



### Model Number

NJ5-11-N-G-5M

### Features

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

## Technical Data

### General specifications

Switching function		Normally closed (NC)
Output type		NAMUR
Rated operating distance	$s_n$	5 mm
Installation		non-flush
Assured operating distance	$s_a$	0 ... 4.05 mm
Reduction factor $r_{AI}$		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
Switching frequency	f	0 ... 3000 Hz
Hysteresis	H	typ. %
Suitable for 2:1 technology		yes, Reverse polarity protection diode not required
Current consumption		
Measuring plate not detected		$\geq 3$ mA
Measuring plate detected		$\leq 1$ mA

### Functional safety related parameters

Safety Integrity Level (SIL)	SIL 2
MTTF <sub>d</sub>	11774 a
Mission Time (T <sub>M</sub> )	20 a
Diagnostic Coverage (DC)	0 %

### Ambient conditions

Ambient temperature	-25 ... 100 °C (-13 ... 212 °F)
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### Mechanical specifications

Connection type	cable PVC, 5 m
Core cross-section	0.34 mm <sup>2</sup>
Housing material	Stainless steel 1.4305 / AISI 303
Sensing face	PVDF
Degree of protection	IP68
Cable	
Bending radius	> 10 x cable diameter

### General information

Use in the hazardous area	see instruction manuals
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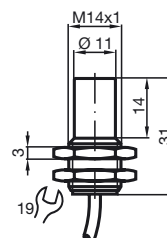
### Compliance with standards and directives

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

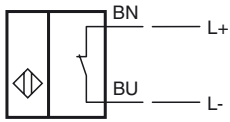
### Approvals and certificates

EAC conformity	TR CU 012/2011
UL approval	cULus Listed, General Purpose
CCC approval	CCC approval / marking not required for products rated $\leq 36$ V

## Dimensions



Electrical Connection



**Data for application in connection with hazardous areas**

Equipment protection level	Gb , Gc (ic) , Da , Mb
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**Equipment protection level Gb**

Type of protection	intrinsic safety
CE marking	CE 0102

**Certificates**

Appropriate type	NJ 5-11-N...
ATEX certificate	PTB 00 ATEX 2048 X
ATEX marking	Ⓔ II 2G Ex ia IIC T6...T1 Gb
Standards	EN 60079-0:2012+A11:2013 , EN 60079-11:2012
IECEX certificate	IECEX PTB 11.0037X
IECEX marking	Ex ia IIC T6...T1 Gb
Standards	IEC 60079-0:2011 , IEC 60079-11:2011

Effective internal capacitance	$C_i$	$\leq 45$ nF A cable length of 10 m is considered.
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Effective internal inductance	$L_i$	$\leq 50$ $\mu$ H A cable length of 10 m is considered.
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Maximum permissible ambient temperature $T_{amb}$	Also observe the maximum permissible ambient temperature stated in the general technical data.
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Keep to the lower of the two values.  
at  $U_i = 16$  V ,  $I_i = 25$  mA ,  $P_i = 34$  mW ,

T6 : 72 °C (161.6 °F)

T5 : 87 °C (188.6 °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 : 65 °C (149 °F)

T5 : 80 °C (176 °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 : 42 °C (107.6 °F)

T5 : 57 °C (134.6 °F)

T4 : 82 °C (179.6 °F)

T3 : 82 °C (179.6 °F)

T2 : 82 °C (179.6 °F)

T1 : 82 °C (179.6 °F)

at  $U_i = 16$  V ,  $I_i = 76$  mA ,  $P_i = 242$  mW ,

T6 : 26 °C (78.8 °F)

T5 : 41 °C (105.8 °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 Gc (ic)**

Type of protection	intrinsic safety	
CE marking	CE	
<b>Certificates</b>		
ATEX certificate	PF 13 CERT 2895 X	
ATEX marking	Ex II 3G Ex ic IIC T6...T1 Gc	
Standards	EN 60079-0:2012+A11:2013 , EN 60079-11:2012	
Effective internal capacitance	$C_i$	≤ 45 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 $U_i = 20 V$ , $I_i = 25 mA$ , $P_i = 34 mW$ , T6 : 55 °C (131 °F) T5 : 55 °C (131 °F) T4 : 55 °C (131 °F) T3 : 55 °C (131 °F) T2 : 55 °C (131 °F) T1 : 55 °C (131 °F) at $U_i = 20 V$ , $I_i = 25 mA$ , $P_i = 64 mW$ , T6 : 55 °C (131 °F) T5 : 55 °C (131 °F) T4 : 55 °C (131 °F) T3 : 55 °C (131 °F) T2 : 55 °C (131 °F) T1 : 55 °C (131 °F) at $U_i = 20 V$ , $I_i = 52 mA$ , $P_i = 169 mW$ , T6 : 32 °C (89.6 °F) T5 : 32 °C (89.6 °F) T4 : 32 °C (89.6 °F) T3 : 32 °C (89.6 °F) T2 : 32 °C (89.6 °F) T1 : 32 °C (89.6 °F) at $U_i = 20 V$ , $I_i = 76 mA$ , $P_i = 242 mW$ , T6 : 16 °C (60.8 °F) T5 : 16 °C (60.8 °F) T4 : 16 °C (60.8 °F) T3 : 16 °C (60.8 °F) T2 : 16 °C (60.8 °F) T1 : 16 °C (60.8 °F)	

**Equipment protection level Da**

Type of protection	intrinsic safety	
CE marking	CE 0102	
<b>Certificates</b>		
Appropriate type	NJ 5-11-N...	
ATEX certificate	PTB 00 ATEX 2048 X	
ATEX marking	Ex II 1D Ex ia IIC T135°C Da	
Standards	EN 60079-0:2012+A11:2013 , EN 60079-11:2012	
IECEX certificate	IECEX PTB 11.0037X	
IECEX marking	Ex ia IIC T135°C Da	
Standards	IEC 60079-0:2011 , IEC 60079-11:2011	
Effective internal capacitance	$C_i$	≤ 45 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 $U_i = 16 V$ , $I_i = 52 mA$ , $P_i = 169 mW$ : 82 °C (179.6 °F) at $U_i = 16 V$ , $I_i = 76 mA$ , $P_i = 242 mW$ : 63 °C (145.4 °F)	

**Equipment protection level Mb**

<b>Certificates</b>		
Appropriate type	NJ 5-11-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	$C_i$	≤ 45 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 $U_i = 16 V$ , $I_i = 52 mA$ , $P_i = 169 mW$ : 82 °C (179.6 °F) at $U_i = 16 V$ , $I_i = 76 mA$ , $P_i = 242 mW$ : 63 °C (145.4 °F)	

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