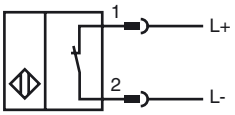
Model Number

NJ2-12GM-N-V1

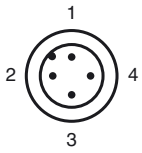
Features

- **2 mm flush**
- **Usable up to SIL2 acc. to IEC 61508**

Connection



Pinout



Wire colors in accordance with EN 60947-5-6

1	|	BN	(brown)
2	|	BU	(blue)

Accessories

V1-G
Female connector, M12, 4-pin, field attachable

V1-W
Female connector, M12, 4-pin, field attachable

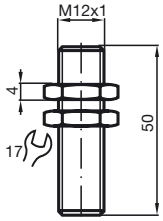
V1-G-N-2M-PUR
Female cordset, M12, 2-pin, NAMUR, PUR cable

V1-W-N-2M-PUR
Female cordset, M12, 2-pin, NAMUR, PUR cable

EXG-12
Quick mounting bracket with dead stop

BF 12
Mounting flange, 12 mm

Dimensions



Technical Data

General specifications		
Switching element function		NAMUR, NC
Rated operating distance	s_n	2 mm
Installation		flush
Output polarity		NAMUR
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
Nominal ratings		
Nominal voltage	U_o	8.2 V (R_i approx. 1 kΩ)
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
Measuring plate detected		≤ 1 mA
Functional safety related parameters		
$MTTF_d$		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		Connector M12 x 1 , 4-pin
Housing material		Stainless steel 1.4305 / AISI 303
Sensing face		PBT
Protection degree		IP67
General information		
Scope of delivery		2 self locking nuts in scope of delivery
Use in the hazardous area		see instruction manuals
Category		1G; 2G
Compliance with standards and directives		
Standard conformity		
NAMUR		EN 60947-5-6:2000 IEC 60947-5-6:1999
Standards		EN 60947-5-2:2007 IEC 60947-5-2:2007
Approvals and certificates		
FM approval		
Control drawing		116-0165F
UL approval		cULus Listed, General Purpose
CSA approval		cCSAus Listed, General Purpose
CCC approval		CCC approval / marking not required for products rated ≤36 V

Release date: 2013-06-26 09:57 Date of issue: 2013-06-26 106397_eng.xml

ATEX 1G

Instruction	**Manual electrical apparatus for hazardous areas**
Device category 1G	for use in hazardous areas with gas, vapour and mist
EC-Type Examination Certificate	PTB 00 ATEX 2048 X
CE marking	CE 0102
ATEX marking	Ex II 1G Ex ia IIC T6 Ga
Directive conformity	94/9/EG
Standards	EN 60079-0:2009, EN 60079-11:2007, EN 60079-26:2007 Ignition protection "Intrinsic safety" Use is restricted to the following stated conditions
Appropriate type	NJ 2-12GM-N...
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.
General	The apparatus has to be operated according to the appropriate data in the data sheet and in this instruction manual. The EC-Type Examination Certificate has to be observed. The special conditions must be adhered to! Directive 94/9/EG and hence also EC-Type Examination Certificates apply in general only to the use of electrical apparatus under atmospheric conditions. The use in ambient temperatures of > 60 °C was tested with regard to hot surfaces by the mentioned certification authority. If the equipment is not used under atmospheric conditions, a reduction of the permissible minimum ignition energies may have to be taken into consideration.
Ambient temperature	The temperature ranges, according to temperature class, are given in the EC-Type Examination Certificate. Note: Use the temperature table for category 1 !!! The 20 % reduction in accordance with EN 1127-1:2007 has already been accounted for in the temperature table for category 1.
Installation, Comissioning	Laws and/or regulations and standards governing the use or intended usage goal must be observed. The intrinsic safety is only assured in connection with an appropriate related apparatus and according to the proof of intrinsic safety. The associated apparatus must satisfy the requirements of category "ia" and have electrical isolation between the power supply and signal circuits. The sensor must be protected from strong electromagnetic fields.
Maintenance	No changes can be made to apparatus, which are operated in hazardous areas. Repairs to these apparatus are not possible.

Specific conditions

Protection from mechanical danger	When used in the temperature range below -20 °C the sensor should be protected from knocks by the provision of an additional housing.
Electrostatic charging	Electrostatic charges must be avoided on the mechanical housing components. Dangerous electrostatic charges on the mechanical housing components can be avoided by incorporating these in the equipotential bonding.

Release date: 2013-06-26 Date of issue: 2013-06-26 106397_eng.xml

ATEX 2G

Instruction	**Manual electrical apparatus for hazardous areas**
Device category 2G	for use in hazardous areas with gas, vapour and mist
EC-Type Examination Certificate	PTB 00 ATEX 2048 X
CE marking	CE 0102
ATEX marking	Ex II 1G Ex ia IIC T6 Ga
Directive conformity	94/9/EG
Standards	EN 60079-0:2009, EN 60079-11:2007 Ignition protection "Intrinsic safety" Use is restricted to the following stated conditions
Appropriate type	NJ 2-12GM-N...
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.
General	The apparatus has to be operated according to the appropriate data in the data sheet and in this instruction manual. The EC-Type Examination Certificate has to be observed. The special conditions must be adhered to! Directive 94/9/EG and hence also EC-Type Examination Certificates apply in general only to the use of electrical apparatus under atmospheric conditions. The use in ambient temperatures of > 60 °C was tested with regard to hot surfaces by the mentioned certification authority. If the equipment is not used under atmospheric conditions, a reduction of the permissible minimum ignition energies may have to be taken into consideration.
Ambient temperature	The temperature ranges, according to temperature class, are given in the EC-Type Examination Certificate.
Installation, Comissioning	Laws and/or regulations and standards governing the use or intended usage goal must be observed. The intrinsic safety is only assured in connection with an appropriate related apparatus and according to the proof of intrinsic safety. The sensor must be protected from strong electromagnetic fields.
Maintenance	No changes can be made to apparatus, which are operated in hazardous areas. Repairs to these apparatus are not possible.
Specific conditions	
Protection from mechanical danger	When used in the temperature range below -20 °C the sensor should be protected from knocks by the provision of an additional housing.
Electrostatic charging	Electrostatic charges must be avoided on the mechanical housing components. Dangerous electrostatic charges on the mechanical housing components can be avoided by incorporating these in the equipotential bonding.

Release date: 2013-06-26 09:57 Date of issue: 2013-06-26 106397_eng.xml