

MINI MCR-EX-SD-20-25-LP-PT - Solenoid driver



1157868

<https://www.phoenixcontact.com/us/products/1157868>

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-Solenoid driver for controlling Ex i solenoid valves in the Ex area. open-circuit voltage: 20 V DC, current limitation: 25 mA, Standard configuration, Loop-powered, Safety Integrity Level (SIL, IEC 61508): 3, Push-in connection

Commercial data

Item number	1157868
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	C430
Product key	DK1224
GTIN	4063151163402
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	Solenoid driver
Product family	MINI Analog Pro

Electrical properties

Electrical isolation between input and output	yes
---	-----

Electrical isolation

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

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	Double/reinforced insulation

Electrical isolation Input/output IEC/EN 60079-11

Standards/regulations	IEC/EN 60079-11
Rated insulation voltage	265 V _{rms}

Electrical isolation Input/output IEC/EN 60079-7

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

Supply

Supply voltage range	loop-powered, no external supply necessary
Power consumption	< 1 W

Input data

Signal: Voltage

Number of inputs	1
Voltage input signal	19.2 V DC ... 30 V DC (24 V DC, -20 % ... +25 %)

Output data

Signal: Voltage

Number of outputs	1
Output voltage	≥ 9.6 V DC (25 mA)
Output resistor	$\geq 413 \Omega$ (Internal resistance R _i)
Current limitation	> 25 mA
Response time	< 50 ms
Open-circuit voltage	> 20 V DC
Short-circuit-proof	yes

MINI MCR-EX-SD-20-25-LP-PT - Solenoid driver



1157868

<https://www.phoenixcontact.com/us/products/1157868>

Connection data

Connection method	Push-in connection
Stripping length	10 mm
Conductor cross-section rigid	0.2 mm ² ... 2.5 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	11 nF
Max. output voltage U_o	24 V
Max. output current I_o	59 mA
Max. output power P_o	354 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	70 mH / 3.33 μ F
IIB/IIIC (simple circuit): Max. external inductivity L_o / Max. external capacitance C_o	30 mH / 919 nF
IIC (simple circuit): Max. external inductivity L_o / Max. external capacitance C_o	10 mH / 114 nF
I (simple circuit): Max. external inductivity L_o / Max. external capacitance C_o	90 mH / 5.23 μ F

Dimensions

Width	6.2 mm
Height	109.81 mm
Depth	119.2 mm

Material specifications

Color	gray (RAL 7042)
-------	-----------------

Environmental and real-life conditions

Ambient conditions

Degree of protection	IP20
Ambient temperature (operation)	-40 °C ... 70 °C

MINI MCR-EX-SD-20-25-LP-PT - Solenoid driver



1157868

<https://www.phoenixcontact.com/us/products/1157868>

Ambient temperature (storage/transport)	-40 °C ... 85 °C
Permissible humidity (operation)	5 % ... 95 % (non-condensing)

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)
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)
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 _{rms} (Input/output)
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} (Input/output)

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} (Input/output)

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} (Input/output)

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)

Altitude range (IEC/EN 60079-7)

Height range	> 3000 m ... 4000 m
Ambient temperature (operation)	-40 °C ... 56 °C

MINI MCR-EX-SD-20-25-LP-PT - Solenoid driver



1157868

<https://www.phoenixcontact.com/us/products/1157868>

Rated insulation voltage	60 V _{rms} (Input/output)
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)

Approvals

CE

Certificate	CE-compliant
-------------	--------------

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	TÜV 21 ATEX 8651 X

IECEX

Identification	[Ex ia Ga] IIC
	[Ex ia Da] IIIC
	Ex ec [ia Ga] IIC T4 Gc
	[Ex ia Ma] I
Certificate	IECEX TUR 21.0043 X

CCC / China-Ex

Identification	[Ex ia Ga] IIC
	[Ex ia Da] IIIC
	Ex ec [ia Ga] IIC T4 Gc
Certificate	2023122310116238

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

MINI MCR-EX-SD-20-25-LP-PT - Solenoid driver



1157868

<https://www.phoenixcontact.com/us/products/1157868>

Certificate	DNV TAA00003FZ
-------------	----------------

Safety Integrity Level (SIL, IEC 61508)

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 23.0189 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
Noise immunity	IEC/EN 61000-6-2
Noise immunity	IEC/EN 61326-3-2

