



### Model Number

NJ15-M1K-N-V1

### Features

- Comfort series
- 15 mm non-flush

## Technical Data

### General specifications

Switching function		Normally closed (NC)
Output type		NAMUR
Rated operating distance	$s_n$	15 mm
Installation		non-flush
Assured operating distance	$s_a$	0 ... 12.15 mm
Actual operating distance	$s_r$	13.5 ... 16.5 mm typ.
Reduction factor $r_{AI}$		0.45
Reduction factor $r_{CU}$		0.4
Reduction factor $r_{304}$		0.8
Output type		2-wire

### Nominal ratings

Nominal voltage	$U_o$	8.2 V ( $R_i$ approx. 1 k $\Omega$ )
Switching frequency	f	0 ... 100 Hz

### Current consumption

Measuring plate not detected	$\geq$ 3 mA
Measuring plate detected	$\leq$ 1 mA

Switching state indicator LED, yellow

### Functional safety related parameters

MTTF <sub>d</sub>	2424 a
Mission Time ( $T_M$ )	20 a
Diagnostic Coverage (DC)	0 %

### Ambient conditions

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

Connection type	Connector plug M12 x 1, 4-pin
Housing material	PBT
Sensing face	PBT
Degree of protection	IP67

### General information

Use in the hazardous area see instruction manuals

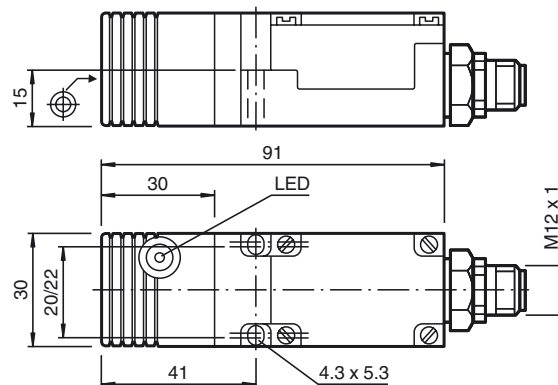
### Compliance with standards and directives

Standard conformity	
NAMUR	EN 60947-5-6:2000 IEC 60947-5-6:1999
Electromagnetic compatibility	NE 21:2012
Standards	EN 60947-5-2:2007 EN 60947-5-2/A1:2012 IEC 60947-5-2:2007 IEC 60947-5-2 AMD 1:2012

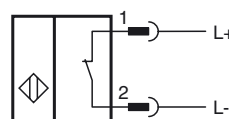
### Approvals and certificates

UL approval	
Ordinary Location	E87056
Hazardous Location	E501628
Control drawing	116-0451

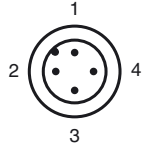
## Dimensions



## Electrical Connection



## Pinout



Wire colors in accordance with EN 60947-5-6

1		BN	(brown)
2		BU	(blue)

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

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

Type of protection	intrinsic safety
CE marking	CE 0102

**Certificates**

Appropriate type	NJ15-M1.-N...
ATEX certificate	PTB 00 ATEX 2032 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 11.0021X
IECEX marking	Ex ia IIC T6 Ga
Standards	IEC 60079-0:2004 , IEC 60079-11:2006 , IEC 60079-26:2006

