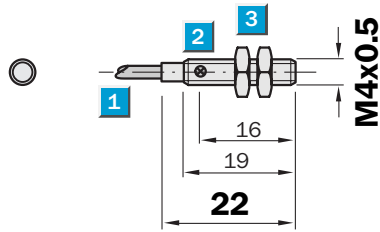
 **Sensing range**  
**0.6 mm**

Inductive sensor

- Can be installed flush
- High switching frequency
- Short-circuit protection (pulsed)
- Robust stainless steel housing with fine thread M4 x 0.5 mm
- Enclosure rating IP 67

Dimensional drawing

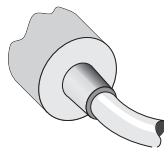


- 1 Connection
- 2 Display LED
- 3 Fastening nuts (2 x); width across 6, stainless steel

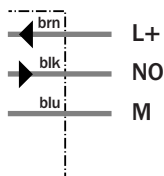


Connection type

- IM04-0B6NS-ZU1
- IM04-0B6PS-ZU1



3 x 0.06 mm<sup>2</sup>



Technical specifications		IM04-	OB6NS-ZU1	OB6PS-ZU1								
<b>Sensing range S<sub>n</sub></b>	0.6 mm											
<b>Electrical configuration</b>	DC 3-wire											
<b>Supply voltage V<sub>s</sub></b>	DC 10 ... 30 V											
Ripple U <sub>pp</sub>	≤ 20 % <sup>1)</sup>											
Voltage drop U <sub>d</sub>	≤ 0.6 V <sup>2)</sup>											
Power consumption	≤ 10 mA <sup>3)</sup>											
<b>Continuous current I<sub>a</sub></b>	≤ 100 mA											
Time delay before availability t <sub>v</sub>	≤ 10 ms											
Hysteresis H, of s <sub>r</sub>	10 %											
Repeatability R	≤ 2 % (U <sub>b</sub> and T <sub>a</sub> constant)											
Temperature drift, of s <sub>r</sub>	± 10 %											
EMC	According to EN 60947-5-2											
<b>Switching output</b>	NPN											
	PNP											
<b>Output function</b>	Normally open <sup>4)</sup>											
<b>Installation</b>	Flush											
<b>Connection type</b>	Cable, PUR, 2 m											
<b>Enclosure rating</b>	IP 67 <sup>5)</sup>											
Max. switching frequency	5,000 Hz											
Dimensions	M4 x 0.5 <sup>6)</sup>											
<b>Short-circuit protection</b>	✓ <sup>7)</sup>											
<b>Reverse polarity protection</b>	✓											
<b>Power-up pulse suppression</b>	✓											
Shock/vibration stress	30 g, 11 ms/10 ... 55 Hz, 1 mm											
Ambient temperature T <sub>a</sub>	-25 °C ... +70 °C											
<b>Housing material</b>	Stainless steel, plastic											
Tightening torque	0.8 Nm											

<sup>1)</sup> of U<sub>b</sub>  
<sup>2)</sup> at I<sub>a</sub> = 50 mA

<sup>3)</sup> without load  
<sup>4)</sup> normally closed function available on

request  
<sup>5)</sup> according to EN 60529

<sup>6)</sup> Thread diameter x pitch (mm)  
<sup>7)</sup> (pulsed)

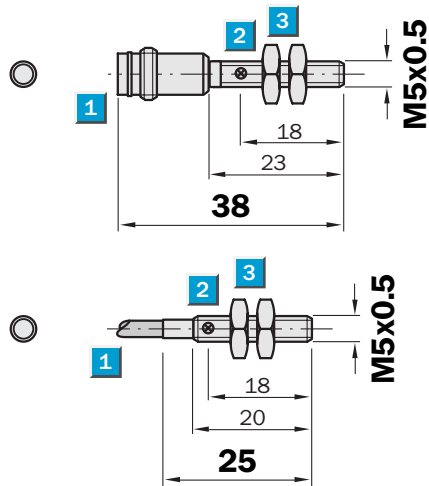
Order information	
Type	Order no.
IM04-OB6NS-ZU1	6 020 146
IM04-OB6PS-ZU1	6 020 145

**Sensing range**  
0.8 mm

Inductive sensor

- Can be installed flush
- High switching frequency
- Short-circuit protection (pulsed)
- Robust stainless steel housing with fine thread M5 x 0.5 mm
- Enclosure rating IP 67

Dimensional drawing

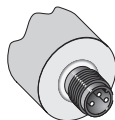


- 1 Connection
- 2 Display LED
- 3 Fastening nuts (2 x); width across 7, stainless steel

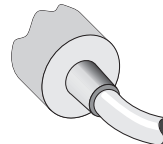
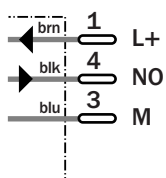


Connection type

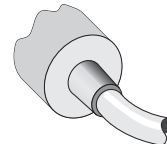
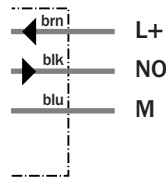
IM05-0B8NS-ZT1	IM05-0B8NS-ZW1	IM05-0B8NO-ZW1
IM05-0B8PS-ZT1	IM05-0B8PS-ZWB	
	IM05-0B8PS-ZW1	



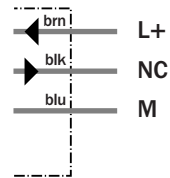
M8, 3-pin



3 x 0.14 mm<sup>2</sup>



3 x 0.14 mm<sup>2</sup>



See chapter Accessories

Connector, M8, 3-pin

Technical specifications		IM05-	OB8NO-ZW1	OB8NS-ZT1	OB8NS-ZW1	OB8PS-ZT1	OB8PS-ZWB	OB8PS-ZW1				
<b>Sensing range <math>S_n</math></b>	0.8 mm											
<b>Electrical configuration</b>	DC 3-wire											
<b>Supply voltage <math>V_s</math></b>	DC 10 ... 30 V											
Ripple $U_{pp}$	$\leq 20\%$ <sup>1)</sup>											
Voltage drop $U_d$	$\leq 2\text{ V}$ <sup>2)</sup>											
Power consumption	$\leq 10\text{ mA}$ <sup>3)</sup>											
<b>Continuous current <math>I_a</math></b>	$\leq 200\text{ mA}$											
Time delay before availability $t_v$	$\leq 10\text{ ms}$											
Hysteresis H, of $s_r$	10 %											
Repeatability R	$\leq 1.5\%$ ( $U_b$ and $T_a$ constant)											
Temperature drift, of $s_r$	$\pm 10\%$											
EMC	According to EN 60947-5-2											
<b>Switching output</b>	NPN											
	PNP											
<b>Output function</b>	Normally closed											
	Normally open											
<b>Installation</b>	Flush											
<b>Connection type</b>	Cable, PVC, 2 m											
	Connector, M8, 3-pin											
	Cable, PVC, 5 m											
<b>Enclosure rating</b>	IP 67 <sup>4)</sup>											
Max. switching frequency	5,000 Hz											
Dimensions	M5 x 0.5 <sup>5)</sup>											
<b>Short-circuit protection</b>	✓ <sup>6)</sup>											
<b>Reverse polarity protection</b>	✓											
<b>Power-up pulse suppression</b>	✓											
Shock/vibration stress	30 g, 11 ms/10 ... 55 Hz, 1 mm											
Ambient temperature $T_a$	-25 °C ... +70 °C											
<b>Housing material</b>	Stainless steel, plastic											
Tightening torque	1.5 Nm											

<sup>1)</sup> of  $U_b$   
<sup>2)</sup> at  $I_a = 200\text{ mA}$

<sup>3)</sup> without load  
<sup>4)</sup> according to EN 60529

<sup>5)</sup> Thread diameter x pitch (mm)  
<sup>6)</sup> (pulsed)

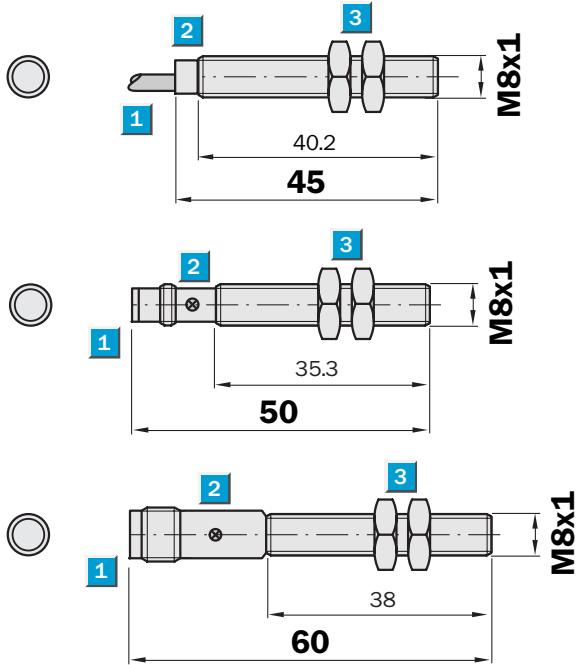
Order information	
Type	Order no.
IM05-OB8NO-ZW1	6 020 157
IM05-OB8NS-ZT1	6 020 158
IM05-OB8NS-ZW1	6 020 155
IM05-OB8PS-ZT1	6 020 110
IM05-OB8PS-ZWB	6 021 575
IM05-OB8PS-ZW1	6 011 591

**Sensing range**  
1.5 mm

Inductive sensor

- High switching frequency
- Short-circuit protection (pulsed)
- Robust brass housing, nickel-plated with fine thread M8 x 1 mm
- Enclosure rating IP 67

Dimensional drawing

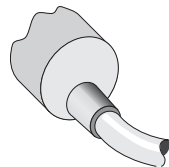


- 1 Connection
- 2 Display LED
- 3 Fastening nuts (2 x); width across 13, metal

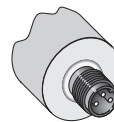


Connection type

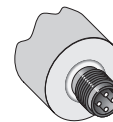
IM08-1B5N0-ZW1	IM08-1B5NS-ZT1	IM08-1B5NS-ZC1
IM08-1B5NS-ZW1	IM08-1B5PO-ZT1	IM08-1B5PS-ZC1
IM08-1B5PO-ZW1	IM08-1B5PS-ZT1	
IM08-1B5PS-ZW1		



3 x 0.14 mm<sup>2</sup>



M8, 3-pin

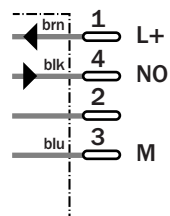
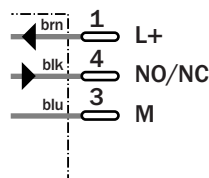


M12, 4-pin

See chapter Accessories

Connector, M12, 4-pin

Connector, M8, 3-pin



Technical specifications		IM08-	1B5NO-ZW1	1B5NS-ZW1	1B5PO-ZW1	1B5PS-ZW1	1B5NS-ZC1	1B5NS-ZT1	1B5PO-ZT1	1B5PS-ZC1	1B5PS-ZT1
<b>Sensing range S<sub>n</sub></b>	1.5 mm										
<b>Electrical configuration</b>	DC 3-wire										
<b>Supply voltage V<sub>s</sub></b>	DC 10 ... 30 V										
Ripple U <sub>pp</sub>	≤ 10 %										
Voltage drop U <sub>d</sub>	≤ 1.2 V <sup>1)</sup>										
Power consumption	≤ 20 mA <sup>2)</sup>										
<b>Continuous current I<sub>a</sub></b>	≤ 200 mA										
Time delay before availability t <sub>v</sub>	≤ 100 ms										
Hysteresis H, of s <sub>r</sub>	2 ... 10 %										
Repeatability R	≤ 2 % (U <sub>b</sub> and T <sub>a</sub> constant) <sup>3)</sup>										
Temperature drift, of s <sub>r</sub>	± 10 %										
EMC	According to EN 60947-5-2										
<b>Switching output</b>	NPN										
	PNP										
<b>Output function</b>	Normally closed										
	Normally open										
<b>Installation</b>	Flush										
<b>Connection type</b>	Cable, PVC, 2 m										
	Connector, M12, 4-pin										
	Connector, M8, 3-pin										
<b>Enclosure rating</b>	IP 67 <sup>4)</sup>										
Max. switching frequency	3,000 Hz										
Dimensions	M8 x 1 <sup>5)</sup>										
<b>Short-circuit protection</b>	✓ <sup>6)</sup>										
<b>Reverse polarity protection</b>	✓										
<b>Power-up pulse suppression</b>	✓										
Shock/vibration stress	30 g, 11 ms/10 ... 55 Hz, 1 mm										
Ambient temperature T <sub>a</sub>	-25 °C ... +70 °C										
<b>Housing material</b>	Brass nickel-plated, plastic										
Tightening torque	4 Nm										

<sup>1)</sup> at I<sub>a</sub> max  
<sup>2)</sup> without load

<sup>3)</sup> of s<sub>r</sub>  
<sup>4)</sup> according to EN 60529

<sup>5)</sup> Thread diameter x pitch (mm)  
<sup>6)</sup> (pulsed)

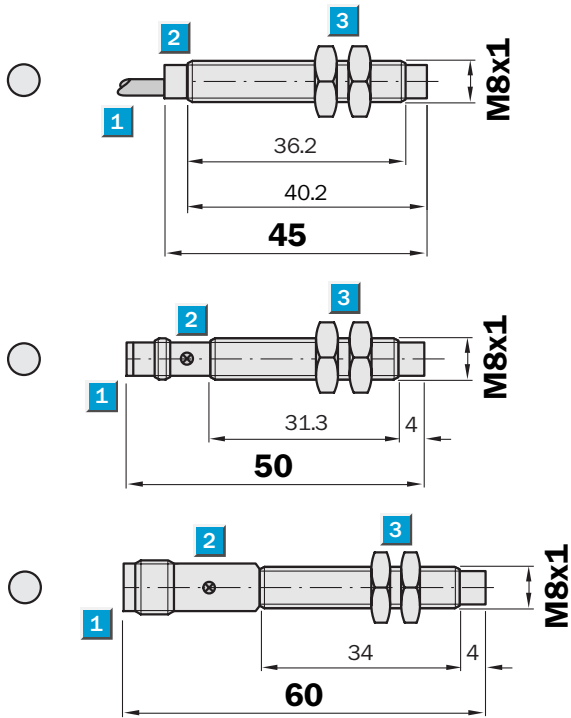
Order information	
Type	Order no.
IM08-1B5NO-ZW1	6 020 218
IM08-1B5NS-ZW1	6 020 216
IM08-1B5PO-ZW1	6 020 217
IM08-1B5PS-ZW1	6 020 215
IM08-1B5NS-ZC1	6 020 224
IM08-1B5NS-ZT1	6 020 220
IM08-1B5PO-ZT1	6 020 221
IM08-1B5PS-ZC1	6 020 223
IM08-1B5PS-ZT1	6 020 219

**Sensing range**  
2.5 mm

Inductive sensor

- High switching frequency
- Short-circuit protection (pulsed)
- Robust brass housing, nickel-plated with fine thread M8 x 1 mm
- Enclosure rating IP 67

Dimensional drawing

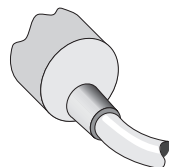


- 1 Connection
- 2 Display LED
- 3 Fastening nuts (2 x); width across 13, metal

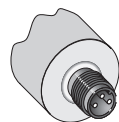
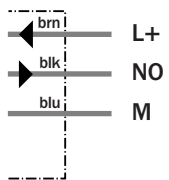


Connection type

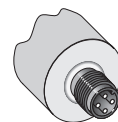
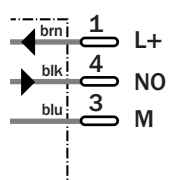
IM08-2N5NS-ZW1	IM08-2N5NS-ZT1	IM08-2N5NS-ZC1
IM08-2N5PS-ZW1	IM08-2N5PS-ZT1	IM08-2N5PS-ZC1



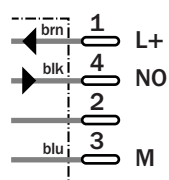
3 x 0.14 mm<sup>2</sup>



M8, 3-pin



M12, 4-pin



See chapter Accessories

Connector, M12, 4-pin

Connector, M8, 3-pin

Technical specifications		IM08-	2N5NS-ZW1	2N5PS-ZW1	2N5NS-ZC1	2N5NS-ZT1	2N5PS-ZC1	2N5PS-ZT1				
<b>Sensing range S<sub>n</sub></b>	2.5 mm											
<b>Electrical configuration</b>	DC 3-wire											
<b>Supply voltage V<sub>s</sub></b>	DC 10 ... 30 V											
Ripple U <sub>pp</sub>	≤ 10 %											
Voltage drop U <sub>d</sub>	≤ 1.2 V <sup>1)</sup>											
Power consumption	≤ 20 mA <sup>2)</sup>											
<b>Continuous current I<sub>a</sub></b>	≤ 200 mA											
Time delay before availability t <sub>v</sub>	≤ 100 ms											
Hysteresis H, of s <sub>r</sub>	2 ... 10 %											
Repeatability R	≤ 2 % (U <sub>b</sub> and T <sub>a</sub> constant) <sup>3)</sup>											
Temperature drift, of s <sub>r</sub>	± 10 %											
EMC	According to EN 60947-5-2											
<b>Switching output</b>	NPN											
	PNP											
<b>Output function</b>	Normally open											
<b>Installation</b>	Non-flush											
<b>Connection type</b>	Cable, PVC, 2 m											
	Connector, M12, 4-pin											
	Connector, M8, 3-pin											
<b>Enclosure rating</b>	IP 67 <sup>4)</sup>											
Max. switching frequency	2,500 Hz											
Dimensions	M8 x 1 <sup>5)</sup>											
<b>Short-circuit protection</b>	✓ <sup>6)</sup>											
<b>Reverse polarity protection</b>	✓											
<b>Power-up pulse suppression</b>	✓											
Shock/vibration stress	30 g, 11 ms/10 ... 55 Hz, 1 mm											
Ambient temperature T <sub>a</sub>	-25 °C ... +70 °C											
<b>Housing material</b>	Brass nickel-plated, plastic											
Tightening torque	4 Nm											


<sup>1)</sup> at I<sub>a</sub> max  
<sup>2)</sup> without load

<sup>3)</sup> of s<sub>r</sub>  
<sup>4)</sup> according to EN 60529

<sup>5)</sup> Thread diameter x pitch (mm)  
<sup>6)</sup> (pulsed)

Order information	
Type	Order no.
IM08-2N5NS-ZW1	6 020 228
IM08-2N5PS-ZW1	6 020 227
IM08-2N5NS-ZC1	6 020 236
IM08-2N5NS-ZT1	6 020 232
IM08-2N5PS-ZC1	6 020 235
IM08-2N5PS-ZT1	6 020 231

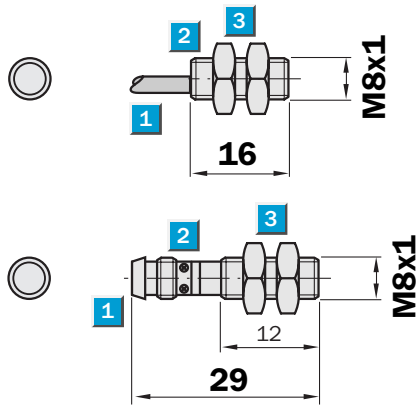


 **Sensing range**  
**1.5 mm**

Inductive sensor

- High switching frequency
- Short-circuit protection (pulsed)
- Robust brass housing, nickel-plated with fine thread M8 x 1 mm
- Enclosure rating IP 67

Dimensional drawing



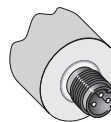
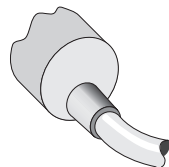
- 1 Connection
- 2 Display LED
- 3 Fastening nuts (2 x); width across 13, metal



Connection type

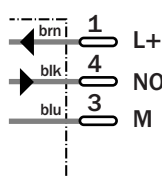
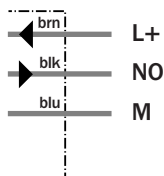
IM08-1B5NS-ZWK  
IM08-1B5PS-ZWK

IM08-1B5NS-ZTK  
IM08-1B5PS-ZTK



3 x 0.14 mm<sup>2</sup>

M8, 3-pin



See chapter Accessories

Connector, M8, 3-pin

Technical specifications		IM08-	1B5NS-ZWK	1B5PS-ZWK	1B5NS-ZTK	1B5PS-ZTK						
<b>Sensing range S<sub>n</sub></b>	1.5 mm											
<b>Electrical configuration</b>	DC 3-wire											
<b>Supply voltage V<sub>s</sub></b>	DC 10 ... 30 V											
Ripple U <sub>pp</sub>	≤ 20 % <sup>1)</sup>											
Voltage drop U <sub>d</sub>	≤ 2 V <sup>2)</sup>											
Power consumption	10 mA <sup>3)</sup>											
<b>Continuous current I<sub>a</sub></b>	≤ 200 mA											
Time delay before availability t <sub>v</sub>	≤ 10 ms											
Hysteresis H, of s <sub>r</sub>	10 %											
Repeatability R	≤ 5 % (U <sub>b</sub> and T <sub>a</sub> constant)											
Temperature drift, of s <sub>r</sub>	± 10 %											
EMC	According to EN 60947-5-2											
<b>Switching output</b>	NPN											
	PNP											
<b>Output function</b>	Normally open <sup>4)</sup>											
<b>Installation</b>	Flush											
<b>Connection type</b>	Cable, PVC, 2 m											
	Connector, M8, 3-pin											
<b>Enclosure rating</b>	IP 67 <sup>5)</sup>											
Max. switching frequency	5,000 Hz											
Dimensions	M8 x 1 <sup>6)</sup>											
<b>Short-circuit protection</b>	✓ <sup>7)</sup>											
<b>Reverse polarity protection</b>	✓											
<b>Power-up pulse suppression</b>	✓											
Shock/vibration stress	30 g, 11 ms/10 ... 55 Hz, 1 mm											
Ambient temperature T <sub>a</sub>	-25 °C ... +70 °C											
<b>Housing material</b>	Brass nickel-plated, plastic											
Tightening torque	4 Nm											

<sup>1)</sup> of U<sub>b</sub>  
<sup>2)</sup> at I<sub>a</sub> = 200 mA

<sup>3)</sup> without load  
<sup>4)</sup> normally closed function available on

request  
<sup>5)</sup> according to EN 60529

<sup>6)</sup> Thread diameter x pitch (mm)  
<sup>7)</sup> (pulsed)

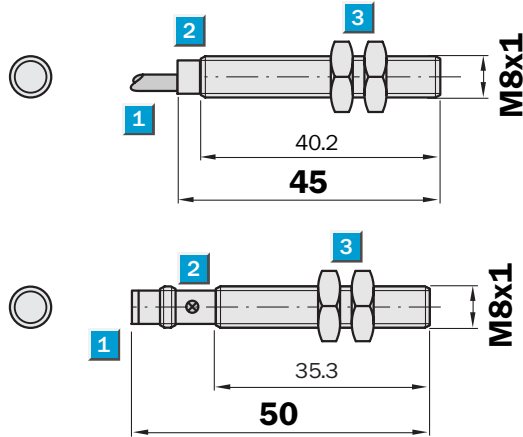
Order information	
Type	Order no.
IM08-1B5NS-ZWK	6 020 173
IM08-1B5PS-ZWK	6 020 111
IM08-1B5NS-ZTK	6 020 176
IM08-1B5PS-ZTK	6 020 112

**Sensing range**  
2 mm

Inductive sensor

- Enhanced sensing range
- High switching frequency
- Short-circuit protection (pulsed)
- Robust brass housing, nickel-plated with fine thread M8 x 1 mm
- Enclosure rating IP 67

Dimensional drawing



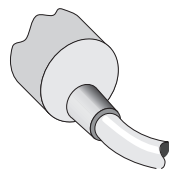
- 1 Connection
- 2 Display LED
- 3 Fastening nuts (2 x); width across 13, metal



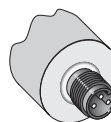
Connection type

- IM08-02BNS-ZW1
- IM08-02BPO-ZW1
- IM08-02BPS-ZW1

- IM08-02BNO-ZT1
- IM08-02BNS-ZT1
- IM08-02BPS-ZT1
- IM08-02BPO-ZT1



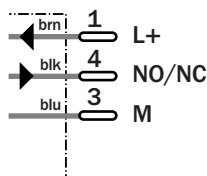
3 x 0.14 mm<sup>2</sup>



M8, 3-pin

See chapter Accessories

Connector, M8, 3-pin



Technical specifications		IM08-	02BNS -ZW1	02BPO -ZW1	02BPS -ZW1	02BNO -ZT1	02BNS -ZT1	02BPS -ZT1	02BPO -ZT1			
<b>Sensing range S<sub>n</sub></b>	2 mm											
<b>Electrical configuration</b>	DC 3-wire											
<b>Supply voltage V<sub>s</sub></b>	DC 10 ... 30 V											
Ripple U <sub>pp</sub>	≤ 10 % <sup>1)</sup>											
Voltage drop U <sub>d</sub>	≤ 1.2 V <sup>2)</sup>											
Power consumption	≤ 20 mA <sup>3)</sup>											
<b>Continuous current I<sub>a</sub></b>	≤ 200 mA											
Time delay before availability t <sub>v</sub>	≤ 100 ms											
Hysteresis H, of s <sub>r</sub>	2 ... 15 %											
Repeatability R	≤ 5 % (U <sub>b</sub> and T <sub>a</sub> constant) <sup>4)</sup>											
Temperature drift, of s <sub>r</sub>	± 10 %											
EMC	According to EN 60947-5-2											
<b>Switching output</b>	NPN											
	PNP											
<b>Output function</b>	Normally open											
	Normally closed											
<b>Installation</b>	Flush											
<b>Connection type</b>	Cable, PVC, 2 m											
	Connector, M8, 3-pin											
<b>Enclosure rating</b>	IP 67 <sup>5)</sup>											
Max. switching frequency	3,000 Hz											
Dimensions	M8 x 1 <sup>6)</sup>											
<b>Short-circuit protection</b>	✓ <sup>7)</sup>											
<b>Reverse polarity protection</b>	✓											
<b>Power-up pulse suppression</b>	✓											
Shock/vibration stress	30 g, 11 ms/10 ... 55 Hz, 1 mm											
Ambient temperature T <sub>a</sub>	-25 °C ... +70 °C											
<b>Housing material</b>	Brass nickel-plated, plastic											
Tightening torque	4 Nm											

<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> according to EN 60529  
<sup>6)</sup> Thread diameter x pitch (mm)

<sup>7)</sup> (pulsed)

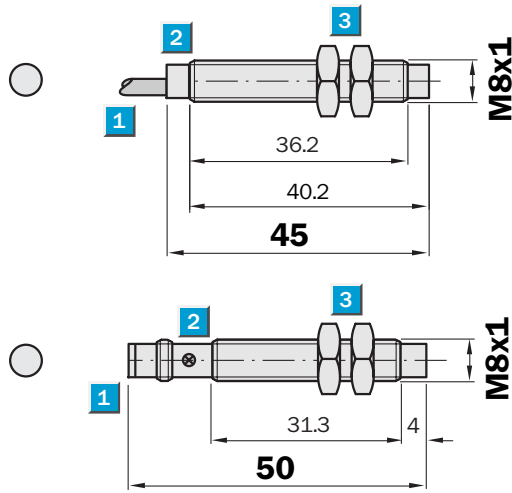
Order information	
Type	Order no.
IM08-02BNS-ZW1	7 900 002
IM08-02BPO-ZW1	7 900 003
IM08-02BPS-ZW1	7 900 001
IM08-02BNO-ZT1	7 900 008
IM08-02BNS-ZT1	7 900 006
IM08-02BPS-ZT1	7 900 005
IM08-02BPO-ZT1	7 900 007

**Sensing range**  
4 mm

Inductive sensor

- Enhanced sensing range
- High switching frequency
- Short-circuit protection (pulsed)
- Robust brass housing, nickel-plated with fine thread M8 x 1 mm
- Enclosure rating IP 67

Dimensional drawing



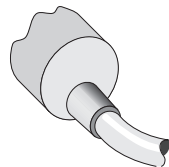
- 1 Connection
- 2 Display LED
- 3 Fastening nuts (2 x); width across 13, metal



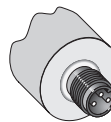
Connection type

- IM08-04NNS-ZW1
- IM08-04NPO-ZW1
- IM08-04NPS-ZW1

- IM08-04NNO-ZT1
- IM08-04NNS-ZT1
- IM08-04NPO-ZT1
- IM08-04NPS-ZT1



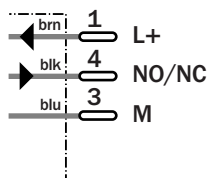
3 x 0.14 mm<sup>2</sup>



M8, 3-pin

See chapter Accessories

Connector, M8, 3-pin



Technical specifications		IM08-	04NNS-ZW1	04NPO-ZW1	04NPS-ZW1	04NN-O-ZT1	04NNS-ZT1	04NPO-ZT1	04NPS-ZT1			
<b>Sensing range S<sub>n</sub></b>	4 mm											
<b>Electrical configuration</b>	DC 3-wire											
<b>Supply voltage V<sub>s</sub></b>	DC 10 ... 30 V											
Ripple U <sub>pp</sub>	≤ 10 % <sup>1)</sup>											
Voltage drop U <sub>d</sub>	≤ 1.2 V <sup>2)</sup>											
Power consumption	≤ 20 mA <sup>3)</sup>											
<b>Continuous current I<sub>a</sub></b>	≤ 200 mA											
Time delay before availability t <sub>v</sub>	≤ 100 ms											
Hysteresis H, of s <sub>r</sub>	2 ... 15 %											
Repeatability R	≤ 5 % (U <sub>b</sub> and T <sub>a</sub> constant) <sup>4)</sup>											
Temperature drift, of s <sub>r</sub>	± 10 %											
EMC	According to EN 60947-5-2											
<b>Switching output</b>	NPN											
	PNP											
<b>Output function</b>	Normally open											
	Normally closed											
<b>Installation</b>	Non-flush											
<b>Connection type</b>	Cable, PVC, 2 m											
	Connector, M8, 3-pin											
<b>Enclosure rating</b>	IP 67 <sup>5)</sup>											
Max. switching frequency	1,800 Hz											
Dimensions	M8 x 1 <sup>6)</sup>											
<b>Short-circuit protection</b>	✓ <sup>7)</sup>											
<b>Reverse polarity protection</b>	✓											
<b>Power-up pulse suppression</b>	✓											
Shock/vibration stress	30 g, 11 ms/10 ... 55 Hz, 1 mm											
Ambient temperature T <sub>a</sub>	-25 °C ... +70 °C											
<b>Housing material</b>	Brass nickel-plated, plastic											
Tightening torque	4 Nm											

<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> according to EN 60529  
<sup>6)</sup> Thread diameter x pitch (mm)

<sup>7)</sup> (pulsed)

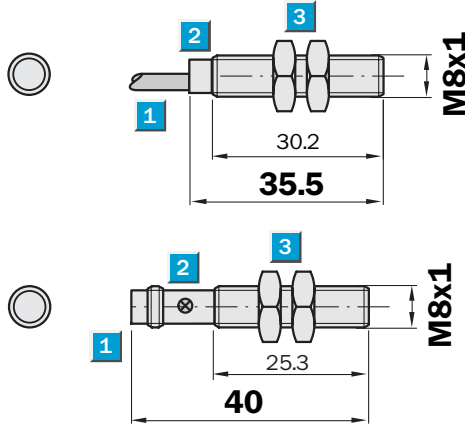
Order information	
Type	Order no.
IM08-04NNS-ZW1	7 900 010
IM08-04NPO-ZW1	7 900 011
IM08-04NPS-ZW1	7 900 009
IM08-04NNO-ZT1	7 900 016
IM08-04NNS-ZT1	7 900 014
IM08-04NPO-ZT1	7 900 015
IM08-04NPS-ZT1	7 900 013

**Sensing range**  
2 mm

Inductive sensor

- Enhanced sensing range
- High switching frequency
- Short-circuit protection (pulsed)
- Robust brass housing, nickel-plated with fine thread M8 x 1 mm
- Enclosure rating IP 67

Dimensional drawing



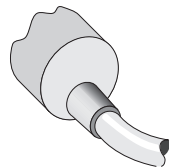
- 1 Connection
- 2 Display LED
- 3 Fastening nuts (2 x); width across 13, metal



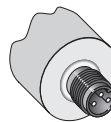
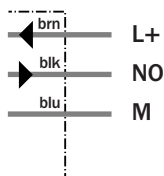
Connection type

- IM08-02BNS-ZWK
- IM08-02BPS-ZWK
- IM08-02BPS-ZUA

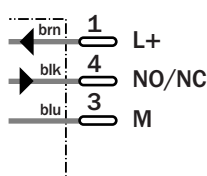
- IM08-02BNS-ZTK
- IM08-02BPO-ZTK
- IM08-02BPS-ZTK
- IM08-02BNO-ZTK



3 x 0.14 mm<sup>2</sup>



M8, 3-pin



See chapter Accessories

Connector, M8, 3-pin

Technical specifications		IM08-	02BNS-ZWK	02BPS-ZWK	02BPS-ZUA	02BNS-ZTK	02BPO-ZTK	02BPS-ZTK	02BNO-ZTK			
<b>Sensing range <math>S_n</math></b>	2 mm											
<b>Electrical configuration</b>	DC 3-wire											
<b>Supply voltage <math>V_s</math></b>	DC 10 ... 30 V											
Ripple $U_{pp}$	$\leq 10\%$ <sup>1)</sup>											
Voltage drop $U_d$	$\leq 1.2\text{ V}$ <sup>2)</sup>											
Power consumption	$\leq 10\text{ mA}$ <sup>3)</sup>											
<b>Continuous current <math>I_a</math></b>	$\leq 200\text{ mA}$											
Time delay before availability $t_v$	$\leq 5\text{ ms}$											
Hysteresis H, of $s_r$	1 ... 20 %											
Repeatability R	$\leq 5\%$ ( $U_b$ and $T_a$ constant) <sup>4)</sup>											
Temperature drift, of $s_r$	$\pm 10\%$											
EMC	According to EN 60947-5-2											
<b>Switching output</b>	NPN											
	PNP											
<b>Output function</b>	Normally open											
	Normally closed											
<b>Installation</b>	Flush											
<b>Connection type</b>	Cable, PVC, 2 m											
	Cable, PUR, 3 m											
	Connector, M8, 3-pin											
<b>Enclosure rating</b>	IP 67 <sup>5)</sup>											
Max. switching frequency	3,000 Hz											
Dimensions	M8 x 1 <sup>6)</sup>											
<b>Short-circuit protection</b>	✓ <sup>7)</sup>											
<b>Reverse polarity protection</b>	✓											
<b>Power-up pulse suppression</b>	✓											
Shock/vibration stress	30 g, 11 ms/10 ... 55 Hz, 1 mm											
Ambient temperature $T_a$	-25 °C ... +70 °C											
<b>Housing material</b>	Brass nickel-plated, plastic											
Tightening torque	4 Nm											

<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> according to EN 60529  
<sup>6)</sup> Thread diameter x pitch (mm)

<sup>7)</sup> (pulsed)

Order information	
Type	Order no.
IM08-02BNS-ZWK	6 025 862
IM08-02BPS-ZWK	6 025 861
IM08-02BPS-ZUA	6 030 237
IM08-02BNS-ZTK	6 025 864
IM08-02BPO-ZTK	6 025 865
IM08-02BPS-ZTK	6 025 863
IM08-02BNO-ZTK	6 025 866

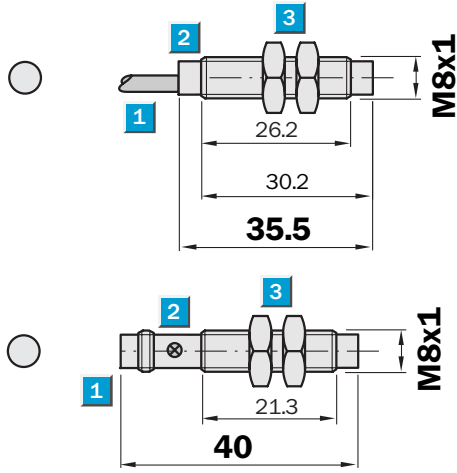


**Sensing range**  
4 mm

Inductive sensor

- Enhanced sensing range
- High switching frequency
- Short-circuit protection (pulsed)
- Robust brass housing, nickel-plated with fine thread M8 x 1 mm
- Enclosure rating IP 67

Dimensional drawing



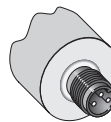
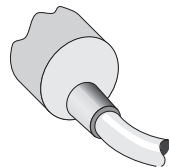
- 1 Connection
- 2 Display LED
- 3 Fastening nuts (2 x); width across 13, metal



Connection type

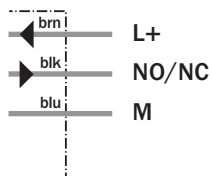
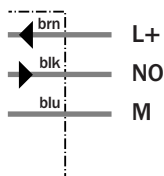
IM08-04NPS-ZWK  
IM08-04NNS-ZWK

