# IMF30-20NNSNCOS

**INDUCTIVE PROXIMITY SENSORS** 



INDUCTIVE PROXIMITY SENSORS



#### **Ordering information**

Туре	Part no.
IMF30-20NNSNCOS	1076661

#### Included in delivery: BEF-MU-M30N1(1)

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



#### Detailed technical data

Features

Housing	Cylindrical thread design
Housing	Standard design
Thread size	M30 x 1.5
Diameter	Ø 30 mm
Sensing range S <sub>n</sub>	20 mm
Safe sensing range S <sub>a</sub>	16.2 mm
Installation type	Non-flush
Switching frequency	500 Hz
Connection type	Male connector M12, 4-pin <sup>1)</sup>
Switching output	NPN
Output function	NO
Electrical wiring	DC 3-wire
Enclosure rating	IP68 <sup>2)</sup> IP69K <sup>3)</sup>
Special features	Resistant to cleaning agents, Visual adjustment indicator, Temperature resistance
Special applications	Hygienic and washdown zones, Difficult application conditions
Items supplied	Mounting nut, V4A stainless steel (2x)

<sup>1)</sup> With gold plated contact pins.

<sup>2)</sup> According to EN 60529.

<sup>3)</sup> According to ISO 20653:2013-03.

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#### Mechanics/electronics

Supply voltageIO VDC30 VDCRipple<10%Ripple<2 v <sup>1</sup> Voltage drop2 v <sup>1</sup> Hysteresis3%20%Reproducibility<2 v <sup>8</sup> 30Temperature drift (of S,)<10%EMCAccording to EN 60947-5-2Continuous current I,<200 mANo load current<10 mAReverse polarity protectionPower-up pulse protectionShock and vibration ersistanceSolog / 2 ms/SOO cycles; 150 g/ 1 Mio cycles; 10 Hz 55 Hz / 1 mm; 55 Hz 500 HZAmbient operating temperature<0 v° +100 °CHousing materialStailes steel V4A, DIN 1.4404 / AISI 316LSoles face materialNomHousing lengthJomTiptenting temperatureJustic LCPHousing lengthJomTiptenting temperatureJustic LCPHousing lengthJon MaTiptenting temperatureJustic LCPHousing lengthJon MaTiptenting temperatureJustic LCPHousing lengthJon MaTiptenting temperatureJustic LCPHousing lengthJustic LCPHousing lengthJustic LCPHousing lengthJustic LCPLiptering Liptering Lipter		
Vote≤ 2 V <sup>1</sup> Vote de drop≤ 2 V <sup>2</sup> Hysteresis3% 20%Reproducibility≤ 2% <sup>2</sup> , 3)Temperature drift (of S,)± 10%EMCAccording to EN 60947-5-2Continuous current Ia≤ 20 mANo load current≤ 10 mAShort-circuit protection✓Power-up pulse protection✓Obg/ 2 ms / 500 cycles; 150 g / 1 Mio cycles; 10 Hz 55 Hz / 1 mm; 55 Hz 500 Hz / 20Power-up pulse protection✓Shock and vibration resistanceGog / 2 ms / 500 cycles; 150 g / 1 Mio cycles; 10 Hz 55 Hz / 1 mm; 55 Hz 500 Hz / 20Ambient operating temperatureHosing statel V4A, DIN 1.4404 / AISI 316LBousing length70 mmTorad lengthØ minThread lengthJp. 100 NmThread lengthJp. 100 NmProtection classII	Supply voltage	10 V DC 30 V DC
Hysteresis3%20%Reproducibility\$2% 2 <sup>1</sup> 3 <sup>3</sup> Temperature drift (of Sr)±10%EMCAccording to EN 60947-5-2Continuous current Ia\$200 mANo load current\$10 mAShort-circuit protection/Reverse polarity protection/Power-up pulse protection/Shock and vibration resistance100g / 2 ms / 500 cycles; 150 g / 1 Mio cycles; 10 Hz 55 Hz / 1 mm; 55 Hz 500 Hz / 60gAmbient operating temperature-40 °C +100 °CHousing materialStainless steel V4A, DIN 1.4404 / AISI 316LSensing face materialPostic, LCPHousing length70 mmThread lengthTyp. 100 NmTightening torque, max.Typ. 100 NmProtection classIII	Ripple	≤ 10 %
Reproducibility<2 % 2 % 2 %	Voltage drop	$\leq 2 V^{(1)}$
Temperature drift (of S,)±10%EMCAccording to EN 60947-5-2Continuous current Ia≤ 200 mANo load current≤ 10 mAShort-circuit protection✓Power-up pulse protection✓Power-up pulse protection✓Shock and vibration resistanceOlog / 2 ms / 500 cycles; 150 g / 1 Mio cycles; 10 Hz 55 Hz / 1 mm; 55 Hz 500 Hz / 60gAmbient operating temperature-40° C +100° CHousing materialStainless steel V4A, DIN 1.4404 / AISI 316LSensing face materialPostc, LCPHousing length70 mmThread lengthTyp. 100 NmTightening torque, max.Typ. 100 NmProtection classIII	Hysteresis	3 % 20 %