Effective internal capacitance	$C_i$	$\leq 140$ nF A cable length of 10 m is considered.
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Effective internal inductance	$L_i$	$\leq 100$ $\mu$ H A cable length of 10 m is considered.
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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.
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for ATEX	<p>at <math>U_i = 16</math> V , <math>I_i = 25</math> mA , <math>P_i = 34</math> 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)</p> <p>at <math>U_i = 16</math> V , <math>I_i = 25</math> mA , <math>P_i = 64</math> mW ,  T6 : 49 °C (120.2 °F)  T5 : 61 °C (141.8 °F)  T4 : 89 °C (192.2 °F)  T3 : 89 °C (192.2 °F)  T2 : 89 °C (192.2 °F)  T1 : 89 °C (192.2 °F)</p> <p>at <math>U_i = 16</math> V , <math>I_i = 52</math> mA , <math>P_i = 169</math> mW ,  T6 : 28 °C (82.4 °F)  T5 : 40 °C (104 °F)  T4 : 68 °C (154.4 °F)  T3 : 68 °C (154.4 °F)  T2 : 68 °C (154.4 °F)  T1 : 68 °C (154.4 °F)</p> <p>at <math>U_i = 16</math> V , <math>I_i = 76</math> mA , <math>P_i = 242</math> mW ,  T6 : 13 °C (55.4 °F)  T5 : 25 °C (77 °F)  T4 : 53 °C (127.4 °F)  T3 : 53 °C (127.4 °F)  T2 : 53 °C (127.4 °F)  T1 : 53 °C (127.4 °F)</p>
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for IECEX	<p>at <math>U_i = 16</math> V , <math>I_i = 25</math> mA , <math>P_i = 34</math> 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)</p> <p>at <math>U_i = 16</math> V , <math>I_i = 25</math> mA , <math>P_i = 64</math> mW ,  T6 : 49 °C (120.2 °F)  T5 : 61 °C (141.8 °F)  T4 : 89 °C (192.2 °F)  T3 : 89 °C (192.2 °F)  T2 : 89 °C (192.2 °F)  T1 : 89 °C (192.2 °F)</p> <p>at <math>U_i = 16</math> V , <math>I_i = 52</math> mA , <math>P_i = 169</math> mW ,  T6 : 28 °C (82.4 °F)  T5 : 40 °C (104 °F)  T4 : 68 °C (154.4 °F)  T3 : 68 °C (154.4 °F)  T2 : 68 °C (154.4 °F)  T1 : 68 °C (154.4 °F)</p> <p>at <math>U_i = 16</math> V , <math>I_i = 76</math> mA , <math>P_i = 242</math> mW ,  T6 : 13 °C (55.4 °F)  T5 : 25 °C (77 °F)  T4 : 53 °C (127.4 °F)  T3 : 53 °C (127.4 °F)  T2 : 53 °C (127.4 °F)  T1 : 53 °C (127.4 °F)</p>
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**Equipment protection level Gb**

Type of protection	intrinsic safety	
CE marking	CE 0102	
<b>Certificates</b>		
Appropriate type	NJ15-M1.-N...	
ATEX certificate	PTB 00 ATEX 2032 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 11.0021X	
IECEX marking	Ex ia IIC T6 Ga	
Standards	IEC 60079-0:2004 , IEC 60079-11:2006	
Effective internal capacitance	$C_i$	$\leq 140$ nF A cable length of 10 m is considered.
Effective internal inductance	$L_i$	$\leq 100$ $\mu$ 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 : 66 °C (150.8 °F) T5 : 81 °C (177.8 °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 : 45 °C (113 °F) T5 : 60 °C (140 °F) T4 : 89 °C (192.2 °F) T3 : 89 °C (192.2 °F) T2 : 89 °C (192.2 °F) T1 : 89 °C (192.2 °F) at $U_i = 16$ V , $I_i = 76$ mA , $P_i = 242$ mW , T6 : 30 °C (86 °F) T5 : 45 °C (113 °F) T4 : 74 °C (165.2 °F) T3 : 74 °C (165.2 °F) T2 : 74 °C (165.2 °F) T1 : 74 °C (165.2 °F)	

**Equipment protection level Da**

CE marking	CE 0102	
<b>Certificates</b>		
Appropriate type	NJ15-M1.-N...	
ATEX certificate	PTB 00 ATEX 2032 X	
ATEX marking	Ex II 1D Ex ia IIIC T135°C Da	
Standards	EN 60079-0:2012+A11:2013 , EN 60079-11:2012	
Effective internal capacitance	$C_i$	$\leq 140$ $\mu$ F A cable length of 10 m is considered.
Effective internal inductance	$L_i$	$\leq 100$ $\mu$ 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 : 89 °C (192.2 °F) at $U_i = 16$ V , $I_i = 76$ mA , $P_i = 242$ mW : 74 °C (165.2 °F)	

**Equipment protection level Mb**

Type of protection	intrinsic safety	
<b>Certificates</b>		
Appropriate type	NJ15-M1.-N...	
IECEX certificate	IECEX PTB 11.0021X	
IECEX marking	Ex ia I	
Standards	IEC 60079-0:2004 , IEC 60079-11:2006	
Effective internal capacitance	$C_i$	$\leq 140$ nF A cable length of 10 m is considered.
Effective internal inductance	$L_i$	$\leq 100$ $\mu$ 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 : 89 °C (192.2 °F) at $U_i = 16$ V , $I_i = 76$ mA , $P_i = 242$ mW : 74 °C (165.2 °F)	

Release date: 2019-05-22 11:09 Date of issue: 2019-05-22 306794\_eng.xml