



CM30-16BNP-EWDS03

CM

CAPACITIVE PROXIMITY SENSORS

SICK
Sensor Intelligence.



Ordering information

| Type | part no. |
|-------------------|----------|
| CM30-16BNP-EWDS03 | 6080314 |

Other models and accessories → www.sick.com/CM

Illustration may differ



Detailed technical data

Features

| | |
|--|---|
| Housing | Metric |
| Thread size | M30 x 1.5 |
| Diameter | Ø 30 mm |
| Sensing range S_n | 3 mm ... 16 mm |
| Safe sensing range S_a | 12.24 mm ¹⁾ |
| Installation type | Flush |
| Switching frequency | 50 Hz |
| Connection type | Cable with AMP male connector, 3-pin, 0.3 m ²⁾ |
| Switching output | NPN |
| Switching output detail | NPN |
| Output function | Complementary |
| Output characteristic | Wire configurable |
| Electrical wiring | DC 4-wire |
| Adjustment | Potentiometer |
| | Sensitivity (11 turns) |
| Enclosure rating | IP68 ³⁾ IP69K |
| Items supplied | Mounting nut, PA12 plastic (2x) Screwdriver for potentiometer adjustment (1 x) |

¹⁾ For flush mounting in electrically conductive materials $S_a = 0.8 \times S_n$ at temperatures <0 °C and >60 °C.²⁾ Do not bend below 0 °C.³⁾ 1 m water depth / 60 min.

Mechanics/electronics

| | |
|---|---|
| Supply voltage | 10 V DC ... 36 V DC |
| Ripple | $\leq 10\%$ ¹⁾ |
| Voltage drop | $\leq 2\text{ V DC}$ ²⁾ |
| Current consumption | 12 mA ³⁾ |
| Time delay before availability | $\leq 200\text{ ms}$ |
| Hysteresis | 3 % ... 20 % |
| Reproducibility | $\leq 5\%$ ⁴⁾ ⁵⁾ |
| Temperature drift (of S_r) | $\pm 10\%$ |
| EMC | According to EN 60947-5-2 |
| Continuous current I_a | $\leq 200\text{ mA}$ |
| Cable material | PVC |
| Conductor size | 0.34 mm ² |
| Cable diameter | $\varnothing 5.2\text{ mm}$ |
| Short-circuit protection | ✓ |
| Power-up pulse protection | ✓ |
| Shock and vibration resistance | According to EN 60068 |
| Ambient operating temperature | -30 °C ... +85 °C ⁶⁾ |
| Ambient temperature, storage | -40 °C ... +85 °C |
| Housing material | Plastic, PBT |
| Housing length | 81 mm |
| Thread length | 59.5 mm |
| Tightening torque, max. | $\leq 7.5\text{ Nm}$ |
| UL File No. | NRKH.E191603 |

¹⁾ Of U_b.²⁾ At I_a max.³⁾ Without load.⁴⁾ Of S_r.⁵⁾ Supply voltage U_B and constant ambient temperature T_a.⁶⁾ +120 °C short time, at the front of the sensor.

Safety-related parameters

| | |
|-------------------------------------|-----------|
| MTTF_D | 919 years |
| DC_{avg} | 0 % |
| T_M (mission time) | 20 years |

Reduction factors

| | |
|--------------|--|
| Note | The values are reference values which may vary |
| Metal | 1 |
| Water | 1 |
| PVC | Approx. 0.4 |
| Oil | Approx. 0.25 |

| | |
|-----------------|-------------|
| Glass | 0.6 |
| Ceramics | 0.5 |
| Alcohol | 0.7 |
| Wood | 0.2 ... 0.7 |

Installation note

| | |
|---------------|---------------------------------------|
| Remark | Associated graphic see "Installation" |
| B | 30 mm |
| C | 30 mm |
| D | 48 mm |
| F | 64 mm |

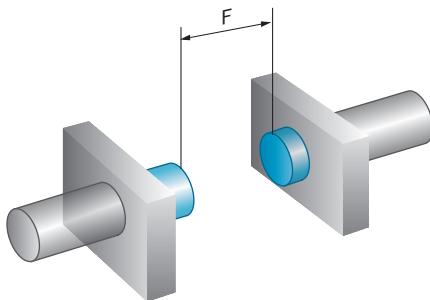
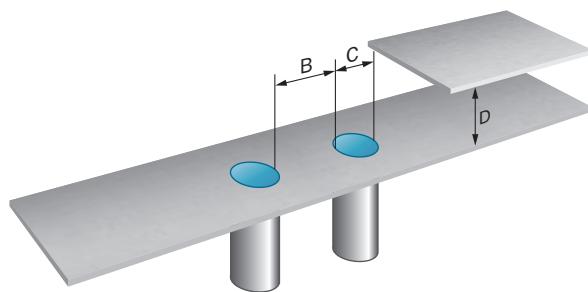
Certificates

| | |
|---|---|
| EU declaration of conformity | ✓ |
| UK declaration of conformity | ✓ |
| Moroccan declaration of conformity | ✓ |
| China-RoHS | ✓ |
| cULus certificate | ✓ |