IM08-04NPS-ZTK  
IM08-04NNO-ZTK  
IM08-04NNS-ZTK  
IM08-04NPO-ZTK



3 x 0.14 mm<sup>2</sup>

M8, 3-pin



See chapter Accessories

Connector, M8, 3-pin

Technical specifications		IM08-	04NPS-ZWK	04NNS-ZWK	04NPS-ZTK	04NNO-ZTK	04NNS-ZTK	04NPO-ZTK				
<b>Sensing range S<sub>n</sub></b>	4 mm											
<b>Electrical configuration</b>	DC 3-wire											
<b>Supply voltage V<sub>s</sub></b>	DC 10 ... 30 V											
Ripple U <sub>pp</sub>	≤ 10 % <sup>1)</sup>											
Voltage drop U <sub>d</sub>	≤ 1.2 V <sup>2)</sup>											
Power consumption	≤ 10 mA <sup>3)</sup>											
<b>Continuous current I<sub>a</sub></b>	≤ 200 mA											
Time delay before availability t <sub>v</sub>	≤ 5 ms											
Hysteresis H, of s <sub>r</sub>	1 ... 20 %											
Repeatability R	≤ 5 % (U <sub>b</sub> and T <sub>a</sub> constant) <sup>4)</sup>											
Temperature drift, of s <sub>r</sub>	± 10 %											
EMC	According to EN 60947-5-2											
<b>Switching output</b>	PNP											
	NPN											
<b>Output function</b>	Normally open											
	Normally closed											
<b>Installation</b>	Non-flush											
<b>Connection type</b>	Cable, PVC, 2 m											
	Connector, M8, 3-pin											
<b>Enclosure rating</b>	IP 67 <sup>5)</sup>											
Max. switching frequency	2,500 Hz											
Dimensions	M8 x 1 <sup>6)</sup>											
<b>Short-circuit protection</b>	✓ <sup>7)</sup>											
<b>Reverse polarity protection</b>	✓											
<b>Power-up pulse suppression</b>	✓											
Shock/vibration stress	30 g, 11 ms/10 ... 55 Hz, 1 mm											
Ambient temperature T <sub>a</sub>	-25 °C ... +70 °C											
<b>Housing material</b>	Brass nickel-plated, plastic											
Tightening torque	4 Nm											

<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> according to EN 60529  
<sup>6)</sup> Thread diameter x pitch (mm)

<sup>7)</sup> (pulsed)

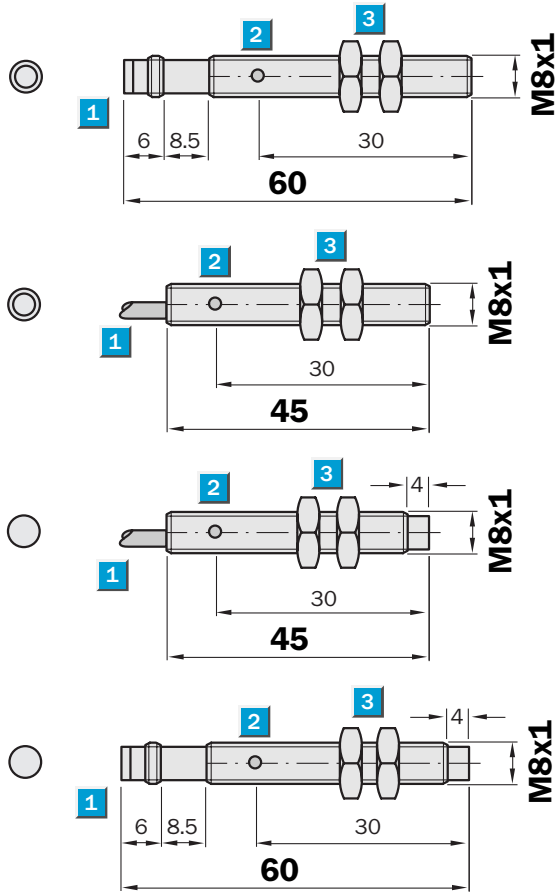
Order information	
Type	Order no.
IM08-04NPS-ZWK	6 025 867
IM08-04NNS-ZWK	6 025 868
IM08-04NPS-ZTK	6 025 869
IM08-04NNO-ZTK	6 025 872
IM08-04NNS-ZTK	6 025 870
IM08-04NPO-ZTK	6 025 871

**Sensing range**  
3 / 6 mm

Inductive sensor

- Triple sensing range
- Installation quasi flush or non-flush in metal
- Short-circuit protection (pulsed)
- Robust brass housing, chrome-plated with fine thread M8 x 1 mm
- Enclosure rating IP 67

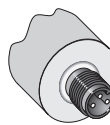
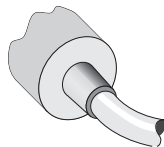
Dimensional drawing



Connection type

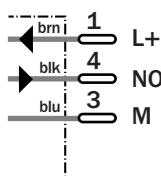
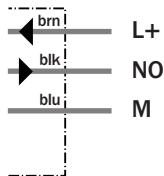
IM08-03BPS-ZW1  
IM08-06NNS-ZW1  
IM08-06NPS-ZW1

IM08-03BPS-ZT1  
IM08-06NPS-ZT1



3 x 0.14 mm<sup>2</sup>

M8, 3-pin



See chapter Accessories

Connector, M8, 3-pin

Technical specifications		IM08-	03BPS-ZW1	03BPS-ZT1	06NNS-ZW1	06NPS-ZW1	06NPS-ZT1						
<b>Sensing range S<sub>n</sub></b>	3 mm												
	6 mm												
<b>Electrical configuration</b>	DC 3-wire												
<b>Supply voltage V<sub>s</sub></b>	DC 10 ... 30 V												
Ripple U <sub>pp</sub>	≤ 20 % <sup>1)</sup>												
Voltage drop U <sub>d</sub>	≤ 2 V <sup>2)</sup>												
Power consumption	≤ 10 mA <sup>3)</sup>												
<b>Continuous current I<sub>a</sub></b>	≤ 200 mA												
Time delay before availability t <sub>v</sub>	≤ 100 ms												
Hysteresis H, of s <sub>r</sub>	1 ... 15 %												
Repeatability R	≤ 5 % (U <sub>b</sub> and T <sub>a</sub> constant) <sup>4)</sup>												
Temperature drift, of s <sub>r</sub>	± 10 %												
EMC	According to EN 60947-5-2												
<b>Switching output</b>	PNP												
	NPN												
<b>Output function</b>	Normally open <sup>5)</sup>												
<b>Installation</b>	Quasi-flush <sup>6)</sup>												
	Non-flush												
<b>Connection type</b>	Cable, PVC, 2 m												
	Connector, M8, 3-pin												
<b>Enclosure rating</b>	IP 67 <sup>7)</sup>												
Max. switching frequency	1,000 Hz												
	500 Hz												
Dimensions	M8 x 1 <sup>8)</sup>												
<b>Short-circuit protection</b>	✓ <sup>9)</sup>												
<b>Reverse polarity protection</b>	✓												
<b>Power-up pulse suppression</b>	✓												
Shock/vibration stress	30 g, 11 ms/10 ... 55 Hz, 1 mm												
Ambient temperature T <sub>a</sub>	-25 °C ... +70 °C												
<b>Housing material</b>	Brass, chrome-plated, plastic												
Tightening torque	4 Nm												

<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> other output functions available on request.

<sup>6)</sup> when mounting in conductible materials the sensors must be installed with a distance A to the surface. A Steel, metal =

1 mm/A Stainless steel = 0 mm  
<sup>7)</sup> according to EN 60529  
<sup>8)</sup> Thread diameter x pitch (mm)  
<sup>9)</sup> (pulsed)

Order information	
Type	Order no.
IM08-03BPS-ZW1	6 027 505
IM08-03BPS-ZT1	6 025 574
IM08-06NNS-ZW1	6 027 507
IM08-06NPS-ZW1	6 027 506
IM08-06NPS-ZT1	6 027 508

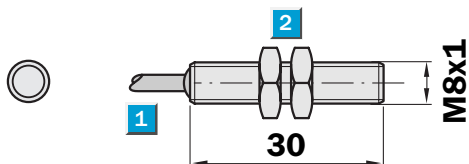
# Inductive sensor, IM08, NAMUR, Flush

**Sensing range**  
**1 mm**

Inductive sensor

- NAMUR to EN 60 947-5-6
  - High switching frequency
  - Robust brass housing, nickel-plated, with fine thread M8 x 1 mm
  - Enclosure rating IP 67
  - Classification PTB 03 ATEX 2037
- ⊕ II 2G EEx ia IIC T6

## Dimensional drawing

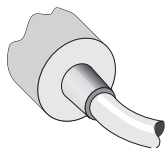


- 1 Connection
- 2 Fastening nuts (2 x); width across 13, metal

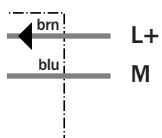


## Connection type

IM08-01B-N-ZW0



2 x 0.14 mm<sup>2</sup>



See chapter Accessories

Switching units

Technical specifications		IM08-	01B-N-ZW0											
<b>Sensing range <math>S_n</math></b>	1 mm													
<b>Electrical configuration</b>	NAMUR													
<b>Supply voltage <math>V_s</math></b>	DC 5 ... 25 V													
Nominal voltage $V_n$	DC 8.2 V													
Power consumption, attenuated	≤ 1 mA													
Power consumption, unattenuated	≥ 2.2 mA													
Internal capacitance	≤ 80 nF													
Internal inductance	≤ 110 μH													
Cable resistance	≤ 50 Ohm													
Temperature drift, of $s_r$	± 10 %													
EMC	According to EN 60 947-5-6													
<b>Switching output</b>	Control current dependent on switching state <sup>1)</sup>													
<b>Output function</b>	NAMUR													
<b>Installation</b>	Flush													
<b>Connection type</b>	Cable, PVC, 2 m													
<b>Enclosure rating</b>	IP 67 <sup>2)</sup>													
Max. switching frequency	2,000 Hz													
Dimensions	M8 x 1 <sup>3)</sup>													
Shock/vibration stress	30 g, 11 ms/10 ... 55 Hz, 1 mm													
Ambient temperature $T_a$	-25 °C ... +70 °C													
<b>Housing material</b>	Brass nickel-plated, plastic													
Tightening torque	2.5 Nm													

<sup>1)</sup> according to EN 60947-5-6      <sup>2)</sup> according to EN 60529      <sup>3)</sup> Thread diameter x pitch (mm)

**Max. data for connecting Isolating unit EN 2 EX**

or other approved isolating amplifier:

<b>Short circuit current <math>I_{kmax}</math></b>	50 mA
<b>No load voltage <math>U_0</math></b>	16 V
<b>Power loss <math>P_{max}</math></b>	75 mW

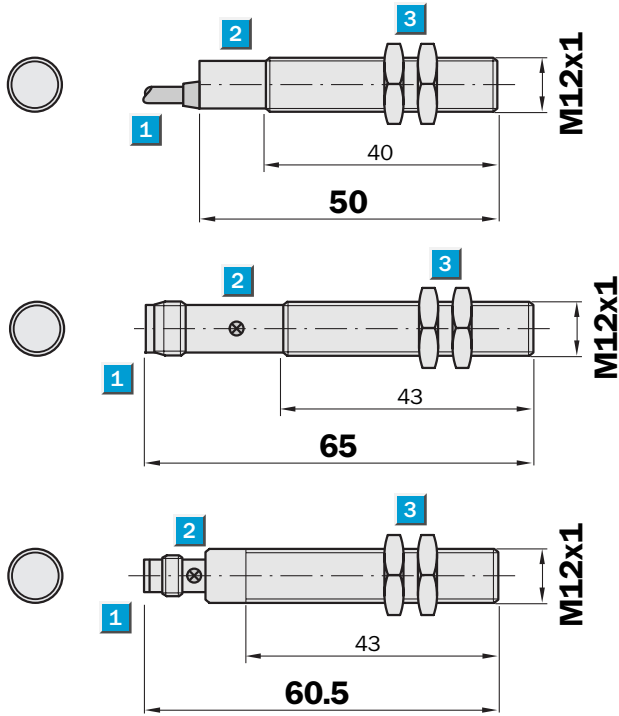
Order information	
<b>Type</b>	<b>Order no.</b>
IM08-01B-N-ZW0	6 021 123

**Sensing range**  
2 mm

Inductive sensor

- Short-circuit protection (pulsed)
- High switching frequency
- Robust brass housing, nickel-plated with fine thread M12 x 1 mm
- Enclosure rating IP 67

Dimensional drawing

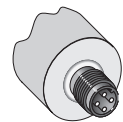
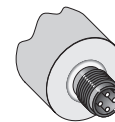
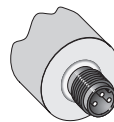
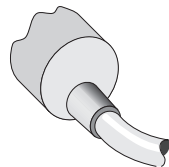


- 1 Connection
- 2 Display LED
- 3 Fastening nuts (2 x); width across 17, metal



Connection type

IM12-02BNO-ZW1	IM12-02BPS-ZT1	IM12-02BNS-ZC1	IM12-02BNO-ZC1
IM12-02BNS-ZW1	IM12-02BNS-ZT1	IM12-02BPS-ZC1	IM12-02BPO-ZC1
IM12-02BPO-ZW1			
IM12-02BPS-ZW1			

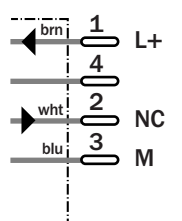
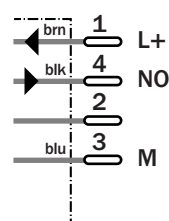
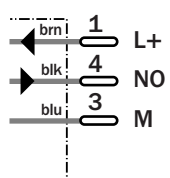
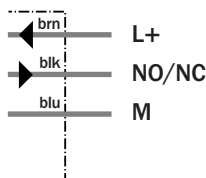


3 x 0.22 mm<sup>2</sup>

M8, 3-pin

M12, 4-pin

M12, 4-pin



See chapter Accessories

Connector, M12, 4-pin

Connector, M8, 3-pin

Mounting systems

Technical specifications		IM12-	02BNO-ZW1	02BNS-ZW1	02BPO-ZW1	02BPS-ZW1	02BNS-ZC1	02BNO-ZC1	02BPO-ZC1	02BPS-ZC1	02BNS-ZT1	02BNS-ZT1
<b>Sensing range S<sub>n</sub></b>	2 mm											
<b>Electrical configuration</b>	DC 3-wire											
<b>Supply voltage V<sub>s</sub></b>	DC 10 ... 30 V											
Ripple U <sub>pp</sub>	≤ 10 % <sup>1)</sup>											
Voltage drop U <sub>d</sub>	≤ 1.2 V <sup>2)</sup>											
Power consumption	≤ 20 mA <sup>3)</sup>											
<b>Continuous current I<sub>a</sub></b>	≤ 200 mA											
Time delay before availability t <sub>v</sub>	≤ 100 ms											
Hysteresis H, of s <sub>r</sub>	2 ... 10 %											
Repeatability R	≤ 2 % (U <sub>b</sub> and T <sub>a</sub> constant) <sup>4)</sup>											
Temperature drift, of s <sub>r</sub>	± 10 %											
EMC	According to EN 60947-5-2											
<b>Switching output</b>	NPN											
	PNP											
<b>Output function</b>	Normally closed											
	Normally open											
<b>Installation</b>	Flush											
<b>Connection type</b>	Cable, PVC, 2 m											
	Connector, M12, 4-pin											
	Connector, M8, 3-pin											
<b>Enclosure rating</b>	IP 67 <sup>5)</sup>											
Max. switching frequency	2,000 Hz											
Dimensions	M12 x 1 <sup>6)</sup>											
<b>Short-circuit protection</b>	✓ <sup>7)</sup>											
<b>Reverse polarity protection</b>	✓											
<b>Power-up pulse suppression</b>	✓											
Shock/vibration stress	30 g, 11 ms/10 ... 55 Hz, 1 mm											
Ambient temperature T <sub>a</sub>	-25 °C ... +70 °C											
<b>Housing material</b>	Brass nickel-plated, plastic											
Tightening torque	10 Nm											

<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> according to EN 60529  
<sup>6)</sup> Thread diameter x pitch (mm)

<sup>7)</sup> (pulsed)

Order information	
Type	Order no.
IM12-02BNO-ZW1	6 011 966
IM12-02BNS-ZW1	6 011 964
IM12-02BPO-ZW1	6 011 965
IM12-02BPS-ZW1	6 011 963
IM12-02BNS-ZC1	6 011 972
IM12-02BNO-ZC1	6 011 974
IM12-02BPO-ZC1	6 011 973
IM12-02BPS-ZC1	6 011 971
IM12-02BPS-ZT1	6 011 967
IM12-02BNS-ZT1	6 011 968

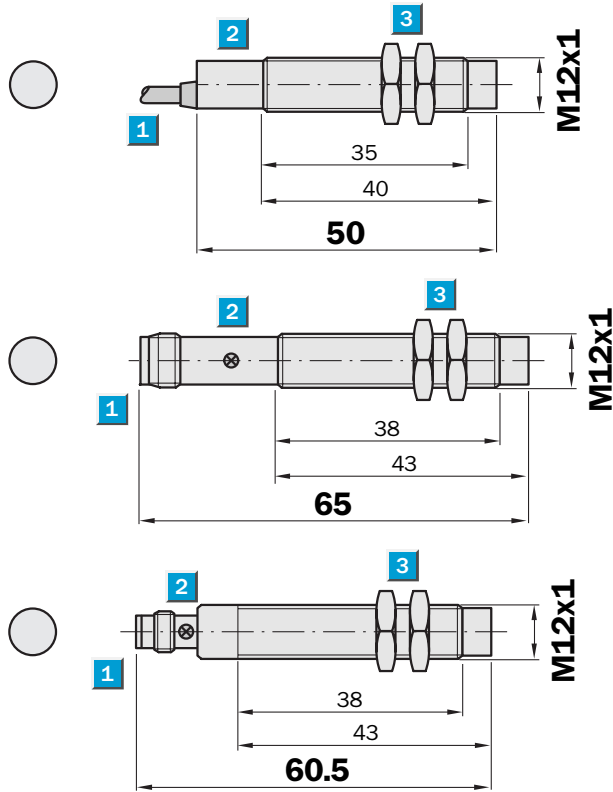


**Sensing range**  
4 mm

Inductive sensor

- Short-circuit protection (pulsed)
- High switching frequency
- Robust brass housing, nickel-plated with fine thread M12 x 1 mm
- Enclosure rating IP 67

Dimensional drawing

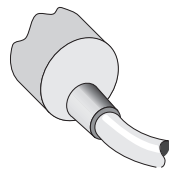


- 1 Connection
- 2 Display LED
- 3 Fastening nuts (2 x); width across 17, metal

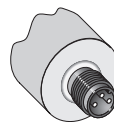
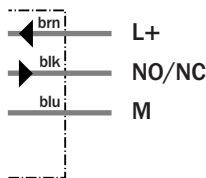


Connection type

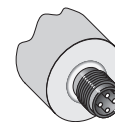
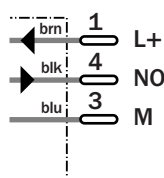
IM12-04NNS-ZW1	IM12-04NPS-ZT1	IM12-04NNS-ZC1	IM12-04NPO-ZC1
IM12-04NPS-ZW1	IM12-04NNS-ZT1	IM12-04NPS-ZC1	
IM12-04NPO-ZW1			



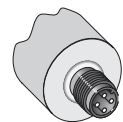
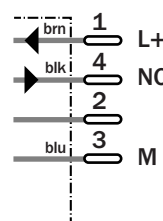
3 x 0.22 mm<sup>2</sup>



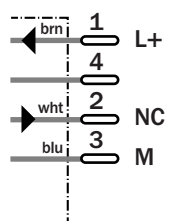
M8, 3-pin



M12, 4-pin



M12, 4-pin



See chapter Accessories

- Connector, M12, 4-pin
- Connector, M8, 3-pin
- Mounting systems

Technical specifications		IM12-	04NNS-ZW1	04NPS-ZW1	04NPO-ZW1	04NNS-ZC1	04NPO-ZC1	04NPS-ZC1	04NPS-ZT1	04NNS-ZT1		
<b>Sensing range S<sub>n</sub></b>	4 mm											
<b>Electrical configuration</b>	DC 3-wire											
<b>Supply voltage V<sub>s</sub></b>	DC 10 ... 30 V											
Ripple U <sub>pp</sub>	≤ 10 % <sup>1)</sup>											
Voltage drop U <sub>d</sub>	≤ 1.2 V <sup>2)</sup>											
Power consumption	≤ 20 mA <sup>3)</sup>											
<b>Continuous current I<sub>a</sub></b>	≤ 200 mA											
Time delay before availability t <sub>v</sub>	≤ 100 ms											
Hysteresis H, of s <sub>r</sub>	2 ... 10 %											
Repeatability R	≤ 2 % (U <sub>b</sub> and T <sub>a</sub> constant) <sup>4)</sup>											
Temperature drift, of s <sub>r</sub>	± 10 %											
EMC	According to EN 60947-5-2											
<b>Switching output</b>	NPN											
	PNP											
<b>Output function</b>	Normally open											
	Normally closed											
<b>Installation</b>	Non-flush											
<b>Connection type</b>	Cable, PVC, 2 m											
	Connector, M12, 4-pin											
	Connector, M8, 3-pin											
<b>Enclosure rating</b>	IP 67 <sup>5)</sup>											
Max. switching frequency	2,000 Hz											
Dimensions	M12 x 1 <sup>6)</sup>											
<b>Short-circuit protection</b>	✓ <sup>7)</sup>											
<b>Reverse polarity protection</b>	✓											
<b>Power-up pulse suppression</b>	✓											
Shock/vibration stress	30 g, 11 ms/10 ... 55 Hz, 1 mm											
Ambient temperature T <sub>a</sub>	-25 °C ... +70 °C											
<b>Housing material</b>	Brass nickel-plated, plastic											
Tightening torque	10 Nm											

<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> according to EN 60529  
<sup>6)</sup> Thread diameter x pitch (mm)

<sup>7)</sup> (pulsed)

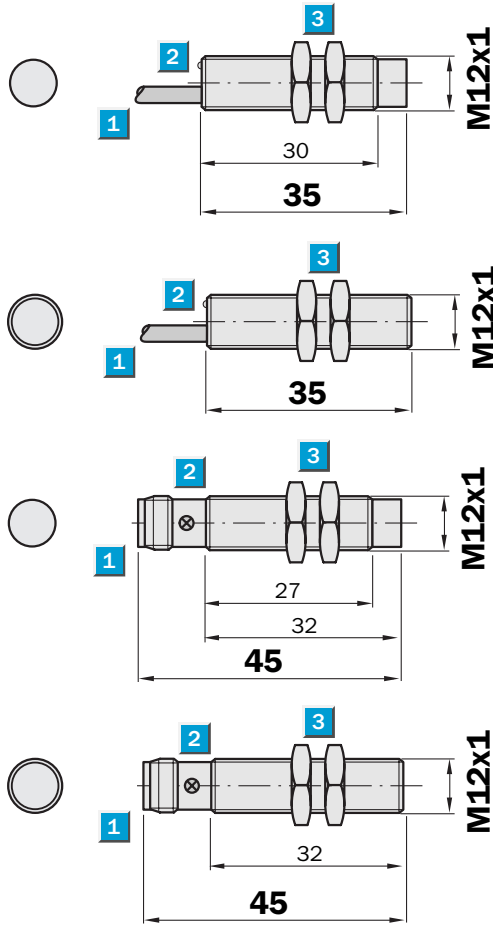
Order information	
Type	Order no.
IM12-04NNS-ZW1	6 011 976
IM12-04NPS-ZW1	6 011 975
IM12-04NPO-ZW1	6 011 977
IM12-04NNS-ZC1	6 011 984
IM12-04NPO-ZC1	6 011 985
IM12-04NPS-ZC1	6 011 983
IM12-04NPS-ZT1	6 011 979
IM12-04NNS-ZT1	6 011 980

**Sensing range**  
2 / 4 mm

Inductive sensor

- High switching frequency
- Short-circuit protection (pulsed)
- Robust brass housing, nickel-plated with fine thread M12 x 1 mm
- Enclosure rating IP 67

### Dimensional drawing

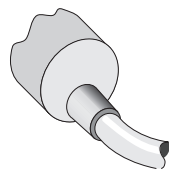


- 1 Connection
- 2 Display LED
- 3 Fastening nuts (2 x); width across 17, metal

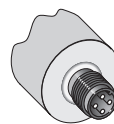
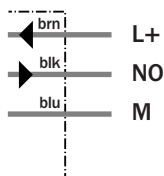


### Connection type

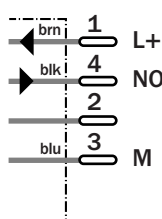
IM12-02BNS-ZUK	IM12-02BPS-ZCK
IM12-02BPS-ZUK	IM12-02BNS-ZCK
IM12-04NNS-ZUK	IM12-04NPS-ZCK
IM12-04NPS-ZUK	IM12-04NNS-ZCK



3 x 0.25 mm<sup>2</sup>



M12, 4-pin



**See chapter Accessories**  
 Connector, M12, 4-pin  
 Mounting systems

Technical specifications		IM12-	02BNS-ZUK	02BPS-ZUK	02BPS-ZCK	02BNS-ZCK	04NNS-ZUK	04NPS-ZUK	04NPS-ZCK	04NNS-ZCK		
<b>Sensing range S<sub>n</sub></b>	2 mm											
	4 mm											
<b>Electrical configuration</b>	DC 3-wire											
<b>Supply voltage V<sub>s</sub></b>	DC 10 ... 30 V											
Ripple U <sub>pp</sub>	≤ 10 % <sup>1)</sup>											
Voltage drop U <sub>d</sub>	≤ 1.5 V <sup>2)</sup>											
Power consumption	≤ 10 mA <sup>3)</sup>											
<b>Continuous current I<sub>a</sub></b>	≤ 300 mA											
Time delay before availability t <sub>v</sub>	≤ 2 ms											
Hysteresis H, of s <sub>r</sub>	1 ... 10 %											
Repeatability R	≤ 1 % (U <sub>b</sub> and T <sub>a</sub> constant) <sup>4)</sup>											
Temperature drift, of s <sub>r</sub>	± 10 %											
EMC	According to EN 60947-5-2											
<b>Switching output</b>	NPN											
	PNP											
<b>Output function</b>	Normally open											
<b>Installation</b>	Flush											
	Non-flush											
<b>Connection type</b>	Cable, PUR-PVC, 2 m											
	Connector, M12, 4-pin											
<b>Enclosure rating</b>	IP 67 <sup>5)</sup>											
Max. switching frequency	2,000 Hz											
Dimensions	M12 x 1 <sup>6)</sup>											
<b>Wire-break protection</b>	✓											
<b>Short-circuit protection</b>	✓ <sup>7)</sup>											
<b>Reverse polarity protection</b>	✓											
<b>Power-up pulse suppression</b>	✓											
Shock/vibration stress	30 g, 11 ms/10 ... 55 Hz, 1 mm											
Ambient temperature T <sub>a</sub>	-25 °C ... +75 °C											
<b>Housing material</b>	Brass nickel-plated, plastic											
Tightening torque	7 Nm											

<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> according to EN 60529  
<sup>6)</sup> Thread diameter x pitch (mm)

<sup>7)</sup> (pulsed)

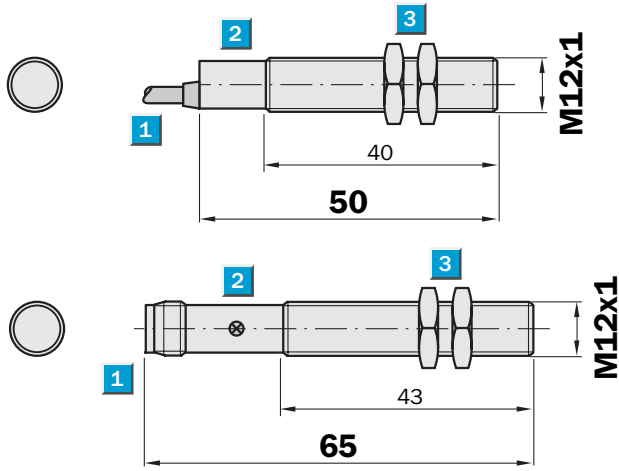
Order information	
Type	Order no.
IM12-02BNS-ZUK	1 017 438
IM12-02BPS-ZUK	1 017 426
IM12-02BPS-ZCK	1 017 428
IM12-02BNS-ZCK	1 017 440
IM12-04NNS-ZUK	1 017 439
IM12-04NPS-ZUK	1 017 427
IM12-04NPS-ZCK	1 017 429
IM12-04NNS-ZCK	1 017 441

**Sensing range**  
4 mm

Inductive sensor

- Enhanced sensing range
- High switching frequency
- Short-circuit protection (pulsed)
- Robust brass housing, nickel-plated with fine thread M12 x 1 mm
- Enclosure rating IP 67

Dimensional drawing

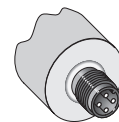
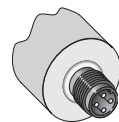
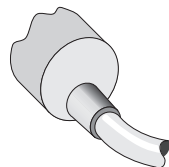


- 1 Connection
- 2 Display LED
- 3 Fastening nuts (2 x); width across 17, metal



Connection type

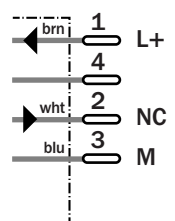
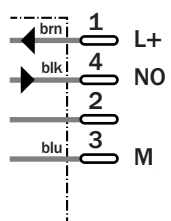
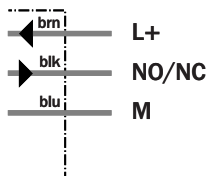
IM12-04BNS-ZW1	IM12-04BNS-ZC1	IM12-04BPO-ZC1
IM12-04BPO-ZW1	IM12-04BPS-ZC1	
IM12-04BPS-ZW1		



3 x 0.22 mm<sup>2</sup>

M12, 4-pin

M12, 4-pin



See chapter Accessories  
Connector, M12, 4-pin  
Mounting systems

Technical specifications		IM12-	04BNS -ZW1	04BPO -ZW1	04BPS -ZW1	04BNS -ZC1	04BPO -ZC1	04BPS -ZC1				
<b>Sensing range <math>S_n</math></b>	4 mm											
<b>Electrical configuration</b>	DC 3-wire											
<b>Supply voltage <math>V_s</math></b>	DC 10 ... 30 V											
Ripple $U_{pp}$	$\leq 10\%$ <sup>1)</sup>											
Voltage drop $U_d$	$\leq 1.2 V$ <sup>2)</sup>											
Power consumption	$\leq 10 mA$ <sup>3)</sup>											
<b>Continuous current <math>I_a</math></b>	$\leq 200 mA$											
Time delay before availability $t_v$	$\leq 100 ms$											
Hysteresis H, of $s_r$	1 ... 15 %											
Repeatability R	$\leq 5\%$ ( $U_b$ and $T_a$ constant) <sup>4)</sup>											
Temperature drift, of $s_r$	$\pm 10\%$											
EMC	According to EN 60947-5-2											
<b>Switching output</b>	NPN											
	PNP											
<b>Output function</b>	Normally open											
	Normally closed											
<b>Installation</b>	Flush <sup>5)</sup>											
<b>Connection type</b>	Cable, PVC, 2 m											
	Connector, M12, 4-pin											
<b>Enclosure rating</b>	IP 67 <sup>6)</sup>											
Max. switching frequency	1,000 Hz											
Dimensions	M12 x 1 <sup>7)</sup>											
<b>Short-circuit protection</b>	✓ <sup>8)</sup>											
<b>Reverse polarity protection</b>	✓											
<b>Power-up pulse suppression</b>	✓											
Shock/vibration stress	30 g, 11 ms/10 ... 55 Hz, 1 mm											
Ambient temperature $T_a$	-25 °C ... +70 °C											
<b>Housing material</b>	Brass nickel-plated, plastic											
Tightening torque	10 Nm											

<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> see installation notes  
<sup>6)</sup> according to EN 60529

<sup>7)</sup> Thread diameter x pitch (mm)  
<sup>8)</sup> (pulsed)

#### Order information

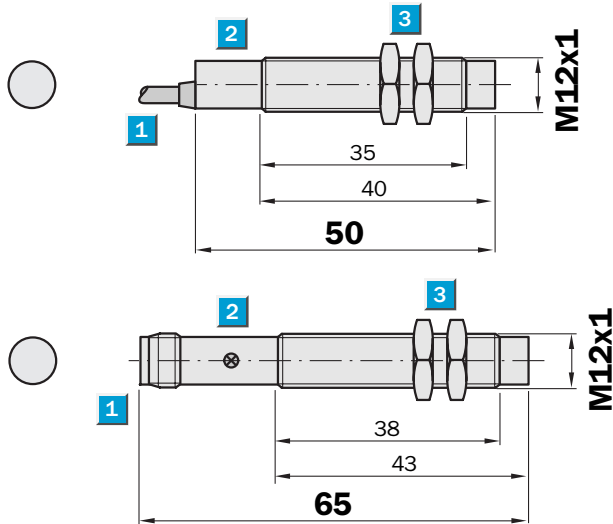
Type	Order no.
IM12-04BNS-ZW1	7 900 034
IM12-04BPO-ZW1	7 900 035
IM12-04BPS-ZW1	7 900 033
IM12-04BNS-ZC1	7 900 038
IM12-04BPO-ZC1	7 900 039
IM12-04BPS-ZC1	7 900 037

**Sensing range**  
8 mm

Inductive sensor

- Enhanced sensing range
- High switching frequency
- Short-circuit protection (pulsed)
- Robust brass housing, nickel-plated with fine thread M12 x 1 mm
- Enclosure rating IP 67

Dimensional drawing

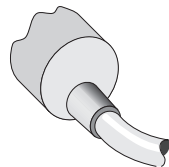


- 1 Connection
- 2 Display LED
- 3 Fastening nuts (2 x); width across 17, metal

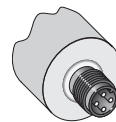
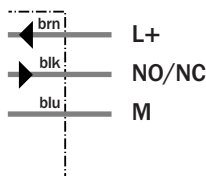


Connection type

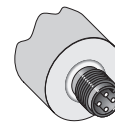
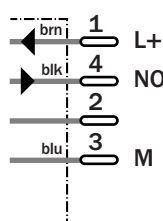
IM12-08NNO-ZW1	IM12-08NNS-ZC1	IM12-08NPO-ZC1
IM12-08NNS-ZW1	IM12-08NPS-ZC1	
IM12-08NPO-ZW1		
IM12-08NPS-ZW1		



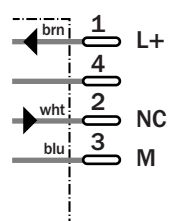
3 x 0.22 mm<sup>2</sup>



M12, 4-pin



M12, 4-pin



See chapter Accessories

Connector, M12, 4-pin  
Mounting systems

Technical specifications		IM12-	08NN O-ZW1	08NNS -ZW1	08NPO -ZW1	08NPS -ZW1	08NNS -ZC1	08NPO -ZC1	08NPS -ZC1			
<b>Sensing range S<sub>n</sub></b>	8 mm											
<b>Electrical configuration</b>	DC 3-wire											
<b>Supply voltage V<sub>s</sub></b>	DC 10 ... 30 V											
Ripple U <sub>pp</sub>	≤ 10 % <sup>1)</sup>											
Voltage drop U <sub>d</sub>	≤ 1.2 V <sup>2)</sup>											
Power consumption	≤ 10 mA <sup>3)</sup>											
<b>Continuous current I<sub>a</sub></b>	≤ 200 mA											
Time delay before availability t <sub>v</sub>	≤ 100 ms											
Hysteresis H, of s <sub>r</sub>	1 ... 15 %											
Repeatability R	≤ 5 % (U <sub>b</sub> and T <sub>a</sub> constant) <sup>4)</sup>											
Temperature drift, of s <sub>r</sub>	± 10 %											
EMC	According to EN 60947-5-2											
<b>Switching output</b>	NPN											
	PNP											
<b>Output function</b>	Normally closed											
	Normally open											
<b>Installation</b>	Non-flush											
<b>Connection type</b>	Cable, PVC, 2 m											
	Connector, M12, 4-pin											
<b>Enclosure rating</b>	IP 67 <sup>5)</sup>											
Max. switching frequency	1,000 Hz											
Dimensions	M12 x 1 <sup>6)</sup>											
<b>Short-circuit protection</b>	✓ <sup>7)</sup>											
<b>Reverse polarity protection</b>	✓											
<b>Power-up pulse suppression</b>	✓											
Shock/vibration stress	30 g, 11 ms/10 ... 55 Hz, 1 mm											
Ambient temperature T <sub>a</sub>	-25 °C ... +70 °C											
<b>Housing material</b>	Brass nickel-plated, plastic											
Tightening torque	10 Nm											

<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> according to EN 60529  
<sup>6)</sup> Thread diameter x pitch (mm)

<sup>7)</sup> (pulsed)

Order information	
Type	Order no.
IM12-08NNO-ZW1	7 900 044
IM12-08NNS-ZW1	7 900 042
IM12-08NPO-ZW1	7 900 043
IM12-08NPS-ZW1	7 900 041
IM12-08NNS-ZC1	7 900 046
IM12-08NPO-ZC1	7 900 047
IM12-08NPS-ZC1	7 900 045

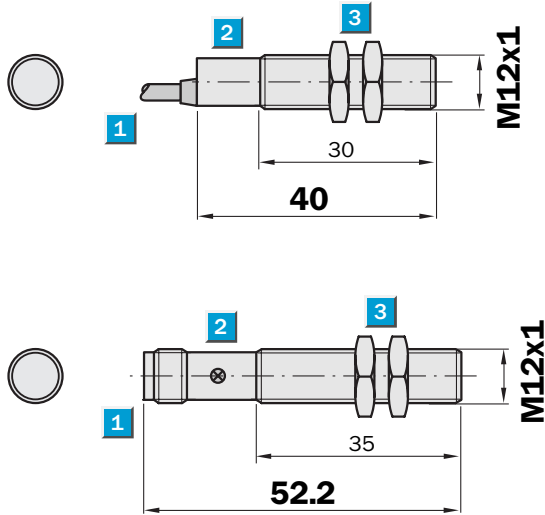


**Sensing range**  
4 mm

Inductive sensor

- Enhanced sensing range
- High switching frequency
- Short-circuit protection (pulsed)
- Robust brass housing, nickel-plated with fine thread M12 x 1 mm
- Enclosure rating IP 67

