



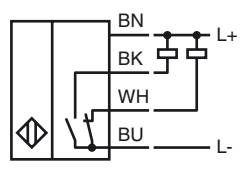
**Model Number**

NBB4-F1-A0

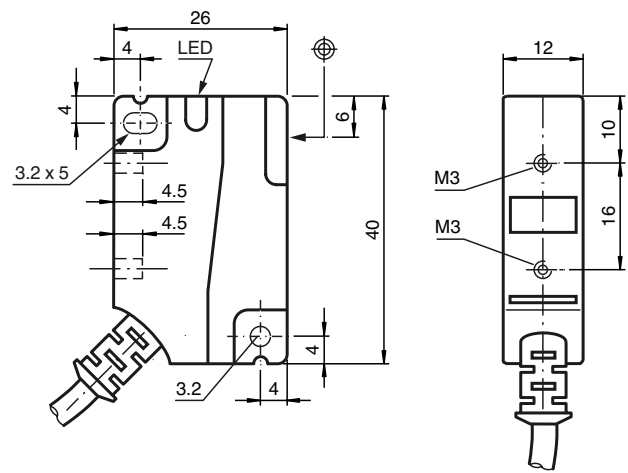
**Features**

- 4 mm flush
- 4-wire DC

**Connection**



**Dimensions**



**Technical Data**

General specifications		
Switching element function	NPN	NO/NC
Rated operating distance	$s_n$	4 mm
Installation		flush
Output polarity		DC
Assured operating distance	$s_a$	0 ... 3.24 mm
Reduction factor $r_{Al}$		0.4
Reduction factor $r_{Cu}$		0.45
Reduction factor $r_{304}$		0.8
Reduction factor $r_{Brass}$		0.55
Nominal ratings		
Operating voltage	$U_B$	10 ... 30 V DC
Switching frequency	$f$	0 ... 1400 Hz
Hysteresis	$H$	typ. 5%
Reverse polarity protected		reverse polarity protected
Short-circuit protection		pulsing
Voltage drop	$U_d$	$\leq 2.5$ V
Rated insulation voltage	$U_{BIS}$	60 V
Operating current	$I_L$	0 ... 250 mA
Off-state current	$I_r$	0 ... 0.01 mA typ. 0.1 $\mu$ A at 25 °C
No-load supply current	$I_0$	$\leq 15$ mA
Indication of the switching state		LED, yellow
Functional safety related parameters		
MTTF <sub>d</sub>		1530 a
Mission Time ( $T_M$ )		20 a
Diagnostic Coverage (DC)		0 %
Ambient conditions		
Ambient temperature		-25 ... 70 °C (-13 ... 158 °F)
Mechanical specifications		
Connection type		cable PVC , 2 m
Core cross-section		0.5 mm <sup>2</sup>
Housing material		PA
Sensing face		PA
Protection degree		IP67
Tightening torque, fastening screws		Threading M3 max: 1.1 Nm
Compliance with standards and directives		
Standard conformity		
Standards		EN 60947-5-2:2007 IEC 60947-5-2:2007
Approvals and certificates		
Protection class		II
Rated insulation voltage	$U_i$	60 V
Design-impulse-voltage withstand	$U_{imp}$	800 V
UL approval		cULus Listed, General Purpose
CSA approval		cCSAus Listed, General Purpose
CCC approval		Products with a maximum operating voltage of $\leq 36$ V do not bear a CCC marking because they do not require approval.

Release date: 2012-06-04 10:28 Date of issue: 2012-06-04 184364\_eng.xml