



## Model Number

NJ1,5-8GM-N

## Features

- 1.5 mm flush
- Usable up to SIL 2 acc. to IEC 61508

## Accessories

### BF 8

Mounting flange, 8 mm

## Technical Data

### General specifications

Switching function		Normally closed (NC)
Output type		NAMUR
Rated operating distance	$s_n$	1.5 mm
Installation		flush
Assured operating distance	$s_a$	0 ... 1.215 mm
Actual operating distance	$s_r$	1.35 ... 1.65 mm typ.
Reduction factor $r_{AI}$		0.4
Reduction factor $r_{CU}$		0.3
Reduction factor $r_{304}$		0.85
Output type		2-wire

### Nominal ratings

Nominal voltage	$U_o$	8.2 V ( $R_i$ approx. 1 k $\Omega$ )
Switching frequency	f	0 ... 5000 Hz
Hysteresis	H	1 ... 10 typ. 5 %
Suitable for 2:1 technology		yes, Reverse polarity protection diode not required
Current consumption		
Measuring plate not detected		$\geq 3$ mA
Measuring plate detected		$\leq 1$ mA

### Functional safety related parameters

Safety Integrity Level (SIL)	SIL 2
------------------------------	-------

### Ambient conditions

Ambient temperature	-25 ... 100 °C (-13 ... 212 °F)
---------------------	---------------------------------

### Mechanical specifications

Connection type	cable PVC, 2 m
Core cross-section	0.14 mm <sup>2</sup>
Housing material	Stainless steel 1.4305 / AISI 303
Sensing face	PBT
Degree of protection	IP66 / IP67
Cable	
Cable diameter	2.6 mm $\pm$ 0.2 mm
Bending radius	> 10 x cable diameter

### General information

Use in the hazardous area	see instruction manuals
---------------------------	-------------------------

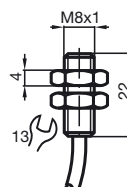
### Compliance with standards and directives

Standard conformity	
NAMUR	EN 60947-5-6:2000 IEC 60947-5-6:1999
Standards	EN 60947-5-2:2007 EN 60947-5-2/A1:2012 IEC 60947-5-2:2007 IEC 60947-5-2 AMD 1:2012

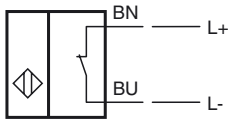
### Approvals and certificates

EAC conformity	TR CU 012/2011
FM approval	
Control drawing	116-0165
UL approval	
Ordinary Location	E87056
Hazardous Location	E501628
Control drawing	116-0452
CSA approval	cCSAus Listed, General Purpose
CCC approval	CCC approval / marking not required for products rated $\leq 36$ V

## Dimensions



Electrical Connection



Release date: 2019-08-05 14:13 Date of issue: 2019-08-05 106361\_eng.xml

**Data for application in connection with hazardous areas**

Equipment protection level	Ga , Gb , Da , Mb
----------------------------	-------------------

**Equipment protection level Ga**

Type of protection	intrinsic safety
CE marking	CE 0102

**Certificates**

Appropriate type	NJ1,5-8GM-N...
ATEX certificate	PTB 00 ATEX 2048 X
ATEX marking	Ⓔ II 1G Ex ia IIC T6...T1 Ga
Standards	EN 60079-0:2012 +A11:2013, EN 60079-11:2012
IECEX certificate	IECEX PTB 11.0037X
IECEX marking	Ex ia IIC T6...T1 Ga
Standards	IEC 60079-0:2011 , IEC 60079-11:2011

Effective internal capacitance	$C_i$	$\leq 30$ nF A cable length of 10 m is considered.
--------------------------------	-------	---

Effective internal inductance	$L_i$	$\leq 50$ $\mu$ H A cable length of 10 m is considered.
-------------------------------	-------	--

Maximum permissible ambient temperature  $T_{amb}$  Also observe the maximum permissible ambient temperature stated in the general technical data. Keep to the lower of the two values.

for ATEX

at  $U_i = 16$  V ,  $I_i = 25$  mA ,  $P_i = 34$  mW ,  
 T6 : 56 °C (132.8 °F)  
 T5 : 68 °C (154.4 °F)  
 T4 : 96 °C (204.8 °F)  
 T3 : 96 °C (204.8 °F)  
 T2 : 96 °C (204.8 °F)  
 T1 : 96 °C (204.8 °F)

at  $U_i = 16$  V ,  $I_i = 25$  mA ,  $P_i = 64$  mW ,  
 T6 : 51 °C (123.8 °F)  
 T5 : 63 °C (145.4 °F)  
 T4 : 91 °C (195.8 °F)  
 T3 : 91 °C (195.8 °F)  
 T2 : 91 °C (195.8 °F)  
 T1 : 91 °C (195.8 °F)

