

MACX MCR-EX-SL-SD-21-40-LP-SP

Order No.: 2924139

The illustration shows the versions with screw connection



Ex-i solenoid driver. For controlling Ex-i solenoid valves, alarm modules or LEDs installed in Ex areas. Current limitation at 40 mA. For gases up to Group II C, loop-powered, electrical isolation, SIL 3.



SIL 3

Commercial data

| | |
|--------------------------|--|
| EAN |  4 046356 338493 |
| Pack | 1 |
| Customs tariff | 85437090 |
| Product key | 09723 |
| Country of Origin | DE |
| Catalog page information | Page 451 (IF-2011) |

Product notes

WEEE/RoHS-compliant since:
29/05/2008



Please note that the data given here has been taken from the online catalog. For comprehensive information and data, please refer to the user documentation at <http://www.download.phoenixcontact.com>. The General Terms and Conditions of Use apply to Internet downloads.

Technical data

Output data

| | |
|--|---|
| Minimum output voltage | 10 V DC (At 40 mA) |
| Output characteristic curve: Output resistor | 287 Ω (Internal resistance R_i) |
| Response time | 20 ms |

Compatible valves

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|------|---|
| Note | This is an extract of possible combinations of valves and solenoid drivers. |
|------|---|

| | |
|------------------|---|
| Compatible valve | ASCO Coil 195 |
| | Bürkert Coil AC 10 standard |
| | Bürkert Coil AC 10 high resistance |
| | Bürkert Coil AC 21 standard 700 mW / 65°C |
| | Bürkert Coil AC 21 high resistance 700 mW / 65°C |
| | Bürkert Coil AC 21 standard 900 mW / 45°C |
| | Bürkert Coil AC 21 high resistance 900 mW / 45°C |
| | Bürkert Coil AC 21 standard 900 mW / 60°C |
| | Bürkert Coil AC 21 high resistance 900 mW / 60°C |
| | Bürkert Coil G1 642735 standard 600 mW / 50°C |
| | Bürkert Coil G1 642735 high resistance 600 mW / 50°C |
| | Bürkert Coil G1 642735 standard 800 mW / 40°C |
| | Bürkert Coil G1 642735 high resistance 800 mW / 40°C |
| | Bürkert Coil G1 642735 standard 1000 mW / 40°C |
| | Bürkert Coil G1 642735 high resistance 1000 mW / 40°C |
| | Norgren Herion Coil 2050 |
| | Norgren Herion Coil 2051 |
| | Norgren Herion Coil 2052 |
| | Norgren Herion Coil 2080 / 2082 |
| | Norgren Herion Coil 2081 / 2083 |
| | Norgren Herion Coil 2084 |
| | Hörbiger Piezo P8 38x RF-Nx-SPN65 30 V type |
| | Hörbiger Piezo P20 381RF-NG-CPN61 30 V type |
| | Parker Coil VZ07 488650.01 |
| | Parker Coil VZ33 494035.10 |
| | Parker Coil VZ08 488660.01 |
| | Parker Coil VZ09 488670.01 |
| | Parker Coil VZ95 482160.01 EEx ia IIB T6 |
| | Parker Coil VZ23 482870.01 |
| | Samson Coil 3701-12 (12 V) |
| | Samson Coil 3701-13 (24 V) |
| | Samson Coil 3963-12 (12 V) |
| | Samson Coil 3963-13 (24 V) |
| | Samson Coil 3964-12 (12 V) |
| | Samson Coil 3964-13 (24 V) |
| | Seitz Pilot valve PV 12F73 Ci oH |
| | Seitz Pilot valve PV 12F73 Xi oH |
| | Seitz Pilot valve PV 12F73 Xi oH-2 |

Power supply

| | |
|-------------------|---------|
| Power consumption | < 1.2 W |
|-------------------|---------|

