

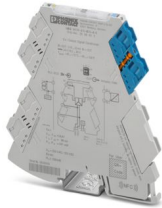
# MINI MCR-EX-IDS-I-I - Output signal conditioner



2908805

<https://www.phoenixcontact.com/us/products/2908805>

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Ex i-Output signal conditioner for isolating and transmitting 0 mA / 4 mA ... 20 mA signals from the controller to an intrinsically safe load in the Ex area. number of channels: 1, open-circuit voltage: 27 V DC, Standard configuration, 3-way isolation, Safety Integrity Level (SIL, IEC 61508): 3, Screw connection

## Commercial data

Item number	2908805
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	C430
Product key	DK1222
GTIN	4055626357522
Weight per piece (including packing)	118.5 g
Weight per piece (excluding packing)	118.5 g
Customs tariff number	85437090
Country of origin	DE

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## Technical data

### Product properties

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

### System properties

#### Functionality

Configuration	DIP switches
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### Electrical properties

Electrical isolation	3-way isolation
Electrical isolation between input and output	yes
Signal transmission behavior	In = Out
Step response (10-90%)	≤ 10 ms
Maximum temperature coefficient	≤ 0.01 %/K
Maximum transmission error	0.1 %

#### Electrical isolation

Overvoltage category	II (≤ 5000 m)
Pollution degree	2 (≤ 5000 m)

#### Electrical isolation Input/output/power 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	Double/reinforced insulation

#### Electrical isolation Output/input, power supply IEC/EN 60079-11

Standards/regulations	IEC/EN 60079-11
Rated insulation voltage	253 V <sub>rms</sub>

#### Electrical isolation Input/output/power supply IEC/EN 60079-7

Standards/regulations	IEC/EN 60079-7
Rated insulation voltage	251 V <sub>rms</sub>

#### Supply

Nominal supply voltage	24 V DC
Supply voltage range	19.2 V DC ... 30 V DC (24 V DC, -20 % ... +25 %)
Power consumption	≤ 1.2 W

### Input data

Signal: Current

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Number of inputs	1
Current input signal	0 mA ... 20 mA
	4 mA ... 20 mA (SIL)
Input current	≤ 30 mA
Voltage drop	< 3.5 V DC (20 mA)

## Output data

Signal: Current

Output description	intrinsically safe
Number of outputs	1
Current output signal	0 mA ... 20 mA
	4 mA ... 20 mA (SIL)
Load/output load current output	≤ 700 Ω (20 mA)
	≤ 630 Ω (21 mA)
Output ripple	20 mV (rms)
Open-circuit voltage	≤ 27 V DC
Short-circuit-proof	yes
Line fault detection	> 10 kΩ (Line break)
	< 50 Ω (Short circuit)

## Connection data

Connection method	Screw connection
Stripping length	10 mm
Screw thread	M3
Conductor cross-section rigid	0.2 mm <sup>2</sup> ... 1.5 mm <sup>2</sup> (with ferrule)
	0.14 mm <sup>2</sup> ... 2.5 mm <sup>2</sup> (without ferrule)
Conductor cross-section flexible	0.14 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>
Conductor cross-section AWG	24 ... 12 (flexible)
Tightening torque	0.5 Nm ... 0.6 Nm

## 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 $C_i$	6.1 nF
Max. output voltage $U_o$	26.4 V
Max. output current $I_o$	98 mA
Max. output power $P_o$	647 mW

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Safety-related maximum voltage $U_m$	253 V AC ( $\leq 2000$ m)
	125 V DC ( $\leq 2000$ m)
	121 V AC ( $> 2000$ m ... 3000 m)
	110 V DC ( $> 2000$ m ... 3000 m)
	33 V AC/DC ( $> 3000$ m ... 4000 m)
	33 V AC/DC ( $> 4000$ m ... 5000 m)
IIA/I (simple circuit): Max. external inductivity $L_o$ / Max. external capacitance $C_o$	10 mH / 2.48 $\mu$ F
IIB/III (simple circuit): Max. external inductivity $L_o$ / Max. external capacitance $C_o$	4 mH / 730 nF
IIC (simple circuit): Max. external inductivity $L_o$ / Max. external capacitance $C_o$	2 mH / 89 nF
IIA/I (mixed circuit): Max. external inductivity $L_o$ / Max. external capacitance $C_o$	10 mH / 493 nF, 1 mH / 553 nF, 500 $\mu$ H / 653 nF, 200 $\mu$ H / 833 nF, 100 $\mu$ H / 993 nF
IIB/III (mixed circuit): Max. external inductivity $L_o$ / Max. external capacitance $C_o$	4 mH / 303 nF, 1 mH / 383 nF, 500 $\mu$ H / 463 nF, 200 $\mu$ H / 613 nF, 100 $\mu$ H / 733 nF
IIC (mixed circuit): Max. external inductivity $L_o$ / Max. external capacitance $C_o$	1.4 mH / 42 nF, 1 mH / 49 nF, 500 $\mu$ H / 66 nF, 200 $\mu$ H / 89 nF

