



# CM30-16BNP-EW1

CM

CAPACITIVE PROXIMITY SENSORS

**SICK**  
Sensor Intelligence.



Illustration may differ



## Ordering information

Type	Part no.
CM30-16BNP-EW1	6058154

Other models and accessories → [www.sick.com/CM](http://www.sick.com/CM)

## Detailed technical data

### Features

<b>Housing</b>	Cylindrical thread design
<b>Thread size</b>	M30 x 1.5
<b>Diameter</b>	Ø 30 mm
<b>Sensing range <math>S_n</math></b>	3 mm ... 16 mm
<b>Safe sensing range <math>S_a</math></b>	12.24 mm <sup>1)</sup>
<b>Installation type</b>	Flush
<b>Switching frequency</b>	50 Hz
<b>Connection type</b>	Cable, 4-wire, 2 m <sup>2)</sup>
<b>Switching output</b>	NPN
<b>Output function</b>	Complementary
<b>Output characteristic</b>	Wire configurable
<b>Electrical wiring</b>	DC 4-wire
<b>Adjustment</b>	Potentiometer (Sensitivity)
<b>Enclosure rating</b>	IP68 <sup>3)</sup> IP69K

<sup>1)</sup> For flush mounting in electrically conductive materials  $S_a = 0.8 \times S_r$  at temperatures  $<0 \text{ }^\circ\text{C}$  and  $>60 \text{ }^\circ\text{C}$ .

<sup>2)</sup> Do not bend below  $0 \text{ }^\circ\text{C}$ .

<sup>3)</sup> 1 m water depth / 60 min.

### Mechanics/electronics

<b>Supply voltage</b>	10 V DC ... 36 V DC
<b>Ripple</b>	$\leq 10 \%$ <sup>1)</sup>

<sup>1)</sup> Of  $U_b$ .

<sup>2)</sup> At  $I_a$  max.

<sup>3)</sup> Without load.

<sup>4)</sup> Of  $S_r$ .

<sup>5)</sup>  $U_b$  and  $T_a$  constant.

<sup>6)</sup>  $+120 \text{ }^\circ\text{C}$  short time, at the front of the sensor.

<b>Voltage drop</b>	≤ 2 V DC <sup>2)</sup>
<b>Current consumption</b>	12 mA <sup>3)</sup>
<b>Time delay before availability</b>	≤ 200 ms
<b>Hysteresis</b>	3 % ... 20 %
<b>Reproducibility</b>	≤ 5 % <sup>4) 5)</sup>
<b>Temperature drift (of S<sub>r</sub>)</b>	± 10 %
<b>EMC</b>	According to EN 60947-5-2
<b>Continuous current I<sub>a</sub></b>	≤ 200 mA
<b>Cable material</b>	PVC
<b>Conductor size</b>	0.34 mm <sup>2</sup>
<b>Cable diameter</b>	Ø 5.2 mm
<b>Short-circuit protection</b>	✓
<b>Reverse polarity protection</b>	✓
<b>Power-up pulse protection</b>	✓
<b>Shock and vibration resistance</b>	According to EN 60068
<b>Ambient operating temperature</b>	-30 °C ... +85 °C <sup>6)</sup>
<b>Ambient temperature, storage</b>	-40 °C ... +85 °C
<b>Housing material</b>	Plastic, PBT
<b>Housing length</b>	81 mm
<b>Thread length</b>	59.5 mm
<b>Tightening torque, max.</b>	≤ 7.5 Nm
<b>Items supplied</b>	Mounting nut, PA12 plastic (2x) Screwdriver for potentiometer adjustment (1 x)
<b>UL File No.</b>	NRKH.E191603

<sup>1)</sup> Of U<sub>b</sub>.

<sup>2)</sup> At I<sub>a</sub> max.

<sup>3)</sup> Without load.

<sup>4)</sup> Of S<sub>r</sub>.

<sup>5)</sup> U<sub>b</sub> and T<sub>a</sub> constant.

<sup>6)</sup> +120 °C short time, at the front of the sensor.

### Safety-related parameters

<b>MTTF<sub>D</sub></b>	919 years
<b>DC<sub>avg</sub></b>	0 %
<b>T<sub>M</sub> (mission time)</b>	20 years

### Reduction factors

<b>Note</b>	The values are reference values which may vary
<b>Metal</b>	1
<b>Water</b>	1
<b>PVC</b>	Approx. 0.4
<b>Oil</b>	Approx. 0.25
<b>Glass</b>	0.6
<b>Ceramics</b>	0.5

<b>Alcohol</b>	0.7
<b>Wood</b>	0.2 ... 0.7

Installation note

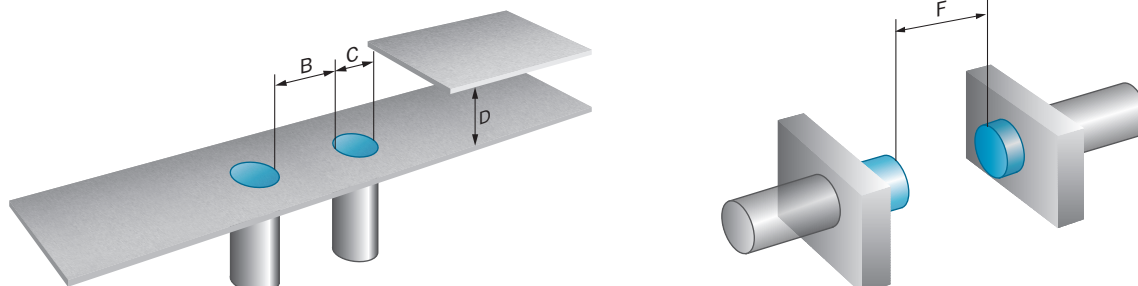
<b>Remark</b>	Associated graphic see "Installation"
<b>B</b>	30 mm
<b>C</b>	30 mm
<b>D</b>	48 mm
<b>F</b>	64 mm

