Model Number

NJ2-12GM-N-10M

Features

- **Comfort series**
- **2 mm flush**
- **Usable up to SIL 2 acc. to IEC 61508**

Accessories

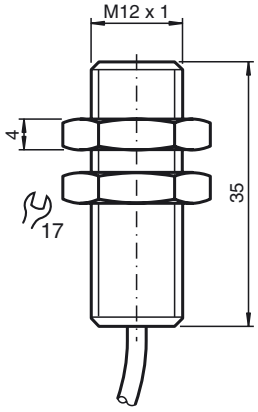
EXG-12
Quick mounting bracket with dead stop

BF 12
Mounting flange, 12 mm

Technical Data

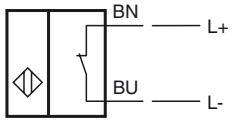
General specifications		
Switching function		Normally closed (NC)
Output type		NAMUR
Rated operating distance	s_n	2 mm
Installation		flush
Assured operating distance	s_a	0 ... 1.62 mm
Reduction factor r_{Al}		0.4
Reduction factor r_{Cu}		0.3
Reduction factor r_{304}		0.85
Output type		2-wire
Nominal ratings		
Nominal voltage	U_o	8 V
Operating voltage	U_B	5 ... 25 V
Switching frequency	f	0 ... 2000 Hz
Hysteresis	H	3 %
Suitable for 2:1 technology		yes , Reverse polarity protection diode not required
Current consumption		
Measuring plate not detected		≥ 3 mA at nominal voltage
Measuring plate detected		≤ 1 mA at nominal voltage
Functional safety related parameters		
Safety Integrity Level (SIL)		SIL 2
$MTTF_d$		5887 a
Mission Time (T_M)		20 a
Diagnostic Coverage (DC)		0 %
Ambient conditions		
Ambient temperature		-25 ... 100 °C (-13 ... 212 °F)
Mechanical specifications		
Connection type		cable PVC , 10 m
Core cross-section		0.34 mm²
Housing material		Stainless steel 1.4305 / AISI 303
Sensing face		PBT
Degree of protection		IP66 / IP67
Cable		
Cable diameter		4.8 mm ± 0.2 mm
Bending radius		> 10 x cable diameter
General information		
Scope of delivery		2 self locking nuts in scope of delivery
Use in the hazardous area		see instruction manuals
Compliance with standards and directives		
Standard conformity		
NAMUR		EN 60947-5-6:2000 IEC 60947-5-6:1999
Standards		EN 60947-5-2:2007 EN 60947-5-2/A1:2012 IEC 60947-5-2:2007 IEC 60947-5-2 AMD 1:2012
Approvals and certificates		
EAC conformity		TR CU 012/2011
FM approval		
Control drawing		116-0165
UL approval		
Ordinary Location		E87056
Hazardous Location		E501628
Control drawing		116-0452
CSA approval		cCSAus Listed, General Purpose
CCC approval		CCC approval / marking not required for products rated ≤36 V
ANZEx		18.3018X