## Interfaces

### Data communication (bypass)

Protocols supported	HART-transparent
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## Signaling

Status display	Green LED (supply voltage)
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## Dimensions

Width	6.2 mm
Height	109.81 mm
Depth	119.2 mm

## Material specifications

Color	gray (RAL 7042)
Housing material	PBT

## Environmental and real-life conditions

### 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 % (at 25 °C, non-condensing)
Shock (operation)	15g (DIN EN 60068-2-27)
Vibration (operation)	5g (DIN EN 60068-2-6)

### Altitude range (IEC/EN 61010-1)

Height range	$> 2000$ m ... 3000 m
Ambient temperature (operation)	-40 °C ... 63 °C

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Rated insulation voltage	300 V <sub>rms</sub> (Input/output/power supply)
Insulation	Double/reinforced insulation

## Altitude range (IEC/EN 61010-1)

Height range	> 3000 m ... 4000 m
Ambient temperature (operation)	-40 °C ... 56 °C
Rated insulation voltage	300 V <sub>rms</sub> (Input/output/power supply)
Insulation	Double/reinforced insulation

## Altitude range (IEC/EN 61010-1)

Height range	> 4000 m ... 5000 m
Ambient temperature (operation)	-40 °C ... 49 °C
Rated insulation voltage	150 V <sub>rms</sub> (Input/output/power supply)
Insulation	Double/reinforced insulation

## Altitude range (IEC/EN 60079-11)

Height range	> 2000 m ... 3000 m
Ambient temperature (operation)	-40 °C ... 63 °C
Rated insulation voltage	150 V <sub>rms</sub> (Output/input, power supply)

## Altitude range (IEC/EN 60079-11)

Height range	> 3000 m ... 4000 m
Ambient temperature (operation)	-40 °C ... 56 °C
Rated insulation voltage	60 V <sub>rms</sub> (Output/input, power supply)

## Altitude range (IEC/EN 60079-11)

Height range	> 4000 m ... 5000 m
Ambient temperature (operation)	-40 °C ... 49 °C
Rated insulation voltage	60 V <sub>rms</sub> (Output/input, power supply)

## Altitude range (IEC/EN 60079-7)

Height range	> 2000 m ... 3000 m
Ambient temperature (operation)	-40 °C ... 63 °C
Rated insulation voltage	162 V <sub>rms</sub> (Input/output/power supply)

## Altitude range (IEC/EN 60079-7)

Height range	> 3000 m ... 4000 m
Ambient temperature (operation)	-40 °C ... 56 °C
Rated insulation voltage	60 V <sub>rms</sub> (Input/output/power supply)

## Altitude range (IEC/EN 60079-7)

Height range	> 4000 m ... 5000 m
Ambient temperature (operation)	-40 °C ... 49 °C
Rated insulation voltage	60 V <sub>rms</sub> (Input/output/power supply)

## Approvals

CE

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Certificate	CE-compliant
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## ATEX

Identification	Ⓜ 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
	Ⓜ I (M1) [Ex ia Ma] I
Certificate	BVS 23 ATEX 006 X

## IECEX

Identification	[Ex ia Ga] IIC
	[Ex ia Da] IIIC
	Ex ec [ia Ga] IIC T4 Gc
	[Ex ia Ma] I
Certificate	IECEX BVS 23.0003X

## CCC / China-Ex

Identification	[Ex ia Ga] IIC
	[Ex ia Da] IIIC
	Ex ec [ia Ga] IIC T4 Gc
Certificate	2023122310117250

## UL, USA/Canada

Identification	UL 61010-2-201 Listed
	Class I, Div. 1, Groups A, B, C, D
	Class II, Div. 1, Groups E, F, G
	Class III, Div. 1
	Class I, Zone 0, 1, 2, Groups IIC, IIB, IIA
	Class I, Div. 2, Groups A, B, C, D T4
	Class I, Zone 2
	AEx ec [ia Ga] IIC T4 Gc; AEx ec [ia IIIC Da] IIC T4 Gc
	Ex ec [ia Ga] IIC T4 Gc X; Ex ec [ia IIIC Da] IIC T4 Gc X
	Class I, Zone 0, [AEx ia Ga] IIC, [Ex ia Ga] IIC X
	Class I, Zone 20, [AEx ia Da] IIIC, [Ex ia Da] IIIC X
Certificate	Ⓜ.Ⓜ. C.D.-No 097285872

## Shipbuilding approval

Certificate	DNV TAA00003FZ
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## Safety Integrity Level (SIL, IEC 61508)

