



## Model Number

NCN3-F31K-N4-S

## Features

- Direct mounting on standard actuators
- Fixed setting
- EC-Type Examination Certificate TÜV99 ATEX 1479X
- Screw terminals
- Usable up to SIL 2 acc. to IEC 61508

## Accessories

### BT65A

Activator for F31 series

### BT65X

Activator for F31 series

### BT115A

Activator for F31 series

### BT115X

Activator for F31 series

### BT65B

Activator for F31 series

### BT115B

Activator for F31 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 ... 2.4 mm                                            |
| Actual operating distance    | $s_r$ 2.7 ... 3.3 mm typ.                                     |
| Actuating element            | Stainless steel 1.4305 / AISI 303<br>8.5 mm x 8.5 mm x 0.5 mm |
| Reduction factor $r_{Al}$    | 0.5                                                           |
| Reduction factor $r_{Cu}$    | 0.4                                                           |
| Reduction factor $r_{304}$   | 1                                                             |
| Reduction factor $r_{316}$   | 1.3                                                           |
| Reduction factor $r_{Brass}$ | 0.6                                                           |
| Output type                  | 2-wire                                                        |

### Nominal ratings

|                                |                                                     |
|--------------------------------|-----------------------------------------------------|
| Nominal voltage                | $U_o$ 8 V                                           |
| Switching frequency            | $f$ 0 ... 3 kHz                                     |
| 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 |
| Current consumption            |                                                     |
| Measuring plate not detected   | $\geq 3$ mA                                         |
| Measuring plate detected       | $\leq 1$ mA                                         |
| Time delay before availability | $t_v$ $\leq 1.1$ ms                                 |
| Switching state indicator      | LED, yellow                                         |

### Functional safety related parameters

|                                |        |
|--------------------------------|--------|
| Safety Integrity Level (SIL)   | SIL 2  |
| MTTF <sub>d</sub>              | 1470 a |
| Mission Time (T <sub>M</sub> ) | 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 (system side)          | Screw terminals, tightening torque min. 0.5 Nm<br>Stripped length 7 mm                                                                       |
| Core cross-section (system side)  | rigid: 0.14 ... 2.5 mm <sup>2</sup><br>flexible: 0.14 ... 1.5 mm <sup>2</sup><br>flexible with core-end sleeve: 0.25 ... 1.5 mm <sup>2</sup> |
| Housing material                  | PBT                                                                                                                                          |
| Sensing face                      | PBT                                                                                                                                          |
| Degree of protection              | IP67                                                                                                                                         |
| Tightening torque, housing screws | 1 Nm                                                                                                                                         |
| Tightening torque, cable gland    | M20 x 1.5 ; $\leq 7$ Nm                                                                                                                      |

### General information

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

### Compliance with standards and directives

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

### Approvals and certificates

|                |                                                                    |
|----------------|--------------------------------------------------------------------|
| EAC conformity | TR CU 012/2011                                                     |
| 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 |

Technical drawing of the LED module showing two views with dimensions in millimeters (mm):

- Top View (Left):**
  - Overall width: 65
  - Overall height: 40
  - Distance from top edge to center of mounting holes: 35
  - Distance from top edge to bottom of mounting holes: 9.5
  - Distance between mounting holes: 14
  - Distance from center of mounting holes to bottom edge: 11
  - Distance from center of mounting holes to right edge: 5.4
  - Distance from center of mounting holes to bottom edge: 9
- Front View (Right):**
  - Overall height: 77.5
  - Distance from top edge to center of mounting holes: 7
  - Distance between mounting holes: 30
  - Mounting holes: M20 x 1.5
  - LED indicator: LED

N4

|  |   |   |
|--|---|---|
|  | 4 | + |
|  | 5 | - |
|  | 1 | + |
|  | 2 | - |

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

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

**Equipment protection level Ga**

|                    |                  |
|--------------------|------------------|
| Type of protection | intrinsic safety |
| CE marking         | CE 0102          |