Connection data

| | |
|--|---------------------|
| Conductor cross section solid min. | 0.2 mm ² |
| Conductor cross section solid max. | 1.5 mm ² |
| Conductor cross section stranded min. | 0.2 mm ² |
| Conductor cross section stranded max. | 1.5 mm ² |
| Conductor cross section AWG/kcmil min. | 24 |
| Conductor cross section AWG/kcmil max | 16 |
| Connection method | Spring-cage conn. |

General data

| | |
|---|--|
| Maximum temperature coefficient | 0.01 %/K |
| Ambient temperature (operation) | -20 °C ... 60 °C (Any mounting position) |
| Ambient temperature (storage/transport) | -40 °C ... 80 °C |
| Permissible humidity (operation) | 10 % ... 95 % (no condensation) |
| Status display | Yellow LED (switching state / status, lights up when output circuit is active) |
| Width | 12.5 mm |
| Height | 99 mm |
| Depth | 114.5 mm |
| Inflammability class according to UL 94 | V0 |
| Pollution degree | 2 |
| Surge voltage category | II |
| Housing material | PA 66-FR |
| Degree of protection | IP20 |
| Color | green |
| Electrical isolation input / output | 2.5 kV (50 Hz, 1 min., test voltage) |
| Conformance | CE-compliant, additionally EN 61326 |
| ATEX | Ex II (1) GD [Ex ia] IIC / IIB / IIA Ex II 3 G Ex nA II T4 X |
| IECEX | [Ex ia] IIC/IIB/IIA; [Ex iaD]; Ex nA IIC T4 X |
| UL, USA / Canada | Class I Div 2; IS for Class I, II, III Div 1 |
| Functional safety (SIL) | SIL 3 |

Safety characteristic data

| | |
|--|--|
| Integrity requirement | for IEC 61508 - Low demand |
| Equipment type | Type A |
| Safety Integrity Level (SIL) | 3 |
| Safe Failure Fraction (SFF) | 100 % |
| λ_{SU} | 2.84×10^{-7} (284 FIT) |
| λ_{SD} | 0 |
| λ_{DU} | 0 |
| λ_{DD} | 0 |
| Probability of a hazardous failure on demand (PFD _{AVG}) | 0 (1 year) |
| | 0 (5 years) |
| | 0 (10 years) |
| Diagnostic coverage (DC) | (DC _S = 0%, DC _D = 0%) |

Safety data

| | |
|---|---------------------|
| Max. voltage U _o | 25.1 V |
| Max. current I _o | 87 mA |
| Max. power P _o | 550 mW |
| Gas group | II C |
| Max. external inductivity L _o | 6.3 mH |
| Max. external capacity C _o | 0.1 µF |
| Gas group | II B |
| Max. external inductivity L _o | 26 mH |
| Max. external capacity C _o | 0.8 µF |
| Gas group | II A |
| Max. external inductivity L _o | 56 mH |
| Max. external capacity C _o | 2.9 µF |
| Safety-related maximum voltage U _m | 253 V AC (125 V DC) |

Certificates

Certification

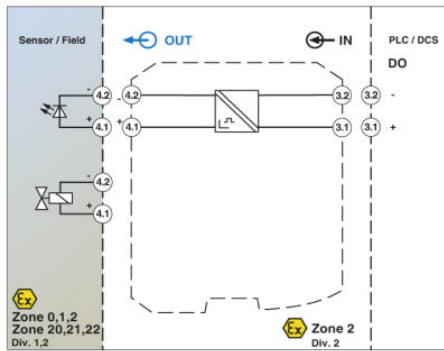
CUL Listed, UL Listed

Certification Ex:

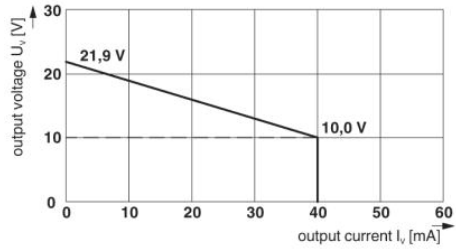
CUL-EX LIS, IECEx, PxC-EX, UL-EX LIS

Drawings

Block diagram



Diagram



Dimensioned drawing

