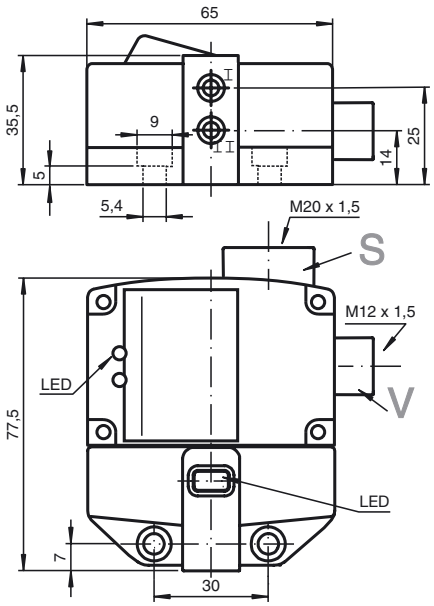
Inductive proximity switches

NBN3-F31K-E8-K-3D

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

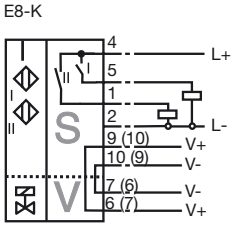


CE

General specifications	
Switching element function	PNP Dual Make function
Rated operating distance s_n	3 mm
Installation	embeddable
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}	1.2
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 µA
No-load supply current I_0	≤ 25 mA
Operating voltage display	LED, green
Indication of the switching state	LED, yellow
Valve status indication	LED, yellow
Standard conformity	
EMC in accordance with	IEC / EN 60947-5-2:2004
Standards	IEC / EN 60947-5-2:2004
Ambient conditions	
Ambient temperature	-25 ... 70 °C (248 ... 343 K)
Mechanical specifications	
Connection (system side)	Cage clamp terminals
Core cross-section (system side)	1.5/2.5 mm² flexible/rigid
Connection (valve side)	Cage clamp terminals
Core cross-section (valve side)	1.5/2.5 mm² flexible/rigid
Housing material	PBT
Sensing face	PBT
Protection degree	IP67
General information	
Use in the hazardous area	see instruction manuals
Category	3D

Connection type:

E8-K



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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	CE
Ex-identification	Ex II 3D IP67 T 97 °C 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 adhered to!
Installation, Comissioning	Laws and/or regulations and standards governing the use or intended usage goal must be observed. Each sensor circuit can be operated at the stated maximum values, with simultaneous operation of the valve circuits. The maximum values of the connected valve circuits, must be observed.
Maintenance	No changes can be made to apparatus, which are operated in hazardous areas. Repairs to these apparatus are not possible.
[Fett]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 UBmax	The maximum permissible operating voltage UBmax 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}=30 V, I_L=100 mA	27 °C
at U_{Bmax}=30 V, I_L=50 mA	23 °C
at U_{Bmax}=30 V, I_L=25 mA	22 °C
Maximum values of the valve circuit	U_i = 32 V; I_i = 240 mA
Protection from mechanical danger	The sensor must not be mechanically damaged.
Connections for external wire	Terminal connection: Minimum conductor cross-section: 0.5 mm^2, maximum conductor cross-section: 2.5 mm^2. The ends of the conductors must be fitted with connector sleeve. The connection and valve cables must not be detached under voltage!
Lead insertion	The cable entry must be such, that no tension load or twist is applied to the cable The protection category must be in accordance with EN 60529 and as stated in the data sheet. The cable entry must be designed so that there are no sharp edges to damage the cable and impair the level of protection of the sensor. The cable entry must be in accordance with the relevant European standard for industrial cable and lead entries.. In addition, in the case of flexible leads, the points of entry of the cable must be rounded off over an angle of at least 75°, with a radius (R), which is at least one quarter of the maximum permissible cable diameter for the entry, but not greater than 3 mm.

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