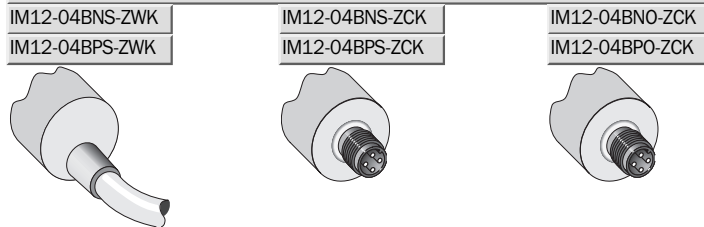
Dimensional drawing



- 1 Connection
- 2 Display LED
- 3 Fastening nuts (2 x); width across 17, metal

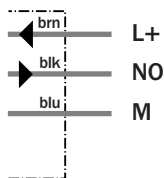


Connection type

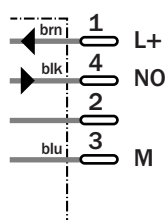


**See chapter Accessories**  
Connector, M12, 4-pin  
Mounting systems

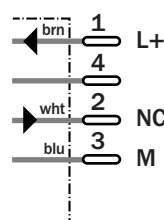
3 x 0.22 mm<sup>2</sup>



M12, 4-pin



M12, 4-pin



Technical specifications		IM12-	04BNS-ZWK	04BPS-ZWK	04BNO-ZCK	04BNS-ZCK	04BPO-ZCK	04BPS-ZCK				
<b>Sensing range <math>S_n</math></b>	4 mm											
<b>Electrical configuration</b>	DC 3-wire											
<b>Supply voltage <math>V_s</math></b>	DC 10 ... 30 V											
Ripple $U_{pp}$	$\leq 10\%$ <sup>1)</sup>											
Voltage drop $U_d$	$\leq 1.5\text{ V}$ <sup>2)</sup>											
Power consumption	$\leq 10\text{ mA}$ <sup>3)</sup>											
<b>Continuous current <math>I_a</math></b>	$\leq 300\text{ mA}$											
Time delay before availability $t_v$	$\leq 100\text{ ms}$											
Hysteresis H, of $s_r$	1 ... 15 %											
Repeatability R	$\leq 5\%$ ( $U_b$ and $T_a$ constant) <sup>4)</sup>											
Temperature drift, of $s_r$	$\pm 10\%$											
EMC	According to EN 60947-5-2											
<b>Switching output</b>	NPN											
	PNP											
<b>Output function</b>	Normally open											
	Normally closed											
<b>Installation</b>	Flush <sup>5)</sup>											
<b>Connection type</b>	Cable, PVC, 2 m											
	Connector, M12, 4-pin											
<b>Enclosure rating</b>	IP 67 <sup>6)</sup>											
Max. switching frequency	2,000 Hz											
Dimensions	M12 x 1 <sup>7)</sup>											
<b>Wire-break protection</b>	✓											
<b>Short-circuit protection</b>	✓ <sup>8)</sup>											
<b>Reverse polarity protection</b>	✓											
<b>Power-up pulse suppression</b>	✓											
Shock/vibration stress	30 g, 11 ms/10 ... 55 Hz, 1 mm											
Ambient temperature $T_a$	-25 °C ... +75 °C											
<b>Housing material</b>	Brass nickel-plated, plastic											
Tightening torque	7 Nm											

<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> see installation notes  
<sup>6)</sup> according to EN 60529  
<sup>7)</sup> Thread diameter x pitch (mm)  
<sup>8)</sup> (pulsed)

## Order information

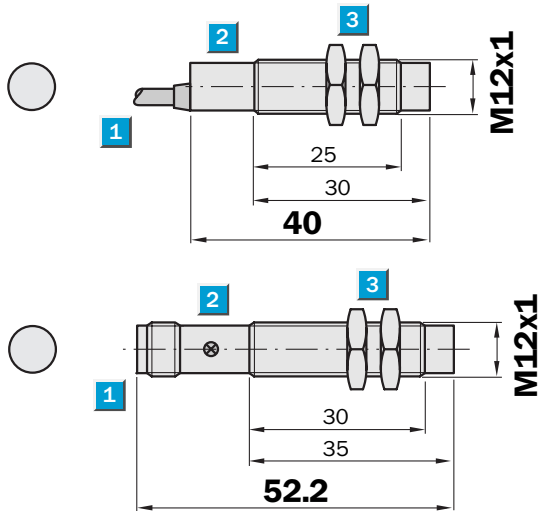
Type	Order no.
IM12-04BNS-ZWK	6 025 683
IM12-04BPS-ZWK	6 025 682
IM12-04BNO-ZCK	6 025 859
IM12-04BNS-ZCK	6 025 681
IM12-04BPO-ZCK	6 025 680
IM12-04BPS-ZCK	6 025 679

**Sensing range**  
8 mm

Inductive sensor

- Enhanced sensing range
- High switching frequency
- Short-circuit protection (pulsed)
- Robust brass housing, nickel-plated with fine thread M12 x 1 mm
- Enclosure rating IP 67

Dimensional drawing

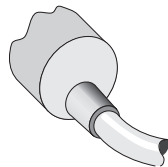


- 1 Connection
- 2 Display LED
- 3 Fastening nuts (2 x); width across 17, metal

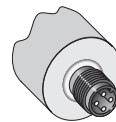
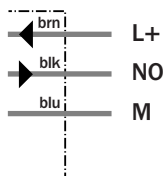


Connection type

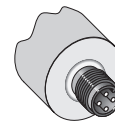
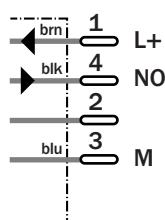
IM12-08NNS-ZWK	IM12-08NNS-ZCK	IM12-08NNO-ZCK
IM12-08NPS-ZWK	IM12-08NPS-ZCK	IM12-08NPO-ZCK



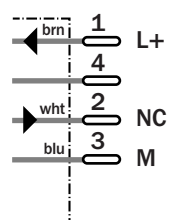
3 x 0.22 mm<sup>2</sup>



M12, 4-pin



M12, 4-pin



See chapter Accessories

Connector, M12, 4-pin

Mounting systems

Technical specifications		IM12-	08NNS-ZWK	08NPS-ZWK	08NNS-ZCK	08NNO-ZCK	08NPO-ZCK	08NPS-ZCK				
<b>Sensing range S<sub>n</sub></b>	8 mm											
<b>Electrical configuration</b>	DC 3-wire											
<b>Supply voltage V<sub>s</sub></b>	DC 10 ... 30 V											
Ripple U <sub>pp</sub>	≤ 10 % <sup>1)</sup>											
Voltage drop U <sub>d</sub>	≤ 1.5 V <sup>2)</sup>											
Power consumption	≤ 10 mA <sup>3)</sup>											
<b>Continuous current I<sub>a</sub></b>	≤ 300 mA											
Time delay before availability t <sub>v</sub>	≤ 100 ms											
Hysteresis H, of s <sub>r</sub>	1 ... 15 %											
Repeatability R	≤ 5 % (U <sub>b</sub> and T <sub>a</sub> constant) <sup>4)</sup>											
Temperature drift, of s <sub>r</sub>	± 10 %											
EMC	According to EN 60947-5-2											
<b>Switching output</b>	NPN											
	PNP											
<b>Output function</b>	Normally open											
	Normally closed											
<b>Installation</b>	Non-flush											
<b>Connection type</b>	Cable, PVC, 2 m											
	Connector, M12, 4-pin											
<b>Enclosure rating</b>	IP 67 <sup>5)</sup>											
Max. switching frequency	2,000 Hz											
Dimensions	M12 x 1 <sup>6)</sup>											
<b>Wire-break protection</b>	✓											
<b>Short-circuit protection</b>	✓ <sup>7)</sup>											
<b>Reverse polarity protection</b>	✓											
<b>Power-up pulse suppression</b>	✓											
Shock/vibration stress	30 g, 11 ms/10 ... 55 Hz, 1 mm											
Ambient temperature T <sub>a</sub>	-25 °C ... +75 °C											
<b>Housing material</b>	Brass nickel-plated, plastic											
Tightening torque	7 Nm											

<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> according to EN 60529  
<sup>6)</sup> Thread diameter x pitch (mm)

<sup>7)</sup> (pulsed)

Order information	
Type	Order no.
IM12-08NNS-ZWK	6 025 685
IM12-08NPS-ZWK	6 025 684
IM12-08NNS-ZCK	6 025 687
IM12-08NNO-ZCK	6 025 860
IM12-08NPO-ZCK	6 025 688
IM12-08NPS-ZCK	6 025 686

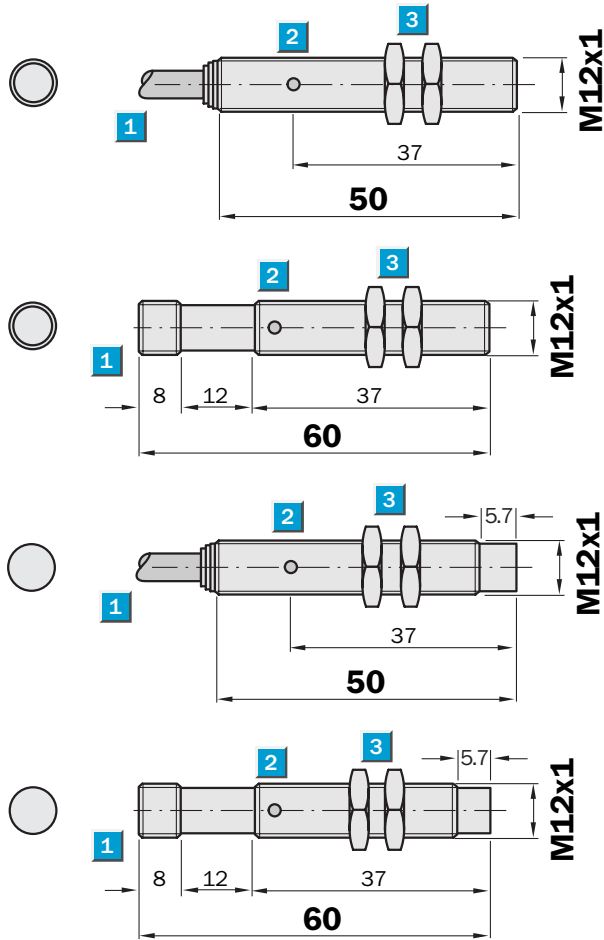
**Sensing range**  
6 / 10 mm

Inductive sensor

- Triple sensing range
- Installation quasi flush or non-flush in metal
- High switching frequency
- Short-circuit protection (pulsed)
- Robust brass housing, chrome-plated with fine thread M12 x 1 mm
- Enclosure rating IP 67



Dimensional drawing

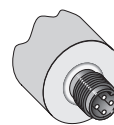
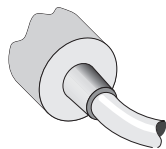


- 1 Connection
- 2 Display LED
- 3 Fastening nuts (2 x); width across 17, metal



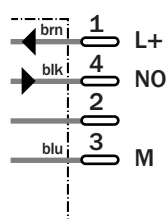
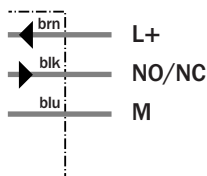
Connection type

IM12-06BPO-ZW1	IM12-06BNS-ZC1
IM12-06BPS-ZW1	IM12-06BPS-ZC1
IM12-10NNS-ZW1	IM12-10NPS-ZC1
IM12-10NPS-ZW1	



3 x 0.34 mm<sup>2</sup>

M12, 4-pin



See chapter Accessories

Connector, M12, 4-pin  
Mounting systems

Technical specifications		IM12-	06BNS-ZC1	06BPO-ZW1	06BPS-ZW1	06BPS-ZC1	10NNS-ZW1	10NPS-ZW1	10NPS-ZC1			
<b>Sensing range <math>S_n</math></b>	6 mm											
	10 mm											
<b>Electrical configuration</b>	DC 3-wire											
<b>Supply voltage <math>V_s</math></b>	DC 10 ... 30 V											
Ripple $U_{pp}$	$\leq 20\%$ <sup>1)</sup>											
	$\leq 10\%$ <sup>1)</sup>											
Voltage drop $U_d$	$\leq 2\text{ V}$ <sup>2)</sup>											
Power consumption	$\leq 10\text{ mA}$ <sup>3)</sup>											
<b>Continuous current <math>I_a</math></b>	$\leq 200\text{ mA}$											
Time delay before availability $t_v$	$\leq 100\text{ ms}$											
Hysteresis H, of $s_r$	1 ... 15 %											
Repeatability R	$\leq 5\%$ ( $U_b$ and $T_a$ constant) <sup>4)</sup>											
Temperature drift, of $s_r$	$\pm 10\%$											
EMC	According to EN 60947-5-2											
<b>Switching output</b>	NPN											
	PNP											
<b>Output function</b>	Normally open <sup>5)</sup>											
	Normally closed <sup>5)</sup>											
<b>Installation</b>	Quasi-flush <sup>6)</sup>											
	Non-flush											
<b>Connection type</b>	Connector, M12, 4-pin											
	Cable, PVC, 2 m											
<b>Enclosure rating</b>	IP 67 <sup>7)</sup>											
Max. switching frequency	800 Hz											
	400 Hz											
Dimensions	M12 x 1 <sup>8)</sup>											
<b>Short-circuit protection</b>	$\checkmark$ <sup>9)</sup>											
<b>Reverse polarity protection</b>	$\checkmark$											
<b>Power-up pulse suppression</b>	$\checkmark$											
Shock/vibration stress	30 g, 11 ms/10 ... 55 Hz, 1 mm											
Ambient temperature $T_a$	-25 °C ... +75 °C											
<b>Housing material</b>	Brass, chrome-plated, plastic											
Tightening torque	10 Nm											

<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> other output functions available on request.

<sup>6)</sup> when mounting in conductible materials the sensors must be installed with a distance A to the surface. A Steel, metal =

2 mm/A Stainless steel = 1 mm  
<sup>7)</sup> according to EN 60529  
<sup>8)</sup> Thread diameter x pitch (mm)  
<sup>9)</sup> (pulsed)

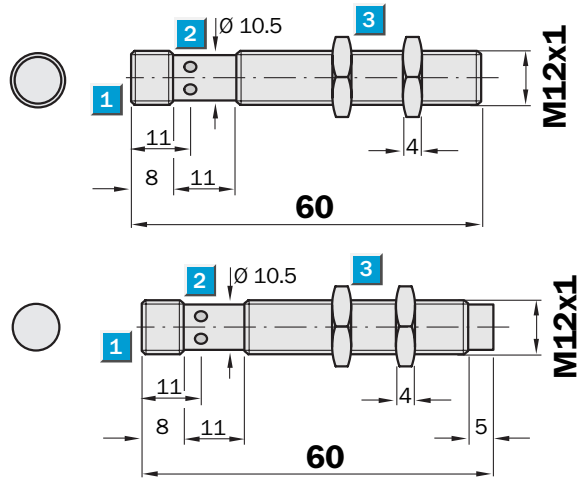
Order information	
Type	Order no.
IM12-06BNS-ZC1	6 030 524
IM12-06BPO-ZW1	6 027 510
IM12-06BPS-ZW1	6 027 509
IM12-06BPS-ZC1	6 027 511
IM12-10NNS-ZW1	6 027 513
IM12-10NPS-ZW1	6 027 512
IM12-10NPS-ZC1	6 027 514

**Sensing range**  
6 / 10 mm

Inductive sensor

- Triple sensing range
- Robust stainless steel V4A, 316L one piece housing, with fine thread M12 x 1 mm
- Enclosure rating IP 69K + IP 68
- Especially suitable for use in the food and beverage sector
- Visual installation support

Dimensional drawing



- 1 Connection
- 2 Display LED
- 3 Fastening nuts (2 x); width across 17, stainless steel V4A, 316L



Connection type

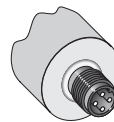
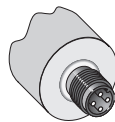
IM12-06BPO-NC1

IM12-06BNS-NC1

IM12-06BPS-NC1

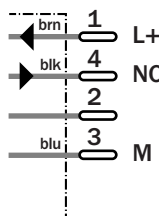
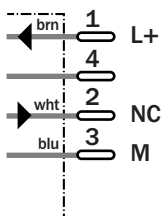
IM12-10NNS-NC1

IM12-10NPS-NC1



M12, 4-pin

M12, 4-pin



See chapter Accessories

Connector, M12, 4-pin

Mounting systems

Technical specifications		IM12-	06BNS-NC1	06BPO-NC1	06BPS-NC1	10NNS-NC1	10NPS-NC1					
<b>Sensing range S<sub>n</sub></b>	6 mm											
	10 mm											
<b>Electrical configuration</b>	DC 3-wire											
<b>Supply voltage V<sub>s</sub></b>	DC 10 ... 30 V											
Ripple U <sub>pp</sub>	≤ 20 % <sup>1)</sup>											
Voltage drop U <sub>d</sub>	≤ 2 V <sup>2)</sup>											
Power consumption	≤ 12 mA <sup>3)</sup>											
<b>Continuous current I<sub>a</sub></b>	≤ 200 mA											
Time delay before availability t <sub>v</sub>	≤ 300 ms											
Hysteresis H, of s <sub>r</sub>	1 ... 15 %											
Repeatability R	≤ 5 % (U <sub>b</sub> and T <sub>a</sub> constant) <sup>4)</sup>											
Temperature drift, of s <sub>r</sub>	≤ 10 %											
EMC	According to EN 60947-5-2											
<b>Switching output</b>	NPN											
	PNP											
<b>Output function</b>	Normally open <sup>5)</sup>											
	Normally closed <sup>5)</sup>											
<b>Installation</b>	Flush											
	Non-flush <sup>6)</sup>											
<b>Connection type</b>	Connector, M12, 4-pin											
<b>Enclosure rating</b>	IP68, IP 69K <sup>7)</sup>											
Max. switching frequency	400 Hz											
Dimensions	M12 x 1 <sup>8)</sup>											
<b>Short-circuit protection</b>	✓ <sup>9)</sup>											
<b>Reverse polarity protection</b>	✓											
<b>Power-up pulse suppression</b>	✓											
Shock/vibration stress	30 g, 11 ms/10 ... 55 Hz, 1 mm <sup>10)</sup>											
Ambient temperature T <sub>a</sub>	-25 °C ... +85 °C											
<b>Housing material</b>	Stainless steel V4A 1.4404, 316L											
Tightening torque	10 Nm											

<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> other output functions available on request.

<sup>6)</sup> see installation notes  
<sup>7)</sup> according to EN 60529  
<sup>8)</sup> Thread diameter x pitch (mm)

<sup>9)</sup> (pulsed)  
<sup>10)</sup> according to IEC 60 947-5-2/7.4

**Correction factors:**


	Flush installation:	Non-flush installation:
Steel (ST37)	1.0	1.0
Copper	0.85	0.8
Aluminium	1.0	1.0
Brass	1.3	1.3
Stainless steel	0.45 / 0.9	0.5 / 0.9

1 mm / 2 mm thick

**Order information**

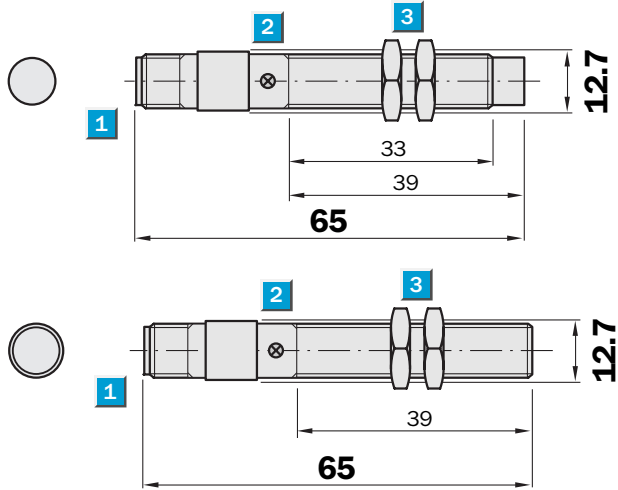
Type	Order no.
IM12-06BNS-NC1	6 027 573
IM12-06BPO-NC1	6 027 574
IM12-06BPS-NC1	6 027 572
IM12-10NNS-NC1	6 027 576
IM12-10NPS-NC1	6 027 575



	<b>Sensing range</b>
	<b>2 / 4 mm</b>
<b>Inductive sensor</b>	

- For harsh environment, resistant to most cutting oils
- Enclosure rating IP 68
- Complementary output function
- Robust brass housing, nickel-plated with fine thread M12 x 1 mm
- LED status indicator (NO function)

Dimensional drawing

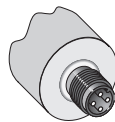


- 1 Connection
- 2 Display LED
- 3 Fastening nuts (2 x); width across 17, metal

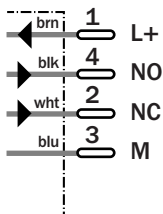


Connection type

- IM12-02BNP-ZC1
- IM12-02BPP-ZC1
- IM12-04NPP-ZC1
- IM12-04NPP-ZC1



M12, 4-pin



**See chapter Accessories**  
 Connector, M12, 4-pin  
 Mounting systems

Technical specifications		IM12-	02BNP-ZC1	02BPP-ZC1	04NNP-ZC1	04NPP-ZC1						
<b>Sensing range <math>S_n</math></b>	2 mm											
	4 mm											
<b>Electrical configuration</b>	DC 4-wire											
<b>Supply voltage <math>V_s</math></b>	DC 10 ... 30 V											
Ripple $U_{pp}$	$\leq 10\%$ <sup>1)</sup>											
Voltage drop $U_d$	$\leq 1.2\text{ V}$ <sup>2)</sup>											
Power consumption	$\leq 20\text{ mA}$ <sup>3)</sup>											
<b>Continuous current <math>I_a</math></b>	$\leq 100\text{ mA}$											
Time delay before availability $t_v$	$\leq 100\text{ ms}$											
Hysteresis H, of $s_r$	2 ... 10 %											
Repeatability R	$\leq 5\%$ ( $U_b$ and $T_a$ constant) <sup>4)</sup>											
Temperature drift, of $s_r$	$\pm 10\%$											
EMC	According to EN 60947-5-2											
<b>Switching output</b>	NPN											
	PNP											
<b>Output function</b>	Complementary											
<b>Installation</b>	Flush											
	Non-flush											
<b>Connection type</b>	Connector, M12, 4-pin											
<b>Enclosure rating</b>	IP 68											
Max. switching frequency	2,000 Hz											
Dimensions	M12 x 1 <sup>5)</sup>											
<b>Short-circuit protection</b>	✓ <sup>6)</sup>											
<b>Reverse polarity protection</b>	✓											
<b>Power-up pulse suppression</b>	✓											
Shock/vibration stress	30 g, 11 ms/10 ... 55 Hz, 1 mm											
Ambient temperature $T_a$	-25 °C ... +70 °C											
<b>Housing material</b>	Brass nickel-plated, plastic											
Tightening torque	10 Nm											

<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> Thread diameter x pitch (mm)  
<sup>6)</sup> (pulsed)

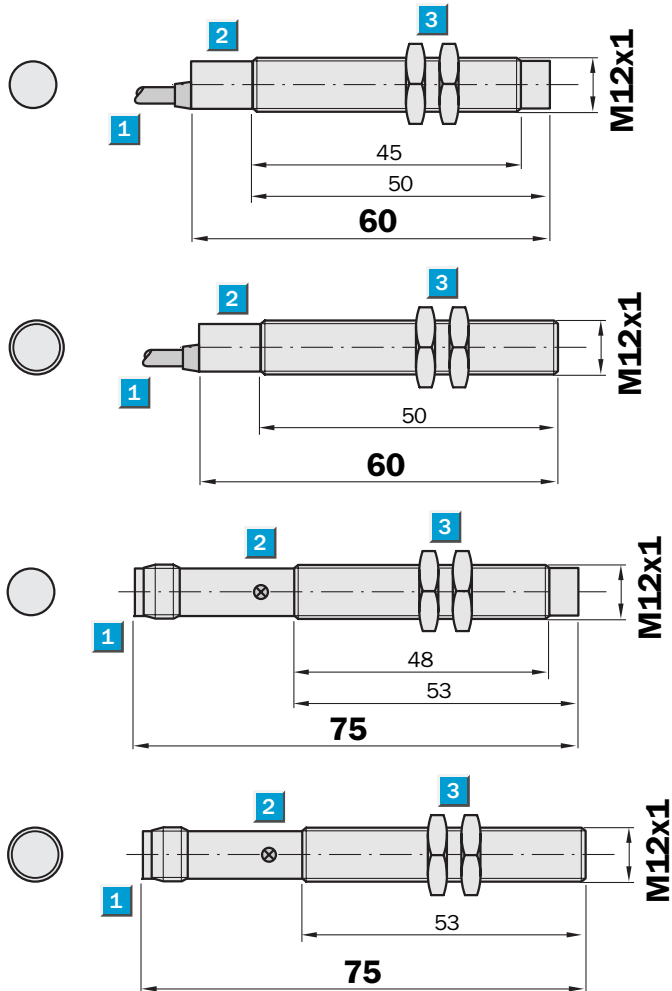
Order information	
Type	Order no.
IM12-02BNP-ZC1	7 902 924
IM12-02BPP-ZC1	7 902 923
IM12-04NNP-ZC1	7 902 926
IM12-04NPP-ZC1	7 902 925

**Sensing range**  
2 / 4 mm

Inductive sensor

- Free configurable output functions in one sensor PNP / NO, PNP / NC NPN / NO, NPN / NC
- Short-circuit protection
- Robust brass housing, nickel-plated with fine thread M12 x 1 mm
- Enclosure rating IP 67
- LED status indicator (NO function)

### Dimensional drawing



- 1 Connection
- 2 Display LED
- 3 Fastening nuts (2 x); width across 17, metal

### Connection type

IM12-02BCP-ZW1	IM12-02BCP-ZC1
IM12-04NCP-ZW1	IM12-04NCP-ZC1



4 x 0.22 mm <sup>2</sup>		M12, 4-pin	
PNP version	NPN version	PNP version	NPN version
brn ← L+	brn → M	brn ← 1 L+	brn ← 1 L+
wht ← L+	wht → NC	wht ← 2 L+	wht ← 2 NO
blk → M	blk ← L+	blk ← 3 M	blk ← 3 M
blu → NO	blu → M	blu ← 4 NO	blu ← 4 M
-----		-----	
brn → M	brn ← L+	brn ← 1 M	brn ← 1 M
wht ← L+	wht → NO	wht ← 2 L+	wht ← 2 NC
blk ← L+	blk → M	blk ← 3 L+	blk ← 3 L+
blu → NC	blu → M	blu ← 4 NC	blu ← 4 M



**See chapter Accessories**  
Connector, M12, 4-pin  
Mounting systems

Technical specifications		IM12-	02BCP-ZW1	02BCP-ZC1	04NCP-ZW1	04NCP-ZC1						
<b>Sensing range <math>S_n</math></b>	2 mm											
	4 mm											
<b>Electrical configuration</b>	DC 4-wire											
<b>Supply voltage <math>V_s</math></b>	DC 10 ... 30 V											
Ripple $U_{pp}$	$\leq 10\%$ <sup>1)</sup>											
Voltage drop $U_d$	$\leq 1.2\text{ V}$ <sup>2)</sup>											
Power consumption	$\leq 30\text{ mA}$ <sup>3)</sup>											
<b>Continuous current <math>I_a</math></b>	$\leq 100\text{ mA}$											
Time delay before availability $t_v$	$\leq 250\text{ ms}$											
Hysteresis H, of $s_r$	2 ... 10 %											
Repeatability R	$\leq 5\%$ ( $U_b$ and $T_a$ constant) <sup>4)</sup>											
Temperature drift, of $s_r$	$\pm 10\%$											
EMC	According to EN 60947-5-2											
<b>Switching output</b>	PNP/NPN config.											
<b>Output function</b>	Configurable											
<b>Installation</b>	Flush											
	Non-flush											
<b>Connection type</b>	Cable, PVC, 2 m											
	Connector, M12, 4-pin											
<b>Enclosure rating</b>	IP 67 <sup>5)</sup>											
Max. switching frequency	1,000 Hz											
Dimensions	M12 x 1 <sup>6)</sup>											
<b>Short-circuit protection</b>	✓											
<b>Reverse polarity protection</b>	✓											
<b>Power-up pulse suppression</b>	✓											
Shock/vibration stress	30 g, 11 ms/10 ... 55 Hz, 1 mm											
Ambient temperature $T_a$	-25 °C ... +70 °C											
<b>Housing material</b>	Brass nickel-plated, plastic											
Tightening torque	10 Nm											

<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> according to EN 60529  
<sup>6)</sup> Thread diameter x pitch (mm)

#### Order information

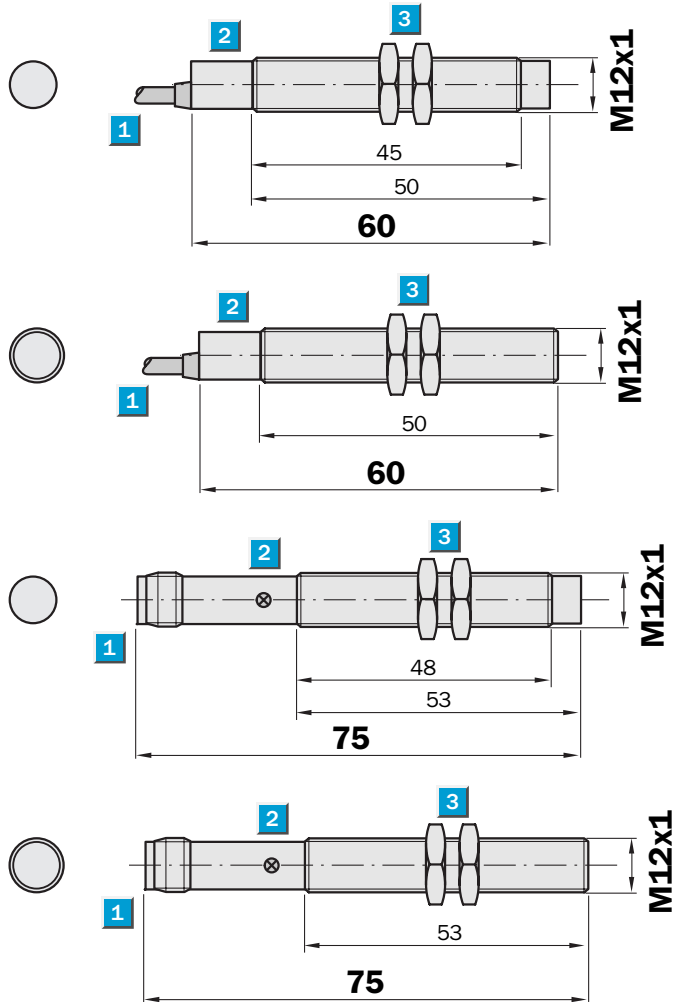
Type	Order no.
IM12-02BCP-ZW1	7 902 927
IM12-02BCP-ZC1	7 902 928
IM12-04NCP-ZW1	7 902 929
IM12-04NCP-ZC1	7 902 930

**Sensing range**  
2 / 4 mm

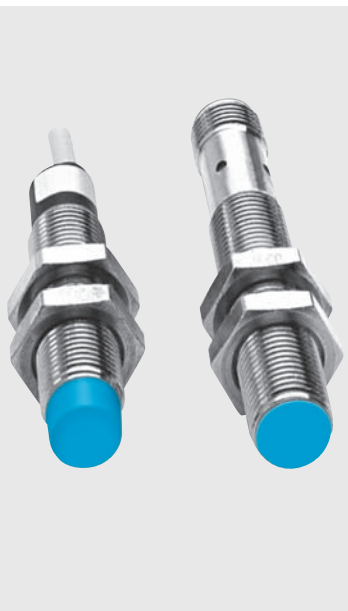
Inductive sensor

- Short-circuit protection (pulsed)
- Robust brass housing, nickel-plated with fine thread M12 x 1 mm
- Enclosure rating IP 67
- High switching frequency

Dimensional drawing



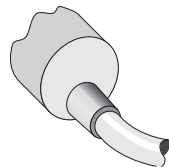
- 1 Connection
- 2 Display LED
- 3 Fastening nuts (2 x); width across 17, metal



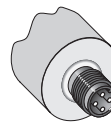
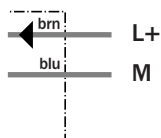
Connection type

IM12-02BDS-ZW1  
IM12-02BDO-ZW1  
IM12-04NDO-ZW1  
IM12-04NDS-ZW1

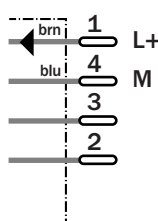
IM12-02BDS-ZC1  
IM12-04NDS-ZC1



2 x 0.22 mm<sup>2</sup>



M12, 4-pin



See chapter Accessories

Connector, M12, 4-pin  
Mounting systems

Technical specifications		IM12-	02BDS-ZC1	04NDS-ZC1	02BDS-ZW1	02BDO-ZW1	04ND-O-ZW1	04NDS-ZW1				
<b>Sensing range S<sub>n</sub></b>	2 mm											
	4 mm											
<b>Electrical configuration</b>	DC 2-wire											
<b>Supply voltage V<sub>s</sub></b>	DC 10 ... 30 V											
Ripple U <sub>pp</sub>	≤ 10 %											
Voltage drop U <sub>d</sub>	≤ 2.8 V <sup>1)</sup>											
<b>Continuous current I<sub>a</sub></b>	≤ 100 mA											
Min. load current	≥ 3 mA											
Residual current	≤ 0.8 mA											
Time delay before availability t <sub>v</sub>	≤ 50 ms											
Hysteresis H, of s <sub>r</sub>	2 ... 10 %											
Repeatability R	≤ 5 % (U <sub>b</sub> and T <sub>a</sub> constant) <sup>2)</sup>											
Temperature drift, of s <sub>r</sub>	± 10 %											
EMC	According to EN 60947-5-2											
<b>Output function</b>	Normally open											
	Normally closed											
<b>Installation</b>	Flush											
	Non-flush											
<b>Connection type</b>	Connector, M12, 4-pin											
	Cable, PVC, 2 m											
<b>Enclosure rating</b>	IP 67 <sup>3)</sup>											
Max. switching frequency	1,500 Hz											
Dimensions	M12 x 1 <sup>4)</sup>											
<b>Short-circuit protection</b>	✓ <sup>5)</sup>											
<b>Reverse polarity protection</b>	✓											
Shock/vibration stress	30 g, 11 ms/10 ... 55 Hz, 1 mm											
Ambient temperature T <sub>a</sub>	-25 °C ... +70 °C											
<b>Housing material</b>	Brass nickel-plated, plastic											
Tightening torque	10 Nm											


<sup>1)</sup> at I<sub>a</sub> max

<sup>2)</sup> of s<sub>r</sub>

<sup>3)</sup> according to EN 60529

<sup>4)</sup> Thread diameter x pitch (mm)  
<sup>5)</sup> (pulsed)

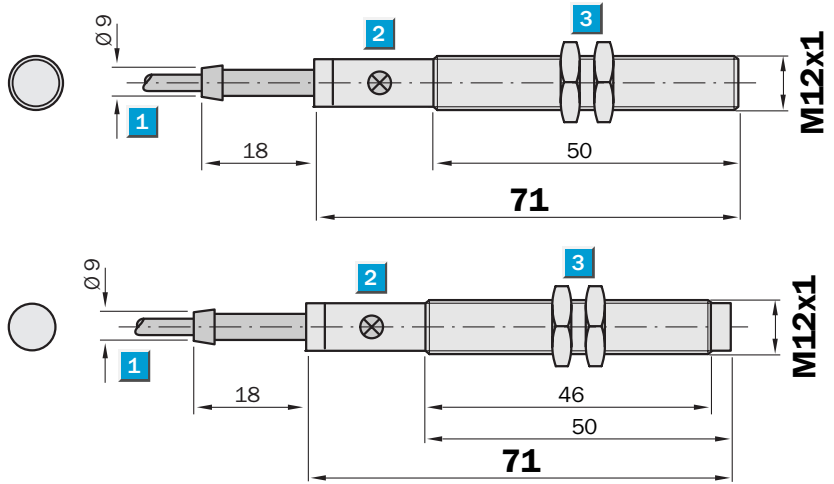
Order information	
Type	Order no.
IM12-02BDS-ZC1	6 020 312
IM12-04NDS-ZC1	6 020 316
IM12-02BDS-ZW1	6 020 310
IM12-02BDO-ZW1	6 020 311
IM12-04NDO-ZW1	6 020 315
IM12-04NDS-ZW1	6 020 314

 **Sensing range**  
2 / 4 mm

Inductive sensor

- Broad supply voltage range in AC
- Robust brass housing, nickel-plated, with fine thread M12 x 1 mm
- Enclosure rating IP 67

Dimensional drawing

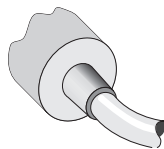


- 1 Connection
- 2 Display LED
- 3 Fastening nuts (2 x); width across 17, metal

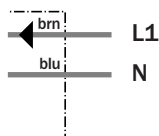


Connection type

- IM12-02BAO-ZUO
- IM12-02BAS-ZUO
- IM12-04NAO-ZUO
- IM12-04NAS-ZUO



2 x 0.5 mm<sup>2</sup>



See chapter Accessories  
Mounting systems

Technical specifications		IM12-	02BAO-ZUO	02BAS-ZUO	04NAO-ZUO	04NAS-ZUO						
<b>Sensing range S<sub>n</sub></b>	2 mm											
	4 mm											
<b>Electrical configuration</b>	AC 2-wire											
<b>Supply voltage V<sub>s</sub></b>	AC 20 ... 250 V											
Voltage drop U <sub>d</sub>	≤ 8.5 V <sup>1)</sup>											
<b>Continuous current I<sub>a</sub></b>	≤ 250 mA (... +50 °C)											
<b>Continuous current I<sub>a</sub></b>	≤ 200 mA (... +80 °C)											
Intermittent current I <sub>k</sub>	0.9 A (20 ms/0.5Hz)											
Min. load current	8 mA											
Residual current	≤ 3 mA (250 V AC)											
Residual current	≤ 1.5 mA (120 V AC)											
Time delay before availability t <sub>v</sub>	≤ 10 ms											
Hysteresis H, of s <sub>r</sub>	1 ... 15 %											
Repeatability R	≤ 10 % (U <sub>b</sub> and T <sub>a</sub> constant) <sup>2)</sup>											
Temperature drift, of s <sub>r</sub>	± 10 %											
EMC	According to EN 60947-5-2											
<b>Output function</b>	Normally closed											
	Normally open											
<b>Installation</b>	Flush											
	Non-flush											
<b>Connection type</b>	Cable, PUR-PVC, 2 m											
<b>Enclosure rating</b>	IP 67 <sup>3)</sup>											
<b>VDE protection class</b>	□											
Max. switching frequency	25 Hz											
Dimensions	M12 x 1 <sup>4)</sup>											
<b>Power-up pulse suppression</b>	✓											
Shock/vibration stress	30 g, 11 ms/10 ... 55 Hz, 1 mm											
Ambient temperature T <sub>a</sub>	-25 °C ... +80 °C											
<b>Housing material</b>	Brass nickel-plated, plastic											
Tightening torque	7 Nm											

