



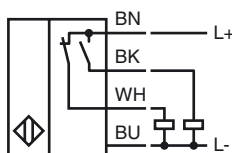
### Model Number

NBB4-F1-A2

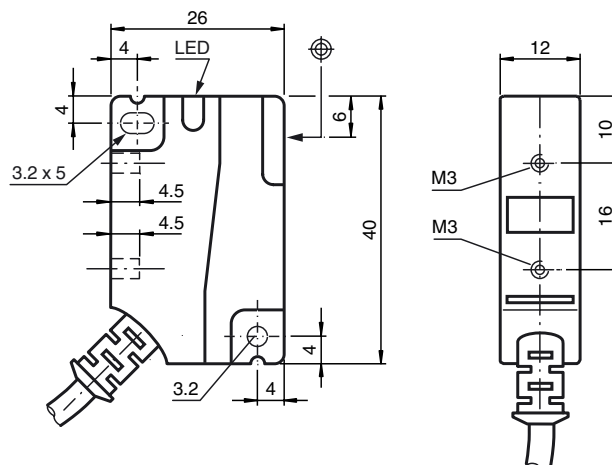
### Features

- 4 mm flush
- 4-wire DC

### Connection



### Dimensions



### Technical Data

#### General specifications

Switching element function	PNP	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>	1640 a
Mission Time ( $T_M$ )	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	0.5 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.