**Certificates**

|                   |                                             |
|-------------------|---------------------------------------------|
| Appropriate type  | NCN3-F31K-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 | $C_i$ | $\leq 100 \text{ nF}$<br>The value is applicable for one sensor circuit.<br>A cable length of 10 m is considered. |
|--------------------------------|-------|-------------------------------------------------------------------------------------------------------------------|

|                               |       |                                                                                                                            |
|-------------------------------|-------|----------------------------------------------------------------------------------------------------------------------------|
| Effective internal inductance | $L_i$ | $\leq 100 \text{ }\mu\text{H}$<br>The value is applicable for one sensor circuit.<br>A cable length of 10 m is considered. |
|-------------------------------|-------|----------------------------------------------------------------------------------------------------------------------------|

|                                                          |                                                                                                                                        |
|----------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|
| Maximum permissible ambient temperature $T_{\text{amb}}$ | Also observe the maximum permissible ambient temperature stated in the general technical data.<br>Keep to the lower of the two values. |
|----------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|

|          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| for ATEX | at $U_i = 15 \text{ V}$ , $I_i = 25 \text{ mA}$ , $P_i = 34 \text{ mW}$ ,<br>T6 : 55 °C (131 °F)<br>T5 : 65 °C (149 °F)<br>T4 : 95 °C (203 °F)<br>T3 : 95 °C (203 °F)<br>T2 : 95 °C (203 °F)<br>T1 : 95 °C (203 °F)<br>at $U_i = 15 \text{ V}$ , $I_i = 25 \text{ mA}$ , $P_i = 64 \text{ mW}$ ,<br>T6 : 55 °C (131 °F)<br>T5 : 65 °C (149 °F)<br>T4 : 95 °C (203 °F)<br>T3 : 95 °C (203 °F)<br>T2 : 95 °C (203 °F)<br>T1 : 95 °C (203 °F)<br>at $U_i = 15 \text{ V}$ , $I_i = 52 \text{ mA}$ , $P_i = 169 \text{ mW}$ ,<br>T6 : 45 °C (113 °F)<br>T5 : 60 °C (140 °F)<br>T4 : 85 °C (185 °F)<br>T3 : 85 °C (185 °F)<br>T2 : 85 °C (185 °F)<br>T1 : 85 °C (185 °F) |
|----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| for IECEX | at $U_i = 15 \text{ V}$ , $I_i = 25 \text{ mA}$ , $P_i = 34 \text{ mW}$ ,<br>T6 : 70 °C (158 °F)<br>T5 : 85 °C (185 °F)<br>T4 : 100 °C (212 °F)<br>T3 : 100 °C (212 °F)<br>T2 : 100 °C (212 °F)<br>T1 : 100 °C (212 °F)<br>at $U_i = 15 \text{ V}$ , $I_i = 25 \text{ mA}$ , $P_i = 64 \text{ mW}$ ,<br>T6 : 70 °C (158 °F)<br>T5 : 85 °C (185 °F)<br>T4 : 100 °C (212 °F)<br>T3 : 100 °C (212 °F)<br>T2 : 100 °C (212 °F)<br>T1 : 100 °C (212 °F)<br>at $U_i = 15 \text{ V}$ , $I_i = 52 \text{ mA}$ , $P_i = 169 \text{ mW}$ ,<br>T6 : 65 °C (149 °F)<br>T5 : 80 °C (176 °F)<br>T4 : 90 °C (194 °F)<br>T3 : 90 °C (194 °F)<br>T2 : 90 °C (194 °F)<br>T1 : 90 °C (194 °F) |
|-----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