<sup>1)</sup> at I<sub>a</sub> max

<sup>2)</sup> of s<sub>r</sub>


<sup>3)</sup> according to EN 60529

<sup>4)</sup> Thread diameter x pitch (mm)

Order information	
Type	Order no.
IM12-02BAO-ZUO	7 902 119
IM12-02BAS-ZUO	7 902 118
IM12-04NAO-ZUO	7 902 121
IM12-04NAS-ZUO	7 902 120

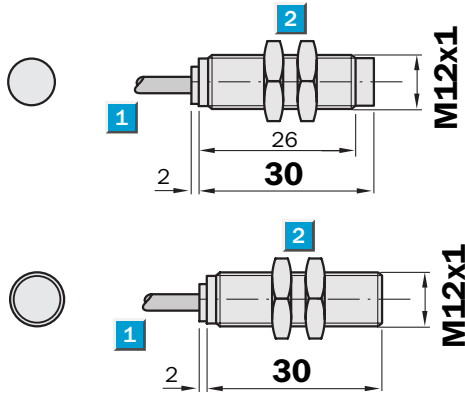


# Inductive sensor, IM12, NAMUR

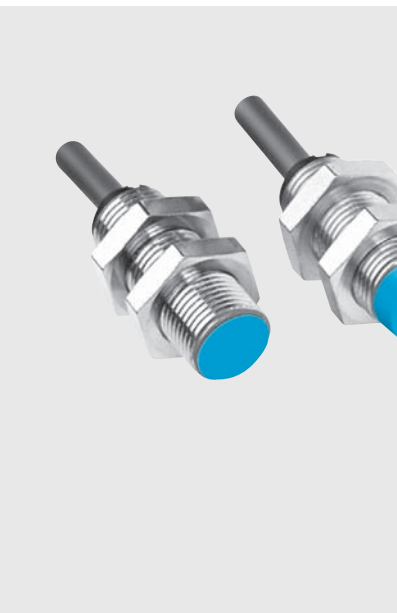
	<b>Sensing range</b>
	<b>2 / 4</b>
<b>Inductive sensor</b>	

- NAMUR to EN 60 947-5-6
- Robust brass housing, nickel-plated, with fine thread M12 x 1 mm
- Classification PTB 03 ATEX 2037  
Ex II 2 G EEx ia IIC T6

## Dimensional drawing

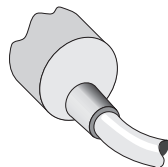


- 1** Connection
- 2** Fastening nuts (2 x); width across 17, metal

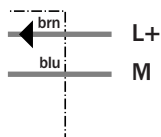


## Connection type

- IM12-02B-N-ZWO
- IM12-04N-N-ZWO



2 x 0.34 mm<sup>2</sup>



## See chapter Accessories

- Mounting systems
- Switching units

Technical specifications		IM12-	02B-N-ZWO	04N-N-ZWO										
<b>Sensing range <math>S_n</math></b>	2 mm													
	4 mm													
<b>Electrical configuration</b>	NAMUR													
<b>Supply voltage <math>V_s</math></b>	DC 5 ... 25 V													
Nominal voltage $V_n$	DC 8.2 V													
Power consumption, attenuated	$\leq 1$ mA													
Power consumption, unattenuated	$\geq 2.2$ mA													
Internal capacitance	$\leq 230$ nF													
Internal inductance	$\leq 380$ $\mu$ H													
Cable resistance	$\leq 50$ Ohm													
Temperature drift, of $s_r$	$\pm 10$ %													
EMC	According to EN 60 947-5-6													
<b>Switching output</b>	Control current dependent on switching state <sup>1)</sup>													
<b>Output function</b>	NAMUR													
<b>Installation</b>	Flush													
	Non-flush													
<b>Connection type</b>	Cable, PVC, 2 m													
<b>Enclosure rating</b>	IP 67 <sup>2)</sup>													
Max. switching frequency	1,200 Hz													
	1,500 Hz													
Dimensions	M12 x 1 <sup>3)</sup>													
<b>Short-circuit protected</b>	✓													
<b>Reverse polarity protected</b>	✓													
Shock/vibration stress	30 g, 11 ms/10 ... 55 Hz, 1 mm													
Ambient temperature $T_a$	-25 °C ... +70 °C													
<b>Housing material</b>	Brass nickel-plated, plastic													
Tightening torque	7 Nm													

<sup>1)</sup> according to NAMUR EN 60947-5-6

<sup>2)</sup> according to EN 60529

<sup>3)</sup> Thread diameter x pitch (mm)

#### Max. data for connecting Isolating unit EN 2 EX

or other approved isolating amplifier:

<b>Short circuit current <math>I_{Kmax}</math></b>	50 mA
<b>No load voltage <math>U_0</math></b>	16 V
<b>Power loss <math>P_{max}</math></b>	75 mW

#### Order information

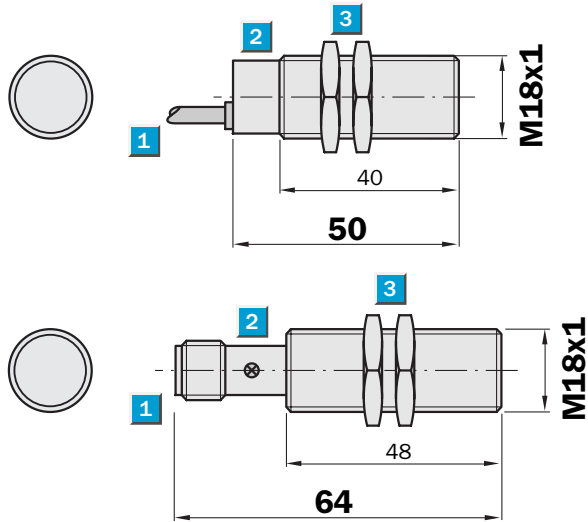
Type	Order no.
IM12-02B-N-ZWO	6 021 124
IM12-04N-N-ZWO	6 021 125

**Sensing range**  
5 mm

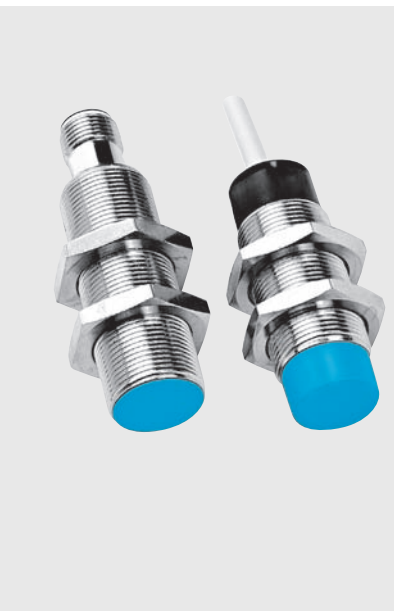
Inductive sensor

- Short-circuit protection (pulsed)
- Robust brass housing, nickel-plated with fine thread M18 x 1 mm
- Enclosure rating IP 67
- High switching frequency

Dimensional drawing

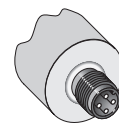
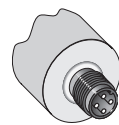
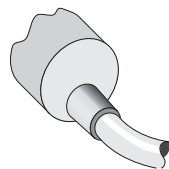


- 1 Connection
- 2 Display LED
- 3 Fastening nuts (2 x); width across 24, metal



Connection type

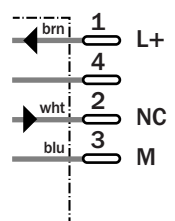
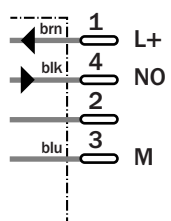
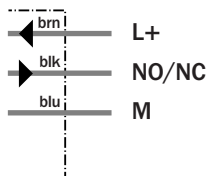
IM18-05BNS-ZW1	IM18-05BNS-ZC1	IM18-05BPO-ZC1
IM18-05BPO-ZW1	IM18-05BPS-ZC1	
IM18-05BPS-ZW1		



3 x 0.34 mm<sup>2</sup>

M12, 4-pin

M12, 4-pin



See chapter Accessories  
Connector, M12, 4-pin  
Mounting systems

Technical specifications		IM18-	05BNS-ZW1	05BPO-ZW1	05BPS-ZW1	05BNS-ZC1	05BPO-ZC1	05BPS-ZC1				
<b>Sensing range S<sub>n</sub></b>	5 mm											
<b>Electrical configuration</b>	DC 3-wire											
<b>Supply voltage V<sub>s</sub></b>	DC 10 ... 30 V											
Ripple U <sub>pp</sub>	≤ 10 %											
Voltage drop U <sub>d</sub>	≤ 1 V <sup>1)</sup>											
Power consumption	≤ 20 mA <sup>2)</sup>											
<b>Continuous current I<sub>a</sub></b>	≤ 400 mA											
Time delay before availability t <sub>v</sub>	≤ 100 ms											
Hysteresis H, of s <sub>r</sub>	2 ... 10 %											
Repeatability R	≤ 2 % (U <sub>b</sub> and T <sub>a</sub> constant) <sup>3)</sup>											
Temperature drift, of s <sub>r</sub>	± 10 %											
EMC	According to EN 60947-5-2											
<b>Switching output</b>	NPN											
	PNP											
<b>Output function</b>	Normally open											
	Normally closed											
<b>Installation</b>	Flush											
<b>Connection type</b>	Cable, PVC, 2 m											
	Connector, M12, 4-pin											
<b>Enclosure rating</b>	IP 67 <sup>4)</sup>											
Max. switching frequency	600 Hz											
Dimensions	M18 x 1 <sup>5)</sup>											
<b>Short-circuit protection</b>	✓ <sup>6)</sup>											
<b>Reverse polarity protection</b>	✓											
<b>Power-up pulse suppression</b>	✓											
Shock/vibration stress	30 g, 11 ms/10 ... 55 Hz, 1 mm											
Ambient temperature T <sub>a</sub>	-25 °C ... +70 °C											
<b>Housing material</b>	Brass nickel-plated, plastic											
Tightening torque	30 Nm											

<sup>1)</sup> at I<sub>a</sub> max  
<sup>2)</sup> without load

<sup>3)</sup> of s<sub>r</sub>  
<sup>4)</sup> according to EN 60529

<sup>5)</sup> Thread diameter x pitch (mm)  
<sup>6)</sup> (pulsed)

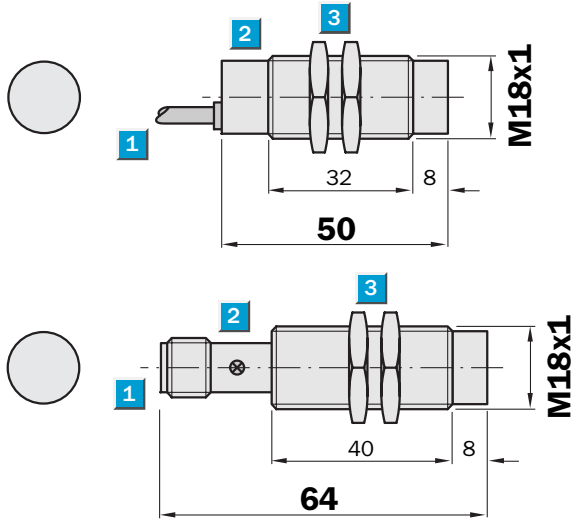
Order information	
Type	Order no.
IM18-05BNS-ZW1	6 011 988
IM18-05BPO-ZW1	6 011 989
IM18-05BPS-ZW1	6 011 987
IM18-05BNS-ZC1	6 011 992
IM18-05BPO-ZC1	6 011 993
IM18-05BPS-ZC1	6 011 991

**Sensing range**  
8 mm

Inductive sensor

- Short-circuit protection (pulsed)
- Robust brass housing, nickel-plated with fine thread M18 x 1 mm
- Enclosure rating IP 67
- High switching frequency

Dimensional drawing

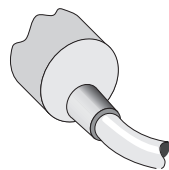


- 1 Connection
- 2 Display LED
- 3 Fastening nuts (2 x); width across 24, metal

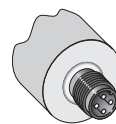
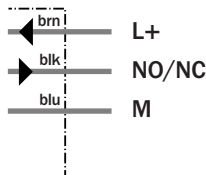


Connection type

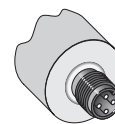
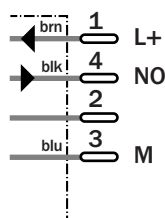
IM18-08NNO-ZW1	IM18-08NNS-ZC1	IM18-08NPO-ZC1
IM18-08NNS-ZW1	IM18-08NPS-ZC1	
IM18-08NPS-ZW1		
IM18-08NNS-ZWA		



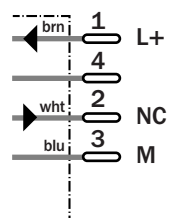
3 x 0.34 mm<sup>2</sup>



M12, 4-pin



M12, 4-pin



See chapter Accessories

Connector, M12, 4-pin  
Mounting systems

Technical specifications		IM18-	08NN O-ZW1	08NNS -ZW1	08NPS -ZW1	08NNS -ZWA	08NNS -ZC1	08NPO -ZC1	08NPS -ZC1			
<b>Sensing range <math>S_n</math></b>	8 mm											
<b>Electrical configuration</b>	DC 3-wire											
<b>Supply voltage <math>V_s</math></b>	DC 10 ... 30 V											
Ripple $U_{pp}$	$\leq 10\%$											
Voltage drop $U_d$	$\leq 1\text{ V}^{1)}$											
Power consumption	$\leq 20\text{ mA}^{2)}$											
<b>Continuous current <math>I_a</math></b>	$\leq 400\text{ mA}$											
Time delay before availability $t_v$	$\leq 100\text{ ms}$											
Hysteresis H, of $s_r$	2 ... 10 %											
Repeatability R	$\leq 2\%$ ( $U_b$ and $T_a$ constant) <sup>3)</sup>											
Temperature drift, of $s_r$	$\pm 10\%$											
EMC	According to EN 60947-5-2											
<b>Switching output</b>	NPN											
	PNP											
<b>Output function</b>	Normally closed											
	Normally open											
<b>Installation</b>	Non-flush											
<b>Connection type</b>	Cable, PVC, 2 m											
	Cable, PVC, 3 m											
	Connector, M12, 4-pin											
<b>Enclosure rating</b>	IP 67 <sup>4)</sup>											
Max. switching frequency	600 Hz											
Dimensions	M18 x 1 <sup>5)</sup>											
<b>Short-circuit protection</b>	✓ <sup>6)</sup>											
<b>Reverse polarity protection</b>	✓											
<b>Power-up pulse suppression</b>	✓											
Shock/vibration stress	30 g, 11 ms/10 ... 55 Hz, 1 mm											
Ambient temperature $T_a$	-25 °C ... +70 °C											
<b>Housing material</b>	Brass nickel-plated, plastic											
Tightening torque	30 Nm											

<sup>1)</sup> at  $I_a$  max  
<sup>2)</sup> without load

<sup>3)</sup> of  $s_r$   
<sup>4)</sup> according to EN 60529

<sup>5)</sup> Thread diameter x pitch (mm)  
<sup>6)</sup> (pulsed)

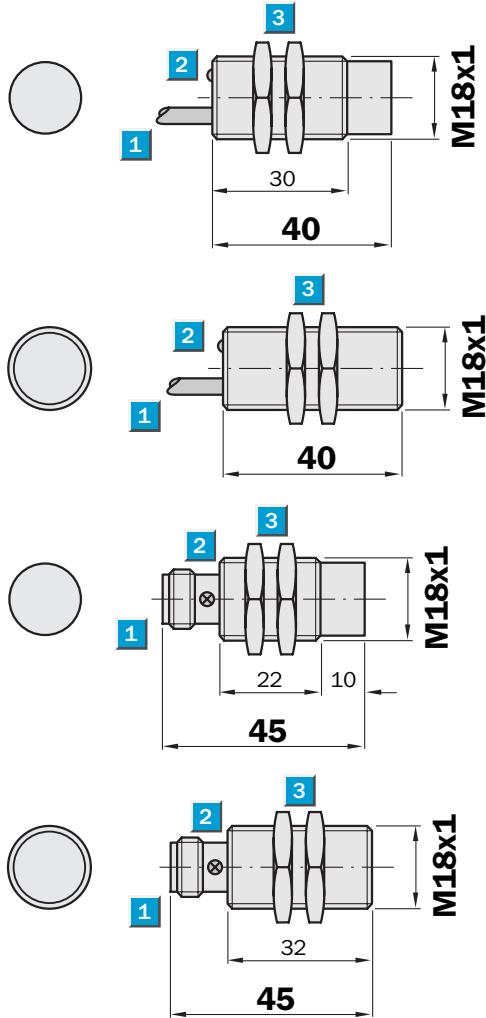
Order information	
Type	Order no.
IM18-08NNO-ZW1	6 011 998
IM18-08NNS-ZW1	6 011 996
IM18-08NPS-ZW1	6 011 995
IM18-08NNS-ZWA	6 030 123
IM18-08NNS-ZC1	6 012 000
IM18-08NPO-ZC1	6 012 001
IM18-08NPS-ZC1	6 011 999

**Sensing range**  
5 / 8 mm

Inductive sensor

- Short-circuit protection (pulsed)
- Robust brass housing, nickel-plated with fine thread M18 x 1 mm
- Enclosure rating IP 67
- High switching frequency

Dimensional drawing

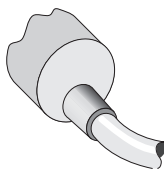


- 1 Connection
- 2 Display LED
- 3 Fastening nuts (2 x); width across 24, metal

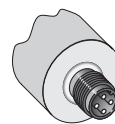
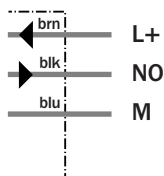


Connection type

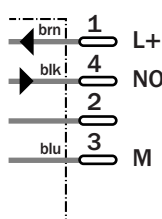
IM18-05BNS-ZUK	IM18-05BNS-ZCK
IM18-05BPS-ZUK	IM18-05BPS-ZCK
IM18-08NNS-ZUK	IM18-08NNS-ZCK
IM18-08NPS-ZUK	IM18-08NPS-ZCK



3 x 0.25 mm<sup>2</sup>



M12, 4-pin



See chapter Accessories

Connector, M12, 4-pin  
Mounting systems

Technical specifications		IM18-	05BNS-ZUK	05BPS-ZUK	05BNS-ZCK	05BPS-ZCK	08NNS-ZUK	08NPS-ZUK	08NNS-ZCK	08NPS-ZCK		
<b>Sensing range S<sub>n</sub></b>	5 mm											
	8 mm											
<b>Electrical configuration</b>	DC 3-wire											
<b>Supply voltage V<sub>s</sub></b>	DC 10 ... 30 V											
Ripple U <sub>pp</sub>	≤ 10 %											
Voltage drop U <sub>d</sub>	≤ 1.5 V <sup>1)</sup>											
Power consumption	≤ 10 mA <sup>2)</sup>											
<b>Continuous current I<sub>a</sub></b>	≤ 300 mA											
Time delay before availability t <sub>v</sub>	≤ 10 ms											
Hysteresis H, of s <sub>r</sub>	1 ... 10 %											
Repeatability R	≤ 2 % (U <sub>b</sub> and T <sub>a</sub> constant) <sup>3)</sup>											
Temperature drift, of s <sub>r</sub>	± 10 %											
EMC	According to EN 60947-5-2											
<b>Switching output</b>	NPN											
	PNP											
<b>Output function</b>	Normally open											
<b>Installation</b>	Flush											
	Non-flush											
<b>Connection type</b>	Cable, PUR-PVC, 2 m											
	Connector, M12, 4-pin											
<b>Enclosure rating</b>	IP 67 <sup>4)</sup>											
Max. switching frequency	1,000 Hz											
Dimensions	M18 x 1 <sup>5)</sup>											
<b>Wire-break protection</b>	✓											
<b>Short-circuit protection</b>	✓ <sup>6)</sup>											
<b>Reverse polarity protection</b>	✓											
<b>Power-up pulse suppression</b>	✓											
Shock/vibration stress	30 g, 11 ms/10 ... 55 Hz, 1 mm											
Ambient temperature T <sub>a</sub>	-25 °C ... +75 °C											
<b>Housing material</b>	Brass nickel-plated, plastic											
Tightening torque	25 Nm											

<sup>1)</sup> at I<sub>a</sub> max  
<sup>2)</sup> without load

<sup>3)</sup> of s<sub>r</sub>  
<sup>4)</sup> according to EN 60529

<sup>5)</sup> Thread diameter x pitch (mm)  
<sup>6)</sup> (pulsed)

Order information	
Type	Order no.
IM18-05BNS-ZUK	1 017 442
IM18-05BPS-ZUK	1 017 430
IM18-05BNS-ZCK	1 017 444
IM18-05BPS-ZCK	1 017 432
IM18-08NNS-ZUK	1 017 443
IM18-08NPS-ZUK	1 017 431
IM18-08NNS-ZCK	1 017 445
IM18-08NPS-ZCK	1 017 433

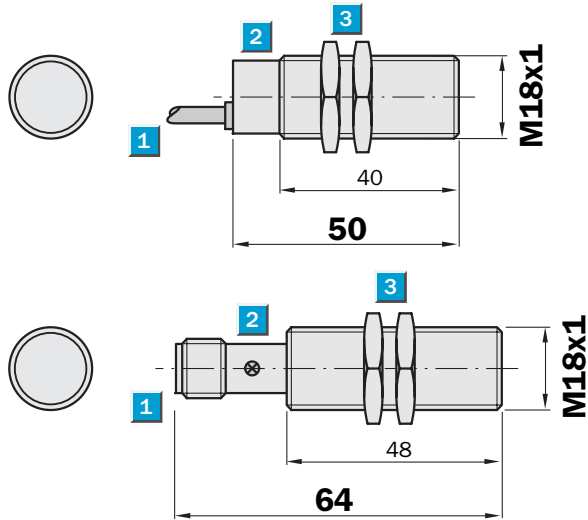


**Sensing range**  
8 mm

Inductive sensor

- Enhanced sensing range
- High switching frequency
- Short-circuit protection (pulsed)
- Robust brass housing, nickel-plated with fine thread M18 x 1 mm
- Enclosure rating IP 67

Dimensional drawing

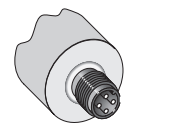
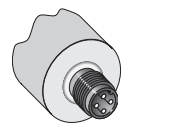
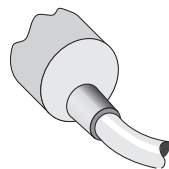


- 1 Connection
- 2 Display LED
- 3 Fastening nuts (2 x); width across 24, metal



Connection type

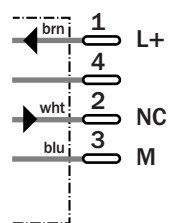
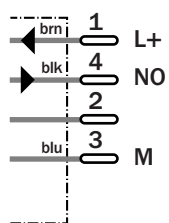
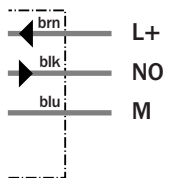
IM18-08BNS-ZW1	IM18-08BNS-ZC1	IM18-08BPO-ZC1
IM18-08BPS-ZWB	IM18-08BPS-ZC1	
IM18-08BPS-ZW1		



3 x 0.34 mm<sup>2</sup>

M12, 4-pin

M12, 4-pin



See chapter Accessories  
Connector, M12, 4-pin  
Mounting systems

Technical specifications		IM18-	08BNS-ZC1	08BNS-ZW1	08BPO-ZC1	08BPS-ZC1	08BPS-ZWB	08BPS-ZW1				
<b>Sensing range <math>S_n</math></b>	8 mm											
<b>Electrical configuration</b>	DC 3-wire											
<b>Supply voltage <math>V_s</math></b>	DC 10 ... 30 V											
Ripple $U_{pp}$	$\leq 10 \%$											
Voltage drop $U_d$	$\leq 1 V^{1)}$											
Power consumption	$\leq 10 mA^{2)}$											
<b>Continuous current <math>I_a</math></b>	$\leq 400 mA$											
Time delay before availability $t_v$	$\leq 100 ms$											
Hysteresis H, of $s_r$	2 ... 15 %											
Repeatability R	$\leq 5 \%$ ( $U_b$ and $T_a$ constant) <sup>3)</sup>											
Temperature drift, of $s_r$	$\pm 10 \%$											
EMC	According to EN 60947-5-2											
<b>Switching output</b>	NPN											
	PNP											
<b>Output function</b>	Normally open											
	Normally closed											
<b>Installation</b>	Flush <sup>4)</sup>											
<b>Connection type</b>	Connector, M12, 4-pin											
	Cable, PVC, 2 m											
	Cable, PVC, 5 m											
<b>Enclosure rating</b>	IP 67 <sup>5)</sup>											
Max. switching frequency	300 Hz											
Dimensions	M18 x 1 <sup>6)</sup>											
<b>Short-circuit protection</b>	✓ <sup>7)</sup>											
<b>Reverse polarity protection</b>	✓											
<b>Power-up pulse suppression</b>	✓											
Shock/vibration stress	30 g, 11 ms/10 ... 55 Hz, 1 mm											
Ambient temperature $T_a$	-25 °C ... +70 °C											
<b>Housing material</b>	Brass nickel-plated, plastic											
Tightening torque	30 Nm											

<sup>1)</sup> at  $I_a$  max  
<sup>2)</sup> without load

<sup>3)</sup> of  $s_r$   
<sup>4)</sup> see installation notes

<sup>5)</sup> according to EN 60529  
<sup>6)</sup> Thread diameter x pitch (mm)

<sup>7)</sup> (pulsed)

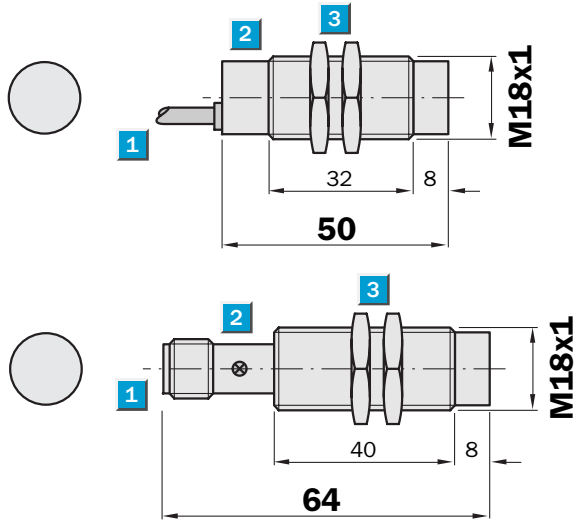
Order information	
Type	Order no.
IM18-08BNS-ZC1	7 900 086
IM18-08BNS-ZW1	7 900 082
IM18-08BPO-ZC1	7 900 087
IM18-08BPS-ZC1	7 900 085
IM18-08BPS-ZWB	6 030 761
IM18-08BPS-ZW1	7 900 081

**Sensing range**  
12 mm

Inductive sensor

- Enhanced sensing range
- High switching frequency
- Short-circuit protection (pulsed)
- Robust brass housing, nickel-plated with fine thread M18 x 1 mm
- Enclosure rating IP 67

Dimensional drawing

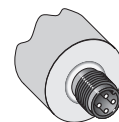
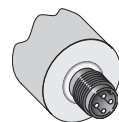
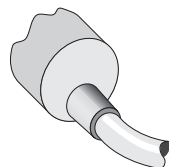


- 1 Connection
- 2 Display LED
- 3 Fastening nuts (2 x); width across 24, metal



Connection type

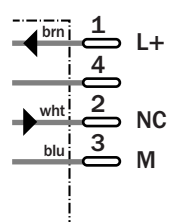
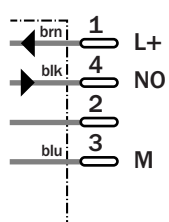
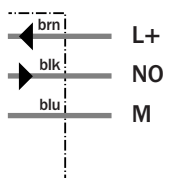
IM18-12NNS-ZW1	IM18-12NNS-ZC1	IM18-12NPO-ZC1
IM18-12NPS-ZW1	IM18-12NPS-ZC1	



3 x 0.34 mm<sup>2</sup>

M12, 4-pin

M12, 4-pin



See chapter Accessories  
Connector, M12, 4-pin  
Mounting systems

Technical specifications		IM18-	12NNS-ZC1	12NNS-ZW1	12NPO-ZC1	12NPS-ZC1	12NPS-ZW1					
<b>Sensing range <math>S_n</math></b>	12 mm											
<b>Electrical configuration</b>	DC 3-wire											
<b>Supply voltage <math>V_s</math></b>	DC 10 ... 30 V											
Ripple $U_{pp}$	$\leq 10 \%$											
Voltage drop $U_d$	$\leq 1 V^{1)}$											
Power consumption	$\leq 10 mA^{2)}$											
<b>Continuous current <math>I_a</math></b>	$\leq 400 mA$											
Time delay before availability $t_v$	$\leq 100 ms$											
Hysteresis H, of $s_r$	2 ... 15 %											
Repeatability R	$\leq 5 \%$ ( $U_b$ and $T_a$ constant) <sup>3)</sup>											
Temperature drift, of $s_r$	$\pm 10 \%$											
EMC	According to EN 60947-5-2											
<b>Switching output</b>	NPN											
	PNP											
<b>Output function</b>	Normally open											
	Normally closed											
<b>Installation</b>	Non-flush											
<b>Connection type</b>	Connector, M12, 4-pin											
	Cable, PVC, 2 m											
<b>Enclosure rating</b>	IP 67 <sup>4)</sup>											
Max. switching frequency	300 Hz											
Dimensions	M18 x 1 <sup>5)</sup>											
<b>Short-circuit protection</b>	✓ <sup>6)</sup>											
<b>Reverse polarity protection</b>	✓											
<b>Power-up pulse suppression</b>	✓											
Shock/vibration stress	30 g, 11 ms/10 ... 55 Hz, 1 mm											
Ambient temperature $T_a$	-25 °C ... +70 °C											
<b>Housing material</b>	Brass nickel-plated, plastic											
Tightening torque	30 Nm											

1) at  $I_a$  max  
2) without load

3) of  $s_r$   
4) according to EN 60529

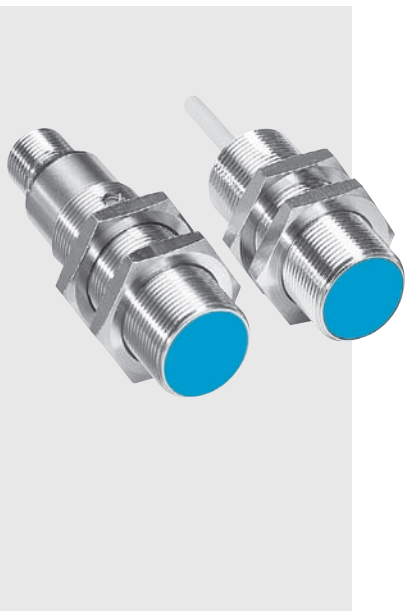
5) Thread diameter x pitch (mm)  
6) (pulsed)

Order information	
Type	Order no.
IM18-12NNS-ZC1	7 900 098
IM18-12NNS-ZW1	7 900 094
IM18-12NPO-ZC1	7 900 099
IM18-12NPS-ZC1	7 900 097
IM18-12NPS-ZW1	7 900 093

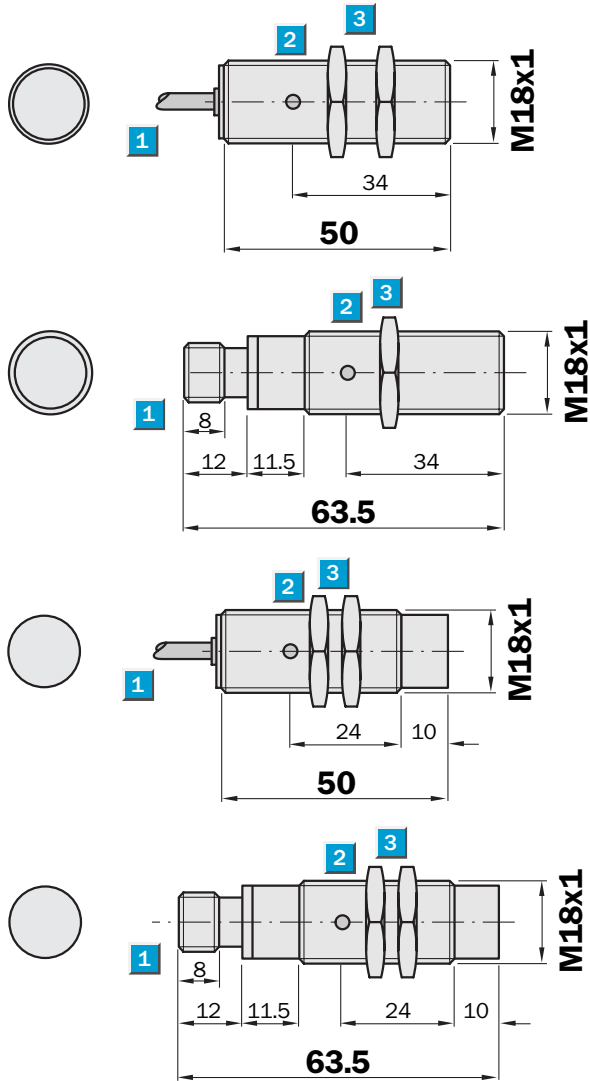
**Sensing range**  
12 / 20 mm

Inductive sensor

- Triple sensing range
- Installation quasi flush or non-flush in metal
- Short-circuit protection (pulsed)
- Robust brass housing, chrome-plated with fine thread M18 x 1 mm
- Enclosure rating IP 67



### Dimensional drawing

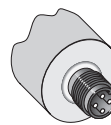
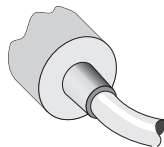


- 1 Connection
- 2 Display LED
- 3 Fastening nuts (2 x); width across 24, metal



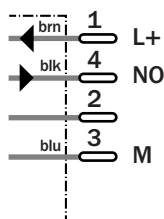
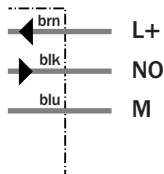
### Connection type

IM18-12BNS-ZW1	IM18-12BPS-ZC1
IM18-12BPS-ZW1	IM18-20NPS-ZC1
IM18-20NPS-ZW1	



3 x 0.34 mm<sup>2</sup>

M12, 4-pin



### See chapter Accessories

Connector, M12, 4-pin

Mounting systems

Technical specifications		IM18-	12BNS-ZW1	12BPS-ZW1	12BPS-ZC1	20NPS-ZW1	20NPS-ZC1						
<b>Sensing range <math>S_n</math></b>	12 mm												
	20 mm												
<b>Electrical configuration</b>	DC 3-wire												
<b>Supply voltage <math>V_s</math></b>	DC 10 ... 30 V												
Ripple $U_{pp}$	$\leq 20\%$ <sup>1)</sup>												
Voltage drop $U_d$	$\leq 2\text{ V}$ <sup>2)</sup>												
Power consumption	$\leq 10\text{ mA}$ <sup>3)</sup>												
<b>Continuous current <math>I_a</math></b>	$\leq 200\text{ mA}$												
Time delay before availability $t_v$	$\leq 100\text{ ms}$												
Hysteresis H, of $s_r$	1 ... 15 %												
Repeatability R	$\leq 5\%$ ( $U_b$ and $T_a$ constant) <sup>4)</sup>												
Temperature drift, of $s_r$	$\pm 10\%$												
EMC	According to EN 60947-5-2												
<b>Switching output</b>	NPN												
	PNP												
<b>Output function</b>	Normally open <sup>5)</sup>												
<b>Installation</b>	Quasi-flush <sup>6)</sup>												
	Non-flush												
<b>Connection type</b>	Cable, PVC, 2 m												
	Connector, M12, 4-pin												
<b>Enclosure rating</b>	IP 67 <sup>7)</sup>												
Max. switching frequency	500 Hz												
	200 Hz												
Dimensions	M18 x 1 <sup>8)</sup>												
<b>Short-circuit protection</b>	$\checkmark$ <sup>9)</sup>												
<b>Reverse polarity protection</b>	$\checkmark$												
<b>Power-up pulse suppression</b>	$\checkmark$												
Shock/vibration stress	30 g, 11 ms/10 ... 55 Hz, 1 mm												
Ambient temperature $T_a$	-25 °C ... +75 °C												
<b>Housing material</b>	Brass, chrome-plated, plastic												
Tightening torque	30 Nm												


1) of  $U_b$   
2) at  $I_a$  max  
3) without load

4) of  $s_r$   
5) other output functions available on request.

