



Model Number

NCB15-30GM40-N0-5M

Features

- 15 mm quasi flush

Accessories

BF 30

Mounting flange, 30 mm

Technical Data

General specifications

Switching function		Normally closed (NC)
Output type		NAMUR
Rated operating distance	s_n	15 mm
Installation		quasi 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}		0.33
Reduction factor r_{Cu}		0.29
Reduction factor r_{304}		0.76
Output type		2-wire

Nominal ratings

Nominal voltage	U_o	8 V
Switching frequency	f	0 ... 450 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		LED, yellow

Functional safety related parameters

MTTF _d	3068 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	
Cable diameter	6 mm \pm 0.2 mm
Bending radius	> 10 x cable diameter

General information

Use in the hazardous area	see instruction manuals
Category	1G; 2G; 3G; 1D; 3D

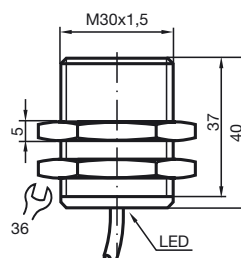
Compliance with standards and directives

Standard conformity	
NAMUR	EN 60947-5-6:2000 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

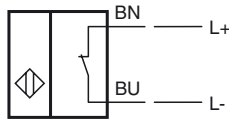
Approvals and certificates

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 ≤ 36 V

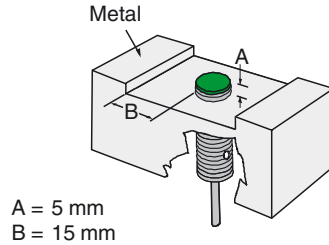
Dimensions



Electrical Connection



Installation conditions



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" Use is restricted to the following stated conditions	
Appropriate type	NCB15-30GM...-N0...	
Effective internal capacitance	C_i	$\leq 120 \text{ nF}$; a cable length of 10 m is considered.
Effective internal inductance	L_i	$\leq 150 \mu\text{H}$; 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. 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 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" Use is restricted to the following stated conditions	
Appropriate type	NCB15-30GM...-N0...	
Effective internal capacitance	C_i	$\leq 120 \text{ nF}$; a cable length of 10 m is considered.
Effective internal inductance	L_i	$\leq 150 \mu\text{H}$; 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.	

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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
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 ≤ 150 μ H ; A cable length of 10 m is considered.

Special conditions

for $P_i=34$ mW, $I_i=25$ mA, T6	55 °C (131 °F)
for $P_i=34$ mW, $I_i=25$ mA, T5	55 °C (131 °F)
for $P_i=34$ mW, $I_i=25$ mA, T4-T1	55 °C (131 °F)
for $P_i=64$ mW, $I_i=25$ mA, T6	55 °C (131 °F)
for $P_i=64$ mW, $I_i=25$ mA, T5	55 °C (131 °F)
for $P_i=64$ mW, $I_i=25$ mA, T4-T1	55 °C (131 °F)
for $P_i=169$ mW, $I_i=52$ mA, T6	41 °C (105.8 °F)
for $P_i=169$ mW, $I_i=52$ mA, T5	41 °C (105.8 °F)
for $P_i=169$ mW, $I_i=52$ mA, T4-T1	41 °C (105.8 °F)
for $P_i=242$ mW, $I_i=76$ mA, T6	29 °C (84.2 °F)
for $P_i=242$ mW, $I_i=76$ mA, T5	29 °C (84.2 °F)
for $P_i=242$ mW, $I_i=76$ mA, T4-T1	29 °C (84.2 °F)

Equipment protection level Gc (nL)

Standard conformity EN 60079-15:2005 Ignition protection category "n"
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 ≤ 150 μ H ; 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. The data stated in the data sheet are restricted by this operating instruction!
The special conditions must be observed!
The ATEX Directive applies only to the use of apparatus under atmospheric conditions.
If you use the device outside atmospheric conditions, consider that the permissible safety parameters should be reduced.

Special conditions

for $P_i=34$ mW, $I_i=25$ mA, T6	55 °C (131 °F)
for $P_i=34$ mW, $I_i=25$ mA, T5	55 °C (131 °F)
for $P_i=34$ mW, $I_i=25$ mA, T4-T1	55 °C (131 °F)
for $P_i=64$ mW, $I_i=25$ mA, T6	55 °C (131 °F)
for $P_i=64$ mW, $I_i=25$ mA, T5	55 °C (131 °F)
for $P_i=64$ mW, $I_i=25$ mA, T4-T1	55 °C (131 °F)
for $P_i=169$ mW, $I_i=52$ mA, T6	41 °C (105.8 °F)
for $P_i=169$ mW, $I_i=52$ mA, T5	41 °C (105.8 °F)
for $P_i=169$ mW, $I_i=52$ mA, T4-T1	41 °C (105.8 °F)
for $P_i=242$ mW, $I_i=76$ mA, T6	29 °C (84.2 °F)
for $P_i=242$ mW, $I_i=76$ mA, T5	29 °C (84.2 °F)
for $P_i=242$ mW, $I_i=76$ mA, T4-T1	29 °C (84.2 °F)

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"
Use is restricted to the following stated conditions

Appropriate type NCB15-30GM...-N0...

Effective internal capacitance C_i ≤ 120 nF A cable length of 10 m is considered.
Effective internal inductance L_i ≤ 150 μ H 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.
The maximum permissible ambient temperature of the data sheet must be noted, in addition, the lower of the two values must be maintained.

Equipment protection level Dc (tc)

CE marking **CE** 0102

ATEX marking **Ex** II 3D Ex tc IIIC T80°C Dc
The Ex-related marking can also be printed on the enclosed label.

Standards EN 60079-0:2012+A11:2013, EN 60079-31:2014
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

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Maximum permissible ambient temperature T_{Umax} Values can be obtained from the following list, depending on the max. operating voltage $U_{b max}$ and the minimum series resistance R_v .

at $U_{Bmax}=9 V, R_v=562 \Omega$ 58 °C (136.4 °F)

using an amplifier in accordance with EN 60947- 58 °C (136.4 °F)

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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

