

# MACX MCR-EX-SL-SD-24-48-LP

Order No.: 2865609




<http://eshop.phoenixcontact.de/phoenix/treeViewClick.do?UID=2865609>

Ex-i solenoid driver. For controlling Ex-i solenoid valves, alarm modules or LEDs installed in Ex areas. Current limitation at 48 mA. For gases up to Group II C, loop-powered, electrical isolation, SIL 3.



## Commercial data

GTIN (EAN)	 4 046356 158411
sales group	H723
Pack	1 pcs.
Customs tariff	85437090
Catalog page information	Page 451 (IF-2011)

## Product notes

WEEE/RoHS-compliant since:  
09/26/2006



<http://www.download.phoenixcontact.com>  
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. The General Terms and Conditions of Use apply to Internet downloads.

## Technical data

### Output data

Output characteristic curve: Output resistor	276 Ω (Internal resistance R <sub>i</sub> )
Response time	30 ms

**Compatible valves**

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

Compatible valve	ASCO Coil 195
	ASCO Coil 302 (12 V)
	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 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
	FESTO Coil MFH-...IA-SA-EX GBXE022AIAD03
	FESTO Coil (J)MFH-...BIA-SA-EX GBXE022AIAD03
	Norgren Herion Coil 2050
	Norgren Herion Coil 2051
	Norgren Herion Coil 2052
	Norgren Herion Coil 2053
	Norgren Herion Coil 2080 / 2082
	Norgren Herion Coil 2081 / 2083
	Norgren Herion Coil 2084
	Norgren Herion Coil 3039
	Nass Coil 1259 30.1-00
	Nass Coil 1259 50.1-00
	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)
PHOENIX CONTACT Inc., USA <a href="http://www.phoenixcon.com">http://www.phoenixcon.com</a>	Seitz Pilot valve PV 12F73 Ci oH
	Seitz Pilot valve PV 12F73 Xi oH
	Seitz Pilot valve PV 12F73 Xi oH-2
	Seitz Solenoid coil 11 G 52

**Power supply**

Power consumption	< 1.4 W
-------------------	---------

**Connection data**

Conductor cross section solid min.	0.2 mm <sup>2</sup>
Conductor cross section solid max.	2.5 mm <sup>2</sup>
Conductor cross section stranded min.	0.2 mm <sup>2</sup>
Conductor cross section stranded max.	2.5 mm <sup>2</sup>
Conductor cross section AWG/kcmil min.	24
Conductor cross section AWG/kcmil max	14
Screw thread	M3
Connection method	Screw connection
Tightening torque, min	0.5 Nm
Tightening torque max	0.6 Nm

**General data**

No. of channels	1
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 acc. 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 %
$\lambda_{SU}$	$2.84 \times 10^{-7}$ (284 FIT)
$\lambda_{SD}$	0
$\lambda_{DU}$	0
$\lambda_{DD}$	0
Probability of a hazardous failure on demand (PFD <sub>AVG</sub> )	0 (1 year)
	0 (5 years)
	0 (10 years)
Diagnostic coverage (DC)	(DC <sub>S</sub> = 0%, DC <sub>D</sub> = 0%)

**Safety data**

Max. voltage U <sub>o</sub>	27.7 V
Max. current I <sub>o</sub>	101 mA
Max. power P <sub>o</sub>	697 mW
Gas group	II C
Max. external inductivity L <sub>o</sub>	5.2 mH
Max. external capacity C <sub>o</sub>	0.08 µF
Gas group	II B
Max. external inductivity L <sub>o</sub>	20 mH
Max. external capacity C <sub>o</sub>	0.66 µF
Gas group	II A
Max. external inductivity L <sub>o</sub>	42 mH
Max. external capacity C <sub>o</sub>	2.2 µF
Safety-related maximum voltage U <sub>m</sub>	253 V AC (125 V DC)

**Certificates / Approvals**



Certification

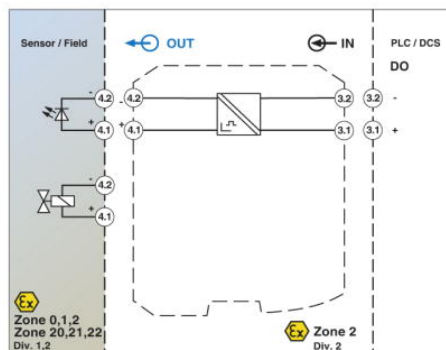
CUL Listed, UL Listed

Certification Ex:

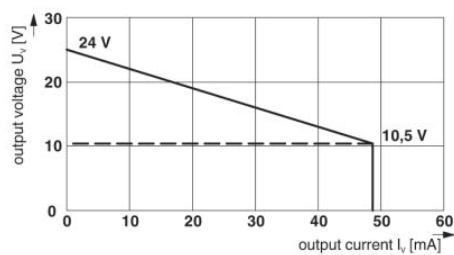
CUL-EX LIS, IECEx, PxC-EX, UL-EX LIS

## Diagrams/Drawings

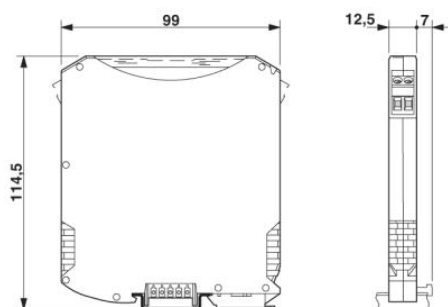
### Block diagram



### Diagram



### Dimensioned drawing



**Address**

PHOENIX CONTACT Inc., USA  
586 Fulling Mill Road  
Middletown, PA 17057, USA  
Phone (800) 888-7388  
Fax (717) 944-1625  
<http://www.phoenixcon.com>



© 2011 Phoenix Contact  
Technical modifications reserved;