Identification	3
Note	single-channel

## INMETRO

Identification	[Ex ia Ma] I
	[Ex ia Ga] IIC
	[Ex ia Da] IIIC

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	Ex ec [ja Ga] IIC T4 Gc
Certificate	DNV 23.0186 X

## Shipbuilding data

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

## EMC data

Electromagnetic compatibility	Tested in accordance with the following standards and regulations: EN 61326-1 For industrial use, NAMUR NE 21
Low Voltage Directive	Conformance with Low Voltage Directive
Noise immunity	EN 61000-6-2
Noise immunity	EN 61326-3-2

## Noise emission

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

Electrical isolation	3-way isolation
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## Mounting

Mounting type	DIN rail mounting
Mounting position	any

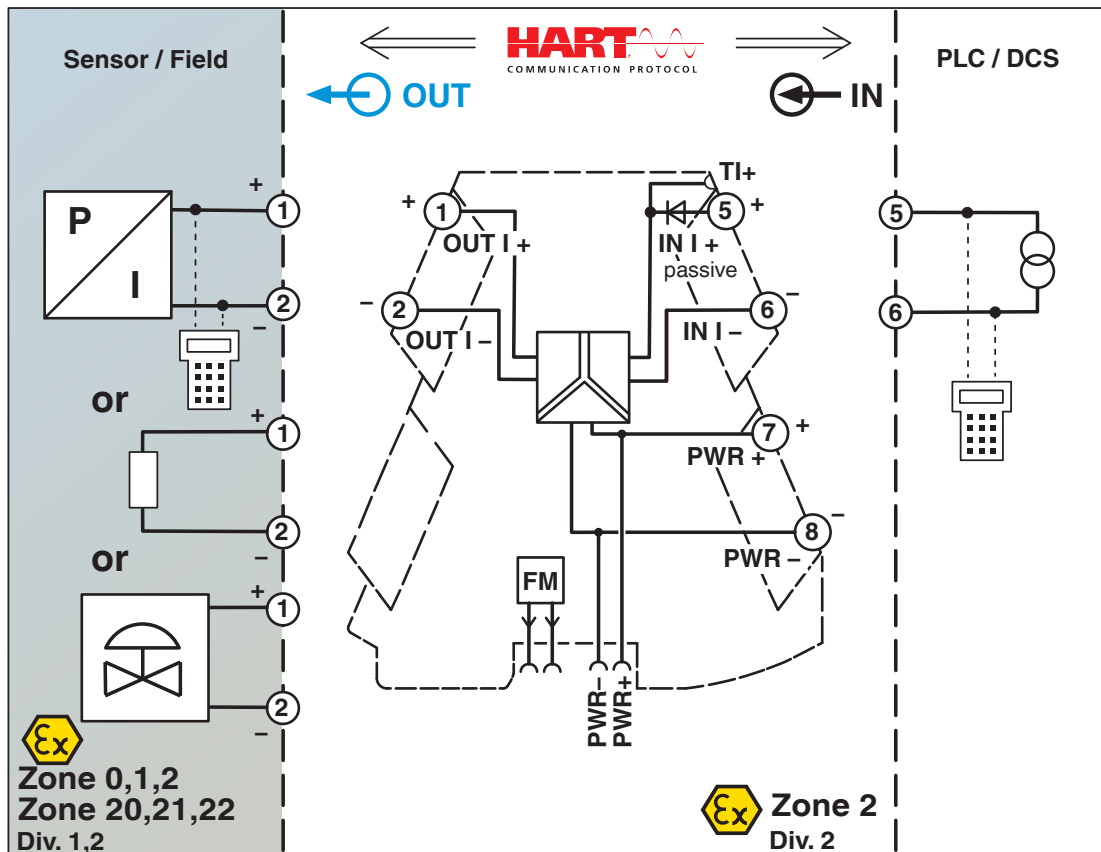
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## Drawings

Block diagram



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## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/2908805>



### Functional Safety

Approval ID: 1435.IM.131623/19



### cULus Listed

Approval ID: E238705

### DNV

Approval ID: TAA00003FZ



### cULus Listed

Approval ID: E238705



### IECEX

Approval ID: IECEX BVS 23.0003X



### ATEX

Approval ID: BVS 23 ATEX E 006 X



### CCC

Approval ID: 2023122310117250



### cULus Listed

Approval ID: E196811



### cULus Listed

Approval ID: E196811

### INMETRO

Approval ID: DNV 23.0186 X

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## Classifications

### ECLASS

ECLASS-13.0	27210120
ECLASS-15.0	27210120
ECLASS-15.0 ASSET	27250101

### ETIM

ETIM 10.0	EC002653
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### UNSPSC

UNSPSC 21.0	39121008
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## Environmental product compliance

### EU RoHS

Fulfills EU RoHS substance requirements	Yes
Exemption	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	4133dd20-b35b-4cb4-b9e3-7c45a9d2016b

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