



### Model Number

NBB10-30GM50-E2-M

### Features

- 10 mm flush
- E1-Type approval
- Extended temperature range
- Extended operating voltage range
- Waterproof, degree of protection IP68

### Accessories

#### BF 30

Mounting flange, 30 mm

#### EXG-30

Quick mounting bracket with dead stop

## Technical Data

### General specifications

Switching element function	PNP	NO
Rated operating distance	$s_n$	10 mm
Installation		flush
Output polarity		DC
Assured operating distance	$s_a$	0 ... 8.1 mm
Actuating element		mild steel, e. g. 1.0037, SR235JR (formerly St37-2) 30 mm x 30 mm x 1 mm
Reduction factor $r_{Al}$		0.4
Reduction factor $r_{Cu}$		0.3
Reduction factor $r_{304}$		0.7
Reduction factor $r_{Brass}$		0.4

### Nominal ratings

Installation conditions		
A		0 mm
B		10 mm
C		16 mm
F		37 mm
Operating voltage	$U_B$	10 ... 65 V
Switching frequency	$f$	0 ... 300 Hz
Hysteresis	H	0.05 ... 2.2 mm
Reverse polarity protection		yes
Short-circuit protection		yes
Overload resistance		yes
Wire breakage protection		yes
Inductive overvoltage protection		yes
Surge suppression		yes
Ripple		10 %
Voltage drop	$U_d$	$\leq 2.5$ V
Repeat accuracy	R	0.3 mm
Operating current	$I_L$	0 ... 300 mA
Off-state current	$I_r$	$\leq 0.01$ mA
No-load supply current	$I_0$	$\leq 10$ mA
Time delay before availability	$t_v$	$\leq 40$ ms
Switching state indicator		LED, yellow

### Functional safety related parameters

MTTF <sub>d</sub>	1640 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	0.75 mm <sup>2</sup>
Housing material	brass, nickel-plated
Sensing face	PBT
Degree of protection	IP68
Mass	192 g

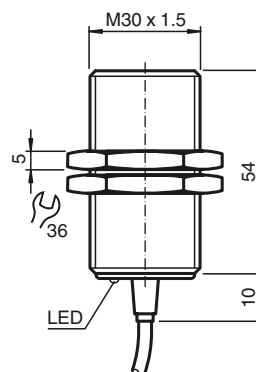
### Compliance with standards and directives

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

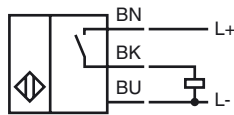
### Approvals and certificates

E1 Type approval	10R-04
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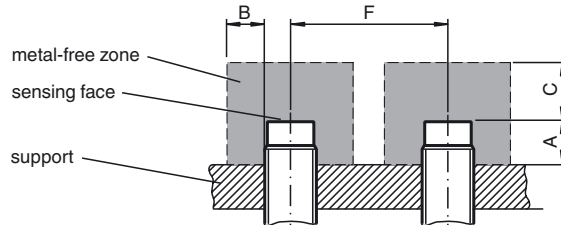
## Dimensions



**Electrical Connection**



**Installation Conditions**



**Installation Hint**

Interference emission and immunity according to Motor Vehicle Directive 10R-04 (E1 type approval)  
 Immunity according to DIN ISO 11452-2: 30 V/m  
 Frequency band of 20 MHz to 2 GHz

Conducted interference according to ISO 7637-2:

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

EN 61000-4-2 was measured according to the requirements in IEC  
 EN 60947-5-2 (4 kV for metal, 8 kV for plastic)  
 EN 61000-4-3: 30 V/m (80 - 2500 MHz)  
 Severity IV  
 EN 61000-4-4: 2 kV  
 Severity III  
 EN 61000-4-6: 10 V (0.01- 80 MHz)  
 Severity III  
 EN 55011: Class A