6) when mounting in conductible materials the sensors must be installed with a distance A to the surface. A Steel, metal =

4 mm/A Stainless steel = 1.5 mm  
7) according to EN 60529  
8) Thread diameter x pitch (mm)  
9) (pulsed)

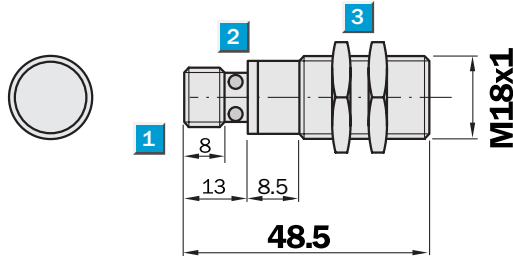
Order information	
Type	Order no.
IM18-12BNS-ZW1	6 027 516
IM18-12BPS-ZW1	6 027 515
IM18-12BPS-ZC1	6 027 517
IM18-20NPS-ZW1	6 027 518
IM18-20NPS-ZC1	6 027 519

 **Sensing range**  
12 mm

Inductive sensor

- Triple sensing range
- Installation quasi flush in metal
- Short-circuit protection (pulsed)
- Robust brass housing, chrome-plated with fine thread M18 x 1 mm
- Enclosure rating IP 67

Dimensional drawing

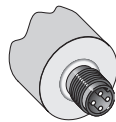


- 1 Connection
- 2 Display LED
- 3 Fastening nuts (2 x); width across 24, metal

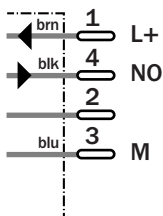


Connection type

IM18-12BPS-ZCK



M12, 4-pin



See chapter Accessories

Connector, M12, 4-pin

Mounting systems

Technical specifications		IM18-	12BPS-ZCK											
<b>Sensing range <math>S_n</math></b>	12 mm													
<b>Electrical configuration</b>	DC 3-wire													
<b>Supply voltage <math>V_s</math></b>	DC 10 ... 30 V													
Ripple $U_{pp}$	$\leq 10\%$ <sup>1)</sup>													
Voltage drop $U_d$	$\leq 2\text{ V}$ <sup>2)</sup>													
Power consumption	$\leq 10\text{ mA}$ <sup>3)</sup>													
<b>Continuous current <math>I_a</math></b>	$\leq 200\text{ mA}$													
Time delay before availability $t_v$	$\leq 100\text{ ms}$													
Hysteresis H, of $s_r$	1 ... 15 %													
Repeatability R	$\leq 5\%$ ( $U_b$ and $T_a$ constant) <sup>4)</sup>													
Temperature drift, of $s_r$	$\pm 10\%$													
EMC	According to EN 60947-5-2													
<b>Switching output</b>	PNP													
<b>Output function</b>	Normally open													
<b>Installation</b>	Quasi-flush <sup>5)</sup>													
<b>Connection type</b>	Connector, M12, 4-pin													
<b>Enclosure rating</b>	IP 67 <sup>6)</sup>													
Max. switching frequency	500 Hz													
Dimensions	M18 x 1 <sup>7)</sup>													
<b>Short-circuit protection</b>	$\checkmark$ <sup>8)</sup>													
<b>Reverse polarity protection</b>	$\checkmark$													
<b>Power-up pulse suppression</b>	$\checkmark$													
Shock/vibration stress	30 g, 11 ms/10 ... 55 Hz, 1 mm													
Ambient temperature $T_a$	-25 °C ... +75 °C													
<b>Housing material</b>	Brass, chrome-plated, plastic													
Tightening torque	30 Nm													

<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> when mounting in conductible materials the sensors must be installed with a distance A to the surface. A Steel, metal = 4 mm/A Stainless steel = 1.5 mm  
<sup>6)</sup> according to EN 60529  
<sup>7)</sup> Thread diameter x pitch (mm)  
<sup>8)</sup> (pulsed)

Order information	
<b>Type</b>	<b>Order no.</b>
IM18-12BPS-ZCK	6 025 569

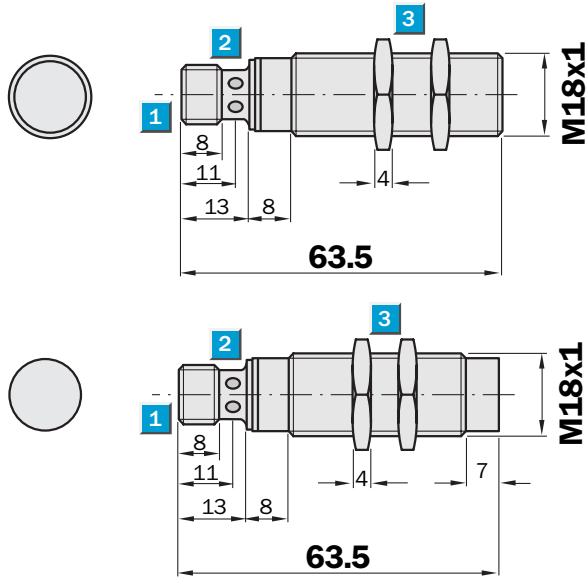


**Sensing range**  
10 / 20 mm

Inductive sensor

- Triple sensing range
- Robust stainless steel V4A, 316L one piece housing, with fine thread M18 x 1 mm
- Enclosure rating IP 69K + IP 68
- Especially suitable for use in the food and beverage sector
- Visual installation support

Dimensional drawing



- 1 Connection
- 2 Display LED
- 3 Fastening nuts (2x); width across 24, stainless steel V4A, 316L



Connection type

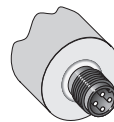
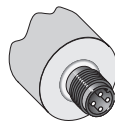
IM18-10BPO-NC1

IM18-10BNS-NC1

IM18-10BPS-NC1

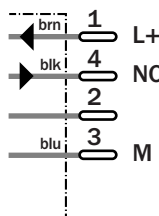
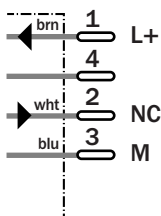
IM18-20NNS-NC1

IM18-20NPS-NC1



M12, 4-pin

M12, 4-pin



See chapter Accessories

Connector, M12, 4-pin

Technical specifications		IM18-	10BNS-NC1	10BPO-NC1	10BPS-NC1	20NNS-NC1	20NPS-NC1					
<b>Sensing range S<sub>n</sub></b>	10 mm											
	20 mm											
<b>Electrical configuration</b>	DC 3-wire											
<b>Supply voltage V<sub>s</sub></b>	DC 10 ... 30 V											
Ripple U <sub>pp</sub>	≤ 20 % <sup>1)</sup>											
Voltage drop U <sub>d</sub>	≤ 2 V <sup>2)</sup>											
Power consumption	≤ 12 mA <sup>3)</sup>											
<b>Continuous current I<sub>a</sub></b>	≤ 200 mA											
Time delay before availability t <sub>v</sub>	≤ 300 ms											
Hysteresis H, of s <sub>r</sub>	1 ... 15 %											
Repeatability R	≤ 5 % (U <sub>b</sub> and T <sub>a</sub> constant) <sup>4)</sup>											
Temperature drift, of s <sub>r</sub>	≤ 10 %											
EMC	According to EN 60947-5-2											
<b>Switching output</b>	NPN											
	PNP											
<b>Output function</b>	Normally open <sup>5)</sup>											
	Normally closed <sup>5)</sup>											
<b>Installation</b>	Flush											
	Non-flush <sup>6)</sup>											
<b>Connection type</b>	Connector, M12, 4-pin											
<b>Enclosure rating</b>	IP68, IP 69K <sup>7)</sup>											
Max. switching frequency	200 Hz											
Dimensions	M18 x 1 <sup>8)</sup>											
<b>Short-circuit protection</b>	✓ <sup>9)</sup>											
<b>Reverse polarity protection</b>	✓											
<b>Power-up pulse suppression</b>	✓											
Shock/vibration stress	30 g, 11 ms/10 ... 55 Hz, 1 mm <sup>10)</sup>											
Ambient temperature T <sub>a</sub>	-25 °C ... +85 °C											
<b>Housing material</b>	Stainless steel V4A 1.4404, 316L											
Tightening torque	50 Nm											

<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> other output functions available on request.

<sup>6)</sup> see installation notes  
<sup>7)</sup> according to EN 60529  
<sup>8)</sup> Thread diameter x pitch (mm)

<sup>9)</sup> (pulsed)  
<sup>10)</sup> according to IEC 60 947-5-2/7.4

**Correction factors:**

	Flush installation:	Non-flush installation:
Steel (ST37)	1.0	1.0
Copper	0.85	0.85
Aluminium	1.0	1.0
Brass	1.3	1.3
Stainless steel	0.4 / 0.8	0.4 / 0.8

1 mm / 2 mm thick

**Order information**

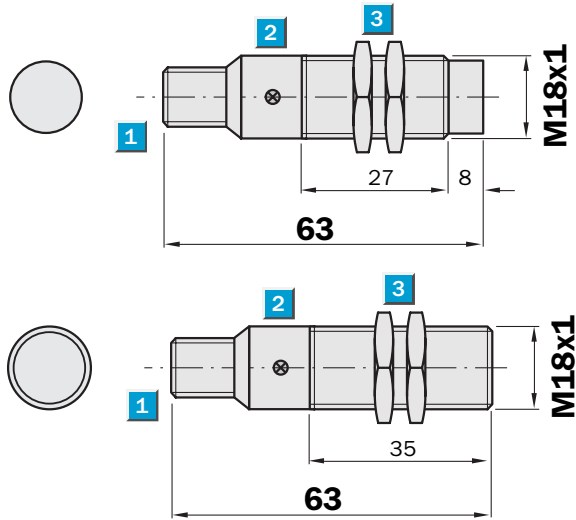
Type	Order no.
IM18-10BNS-NC1	6 027 578
IM18-10BPO-NC1	6 027 579
IM18-10BPS-NC1	6 027 577
IM18-20NNS-NC1	6 027 581
IM18-20NPS-NC1	6 027 580

**Sensing range**  
5/ 8 mm

Inductive sensor

- For harsh environment, resistant to most cutting oils
- Enclosure rating IP 68
- Complementary output function
- Robust brass housing, nickel-plated with fine thread M18 x 1 mm
- LED status indicator (NO function)

Dimensional drawing

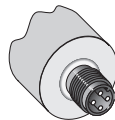


- 1 Connection
- 2 Display LED
- 3 Fastening nuts (2 x); width across 24, metal

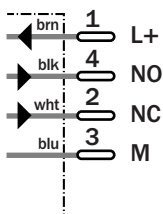


Connection type

- IM18-05BNP-ZC1
- IM18-05BPP-ZC1
- IM18-08NPP-ZC1
- IM18-08NPP-ZC1



M12, 4-pin



See chapter Accessories  
Connector, M12, 4-pin  
Mounting systems

Technical specifications		IM18-	05BNP-ZC1	05BPP-ZC1	08NNP-ZC1	08NPP-ZC1						
<b>Sensing range S<sub>n</sub></b>	5 mm											
	8 mm											
<b>Electrical configuration</b>	DC 4-wire											
<b>Supply voltage V<sub>s</sub></b>	DC 10 ... 30 V											
Ripple U <sub>pp</sub>	≤ 10 %											
Voltage drop U <sub>d</sub>	≤ 0.8 V <sup>1)</sup>											
Power consumption	≤ 20 mA <sup>2)</sup>											
<b>Continuous current I<sub>a</sub></b>	≤ 400 mA											
Time delay before availability t <sub>v</sub>	≤ 100 ms											
Hysteresis H, of s <sub>r</sub>	2 ... 10 %											
Repeatability R	≤ 5 % (U <sub>b</sub> and T <sub>a</sub> constant) <sup>3)</sup>											
Temperature drift, of s <sub>r</sub>	± 10 %											
EMC	According to EN 60947-5-2											
<b>Switching output</b>	NPN											
	PNP											
<b>Output function</b>	Complementary											
<b>Installation</b>	Flush											
	Non-flush											
<b>Connection type</b>	Connector, M12, 4-pin											
<b>Enclosure rating</b>	IP 68											
Max. switching frequency	1,000 Hz											
Dimensions	M18 x 1 <sup>4)</sup>											
<b>Short-circuit protection</b>	✓ <sup>5)</sup>											
<b>Reverse polarity protection</b>	✓											
<b>Power-up pulse suppression</b>	✓											
Shock/vibration stress	30 g, 11 ms/10 ... 55 Hz, 1 mm											
Ambient temperature T <sub>a</sub>	-25 °C ... +70 °C											
<b>Housing material</b>	Brass nickel-plated, plastic											
Tightening torque	40 Nm											

<sup>1)</sup> at I<sub>a</sub> max

<sup>2)</sup> without load

<sup>3)</sup> of s<sub>r</sub>

<sup>4)</sup> Thread diameter x pitch (mm)  
<sup>5)</sup> (pulsed)

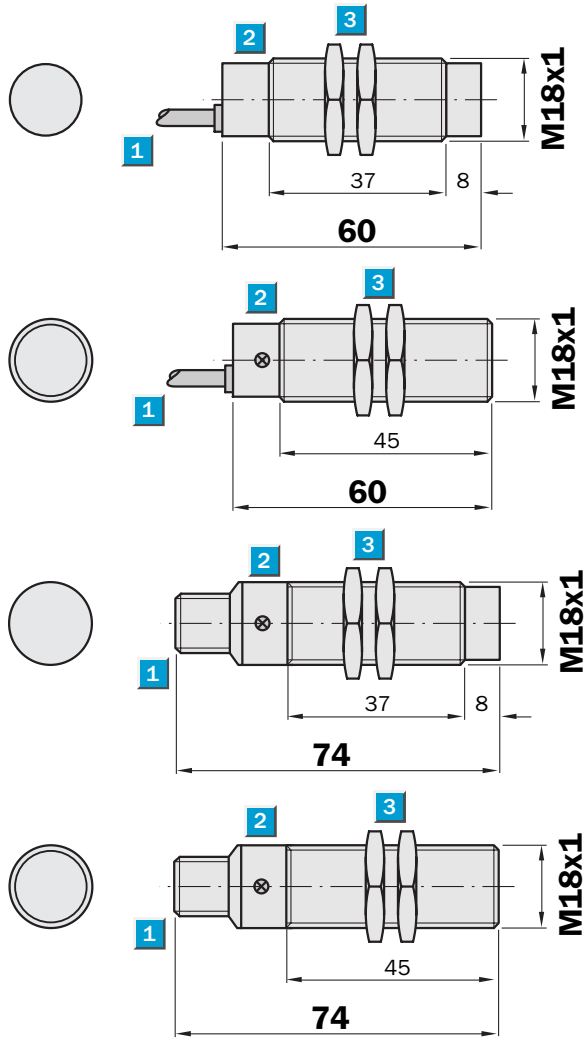
Order information	
Type	Order no.
IM18-05BNP-ZC1	7 902 932
IM18-05BPP-ZC1	7 902 931
IM18-08NNP-ZC1	7 902 934
IM18-08NPP-ZC1	7 902 933

**Sensing range**  
5 / 8 mm

Inductive sensor

- Free configurable output functions in one sensor PNP / NO, PNP / NC NPN / NO, NPN / NC
- Short-circuit protection
- Robust brass housing, nickel-plated with fine thread M18 x 1 mm
- Enclosure rating IP 67
- LED status indicator (NO function)

### Dimensional drawing

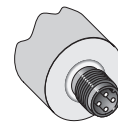
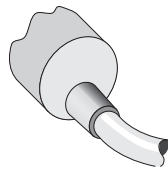


- 1 Connection
- 2 Display LED
- 3 Fastening nuts (2 x); width across 24, metal

### Connection type

IM18-05BCP-ZW1  
IM18-08NCP-ZW1

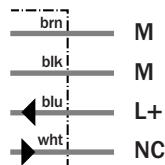
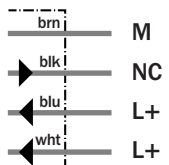
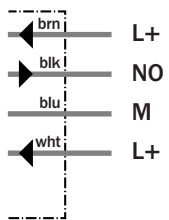
IM18-05BCP-ZC1  
IM18-08NCP-ZC1



4 x 0.34 mm<sup>2</sup>

PNP version

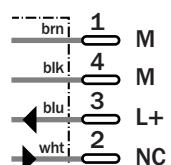
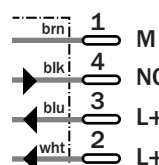
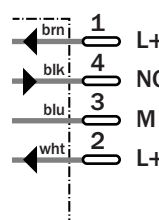
NPN version



M12, 4-pin

PNP version

NPN version



### See chapter Accessories

Connector, M12, 4-pin  
Mounting systems

Technical specifications		IM18-	05BCP-ZW1	05BCP-ZC1	08NCP-ZW1	08NCP-ZC1						
<b>Sensing range <math>S_n</math></b>	5 mm											
	8 mm											
<b>Electrical configuration</b>	DC 4-wire											
<b>Supply voltage <math>V_s</math></b>	DC 10 ... 30 V											
Ripple $U_{pp}$	$\leq 10 \%$											
Voltage drop $U_d$	$\leq 1.2 \text{ V}^{1)}$											
Power consumption	$\leq 30 \text{ mA}^{2)}$											
<b>Continuous current <math>I_a</math></b>	$\leq 100 \text{ mA}$											
Time delay before availability $t_v$	$\leq 200 \text{ ms}$											
Hysteresis H, of $s_r$	2 ... 10 %											
Repeatability R	$\leq 5 \%$ ( $U_b$ and $T_a$ constant) <sup>3)</sup>											
Temperature drift, of $s_r$	$\pm 10 \%$											
EMC	According to EN 60947-5-2											
<b>Switching output</b>	PNP/NPN config.											
<b>Output function</b>	Configurable											
<b>Installation</b>	Flush											
	Non-flush											
<b>Connection type</b>	Cable, PVC, 2 m											
	Connector, M12, 4-pin											
<b>Enclosure rating</b>	IP 67 <sup>4)</sup>											
Max. switching frequency	300 Hz											
Dimensions	M18 x 1 <sup>5)</sup>											
<b>Short-circuit protection</b>	✓											
<b>Reverse polarity protection</b>	✓											
<b>Power-up pulse suppression</b>	✓											
Shock/vibration stress	30 g, 11 ms/10 ... 55 Hz, 1 mm											
Ambient temperature $T_a$	-25 °C ... +70 °C											
<b>Housing material</b>	Brass nickel-plated, plastic											
Tightening torque	40 Nm											

1) at  $I_a$  max

2) without load


3) of  $s_r$ 

4) according to EN 60529

5) Thread diameter x pitch (mm)

**Order information**

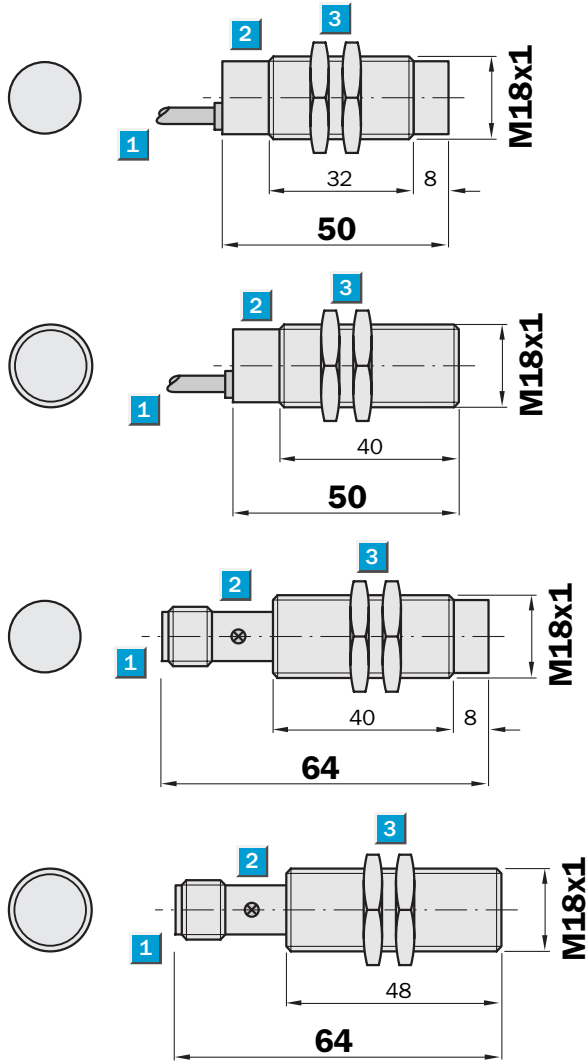
Type	Order no.
IM18-05BCP-ZW1	7 902 935
IM18-05BCP-ZC1	7 902 936
IM18-08NCP-ZW1	7 902 937
IM18-08NCP-ZC1	7 902 938

 **Sensing range**  
5 / 8 mm

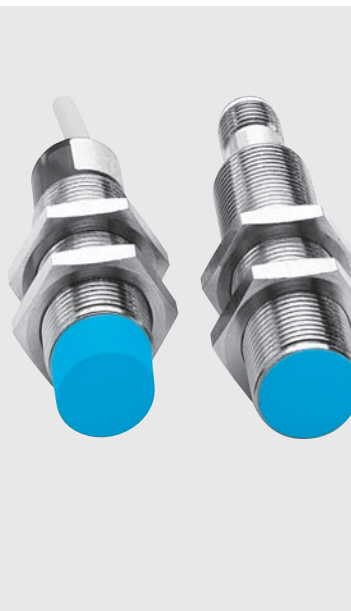
Inductive sensor

- Short-circuit protection (pulsed)
- Robust brass housing, nickel-plated with fine thread M18 x 1 mm
- Enclosure rating IP 67

Dimensional drawing



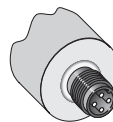
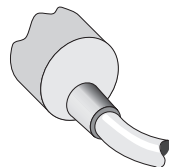
- 1 Connection
- 2 Display LED
- 3 Fastening nuts (2 x); width across 24, metal



Connection type

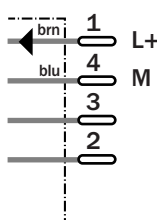
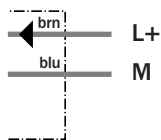
IM18-05BDS-ZW1  
IM18-08NDS-ZW1

IM18-05BDS-ZC1  
IM18-08NDS-ZC1



2 x 0.34 mm<sup>2</sup>

M12, 4-pin



See chapter Accessories

Connector, M12, 4-pin  
Mounting systems

Technical specifications		IM18-	05BDS-ZW1	05BDS-ZC1	08NDS-ZW1	08NDS-ZC1						
<b>Sensing range S<sub>n</sub></b>	5 mm											
	8 mm											
<b>Electrical configuration</b>	DC 2-wire											
<b>Supply voltage V<sub>s</sub></b>	DC 10 ... 30 V											
Ripple U <sub>pp</sub>	≤ 10 %											
Voltage drop U <sub>d</sub>	≤ 2.8 V <sup>1)</sup>											
<b>Continuous current I<sub>a</sub></b>	≤ 100 mA											
Min. load current	≥ 3 mA											
Residual current	≤ 0.8 mA											
Time delay before availability t <sub>v</sub>	≤ 50 ms											
Hysteresis H, of s <sub>r</sub>	2 ... 10 %											
Repeatability R	≤ 2 % (U <sub>b</sub> and T <sub>a</sub> constant) <sup>2)</sup>											
Temperature drift, of s <sub>r</sub>	± 10 %											
EMC	According to EN 60947-5-2											
<b>Output function</b>	Normally open <sup>3)</sup>											
<b>Installation</b>	Flush											
	Non-flush											
<b>Connection type</b>	Cable, PVC, 2 m											
	Connector, M12, 4-pin											
<b>Enclosure rating</b>	IP 67 <sup>4)</sup>											
Max. switching frequency	300 Hz											
Dimensions	M18 x 1 <sup>5)</sup>											
<b>Short-circuit protection</b>	✓ <sup>6)</sup>											
<b>Reverse polarity protection</b>	✓											
Shock/vibration stress	30 g, 11 ms/10 ... 55 Hz, 1 mm											
Ambient temperature T <sub>a</sub>	-25 °C ... +70 °C											
<b>Housing material</b>	Brass nickel-plated, plastic											
Tightening torque	30 Nm											

<sup>1)</sup> at I<sub>a</sub> max  
<sup>2)</sup> of s<sub>r</sub>


<sup>3)</sup> normally closed function available on request

<sup>4)</sup> according to EN 60529  
<sup>5)</sup> Thread diameter x pitch (mm)

<sup>6)</sup> (pulsed)

Order information	
Type	Order no.
IM18-05BDS-ZW1	6 020 318
IM18-05BDS-ZC1	6 020 320
IM18-08NDS-ZW1	6 020 322
IM18-08NDS-ZC1	6 020 324

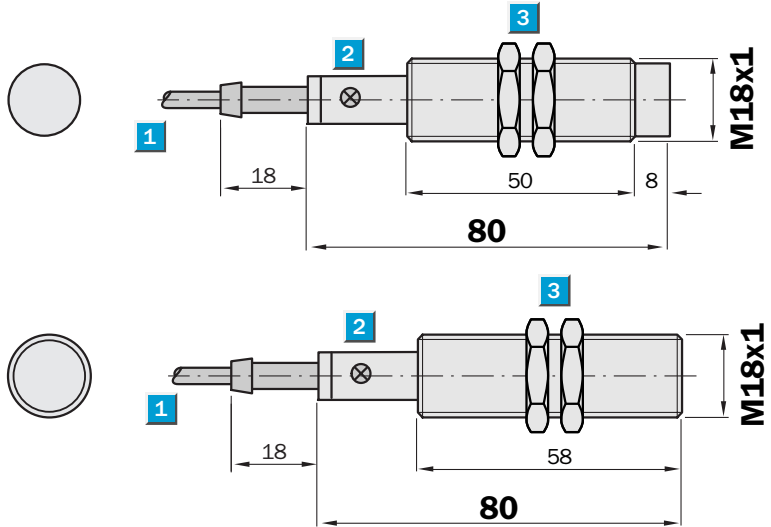


 **Sensing range**  
5 / 8 mm

Inductive sensor

- Broad supply voltage range in AC and DC
- Robust brass housing, nickel-plated, with fine thread M18 x 1 mm
- Enclosure rating IP 67

Dimensional drawing



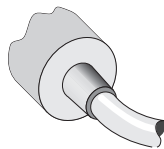
- 1 Connection
- 2 Display LED
- 3 Fastening nuts (2 x); width across 24, metal



Connection type

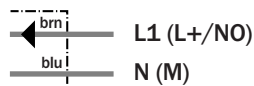
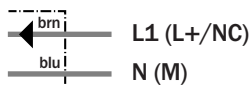
IM18-05BU0-ZU0  
IM18-08NU0-ZU0

IM18-05BUS-ZU0  
IM18-08NUS-ZU0



2 x 0.5 mm<sup>2</sup>

2 x 0.5 mm<sup>2</sup>



See chapter Accessories  
Mounting systems

Technical specifications		IM18-	05BUO -ZUO	05BUS -ZUO	08NUO -ZUO	08NUS -ZUO						
<b>Sensing range S<sub>n</sub></b>	5 mm											
	8 mm											
<b>Electrical configuration</b>	AC/DC 2-wire											
<b>Supply voltage V<sub>s</sub></b>	AC/DC 20 ... 250 V											
Voltage drop U <sub>d</sub> AC/DC	≤ 6.5 V / ≤ 6 V											
<b>Continuous current I<sub>a</sub></b>	≤ 350 mA AC (... + 50 °C)											
<b>Continuous current I<sub>a</sub></b>	≤ 250 mA AC (... + 80 °C)											
<b>Continuous current I<sub>a</sub></b>	≤ 100 mA DC											
Intermittent current I <sub>k</sub>	2.2 A (20 ms/0.5Hz)											
Min. load current	5 mA											
Residual current	≤ 2.5 mA (250 V AC)											
Residual current	≤ 1.3 mA (110 V AC)											
Residual current	≤ 0.8 mA (24 V DC)											
Time delay before availability t <sub>v</sub>	≤ 8 ms											
Hysteresis H, of s <sub>r</sub>	1 ... 15 %											
Repeatability R	≤ 10 % (U <sub>b</sub> and T <sub>a</sub> constant) <sup>1)</sup>											
Temperature drift, of s <sub>r</sub>	± 10 %											
EMC	According to EN 60947-5-2											
<b>Output function</b>	Normally closed											
	Normally open											
<b>Installation</b>	Flush											
	Non-flush											
<b>Connection type</b>	Cable, PUR-PVC, 2 m											
	Cable, PVC/PUR, 2 m											
<b>Enclosure rating</b>	IP 67 <sup>2)</sup>											
<b>VDE protection class</b>	□											
Max. switching frequency AC/DC	25 Hz / 100 Hz											
Dimensions	M18 x 1 <sup>3)</sup>											
<b>Power-up pulse suppression</b>	✓											
Shock/vibration stress	30 g, 11 ms/10 ... 55 Hz, 1 mm											
Ambient temperature T <sub>a</sub>	-25 °C ... +80 °C											
<b>Housing material</b>	Brass nickel-plated, plastic											
Tightening torque	35 Nm											

<sup>1)</sup> of s<sub>r</sub>

<sup>2)</sup> according to EN 60529

<sup>3)</sup> Thread diameter x pitch (mm)

#### Order information

Type	Order no.
IM18-05BUO-ZUO	7 902 123
IM18-05BUS-ZUO	7 902 122
IM18-08NUO-ZUO	7 902 125
IM18-08NUS-ZUO	7 902 124

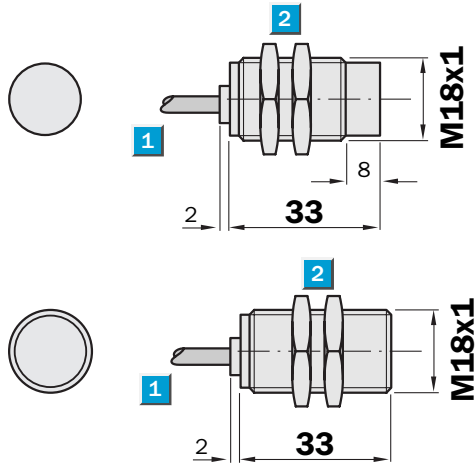
# Inductive sensor, IM18, NAMUR

**Sensing range**  
5 / 8 mm

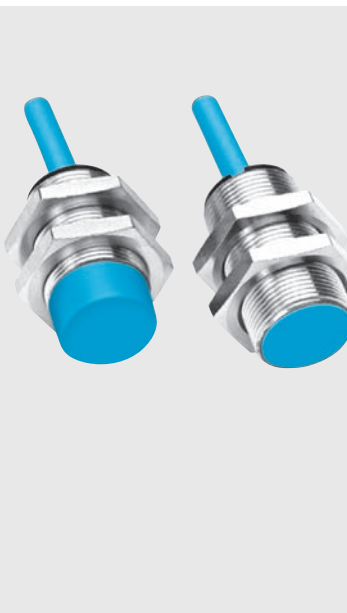
Inductive sensor

- NAMUR to EN 60 947-5-6
- High switching frequency
- Robust brass housing, nickel-plated, with fine thread M18 x 1 mm
- Enclosure rating IP 67
- Classification PTB 03 ATEX 2037
- $\text{Ex}$  II 2 G EEx ia IIC T6

## Dimensional drawing

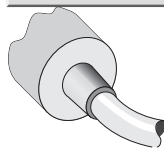


- 1 Connection
- 2 Fastening nuts (2 x); width across 24, metal

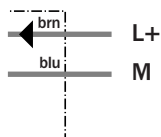


## Connection type

- IM18-05B-N-ZWO
- IM18-08N-N-ZWO



2 x 0.34 mm<sup>2</sup>



## See chapter Accessories

- Mounting systems
- Switching units

Technical specifications		IM18-	05B-N-ZWO	08N-N-ZWO									
<b>Sensing range S<sub>n</sub></b>	5 mm												
	8 mm												
<b>Electrical configuration</b>	NAMUR												
<b>Supply voltage V<sub>s</sub></b>	DC 5 ... 25 V												
Nominal voltage V <sub>n</sub>	DC 8.2 V												
Power consumption, attenuated	≤ 1 mA												
Power consumption, unattenuated	≥ 2.2 mA												
Internal capacitance	≤ 230 nF												
	≤ 240 nF												
Internal inductance	≤ 60 μH												
Cable resistance	≤ 50 Ohm												
Temperature drift, of s <sub>r</sub>	± 10 %												
EMC	According to EN 60 947-5-6												
<b>Switching output</b>	Control current dependent on switching state <sup>1)</sup>												
<b>Output function</b>	NAMUR												
<b>Installation</b>	Flush												
	Non-flush												
<b>Connection type</b>	Cable, PVC, 2 m												
<b>Enclosure rating</b>	IP 67 <sup>2)</sup>												
Max. switching frequency	720 Hz												
	300 Hz												
Dimensions	M18 x 1 <sup>3)</sup>												
<b>short-circuit protected</b>	✓												
<b>Reverse polarity protected</b>	✓												
Shock/vibration stress	30 g, 11 ms/10 ... 55 Hz, 1 mm												
Ambient temperature T <sub>a</sub>	-25 °C ... +70 °C												
<b>Housing material</b>	Brass nickel-plated, plastic												
Tightening torque	35 Nm												

<sup>1)</sup> according to NAMUR EN 60947-5-6

<sup>2)</sup> according to EN 60529

<sup>3)</sup> Thread diameter x pitch (mm)

**Max. data for connecting Isolating unit EN 2 EX**

or other approved isolating amplifier:

<b>Short circuit current I<sub>Kmax</sub></b>	50 mA
<b>No load voltage U<sub>0</sub></b>	16 V
<b>Power loss P<sub>max</sub></b>	75 mW

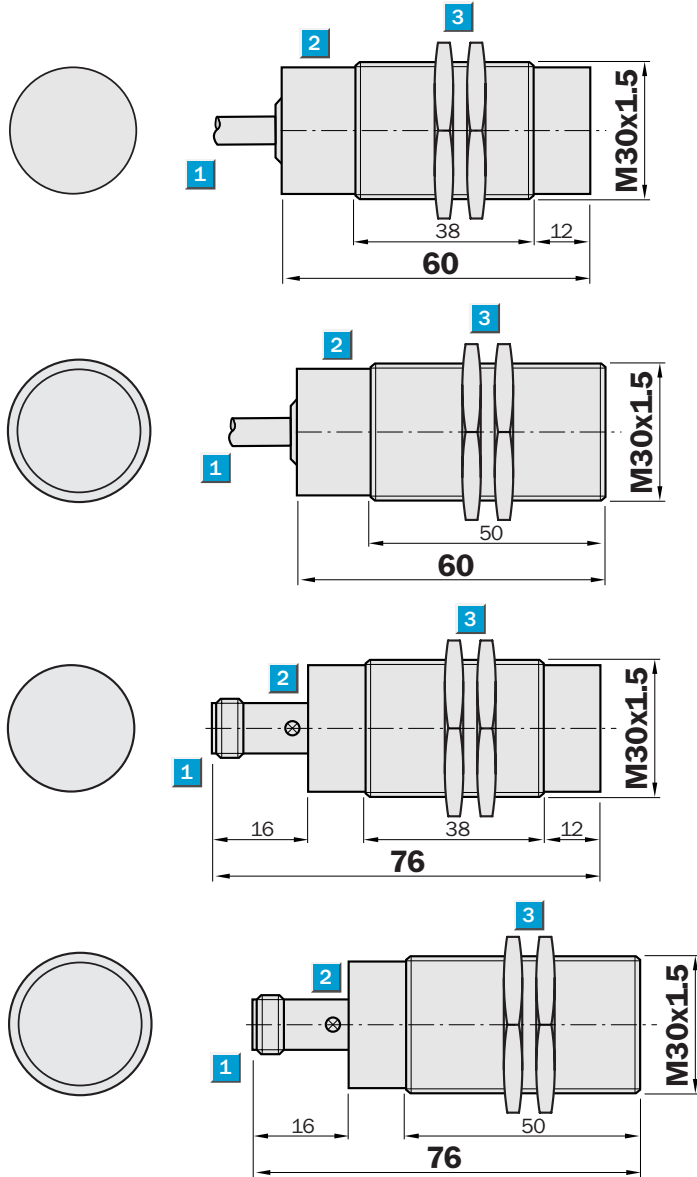
Order information	
Type	Order no.
IM18-05B-N-ZWO	6 021 126
IM18-08N-N-ZWO	6 021 127

**Sensing range**  
10 / 15 mm

Inductive sensor

- High switching frequency
- Short-circuit protection (pulsed)
- Robust brass housing, nickel-plating with fine thread M30 x 1.5 mm
- Enclosure rating IP 67

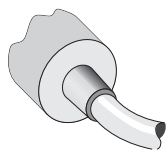
Dimensional drawing



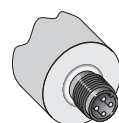
- 1 Connection
- 2 Display LED
- 3 Fastening nuts (2 x); width across 36, metal

Connection type

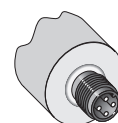
IM30-10BNS-ZW1	IM30-10BNS-ZC1	IM30-10BPO-ZC1
IM30-10BPS-ZW1	IM30-10BPS-ZC1	
IM30-15NNS-ZW1	IM30-15NNS-ZC1	
IM30-15NPS-ZW1	IM30-15NPS-ZC1	
IM30-15NPO-ZW1		



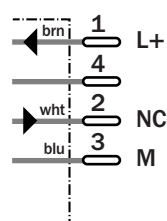
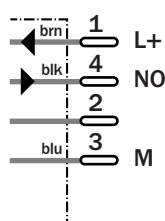
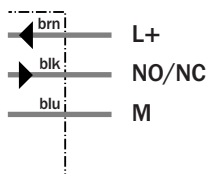
3 x 0.5 mm<sup>2</sup>



M12, 4-pin



M12, 4-pin



See chapter Accessories

Connector, M12, 4-pin

Mounting systems

Technical specifications		IM30-	10BNS-ZW1	10BPS-ZW1	10BNS-ZC1	10BPO-ZC1	10BPS-ZC1	15NNS-ZW1	15NPS-ZW1	15NPO-ZW1	15NNS-ZC1	15NPS-ZC1
<b>Sensing range S<sub>n</sub></b>	10 mm											
	15 mm											
<b>Electrical configuration</b>	DC 3-wire											
<b>Supply voltage V<sub>s</sub></b>	DC 10 ... 30 V											
Ripple U <sub>pp</sub>	≤ 10 % <sup>1)</sup>											
Voltage drop U <sub>d</sub>	≤ 1 V <sup>2)</sup>											
Power consumption	≤ 20 mA <sup>3)</sup>											
<b>Continuous current I<sub>a</sub></b>	≤ 400 mA											
Time delay before availability t <sub>v</sub>	≤ 100 ms											
Hysteresis H, of s <sub>r</sub>	2 ... 10 %											
Repeatability R	≤ 2 % (U <sub>b</sub> and T <sub>a</sub> constant) <sup>4)</sup>											
Temperature drift, of s <sub>r</sub>	± 10 %											
EMC	According to EN 60947-5-2											
<b>Switching output</b>	NPN											
	PNP											
<b>Output function</b>	Normally open											
	Normally closed											
<b>Installation</b>	Flush											
	Non-flush											
<b>Connection type</b>	Cable, PVC, 2 m											
	Connector, M12, 4-pin											
<b>Enclosure rating</b>	IP 67 <sup>5)</sup>											
Max. switching frequency	200 Hz											
Dimensions	M30 x 1.5 <sup>6)</sup>											
<b>Short-circuit protection</b>	✓ <sup>7)</sup>											
<b>Reverse polarity protection</b>	✓											
<b>Power-up pulse suppression</b>	✓											
Shock/vibration stress	30 g, 11 ms/10 ... 55 Hz, 1 mm											
Ambient temperature T <sub>a</sub>	-25 °C ... +70 °C											
<b>Housing material</b>	Brass nickel-plated, plastic											
Tightening torque	60 Nm											

