



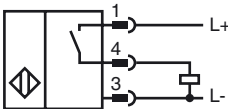
Model Number

NBB5-18GM50-E2-V1-M

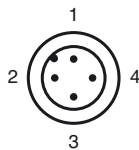
Features

- 5 mm flush
- e1-Type approval
- Extended temperature range
- Extended operating voltage range
- Waterproof, protection class IP68

Connection



Pinout



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)

Accessories

EXG-18

Quick mounting bracket with dead stop

BF 18

Mounting flange, 18 mm

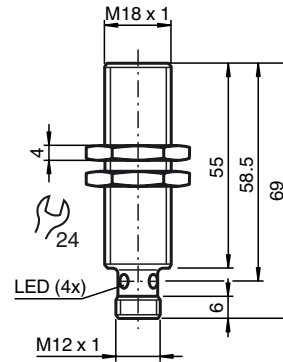
V1-W

4-pin, M12 female field-attachable connector

V1-G

4-pin, M12 female field-attachable connector

Dimensions



Technical Data

General specifications

Switching element function	PNP	NO
Rated operating distance	s_n	5 mm
Installation		flush
Output polarity		DC
Assured operating distance	s_a	0 ... 4.05 mm
Actuating element		mild steel, e. g. 1.0037, SR235JR (formerly St37-2) 18 mm x 18 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		2 mm
C		10 mm
F		30 mm
Operating voltage	U_B	10 ... 65 V
Switching frequency	f	0 ... 800 Hz
Hysteresis	H	0.04 ... 1.15 mm
Reverse polarity protection		reverse polarity protected
Short-circuit protection		pulsing
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		0.15 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
Indication of the switching state		Multihole-LED, yellow

Functional safety related parameters

MTTF _d	1610 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	connector M12 x 1, 4-pin
Housing material	brass, nickel-plated
Sensing face	PPS
Protection degree	IP68
Mass	50 g

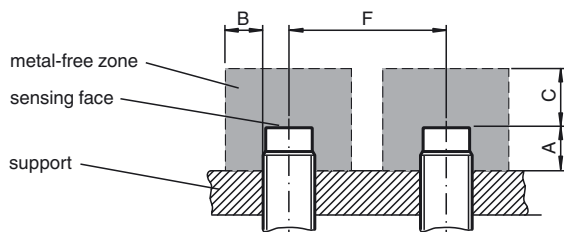
Compliance with standards and directives

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

Approvals and certificates

e1 Type approval	2006/28/EG
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Installation conditions



Installation hint

Interference emission and immunity according to Motor Vehicle Directive 2006/28/EC (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	3 a	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