

Solenoid driver - MACX MCR-EX-SL-SD-24-48-LFD - 2906155

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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; screw 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, screw connection technology
- ✔ Installation in zone 2 permitted
- ✔ Housing width: 12.5 mm



Key Commercial Data

| | |
|--------------|---------------|
| Packing unit | 1 pc |
| GTIN | |
| GTIN | 4055626041490 |

Technical data

Note

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

Dimensions

| | |
|--------|----------|
| Width | 12.5 mm |
| Height | 112.5 mm |

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Dimensions

| | |
|-------|----------|
| Depth | 114.5 mm |
|-------|----------|

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 |
| Noise immunity | EN 61000-6-2 When being exposed to interference, there may be minimal deviations. |

Input data

| | |
|--------------|--------------|
| Signal input | Signal input |
|--------------|--------------|

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 | Screw connection |
| Stripping length | 7 mm |
| Conductor cross section solid | 0.2 mm ² ... 2.5 mm ² |
| Conductor cross section flexible | 0.2 mm ² ... 2.5 mm ² |
| Conductor cross section AWG | 24 ... 14 |
| Torque | 0.5 Nm ... 0.6 Nm |

Connection data 2

| | |
|-----------------|-------------|
| Connection name | Test socket |
| Max. diameter | 2.3 mm |

General

| | |
|-------------------------------|--------------------------------|
| No. of channels | 1 |
| Status display | Green LED (supply voltage) |
| | LED yellow (switching state) |
| | Red LED (line errors) |
| 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 |

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General

| | |
|----------------------|------------------------------------------------------------------------------------------------------------------------------------|
| Color | gray |
| 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 | 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 |
|-------------------------------|--------------------------------|

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Standards and Regulations

| | |
|--------------------|-----------------------------------------------------------------------------------------|
| Noise emission | EN 61000-6-4 |
| 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" |

Approvals

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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