



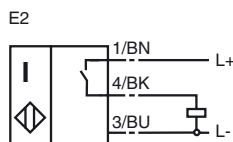
CE

**Model Number**

NBB2-8GM50-E2-3G-3D

**Features**

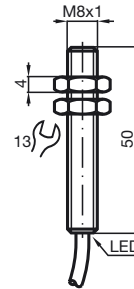
- Basic series
- increased operating distance

**Connection****Accessories****BF 8**

Mounting flange

**EXG-08**

Mounting aid

**Dimensions****Technical Data****General specifications**

Switching element function	PNP	Make function
Rated operating distance	$s_n$	2 mm
Installation		embeddable
Output polarity		DC
Assured operating distance	$s_a$	0 ... 1.62 mm
Reduction factor $r_{Al}$		0.45
Reduction factor $r_{Cu}$		0.35
Reduction factor $r_{V2A}$		0.75

**Nominal ratings**

Operating voltage	$U_B$	10 ... 30 V
Switching frequency	$f$	0 ... 1500 Hz
Hysteresis	$H$	typ. 5 %
Reverse polarity protection		protected against reverse polarity
Short-circuit protection		pulsing
Voltage drop	$U_d$	$\leq 3$ V
Operating current	$I_L$	0 ... 100 mA
Off-state current	$I_r$	0 ... 0.5 mA typ. 0.1 $\mu$ A
No-load supply current	$I_0$	$\leq 15$ mA
Indication of the switching state		LED, yellow

**Standard conformity**

Standards	IEC / EN 60947-5-2:2004
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**Ambient conditions**

Ambient temperature	-25 ... 70 °C (248 ... 343 K)
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**Mechanical specifications**

Connection type	2 m, PVC cable
Core cross-section	0.14 mm <sup>2</sup>
Housing material	brass, nickel-plated
Sensing face	LCP
Protection degree	IP67

**General information**

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

**ATEX 3G (nA)**

Instruction	<b>Manual electrical apparatus for hazardous areas</b>
<b>Device category 3G (nA)</b>	for use in hazardous areas with gas, vapour and mist
Directive conformity	94/9/EG
Standard conformity	EN 60079-15:2003
	Ignition protection category "n"
	Use is restricted to the following stated conditions
CE symbol	
Ex-identification	 II 3G EEx nA IIC T6 X
General	The apparatus has to be operated according to the appropriate data in the data sheet and in this instruction manual. The data stated in the data sheet are restricted by this operating instruction! The special conditions must be observed!
Installation, Commissioning	Laws and/or regulations and standards governing the use or intended usage goal must be observed.
Maintenance	No changes can be made to apparatus, which are operated in hazardous areas. Repairs to these apparatus are not possible.
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 $U_{Bmax}=30\text{ V}$ , $I_L=100\text{ mA}$	43 °C
at $U_{Bmax}=30\text{ V}$ , $I_L=50\text{ mA}$	46 °C
Protection from mechanical danger	The sensor must not be exposed to <b>ANY FORM</b> of mechanical danger.
Protection from UV light	The sensor and the connection cable must be protected from damaging UV-radiation. This can be achieved when the sensor is used in internal areas.
Electrostatic charging	Electrostatic charges on the metal housing components must be avoided. Dangerous electrostatic charges on the metal housing components can be avoided by incorporating these components in the equipotential bonding.
Protection of the connection cable	The connection cable must be prevented from being subjected to tension and torsional loading.

**ATEX 3D**

Instruction

**Manual electrical apparatus for hazardous areas****Device category 3D**

Directive conformity

Standard conformity

CE symbol

Ex-identification

General

Installation, Commissioning

Maintenance

[Fett]Special conditions

Maximum operating current  $I_L$ Maximum operating voltage  $U_{Bmax}$ 

Maximum heating (Temperature rise)

at  $U_{Bmax}=30\text{ V}$ ,  $I_L=100\text{ mA}$ at  $U_{Bmax}=30\text{ V}$ ,  $I_L=50\text{ mA}$ 

Protection from mechanical danger

Electrostatic charging

Protection of the connection cable

for use in hazardous areas with non-conducting combustible dust

94/9/EG

EN 50281-1-1

Protection via housing

Use is restricted to the following stated conditions

CE

Ex II 3D IP67 T 97 °C X

The apparatus has to be operated according to the appropriate data in the data sheet and in this instruction manual. The data stated in the data sheet are restricted by this operating instruction! The special conditions must be adhered to!

Laws and/or regulations and standards governing the use or intended usage goal must be observed.

No changes can be made to apparatus, which are operated in hazardous areas.

Repairs to these apparatus are not possible.

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.

The maximum permissible operating voltage  $U_{Bmax}$  must be restricted to the values given in the following list. Tolerances are not permitted.dependant of the load current  $I_L$  and the max. operating voltage  $U_{Bmax}$ . Information can be taken from the following list. The maximum surface temperature at maximum ambient temperature is given in the Ex identification of the apparatus.

27 °C

24 °C

The sensor must not be mechanically damaged.

Electrostatic charges on the metal housing components must be avoided. Dangerous electrostatic charges on the metal housing components can be avoided by incorporating these components in the equipotential bonding.

The connection cable must be prevented from being subjected to tension and torsional loading.