EMCAccording to EN 60947-5-2Continuous current Ia< 200 mA	Reproducibility	$\leq 2 \%^{(2)(3)}$
Continuous current IaSolutionKo load current\$200 mANo load current\$10 mAShort-circuit protectionIReverse polarity protectionIPower-up pulse protectionIShock and vibration resistance00 g/ 2 ms / 500 cycles; 150 g/ 1 Mio cycles; 10 Hz 55 Hz / 1 mm; 55 Hz 500 Hz / 60 gAmbient operating temperature-40 °C +100 °CHousing materialStailess steel V4A, DIN 1.4404 / AISI 316LBonsing face materialPostc, LCPHousing length70 mmThread lengthTo, 100 NmTipHening torque, max.III on NmIII contentsIII contentsIII contentsIII contents	Temperature drift (of S <sub>r</sub> )	± 10 %
No load current≤ 10 mAShort-circuit protection/Reverse polarity protection/Power-up pulse protection/Shock and vibration resistance00 g/ 2 ms/ 500 cycles; 150 g/ 1 Mio cycles; 10 Hz 55 Hz / 1 mm; 55 Hz 500 Hz / 0gAmbient operating temperature-40 °C +100 °CHousing materialStailes steel V4A, DIN 1.4404 / AISI 316LBensing face materialPostic, LCPHousing length-00 mmThread lengthTy .00 NmTightening torque, max.Ju .00 NmProtection classIII	EMC	According to EN 60947-5-2
Short-circuit protection       Reverse polarity protection       Power-up pulse protection       Shock and vibration resistance       Shock and vibration resistance       Ambient operating temperature       -40 °C +100 °C       Housing material       Sensing face material       Housing length       Thread length       Tightening torque, max.       Protection class	Continuous current I <sub>a</sub>	≤ 200 mA
Reverse polarity protection✓Power-up pulse protection✓Shock and vibration resistancelo0g/2 ms/500 cycles; 150 g/1 Mio cycles; 10 Hz 55 Hz/1 mm; 55 Hz 500 Hz/ 60 gAmbient operating temperature-40 °C +100 °CHousing materialStainless steel V4A, DIN 1.4404/AISI 316LSensing face materialPlastic, LCPHousing length70 mmThread lengthTyp 100 NmTightening torque, max.Typ 100 NmProtection classIII	No load current	≤ 10 mA
Power-up pulse protection✓Shock and vibration resistance100 g/ 2 ms / 500 cycles; 150 g / 1 Mio cycles; 10 Hz 55 Hz / 1 mm; 55 Hz 500 Hz / 60 gAmbient operating temperature-40 ° C +100 ° CHousing materialStainless steel V4A, DIN 1.4404 / AISI 316LSensing face materialPlastic, LCPHousing length70 mmThread length40 ° mmTightening torque, max.Typ. 100 NmIlIII	Short-circuit protection	1
Shock and vibration resistance100 g / 2 ms / 500 cycles; 150 g / 1 Mio cycles; 10 Hz 55 Hz / 1 mm; 55 Hz 500 Hz / 60 gAmbient operating temperature-40 °C +100 °CHousing materialStainless steel V4A, DIN 1.4404 / AISI 316LSensing face materialPlastic, LCPHousing length70 mmThread length40 mmTightening torque, max.Typ. 100 NmProtection classIII	Reverse polarity protection	4
60 gAmbient operating temperature-40 °C +100 °CHousing materialStainless steel V4A, DIN 1.4404 / AISI 316LSensing face materialPlastic, LCPHousing length70 mmThread length40 mmTightening torque, max.Typ. 100 NmProtection classIII	Power-up pulse protection	4
Housing materialStainless steel V4A, DIN 1.4404 / AISI 316LSensing face materialPlastic, LCPHousing length70 mmThread length40 mmTightening torque, max.Typ. 100 NmProtection classIII	Shock and vibration resistance	
Sensing face materialPlastic, LCPHousing length70 mmThread length40 mmTightening torque, max.Typ. 100 NmProtection classIII	Ambient operating temperature	-40 °C +100 °C
Housing length 70 mm   Thread length 40 mm   Tightening torque, max. Typ. 100 Nm   Protection class III	Housing material	Stainless steel V4A, DIN 1.4404 / AISI 316L
Thread length 40 mm   Tightening torque, max. Typ. 100 Nm   Protection class III	Sensing face material	Plastic, LCP
Tightening torque, max. Typ. 100 Nm   Protection class III	Housing length	70 mm
Protection class III	Thread length	40 mm
	Tightening torque, max.	Typ. 100 Nm
UL File No. E181493	Protection class	III
	UL File No.	E181493

