

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



2908806

<https://www.phoenixcontact.com/us/products/2908806>

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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. HART-transparent, open-circuit voltage: 27 V DC, Standard configuration, Safety Integrity Level (SIL, IEC 61508): 3, Push-in connection

Commercial data

Item number	2908806
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	C430
Product key	DK1222
GTIN	4055626357539
Weight per piece (including packing)	118.5 g
Weight per piece (excluding packing)	118.5 g
Customs tariff number	85437090
Country of origin	DE

Technical data

Product properties

Product type	Output signal conditioner
Product family	MINI Analog Pro
Configuration	DIP switches

System properties

Functionality

Configuration	DIP switches
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Electrical properties

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 _{rms}
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 _{rms}

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

Standards/regulations	IEC/EN 60079-7
Rated insulation voltage	251 V _{rms}

Supply

Nominal supply voltage	24 V DC
Supply voltage range	19.2 V DC ... 30 V DC
Power consumption	≤ 1.2 W

Input data

Signal: Current

Number of inputs	1
Current input signal	0 mA ... 20 mA

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	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	$\leq 700 \Omega$ (20 mA) $\leq 630 \Omega$ (21 mA)
Output ripple	20 mV (rms)
Open-circuit voltage	≤ 27 V DC
Short-circuit-proof	yes
Line fault detection	> 10 k Ω (Line break) $< 50 \Omega$ (Short circuit)

Connection data

Connection method	Push-in connection
Stripping length	10 mm
Conductor cross-section rigid	0.2 mm ² ... 1.5 mm ² (with ferrule) 0.14 mm ² ... 2.5 mm ² (without ferrule)
Conductor cross-section flexible	0.14 mm ² ... 2.5 mm ²
Conductor cross-section AWG	24 ... 12 (flexible)

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
Safety-related maximum voltage U_m	253 V AC 125 V DC
IIA/I (simple circuit): Max. external inductivity L_o / Max. external capacitance C_o	10 mH / 2.48 μ F

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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 μ H / 653 nF, 200 μ H / 833 nF, 100 μ 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 μ H / 463 nF, 200 μ H / 613 nF, 100 μ 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 μ H / 66 nF, 200 μ 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
Rated insulation voltage	300 V _{rms} (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 _{rms} (Input/output/power supply)
Insulation	Double/reinforced insulation

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Altitude range (IEC/EN 61010-1)

Height range	> 4000 m ... 5000 m
Ambient temperature (operation)	-40 °C ... 49 °C
Rated insulation voltage	150 V _{rms} (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
Safety-related maximum voltage U _m	121 V AC 110 V DC
Rated insulation voltage	150 V _{rms} (Output/input, power supply)

Altitude range (IEC/EN 60079-11)

Height range	> 3000 m ... 4000 m
Ambient temperature (operation)	-40 °C ... 56 °C
Safety-related maximum voltage U _m	33 V AC/DC
Rated insulation voltage	60 V _{rms} (Output/input, power supply)

Altitude range (IEC/EN 60079-11)

Height range	> 4000 m ... 5000 m
Ambient temperature (operation)	-40 °C ... 49 °C
Safety-related maximum voltage U _m	33 V AC/DC
Rated insulation voltage	60 V _{rms} (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 _{rms} (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 _{rms} (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 _{rms} (Input/output/power supply)

Approvals

CE

Certificate	CE-compliant
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ATEX

	⚡ II (1) G [Ex ia Ga] IIC
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Identification	⚡ II (1) D [Ex ia Da] IIC
	⚡ II 3 (1) G Ex ec [ia Ga] IIC T4 Gc
	⚡ I (M1) [Ex ia Ma] I
Certificate	BVS 23 ATEX 006 X

IECEEx

Identification	[Ex ia Ga] IIC
	[Ex ia Da] IIIC
	Ex ec [ia Ga] IIC T4 Gc
	[Ex ia Ma] I
Certificate	IECEEx 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
	Ex ec [ia Ga] IIC T4 Gc
Certificate	DNV 23.0186 X