Dimensions



Release date: 2019-08-05 14:28 Date of issue: 2019-08-26 106395_eng.xml

Electrical Connection



Release date: 2019-08-05 14:28 Date of issue: 2019-08-26 106395_eng.xml

Data for application in connection with hazardous areas		
Equipment protection level		Ga , Gb , Da , Mb
Equipment protection level Ga		
Type of protection		intrinsic safety
CE marking		CE 0102
Certificates		
Appropriate type		NJ 2-12GM-N...
ATEX certificate		PTB 00 ATEX 2048 X
ATEX marking		Ex II 1G Ex ia IIC T6...T1 Ga
Standards		EN 60079-0:2012+A11:2013 , EN 60079-11:2012
IECEx certificate		IECEx PTB 11.0037X
IECEx marking		Ex ia IIC T6...T1 Ga
Standards		IEC 60079-0:2011 , IEC 60079-11:2011
Effective internal capacitance	C_i	≤ 30 nF A cable length of 10 m is considered.
Effective internal inductance	L_i	≤ 50 µH A cable length of 10 m is considered.
Maximum permissible ambient temperature T_{amb}		Also observe the maximum permissible ambient temperature stated in the general technical data. Keep to the lower of the two values.
for ATEX		at U_i = 16 V , I_i = 25 mA , P_i = 34 mW , T6 : 59 °C (138.2 °F) T5 : 71 °C (159.8 °F) T4 : 99 °C (210.2 °F) T3 : 99 °C (210.2 °F) T2 : 99 °C (210.2 °F) T1 : 99 °C (210.2 °F) at U_i = 16 V , I_i = 25 mA , P_i = 64 mW , T6 : 56 °C (132.8 °F) T5 : 68 °C (154.4 °F) T4 : 96 °C (204.8 °F) T3 : 96 °C (204.8 °F) T2 : 96 °C (204.8 °F) T1 : 96 °C (204.8 °F) at U_i = 16 V , I_i = 52 mA , P_i = 169 mW , T6 : 45 °C (113 °F) T5 : 57 °C (134.6 °F) T4 : 81 °C (177.8 °F) T3 : 81 °C (177.8 °F) T2 : 81 °C (177.8 °F) T1 : 81 °C (177.8 °F) at U_i = 16 V , I_i = 76 mA , P_i = 242 mW , T6 : 37 °C (98.6 °F) T5 : 49 °C (120.2 °F) T4 : 63 °C (145.4 °F) T3 : 63 °C (145.4 °F) T2 : 63 °C (145.4 °F) T1 : 63 °C (145.4 °F)
for IECEx		at U_i = 16 V , I_i = 25 mA , P_i = 34 mW , T6 : 76 °C (168.8 °F) T5 : 91 °C (195.8 °F) T4 : 100 °C (212 °F) T3 : 100 °C (212 °F) T2 : 100 °C (212 °F) T1 : 100 °C (212 °F) at U_i = 16 V , I_i = 25 mA , P_i = 64 mW , T6 : 73 °C (163.4 °F) T5 : 88 °C (190.4 °F) T4 : 100 °C (212 °F) T3 : 100 °C (212 °F) T2 : 100 °C (212 °F) T1 : 100 °C (212 °F) at U_i = 16 V , I_i = 52 mA , P_i = 169 mW , T6 : 62 °C (143.6 °F) T5 : 77 °C (170.6 °F) T4 : 81 °C (177.8 °F) T3 : 81 °C (177.8 °F) T2 : 81 °C (177.8 °F) T1 : 81 °C (177.8 °F) at U_i = 16 V , I_i = 76 mA , P_i = 242 mW , T6 : 54 °C (129.2 °F) T5 : 63 °C (145.4 °F) T4 : 63 °C (145.4 °F) T3 : 63 °C (145.4 °F) T2 : 63 °C (145.4 °F) T1 : 63 °C (145.4 °F)

