



### Model Number

NBN3-F31K-E8-3D

### 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	$U_d$	$\leq 3$ V
Operating current	$I_L$	0 ... 100 mA
Off-state current	$I_r$	0 ... 0.5 mA typ. 0.1 $\mu$ A
No-load supply current	$I_0$	$\leq 25$ 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 <sup>2</sup> 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 ; $\leq 7$ Nm

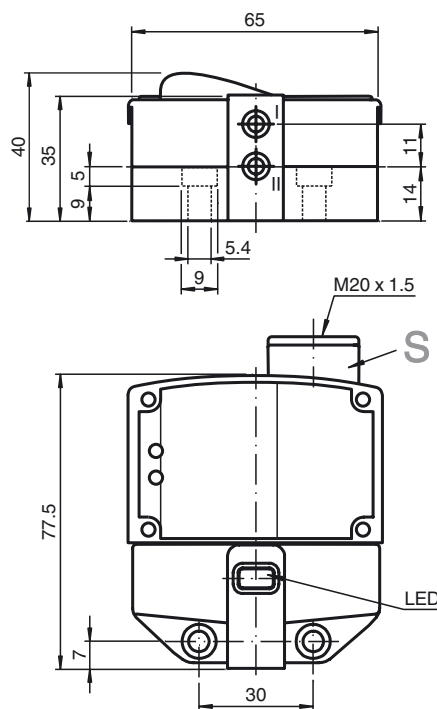
### General information

Use in the hazardous area		see instruction manuals
Category		3D

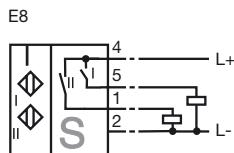
### Compliance with standards and directives

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

## Dimensions



Electrical Connection



Equipment protection level 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
<b>Special conditions</b>	
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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