



Model Number

NBB4-12GM50-E1-M

Features

- 4 mm flush
- Extended temperature range
-40 ... +85 °C
- E1-Type approval
- Increased noise immunity 100 V/m
- With increased sealing, protection
class
IP68 / IP69K
- Highly shock and vibration resistant

Accessories

BF 12

Mounting flange, 12 mm

EXG-12

Quick mounting bracket with dead stop

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}	0.45
Reduction factor r_{Cu}	0.35
Reduction factor r_{304}	0.75
Reduction factor r_{Brass}	0.45
Output type	3-wire

Nominal ratings

Operating voltage	U_B 5 ... 60 V
Switching frequency	f 0 ... 2500 Hz
Hysteresis	H typ. 5 %
Reverse polarity protection	reverse polarity protected
Short-circuit protection	pulsing
Inductive overvoltage protection	yes
Surge suppression	yes
Voltage drop	U_d ≤ 2 V
Rated insulation voltage	U_{BIS} 60 V
Operating current	I_L 0 ... 200 mA
Off-state current	I_r 0 ... 0.5 mA typ. 0.1 µA at 25 °C
No-load supply current	I_0 ≤ 7 mA
Time delay before availability	t_v ≤ 200 ms
Switching state indicator	LED, yellow

Functional safety related parameters

MTTF _d	1175 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	3 x 0.75 mm ²
Housing material	brass, nickel-plated
Sensing face	PBT
Degree of protection	IP68 / IP69K
Mass	120 g

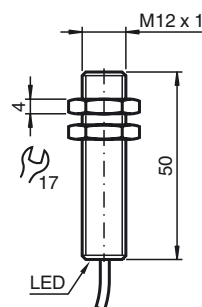
Compliance with standards and directives

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

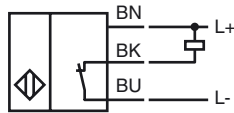
Approvals and certificates

UL approval	cULus Listed, General Purpose, Class 2 Power Source
CSA approval	cCSAus Listed, General Purpose, Class 2 Power Source
CCC approval	Certified by China Compulsory Certification (CCC)
E1 Type approval	10R-04

Dimensions



Electrical Connection



Installation Hint

Interference immunity in accordance with
DIN ISO 11452-2: 100 V/m
Frequency band 20 MHz up to 2 GHz

Mains-borne interference in accordance with ISO 7637-2: Pulse							
	1	2a	2b	3a	3b	4	5
Severity level	III	III	III	III	III	III	III
Failure criterion	C	A	C	A	A	A	B

EN 61000-4-2:	CD: 8 kV / AD: 15 kV
Severity level	IV IV
EN 61000-4-3:	30 V/m (80...2500 MHz)
Severity level	IV
EN 61000-4-4:	2 kV
Severity level	III
EN 61000-4-6:	10 V (0.01...80 MHz)
Severity level	III
EN 55011:	Class A