



Model Number

NBB3-V3-Z4-3G-3D

Features

- 3 mm flush
- 2-wire DC
- 60 V DC output
- ATEX-approval for zone 2 and zone 22

Technical Data

General specifications

Switching function	Normally open (NO)
Output type	Two-wire
Rated operating distance	s_n 3 mm
Installation	flush
Output polarity	DC
Assured operating distance	s_a 0 ... 2.4 mm
Actual operating distance	s_r 2.7 ... 3.3 mm typ.
Reduction factor r_{Al}	0.45
Reduction factor r_{Cu}	0.35
Reduction factor r_{304}	0.8
Reduction factor r_{Brass}	0.5
Output type	2-wire

Nominal ratings

Operating voltage	U_B	5 ... 60 V DC
Switching frequency	f	0 ... 2000 Hz
Hysteresis	H	typ. 0.2 mm
Reverse polarity protection		reverse polarity protected
Short-circuit protection		no
Inductive overvoltage protection		yes
Voltage drop	U_d	≤ 4 V
Voltage drop at I_L		
Voltage drop $I_L = 10$ mA, switching element on U_d		3.4 ... 3.9 V typ. 3.6 V
Operating current	I_L	4 ... 100 mA
Lowest operating current	I_m	4 mA
Off-state current	I_r	0.4 ... 0.55 mA typ. 0.46 mA
Time delay before availability	t_v	≤ 1 ms
Switching state indicator		LED, yellow

Limit data

Tightening torque, fastening screws	0.4 Nm
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Functional safety related parameters

MTTF _d	1552 a
Mission Time (T_M)	20 a
Diagnostic Coverage (DC)	0 %

Standard conformity

EMC in accordance with	EN 60947-5-2:2007 EN 60947-5-2/A1:2012 IEC 60947-5-2:2007 IEC 60947-5-2 AMD 1:2012
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Ambient conditions

Ambient temperature	-25 ... 85 °C (-13 ... 185 °F)
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Mechanical specifications

Connection type	cable PVC, 130 mm
Core cross-section	0.14 mm ²
Housing material	PBT
Sensing face	PBT
Degree of protection	IP67
Cable	

Bending radius	> 10 x cable diameter
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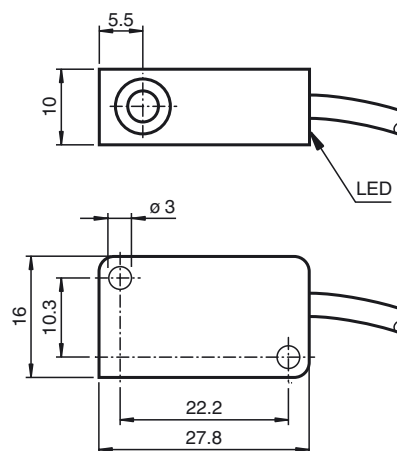
General information

Use in the hazardous area	see instruction manuals
Category	3G; 3D

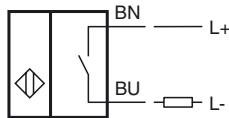
Approvals and certificates

UL approval	cULus Listed, General Purpose
CSA approval	cCSAus Listed, General Purpose

Dimensions



Electrical Connection



Equipment protection level Gc (nA)

Certificate	PF 15CERT3754 X
CE marking	CE

ATEX marking	Ex II 3G Ex nA IIC T6 Gc The Ex-related marking can also be printed on the enclosed label.
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Standards	EN 60079-0:2012+A11:2013, EN 60079-15:2010 Ignition protection category "n" Use is restricted to the following stated conditions
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Special conditions

Maximum operating current I_L	The maximum permissible load current must be restricted to the values given in the following list. High load currents and load short-circuits are not permitted.
Maximum operating voltage U_{Bmax}	The maximum permissible operating voltage U_{Bmax} is restricted to the values in the following list. Tolerances are not permissible.
Maximum permissible ambient temperature T_{Umax}	dependant of the load current I_L and the max. operating voltage U_{Bmax} Information can be taken from the following list.
at $U_{Bmax}=60\text{ V}$, $I_L=100\text{ mA}$	38 °C (100.4 °F)
at $U_{Bmax}=60\text{ V}$, $I_L=50\text{ mA}$	52 °C (125.6 °F)
at $U_{Bmax}=60\text{ V}$, $I_L=25\text{ mA}$	57 °C (134.6 °F)
at $U_{Bmax}=30\text{ V}$, $I_L=100\text{ mA}$	36 °C (96.8 °F)
at $U_{Bmax}=30\text{ V}$, $I_L=50\text{ mA}$	50 °C (122 °F)
at $U_{Bmax}=30\text{ V}$, $I_L=25\text{ mA}$	57 °C (134.6 °F)

Equipment protection level Dc (tc)

CE marking	CE
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ATEX marking	Ex II 3D Ex tc IIIC T80°C Dc The Ex-related marking can also be printed on the enclosed label.
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Standards	EN 60079-0:2012+A11:2013, EN 60079-31:2014 Protection by enclosure "tc" Some of the information in this instruction manual is more specific than the information provided in the datasheet.
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General	The corresponding datasheets, declarations of conformity, EC-type examination certificates, certifications, and control drawings, where applicable (see datasheets), form an integral part of this document. These documents can be found at www.pepperl-fuchs.com . The maximum surface temperature of the device was determined without a layer of dust on the apparatus. Some of the information in this instruction manual is more specific than the information provided in the datasheet.
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