**Equipment protection level Gb**

|                                                          |       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|----------------------------------------------------------|-------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Type of protection                                       |       | intrinsic safety                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| CE marking                                               |       |  0102                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Certificates                                             |       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Appropriate type                                         |       | NCN3-F31K-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                           | $C_i$ | $\leq 100 \text{ nF}$<br>The value is applicable for one sensor circuit.<br>A cable length of 10 m is considered.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Effective internal inductance                            | $L_i$ | $\leq 100 \text{ }\mu\text{H}$<br>The value is applicable for one sensor circuit.<br>A cable length of 10 m is considered.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Maximum permissible ambient temperature $T_{\text{amb}}$ |       | Also observe the maximum permissible ambient temperature stated in the general technical data.<br>Keep to the lower of the two values.<br>at $U_i = 15 \text{ V}$ , $I_i = 25 \text{ mA}$ , $P_i = 34 \text{ mW}$ ,<br>T6 : $70 \text{ }^\circ\text{C}$ ( $158 \text{ }^\circ\text{F}$ )<br>T5 : $85 \text{ }^\circ\text{C}$ ( $185 \text{ }^\circ\text{F}$ )<br>T4 : $100 \text{ }^\circ\text{C}$ ( $212 \text{ }^\circ\text{F}$ )<br>T3 : $100 \text{ }^\circ\text{C}$ ( $212 \text{ }^\circ\text{F}$ )<br>T2 : $100 \text{ }^\circ\text{C}$ ( $212 \text{ }^\circ\text{F}$ )<br>T1 : $100 \text{ }^\circ\text{C}$ ( $212 \text{ }^\circ\text{F}$ )<br>at $U_i = 15 \text{ V}$ , $I_i = 25 \text{ mA}$ , $P_i = 64 \text{ mW}$ ,<br>T6 : $70 \text{ }^\circ\text{C}$ ( $158 \text{ }^\circ\text{F}$ )<br>T5 : $85 \text{ }^\circ\text{C}$ ( $185 \text{ }^\circ\text{F}$ )<br>T4 : $100 \text{ }^\circ\text{C}$ ( $212 \text{ }^\circ\text{F}$ )<br>T3 : $100 \text{ }^\circ\text{C}$ ( $212 \text{ }^\circ\text{F}$ )<br>T2 : $100 \text{ }^\circ\text{C}$ ( $212 \text{ }^\circ\text{F}$ )<br>T1 : $100 \text{ }^\circ\text{C}$ ( $212 \text{ }^\circ\text{F}$ )<br>at $U_i = 15 \text{ V}$ , $I_i = 52 \text{ mA}$ , $P_i = 169 \text{ mW}$ ,<br>T6 : $65 \text{ }^\circ\text{C}$ ( $149 \text{ }^\circ\text{F}$ )<br>T5 : $80 \text{ }^\circ\text{C}$ ( $176 \text{ }^\circ\text{F}$ )<br>T4 : $90 \text{ }^\circ\text{C}$ ( $194 \text{ }^\circ\text{F}$ )<br>T3 : $90 \text{ }^\circ\text{C}$ ( $194 \text{ }^\circ\text{F}$ )<br>T2 : $90 \text{ }^\circ\text{C}$ ( $194 \text{ }^\circ\text{F}$ )<br>T1 : $90 \text{ }^\circ\text{C}$ ( $194 \text{ }^\circ\text{F}$ ) |

**Equipment protection level Gc (ic)**

|                                                          |                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |
|----------------------------------------------------------|----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| Type of protection                                       |                | intrinsic safety                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |
| CE marking                                               |                | CE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |
| Certificates                                             |                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |
| ATEX certificate                                         |                | PF13CERT2895 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 <sub>i</sub> | ≤ 100 nF<br>The value is applicable for one sensor circuit.<br>A cable length of 10 m is considered.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  |
| Effective internal inductance                            | L <sub>i</sub> | ≤ 100 μH<br>The value is applicable for one sensor circuit.<br>A cable length of 10 m is considered.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  |
| Maximum permissible ambient temperature T <sub>amb</sub> |                | Also observe the maximum permissible ambient temperature stated in the general technical data.<br>Keep to the lower of the two values.<br>at U <sub>i</sub> = 20 V , I <sub>i</sub> = 25 mA , P <sub>i</sub> = 34 mW ,<br>T6 : 70 °C (158 °F)<br>T5 : 85 °C (185 °F)<br>T4 : 100 °C (212 °F)<br>T3 : 100 °C (212 °F)<br>T2 : 100 °C (212 °F)<br>T1 : 100 °C (212 °F)<br>at U <sub>i</sub> = 20 V , I <sub>i</sub> = 25 mA , P <sub>i</sub> = 64 mW ,<br>T6 : 70 °C (158 °F)<br>T5 : 85 °C (185 °F)<br>T4 : 100 °C (212 °F)<br>T3 : 100 °C (212 °F)<br>T2 : 100 °C (212 °F)<br>T1 : 100 °C (212 °F)<br>at U <sub>i</sub> = 20 V , I <sub>i</sub> = 52 mA , P <sub>i</sub> = 169 mW ,<br>T6 : 65 °C (149 °F)<br>T5 : 80 °C (176 °F)<br>T4 : 90 °C (194 °F)<br>T3 : 90 °C (194 °F)<br>T2 : 90 °C (194 °F)<br>T1 : 90 °C (194 °F) |  |