<sup>1)</sup> At I<sub>a</sub> max.

<sup>2)</sup> Supply voltage Ub and constant ambient temperature Ta.
<sup>3)</sup> Of Sr.

#### Safety-related parameters

MTTFD	1,971 years
DC <sub>avg</sub>	0 %
T <sub>M</sub> (mission time)	20 years

#### **Reduction factors**

Note	The values are reference values which may vary
Stainless steel (V2A, 304)	Approx. 0.78
Aluminum (Al)	Approx. 0.44
Copper (Cu)	Approx. 0.36
Brass (Br)	Approx. 0.46

#### Installation note

Remark	Associated graphic see "Installation"
A	20 mm
В	62 mm
c	30 mm

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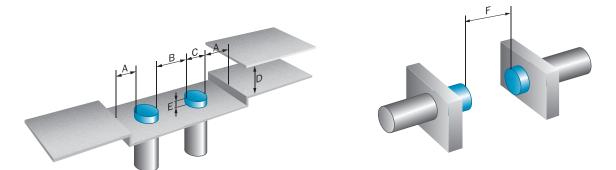
D	60 mm
E	20 mm
F	160 mm

#### Classifications

eCl@ss 5.0 27270101	
eCl@ss 5.1.4 27270101	
eCl@ss 6.0 27270101	
eCl@ss 6.2 27270101	
eCl@ss 7.0 27270101	
eCl@ss 8.0 27270101	
eCl@ss 8.1 27270101	
eCl@ss 9.0 27270101	
eCl@ss 10.0 27270101	
eCl@ss 11.0 27270101	
eCl@ss 12.0 27274001	
ETIM 5.0 EC002714	
ETIM 6.0 EC002714	
ETIM 7.0 EC002714	
ETIM 8.0 EC002714	
UNSPSC 16.0901 39122230	

#### Installation note

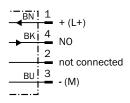
Non-flush installation



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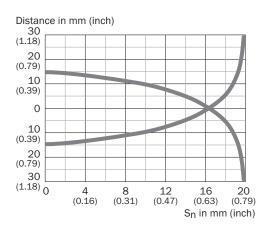
#### **Connection diagram**

Cd-007



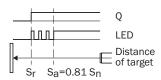
#### Response diagram

Response diagram



#### Adjustments

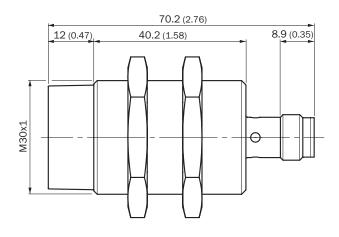
Installation aid



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

IMF30, non flush



#### **Recommended accessories**

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

	Brief description	Туре	Part no.
Universal bar clamp systems			
	Plate N10 for universal clamp bracket, M30, Zinc plated steel (sheet), Zinc die cast (clamping bracket), Universal clamp (5322626), mounting hardware	BEF-KHS-N10	2062372
Mounting brac	ckets 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
Plug connecto	ors and cables		
•0	Head A: female connector, M12, 4-pin, straight Head B: Flying leads Cable: Sensor/actuator cable, PP, unshielded, 2 m This product is generally resistant to chemical cleaning agents (see ECOLAB) and other chemical compounds such as H2O2 and CH2O2. Before permanent installation is car- ried out, the material's resistance to the cleaning agent being used must be checked., Resistant against lactic acid & hydrogen peroxide (H2O2)	DOL-1204-G02MRN	6058291
	Head A: female connector, M12, 4-pin, straight Head B: Flying leads Cable: Sensor/actuator cable, PP, unshielded, 5 m This product is generally resistant to chemical cleaning agents (see ECOLAB) and other chemical compounds such as H2O2 and CH2O2. Before permanent installation is car- ried out, the material's resistance to the cleaning agent being used must be checked., Resistant against lactic acid & hydrogen peroxide (H2O2)	DOL-1204-G05MRN	6058476