Noise emission

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

Standards and regulations

GB Standard

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

MINI MCR-EX-SD-20-25-LP-PT - Solenoid driver

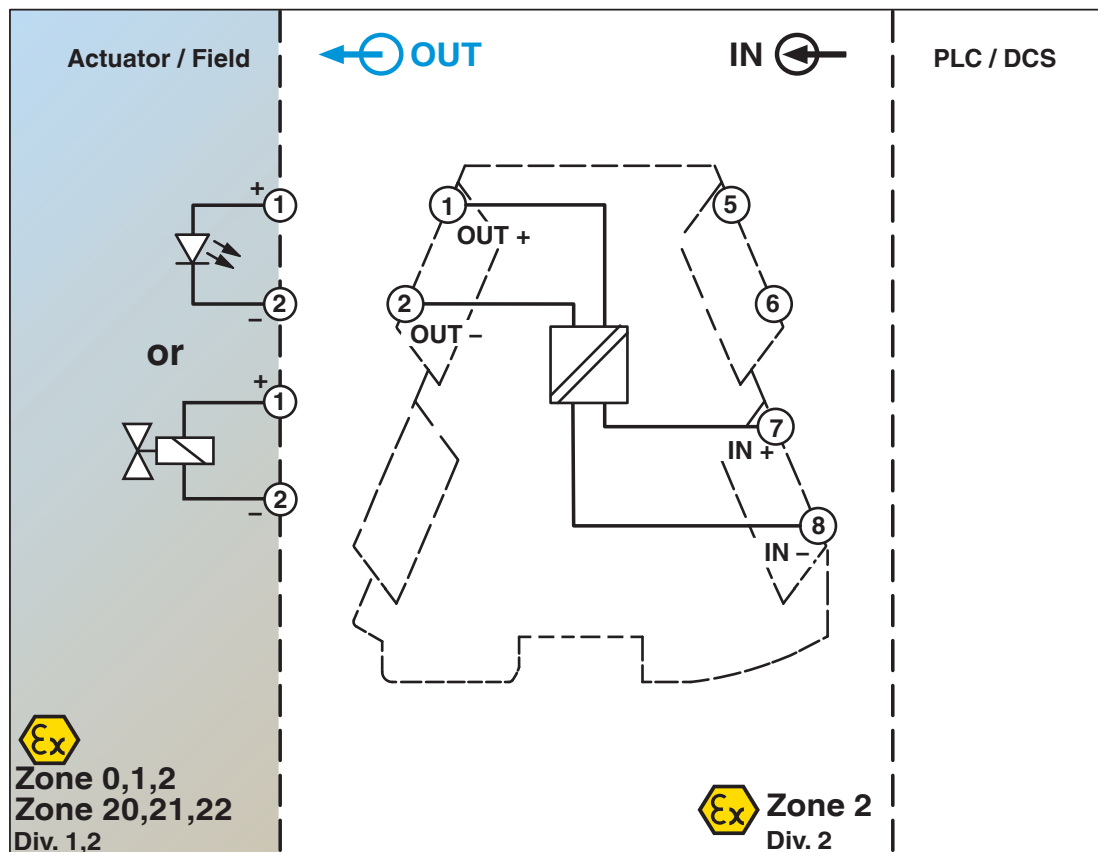


1157868

<https://www.phoenixcontact.com/us/products/1157868>

Drawings

Block diagram



MINI MCR-EX-SD-20-25-LP-PT - Solenoid driver



1157868

<https://www.phoenixcontact.com/us/products/1157868>

Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/1157868>



Functional Safety

Approval ID: 1435.IM.131623/19



cULus Listed

Approval ID: E238705

DNV

Approval ID: TAA00003FZ



IECEx

Approval ID: IECEx TUR 21.0043X



ATEX

Approval ID: TUEV 21 ATEX 8651 X



CCC

Approval ID: 2023122316116237



cULus Listed

Approval ID: E196811



cULus Listed

Approval ID: E196811

INMETRO

Approval ID: DNV 23.0189 X

MINI MCR-EX-SD-20-25-LP-PT - Solenoid driver



1157868

<https://www.phoenixcontact.com/us/products/1157868>

Classifications

ECLASS

ECLASS-13.0	27210120
ECLASS-15.0	27210120

ETIM

ETIM 9.0	EC002653
----------	----------

MINI MCR-EX-SD-20-25-LP-PT - Solenoid driver



1157868

<https://www.phoenixcontact.com/us/products/1157868>

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)
SCIP	4130b180-30d6-4c5f-a9c0-c9ac7cd02a52

Phoenix Contact 2025 © - 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