAC Ex

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



CCC

Approval ID: 2021122316114080

MACX MCR-EX-IDS-I-I - Output signal conditioner



2908060

<https://www.phoenixcontact.com/us/products/2908060>

Classifications

ECLASS

ECLASS-13.0	27210120
ECLASS-15.0	27210120

ETIM

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

UNSPSC

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

2908060

<https://www.phoenixcontact.com/us/products/2908060>

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	66ca8a68-c972-4fc8-a188-3fb6b1b243a1

EF3.1 Climate Change

CO2e kg	6.723 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