



Model Number

NBB4-12GM50-E2-V1-3G-3D

Features

- Increased operating distance
- 4 mm flush
- ATEX-approval for zone 2 and zone 22

Accessories

BF 12

Mounting flange, 12 mm

EXG-12

Quick mounting bracket with dead stop

Technical Data

General specifications

Switching function	Normally open (NO)
Output type	PNP
Rated operating distance	s_n 4 mm
Installation	flush
Output polarity	DC
Assured operating distance	s_a 0 ... 3.24 mm
Reduction factor r_{AI}	0.45
Reduction factor r_{CU}	0.35
Reduction factor r_{304}	0.7
Output type	3-wire

Nominal ratings

Operating voltage	U_B 10 ... 30 V DC
Switching frequency	f 0 ... 1000 Hz
Hysteresis	H typ. 5 %
Reverse polarity protection	reverse polarity protected
Short-circuit protection	pulsing
Voltage drop	U_d ≤ 3 V
Design data	
Operating current	I_L 0 ... 150 mA
Off-state current	I_r 0 ... 0.5 mA typ. 0.1 μ A at 25 °C
Off-state current $T_{U=40^\circ\text{C}}$, switching element off	$\leq$
No-load supply current	I_0 ≤ 15 mA
Time delay before availability	t_v ≤ 5 ms
Switching state indicator	Multihole-LED, yellow

Functional safety related parameters

MTTF _d	1820 a
Mission Time (T_M)	20 a
Diagnostic Coverage (DC)	0 %

Ambient conditions

Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
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Mechanical specifications

Connection type	Connector plug M12 x 1, 4-pin
Cable version	PBT
Housing material	brass, nickel-plated
Sensing face	PBT
Degree of protection	IP67

General information

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

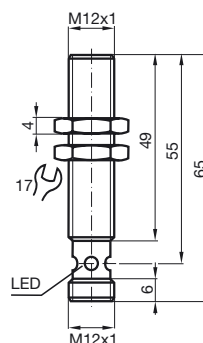
Compliance with standards and directives

Standard conformity	
Standards	EN 60947-5-2:2007 IEC 60947-5-2:2007

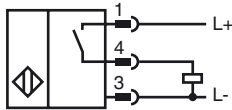
Approvals and certificates

UL approval	cULus Listed, General Purpose
CSA approval	cCSAus Listed, General Purpose
CCC approval	CCC approval / marking not required for products rated ≤ 36 V

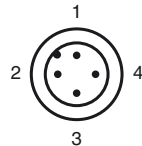
Dimensions



Electrical Connection



Pinout



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)

Equipment protection level Gc (nA)

Certificate	PF 15CERT3754 X
CE marking	
ATEX marking	II 3G Ex nA IIC T6 Gc The Ex-related marking can also be printed on the enclosed label.
Standards	EN 60079-0:2012+A11:2013, EN 60079-15:2010 Ignition protection category "n" Use is restricted to the following stated conditions

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_B max 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 $U_{Bmax}=30$ V, $I_L=150$ mA	47 °C (116.6 °F)
at $U_{Bmax}=30$ V, $I_L=100$ mA	51 °C (123.8 °F)
at $U_{Bmax}=30$ V, $I_L=50$ mA	53 °C (127.4 °F)

Equipment protection level Dc (tc)

CE marking	
ATEX marking	II 3D Ex tc IIIC T80°C Dc The Ex-related marking can also be printed on the enclosed label.
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.
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.

Special conditions

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 $U_{Bmax}=30$ V, $I_L=150$ mA	47 °C (116.6 °F)
at $U_{Bmax}=30$ V, $I_L=100$ mA	51 °C (123.8 °F)
at $U_{Bmax}=30$ V, $I_L=50$ mA	53 °C (127.4 °F)

Equipment protection level Dc (tD)



General	The apparatus has to be operated according to the appropriate data in the data sheet and in this instruction manual. The maximum surface temperature has been determined in accordance with method A without a dust layer on the equipment. The data stated in the data sheet are restricted by this operating instruction! The special conditions must be adhered to!
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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.
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