Model Number

NJ5-18GK-SN

Features

- **5 mm flush**
- **Usable up to SIL 3 acc. to IEC 61508**

Application

Danger!
In safety-related applications the sensor must be operated with a qualified fail safe interface from Pepperl+Fuchs, such as KFD2-SH-EX1.
Consider the "exida Functional Safety Assessment" document which is available on www.pepperl-fuchs.com as an integral part of this product's documentation.

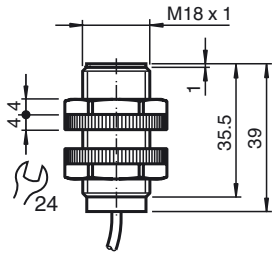
Accessories

BF 18
Mounting flange, 18 mm

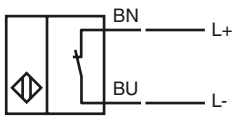
Technical Data

General specifications		
Switching function		Normally closed (NC)
Output type		NAMUR with safety function
Rated operating distance	s_n	5 mm
Installation		flush
Assured operating distance	s_a	0 ... 4.05 mm
Reduction factor r_{Al}		0.4
Reduction factor r_{Cu}		0.3
Reduction factor r_{304}		0.85
Safety Integrity Level (SIL)		up to SIL3 acc. to IEC 61508 **Danger!** In safety-related applications the sensor must be operated with a qualified fail safe interface from Pepperl+Fuchs, such as KFD2-SH-EX1. Consider the "exida Functional Safety Assessment" document which is available on www.pepperl-fuchs.com as an integral part of this product's documentation.
Output type		2-wire
Nominal ratings		
Nominal voltage	U_o	8 V DC
Switching frequency	f	0 ... 500 Hz
Current consumption		
Measuring plate not detected		≥ 3 mA
Measuring plate detected		≤ 1 mA
Functional safety related parameters		
$MTTF_d$		9154 a
Mission Time (T_M)		20 a
Diagnostic Coverage (DC)		0 %
Ambient conditions		
Ambient temperature		-40 ... 100 °C (-40 ... 212 °F)
Mechanical specifications		
Connection type		cable silicone , 2 m
Core cross-section		0.75 mm^2
Housing material		PP
Sensing face		PP
Degree of protection		IP68
Cable		
Bending radius		> 10 x cable diameter
General information		
Use in the hazardous area		see instruction manuals
Category		1G; 2G; 3G; 1D
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		116-0165
UL approval		cULus Listed, General Purpose
CSA approval		cCSAus Listed, General Purpose
CCC approval		CCC approval / marking not required for products rated ≤36 V

Dimensions



Electrical Connection



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Equipment protection level Ga		
CE marking		CE 0102
ATEX marking		Ex II 1G Ex ia IIC T6…T1 Ga The Ex-related marking can also be printed on the enclosed label.
Standards		EN 60079-0:2012+A11:2013 EN 60079-11:2012 Ignition protection "Intrinsic safety" Use is restricted to the following stated conditions
Appropriate type		NJ 5-18GK-SN...
Effective internal inductivity	C_i	≤ 120 nF ; a cable length of 10 m is considered.
Effective internal inductance	L_i	≤ 200 µH ; a cable length of 10 m is considered.
Ambient temperature		Details of the correlation between the type of circuit connected, the maximum permissible ambient temperature, the temperature class, and the effective internal reactance values can be found on the EC-type examination certificate. **Note:** Use the temperature table for category 1 !!! The 20 % reduction in accordance with EN 1127-1 has already been applied to the temperature table for category 1.
Special conditions		
Equipment protection level Gb		
CE marking		CE 0102
ATEX marking		Ex II 1G Ex ia IIC T6…T1 Ga The Ex-related marking can also be printed on the enclosed label.
Standards		EN 60079-0:2012+A11:2013 EN 60079-11:2012 Ignition protection "Intrinsic safety" Use is restricted to the following stated conditions
Appropriate type		NJ 5-18GK-SN...
Effective internal inductivity	C_i	≤ 120 nF ; a cable length of 10 m is considered.
Effective internal inductance	L_i	≤ 200 µH ; a cable length of 10 m is considered.
Maximum permissible ambient temperature T_{amb}		Details of the correlation between the type of circuit connected, the maximum permissible ambient temperature, the temperature class, and the effective internal reactance values can be found on the EC-type examination certificate.
Special conditions		
Equipment protection level Gc (ic)		
Certificate		PF13CERT2895 X
CE marking		CE
ATEX marking		Ex II 3G Ex ic IIC T6…T1 Gc The Ex-related marking can also be printed on the enclosed label.
Standards		EN 60079-0:2012+A11:2013 EN 60079-11:2012 Ignition protection category "ic" Use is restricted to the following stated conditions
Effective internal inductivity	C_i	≤ 120 nF ; a cable length of 10 m is considered.
Effective internal inductance	L_i	≤ 200 µH ; A cable length of 10 m is considered.
Special conditions		
for Pi=34 mW, Ii=25 mA, T6		70 °C (158 °F)
for Pi=34 mW, Ii=25 mA, T5		85 °C (185 °F)
for Pi=34 mW, Ii=25 mA, T4-T1		100 °C (212 °F)
for Pi=64 mW, Ii=25 mA, T6		69 °C (156.2 °F)
for Pi=64 mW, Ii=25 mA, T5		84 °C (183.2 °F)
for Pi=64 mW, Ii=25 mA, T4-T1		100 °C (212 °F)
for Pi=169 mW, Ii=52 mA, T6		51 °C (123.8 °F)
for Pi=169 mW, Ii=52 mA, T5		66 °C (150.8 °F)
for Pi=169 mW, Ii=52 mA, T4-T1		80 °C (176 °F)
for Pi=242 mW, Ii=76 mA, T6		39 °C (102.2 °F)
for Pi=242 mW, Ii=76 mA, T5		54 °C (129.2 °F)
for Pi=242 mW, Ii=76 mA, T4-T1		61 °C (141.8 °F)
Equipment protection level Da		
CE marking		CE 0102
ATEX marking		Ex II 1D Ex ia IIIC T135°C Da The Ex-related marking can also be printed on the enclosed label.
Standards		EN 60079-0:2012+A11:2013 EN 60079-11:2012 Ignition protection "Intrinsic safety" Use is restricted to the following stated conditions
Appropriate type		NJ 5-18GK-SN...
Effective internal inductivity	C_i	≤ 120 nF ; a cable length of 10 m is considered.
Effective internal inductance	L_i	≤ 200 µH A cable length of 10 m is considered.
Special conditions		

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