



### Model Number

NBB4-12GM50-E1-M1

### Features

- 4 mm flush
- Increased operating distance
- Extended temperature range  
-40 ... +85 °C
- With increased sealing, protection  
class  
IP68 / IP69K
- E1-Type approval

### Accessories

#### BF 12

Mounting flange, 12 mm

## Technical Data

### General specifications

Switching function	Normally closed (NC)
Output type	NPN
Rated operating distance	$s_n$ 4 mm
Installation	flush
Output polarity	DC
Assured operating distance	$s_a$ 0 ... 3.24 mm
Actuating element	mild steel, e. g. 1.0037, SR235JR (formerly St37-2) 12 mm x 12 mm x 1 mm
Reduction factor $r_{Al}$	0.4
Reduction factor $r_{Cu}$	0.3
Reduction factor $r_{304}$	0.75
Reduction factor $r_{Brass}$	0.45
Output type	3-wire

### Nominal ratings

Operating voltage	$U_B$	7 ... 30 V
Switching frequency	$f$	0 ... 2200 Hz
Hysteresis	$H$	typ. 5%
Reverse polarity protection		reverse polarity protected
Short-circuit protection		pulsing
Voltage drop	$U_d$	$\leq 2$ V
Operating current	$I_L$	0 ... 200 mA
Off-state current	$I_r$	0 ... 0.5 mA typ. 4 $\mu$ A at 25 °C
No-load supply current	$I_0$	$\leq 10$ mA
Time delay before availability	$t_v$	$\leq 100$ ms
Switching state indicator		LED, yellow

### Functional safety related parameters

MTTF <sub>d</sub>	1484 a
Mission Time (T <sub>M</sub> )	20 a
Diagnostic Coverage (DC)	0 %

### Ambient conditions

Ambient temperature	-40 ... 85 °C (-40 ... 185 °F)
Storage temperature	-40 ... 85 °C (-40 ... 185 °F)

### Mechanical specifications

Connection type	cable PUR, 2 m
Core cross-section	0.34 mm <sup>2</sup>
Housing material	brass, nickel-plated
Sensing face	PBT
Degree of protection	IP68 / IP69K
Mass	70 g

### General information

Scope of delivery	2 self locking nuts in scope of delivery
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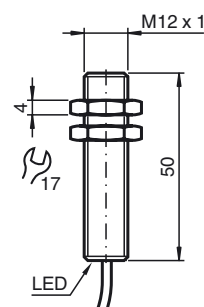
### Compliance with standards and directives

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 EN 12895: 2015

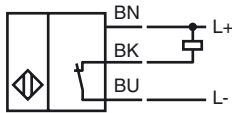
### Approvals and certificates

UL approval	cULus Listed, General Purpose, Class 2 Power Source
CCC approval	CCC approval / marking not required for products rated $\leq 36$ V
E1 Type approval	10R-04

## Dimensions



**Electrical Connection**



**Installation Hint**

Mains-borne interference in accordance with ISO 7637-2:

Pulse	1	2a	2b	3a	3b	4
Severity level	III	III	III	III	III	III
Failure criterion	A	A	C	A	A	C

EN 61000-4-2: CD: 8 kV / AD: 15 kV  
Severity level IV IV

EN 61000-4-3: 36 V/m (80...2500 MHz)  
Severity level IV

EN 61000-4-4: 2 kV  
Severity level III

EN 61000-4-6: 30 V (0.01...80 MHz)  
Severity level III

EN 55011: Class A