Classifications

| | |
|-----------------------|----------|
| ECLASS 5.0 | 27270102 |
| ECLASS 5.1.4 | 27270102 |
| ECLASS 6.0 | 27270102 |
| ECLASS 6.2 | 27270102 |
| ECLASS 7.0 | 27270102 |
| ECLASS 8.0 | 27270102 |
| ECLASS 8.1 | 27270102 |
| ECLASS 9.0 | 27270102 |
| ECLASS 10.0 | 27270102 |
| ECLASS 11.0 | 27270102 |
| ECLASS 12.0 | 27274201 |
| ETIM 5.0 | EC002715 |
| ETIM 6.0 | EC002715 |
| ETIM 7.0 | EC002715 |
| ETIM 8.0 | EC002715 |
| UNSPSC 16.0901 | 39122230 |

Installation note Flush installation



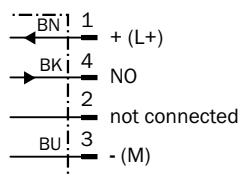
Shock and vibration resistance

| | |
|---|--------------------------------------|
| 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 |

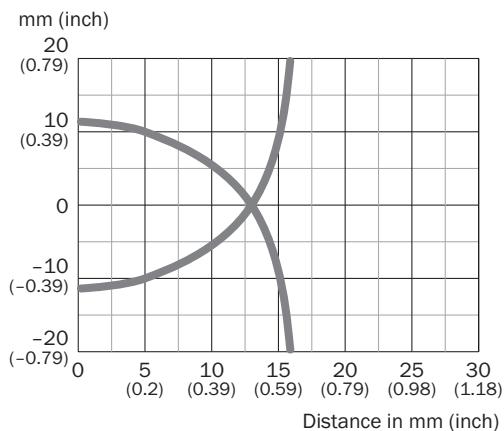
Electromagnetic compatibility (EMC)

| | |
|--|---|
| 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): | Continous > 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 |

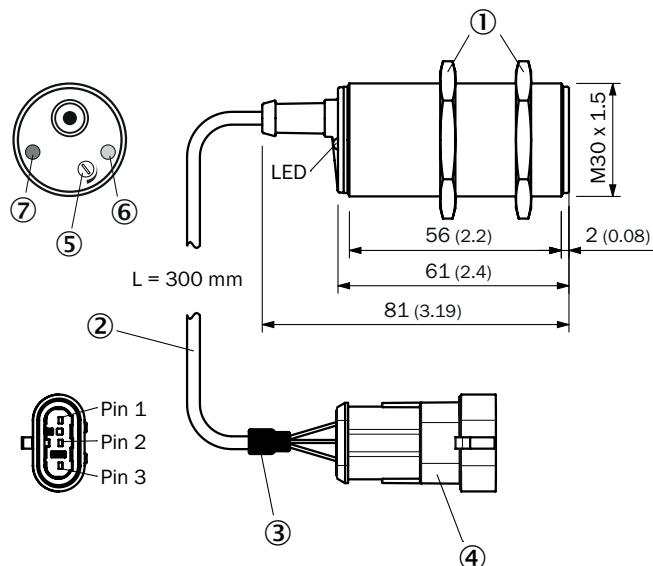
Connection diagram Cd-007



Response diagram CM30, Flush installation



Dimensional drawing CM30, flush, cable with male connector



Dimensions in mm (inch)

- ① fastening nuts (2 x); 36 mm hex, plastic
- ② Cable 4 x 0.34 mm² PVC; Ø 5.2 mm
- ③ Heat-shrink tubing, 25 mm
- ④ Male connector: 1 x housing: AMP no.: 282105-1; 3 x tab contact AMP no.: 282404-1, tin plated pins AWG 20-22; 3 x green seal AMP no.: 0-0281934-4
- ⑤ Potentiometer for sensitivity adjustment
- ⑥ LED yellow: output active
- ⑦ LED green: operating indicator

Recommended accessories

Other models and accessories → www.sick.com/CM

| | Brief description | Type | part no. |
|---|---|------------|----------|
| Mounting systems | | | |
|  | <ul style="list-style-type: none">Description: Mounting bracket for M30 sensorsMaterial: SteelDetails: Steel, zinc coatedItems supplied: Without mounting hardware | BEF-WN-M30 | 5308445 |
|  | <ul style="list-style-type: none">Description: Mounting plate for M30 sensorsMaterial: SteelDetails: Steel, zinc coatedItems supplied: Without mounting hardware | BEF-WG-M30 | 5321871 |

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:

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