at  $U_i = 16$  V ,  $I_i = 52$  mA ,  $P_i = 169$  mW ,  
 T6 : 32 °C (89.6 °F)  
 T5 : 44 °C (111.2 °F)  
 T4 : 67 °C (152.6 °F)  
 T3 : 67 °C (152.6 °F)  
 T2 : 67 °C (152.6 °F)  
 T1 : 67 °C (152.6 °F)

at  $U_i = 16$  V ,  $I_i = 76$  mA ,  $P_i = 242$  mW ,  
 T6 : 19 °C (66.2 °F)  
 T5 : 31 °C (87.8 °F)  
 T4 : 41 °C (105.8 °F)  
 T3 : 41 °C (105.8 °F)  
 T2 : 41 °C (105.8 °F)  
 T1 : 41 °C (105.8 °F)

for IECEX

at  $U_i = 16$  V ,  $I_i = 25$  mA ,  $P_i = 34$  mW ,  
 T6 : 73 °C (163.4 °F)  
 T5 : 88 °C (190.4 °F)  
 T4 : 100 °C (212 °F)  
 T3 : 100 °C (212 °F)  
 T2 : 100 °C (212 °F)  
 T1 : 100 °C (212 °F)

at  $U_i = 16$  V ,  $I_i = 25$  mA ,  $P_i = 64$  mW ,  
 T6 : 68 °C (154.4 °F)  
 T5 : 83 °C (181.4 °F)  
 T4 : 100 °C (212 °F)  
 T3 : 100 °C (212 °F)  
 T2 : 100 °C (212 °F)  
 T1 : 100 °C (212 °F)

at  $U_i = 16$  V ,  $I_i = 52$  mA ,  $P_i = 169$  mW ,  
 T6 : 49 °C (120.2 °F)  
 T5 : 64 °C (147.2 °F)  
 T4 : 67 °C (152.6 °F)  
 T3 : 67 °C (152.6 °F)  
 T2 : 67 °C (152.6 °F)  
 T1 : 67 °C (152.6 °F)

at  $U_i = 16$  V ,  $I_i = 76$  mA ,  $P_i = 242$  mW ,  
 T6 : 36 °C (96.8 °F)  
 T5 : 42 °C (107.6 °F)  
 T4 : 42 °C (107.6 °F)  
 T3 : 42 °C (107.6 °F)  
 T2 : 42 °C (107.6 °F)  
 T1 : 42 °C (107.6 °F)

Release date: 2019-08-05 14:13 Date of issue: 2019-08-05 106361\_eng.xml

**Equipment protection level Gb**

Type of protection	intrinsic safety	
CE marking	CE 0102	
<b>Certificates</b>		
Appropriate type	NJ1,5-8GM-N...	
ATEX certificate	PTB 00 ATEX 2048 X	
ATEX marking	Ex II 1G Ex ia IIC T6...T1 Ga	
Standards	EN 60079-0:2012+A11:2013 , EN 60079-11:2012	
IECEX certificate	IECEX PTB 11.0037X	
IECEX marking	Ex ia IIC T6...T1 Ga	
Standards	IEC 60079-0:2011 , IEC 60079-11:2011	
Effective internal capacitance	$C_i$	$\leq 30$ nF A cable length of 10 m is considered.
Effective internal inductance	$L_i$	$\leq 50$ $\mu$ H A cable length of 10 m is considered.
Maximum permissible ambient temperature $T_{amb}$	Also observe the maximum permissible ambient temperature stated in the general technical data. Keep to the lower of the two values. at $U_i = 16$ V , $I_i = 25$ mA , $P_i = 34$ mW , T6 : 73 °C (163.4 °F) T5 : 88 °C (190.4 °F) T4 : 100 °C (212 °F) T3 : 100 °C (212 °F) T2 : 100 °C (212 °F) T1 : 100 °C (212 °F) at $U_i = 16$ V , $I_i = 25$ mA , $P_i = 64$ mW , T6 : 68 °C (154.4 °F) T5 : 83 °C (181.4 °F) T4 : 100 °C (212 °F) T3 : 100 °C (212 °F) T2 : 100 °C (212 °F) T1 : 100 °C (212 °F) at $U_i = 16$ V , $I_i = 52$ mA , $P_i = 169$ mW , T6 : 49 °C (120.2 °F) T5 : 64 °C (147.2 °F) T4 : 67 °C (152.6 °F) T3 : 67 °C (152.6 °F) T2 : 67 °C (152.6 °F) T1 : 67 °C (152.6 °F) at $U_i = 16$ V , $I_i = 76$ mA , $P_i = 242$ mW , T6 : 36 °C (96.8 °F) T5 : 42 °C (107.6 °F) T4 : 42 °C (107.6 °F) T3 : 42 °C (107.6 °F) T2 : 42 °C (107.6 °F) T1 : 42 °C (107.6 °F)	

