



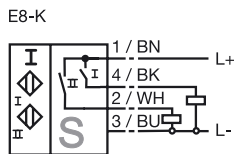
Model Number

NBN3-F31-E8-K-3G-3D

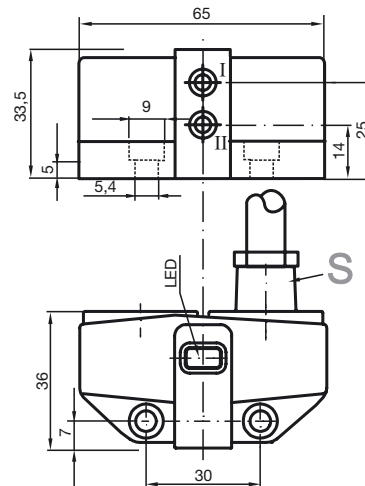
Features

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

Connection



Dimensions



Technical Data

General specifications

Switching element function		PNPDual Make function
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_{AI}		0.5
Reduction factor r_{Cu}		0.4
Reduction factor r_{V2A}		1
Reduction factor r_{SI37}		1.2

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_0	≤ 25 mA
Operating voltage display		LED, green
Indication of the switching state		LED, yellow

Ambient conditions

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

Connection (system side)		5 m, PVC cable
Core cross-section (system side)		0.75 mm ²
Housing material		PBT
Sensing face		PBT
Protection degree		IP67

General information

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

ATEX 3G (nA)

Instruction

Manual electrical apparatus for hazardous areas**Device category 3G (nA)**

Directive conformity

Standard conformity

CE symbol

Ex-identification

General

Installation, Commissioning

Maintenance

Special conditions

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

Protection from mechanical danger

Protection from UV light

Protection of the connection cable


for use in hazardous areas with gas, vapour and mist

94/9/EG

EN 60079-0:2006, EN 60079-15:2005

Ignition protection category "n"

Use is restricted to the following stated conditions


 II 3G Ex nA IIC T6 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 observed!

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} is restricted to the values in the following list. Tolerances are not permissible.

Information can be taken from the following list.

43 °C



45 °C

The sensor must not be exposed to **ANY FORM** of mechanical danger.

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.

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

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 Protection via housing "tD" Use is restricted to the following stated conditions
CE symbol	
Ex-identification	 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	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 $U_{Bmax}=30\text{ V}$, $I_L=50\text{ mA}$	45 °C
at $U_{Bmax}=30\text{ V}$, $I_L=25\text{ mA}$	45 °C
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.
Protection of the connection cable	The connection cable must be prevented from being subjected to tension and torsional loading.