



Model Number

NBN3-F31K-E8-3G-3D

Features

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

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
Reduction factor r_{Brass}		
Output type		4-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
No-load supply current	I_0	≤ 25 mA
Operating voltage indicator		LED, green
Switching state indicator		LED, yellow

Ambient conditions

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

Mechanical specifications

Connection (system side)	Cage tension spring terminals
Core cross-section (system side)	1.5/2.5 mm ² flexible/rigid
Housing material	PBT
Sensing face	PBT
Degree of protection	IP67
Tightening torque, housing screws	1 Nm
Tightening torque, cable gland	M20 x 1.5 ; ≤ 7 Nm

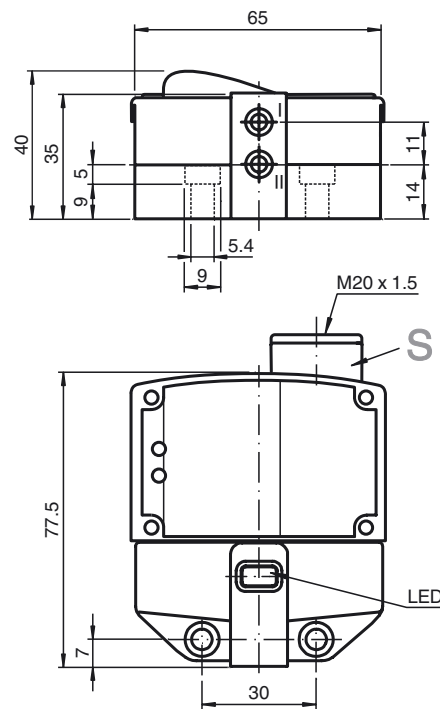
General information

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

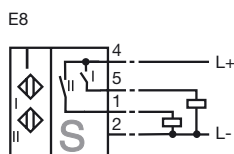
Compliance with standards and directives

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

Dimensions



Electrical Connection



Equipment protection level Gc (nA)

CE marking	CE
ATEX marking	Ex II 3G EEx nA IIC T6 X
Directive conformity	94/9/EG
Standards	EN 60079-15:2003 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 $U_{Bmax}=30\text{ V}$, $I_L=100\text{ mA}$	42 °C (107.6 °F)
at $U_{Bmax}=30\text{ V}$, $I_L=50\text{ mA}$	46 °C (114.8 °F)
at $U_{Bmax}=30\text{ V}$, $I_L=25\text{ mA}$	47 °C (116.6 °F)

Equipment protection level Dc

CE marking	CE
ATEX marking	Ex II 3D IP65 T 98 °C (208.4 °F) X
Directive conformity	94/9/EG
Standards	EN 50281-1-1 Protection via housing Use is restricted to the following stated conditions
Special conditions	
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 $U_{Bmax}=30\text{ V}$, $I_L=100\text{ mA}$	28 K
at $U_{Bmax}=30\text{ V}$, $I_L=50\text{ mA}$	24 K
at $U_{Bmax}=30\text{ V}$, $I_L=25\text{ mA}$	23 K

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