<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> according to EN 60529  
<sup>6)</sup> Thread diameter x pitch (mm)

<sup>7)</sup> (pulsed)

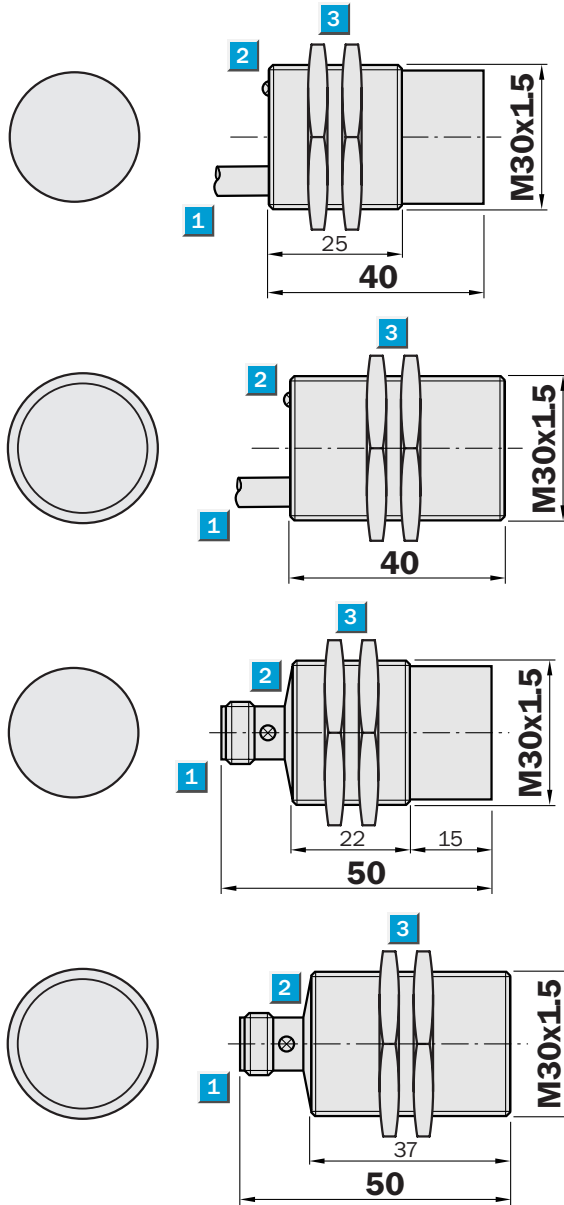
Order information	
Type	Order no.
IM30-10BNS-ZW1	6 020 275
IM30-10BPS-ZW1	6 020 274
IM30-10BNS-ZC1	6 020 279
IM30-10BPO-ZC1	6 020 280
IM30-10BPS-ZC1	6 020 278
IM30-15NNS-ZW1	6 020 283
IM30-15NPS-ZW1	6 020 282
IM30-15NPO-ZW1	6 020 284
IM30-15NNS-ZC1	6 020 287
IM30-15NPS-ZC1	6 020 286

**Sensing range**  
10 / 15 mm

Inductive sensor

- Short-circuit protection (pulsed)
- Robust brass housing, nickel-plating with fine thread M30 x 1.5 mm
- Enclosure rating IP 67
- High switching frequency

### Dimensional drawing



- 1 Connection
- 2 Display LED
- 3 Fastening nuts (2 x); width across 36, metal

### Connection type

IM30-10BNS-ZUK  
IM30-10BPS-ZUK  
IM30-15NPS-ZUK  
IM30-15NNS-ZUK

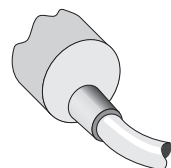
IM30-10BNS-ZCK  
IM30-10BPS-ZCK  
IM30-15NNS-ZCK  
IM30-15NPS-ZCK



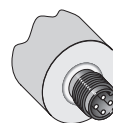
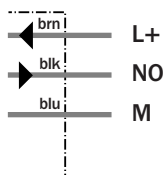
### See chapter Accessories

Connector, M12, 4-pin

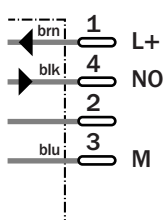
Mounting systems



3 x 0.5 mm<sup>2</sup>



M12, 4-pin



Technical specifications		IM30-	10BNS-ZUK	10BPS-ZUK	10BNS-ZCK	10BPS-ZCK	15NPS-ZUK	15NNS-ZUK	15NNS-ZCK	15NPS-ZCK		
<b>Sensing range S<sub>n</sub></b>	10 mm											
	15 mm											
<b>Electrical configuration</b>	DC 3-wire											
<b>Supply voltage V<sub>s</sub></b>	DC 10 ... 30 V											
Ripple U <sub>pp</sub>	≤ 10 % <sup>1)</sup>											
Voltage drop U <sub>d</sub>	≤ 1.5 V <sup>2)</sup>											
Power consumption	≤ 10 mA <sup>3)</sup>											
<b>Continuous current I<sub>a</sub></b>	≤ 300 mA											
Time delay before availability t <sub>v</sub>	≤ 15 ms											
Hysteresis H, of s <sub>r</sub>	1 ... 10 %											
Repeatability R	≤ 3 % (U <sub>b</sub> and T <sub>a</sub> constant) <sup>4)</sup>											
Temperature drift, of s <sub>r</sub>	± 10 %											
EMC	According to EN 60947-5-2											
<b>Switching output</b>	NPN											
	PNP											
<b>Output function</b>	Normally open											
<b>Installation</b>	Flush											
	Non-flush											
<b>Connection type</b>	Cable, PUR-PVC, 2 m											
	Connector, M12, 4-pin											
Max. switching frequency	500 Hz											
Dimensions	M30 x 1.5 <sup>5)</sup>											
<b>Wire-break protection</b>	✓											
<b>Short-circuit protection</b>	✓ <sup>6)</sup>											
<b>Reverse polarity protection</b>	✓											
<b>Power-up pulse suppression</b>	✓											
Shock/vibration stress	30 g, 11 ms/10 ... 55 Hz, 1 mm											
Ambient temperature T <sub>a</sub>	-25 °C ... +70 °C											
<b>Housing material</b>	Brass nickel-plated, plastic											
Tightening torque	50 Nm											

<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> Thread diameter x pitch (mm)  
<sup>6)</sup> (pulsed)

Order information	
Type	Order no.
IM30-10BNS-ZUK	1 017 446
IM30-10BPS-ZUK	1 017 434
IM30-10BNS-ZCK	1 017 448
IM30-10BPS-ZCK	1 017 436
IM30-15NPS-ZUK	1 017 435
IM30-15NNS-ZUK	1 017 447
IM30-15NNS-ZCK	1 017 449
IM30-15NPS-ZCK	1 017 437

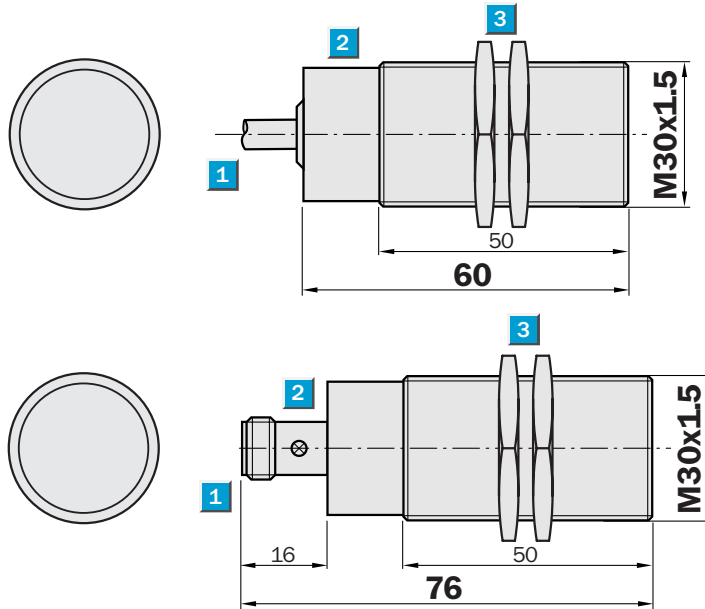


**Sensing range**  
15 mm

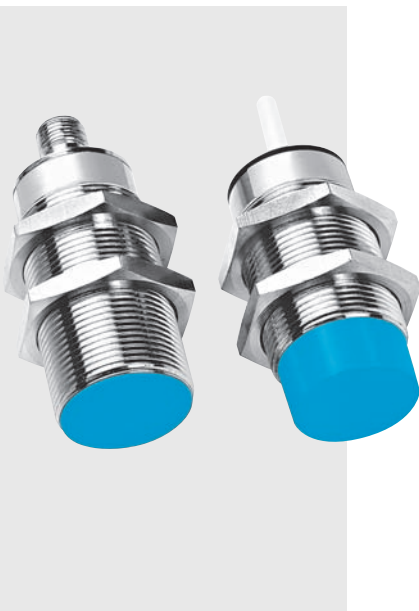
Inductive sensor

- Enhanced sensing range
- High switching frequency
- Short-circuit protection (pulsed)
- Robust brass housing, nickel-plated with fine thread M30 x 1.5 mm
- Enclosure rating IP 67

Dimensional drawing

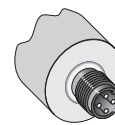
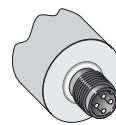
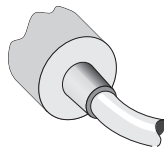


- 1 Connection
- 2 Display LED
- 3 Fastening nuts (2 x); width across 36, metal



Connection type

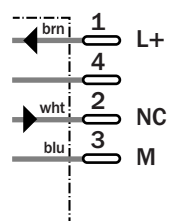
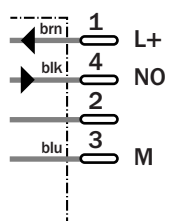
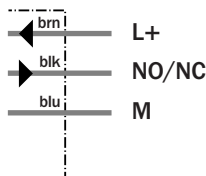
IM30-15BNS-ZW1	IM30-15BNS-ZC1	IM30-15BPO-ZC1
IM30-15BPO-ZW1	IM30-15BPS-ZC1	
IM30-15BPS-ZW1		



3 x 0.5 mm<sup>2</sup>

M12, 4-pin

M12, 4-pin



See chapter Accessories  
Connector, M12, 4-pin  
Mounting systems

Technical specifications		IM30-	15BNS-ZW1	15BPO-ZW1	15BPS-ZW1	15BNS-ZC1	15BPO-ZC1	15BPS-ZC1				
<b>Sensing range <math>S_n</math></b>	15 mm											
<b>Electrical configuration</b>	DC 3-wire											
<b>Supply voltage <math>V_s</math></b>	DC 10 ... 30 V											
Ripple $U_{pp}$	$\leq 10\%$ <sup>1)</sup>											
Voltage drop $U_d$	$\leq 1\text{ V}$ <sup>2)</sup>											
Power consumption	$\leq 10\text{ mA}$ <sup>3)</sup>											
<b>Continuous current <math>I_a</math></b>	$\leq 400\text{ mA}$											
Time delay before availability $t_v$	$\leq 100\text{ ms}$											
Hysteresis H, of $s_r$	2 ... 15 %											
Repeatability R	$\leq 5\%$ ( $U_b$ and $T_a$ constant) <sup>4)</sup>											
Temperature drift, of $s_r$	$\pm 10\%$											
EMC	According to EN 60947-5-2											
<b>Switching output</b>	NPN											
	PNP											
<b>Output function</b>	Normally open											
	Normally closed											
<b>Installation</b>	Flush <sup>5)</sup>											
<b>Connection type</b>	Cable, PVC, 2 m											
	Connector, M12, 4-pin											
Max. switching frequency	150 Hz											
Dimensions	M30 x 1.5 <sup>6)</sup>											
<b>Short-circuit protection</b>	✓ <sup>7)</sup>											
<b>Reverse polarity protection</b>	✓											
<b>Power-up pulse suppression</b>	✓											
Shock/vibration stress	30 g, 11 ms/10 ... 55 Hz, 1 mm											
Ambient temperature $T_a$	-25 °C ... +70 °C											
<b>Housing material</b>	Brass nickel-plated, plastic											
Tightening torque	60 Nm											

<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> see installation notes  
<sup>6)</sup> Thread diameter x pitch (mm)

<sup>7)</sup> (pulsed)

#### Order information

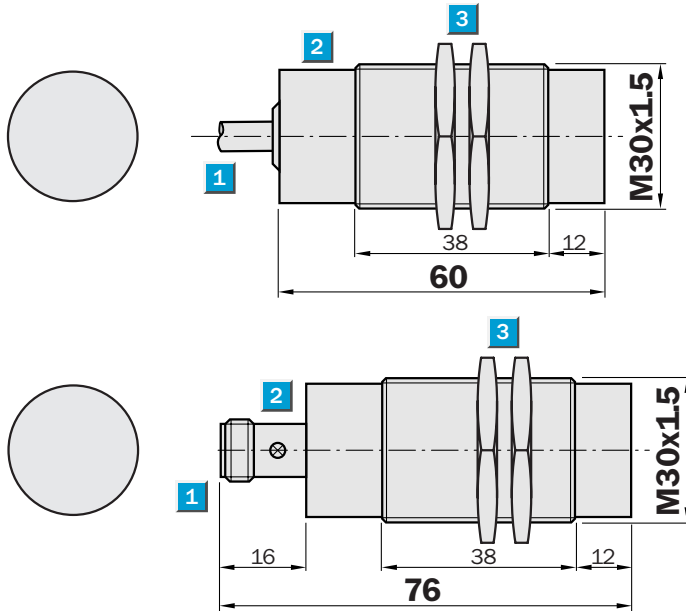
Type	Order no.
IM30-15BNS-ZW1	7 900 142
IM30-15BPO-ZW1	7 900 143
IM30-15BPS-ZW1	7 900 141
IM30-15BNS-ZC1	7 900 146
IM30-15BPO-ZC1	7 900 147
IM30-15BPS-ZC1	7 900 145

**Sensing range**  
20 mm

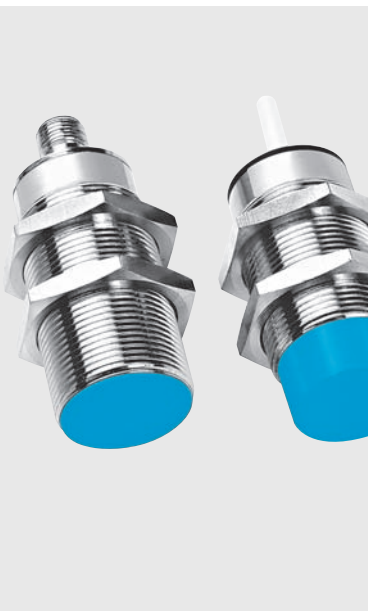
Inductive sensor

- Enhanced sensing range
- High switching frequency
- Short-circuit protection (pulsed)
- Robust brass housing, nickel-plated with fine thread M30 x 1.5 mm
- Enclosure rating IP 67

Dimensional drawing



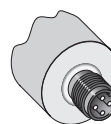
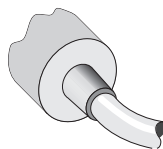
- 1 Connection
- 2 Display LED
- 3 Fastening nuts (2 x); width across 36, metal



Connection type

IM30-20NNS-ZW1  
IM30-20NPO-ZW1  
IM30-20NPS-ZW1

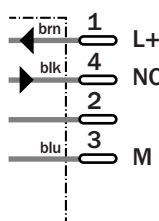
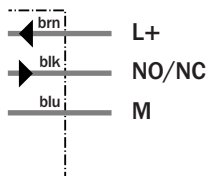
IM30-20NNS-ZC1  
IM30-20NPS-ZC1



See chapter Accessories  
Connector, M12, 4-pin  
Mounting systems

3 x 0.5 mm<sup>2</sup>

M12, 4-pin



Technical specifications		IM30-	20NNS-ZW1	20NPO-ZW1	20NPS-ZW1	20NNS-ZC1	20NPS-ZC1						
<b>Sensing range <math>S_n</math></b>	20 mm												
<b>Electrical configuration</b>	DC 3-wire												
<b>Supply voltage <math>V_s</math></b>	DC 10 ... 30 V												
Ripple $U_{pp}$	$\leq 10\%$ <sup>1)</sup>												
Voltage drop $U_d$	$\leq 1\text{ V}$ <sup>2)</sup>												
Power consumption	$\leq 10\text{ mA}$ <sup>3)</sup>												
<b>Continuous current <math>I_a</math></b>	$\leq 400\text{ mA}$												
Time delay before availability $t_v$	$\leq 100\text{ ms}$												
Hysteresis H, of $s_r$	2 ... 15 %												
Repeatability R	$\leq 5\%$ ( $U_b$ and $T_a$ constant) <sup>4)</sup>												
Temperature drift, of $s_r$	$\pm 10\%$												
EMC	According to EN 60947-5-2												
<b>Switching output</b>	NPN												
	PNP												
<b>Output function</b>	Normally open												
	Normally closed												
<b>Installation</b>	Non-flush												
<b>Connection type</b>	Cable, PVC, 2 m												
	Connector, M12, 4-pin												
Max. switching frequency	150 Hz												
Dimensions	M30 x 1.5 <sup>5)</sup>												
<b>Short-circuit protection</b>	✓ <sup>6)</sup>												
<b>Reverse polarity protection</b>	✓												
<b>Power-up pulse suppression</b>	✓												
Shock/vibration stress	30 g, 11 ms/10 ... 55 Hz, 1 mm												
Ambient temperature $T_a$	-25 °C ... +70 °C												
<b>Housing material</b>	Brass nickel-plated, plastic												
Tightening torque	60 Nm												

<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> Thread diameter x pitch (mm)  
<sup>6)</sup> (pulsed)

Order information	
Type	Order no.
IM30-20NNS-ZW1	7 900 154
IM30-20NPO-ZW1	7 900 155
IM30-20NPS-ZW1	7 900 153
IM30-20NNS-ZC1	7 900 158
IM30-20NPS-ZC1	7 900 157

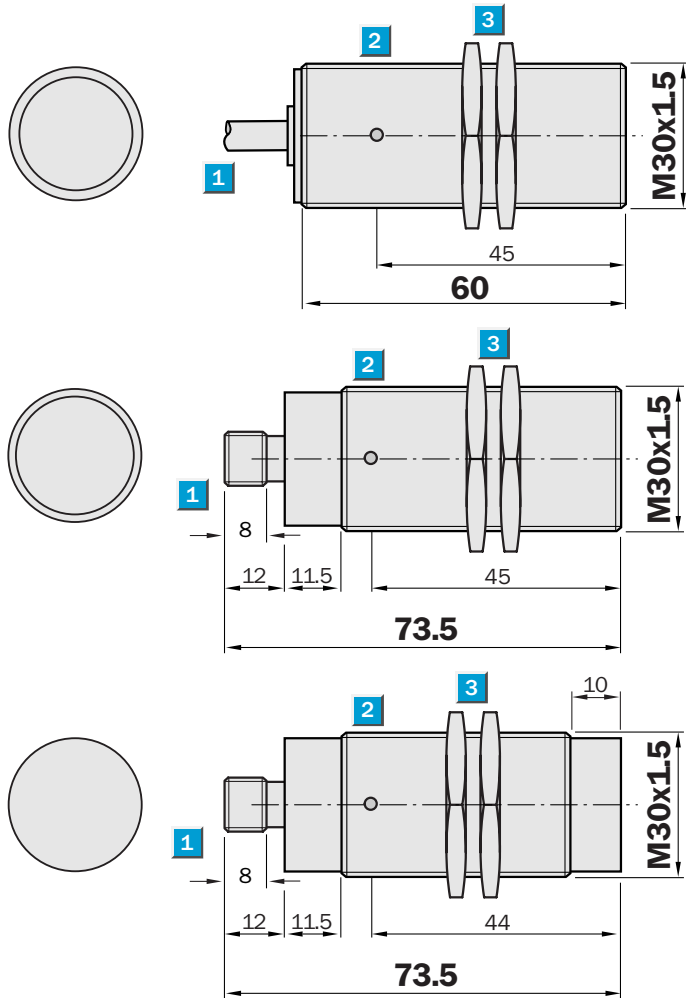
**Sensing range**  
22 / 40 mm

Inductive sensor

- Triple sensing range
- Installation quasi flush or non-flush in metal
- Short-circuit protection (pulsed)
- Robust brass housing, chrome-plated with fine thread M30 x 1 mm
- Enclosure rating IP 67



Dimensional drawing



- 1 Connection
- 2 Display LED
- 3 Fastening nuts (2 x); width across 36, metal

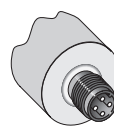
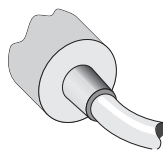


Connection type

IM30-22BNS-ZW1

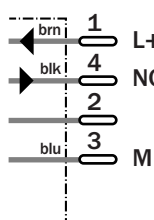
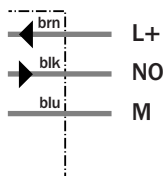
IM30-22BPS-ZC1

IM30-40NPS-ZC1



3 x 0.34 mm<sup>2</sup>

M12, 4-pin



See chapter Accessories  
Connector, M12, 4-pin  
Mounting systems

Technical specifications		IM30-	22BNS -ZW1	22BPS -ZC1	40NPS -ZC1							
<b>Sensing range <math>S_n</math></b>	22 mm											
	40 mm											
<b>Electrical configuration</b>	DC 3-wire											
<b>Supply voltage <math>V_s</math></b>	DC 10 ... 30 V											
Ripple $U_{pp}$	$\leq 20\%$ <sup>1)</sup>											
Voltage drop $U_d$	$\leq 2\text{ V}$ <sup>2)</sup>											
Power consumption	$\leq 10\text{ mA}$ <sup>3)</sup>											
<b>Continuous current <math>I_a</math></b>	$\leq 200\text{ mA}$											
Time delay before availability $t_v$	$\leq 100\text{ ms}$											
Hysteresis H, of $s_r$	1 ... 15 %											
Repeatability R	$\leq 5\%$ ( $U_b$ and $T_a$ constant) <sup>4)</sup>											
Temperature drift, of $s_r$	$\pm 10\%$											
EMC	According to EN 60947-5-2											
<b>Switching output</b>	NPN											
	PNP											
<b>Output function</b>	Normally open <sup>5)</sup>											
<b>Installation</b>	Quasi-flush <sup>6)</sup>											
	Non-flush											
<b>Connection type</b>	Cable, PVC, 2 m											
	Connector, M12, 4-pin											
Max. switching frequency	200 Hz											
	100 Hz											
Dimensions	M30 x 1.5 <sup>7)</sup>											
<b>Short-circuit protection</b>	$\checkmark$ <sup>8)</sup>											
<b>Reverse polarity protection</b>	$\checkmark$											
<b>Power-up pulse suppression</b>	$\checkmark$											
Shock/vibration stress	30 g, 11 ms/10 ... 55 Hz, 1 mm											
Ambient temperature $T_a$	-25 °C ... +70 °C											
<b>Housing material</b>	Brass, chrome-plated, plastic											
Tightening torque	60 Nm											

<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> other output functions available on request.

<sup>6)</sup> when mounting in conductible materials the sensors must be installed with a distance A to the surface. A Steel, metal =

6 mm/A Stainless steel = 2 mm  
<sup>7)</sup> Thread diameter x pitch (mm)  
<sup>8)</sup> (pulsed)

#### Order information

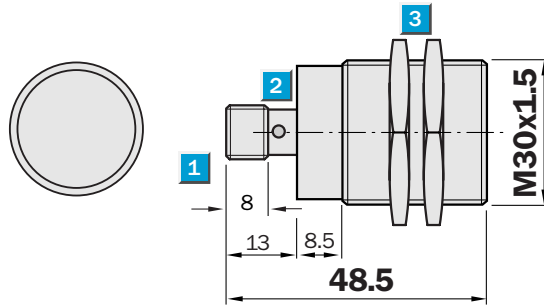
Type	Order no.
IM30-22BNS-ZW1	6 027 520
IM30-22BPS-ZC1	6 027 521
IM30-40NPS-ZC1	6 027 522

 **Sensing range**  
22 mm

Inductive sensor

- Triple sensing range
- Installation quasi flush in metal
- Short-circuit protection (pulsed)
- Robust brass housing, chrome-plated with fine thread M30 x 1 mm
- Enclosure rating IP 67

Dimensional drawing



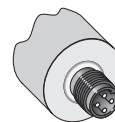
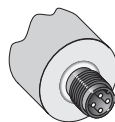
- 1 Connection
- 2 Display LED
- 3 Fastening nuts (2 x); width across 36, metal



Connection type

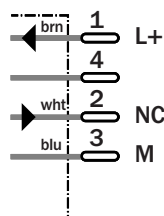
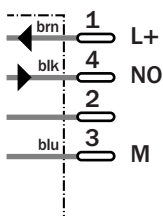
IM30-22BPS-ZCK

IM30-22BPO-ZCK



M12, 4-pin

M12, 4-pin



See chapter Accessories

Connector, M12, 4-pin

Mounting systems

Technical specifications		IM30-	22BPO-ZCK	22BPS-ZCK									
<b>Sensing range <math>S_n</math></b>	22 mm												
<b>Electrical configuration</b>	DC 3-wire												
<b>Supply voltage <math>V_s</math></b>	DC 10 ... 30 V												
Ripple $U_{pp}$	$\leq 20\%$ <sup>1)</sup>												
Voltage drop $U_d$	$\leq 2\text{ V}$ <sup>2)</sup>												
Power consumption	$\leq 10\text{ mA}$ <sup>3)</sup>												
<b>Continuous current <math>I_a</math></b>	$\leq 200\text{ mA}$												
Time delay before availability $t_v$	$\leq 100\text{ ms}$												
Hysteresis H, of $s_r$	1 ... 15 %												
Repeatability R	$\leq 5\%$ ( $U_b$ and $T_a$ constant) <sup>4)</sup>												
Temperature drift, of $s_r$	$\pm 10\%$												
EMC	According to EN 60947-5-2												
<b>Switching output</b>	PNP												
<b>Output function</b>	Normally closed <sup>5)</sup>												
	Normally open <sup>5)</sup>												
<b>Installation</b>	Quasi-flush <sup>6)</sup>												
<b>Connection type</b>	Connector, M12, 4-pin												
<b>Enclosure rating</b>	IP 67 <sup>7)</sup>												
Max. switching frequency	200 Hz												
Dimensions	M30 x 1.5 <sup>8)</sup>												
<b>Short-circuit protection</b>	$\checkmark$ <sup>9)</sup>												
<b>Reverse polarity protection</b>	$\checkmark$												
<b>Power-up pulse suppression</b>	$\checkmark$												
Shock/vibration stress	30 g, 11 ms/10 ... 55 Hz, 1 mm												
Ambient temperature $T_a$	-25 °C ... +70 °C												
<b>Housing material</b>	Brass, chrome-plated, plastic												
Tightening torque	60 Nm												

<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> other output functions available on request.

<sup>6)</sup> when mounting in conductible materials the sensors must be installed with a distance A to the surface. A Steel, metal =

6 mm/A Stainless steel = 2 mm  
<sup>7)</sup> according to EN 60529  
<sup>8)</sup> Thread diameter x pitch (mm)  
<sup>9)</sup> (pulsed)

Order information	
Type	Order no.
IM30-22BPO-ZCK	6 025 568
IM30-22BPS-ZCK	6 025 566

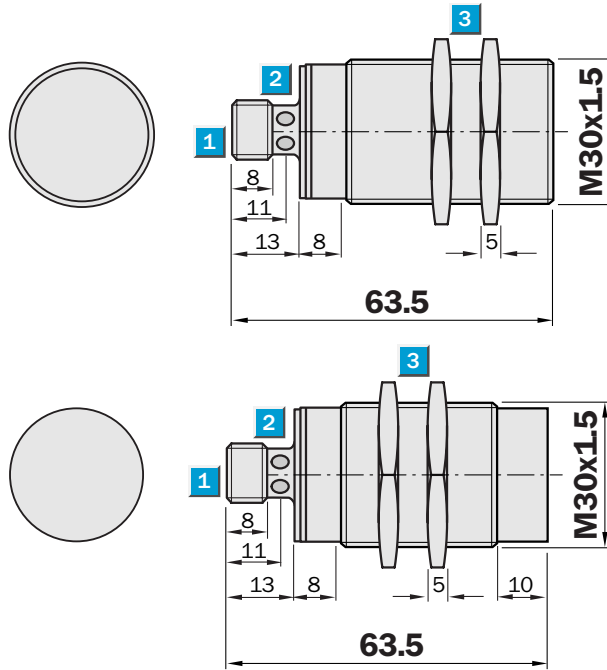


**Sensing range**  
20 / 40 mm

Inductive sensor

- Triple sensing range
- Robust stainless steel V4A, 316L one piece housing, with fine thread M30 x 1.5 mm
- Enclosure rating IP 69K + IP 68
- Especially suitable for use in the food and beverage sector
- Visual installation support

Dimensional drawing

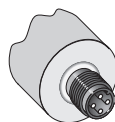


- 1 Connection
- 2 Display LED
- 3 Fastening nuts (2 x); width across 36, stainless steel V4A, 316L

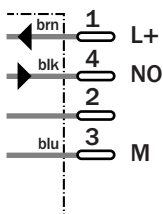


Connection type

- IM30-20BNS-NC1
- IM30-20BPS-NC1
- IM30-40NNS-NC1
- IM30-40NPS-NC1



M12, 4-pin



See chapter Accessories  
Connector, M12, 4-pin

Technical specifications		IM30-	20BNS-NC1	20BPS-NC1	40NNS-NC1	40NPS-NC1						
<b>Sensing range S<sub>n</sub></b>	20 mm											
	40 mm											
<b>Electrical configuration</b>	DC 3-wire											
<b>Supply voltage V<sub>s</sub></b>	DC 10 ... 30 V											
Ripple U <sub>pp</sub>	≤ 20 % <sup>1)</sup>											
Voltage drop U <sub>d</sub>	≤ 2 V <sup>2)</sup>											
Power consumption	≤ 12 mA <sup>3)</sup>											
<b>Continuous current I<sub>a</sub></b>	≤ 200 mA											
Time delay before availability t <sub>v</sub>	≤ 300 ms											
Hysteresis H, of s <sub>r</sub>	1 ... 15 %											
Repeatability R	≤ 5 % (U <sub>b</sub> and T <sub>a</sub> constant) <sup>4)</sup>											
Temperature drift, of s <sub>r</sub>	≤ 10 %											
EMC	According to EN 60947-5-2											
<b>Switching output</b>	NPN											
	PNP											
<b>Output function</b>	Normally open <sup>5)</sup>											
<b>Installation</b>	Flush											
	Non-flush <sup>6)</sup>											
<b>Connection type</b>	Connector, M12, 4-pin											
<b>Enclosure rating</b>	IP68, IP 69K <sup>7)</sup>											
Max. switching frequency	100 Hz											
Dimensions	M30 x 1.5 <sup>8)</sup>											
<b>Short-circuit protection</b>	✓ <sup>9)</sup>											
<b>Reverse polarity protection</b>	✓											
<b>Power-up pulse suppression</b>	✓											
Shock/vibration stress	30 g, 11 ms/10 ... 55 Hz, 1 mm <sup>10)</sup>											
Ambient temperature T <sub>a</sub>	-25 °C ... +85 °C											
<b>Housing material</b>	Stainless steel V4A 1.4404, 316L											
Tightening torque	150 Nm											

<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> other output functions available on request.

<sup>6)</sup> see installation notes  
<sup>7)</sup> according to EN 60529  
<sup>8)</sup> Thread diameter x pitch (mm)

<sup>9)</sup> (pulsed)  
<sup>10)</sup> according to IEC 60 947-5-2/7.4

**Correction factors:**

	Flush installation:	Non-flush installation:
Steel (ST37)	1.0	1.0
Copper	0.9	0.9
Aluminium	1.0	1.0
Brass	1.2	1.2
Stainless steel	0.5 / 0.9	- / 0.5

1 mm / 2 mm thick

**Order information**

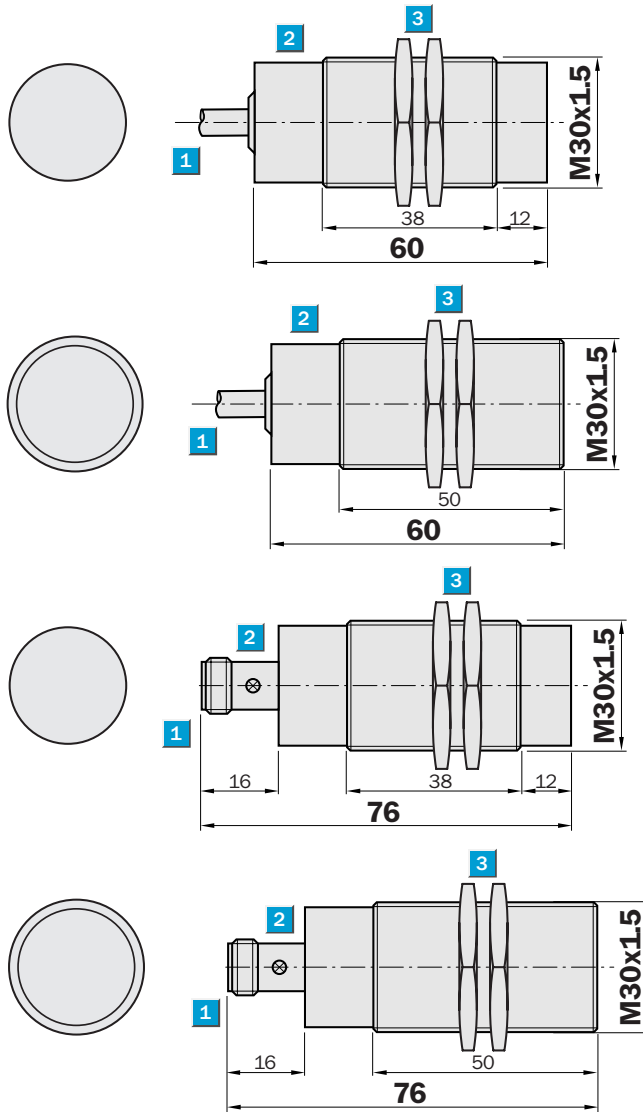
Type	Order no.
IM30-20BNS-NC1	6 027 583
IM30-20BPS-NC1	6 027 582
IM30-40NNS-NC1	6 027 585
IM30-40NPS-NC1	6 027 584

**Sensing range**  
10 / 15 mm

Inductive sensor

- Short-circuit protection (pulsed)
- Robust brass housing, nickel-plated with fine thread M30 x 1 mm
- Enclosure rating IP 67

### Dimensional drawing

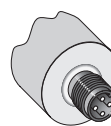
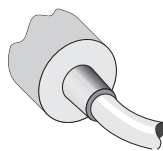


- 1 Connection
- 2 Display LED
- 3 Fastening nuts (2 x); width across 36, metal

### Connection type

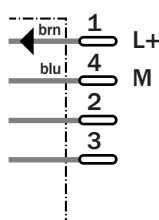
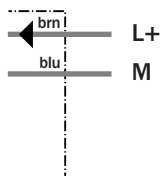
IM30-10BDS-ZW1  
IM30-15NDS-ZW1

IM30-10BDS-ZC1  
IM30-15NDS-ZC1



2 x 0.34 mm<sup>2</sup>

M12, 4-pin



### See chapter Accessories

Connector, M12, 4-pin  
Mounting systems

Technical specifications		IM30-	10BDS-ZW1	10BDS-ZC1	15NDS-ZW1	15NDS-ZC1						
<b>Sensing range <math>S_n</math></b>	10 mm											
	15 mm											
<b>Electrical configuration</b>	DC 2-wire											
<b>Supply voltage <math>V_s</math></b>	DC 10 ... 30 V											
Ripple $U_{pp}$	$\leq 10 \%$											
Voltage drop $U_d$	$\leq 2.8 V^{1)}$											
<b>Continuous current <math>I_a</math></b>	$\leq 100 mA$											
Min. load current	$\geq 3 mA$											
Residual current	$\leq 0.8 mA$											
Time delay before availability $t_v$	$\leq 50 ms$											
Hysteresis H, of $s_r$	2 ... 10 %											
Repeatability R	$\leq 2 \%$ ( $U_b$ and $T_a$ constant) <sup>2)</sup>											
Temperature drift, of $s_r$	$\pm 10 \%$											
EMC	According to EN 60947-5-2											
<b>Output function</b>	Normally open <sup>3)</sup>											
<b>Installation</b>	Flush											
	Non-flush											
<b>Connection type</b>	Cable, PVC, 2 m											
	Connector, M12, 4-pin											
<b>Enclosure rating</b>	IP 67 <sup>4)</sup>											
Max. switching frequency	150 Hz											
Dimensions	$\checkmark M30 \times 1.5^{5)}$											
<b>Short-circuit protection</b>	$\checkmark^{6)}$											
<b>Reverse polarity protection</b>												
Shock/vibration stress	30 g, 11 ms/10 ... 55 Hz, 1 mm											
Ambient temperature $T_a$	-25 °C ... +70 °C											
<b>Housing material</b>	Brass nickel-plated, plastic											
Tightening torque	60 Nm											

<sup>1)</sup> at  $I_a$  max  
<sup>2)</sup> of  $s_r$

<sup>3)</sup> normally closed function available on request

<sup>4)</sup> according to EN 60 529  
<sup>5)</sup> Thread diameter x pitch (mm)

