

## Model Number

**NCB8-18GM40-N0-5M**

## Features

- **Comfort series**

## Accessories

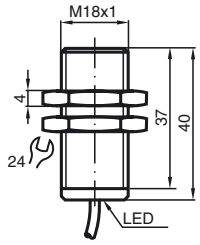
**EXG-18**
Quick mounting bracket with dead stop

**BF 18**
Mounting flange, 18 mm

## Technical Data

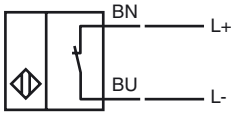
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| **General specifications** | | |
| Switching function | | Normally closed (NC) |
| Output type | | NAMUR |
| Rated operating distance | $s_n$ | 8 mm |
| Installation | | flush |
| Assured operating distance | $s_a$ | 0 ... 6.48 mm |
| Actual operating distance | $s_r$ | 7.2 ... 8.8 mm typ. 8 mm |
| Reduction factor $r_{Al}$ | | 0.39 |
| Reduction factor $r_{Cu}$ | | 0.36 |
| Reduction factor $r_{304}$ | | 0.71 |
| Output type | | 2-wire |
| **Nominal ratings** | | |
| Nominal voltage | $U_o$ | 8 V |
| Switching frequency | f | 0 ... 1500 Hz |
| Hysteresis | H | 1 ... 15 typ. 5 % |
| Reverse polarity protection | | reverse polarity protected |
| Short-circuit protection | | yes |
| Current consumption | | |
| Measuring plate not detected | | ≥ 2.2 mA |
| Measuring plate detected | | ≤ 1 mA |
| Switching state indicator | | all direction LED, yellow |
| **Functional safety related parameters** | | |
| $MTTF_d$ | | 2660 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 , 5 m |
| Core cross-section | | 0.75 $mm^2$ |
| Housing material | | Stainless steel 1.4305 / AISI 303 |
| Sensing face | | PBT |
| Degree of protection | | IP67 |
| Cable | | |
| Bending radius | | > 10 x cable diameter |
| **General information** | | |
| Use in the hazardous area | | see instruction manuals |
| Category | | 1G; 2G; 3G; 1D; 3D |
| **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 |
| 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 ≤36 V |

## Dimensions




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## Electrical Connection




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| **Equipment protection level Ga** | | |
| CE marking | | CE 0102 |
| ATEX marking | | Ex II 1G Ex ia IIC T6…T1 Ga The Ex-related marking can also be printed on the enclosed label. |
| Standards | | EN 60079-0:2012+A11:2013 EN 60079-11:2012 Ignition protection "Intrinsic safety"<br>Use is restricted to the following stated conditions |
| Appropriate type | | NCB8-18GM...-N0... |
| Effective internal capacitance | $C_i$ | ≤ 120 nF ; a cable length of 10 m is considered. |
| Effective internal inductance | $L_i$ | ≤ 50 µH ; a cable length of 10 m is considered. |
| Ambient temperature | | Details of the correlation between the type of circuit connected, the maximum permissible ambient temperature, the temperature class, and the effective internal reactance values can be found on the EC-type examination certificate.<br>**Note:** Use the temperature table for category 1 !!! The 20 % reduction in accordance with EN 1127-1 has already been applied to the temperature table for category 1. |
| **Equipment protection level Gb** | | |
| CE marking | | CE 0102 |
| ATEX marking | | Ex II 1G Ex ia IIC T6…T1 Ga<br>The Ex-significant identification is on the enclosed adhesive label |
| Standards | | EN 60079-0:2012+A11:2013 EN 60079-11:2012 Ignition protection "Intrinsic safety"<br>Use is restricted to the following stated conditions |
| Appropriate type | | NCB8-18GM...-N0... |
| Effective internal capacitance | $C_i$ | ≤ 120 nF ; a cable length of 10 m is considered. |
| Effective internal inductance | $L_i$ | ≤ 50 µH ; a cable length of 10 m is considered. |
| Maximum permissible ambient temperature | $T_{amb}$ | Details of the correlation between the type of circuit connected, the maximum permissible ambient temperature, the temperature class, and the effective internal reactance values can be found on the EC-type examination certificate. |
| **Equipment protection level Gc (ic)** | | |
| Certificate | | PF 13 CERT 2895 X |
| CE marking | | CE |
| ATEX marking | | Ex II 3G Ex ic IIC T6…T1 Gc<br>The Ex-significant identification is on the enclosed adhesive label |
| Standards | | EN 60079-0:2012+A11:2013 EN 60079-11:2012 Ignition protection category "ic" Use is restricted to the following stated conditions |
| Effective internal capacitance | $C_i$ | ≤ 120 nF ; a cable length of 10 m is considered. |
| Effective internal inductance | $L_i$ | ≤ 50 µH ; A cable length of 10 m is considered. |
| **Special conditions** | | |
| for Pi=34 mW, Ii=25 mA, T6 | | 55 °C (131 °F) |
| for Pi=34 mW, Ii=25 mA, T5 | | 55 °C (131 °F) |
| for Pi=34 mW, Ii=25 mA, T4-T1 | | 55 °C (131 °F) |
| for Pi=64 mW, Ii=25 mA, T6 | | 55 °C (131 °F) |
| for Pi=64 mW, Ii=25 mA, T5 | | 55 °C (131 °F) |
| for Pi=64 mW, Ii=25 mA, T4-T1 | | 55 °C (131 °F) |
| for Pi=169 mW, Ii=52 mA, T6 | | 41 °C (105.8 °F) |
| for Pi=169 mW, Ii=52 mA, T5 | | 41 °C (105.8 °F) |
| for Pi=169 mW, Ii=52 mA, T4-T1 | | 41 °C (105.8 °F) |
| for Pi=242 mW, Ii=76 mA, T6 | | 29 °C (84.2 °F) |
| for Pi=242 mW, Ii=76 mA, T5 | | 29 °C (84.2 °F) |
| for Pi=242 mW, Ii=76 mA, T4-T1 | | 29 °C (84.2 °F) |