**Equipment protection level Da**

|                    |                  |
|--------------------|------------------|
| Type of protection | intrinsic safety |
| CE marking         | <b>CE</b> 0102   |

**Certificates**

|                   |                                             |
|-------------------|---------------------------------------------|
| Appropriate type  | NCN3-F31K-N4-S...                           |
| ATEX certificate  | TÜV 99 ATEX 1479 X                          |
| ATEX marking      | <b>Ex</b> 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 | $C_i$ | $\leq 100 \text{ nF}$<br>A cable length of 10 m is considered. |
|--------------------------------|-------|----------------------------------------------------------------|

|                               |       |                                                                         |
|-------------------------------|-------|-------------------------------------------------------------------------|
| Effective internal inductance | $L_i$ | $\leq 100 \text{ }\mu\text{H}$<br>A cable length of 10 m is considered. |
|-------------------------------|-------|-------------------------------------------------------------------------|

|                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                               |
|----------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Maximum permissible ambient temperature $T_{\text{amb}}$ | Also observe the maximum permissible ambient temperature stated in the general technical data.<br>Keep to the lower of the two values.<br>at $U_i = 15 \text{ V}$ , $I_i = 25 \text{ mA}$ , $P_i = 34 \text{ mW}$ : 100 °C (212 °F)<br>at $U_i = 15 \text{ V}$ , $I_i = 25 \text{ mA}$ , $P_i = 64 \text{ mW}$ : 100 °C (212 °F)<br>at $U_i = 15 \text{ V}$ , $I_i = 52 \text{ mA}$ , $P_i = 169 \text{ mW}$ : 90 °C (194 °F) |
|----------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

**Equipment protection level Mb**

|                    |                  |
|--------------------|------------------|
| Type of protection | intrinsic safety |
| CE marking         | <b>CE</b> 0102   |

**Certificates**

|                   |                                      |
|-------------------|--------------------------------------|
| Appropriate type  | NCN3-F31K-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 | $C_i$ | $\leq 100 \text{ nF}$<br>The value is applicable for one sensor circuit.<br>A cable length of 10 m is considered. |
|--------------------------------|-------|-------------------------------------------------------------------------------------------------------------------|

|                               |       |                                                                                                                            |
|-------------------------------|-------|----------------------------------------------------------------------------------------------------------------------------|
| Effective internal inductance | $L_i$ | $\leq 100 \text{ }\mu\text{H}$<br>The value is applicable for one sensor circuit.<br>A cable length of 10 m is considered. |
|-------------------------------|-------|----------------------------------------------------------------------------------------------------------------------------|

|                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                               |
|----------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Maximum permissible ambient temperature $T_{\text{amb}}$ | Also observe the maximum permissible ambient temperature stated in the general technical data.<br>Keep to the lower of the two values.<br>at $U_i = 15 \text{ V}$ , $I_i = 25 \text{ mA}$ , $P_i = 34 \text{ mW}$ : 100 °C (212 °F)<br>at $U_i = 15 \text{ V}$ , $I_i = 25 \text{ mA}$ , $P_i = 64 \text{ mW}$ : 100 °C (212 °F)<br>at $U_i = 15 \text{ V}$ , $I_i = 52 \text{ mA}$ , $P_i = 169 \text{ mW}$ : 90 °C (194 °F) |
|----------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|