<sup>6)</sup> (pulsed)

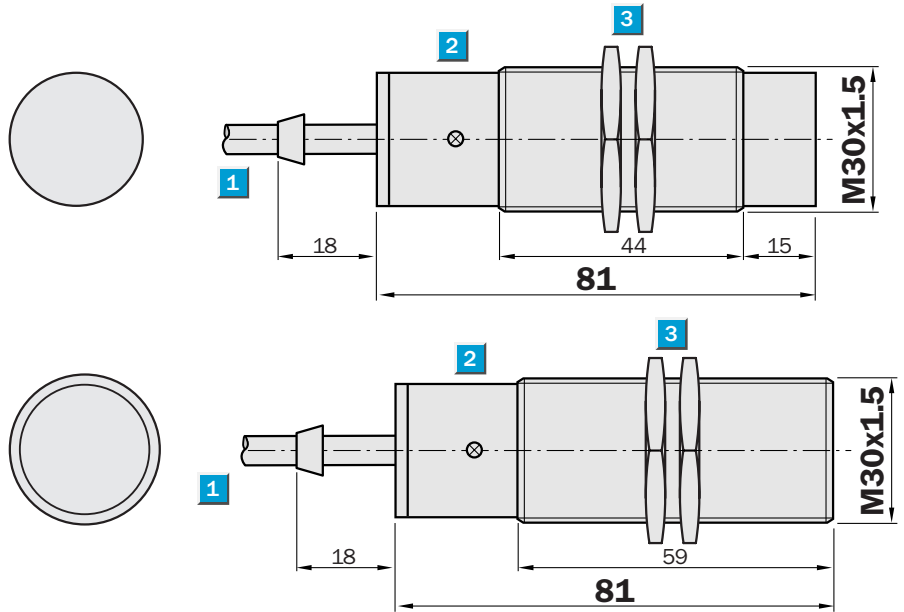
Order information	
Type	Order no.
IM30-10BDS-ZW1	6 020 326
IM30-10BDS-ZC1	6 020 328
IM30-15NDS-ZW1	6 020 330
IM30-15NDS-ZC1	6 020 332

**Sensing range**  
10 / 15 mm

Inductive sensor

- Broad supply voltage range in AC and DC
- Robust brass housing, nickel-plated, with fine thread M30 x 1.5 mm
- Enclosure rating IP 67

Dimensional drawing

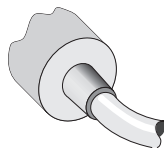


- 1 Connection
- 2 Display LED
- 3 Fastening nuts (2 x); width across 36, metal

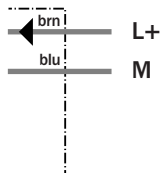


Connection type

- IM30-10BUO-ZUO
- IM30-10BUS-ZUO
- IM30-15NUO-ZUO
- IM30-15NUS-ZUO



2 x 0.5 mm<sup>2</sup>



See chapter Accessories

Mounting systems

Technical specifications		IM30-	10BUO-ZUO	10BUS-ZUO	15NUO-ZUO	15NUS-ZUO						
<b>Sensing range S<sub>n</sub></b>	10 mm											
	15 mm											
<b>Electrical configuration</b>	AC/DC 2-wire											
<b>Supply voltage V<sub>s</sub></b>	AC/DC 20 ... 250 V											
Voltage drop U <sub>d</sub> AC/DC	≤ 6.5 V / ≤ 6 V											
<b>Continuous current I<sub>a</sub></b>	≤ 350 mA (... + 50 °C)											
<b>Continuous current I<sub>a</sub></b>	≤ 250 mA (... + 80 °C)											
<b>Continuous current I<sub>a</sub></b>	≤ 100 mA DC											
Intermittent current I <sub>k</sub>	2.2 A (20 ms/0.5Hz)											
Min. load current	5 mA											
Residual current	≤ 2.5 mA (250 V AC)											
Residual current	≤ 1.3 mA (110 V AC)											
Residual current	≤ 0.8 mA (24 V DC)											
Time delay before availability t <sub>v</sub>	≤ 8 ms											
Hysteresis H, of s <sub>r</sub>	1 ... 15 %											
Repeatability R	≤ 10 % (U <sub>b</sub> and T <sub>a</sub> constant) <sup>1)</sup>											
Temperature drift, of s <sub>r</sub>	± 10 %											
EMC	According to EN 60947-5-2											
<b>Output function</b>	Normally closed											
	Normally open											
<b>Installation</b>	Flush											
	Non-flush											
<b>Connection type</b>	Cable, PUR-PVC, 2 m											
<b>Enclosure rating</b>	IP 67 <sup>2)</sup>											
<b>VDE protection class</b>	□											
Max. switching frequency AC/DC	25 Hz / 30 Hz											
Dimensions	√M30 x 1.5 <sup>3)</sup>											
<b>Power-up pulse suppression</b>												
Shock/vibration stress	30 g, 11 ms/10 ... 55 Hz, 1 mm											
Ambient temperature T <sub>a</sub>	-25 °C ... +70 °C											
<b>Housing material</b>	Brass nickel-plated, plastic											
Tightening torque	50 Nm											

<sup>1)</sup> of s<sub>r</sub>

<sup>2)</sup> according to EN 60 529

<sup>3)</sup> thread diameter x pitch (mm)

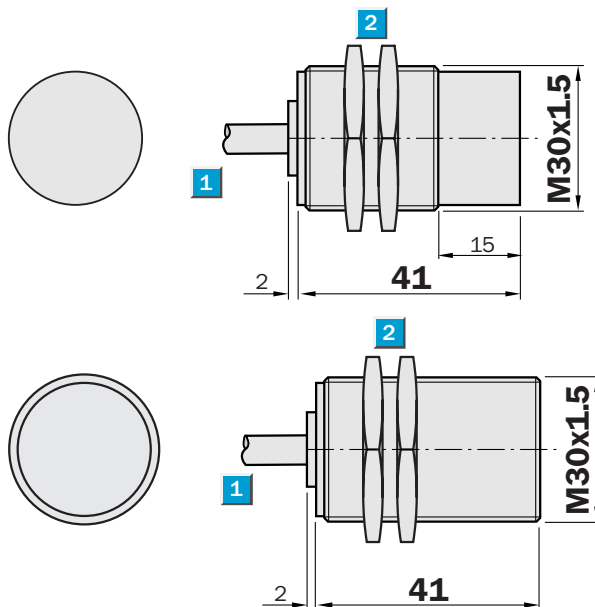
Order information	
Type	Order no.
IM30-10BUO-ZUO	7 902 127
IM30-10BUS-ZUO	7 902 126
IM30-15NUO-ZUO	7 902 129
IM30-15NUS-ZUO	7 902 128

**Sensing range**  
10 / 15 mm

Inductive sensor

- NAMUR to EN 60 947-5-6
- High switching frequency
- Robust brass housing, nickel-plated, with fine thread M30 x 1.5 mm
- Classification PTB 03 ATEX 2037  
Ex II 2 G EEx ia IIC T6

## Dimensional drawing

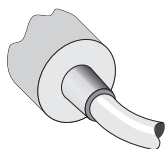


- 1 Connection
- 2 Fastening nuts (2 x); width across 36, metal

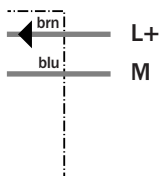


## Connection type

- IM30-10B-N-ZWO
- IM30-15N-N-ZWO



2 x 0.5 mm<sup>2</sup>



## See chapter Accessories

- Mounting systems
- Switching units

Technical specifications		IM30-10B-	N-ZWO	N-ZWO										
<b>Sensing range <math>S_n</math></b>	10 mm													
	15 mm													
<b>Electrical configuration</b>	NAMUR													
<b>Supply voltage <math>V_s</math></b>	DC 5 ... 25 V													
Nominal voltage $V_n$	DC 8.2 V													
Power consumption, attenuated	$\leq 1$ mA													
Power consumption, unattenuated	$\geq 2.2$ mA													
Internal capacitance	$\leq 230$ nF													
	$\leq 240$ nF													
Internal inductance	$\leq 130$ $\mu$ H													
	$\leq 100$ $\mu$ H													
Cable resistance	$\leq 50$ Ohm													
Temperature drift, of $s_r$	$\pm 10$ %													
EMC	According to EN 60947-5-2													
<b>Switching output</b>	Control current dependent on switching state <sup>1)</sup>													
<b>Output function</b>	NAMUR													
<b>Installation</b>	Flush													
	Non-flush													
<b>Connection type</b>	Cable, PVC, 2 m													
<b>Enclosure rating</b>	IP 67 <sup>2)</sup>													
Max. switching frequency	450 Hz													
	200 Hz													
Dimensions	$\checkmark$ M30 x 1.5 <sup>3)</sup>													
<b>short-circuit protected</b>	$\checkmark$													
<b>Reverse polarity protected</b>														
Shock/vibration stress	30 g, 11 ms/10 ... 55 Hz, 1 mm													
Ambient temperature $T_a$	-25 °C ... +70 °C													
<b>Housing material</b>	Brass nickel-plated, plastic													
Tightening torque	50 Nm													

<sup>1)</sup> according to NAMUR EN 60947-5-6

<sup>2)</sup> according to EN 60 529

<sup>3)</sup> thread diameter x pitch (mm)

#### Max. data for connecting Isolating unit EN 2 EX


or other approved isolating amplifier:

<b>Short circuit current <math>I_{Kmax}</math></b>	50 mA
<b>No load voltage <math>U_0</math></b>	16 V
<b>Power loss <math>P_{max}</math></b>	75 mW

#### Order information

Type	Order no.
IM30-10B-N-ZWO	6 021 128
IM30-15N-N-ZWO	6 021 129

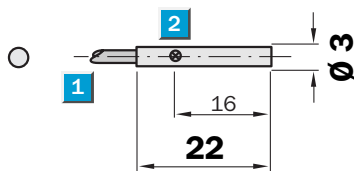


 **Sensing range**  
**0.6 mm**

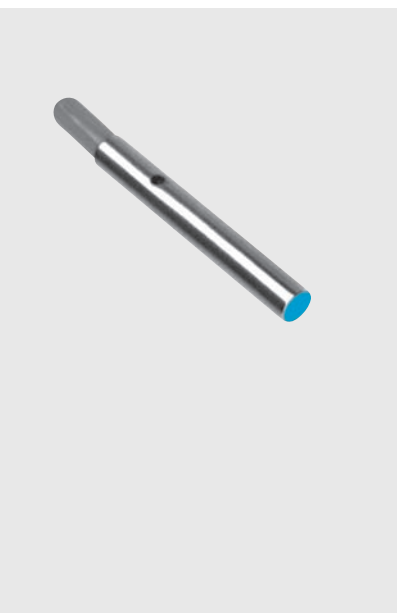
Inductive sensor

- Can be installed flush
- High switching frequency
- Short-circuit protection (pulsed)
- Solid stainless steel housing
- Enclosure rating IP 67

Dimensional drawing



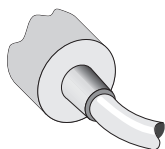
- 1 Connection
- 2 Display LED



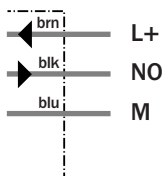
Connection type

IH03-0B6NS-VU1

IH03-0B6PS-VU1



3 x 0.06 mm<sup>2</sup>



Technical specifications		IH03-	OB6NS -VU1	OB6PS -VU1								
<b>Sensing range <math>S_n</math></b>	0.6 mm											
<b>Electrical configuration</b>	DC 3-wire											
<b>Supply voltage <math>V_s</math></b>	DC 10 ... 30 V											
Ripple $U_{pp}$	$\leq 20\%$ <sup>1)</sup>											
Voltage drop $U_d$	$\leq 0.6\text{ V}$ <sup>2)</sup>											
Power consumption	$\leq 10\text{ mA}$ <sup>3)</sup>											
<b>Continuous current <math>I_a</math></b>	$\leq 100\text{ mA}$											
Time delay before availability $t_v$	$\leq 10\text{ ms}$											
Hysteresis H, of $s_r$	10 %											
Repeatability R	$\leq 2\%$ ( $U_b$ and $T_a$ constant)											
Temperature drift, of $s_r$	$\pm 10\%$											
EMC	According to EN 60947-5-2											
<b>Switching output</b>	NPN											
	PNP											
<b>Output function</b>	Normally open <sup>4)</sup>											
<b>Installation</b>	Flush											
<b>Connection type</b>	Cable, PUR, 2 m											
<b>Enclosure rating</b>	IP 67 <sup>5)</sup>											
Max. switching frequency	5,000 Hz											
Sleeve diameter	3 mm											
<b>Short-circuit protection</b>	$\checkmark$ <sup>6)</sup>											
<b>Reverse polarity protection</b>	$\checkmark$											
<b>Power-up pulse suppression</b>	$\checkmark$											
Shock/vibration stress	30 g, 11 ms/10 ... 55 Hz, 1 mm											
Ambient temperature $T_a$	-25 °C ... +70 °C											
<b>Housing material</b>	Stainless steel, plastic											

<sup>1)</sup> of  $U_b$   
<sup>2)</sup> at  $I_a = 50\text{ mA}$

<sup>3)</sup> without load  
<sup>4)</sup> normally closed function available on

request  
<sup>5)</sup> according to EN 60529

<sup>6)</sup> (pulsed)

#### Order information

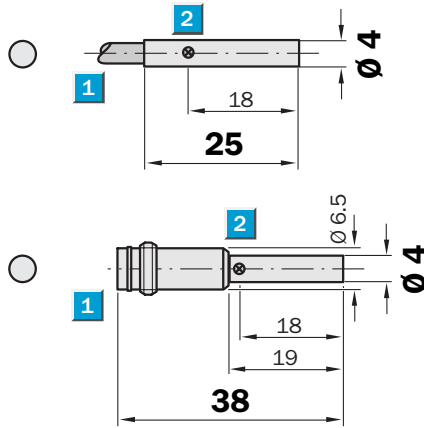
Type	Order no.
IH03-OB6NS-VU1	6 020 142
IH03-OB6PS-VU1	6 020 141

**Sensing range**  
0.8 mm

Inductive sensor

- Can be installed flush
- High switching frequency
- Short-circuit protection (pulsed)
- Solid stainless steel housing
- Enclosure rating IP 67

Dimensional drawing



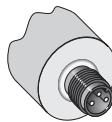
- 1 Connection
- 2 Display LED



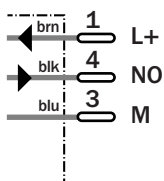
Connection type

IH04-0B8NS-VT1  
IH04-0B8PS-VT1

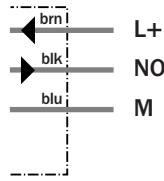
IH04-0B8NS-VW1  
IH04-0B8PS-VW1



M8, 3-pin



3 x 0.14 mm<sup>2</sup>



See chapter Accessories

Connector, M8, 3-pin

Technical specifications		IH04-	OB8NS -VW1	OB8PS -VW1	OB8NS -VT1	OB8PS -VT1						
<b>Sensing range <math>S_n</math></b>	0.8 mm											
<b>Electrical configuration</b>	DC 3-wire											
<b>Supply voltage <math>V_s</math></b>	DC 10 ... 30 V											
Ripple $U_{pp}$	$\leq 20\%$ <sup>1)</sup>											
Voltage drop $U_d$	$\leq 2\text{ V}$ <sup>2)</sup>											
Power consumption	10 mA <sup>3)</sup>											
<b>Continuous current <math>I_a</math></b>	$\leq 200\text{ mA}$											
Time delay before availability $t_v$	$\leq 10\text{ ms}$											
Hysteresis H, of $s_r$	10 %											
Repeatability R	$\leq 1.5\%$ ( $U_b$ and $T_a$ constant)											
Temperature drift, of $s_r$	$\pm 10\%$											
EMC	According to EN 60947-5-2											
<b>Switching output</b>	NPN											
	PNP											
<b>Output function</b>	Normally open <sup>4)</sup>											
<b>Installation</b>	Flush											
<b>Connection type</b>	Cable, PVC, 2 m											
	Connector, M8, 3-pin											
<b>Enclosure rating</b>	IP 67 <sup>5)</sup>											
Max. switching frequency	5,000 Hz											
Sleeve diameter	4 mm											
<b>Short-circuit protection</b>	$\checkmark$ <sup>6)</sup>											
<b>Reverse polarity protection</b>	$\checkmark$											
<b>Power-up pulse suppression</b>	$\checkmark$											
Shock/vibration stress	30 g, 11 ms/10 ... 55 Hz, 1 mm											
Ambient temperature $T_a$	-25 °C ... +70 °C											
<b>Housing material</b>	Stainless steel, plastic											

<sup>1)</sup> of  $U_b$   
<sup>2)</sup> at  $I_a = 200\text{ mA}$

<sup>3)</sup> without load  
<sup>4)</sup> normally closed function available on

request  
<sup>5)</sup> according to EN 60529

<sup>6)</sup> (pulsed)

#### Order information

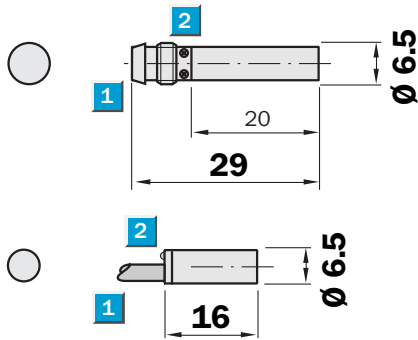
Type	Order no.
IH04-OB8NS-VW1	6 020 149
IH04-OB8PS-VW1	6 020 113
IH04-OB8NS-VT1	6 020 152
IH04-OB8PS-VT1	6 020 114

**Sensing range**  
1.5 mm

Inductive sensor

- Can be installed flush
- High switching frequency
- Short-circuit protection (pulsed)
- Solid stainless steel housing
- Enclosure rating IP 67

Dimensional drawing



- 1 Connection
- 2 Display LED

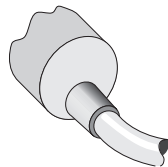


See chapter Accessories  
Connector, M8, 3-pin  
Mounting systems

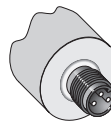
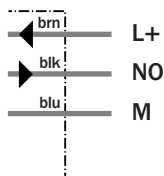
Connection type

IH06-1B5NS-VWK  
IH06-1B5PS-VWK

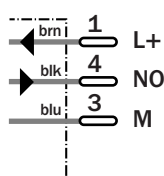
IH06-1B5NS-VTK  
IH06-1B5PS-VTK



3 x 0.14 mm<sup>2</sup>



M8, 3-pin



Technical specifications		IH06-	1B5NS-VWK	1B5PS-VWK	1B5NS-VTK	1B5PS-VTK						
<b>Sensing range <math>S_n</math></b>	1.5 mm											
<b>Electrical configuration</b>	DC 3-wire											
<b>Supply voltage <math>V_s</math></b>	DC 10 ... 30 V											
Ripple $U_{pp}$	$\leq 20\%$ <sup>1)</sup>											
Voltage drop $U_d$	$\leq 2\text{ V}$ <sup>2)</sup>											
Power consumption	$\leq 10\text{ mA}$ <sup>3)</sup>											
<b>Continuous current <math>I_a</math></b>	$\leq 200\text{ mA}$											
Time delay before availability $t_v$	$\leq 10\text{ ms}$											
Hysteresis H, of $s_r$	10 %											
Repeatability R	$\leq 5\%$ ( $U_b$ and $T_a$ constant)											
Temperature drift, of $s_r$	$\pm 10\%$											
EMC	According to EN 60947-5-2											
<b>Switching output</b>	NPN											
	PNP											
<b>Output function</b>	Normally open <sup>4)</sup>											
<b>Installation</b>	Flush											
<b>Connection type</b>	Cable, PVC, 2 m											
	Connector, M8, 3-pin											
<b>Enclosure rating</b>	IP 67 <sup>5)</sup>											
Max. switching frequency	5,000 Hz											
Sleeve diameter	6.5 mm											
<b>Short-circuit protection</b>	✓ <sup>6)</sup>											
<b>Reverse polarity protection</b>	✓											
<b>Power-up pulse suppression</b>	✓											
Shock/vibration stress	30 g, 11 ms/10 ... 55 Hz, 1 mm											
Ambient temperature $T_a$	-25 °C ... +70 °C											
<b>Housing material</b>	Stainless steel, plastic											

<sup>1)</sup> of  $U_b$   
<sup>2)</sup> at  $I_a = 200\text{ mA}$

<sup>3)</sup> without load  
<sup>4)</sup> normally closed function available on

request  
<sup>5)</sup> according to EN 60529

<sup>6)</sup> (pulsed)

#### Order information

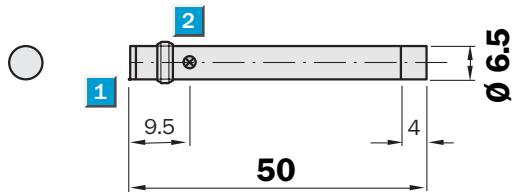
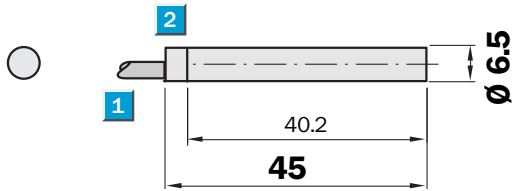
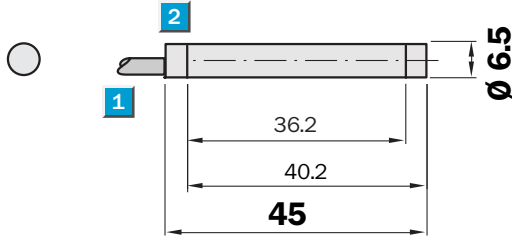
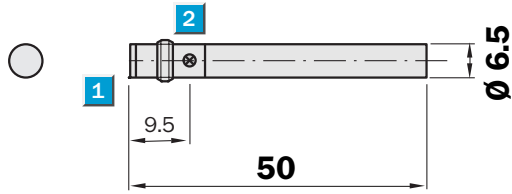
Type	Order no.
IH06-1B5NS-VWK	6 020 166
IH06-1B5PS-VWK	6 020 165
IH06-1B5NS-VTK	6 020 170
IH06-1B5PS-VTK	6 020 169

**Sensing range**  
2 / 4 mm

Inductive sensor

- Enhanced sensing range
- High switching frequency
- Short-circuit protection (pulsed)
- Solid stainless steel housing
- Enclosure rating IP 67

Dimensional drawing



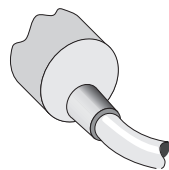
- 1 Connection
- 2 Display LED



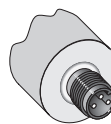
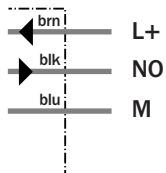
See chapter Accessories  
Connector, M8, 3-pin  
Mounting systems

Connection type

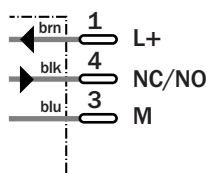
IH06-02BNS-VW1	IH06-02BNS-VT1
IH06-02BPS-VW1	IH06-02BPO-VT1
IH06-04NNS-VW1	IH06-02BPS-VT1
IH06-04NPS-VW1	IH06-04NPS-VT1



3 x 0.14 mm<sup>2</sup>



M8, 3-pin



Technical specifications		IH06-	02BNS -VW1	02BPS -VW1	02BNS -VT1	02BPO -VT1	02BPS -VT1	04NNS -VW1	04NPS -VW1	04NPS -VT1		
<b>Sensing range <math>S_n</math></b>	2 mm											
	4 mm											
<b>Electrical configuration</b>	DC 3-wire											
<b>Supply voltage <math>V_s</math></b>	DC 10 ... 30 V											
Ripple $U_{pp}$	$\leq 10\%$ <sup>1)</sup>											
Voltage drop $U_d$	$\leq 1.2 V$ <sup>2)</sup>											
Power consumption	$\leq 20 mA$ <sup>3)</sup>											
<b>Continuous current <math>I_a</math></b>	$\leq 200 mA$											
Time delay before availability $t_v$	$\leq 100 ms$											
Hysteresis H, of $s_r$	2 ... 15 %											
Repeatability R	$\leq 5\%$ ( $U_b$ and $T_a$ constant) <sup>4)</sup>											
Temperature drift, of $s_r$	$\pm 10\%$											
EMC	According to EN 60947-5-2											
<b>Switching output</b>	NPN											
	PNP											
<b>Output function</b>	Normally open											
	Normally closed											
<b>Installation</b>	Flush <sup>5)</sup>											
	Non-flush											
<b>Connection type</b>	Cable, PVC, 2 m											
	Connector, M8, 3-pin											
<b>Enclosure rating</b>	IP 67 <sup>6)</sup>											
Max. switching frequency	3,000 Hz											
	1,800 Hz											
Sleeve diameter	6.5 mm											
<b>Short-circuit protection</b>	✓ <sup>7)</sup>											
<b>Reverse polarity protection</b>	✓											
<b>Power-up pulse suppression</b>	✓											
Shock/vibration stress	30 g, 11 ms/10 ... 55 Hz, 1 mm											
Ambient temperature $T_a$	-25 °C ... +70 °C											
<b>Housing material</b>	Stainless steel, plastic											

<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> see installation notes  
<sup>6)</sup> according to EN 60529

<sup>7)</sup> (pulsed)

#### Order information

Type	Order no.
IH06-02BNS-VW1	7 900 178
IH06-02BPS-VW1	7 900 177
IH06-02BNS-VT1	7 900 180
IH06-02BPO-VT1	1 016 857
IH06-02BPS-VT1	7 900 179
IH06-04NNS-VW1	7 900 182
IH06-04NPS-VW1	7 900 181
IH06-04NPS-VT1	7 900 183



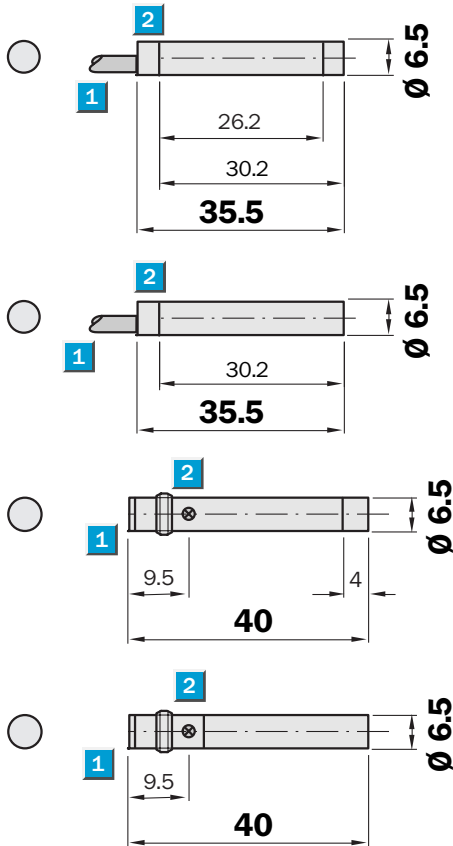
**Sensing range**  
2 / 4 mm

Inductive sensor

- Enhanced sensing range
- High switching frequency
- Short-circuit protection (pulsed)
- Solid stainless steel housing
- Enclosure rating IP 67



Dimensional drawing

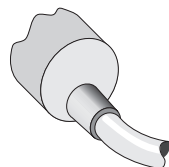


- 1 Connection
- 2 Display LED

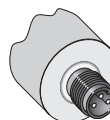
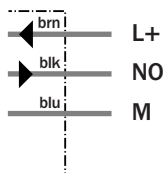


Connection type

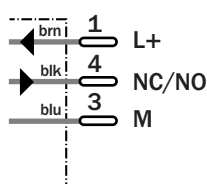
IH06-02BPS-VWK	IH06-02BNS-VTK
IH06-02BNS-VWK	IH06-02BPS-VTK
IH06-04NNS-VWK	IH06-02BPO-VTK
IH06-04NPS-VWK	IH06-04NPS-VTK
	IH06-04NNS-VTK
	IH06-04NPO-VTK



3 x 0.14 mm<sup>2</sup>



M8, 3-pin



See chapter Accessories  
Connector, M8, 3-pin  
Mounting systems

Technical specifications		IH06-	02BPS -VWK	02BNS -VWK	02BNS -VTK	02BPS -VTK	02BPO -VTK	04NNS -VWK	04NPS -VWK	04NPS -VTK	04NNS -VTK	04NPO -VTK
<b>Sensing range <math>S_n</math></b>	2 mm											
	4 mm											
<b>Electrical configuration</b>	DC 3-wire											
<b>Supply voltage <math>V_s</math></b>	DC 10 ... 30 V											
Ripple $U_{pp}$	$\leq 10\%$ <sup>1)</sup>											
Voltage drop $U_d$	$\leq 1.2\text{ V}$ <sup>2)</sup>											
Power consumption	$\leq 10\text{ mA}$ <sup>3)</sup>											
<b>Continuous current <math>I_a</math></b>	$\leq 200\text{ mA}$											
Time delay before availability $t_v$	$\leq 100\text{ ms}$											
Hysteresis H, of $s_r$	1 ... 20 %											
Repeatability R	$\leq 5\%$ ( $U_b$ and $T_a$ constant) <sup>4)</sup>											
Temperature drift, of $s_r$	$\pm 10\%$											
EMC	According to EN 60947-5-2											
<b>Switching output</b>	PNP											
	NPN											
<b>Output function</b>	Normally open											
	Normally closed											
<b>Installation</b>	Flush <sup>5)</sup>											
	Non-flush											
<b>Connection type</b>	Cable, PVC, 2 m											
	Connector, M8, 3-pin											
<b>Enclosure rating</b>	IP 67 <sup>6)</sup>											
Max. switching frequency	3,000 Hz											
	2,500 Hz											
Sleeve diameter	6.5 mm											
<b>Short-circuit protection</b>	✓ <sup>7)</sup>											
<b>Reverse polarity protection</b>	✓											
<b>Power-up pulse suppression</b>	✓											
Shock/vibration stress	30 g, 11 ms/10 ... 55 Hz, 1 mm											
Ambient temperature $T_a$	-25 °C ... +70 °C											
<b>Housing material</b>	Stainless steel, plastic											

<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> see installation notes  
<sup>6)</sup> according to EN 60529

<sup>7)</sup> (pulsed)

#### Order information

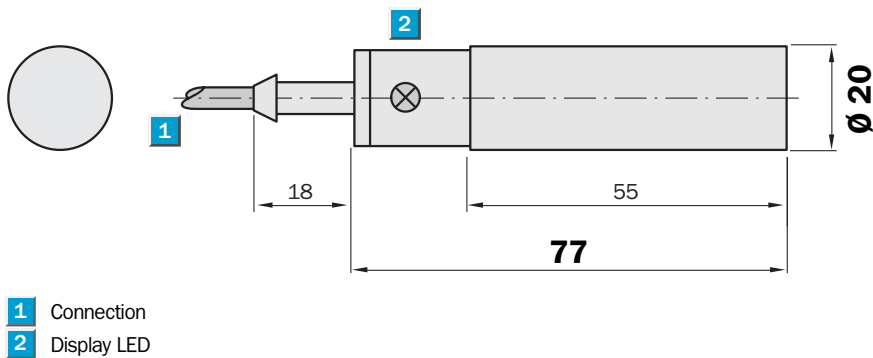
Type	Order no.
IH06-02BPS-VWK	6 025 874
IH06-02BNS-VWK	6 025 875
IH06-02BNS-VTK	6 025 878
IH06-02BPS-VTK	6 025 877
IH06-02BPO-VTK	6 025 879
IH06-04NNS-VWK	6 025 881
IH06-04NPS-VWK	6 025 880
IH06-04NPS-VTK	6 025 882
IH06-04NNS-VTK	6 025 883
IH06-04NPO-VTK	6 025 884

 **Sensing range**  
10 mm

Inductive sensor

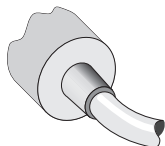
- Can be installed non-flush in metal
- Broad supply voltage range in AC and DC
- Plastic housing
- Enclosure rating IP 67
- Mounting clamps incl.

Dimensional drawing

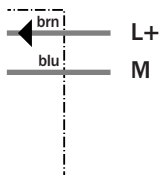


Connection type

IH20-10NUS-KU0



2 x 0.5 mm<sup>2</sup>




Technical specifications		IH20-	10NUS -KUO												
<b>Sensing range <math>S_n</math></b>	10 mm														
<b>Electrical configuration</b>	AC/DC 2-wire														
<b>Supply voltage <math>V_s</math></b>	AC/DC 20 ... 250 V														
Voltage drop $U_d$ AC/DC	$\leq 6.5$ V / $\leq 6$ V														
<b>Continuous current <math>I_a</math></b>	$\leq 350$ mA AC (... + 50 °C)														
<b>Continuous current <math>I_a</math></b>	$\leq 250$ mA AC (... + 80 °C)														
<b>Continuous current <math>I_a</math></b>	$\leq 100$ mA DC														
Intermittent current $I_k$	2.2 A (20 ms/0.5Hz)														
Min. load current	5 mA														
Residual current	$\leq 2.5$ mA (250 V AC)														
Residual current	$\leq 1.3$ mA (110 V AC)														
Residual current	$\leq 0.8$ mA (24 V DC)														
Time delay before availability $t_v$	$\leq 45$ ms														
Hysteresis H, of $s_r$	1 ... 15 %														
Repeatability R	$\leq 10$ % ( $U_b$ and $T_a$ constant) <sup>1)</sup>														
Temperature drift, of $s_r$	$\pm 10$ %														
EMC	According to EN 60947-5-2														
<b>Output function</b>	Normally open														
<b>Installation</b>	Non-flush														
<b>Connection type</b>	Cable, PUR-PVC, 2 m														
<b>Enclosure rating</b>	IP 67 <sup>2)</sup>														
<b>VDE protection class</b>	<input type="checkbox"/>														
Max. switching frequency AC/DC	25 Hz / 70 Hz														
Sleeve diameter	20 mm														
<b>Power-up pulse suppression</b>	✓														
Shock/vibration stress	30 g, 11 ms/10 ... 55 Hz, 1 mm														
Ambient temperature $T_a$	-25 °C ... +80 °C														
<b>Housing material</b>	Plastic														

<sup>1)</sup> of  $s_r$

<sup>2)</sup> according to EN 60529

#### Order information

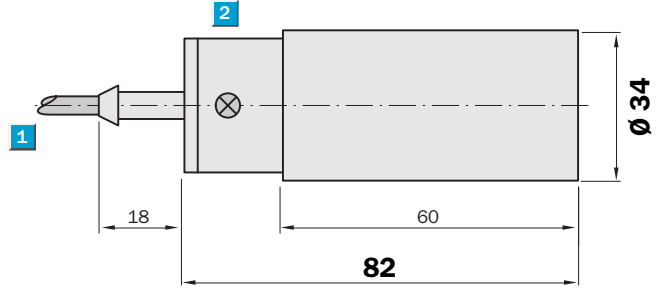
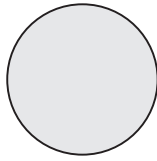
Type	Order no.
IH20-10NUS-KUO	7 902 130

 **Sensing range**  
30 mm

Inductive sensor

- Can be installed non-flush in metal
- Enhanced sensing range
- Broad supply voltage range in AC and DC
- Plastic housing
- Enclosure rating IP 67
- Mounting clamps incl.

