

APD®



Model Number

NJ4-12GK-N

Features

- 4 mm non-flush
- Usable up to SIL 2 acc. to IEC 61508

Accessories

BF 12

Mounting flange, 12 mm

Technical Data

General specifications

Switching function		Normally closed (NC)
Output type		NAMUR
Rated operating distance	s_n	4 mm
Installation		non-flush
Assured operating distance	s_a	0 ... 3.24 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	8.2 V (R_i approx. 1 k Ω)
Switching frequency	f	0 ... 1500 Hz

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 _d		11774 a
Mission Time (T _M)		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 , 2 m
Core cross-section		0,34 mm ²
Housing material		PBT
Sensing face		PBT
Degree of protection		IP66 / IP68
Cable		
Bending radius		> 10 x cable diameter

General information

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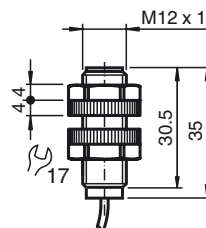
Compliance with standards and directives

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

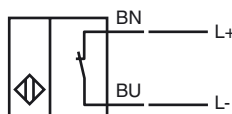
Approvals and certificates

EAC conformity		TR CU 012/2011
FM approval		
Control drawing		116-0165
UL approval		cULus Listed, General Purpose
CSA approval		cCSAus 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 , Da , Mb

Equipment protection level GbType of protection intrinsic safety
CE marking **CE** 0102**Certificates**

Appropriate type NJ4-12GK-N...

ATEX certificate PTB 00 ATEX 2048 X

ATEX marking **Ex** 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 Ga

Standards IEC 60079-0:2004 , IEC 60079-11:2006

Effective internal inductivity C_i ≤ 45 nF
A cable length of 10 m is considered.Effective internal inductance L_i ≤ 50 μ H
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 : 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 , $I_i = 25$ mA , $P_i = 64$ mW ,
T6 : 69 °C (156.2 °F)
T5 : 84 °C (183.2 °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 : 51 °C (123.8 °F)
T5 : 66 °C (150.8 °F)
T4 : 80 °C (176 °F)
T3 : 80 °C (176 °F)
T2 : 80 °C (176 °F)
T1 : 80 °C (176 °F)

at $U_i = 16$ V , $I_i = 76$ mA , $P_i = 242$ mW ,
T6 : 39 °C (102.2 °F)
T5 : 54 °C (129.2 °F)
T4 : 61 °C (141.8 °F)
T3 : 61 °C (141.8 °F)
T2 : 61 °C (141.8 °F)
T1 : 61 °C (141.8 °F)

Equipment protection level DaType of protection intrinsic safety
CE marking **CE** 0102**Certificates**

Appropriate type NJ4-12GK-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

Effective internal inductivity C_i ≤ 45 nF
A cable length of 10 m is considered.Effective internal inductance L_i ≤ 50 μ H
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 : 80 °C (176 °F)
at $U_i = 16$ V , $I_i = 76$ mA , $P_i = 242$ mW : 61 °C (141.8 °F)

Equipment protection level Mb

Type of protection intrinsic safety

Certificates

Appropriate type NJ4-12GK-N...

IECEX certificate IECEX PTB 11.0037X

IECEX marking Ex ia I

Standards IEC 60079-0:2004 , IEC 60079-11:2006

Effective internal inductivity C_i ≤ 45 nF
A cable length of 10 m is considered.Effective internal inductance L_i ≤ 50 μ H
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 $U_i = 16\text{ V}$, $I_i = 25\text{ mA}$, $P_i = 34\text{ mW}$: 100 °C (212 °F)

at $U_i = 16\text{ V}$, $I_i = 25\text{ mA}$, $P_i = 64\text{ mW}$: 100 °C (212 °F)

at $U_i = 16\text{ V}$, $I_i = 52\text{ mA}$, $P_i = 169\text{ mW}$: 80 °C (176 °F)

at $U_i = 16\text{ V}$, $I_i = 76\text{ mA}$, $P_i = 242\text{ mW}$: 61 °C (141.8 °F)

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Refer to "General Notes Relating to Pepperl+Fuchs Product Information".

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