Classifications

<b>ECl@ss 5.0</b>	27270102
<b>ECl@ss 5.1.4</b>	27270102
<b>ECl@ss 6.0</b>	27270102
<b>ECl@ss 6.2</b>	27270102
<b>ECl@ss 7.0</b>	27270102
<b>ECl@ss 8.0</b>	27270102
<b>ECl@ss 8.1</b>	27270102
<b>ECl@ss 9.0</b>	27270102
<b>ECl@ss 10.0</b>	27270102
<b>ECl@ss 11.0</b>	27270102
<b>ETIM 5.0</b>	EC002715
<b>ETIM 6.0</b>	EC002715
<b>ETIM 7.0</b>	EC002715
<b>ETIM 8.0</b>	EC002715
<b>UNSPSC 16.0901</b>	39122230

Installation note

Flush installation



Shock and vibration resistance

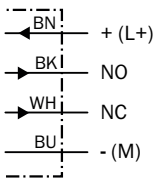
Shock (IEC 60068-2-27):	30 G / 11ms, 3 pos, 3 neg per axis
Rough handling shocks (IEC 60068-2-31):	2 times from 1m, 100 times from 0,5m
Vibration (IEC 60068-2-6):	10 to 150 Hz, 1 mm / 15 G

## Electromagnetic compatibility (EMC)

Electrostatic discharge (EN61000-4-2):	Contact discharge > 40 kV Air discharge > 40 kV
Electrical fast transients/burst (EN 61000-4-4):	+/- 4 kV
Surge (EN 61000-4-5):	Power supply > 2 kV (with 500 Ohm) Sensor output > 2 kV (with 500 Ohm)
Wire conducted disturbances (EN 61000-4-6):	> 20 Vrms
Power-frequency magnetic fields (EN 61000-4-8):	Continuous > 60 A/m, 75.9 μ tesla Short-time > 600 A/m, 759 μ tesla
Radiated RF electromagnetic fields (EN 61000-4-3):	> 20 V/m

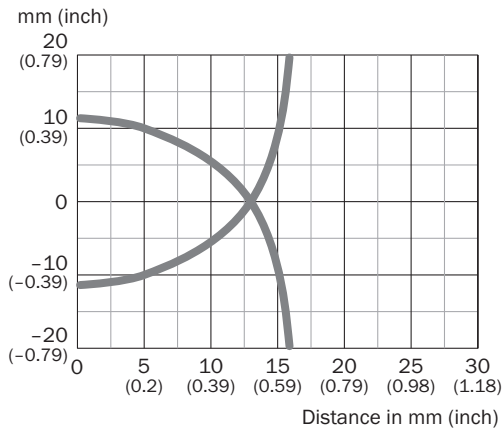
## Connection diagram

Cd-005



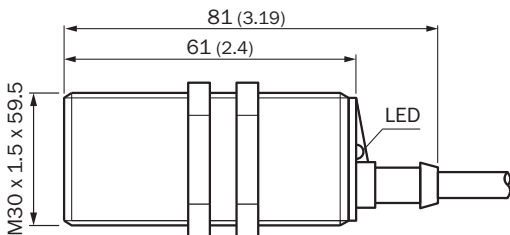
## Characteristic curve

CM30, Flush installation





## Dimensional drawing (Dimensions in mm (inch))

CM30, flush, cable



### Recommended accessories

Other models and accessories → [www.sick.com/CM](http://www.sick.com/CM)

	<b>Brief description</b>	<b>Type</b>	<b>Part no.</b>
Mounting brackets and plates			
	Mounting plate for M30 sensors, steel, zinc coated, without mounting hardware	BEF-WG-M30	5321871
	Mounting bracket for M30 sensors, steel, zinc coated, without mounting hardware	BEF-WN-M30	5308445

## SICK AT A GLANCE

SICK is one of the leading manufacturers of intelligent sensors and sensor solutions for industrial applications. A unique range of products and services creates the perfect basis for controlling processes securely and efficiently, protecting individuals from accidents and preventing damage to the environment.

We have extensive experience in a wide range of industries and understand their processes and requirements. With intelligent sensors, we can deliver exactly what our customers need. In application centers in Europe, Asia and North America, system solutions are tested and optimized in accordance with customer specifications. All this makes us a reliable supplier and development partner.

Comprehensive services complete our offering: SICK LifeTime Services provide support throughout the machine life cycle and ensure safety and productivity.

For us, that is “Sensor Intelligence.”

## WORLDWIDE PRESENCE:

Contacts and other locations –[www.sick.com](http://www.sick.com)