Shipbuilding data

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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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Mounting

Mounting type	DIN rail mounting
Mounting position	any

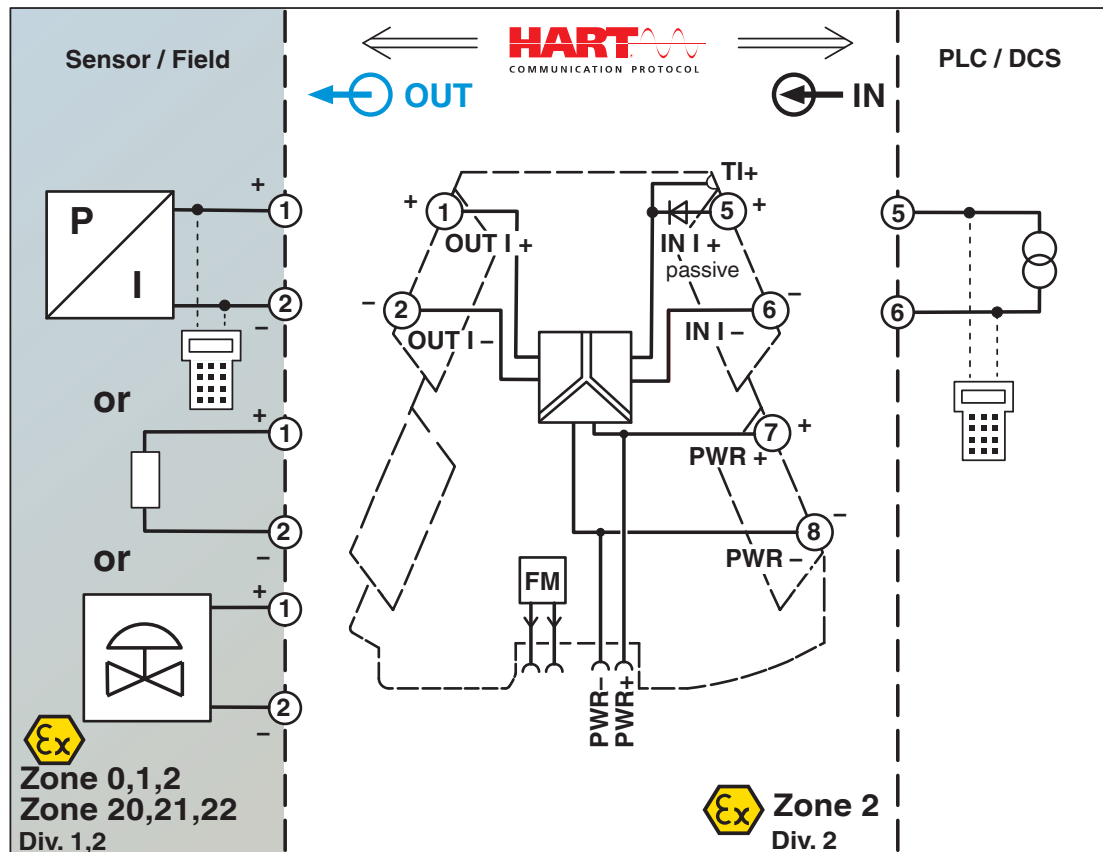
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Drawings

Block diagram



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Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/2908806>



Functional Safety

Approval ID: 1435.IM.131623/19



cULus Listed

Approval ID: E238705

DNV

Approval ID: TAA00003FZ



ATEX

Approval ID: BVS 23 ATEX E 006 X



IECEx

Approval ID: IECEx BVS 23.0003X



ATEX

Approval ID: BVS 23 ATEX E 006 X



CCC

Approval ID: 2023122310117250EN



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 9.0	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	afc8d24d-0e73-4b4b-a954-93f91410b0d4