



Model Number

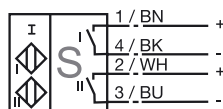
NBN3-F31-Z8-V1-3G-3D

Features

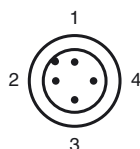
- Direct mounting on standard actuators
- Compact and stable housing
- Fixed setting
- Satisfies machinery directive

Connection

Z8-V1



Pinout



Wire colors in accordance with EN 60947-5-2

1	BN
2	WH
3	BU
4	BK

Accessories

V1-G

Field attachable female cordset

V1-W

Field attachable female cordset

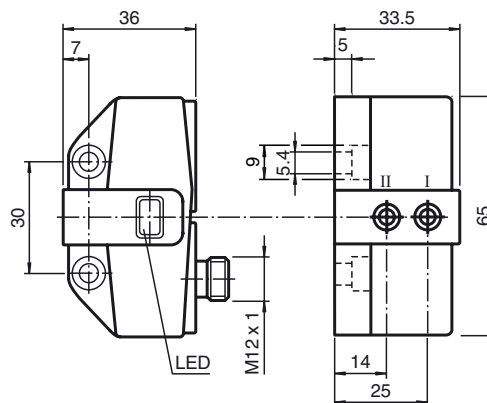
V1-G-2M-PUR

Cable socket, M12, 4-pin, PUR cable

V1-W-2M-PUR

Cable socket, M12, 4-pin, PUR cable

Dimensions



Technical Data

General specifications

Switching element function	Dual (NO)
Rated operating distance	s_n 3 mm
Installation	flush mountable
Output polarity	DC
Assured operating distance	s_a 0 ... 2.43 mm
Reduction factor r_{Al}	0.5
Reduction factor r_{Cu}	0.4
Reduction factor r_{V2A}	1
Reduction factor r_{St37}	1.1

Nominal ratings

Operating voltage	U_B	6 ... 60 V
Switching frequency	f	0 ... 500 Hz
Hysteresis	H	typ. 5 %
Reverse polarity protected		tolerant
Short-circuit protection		no
Voltage drop	U_d	≤ 6 V
Operating current	I_L	4 ... 100 mA
Lowest operating current	I_m	4 mA
Off-state current	I_r	0 ... 1 mA typ. 0.7 mA
Indication of the switching state		LED, yellow

Limit data

Tightening torque, fastening screws	0.4 Nm
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Ambient conditions

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

Connection (system side)	connector M12 x 1, 4-pin
Housing material	PBT
Sensing face	PBT
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

Approvals and certificates

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

ATEX 3G (nA)

Instruction	Manual electrical apparatus for hazardous areas
Device category 3G (nA)	for use in hazardous areas with gas, vapour and mist
Directive conformity	94/9/EG
Standard conformity	EN 60079-0:2006, EN 60079-15:2005
	Ignition protection category "n"
	Use is restricted to the following stated conditions
CE symbol	CE
Ex-identification	Ex II 3G Ex 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. The power supply must not be provided in a manner in which a voltage in excess of 60 V arises between arbitrary connections.
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, $I_L=100$ mA	46 °C (114.8 °F)
at $U_{Bmax}=60$ V, $I_L=50$ mA	55 °C (131 °F)
at $U_{Bmax}=60$ V, $I_L=25$ mA	59 °C (138.2 °F)
Plug connector	The plug connector must not be withdrawn under voltage. The proximity switch is identified as follows: "WARNING - DO NOT SEPARATE WHEN ENERGIZED". With the plug connector disconnected, soiling of the internal area must be prevented. (i.e. the area that is inaccessible when the connector is inserted)
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.

ATEX 3D (tD)

Instruction	Manual electrical apparatus for hazardous areas
Device category 3D	for use in hazardous areas with combustible dust
Directive conformity	94/9/EG
Standard conformity	EN 61241-0:2006, EN 61241-1:2004
CE symbol	Protection via housing "tD" Use is restricted to the following stated conditions CE
Ex-identification	Ex II 3D Ex tD A22 IP67 T80°C X
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!
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} must be restricted to the values given in the following list. Tolerances are not permitted.
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, $I_L=100$ mA	46 °C (114.8 °F)
at $U_{Bmax}=60$ V, $I_L=50$ mA	55 °C (131 °F)
at $U_{Bmax}=60$ V, $I_L=25$ mA	59 °C (138.2 °F)
Plug connector	The plug connector must not be withdrawn under voltage. The proximity switch is identified as follows: "WARNING - DO NOT SEPARATE WHEN ENERGIZED". With the plug connector disconnected, soiling of the internal area must be prevented. (i.e. the area that is inaccessible when the connector is inserted) 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 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	Sliding contact discharges must be avoided.