



### Model Number

**NBB5-F33-E0**

### Features

- 5 mm flush
- 3-wire DC

## Technical Data

### General specifications

Switching function	Normally open (NO)
Output type	NPN
Rated operating distance	$s_n$ 5 mm
Installation	flush
Output polarity	DC
Assured operating distance	$s_a$ 0 ... 4.05 mm
Reduction factor $r_{AI}$	0.3
Reduction factor $r_{CU}$	0.2
Reduction factor $r_{304}$	0.6
Output type	3-wire

### Nominal ratings

Operating voltage	$U_B$	10 ... 30 V DC
Switching frequency	$f$	0 ... 500 Hz
Hysteresis	$H$	typ. 5 %
Reverse polarity protection		reverse polarity protected
Short-circuit protection		pulsing
Voltage drop	$U_d$	$\leq 3$ V
Operating current	$I_L$	0 ... 200 mA
Off-state current	$I_r$	0 ... 0.5 mA typ. 0.1 $\mu$ A
No-load supply current	$I_0$	$\leq 15$ mA
Time delay before availability	$t_v$	$\leq 10$ ms

### Functional safety related parameters

MTTF <sub>d</sub>	730 a
Mission Time (T <sub>M</sub> )	20 a
Diagnostic Coverage (DC)	0 %

### Ambient conditions

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

Connection type	cable PVC, 2 m
Core cross-section	0.34 mm <sup>2</sup>
Housing material	PBT
Sensing face	PBT
Degree of protection	IP67
Cable	
Cable diameter	4.6 mm $\pm$ 0.2 mm
Bending radius	> 10 x cable diameter

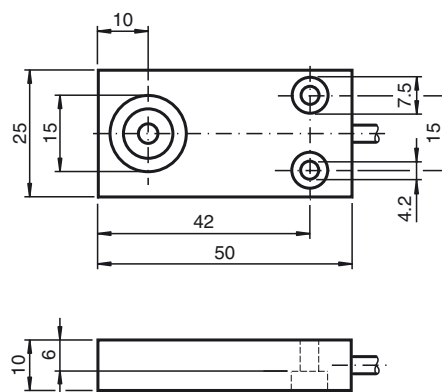
### Compliance with standards and directives

Standard conformity	
Standards	EN 60947-5-2:2007 EN 60947-5-2/A1:2012 IEC 60947-5-2:2007 IEC 60947-5-2 AMD 1:2012

### Approvals and certificates

UL approval	cULus Listed, General Purpose
CSA approval	cCSAus Listed, General Purpose
CCC approval	CCC approval / marking not required for products rated $\leq 36$ V

## Dimensions



## Electrical Connection