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| **Equipment protection level Gc (nL)** | |
| Standard conformity | EN 60079-15:2005 Ignition protection category "n"<br>Use is restricted to the following stated conditions |
| Effective internal capacitance $C_i$ | ≤ 120 nF ; a cable length of 10 m is considered. |
| Effective internal inductance $L_i$ | ≤ 50 µH ; A cable length of 10 m is considered. |
| General | The apparatus has to be operated according to the appropriate data in the data sheet and in this instruction manual.<br>The data stated in the data sheet are restricted by this operating instruction!<br>The special conditions must be observed!<br>The ATEX Directive applies only to the use of apparatus under atmospheric conditions.<br>If you use the device outside atmospheric conditions, consider that the permissible safety parameters should be reduced. |
| **Special conditions** | |
| for Pi=34 mW, Ii=25 mA, T6 | 55 °C (131 °F) |
| for Pi=34 mW, Ii=25 mA, T5 | 55 °C (131 °F) |
| for Pi=34 mW, Ii=25 mA, T4-T1 | 55 °C (131 °F) |
| for Pi=64 mW, Ii=25 mA, T6 | 55 °C (131 °F) |
| for Pi=64 mW, Ii=25 mA, T5 | 55 °C (131 °F) |
| for Pi=64 mW, Ii=25 mA, T4-T1 | 55 °C (131 °F) |
| for Pi=169 mW, Ii=52 mA, T6 | 41 °C (105.8 °F) |
| for Pi=169 mW, Ii=52 mA, T5 | 41 °C (105.8 °F) |
| for Pi=169 mW, Ii=52 mA, T4-T1 | 41 °C (105.8 °F) |
| for Pi=242 mW, Ii=76 mA, T6 | 29 °C (84.2 °F) |
| for Pi=242 mW, Ii=76 mA, T5 | 29 °C (84.2 °F) |
| for Pi=242 mW, Ii=76 mA, T4-T1 | 29 °C (84.2 °F) |

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| **Equipment protection level Da** | |
| CE marking | CE 0102 |
| ATEX marking | Ex II 1D Ex ia IIIC T135°C Da The Ex-related marking can also be printed on the enclosed label. |
| Standards | EN 60079-0:2012+A11:2013 EN 60079-11:2012 Ignition protection "Intrinsic safety"<br>Use is restricted to the following stated conditions |
| Appropriate type | NCB8-18GM...-N0... |
| Effective internal capacitance $C_i$ | ≤ 120 nF A cable length of 10 m is considered. |
| Effective internal inductance $L_i$ | ≤ 50 µH ; a cable length of 10 m is considered. |
| Maximum permissible ambient temperature $T_{amb}$ | Details of the correlation between the type of circuit connected, the maximum permissible ambient temperature, the surface temperature, and the effective internal reactance values can be found on the EC-type-examination certificate.<br>**The maximum permissible ambient temperature of the data sheet must be noted, in addition, the lower of the two values must be maintained.** |

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| **Equipment protection level Dc** | |
| CE marking | CE 0102 |
| ATEX marking | Ex II 3D IP67 T 111 °C (231.8 °F) X<br>The Ex-relevant identification may also be printed on the accompanying adhesive label. |
| Standards | EN 50281-1-1<br>Protection via housing<br>Use is restricted to the following stated conditions |
| **Special conditions** | |
| Maximum heating (Temperature rise) | Values can be obtained from the following list, depending on the max. operating voltage Ub max and the minimum series resistance Rv. |
| at $U_{Bmax}$=9 V, $R_V$=562 Ω | 11 K |
| using an amplifier in accordance with EN 60947-5-6 | 11 K |

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| **Equipment protection level Dc (tc)** | |
| CE marking | CE 0102 |
| ATEX marking | Ex II 3D Ex tc IIIC T80°C Dc<br>The Ex-related marking can also be printed on the enclosed label. |
| Standards | EN 60079-0:2012+A11:2013, EN 60079-31:2014<br>Protection by enclosure "tc" Some of the information in this instruction manual is more specific than the information provided in the datasheet. |
| General | The corresponding datasheets, declarations of conformity, EC-type examination certificates, certifications, and control drawings, where applicable (see datasheets), form an integral part of this document. These documents can be found at www.pepperl-fuchs.com. The maximum surface temperature of the device was determined without a layer of dust on the apparatus. Some of the information in this instruction manual is more specific than the information provided in the datasheet. |
| **Special conditions** | |
| Maximum permissible ambient temperature $T_{Umax}$ | Values can be obtained from the following list, depending on the max. operating voltage Ub max and the minimum series resistance Rv. |
| at $U_{Bmax}$=9 V, $R_V$=562 Ω | 61 °C (141.8 °F) |
| using an amplifier in accordance with EN 60947-5-6 | 61 °C (141.8 °F) |

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