



Model Number

NBN4-12GK50-E3-M

Features

- 4 mm non-flush
- E1-Type approval
- With increased sealing, protection class IP68 / IP69K
- Extended temperature range
- Extended operating voltage range

Accessories

BF 12
Mounting flange, 12 mm

Technical Data

General specifications

Switching element function		PNP	NC
Rated operating distance	s_n	4 mm	
Installation		non-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}		0.5	
Reduction factor r_{Cu}		0.4	
Reduction factor r_{304}		0.9	
Reduction factor r_{Brass}		0.6	

Nominal ratings

Installation conditions			
A		8 mm	
B		9 mm	
C		6 mm	
F		27 mm	
Operating voltage	U_B	10 ... 65 V	
Switching frequency	f	0 ... 3500 Hz	
Hysteresis	H	0.03 ... 0.88	
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	≤ 2.5 V	
Repeat accuracy		0.2 mm	
Operating current	I_L	0 ... 300 mA	
Off-state current	I_r	≤ 0.01 mA	
No-load supply current	I_0	≤ 10 mA	
Time delay before availability	t_v	≤ 40 ms	
Switching state indicator		LED, yellow	

Functional safety related parameters

MTTF _d	1060 a
Mission Time (T _M)	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 ²
Housing material	PPS
Sensing face	PPS
Degree of protection	IP68
Mass	110 g

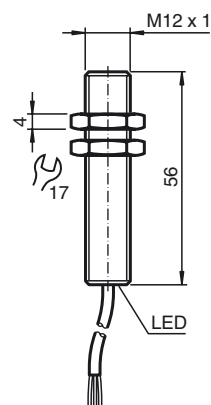
Compliance with standards and directives

Standard conformity	
Standards	EN 60947-5-2:2007 IEC 60947-5-2:2007

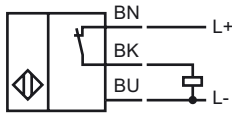
Approvals and certificates

E1 Type approval	10R-04
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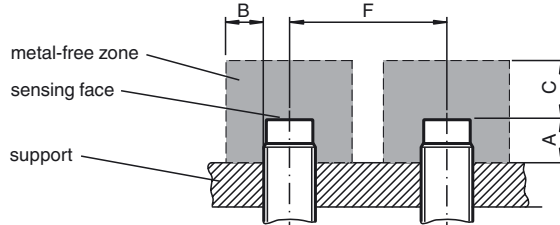
Dimensions



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