Release date: 2019-08-05 14:28 Date of issue: 2019-08-26 106395_eng.xml

Equipment protection level Gb		
Type of protection		intrinsic safety
CE marking		CE 0102
Certificates		
Appropriate type		NJ 2-12GM-N...
ATEX certificate		PTB 00 ATEX 2048 X
ATEX marking		Ex II 1G Ex ia IIC T6…T1 Ga
Standards		EN 60079-0:2012+A11:2013 , EN 60079-11:2012
IECEx certificate		IECEx PTB 11.0037X
IECEx marking		Ex ia IIC T6...T1 Ga
Standards		IEC 60079-0:2011 , IEC 60079-11:2011
Effective internal capacitance	C_i	≤ 30 nF A cable length of 10 m is considered.
Effective internal inductance	L_i	≤ 50 µH A cable length of 10 m is considered.
Maximum permissible ambient temperature T_{amb}		Also observe the maximum permissible ambient temperature stated in the general technical data. Keep to the lower of the two values. at U_i = 16 V , I_i = 25 mA , P_i = 34 mW , T6 : 76 °C (168.8 °F) T5 : 91 °C (195.8 °F) T4 : 100 °C (212 °F) T3 : 100 °C (212 °F) T2 : 100 °C (212 °F) T1 : 100 °C (212 °F) at U_i = 16 V , I_i = 25 mA , P_i = 64 mW , T6 : 73 °C (163.4 °F) T5 : 88 °C (190.4 °F) T4 : 100 °C (212 °F) T3 : 100 °C (212 °F) T2 : 100 °C (212 °F) T1 : 100 °C (212 °F) at U_i = 16 V , I_i = 52 mA , P_i = 169 mW , T6 : 62 °C (143.6 °F) T5 : 77 °C (170.6 °F) T4 : 81 °C (177.8 °F) T3 : 81 °C (177.8 °F) T2 : 81 °C (177.8 °F) T1 : 81 °C (177.8 °F) at U_i = 16 V , I_i = 76 mA , P_i = 242 mW , T6 : 54 °C (129.2 °F) T5 : 63 °C (145.4 °F) T4 : 63 °C (145.4 °F) T3 : 63 °C (145.4 °F) T2 : 63 °C (145.4 °F) T1 : 63 °C (145.4 °F)
Equipment protection level Da		
Type of protection		intrinsic safety
CE marking		CE 0102
Certificates		
Appropriate type		NJ 2-12GM-N...
ATEX certificate		PTB 00 ATEX 2048 X
ATEX marking		Ex II 1D Ex ia IIIC T135°C Da
Standards		EN 60079-0:2012+A11:2013 , EN 60079-11:2012
IECEx certificate		IECEx PTB 11.0037X
IECEx marking		Ex ia IIIC T135°C Da
Standards		IEC 60079-0:2011 , IEC 60079-11:2011
Effective internal capacitance	C_i	≤ 30 nF A cable length of 10 m is considered.
Effective internal inductance	L_i	≤ 50 µH A cable length of 10 m is considered.
Maximum permissible ambient temperature T_{amb}		Also observe the maximum permissible ambient temperature stated in the general technical data. Keep to the lower of the two values. at U_i = 16 V , I_i = 25 mA , P_i = 34 mW : 100 °C (212 °F) at U_i = 16 V , I_i = 25 mA , P_i = 64 mW : 100 °C (212 °F) at U_i = 16 V , I_i = 52 mA , P_i = 169 mW : 81 °C (177.8 °F) at U_i = 16 V , I_i = 76 mA , P_i = 242 mW : 63 °C (145.4 °F)
Equipment protection level Mb		
Type of protection		intrinsic safety
Certificates		
Appropriate type		NJ 2-12GM-N...
IECEx certificate		IECEx PTB 11.0037X
IECEx marking		Ex ia I Mb
Standards		IEC 60079-0:2011 , IEC 60079-11:2011
Effective internal capacitance	C_i	≤ 30 nF A cable length of 10 m is considered.
Effective internal inductance	L_i	≤ 50 µH A cable length of 10 m is considered.

Release date: 2019-08-05 14:28 Date of issue: 2019-08-26 106395_eng.xml

Maximum permissible ambient temperature T_{amb}	Also observe the maximum permissible ambient temperature stated in the general technical data. Keep to the lower of the two values. at U_i = 16 V , I_i = 25 mA , P_i = 34 mW : 100 °C (212 °F) at U_i = 16 V , I_i = 25 mA , P_i = 64 mW : 100 °C (212 °F) at U_i = 16 V , I_i = 52 mA , P_i = 169 mW : 81 °C (177.8 °F) at U_i = 16 V , I_i = 76 mA , P_i = 242 mW : 63 °C (145.4 °F)

Release date: 2019-08-05 14:28 Date of issue: 2019-08-26 106395_eng.xml