**Equipment protection level Da**

Type of protection	intrinsic safety	
CE marking	CE 0102	
<b>Certificates</b>		
Appropriate type	NJ1,5-8GM-N...	
ATEX certificate	PTB 00 ATEX 2048 X	
ATEX marking	Ex II 1D Ex ia IIIC T135°C Da	
Standards	EN 60079-0:2012+A11:2013 , EN 60079-11:2012	
IECEX certificate	IECEX PTB 11.0037X	
IECEX marking	Ex ia IIIC T135°C Da	
Standards	IEC 60079-0:2011 , IEC 60079-11:2011	
Effective internal capacitance	$C_i$	$\leq 30$ $\mu$ F A cable length of 10 m is considered.
Effective internal inductance	$L_i$	$\leq 50$ $\mu$ H A cable length of 10 m is considered.
Maximum permissible ambient temperature $T_{amb}$	Also observe the maximum permissible ambient temperature stated in the general technical data. Keep to the lower of the two values. at $U_i = 16$ V , $I_i = 25$ mA , $P_i = 34$ mW : 100 °C (212 °F) at $U_i = 16$ V , $I_i = 25$ mA , $P_i = 64$ mW : 100 °C (212 °F) at $U_i = 16$ V , $I_i = 52$ mA , $P_i = 169$ mW : 67 °C (152.6 °F) at $U_i = 16$ V , $I_i = 76$ mA , $P_i = 242$ mW : 41 °C (105.8 °F)	

**Equipment protection level Mb**

Type of protection	intrinsic safety	
<b>Certificates</b>		
Appropriate type	NJ1,5-8GM-N...	
IECEX certificate	IECEX PTB 11.0037X	
IECEX marking	Ex ia I Mb	
Standards	IEC 60079-0:2011 , IEC 60079-11:2011	
Effective internal capacitance	$C_i$	$\leq 30$ nF A cable length of 10 m is considered.
Effective internal inductance	$L_i$	$\leq 50$ $\mu$ H A cable length of 10 m is considered.

Maximum permissible ambient temperature  $T_{amb}$

Also observe the maximum permissible ambient temperature stated in the general technical data. Keep to the lower of the two values.

at  $U_i = 16\text{ V}$ ,  $I_i = 25\text{ mA}$ ,  $P_i = 34\text{ mW}$ :  $100\text{ °C}$  ( $212\text{ °F}$ )

at  $U_i = 16\text{ V}$ ,  $I_i = 25\text{ mA}$ ,  $P_i = 64\text{ mW}$ :  $100\text{ °C}$  ( $212\text{ °F}$ )

at  $U_i = 16\text{ V}$ ,  $I_i = 52\text{ mA}$ ,  $P_i = 169\text{ mW}$ :  $67\text{ °C}$  ( $152.6\text{ °F}$ )

at  $U_i = 16\text{ V}$ ,  $I_i = 76\text{ mA}$ ,  $P_i = 242\text{ mW}$ :  $41\text{ °C}$  ( $105.8\text{ °F}$ )

Release date: 2019-08-05 14:13 Date of issue: 2019-08-05 106361\_eng.xml

Refer to "General Notes Relating to Pepperl+Fuchs Product Information".

Pepperl+Fuchs Group  
www.pepperl-fuchs.com

USA: +1 330 486 0001  
fa-info@us.pepperl-fuchs.com

Germany: +49 621 776 1111  
fa-info@de.pepperl-fuchs.com

Singapore: +65 6779 9091  
fa-info@sg.pepperl-fuchs.com

DOWNLOADED FROM WWW.SCATTS.CO.UK



# SCATTERGOOD & JOHNSON LTD

ELECTRICAL ENGINEERING & FLUID CONTROL DISTRIBUTORS

Est.1899

At Scattergood & Johnson Ltd, we pride ourselves on being a technical distributor to specialist industries.

Working with a range of quality product suppliers across a number of specialist markets, we are not your average 'box shifter' - we are your technical and supply chain partner.

We fully support every product we sell - for free! Our internal team and external sales engineers can answer any product or application question, no matter the complexity.

Backing up this technical ability is a range of 50,000+ products available from stock for nationwide next day delivery (same day if required!), or you can collect what you need from any of our trade counters around the UK.

Select your specialist interest below to learn more about how we can help.



Online, In Branch and On the Road - Scattergood & Johnson Ltd, there when you need us.

# [www.scatts.co.uk](http://www.scatts.co.uk)