



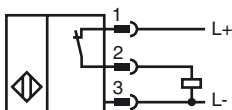
**Model Number**

NBB5-18GM50-E3-V1-M

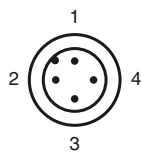
**Features**

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

**Connection**



**Pinout**



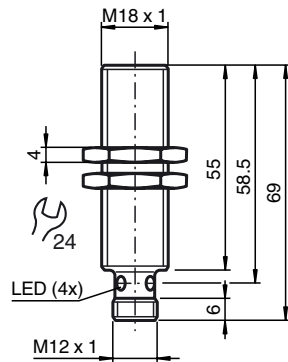
Wire colors in accordance with EN 60947-5-2

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	NC
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**

<b>Installation conditions</b>		
A		0 mm
B		2 mm
C		10 mm
F		30 mm
Operating voltage	$U_B$	10 ... 65 V
Switching frequency	f	0 ... 3500 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	$U_d$	$\leq 2.5$ V
Repeat accuracy		0.15 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
Indication of the switching state		Multihole-LED, yellow

**Functional safety related parameters**

MTTF <sub>d</sub>	1050 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	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**

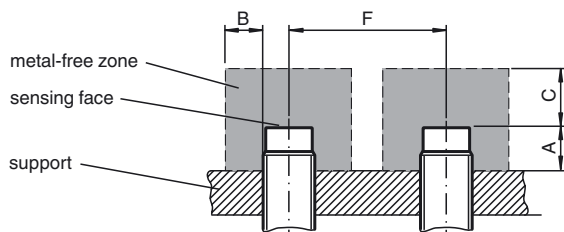
<b>Standard conformity</b>	
Standards	EN 60947-5-2:2007 IEC 60947-5-2:2007

**Approvals and certificates**

e1 Type approval	2006/28/EG
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Release date: 2012-11-28 11:31 Date of issue: 2012-11-28 236486\_eng.xml

**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