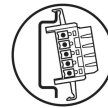


MACX MCR-EX-SL-SD-21-60-LP

Order No.: 2865515



Ex-i solenoid driver For controlling Ex-i solenoid valves, alarm modules or LEDs installed in Ex areas. Current limitation at 58 mA. For gases up to Group II B, loop-powered, electrical isolation, SIL 3.

**Commercial data**

EAN	 4 046356 160575
Pack	1
Customs tariff	85438997
Product key	09723
Country of Origin	DE
Catalog page information	Page 451 (IF-2011)

Product notes

WEEE/RoHS-compliant since:
03/08/2006



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**

Output characteristic curve: Output resistor	133 Ω (Internal resistance R_i)
Response time	30 ms

Compatible valves

Note	This is an extract of possible combinations of valves and solenoid drivers.
Compatible valve	ASCO Coil 302 (12 V)
	ASCO Coil 302 (24 V)
	Bürkert Coil AC 10 standard
	Bürkert Coil AC 10 high resistance
	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
	Parker Coil VZ95 482160.01 EEx ia IIB T6

Power supply

Power consumption	< 1.4 W
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Connection data

Conductor cross section solid min.	0.2 mm ²
Conductor cross section solid max.	2.5 mm ²
Conductor cross section stranded min.	0.2 mm ²
Conductor cross section stranded max.	2.5 mm ²
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 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] IIB / IIA Ex II 3 G Ex nA II T4 X
IECEX	[Ex ia] 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	188 mA
Max. power P _o	1.18 W

Gas group	II B
Max. external inductivity L_o	7 mH
Max. external capacity C_o	0.8 μ F
Gas group	II A
Max. external inductivity L_o	14.6 mH
Max. external capacity C_o	2.9 μ F
Safety-related maximum voltage U_m	253 V AC (125 V DC)

Certificates



Certification

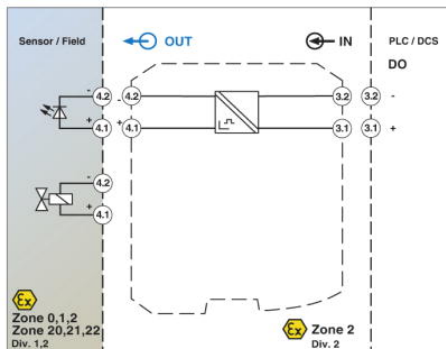
CUL Listed, UL Listed

Certification Ex:

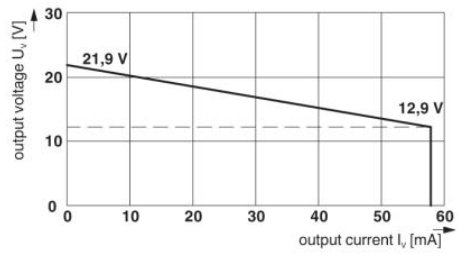
CUL-EX LIS, IECEx, PxC-EX, UL-EX LIS

Drawings

Block diagram



Diagram



Dimensioned drawing

