



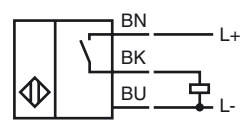
Model Number

NCB1,5-18GM60-E2-D-V1-3G-3D

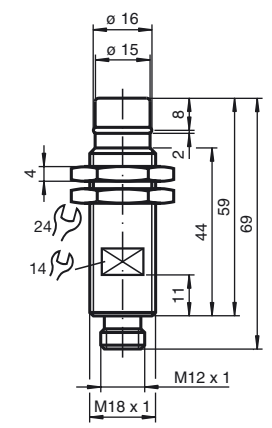
Features

- Compression proof up to 350 bar, dynamic on active surface
- For applications in hydraulic cylinder

Connection

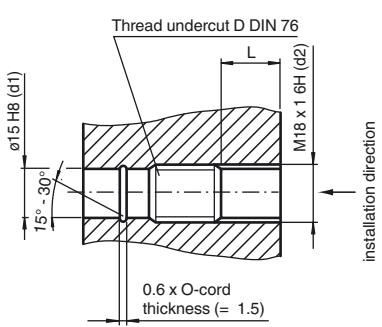


Dimensions



Technical Data

General specifications		
Switching element function		PNP NO
Rated operating distance	s_n	1.5 mm
Installation		embeddable
Output polarity		DC
Assured operating distance	s_a	0 ... 1.22 mm
Reduction factor r_{AI}		0.3
Reduction factor r_{Cu}		0.2
Reduction factor r_{304}		0.5
Nominal ratings		
Operating voltage	U_B	10 ... 60 V
Switching frequency	f	0 ... 1500 Hz
Hysteresis	H	typ. 5 %
Reverse polarity protected		reverse polarity protected
Short-circuit protection		pulsing
Voltage drop	U_d	≤ 3 V
Operating current	I_L	0 ... 200 mA
No-load supply current	I_0	≤ 10 mA
Limit data		
Operating pressure dynamically		350 bar (507.6 psi)
Ambient conditions		
Ambient temperature		-35 ... 80 °C (-31 ... 176 °F)
Mechanical specifications		
Connection type		connector M12 x 1, 4-pin
Housing material		Stainless steel
Sensing face		Epoxy (black)
Protection degree		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



L: recommended installation depth: $L \geq 0.8 \times d2$

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ATEX 3G (nA)

Instruction

Manual electrical apparatus for hazardous areas

Device category 3G (nA)

Directive conformity

Standard conformity

for use in hazardous areas with gas, vapour and mist

94/9/EG

EN 60079-15:2003

Ignition protection category "n"

Use is restricted to the following stated conditions

CE symbol

CE

Ex-identification

II 3G EEx nA IIC T6 X

The Ex-significant identification is on the enclosed adhesive label

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.

The adhesive label provided must be affixed in the immediate vicinity of the sensor! The surface to which the label is applied must be clean, flat and free from grease!

The affixed adhesive label must be readable and durable, taking account of the possibility of chemical corrosion!

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 $U_{Bmax}=60$ V, $I_L=200$ mA

52 °C (125.6 °F)

at $U_{Bmax}=60$ V, $I_L=50$ mA

54 °C (129.2 °F)

at $U_{Bmax}=30$ V, $I_L=200$ mA

56 °C (132.8 °F)

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

58 °C (136.4 °F)

Plug connector

The plug connector must not be disconnected under voltage. The proximity switch is marked as follows: "DO NOT DISCONNECT UNDER VOLTAGE!" When the plug connector is disconnected the ingress of dirt into the inner areas (i.e. the areas, which are not accessible in the plugged-in condition) must be prevented.

Protection from mechanical danger

The sensor must not be exposed to **ANY FORM** 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 must be avoided on the mechanical housing components. Dangerous electrostatic charges on the mechanical housing components can be avoided by incorporating these in the equipotential bonding.

ATEX 3D

Instruction	Manual electrical apparatus for hazardous areas
Device category 3D	for use in hazardous areas with non-conducting combustible dust
Directive conformity	94/9/EG
Standard conformity	EN 50281-1-1
	Protection via housing
	Use is restricted to the following stated conditions
CE symbol	
Ex-identification	 II 3D IP67 T 98 °C (208.4 °F) X The Ex-significant identification is on the enclosed adhesive label
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 adhered to!
Installation, Commissioning	Laws and/or regulations and standards governing the use or intended usage goal must be observed. The adhesive label provided must be affixed in the immediate vicinity of the sensor! The surface to which the label is applied must be clean, flat and free from grease! The affixed adhesive label must be readable and durable, taking account of the possibility of chemical corrosion!
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} must be restricted to the values given in the following list. Tolerances are not permitted.
Maximum heating (Temperature rise)	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.
at $U_{Bmax}=60$ V, $I_L=200$ mA	18 K
at $U_{Bmax}=60$ V, $I_L=50$ mA	16 K
at $U_{Bmax}=30$ V, $I_L=200$ mA	14 K
at $U_{Bmax}=30$ V, $I_L=100$ mA	11 K
Plug connector	The plug connector must not be disconnected under voltage. The proximity switch is marked as follows: "DO NOT DISCONNECT UNDER VOLTAGE!" When the plug connector is disconnected the ingress of dirt into the inner areas (i.e. the areas, which are not accessible in the plugged-in condition) must be prevented. The plug connection can only be separated using a tool. This is achieved by using the locking protection V1-Clip (Mounting accessory from Pepperl + Fuchs).
Protection from mechanical danger	The sensor must not be mechanically damaged.
Electrostatic charging	Electrostatic charges must be avoided on the mechanical housing components. Dangerous electrostatic charges on the mechanical housing components can be avoided by incorporating these in the equipotential bonding.