



## Model Number

NCN3-F25-N4-0,14

## Features

- For installation in housing
- Direct mounting on standard actuators
- ATEX & IECEX certifications

## Accessories

### BT32

Activator for F25 series

### BT32XS

Activator for F25 series

### BT32XAS

Activator for F25 series

### BT33

Activator for F25 series

### BT34

Activator for F25 series

## Technical Data

### General specifications

Switching function		2 x normally closed (NC)
Output type		NAMUR
Rated operating distance	$s_n$	3 mm
Installation		flush mountable
Assured operating distance	$s_a$	0 ... 2.43 mm
Actual operating distance	$s_r$	2.7 ... 3.3 mm typ.
Reduction factor $r_{AI}$		0.52
Reduction factor $r_{CU}$		0.43
Reduction factor $r_{304}$		0.86
Reduction factor $r_{St37}$		1
Reduction factor $r_{Brass}$		0.54
Output type		2-wire

### Nominal ratings

Nominal voltage	$U_o$	8.2 V ( $R_f$ approx. 1 k $\Omega$ )
Switching frequency	$f$	0 ... 1500 Hz
Hysteresis	$H$	typ. 5 %
Reverse polarity protection		reverse polarity protected
Short-circuit protection		yes
Suitable for 2:1 technology		yes, Reverse polarity protection diode not required
Design data		
Current consumption		
Measuring plate not detected		$\geq 3$ mA
Measuring plate detected		$\leq 1$ mA
Time delay before availability	$t_v$	$\leq 1$ ms
Switching state indicator		LED, yellow

### Functional safety related parameters

MTTF <sub>d</sub>		1010 a
Mission Time ( $T_M$ )		20 a
Diagnostic Coverage (DC)		0 %

### Ambient conditions

Ambient temperature		-25 ... 100 °C (-13 ... 212 °F)
Storage temperature		-40 ... 100 °C (-40 ... 212 °F)

### Mechanical specifications

Connection type		cable PVC, 180 mm
Core cross-section		4 x 0.14 mm <sup>2</sup>
Housing material		PBT
Sensing face		PBT
Degree of protection		IP67
Cable		
Cable diameter		3 mm $\pm$ 0.3 mm
Bending radius		> 10 x cable diameter
Mass		44 g
Tightening torque, fastening screws		M5 x 25 : 2.7 Nm
Note		Installation in housing

### General information

Use in the hazardous area		see instruction manuals
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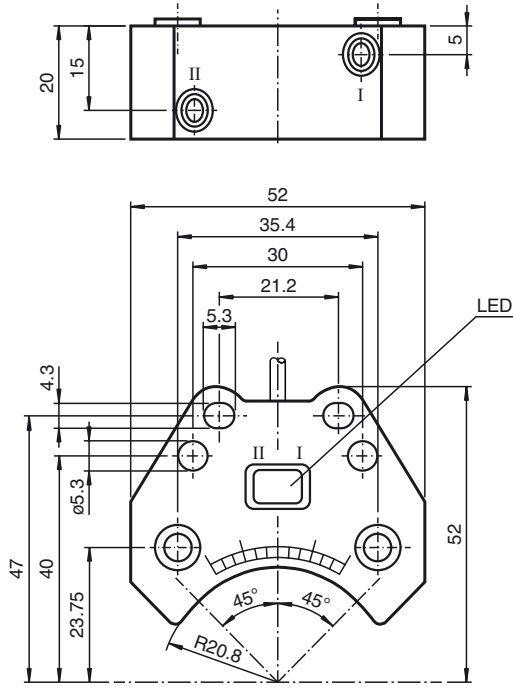
### Compliance with standards and directives

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

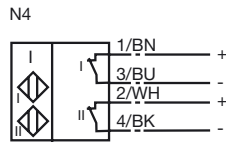
### Approvals and certificates

FM approval		
Control drawing		116-0165
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



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

Equipment protection level	Ga , Gb , Gc (ic) , Da , Mb
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**Equipment protection level Ga**

Type of protection	intrinsic safety
CE marking	CE 0102

**Certificates**

Appropriate type	NCN3-F25.-N4...
ATEX certificate	TÜV 99 ATEX 1479 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 TUN 17.0021X
IECEX marking	Ex ia IIC T6...T1 Ga
Standards	IEC 60079-0:2011 , IEC 60079-11:2011

