

Solenoid driver - MACX MCR-EX-SL-SD-24-48-LFD-SP - 2906156

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Ex i solenoid driver for controlling Ex i solenoid valves in hazardous areas, logic input, off-load voltage 24.3 V, current limitation at 48 mA, line fault transparency, error message output, up to SIL 3 according to IEC 61508, Push-in connection.

Your advantages

- ✔ Input: logic
- ✔ Output: intrinsically safe [Ex ia]; off-load voltage > 24.3 V DC; current limitation > 48 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, push-in connection technology
- ✔ Installation in zone 2 permitted
- ✔ Housing width: 12.5 mm



Key Commercial Data

Packing unit	1 pc
GTIN	
GTIN	4055626040882

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	116 mm
Depth	114.5 mm

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Technical data

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)
Degree of protection	IP20
	IP20
Noise immunity	EN 61000-6-2 When being exposed to interference, there may be minimal deviations.

Input data

Signal input	Signal input
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Output data

Output characteristic curve: Output resistor	≥ 297 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	< 1.62 W

Connection data

Connection method	Push-in connection
Stripping length	8 mm
Conductor cross section solid	0.2 mm ² ... 1.5 mm ²
Conductor cross section flexible	0.2 mm ² ... 1.5 mm ²
Conductor cross section AWG	24 ... 16

Connection data 2

Connection name	Test socket
Max. diameter	2.3 mm

General

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
Interference emission	EN 61000-6-4
Housing material	PA 6.6-FR
Color	gray
Designation	Output/input, error message output

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Technical data

General

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	27.06 V
Max. output current I _o	91.11 mA
Max. output power P _o	616 mW
Group	IIC
Max. external inductivity L _o	3.5 mH
Max. external capacity C _o	78 nF
Group	IIB
Max. external inductivity L _o	15 mH
Max. external capacity C _o	686 nF
Group	IIA
Max. external inductivity L _o	32 mH
Max. external capacity C _o	2290 nF
Safety-related maximum voltage U _m	253 V AC/DC

Standards and Regulations

Electromagnetic compatibility	Conformance with EMC directive
Noise emission	EN 61000-6-4
Flammability rating according to UL 94	V0

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Technical data

Standards and Regulations

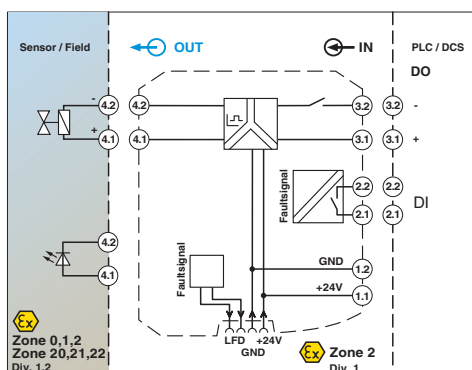
Conformance	CE-compliant, additionally EN 61326
ATEX	# II (1) G [Ex ia Ga] IIC
	# II (1) D [Ex ia Da] IIIC
	# II 3(1) G Ex nA [ia Ga] IIC T4 Gc X
IECEX	[Ex ia Ga] IIC
	[Ex ia Da] IIIC
	Ex nA [ia Ga] IIC T4 Gc
UL, USA/Canada	UL 61010 Listed
DNV GL-Temperature	B
DNV GL-Humidity	B
DNV GL-Vibration	A
DNV GL-EMC	A
DNV GL-Enclosure	Required protection according to the Rules shall be provided upon installation on board
Group	IIC
	IIB
	IIA

Environmental Product Compliance

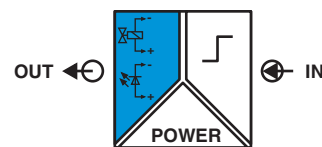
China RoHS	Environmentally Friendly Use Period = 50
	For details about hazardous substances go to tab "Downloads", Category "Manufacturer's declaration"

Drawings

Block diagram



Pictogram



Approvals

Approvals

Solenoid driver - MACX MCR-EX-SL-SD-24-48-LFD-SP - 2906156

Approvals


Approvals

Functional Safety / EAC

Ex Approvals

IECEX / ATEX

Approval details

Functional Safety	BVS Pb 11/13	
EAC		RU C- DE.A*30.B.01082

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