



## Model Number

NCN8-18GM60-B3B-V1

## Features

- Comfort series
- A/B slave with extended addressing possibility for up to 62 slaves
- Cylindrical
- NO/NC selectable
- Stability control warning
- Installation help
- On/Off delay (disconnectable)
- Oscillator monitoring

## Accessories

### BF 18

Mounting flange, 18 mm

### V1-G

Female connector, M12, 4-pin, field attachable

### V1-W-2M-PUR

Female cordset, M12, 4-pin, PUR cable

### V1-G-2M-PUR

Female cordset, M12, 4-pin, PUR cable

### V1-W

Female connector, M12, 4-pin, field attachable

## Technical Data

### General specifications

Switching function		Normally open/closed (NO/NC) programmable
Output type		AS-Interface
Rated operating distance	$s_n$	8 mm
Installation		non-flush
Assured operating distance	$s_a$	0 ... 6.48 mm
Actual operating distance	$s_r$	7.2 ... 8.8 mm typ. 8 mm
Reduction factor $r_{AI}$		0.42
Reduction factor $r_{CU}$		0.4
Reduction factor $r_{304}$		0.72
Slave type		A/B slave
AS-Interface specification		V3.0
Required master specification		$\geq V2.1$
Output type		2-wire

### Nominal ratings

Operating voltage	$U_B$	26.5 ... 31.9 V via AS-i bus system
Switching frequency	$f$	0 ... 100 Hz
Hysteresis	$H$	1 ... 15 typ. 5 %
Reverse polarity protection		reverse polarity protected
Voltage drop at $I_L$		
Voltage drop $I_L = 20$ mA, switching element on $U_d$		3.4 ... 5 V typ. 4.3 V
Time delay before availability	$t_v$	$\leq 1000$ ms
Operating voltage indicator		dual-LED, green
Switching state indicator		dual-LED, yellow/red
Error indicator		dual-LED, red

### Functional safety related parameters

MTTF <sub>d</sub>	926 a
Mission Time ( $T_M$ )	20 a
Diagnostic Coverage (DC)	0 %

### Ambient conditions

Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Storage temperature	-40 ... 85 °C (-40 ... 185 °F)

### Mechanical specifications

Connection type	Connector plug M12 x 1, 4-pin
Housing material	Stainless steel 1.4305 / AISI 303
Sensing face	PBT
Degree of protection	IP67

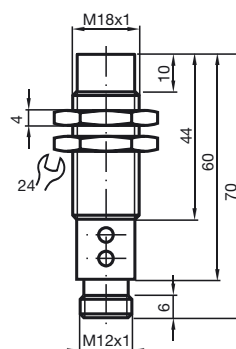
### Compliance with standards and directives

Standard conformity	
Electromagnetic compatibility	EN 50295:1999-10
Standards	
EN 60947-5-2:2007	
IEC 60947-5-2:2007	

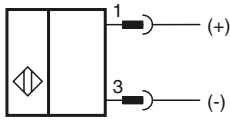
### Approvals and certificates

UL approval	cULus Listed, General Purpose
CSA approval	cCSAus Listed, General Purpose
CCC approval	CCC approval / marking not required for products rated $\leq 36$ V

## Dimensions



**Electrical Connection**



**Pinout**



Wire colors in accordance with EN 60947-5-2

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

**Programming Instructions**

Adress 00    preset, alterable  
                   via Busmaster  
                   or programming units

IO-Code    0  
 ID-Code    A  
 ID1-Code   7  
 ID2-Code   E

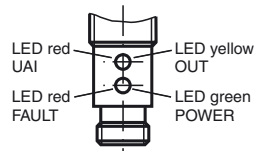
**Data bit**

Bit	Function
D0	Switching state
D1	Prefailure message (dynamic)
D2	Oscillator monitoring
D3	Object too close

**Parameter bit**

Bit	Function
P0	ON / Off delay activated* / deactivated
P1	Switching element function NO* / NC
P2	not used
P3	not used

\*Standard setting

**Indicators**

## Indication depending on the distance to the object and switching element function (P1)

Distance to the object	Function	Parameter P1	yellow LED (OUT)	red LED (UAI)	Data bit D0	Data bit D3
$> 1.2 S_n$	NO	1	off	off	0	1
$1 S_n - 1.2 S_n$		1	off	flashing	0	1
$0.8 S_n - 1 S_n$		1	flashing	flashing	1	1
$0.1 S_n - 0.8 S_n$		1	on	off	1	1
$0 S_n - 0.1 S_n$		1	flashing	flashing	1	0
$> 1,2 S_n$	NC	0	on	off	1	1
$1 S_n - 1.2 S_n$		0	flashing	flashing	1	1
$0.8 S_n - 1 S_n$		0	off	flashing	0	1
$0.1 S_n - 0.8 S_n$		0	off	off	0	1
$0 S_n - 0.1 S_n$		0	off	flashing	1	0

## Indication depending on the operation mode

Symptoms	green LED (POWER)	red LED (FAULT)	Data bit D2
normal operation	on	off	1
oscillator defect	flashing	flashing	0*
no communication	off	on	1

\*: D0, D1, D3 will be set to 0

## Dynamic pre-fault indication:

While normal operation D1=1. If the switch is damped critically, i.e. the object has passed uncompletely the unsafe sensing range of  $0.8 S_n - 1.2 s_n$  during damping, changes D1 to 0 and signals that an adjustment is necessary. See the following diagram:

## Monitoring "object too near":

D3 serves as signalling: Object too near too the sensor, danger of damage, adjustment necessary. In normal mode D3=1. If the object reaches the  $0 - 0.1 s_n$  range, D3=0. If the object leaves this range, D3=1.

## On/off delay:

The on/off delay is preset and switched on (P0=1). On delay approx.15 ms, when P0=1 and NO function (P1=1). Off delay approx.15 ms, when P0=1 and NC function (P1=0).