

Solenoid driver - MACX MCR-EX-SL-SD-21-25-LFD - 2905669

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Ex i solenoid driver for controlling Ex i solenoid valves in hazardous areas, logic input, off-load voltage 21.1 V, current limitation at 25.1 mA, line fault transparency, error message output, up to SIL 3 according to IEC 61508; screw connection.

Why buy this product

- ✓ Input: logic
- ✓ Output: intrinsically safe [Ex ia]; off-load voltage > 21.1 V DC; current limitation > 25.1 mA
- ✓ Line fault detection (can be enabled/disabled), via the signal circuit or via a separate error message output
- ✓ Transparent for test pulses
- ✓ Up to SIL 3 according to IEC/EN 61508
- ✓ Safe electrical isolation between output, input, supply, and error message output
- ✓ Power supply and error indication possible via DIN rail connector
- ✓ Plug-in connection terminals, screw connection technology
- ✓ Installation in zone 2 permitted
- ✓ Housing width: 12.5 mm



Key Commercial Data

Packing unit	1 STK
GTIN	 4 046356 985079
GTIN	4046356985079

Technical data

Note

Utilization restriction	EMC: class A product, see manufacturer's declaration in the download area
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Dimensions

Width	12.5 mm
Height	112.5 mm

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Technical data

Dimensions

Depth	114.5 mm
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Ambient conditions

Ambient temperature (operation)	-20 °C ... 60 °C (Any mounting position)
Ambient temperature (storage/transport)	-40 °C ... 80 °C
Maximum altitude	≤ 2000 m
Permissible humidity (operation)	10 % ... 95 % (non-condensing)
Noise immunity	EN 61000-6-2 When being exposed to interference, there may be minimal deviations.
Degree of protection	IP20

Input data

Signal input	Signal input
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Output data

Output characteristic curve: Output resistor	≥ 641 Ω (Internal resistance R _i)
Response time	< 30 ms

Power supply

Nominal supply voltage	24 V DC
Supply voltage range	19.2 V DC ... 30 V DC (24 V DC -20%...+25%)
Power dissipation	< 0.8 W

Connection data

Conductor cross section solid min.	0.2 mm ²
Conductor cross section solid max.	2.5 mm ²
Conductor cross section flexible min.	0.2 mm ²
Conductor cross section flexible max.	2.5 mm ²
Conductor cross section AWG min.	24
Conductor cross section AWG max.	14
Stripping length	7 mm
Connection method	Screw connection
Tightening torque, min	0.5 Nm
Tightening torque max	0.6 Nm

General

No. of channels	1
Status display	Green LED (supply voltage) LED yellow (switching state) Red LED (line errors)
Flammability rating according to UL 94	V0
Degree of pollution	2
Overvoltage category	II
Electromagnetic compatibility	Conformance with EMC directive

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Technical data

General

Interference emission	EN 61000-6-4
Housing material	PA 6.6-FR
Color	green
Designation	Output/input, error message output
Electrical isolation	375 V (Peak value in accordance with EN 60079-11)
	300 V _{rms} (Rated insulation voltage (overvoltage category II; degree of pollution 2, safe isolation as per EN 61010-1))
	2.5 kV (50 Hz, 1 min., test voltage)
Designation	Output/supply, DIN rail connector
Electrical isolation	375 V (Peak value in accordance with EN 60079-11)
	300 V _{rms} (Rated insulation voltage (overvoltage category II; degree of pollution 2, safe isolation as per EN 61010-1))
	2.5 kV (50 Hz, 1 min., test voltage)
Designation	Input/error message output/supply
Electrical isolation	1.5 kV (50 Hz, 1 min., test voltage)
Conformance	CE-compliant, additionally EN 61326
ATEX	# II (1) G [Ex ia Ga] IIC
	# II (1) D [Ex ia Da] IIIC
	# II 3(1) G Ex nA [ia Ga] IIC T4 Gc X
IECEX	[Ex ia Ga] IIC
	[Ex ia Da] IIIC
	Ex nA [ia Ga] IIC T4 Gc
UL, USA/Canada	UL 61010 Listed
SIL	3

Safety data

Max. internal inductance L _i	negligible
Max. internal capacitance C _i	11 nF
Max. output voltage U _o	23.98 V
Max. output current I _o	37.4 mA
Max. output power P _o	224 mW
Group	IIC
Max. external inductivity L _o	22 mH
Max. external capacity C _o	110 nF
Group	IIB
Max. external inductivity L _o	100 mH
Max. external capacity C _o	910 nF
Group	IIA
Max. external inductivity L _o	200 mH
Max. external capacity C _o	3330 nF
Safety-related maximum voltage U _m	253 V AC/DC

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Technical data

Standards and Regulations

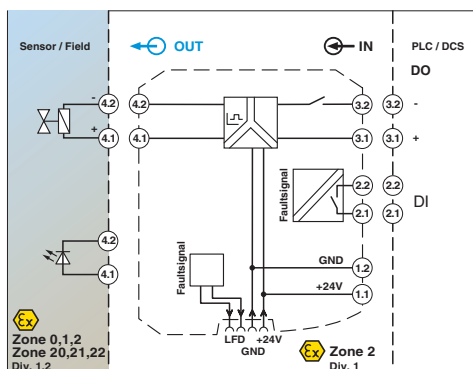
Electromagnetic compatibility	Conformance with EMC directive
Noise emission	EN 61000-6-4
Flammability rating according to UL 94	V0
Conformance	CE-compliant, additionally EN 61326
ATEX	# II (1) G [Ex ia Ga] IIC
	# II (1) D [Ex ia Da] IIIC
	# II 3(1) G Ex nA [ia Ga] IIC T4 Gc X
IECEX	[Ex ia Ga] IIC
	[Ex ia Da] IIIC
	Ex nA [ia Ga] IIC T4 Gc
UL, USA/Canada	UL 61010 Listed
Group	IIC
	IIB
	IIA

Environmental Product Compliance

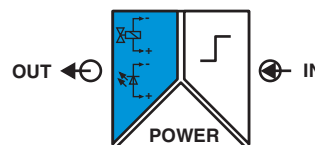
REACH SVHC	Lead 7439-92-1
China RoHS	Environmentally Friendly Use Period = 50
	For details about hazardous substances go to tab "Downloads", Category "Manufacturer's declaration"

Drawings

Block diagram



Pictogram



Approvals

Approvals

Solenoid driver - MACX MCR-EX-SL-SD-21-25-LFD - 2905669

Approvals

Approvals

GL / Functional Safety / EAC


Ex Approvals

IECEX / ATEX

Approval details

GL		http://exchange.dnv.com/tari/	11564-14 HH
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Functional Safety			BVS Pb 11/13
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EAC			RU C- DE.A*30.B.01082
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