



### Model Number

NCB4-12GM70-E0-M

### Features

- Comfort series
- 4 mm flush
- Increased operating distance
- Extended temperature range - 40 ... +85 °C
- E1-Type approval
- Increased noise immunity 100 V/m

### Accessories

#### BF 12

Mounting flange, 12 mm

## Technical Data

### General specifications

Switching element function		NPN	NO
Rated operating distance	$s_n$	4 mm	
Installation		flush	
Output polarity		DC	
Assured operating distance	$s_a$	0 ... 3.24 mm	
Reduction factor $r_{Al}$		0.45	
Reduction factor $r_{Cu}$		0.4	
Reduction factor $r_{304}$		0.75	

### Nominal ratings

Operating voltage	$U_B$	10 ... 60 V
Switching frequency	$f$	0 ... 1000 Hz
Hysteresis	$H$	typ. 5 %
Reverse polarity protection		reverse polarity protected
Short-circuit protection		pulsing
Voltage drop	$U_d$	≤ 3 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
No-load supply current	$I_0$	≤ 10 mA
Time delay before availability	$t_v$	≤ 5 ms
Switching state indicator		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)
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### Mechanical specifications

Connection type	cable PUR , 2 m
Core cross-section	0.75 mm <sup>2</sup>
Housing material	Stainless steel 1.4305 / AISI 303
Sensing face	PBT
Degree of protection	IP69K
Mass	120 g

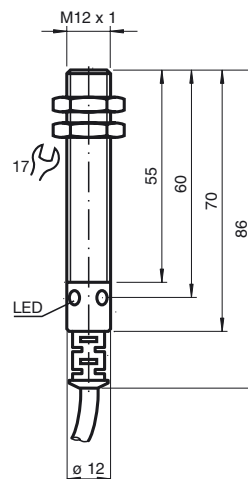
### Compliance with standards and directives

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

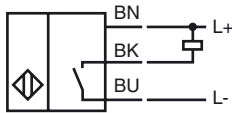
### Approvals and certificates

Protection class	II
Rated insulation voltage	$U_i$ 60 V
Design-impulse-voltage withstand	$U_{imp}$ 800 V
UL approval	cULus Listed, General Purpose
CSA approval	cCSAus Listed, General Purpose
E1 Type approval	10R-04

## Dimensions



**Electrical Connection**



**Installation Hint**

Emitted interference and interference immunity in accordance with motor vehicle directive 2006/28/EG (e1 Type approval)  
 Interference immunity in accordance with DIN ISO 11452-2:  
 Severity IV 100 V/m  
 Frequency band 200 MHz up to 2 GHz  
 Interference immunity to DIN ISO 11452-3:  
 Severity IV 200 V/m  
 Frequency band 0.15 MHz to 200 MHz  
 Mains-borne interference in accordance with ISO 7637-2:

Pulse	1	2a	2b	3a	3b	4	5
Severity level	IV	IV	IV	IV	IV	IV	IV
Failure criterion	C	A	C	A	A	A	C

EN 61000-4-2: CD: 8 kV / AD: 15 kV  
 Severity level IV IV  
 EN 61000-4-3: 10 V/m (80...1000 MHz)  
 Severity level III  
 EN 61000-4-4: 2 kV  
 Severity level III  
 EN 61000-4-5: Supply line to line 0.5 kV  
 Severity level I  
 EN 61000-4-6: 10 V (0.15...80 MHz)  
 Severity level III  
 EN 55011: Class B