Effective internal capacitance	$C_i$	$\leq 100$ nF The value is applicable for one sensor circuit. A cable length of 10 m is considered.
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Effective internal inductance	$L_i$	$\leq 100$ $\mu$ H The value is applicable for one sensor circuit. 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 = 15</math> V , <math>I_i = 25</math> mA , <math>P_i = 34</math> mW ,  T6 : 55 °C (131 °F)  T5 : 70 °C (158 °F)  T4 : 95 °C (203 °F)  T3 : 95 °C (203 °F)  T2 : 95 °C (203 °F)  T1 : 95 °C (203 °F)</p> <p>at <math>U_i = 15</math> V , <math>I_i = 25</math> mA , <math>P_i = 64</math> mW ,  T6 : 55 °C (131 °F)  T5 : 65 °C (149 °F)  T4 : 95 °C (203 °F)  T3 : 95 °C (203 °F)  T2 : 95 °C (203 °F)  T1 : 95 °C (203 °F)</p> <p>at <math>U_i = 15</math> V , <math>I_i = 52</math> mA , <math>P_i = 169</math> mW ,  T6 : 45 °C (113 °F)  T5 : 55 °C (131 °F)  T4 : 85 °C (185 °F)  T3 : 85 °C (185 °F)  T2 : 85 °C (185 °F)  T1 : 85 °C (185 °F)</p>
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for IECEX	<p>at <math>U_i = 15</math> V , <math>I_i = 25</math> mA , <math>P_i = 34</math> mW ,  T6 : 75 °C (167 °F)  T5 : 90 °C (194 °F)  T4 : 100 °C (212 °F)  T3 : 100 °C (212 °F)  T2 : 100 °C (212 °F)  T1 : 100 °C (212 °F)</p> <p>at <math>U_i = 15</math> V , <math>I_i = 25</math> mA , <math>P_i = 64</math> mW ,  T6 : 70 °C (158 °F)  T5 : 85 °C (185 °F)  T4 : 100 °C (212 °F)  T3 : 100 °C (212 °F)  T2 : 100 °C (212 °F)  T1 : 100 °C (212 °F)</p> <p>at <math>U_i = 15</math> V , <math>I_i = 52</math> mA , <math>P_i = 169</math> mW ,  T6 : 60 °C (140 °F)  T5 : 75 °C (167 °F)  T4 : 95 °C (203 °F)  T3 : 95 °C (203 °F)  T2 : 95 °C (203 °F)  T1 : 95 °C (203 °F)</p>
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**Equipment protection level Gb**

Type of protection	intrinsic safety	
CE marking	CE 0102	
<b>Certificates</b>		
Appropriate type	NCN3-F25.-N4...	
ATEX certificate	TÜV 99 ATEX 1479 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 TUN 17.0021X	
IECEX marking	Ex ia IIC T6...T1 Ga	
Standards	IEC 60079-0:2011 , IEC 60079-11:2011	
Effective internal capacitance	$C_i$	$\leq 100 \text{ nF}$ The value is applicable for one sensor circuit. A cable length of 10 m is considered.
Effective internal inductance	$L_i$	$\leq 100 \text{ }\mu\text{H}$ The value is applicable for one sensor circuit. 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 $U_i = 15 \text{ V}$ , $I_i = 25 \text{ mA}$ , $P_i = 34 \text{ mW}$ , T6 : 75 °C (167 °F) T5 : 90 °C (194 °F) T4 : 100 °C (212 °F) T3 : 100 °C (212 °F) T2 : 100 °C (212 °F) T1 : 100 °C (212 °F) at $U_i = 15 \text{ V}$ , $I_i = 25 \text{ mA}$ , $P_i = 64 \text{ mW}$ , T6 : 70 °C (158 °F) T5 : 85 °C (185 °F) T4 : 100 °C (212 °F) T3 : 100 °C (212 °F) T2 : 100 °C (212 °F) T1 : 100 °C (212 °F) at $U_i = 15 \text{ V}$ , $I_i = 52 \text{ mA}$ , $P_i = 169 \text{ mW}$ , T6 : 60 °C (140 °F) T5 : 75 °C (167 °F) T4 : 95 °C (203 °F) T3 : 95 °C (203 °F) T2 : 95 °C (203 °F) T1 : 95 °C (203 °F)	