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	Brief description	Туре	Part no.
50	Head A: female connector, M12, 4-pin, angled Head B: Flying leads Cable: Sensor/actuator cable, PP, unshielded, 2 m This product is generally resistant to chemical cleaning agents (see ECOLAB) and other chemical compounds such as H2O2 and CH2O2. Before permanent installation is car- ried out, the material's resistance to the cleaning agent being used must be checked., Resistant against lactic acid & hydrogen peroxide (H2O2), only suitable for PNP sensors	DOL-1204-L02MRN	6058482
	Head A: female connector, M12, 4-pin, angled Head B: Flying leads Cable: Sensor/actuator cable, PP, unshielded, 5 m This product is generally resistant to chemical cleaning agents (see ECOLAB) and other chemical compounds such as H2O2 and CH2O2. Before permanent installation is car- ried out, the material's resistance to the cleaning agent being used must be checked., Resistant against lactic acid & hydrogen peroxide (H2O2), only suitable for PNP sensors	DOL-1204-L05MRN	6058483
Ð	Head A: female connector, M12, 4-pin, angled Head B: Flying leads Cable: Sensor/actuator cable, PP, unshielded, 2 m This product is generally resistant to chemical cleaning agents (see ECOLAB) and other chemical compounds such as H2O2 and CH2O2. Before permanent installation is car- ried out, the material's resistance to the cleaning agent being used must be checked., Resistant against lactic acid & hydrogen peroxide (H2O2)	DOL-1204-W02MRN	6058474
	Head A: female connector, M12, 4-pin, angled Head B: Flying leads Cable: Sensor/actuator cable, PP, unshielded, 5 m This product is generally resistant to chemical cleaning agents (see ECOLAB) and other chemical compounds such as H2O2 and CH2O2. Before permanent installation is car- ried out, the material's resistance to the cleaning agent being used must be checked., Resistant against lactic acid & hydrogen peroxide (H2O2)	DOL-1204-W05MRN	6058477
	Head A: female connector, M12, 4-pin, angled Head B: male connector, M12, 4-pin, straight Cable: Sensor/actuator cable, PP, unshielded, 2 m This product is generally resistant to chemical cleaning agents (see ECOLAB) and other chemical compounds such as H2O2 and CH2O2. Before permanent installation is car- ried out, the material's resistance to the cleaning agent being used must be checked., Resistant against lactic acid & hydrogen peroxide (H2O2)	DSL-1204-B02MRN	6058502
	Head A: female connector, M12, 4-pin, angled Head B: male connector, M12, 4-pin, straight Cable: Sensor/actuator cable, PP, unshielded, 5 m This product is generally resistant to chemical cleaning agents (see ECOLAB) and other chemical compounds such as H2O2 and CH2O2. Before permanent installation is car- ried out, the material's resistance to the cleaning agent being used must be checked., Resistant against lactic acid & hydrogen peroxide (H2O2)	DSL-1204-B05MRN	6058503
60 66	Head A: female connector, M12, 4-pin, straight Head B: male connector, M12, 4-pin, straight Cable: Sensor/actuator cable, PP, unshielded, 2 m This product is generally resistant to chemical cleaning agents (see ECOLAB) and other chemical compounds such as H2O2 and CH2O2. Before permanent installation is car- ried out, the material's resistance to the cleaning agent being used must be checked., Resistant against lactic acid & hydrogen peroxide (H2O2)	DSL-1204-G02MRN	6058499
	Head A: female connector, M12, 4-pin, straight Head B: male connector, M12, 4-pin, straight Cable: Sensor/actuator cable, PP, unshielded, 5 m This product is generally resistant to chemical cleaning agents (see ECOLAB) and other chemical compounds such as H2O2 and CH2O2. Before permanent installation is car- ried out, the material's resistance to the cleaning agent being used must be checked., Resistant against lactic acid & hydrogen peroxide (H2O2)	DSL-1204-G05MRN	6058500

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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."

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