



Model Number

NBN3-F31-E8-V1-3G-3D

Features

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

Accessories

V1-G

Female connector, M12, 4-pin, field attachable

V1-W

Female connector, M12, 4-pin, field attachable

V1-G-2M-PUR

Female cordset, M12, 4-pin, PUR cable

V1-W-2M-PUR

Female cordset, M12, 4-pin, PUR cable

Technical Data

General specifications

Switching function		2 x normally open (NO)
Output type		PNP
Rated operating distance	s_n	3 mm
Installation		flush mountable
Output polarity		DC
Assured operating distance	s_a	0 ... 2.43 mm
Actual operating distance	s_r	2.7 ... 3.3 mm typ.
Reduction factor r_{Al}		0.5
Reduction factor r_{Cu}		0.4
Reduction factor r_{304}		1
Reduction factor r_{St37}		1.2
Output type		3-wire

Nominal ratings

Operating voltage	U_B	10 ... 30 V
Switching frequency	f	0 ... 500 Hz
Hysteresis	H	typ. 5 %
Reverse polarity protection		all connections
Short-circuit protection		pulsing
Voltage drop	U_d	≤ 3 V
Operating current	I_L	0 ... 100 mA
Off-state current	I_r	0 ... 0.5 mA typ. 0.1 μ A at 25 °C
No-load supply current	I_o	≤ 25 mA
Operating voltage indicator		LED, green
Switching state indicator		LED, yellow

Ambient conditions

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

Connection (system side)		4-pin, M12 x 1 connector
Housing material		PBT
Sensing face		PBT
Degree of protection		IP67

General information

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

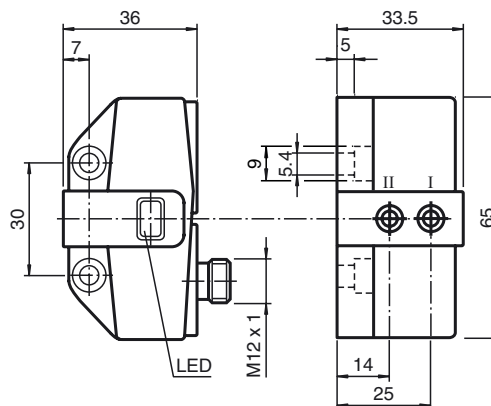
Compliance with standards and directives

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

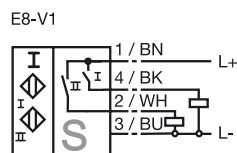
Approvals and certificates

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

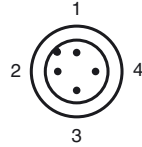
Dimensions



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)

CE marking	CE
ATEX marking	Ex II 3G Ex nA IIC T6 X
Directive conformity	94/9/EG
Standards	EN 60079-0:2006, EN 60079-15:2005 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_{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 (109.4 °F)
at $U_{Bmax}=30\text{ V}$, $I_L=50\text{ mA}$	45 °C (113 °F)
at $U_{Bmax}=30\text{ V}$, $I_L=25\text{ mA}$	45 °C (113 °F)

Equipment protection level Dc (tD)

Directive conformity	94/9/EG
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!
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 $U_{Bmax}=30\text{ V}$, $I_L=100\text{ mA}$	43 °C (109.4 °F)
at $U_{Bmax}=30\text{ V}$, $I_L=50\text{ mA}$	45 °C (113 °F)
at $U_{Bmax}=30\text{ V}$, $I_L=25\text{ mA}$	45 °C (113 °F)