**Equipment protection level Gc (ic)**

Type of protection	intrinsic safety	
CE marking	CE	
<b>Certificates</b>		
ATEX certificate	PF 13 CERT 2895 X	
ATEX marking	II 3G Ex ic IIC T6...T1 Gc	
Standards	EN 60079-0:2012+A11:2013 , EN 60079-11:2012	
Effective internal capacitance	$C_i$	$\leq 100 \text{ nF}$ The value is applicable for one sensor circuit. A cable length of 10 m is considered.
Effective internal inductance	$L_i$	$\leq 100 \text{ }\mu\text{H}$ The value is applicable for one sensor circuit. 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 $U_i = 20 \text{ V}$ , $I_i = 25 \text{ mA}$ , $P_i = 34 \text{ mW}$ , T6 : 75 °C (167 °F) T5 : 90 °C (194 °F) T4 : 100 °C (212 °F) T3 : 100 °C (212 °F) T2 : 100 °C (212 °F) T1 : 100 °C (212 °F) at $U_i = 20 \text{ V}$ , $I_i = 25 \text{ mA}$ , $P_i = 64 \text{ mW}$ , T6 : 70 °C (158 °F) T5 : 85 °C (185 °F) T4 : 100 °C (212 °F) T3 : 100 °C (212 °F) T2 : 100 °C (212 °F) T1 : 100 °C (212 °F) at $U_i = 20 \text{ V}$ , $I_i = 52 \text{ mA}$ , $P_i = 169 \text{ mW}$ , T6 : 60 °C (140 °F) T5 : 75 °C (167 °F) T4 : 95 °C (203 °F) T3 : 95 °C (203 °F) T2 : 95 °C (203 °F) T1 : 95 °C (203 °F)	

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**Equipment protection level Da**

Type of protection	intrinsic safety	
CE marking	CE 0102	
<b>Certificates</b>		
Appropriate type	NCN3-F25.-N4...	
ATEX certificate	TÜV 99 ATEX 1479 X	
ATEX marking	Ⓔ II 1D Ex ia IIIC T135°C Da	
Standards	EN 60079-0:2012+A11:2013 , EN 60079-11:2012	
IECEX certificate	IECEX TUN 17.0021X	
IECEX marking	Ex ia IIIC T135°C Da	
Standards	IEC 60079-0:2011 , IEC 60079-11:2011	
Effective internal capacitance	$C_i$	≤ 100 nF A cable length of 10 m is considered.
Effective internal inductance	$L_i$	≤ 100 μH 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 $U_i = 15\text{ V}$ , $I_i = 25\text{ mA}$ , $P_i = 34\text{ mW}$ : 100 °C (212 °F) at $U_i = 15\text{ V}$ , $I_i = 25\text{ mA}$ , $P_i = 64\text{ mW}$ : 100 °C (212 °F) at $U_i = 15\text{ V}$ , $I_i = 52\text{ mA}$ , $P_i = 169\text{ mW}$ : 95 °C (203 °F)	

**Equipment protection level Mb**

Type of protection	intrinsic safety	
CE marking	CE 0102	
<b>Certificates</b>		
Appropriate type	NCN3-F25.-N4...	
IECEX certificate	IECEX TUN 17.0021X	
IECEX marking	Ex ia I Mb	
Standards	IEC 60079-0:2011 , IEC 60079-11:2011	
Effective internal capacitance	$C_i$	≤ 100 nF The value is applicable for one sensor circuit. A cable length of 10 m is considered.
Effective internal inductance	$L_i$	≤ 100 μH The value is applicable for one sensor circuit. 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 $U_i = 15\text{ V}$ , $I_i = 25\text{ mA}$ , $P_i = 34\text{ mW}$ : 100 °C (212 °F) at $U_i = 15\text{ V}$ , $I_i = 25\text{ mA}$ , $P_i = 64\text{ mW}$ : 100 °C (212 °F) at $U_i = 15\text{ V}$ , $I_i = 52\text{ mA}$ , $P_i = 169\text{ mW}$ : 95 °C (203 °F)	