Dimensional drawing

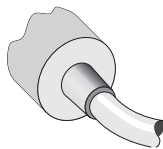


- 1 Connection
- 2 Display LED

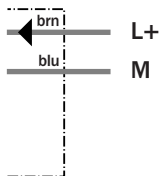


Connection type

- IH34-30NUO-KUO
- IH34-30NUS-KUO



2 x 0.5 mm<sup>2</sup>




Technical specifications		IH34-	30NUO -KUO	30NUS -KUO									
<b>Sensing range <math>S_n</math></b>	30 mm												
<b>Electrical configuration</b>	AC/DC 2-wire												
<b>Supply voltage <math>V_s</math></b>	AC/DC 20 ... 250 V												
Voltage drop $U_d$ AC/DC	$\leq 6.5$ V / $\leq 6$ V												
<b>Continuous current <math>I_a</math></b>	$\leq 350$ mA AC (... + 50 °C)												
<b>Continuous current <math>I_a</math></b>	$\leq 250$ mA AC (... + 80 °C)												
<b>Continuous current <math>I_a</math></b>	$\leq 100$ mA DC												
Intermittent current $I_k$	2.2 A (20 ms/0.5Hz)												
Min. load current	5 mA												
Residual current	$\leq 2.5$ mA (250 V AC)												
Residual current	$\leq 1.3$ mA (110 V AC)												
Residual current	$\leq 0.8$ mA (24 V DC)												
Time delay before availability $t_v$	$\leq 50$ ms												
Hysteresis H, of $s_r$	1 ... 15 %												
Repeatability R	$\leq 10$ % ( $U_b$ and $T_a$ constant) <sup>1)</sup>												
Temperature drift, of $s_r$	$\pm 10$ %												
EMC	According to EN 60947-5-2												
<b>Output function</b>	Normally closed												
	Normally open												
<b>Installation</b>	Non-flush												
<b>Connection type</b>	Cable, PUR-PVC, 2 m												
<b>Enclosure rating</b>	IP 67 <sup>2)</sup>												
<b>VDE protection class</b>	<input type="checkbox"/>												
Max. switching frequency	7 Hz												
Sleeve diameter	34 mm												
<b>Power-up pulse suppression</b>	✓												
Shock/vibration stress	30 g, 11 ms/10 ... 55 Hz, 1 mm												
Ambient temperature $T_a$	-25 °C ... +80 °C												
<b>Housing material</b>	Plastic												

<sup>1)</sup> of  $s_r$

<sup>2)</sup> according to EN 60529

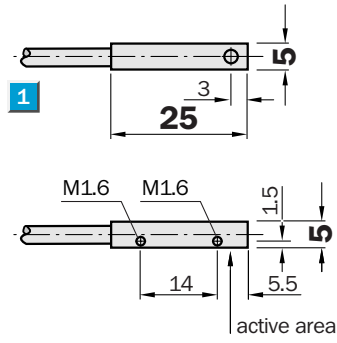
Order information	
Type	Order no.
IH34-30NUO-KUO	7 902 135
IH34-30NUS-KUO	7 902 134

 **Sensing range**  
**0.8 mm**

Inductive sensor

- Can be installed flush
- High switching frequency
- Short-circuit protection (pulsed)
- Robust brass housing, nickel-plated
- Enclosure rating IP 67

Dimensional drawing



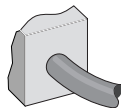
1 Connection



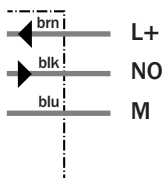
Connection type

IQ05-0B8NS-ZU1

IQ05-0B8PS-ZU1



3 x 0.06 mm<sup>2</sup>



Technical specifications		IQ05-	OB8NS -ZU1	OB8PS -ZU1									
<b>Sensing range <math>S_n</math></b>	0.8 mm												
<b>Electrical configuration</b>	DC 3-wire												
<b>Supply voltage <math>V_s</math></b>	DC 10 ... 30 V												
Ripple $U_{pp}$	$\leq 20\%$ <sup>1)</sup>												
Voltage drop $U_d$	$\leq 2\text{ V}$ <sup>2)</sup>												
Power consumption	$\leq 10\text{ mA}$ <sup>3)</sup>												
<b>Continuous current <math>I_a</math></b>	$\leq 200\text{ mA}$												
Time delay before availability $t_v$	$\leq 10\text{ ms}$												
Hysteresis H, of $s_r$	10 %												
Repeatability R	$\leq 1.5\%$ ( $U_b$ and $T_a$ constant)												
Temperature drift, of $s_r$	$\pm 10\%$												
EMC	According to EN 60947-5-2												
<b>Switching output</b>	NPN												
	PNP												
<b>Output function</b>	Normally open <sup>4)</sup>												
<b>Installation</b>	Flush												
<b>Connection type</b>	Cable, PUR, 2 m												
<b>Enclosure rating</b>	IP 67 <sup>5)</sup>												
Max. switching frequency	5,000 Hz												
Dimensions	5 x 5 x 25 mm <sup>6)</sup>												
<b>Short-circuit protection</b>	✓ <sup>7)</sup>												
<b>Reverse polarity protection</b>	✓												
<b>Power-up pulse suppression</b>	✓												
Shock/vibration stress	30 g, 11 ms/10 ... 55 Hz, 1 mm												
Ambient temperature $T_a$	-25 °C ... +70 °C												
<b>Housing material</b>	Brass nickel-plated, plastic												

<sup>1)</sup> of  $U_b$   
<sup>2)</sup> at  $I_a = 200\text{ mA}$

<sup>3)</sup> without load  
<sup>4)</sup> normally closed function available on

request  
<sup>5)</sup> according to EN 60529

<sup>6)</sup> Width x height x depth  
<sup>7)</sup> (pulsed)

#### Order information

Type	Order no.
IQ05-OB8NS-ZU1	6 020 162
IQ05-OB8PS-ZU1	6 020 161

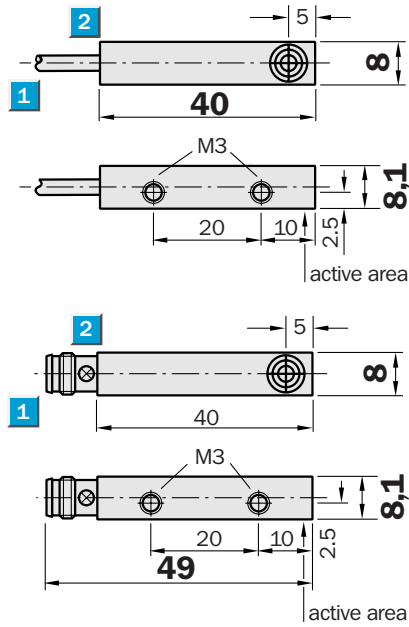


**Sensing range**  
2 / 4 mm

Inductive sensor

- Can be installed flush or non-flush in metal
- High switching frequency
- Short-circuit protection (pulsed)
- Small plastic housing
- Enclosure rating IP 67

### Dimensional drawing



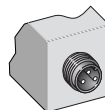
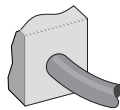
- 1 Connection
- 2 Display LED



### Connection type

IQ08-02BNS-KU0  
IQ08-02BPS-KU0  
IQ08-04NPS-KU0

IQ08-02BNS-KT0  
IQ08-02BPS-KT0  
IQ08-04NPS-KT0

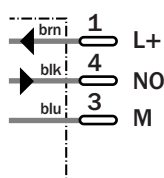
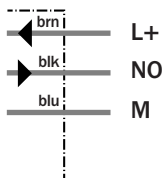


### See chapter Accessories

Connector, M8, 3-pin

3 x 0.25 mm<sup>2</sup>

M8, 3-pin



Technical specifications		IQ08-	02BNS -KU0	02BPS -KU0	02BNS -KTO	02BPS -KTO	04NPS -KU0	04NPS -KTO				
<b>Sensing range <math>S_n</math></b>	2 mm											
	4 mm											
<b>Electrical configuration</b>	DC 3-wire											
<b>Supply voltage <math>V_s</math></b>	DC 10 ... 30 V											
Ripple $U_{pp}$	$\leq 10\%$ <sup>1)</sup>											
Voltage drop $U_d$	$\leq 1.5\text{ V}$ <sup>2)</sup>											
Power consumption	$\leq 10\text{ mA}$ <sup>3)</sup>											
<b>Continuous current <math>I_a</math></b>	$\leq 300\text{ mA}$											
Time delay before availability $t_v$	$\leq 2\text{ ms}$											
Hysteresis H, of $s_r$	1 ... 10 %											
Repeatability R	$\leq 1\%$ ( $U_b$ and $T_a$ constant) <sup>4)</sup>											
Temperature drift, of $s_r$	$\pm 10\%$											
EMC	According to EN 60947-5-2											
<b>Switching output</b>	NPN											
	PNP											
<b>Output function</b>	Normally open											
<b>Installation</b>	Flush											
	Non-flush											
<b>Connection type</b>	Cable, PUR-PVC, 2 m											
	Connector, M8, 3-pin											
<b>Enclosure rating</b>	IP 67 <sup>5)</sup>											
Max. switching frequency	5,000 Hz											
Dimensions	8 x 8 x 40 mm <sup>6)</sup>											
	8 x 8 x 49 mm <sup>6)</sup>											
<b>Wire-break protection</b>	✓											
<b>Short-circuit protection</b>	✓ <sup>7)</sup>											
<b>Reverse polarity protection</b>	✓											
<b>Power-up pulse suppression</b>	✓											
Shock/vibration stress	30 g, 11 ms/10 ... 55 Hz, 1 mm											
Ambient temperature $T_a$	-25 °C ... +75 °C											
<b>Housing material</b>	Plastic											

<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> according to EN 60529  
<sup>6)</sup> Width x height x depth

<sup>7)</sup> (pulsed)

#### Order information

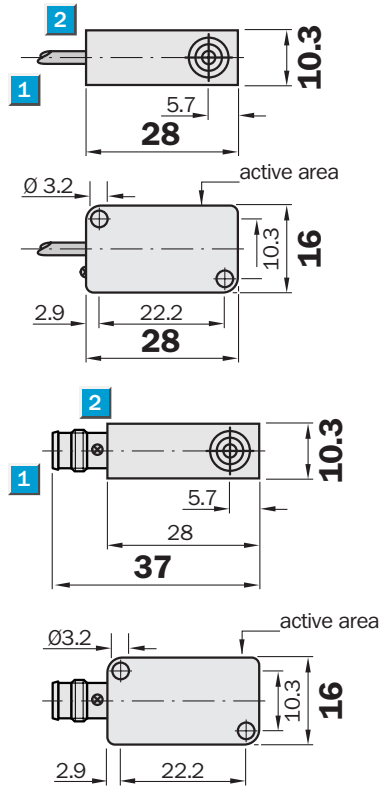
Type	Order no.
IQ08-02BNS-KU0	7 900 196
IQ08-02BPS-KU0	7 900 195
IQ08-02BNS-KTO	7 900 198
IQ08-02BPS-KTO	7 900 197
IQ08-04NPS-KU0	7 900 199
IQ08-04NPS-KTO	7 900 201

**Sensing range**  
3 / 6 mm

Inductive sensor

- Can be installed flush or non-flush in metal
- High switching frequency
- Short-circuit protection (pulsed)
- Plastic housing
- Enclosure rating IP 67

Dimensional drawing



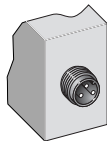
- 1 Connection
- 2 Display LED



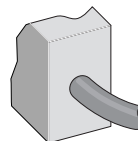
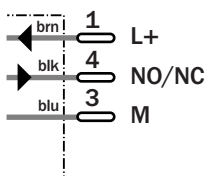
See chapter Accessories  
Connector, M8, 3-pin

Connection type

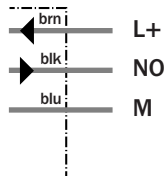
IQ10-03BPS-KT1	IQ10-03BPS-KW1
IQ10-03BNS-KT1	IQ10-03BNS-KW1
IQ10-03BPO-KT1	IQ10-06NPS-KW1
IQ10-06NNS-KT1	IQ10-06NNS-KW1
IQ10-06NPS-KT1	



M8, 3-pin



3 x 0.25 mm<sup>2</sup>



Technical specifications		IQ10-	03BPS -KW1	03BNS -KW1	03BPS -KT1	03BNS -KT1	03BPO -KT1	06NPS -KW1	06NNS -KW1	06NNS -KT1	06NPS -KT1	
<b>Sensing range <math>S_n</math></b>	3 mm											
	6 mm											
<b>Electrical configuration</b>	DC 3-wire											
<b>Supply voltage <math>V_s</math></b>	DC 10 ... 30 V											
Ripple $U_{pp}$	$\leq 10\%$ <sup>1)</sup>											
Voltage drop $U_d$	$\leq 1.5\text{ V}$ <sup>2)</sup>											
Power consumption	$\leq 5\text{ mA}$ <sup>3)</sup>											
<b>Continuous current <math>I_a</math></b>	$\leq 300\text{ mA}$											
Time delay before availability $t_v$	$\leq 10\text{ ms}$											
Hysteresis H, of $s_r$	1 ... 15 %											
Repeatability R	$\leq 1\%$ ( $U_b$ and $T_a$ constant) <sup>4)</sup>											
Temperature drift, of $s_r$	$\pm 10\%$											
EMC	According to EN 60947-5-2											
<b>Switching output</b>	PNP											
	NPN											
<b>Output function</b>	Normally open											
	Normally closed											
<b>Installation</b>	Flush											
	Non-flush											
<b>Connection type</b>	Cable, PVC, 2 m											
	Connector, M8, 3-pin											
<b>Enclosure rating</b>	IP 67 <sup>5)</sup>											
Max. switching frequency	3,000 Hz											
	1,000 Hz											
Dimensions	10 x 16 x 28 mm <sup>6)</sup>											
	10 x 16 x 37 mm <sup>6)</sup>											
<b>Wire-break protection</b>	✓											
<b>Short-circuit protection</b>	✓ <sup>7)</sup>											
<b>Reverse polarity protection</b>	✓											
<b>Power-up pulse suppression</b>	✓											
Shock/vibration stress	30 g, 11 ms/10 ... 55 Hz, 1 mm											
Ambient temperature $T_a$	-25 °C ... +75 °C											
<b>Housing material</b>	Plastic											

<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> according to EN 60529  
<sup>6)</sup> Width x height x depth

<sup>7)</sup> (pulsed)

#### Order information

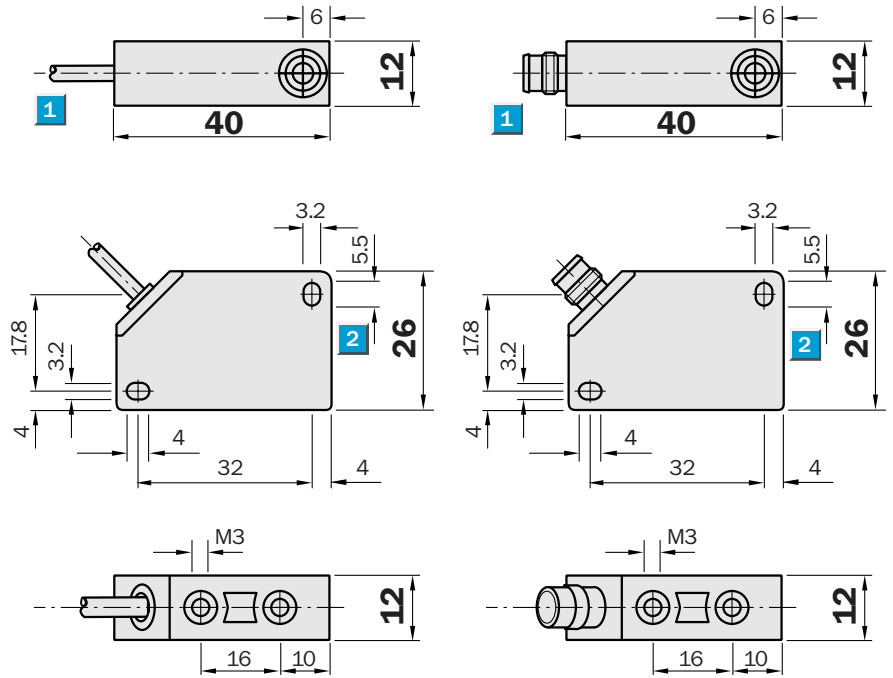
Type	Order no.
IQ10-03BPS-KW1	7 900 203
IQ10-03BNS-KW1	7 900 204
IQ10-03BPS-KT1	7 900 205
IQ10-03BNS-KT1	7 900 206
IQ10-03BPO-KT1	7 902 530
IQ10-06NPS-KW1	7 900 207
IQ10-06NNS-KW1	7 900 208
IQ10-06NNS-KT1	7 900 210
IQ10-06NPS-KT1	7 900 209

**Sensing range**  
3 / 6 mm

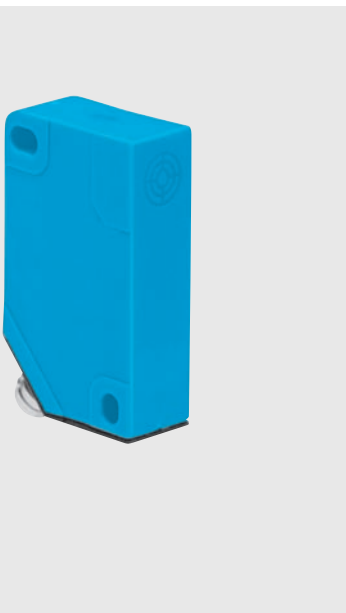
Inductive sensor

- Can be installed flush or non-flush in metal
- High switching frequency
- Short-circuit protection (pulsed)
- Plastic housing
- Enclosure rating IP 67

Dimensional drawing

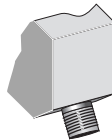


- 1 Connection
- 2 Display LED

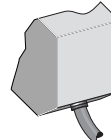


Connection type

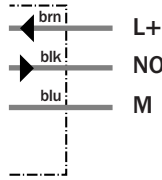
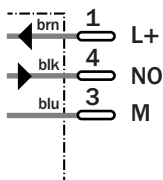
IQ12-03BNS-KT0	IQ12-03BNS-KU0
IQ12-03BPS-KT0	IQ12-03BPS-KU0
IQ12-06NPS-KT0	IQ12-06NPS-KU0



M8, 3-pin



3 x 0.25 mm<sup>2</sup>



See chapter Accessories  
Connector, M8, 3-pin

Technical specifications		IQ12-	03BNS -KU0	03BPS -KU0	03BNS -KTO	03BPS -KTO	06NPS -KU0	06NPS -KTO				
<b>Sensing range <math>S_n</math></b>	3 mm											
	6 mm											
<b>Electrical configuration</b>	DC 3-wire											
<b>Supply voltage <math>V_s</math></b>	DC 6 ... 36 V											
Ripple $U_{pp}$	$\leq 10\%$ <sup>1)</sup>											
Voltage drop $U_d$	$\leq 1.5\text{ V}$ <sup>2)</sup>											
Power consumption	$\leq 5\text{ mA}$ <sup>3)</sup>											
<b>Continuous current <math>I_a</math></b>	$\leq 300\text{ mA}$											
Time delay before availability $t_v$	$\leq 10\text{ ms}$											
Hysteresis H, of $s_r$	1 ... 15 %											
Repeatability R	$\leq 1\%$ ( $U_b$ and $T_a$ constant) <sup>4)</sup>											
Temperature drift, of $s_r$	$\pm 10\%$											
EMC	According to EN 60947-5-2											
<b>Switching output</b>	NPN											
	PNP											
<b>Output function</b>	Normally open											
<b>Installation</b>	Flush											
	Non-flush											
<b>Connection type</b>	Cable, PUR-PVC, 2 m											
	Connector, M8, 3-pin											
<b>Enclosure rating</b>	IP 67 <sup>5)</sup>											
Max. switching frequency	3,000 Hz											
	1,000 Hz											
Dimensions	12 x 26 x 40 mm <sup>6)</sup>											
	12 x 26 x 49 mm <sup>6)</sup>											
<b>Wire-break protection</b>	✓											
<b>Short-circuit protection</b>	✓ <sup>7)</sup>											
<b>Reverse polarity protection</b>	✓											
<b>Power-up pulse suppression</b>	✓											
Shock/vibration stress	30 g, 11 ms/10 ... 55 Hz, 1 mm											
Ambient temperature $T_a$	-25 °C ... +75 °C											
<b>Housing material</b>	Plastic											

<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> according to EN 60529  
<sup>6)</sup> Width x height x depth

<sup>7)</sup> (pulsed)

#### Order information

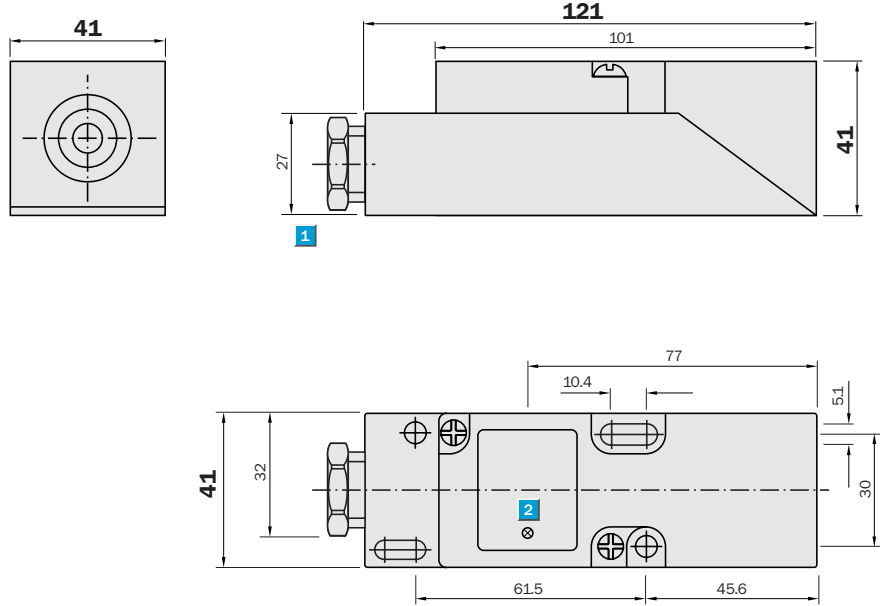
Type	Order no.
IQ12-03BNS-KU0	1 016 299
IQ12-03BPS-KU0	1 016 275
IQ12-03BNS-KTO	1 016 461
IQ12-03BPS-KTO	1 016 276
IQ12-06NPS-KU0	1 016 463
IQ12-06NPS-KTO	1 016 467

 **Sensing range**  
15 / 20 mm

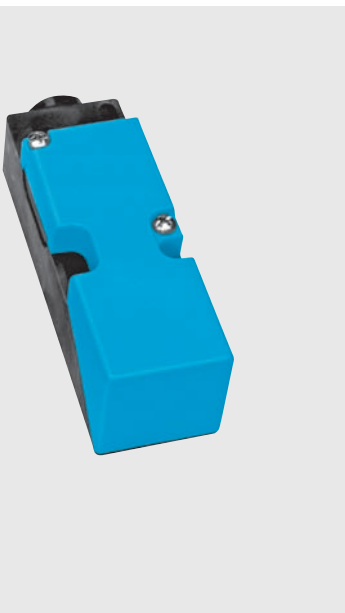
**Inductive sensor**

- Variable switching zone
- Programmable NO/NC function
- Short-circuit protection (pulsed)
- Terminal
- Enclosure rating IP 65

**Dimensional drawing**



- 1** Connection
- 2** Display LED

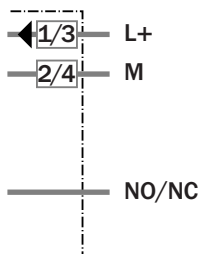


**Connection type**

- IQ40-15BPP-KKO
- IQ40-20NPP-KKO



Terminal, M20 x 1.5



Technical specifications		IQ40-	15BPP -KKO	20NPP -KKO									
<b>Sensing range S<sub>n</sub></b>	15 mm												
	20 mm												
<b>Electrical configuration</b>	DC 3-wire												
<b>Supply voltage V<sub>s</sub></b>	DC 10 ... 36 V												
Voltage drop U <sub>d</sub>	≤ 2.5 V <sup>1)</sup>												
Power consumption	≤ 15 mA <sup>2)</sup>												
<b>Continuous current I<sub>a</sub></b>	≤ 250 mA												
Time delay before availability t <sub>v</sub>	≤ 4 ms												
Hysteresis H, of s <sub>r</sub>	1 ... 15 %												
Repeatability R	≤ 10 % (U <sub>b</sub> and T <sub>a</sub> constant) <sup>3)</sup>												
Temperature drift, of s <sub>r</sub>	± 10 %												
EMC	According to EN 60947-5-2												
<b>Switching output</b>	PNP												
<b>Output function</b>	Programmable												
<b>Installation</b>	Flush												
	Non-flush												
<b>Connection type</b>	Cable gland, Terminal, M20 x 1.5												
<b>Enclosure rating</b>	IP 65 <sup>4)</sup>												
<b>VDE protection class</b>	□												
Max. switching frequency	300 Hz												
Dimensions	40 x 40 x 121 mm <sup>5)</sup>												
<b>Short-circuit protection</b>	✓ <sup>6)</sup>												
<b>Reverse polarity protection</b>	✓												
<b>Power-up pulse suppression</b>	✓												
Shock/vibration stress	30 g, 11 ms/10 ... 55 Hz, 1 mm												
Ambient temperature T <sub>a</sub>	-25 °C ... +80 °C												
<b>Housing material</b>	Plastic												


<sup>1)</sup> at I<sub>a</sub> max and U<sub>b</sub> 24 V  
<sup>2)</sup> without load

<sup>3)</sup> of s<sub>r</sub>  
<sup>4)</sup> according to EN 60529

<sup>5)</sup> Width x height x depth  
<sup>6)</sup> (pulsed)

Order information	
Type	Order no.
IQ40-15BPP-KKO	7 900 219
IQ40-20NPP-KKO	7 900 221

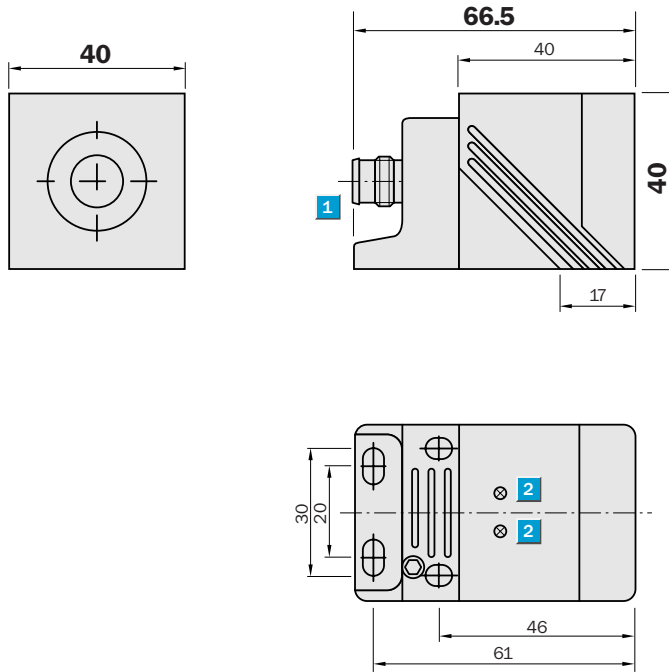


 **Sensing range**  
15 / 35 mm

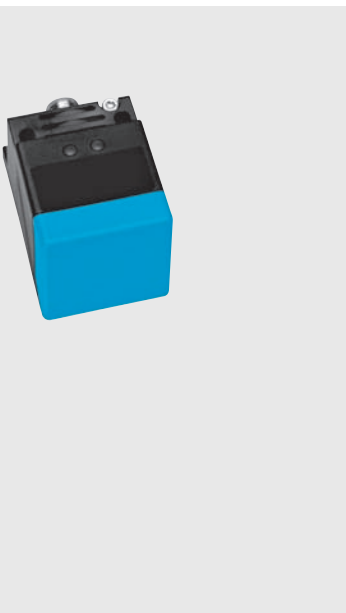
Inductive sensor

- Variable switching zone
- NO output function
- Short-circuit protection (pulsed)
- Enclosure rating IP 67
- LED status-and function indicator

Dimensional drawing

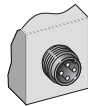


- 1 Connection
- 2 Display LED

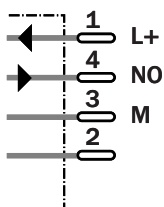


Connection type

- IQ40-15BPS-KCO
- IQ40-35NPS-KCO



M12, 4-pin



See chapter Accessories

Connector, M12, 4-pin

Technical specifications		IQ40-	15BPS -KCO	35NPS -KCO								
<b>Sensing range <math>S_n</math></b>	15 mm											
	35 mm											
<b>Supply voltage <math>V_s</math></b>	DC 10 ... 36 V											
Voltage drop $U_d$	$\leq 2.5$ V <sup>1)</sup>											
Power consumption	$\leq 15$ mA <sup>2)</sup>											
<b>Continuous current <math>I_a</math></b>	$\leq 250$ mA											
Time delay before availability $t_v$	$\leq 4$ ms											
Hysteresis H, of $s_r$	1 ... 15 %											
Repeatability R	$\leq 10$ % ( $U_b$ and $T_a$ constant) <sup>3)</sup>											
Temperature drift, of $s_r$	$\pm 10$ %											
EMC	According to EN 60947-5-2											
<b>Switching output</b>	PNP											
<b>Output function</b>	Normally open											
<b>Installation</b>	Flush											
	Non-flush											
<b>Connection type</b>	Connector, M12, 4-pin											
<b>Enclosure rating</b>	IP 67 <sup>4)</sup>											
<b>VDE protection class</b>	<input type="checkbox"/>											
Max. switching frequency	300 Hz											
	100 Hz											
Dimensions	40 x 40 x 66.5 mm <sup>5)</sup>											
<b>Short-circuit protection</b>	✓ <sup>6)</sup>											
<b>Reverse polarity protection</b>	✓											
<b>Power-up pulse suppression</b>	✓											
Shock/vibration stress	30 g, 11 ms/10 ... 55 Hz, 1 mm											
Ambient temperature $T_a$	-25 °C ... +70 °C											
<b>Housing material</b>	Plastic											


<sup>1)</sup> at  $I_a$  max and  $U_b$  24 V  
<sup>2)</sup> without load

<sup>3)</sup> of  $s_r$   
<sup>4)</sup> according to EN 60529

<sup>5)</sup> Width x height x depth  
<sup>6)</sup> (pulsed)

#### Order information

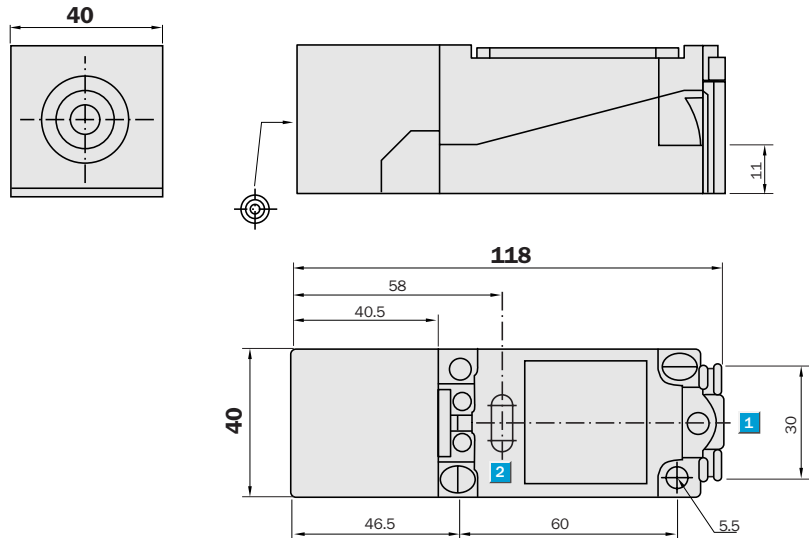
Type	Order no.
IQ40-15BPS-KCO	7 900 223
IQ40-35NPS-KCO	7 900 224

 **Sensing range**  
15 / 20 mm

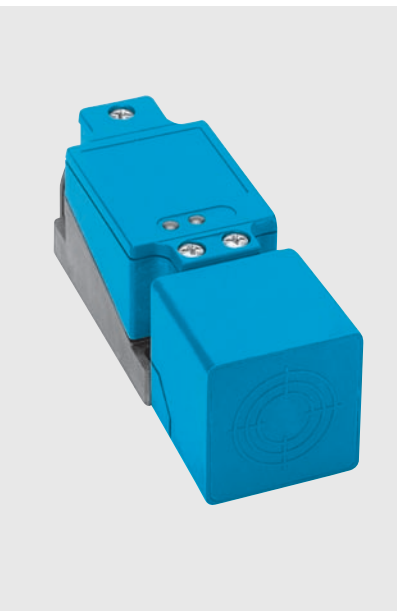
Inductive sensor

- Variable switching zone
- Short-circuit protection (pulsed)
- Terminal
- Enclosure rating IP 68
- Switching status LED, yellow
- Operating voltage status LED, green

Dimensional drawing



- 1** Connection
- 2** Display LED

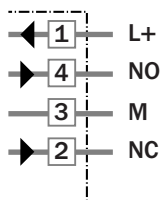


Connection type

- IQ40-15BPP-KK1
- IQ40-20NPP-KK1



Terminal, M20 x 1.5



Technical specifications		IQ40-	15BPP -KK1	20NPP -KK1									
<b>Sensing range S<sub>n</sub></b>	15 mm												
	20 mm												
<b>Electrical configuration</b>	DC 4-wire												
<b>Supply voltage V<sub>s</sub></b>	DC 10 ... 60 V												
Voltage drop U <sub>d</sub>	≤ 2.8 V <sup>1)</sup>												
Power consumption	≤ 10 mA <sup>2)</sup>												
<b>Continuous current I<sub>a</sub></b>	≤ 200 mA												
Temperature drift, of s <sub>r</sub>	± 10 %												
EMC	According to EN 60947-5-2												
<b>Switching output</b>	PNP												
<b>Output function</b>	Complementary												
<b>Installation</b>	Flush												
	Non-flush												
<b>Connection type</b>	Cable gland, Terminal, M20 x 1.5												
<b>Enclosure rating</b>	IP 68 <sup>3)</sup>												
<b>VDE protection class</b>	□												
Max. switching frequency	150 Hz												
Dimensions	40 x 40 x 118 mm <sup>4)</sup>												
<b>Short-circuit protection</b>	✓ <sup>5)</sup>												
<b>Reverse polarity protection</b>	✓												
<b>Power-up pulse suppression</b>	✓												
Shock/vibration stress	30 g, 11 ms/10 ... 55 Hz, 1 mm												
Ambient temperature T <sub>a</sub>	-25 °C ... +70 °C												
<b>Housing material</b>	Plastic, PBT												

<sup>1)</sup> at I<sub>a</sub> max and U<sub>b</sub> 60 V


<sup>2)</sup> without load

<sup>3)</sup> according to EN 60529

<sup>4)</sup> Width x height x depth  
<sup>5)</sup> (pulsed)

#### Order information

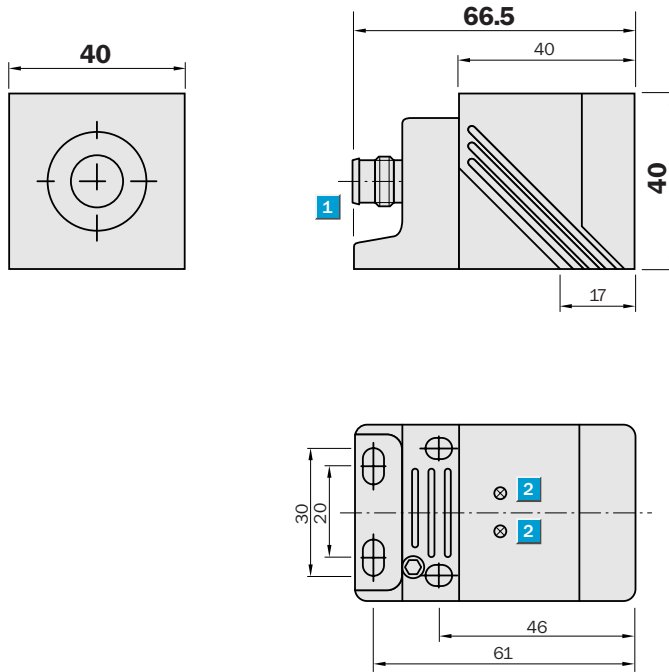
Type	Order no.
IQ40-15BPP-KK1	6 025 814
IQ40-20NPP-KK1	6 025 815

 **Sensing range**  
20 / 35 mm

Inductive sensor

- Variable switching zone
- Complementary output function
- Short-circuit protection (pulsed)
- Enclosure rating IP 67
- LED status-and function indicator

Dimensional drawing

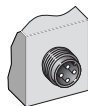


- 1 Connection
- 2 Display LED

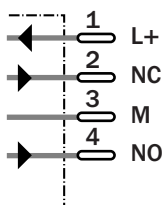


Connection type

- IQ40-20BPP-KCK
- IQ40-35NPP-KCK



M12, 4-pin



See chapter Accessories

Connector, M12, 4-pin


Technical specifications		IQ40-	20BPP -KCK	35NPP -KCK								
<b>Sensing range <math>S_n</math></b>	20 mm											
	35 mm											
<b>Electrical configuration</b>	DC 4-wire											
<b>Supply voltage <math>V_s</math></b>	DC 10 ... 36 V											
Voltage drop $U_d$	$\leq 2.5 \text{ V}^{1)}$											
Power consumption	$\leq 15 \text{ mA}^{2)}$											
<b>Continuous current <math>I_a</math></b>	$\leq 250 \text{ mA}$											
Time delay before availability $t_v$	$\leq 4 \text{ ms}$											
Hysteresis H, of $s_r$	1 ... 15 %											
Repeatability R	$\leq 10 \%$ ( $U_b$ and $T_a$ constant) <sup>3)</sup>											
Temperature drift, of $s_r$	$\pm 10 \%$											
EMC	According to EN 60947-5-2											
<b>Switching output</b>	PNP											
<b>Output function</b>	Complementary											
<b>Installation</b>	Flush											
	Non-flush											
<b>Connection type</b>	Connector, M12, 4-pin											
<b>Enclosure rating</b>	IP 67 <sup>4)</sup>											
<b>VDE protection class</b>	<input type="checkbox"/>											
Max. switching frequency	100 Hz											
Dimensions	40 x 40 x 66.5 mm <sup>5)</sup>											
<b>Short-circuit protection</b>	<input checked="" type="checkbox"/> <sup>6)</sup>											
<b>Reverse polarity protection</b>	<input checked="" type="checkbox"/>											
<b>Power-up pulse suppression</b>	<input checked="" type="checkbox"/>											
Shock/vibration stress	30 g, 11 ms/10 ... 55 Hz, 1 mm											
Ambient temperature $T_a$	-25 °C ... +70 °C											
<b>Housing material</b>	Plastic											

<sup>1)</sup> at  $I_a$  max and  $U_b$  24 V  
<sup>2)</sup> without load

<sup>3)</sup> of  $s_r$   
<sup>4)</sup> according to EN 60529

<sup>5)</sup> Width x height x depth  
<sup>6)</sup> (pulsed)

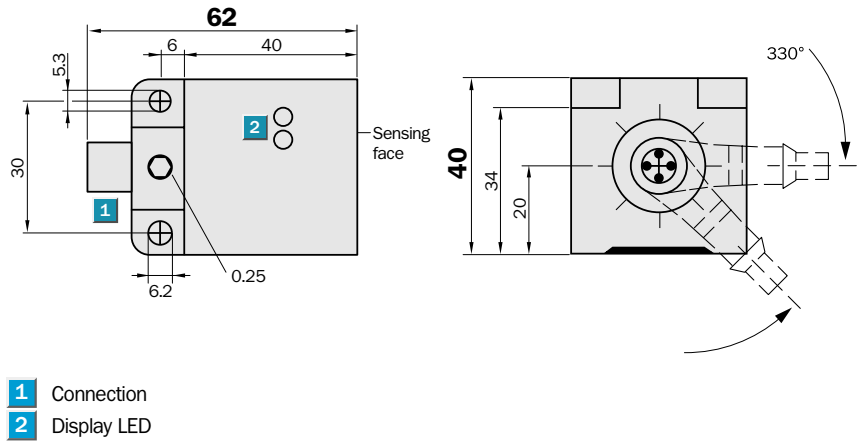
Order information	
Type	Order no.
IQ40-20BPP-KCK	6 012 014
IQ40-35NPP-KCK	6 012 015

 **Sensing range**  
30 / 35 mm

**Inductive sensor**

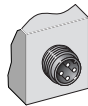
- Variable switching zone
- Complementary output function
- Connector, 330° rotatable
- Enclosure rating IP 67
- Factor 1 for all metals
- Magnetic field immune (6025813)

**Dimensional drawing**

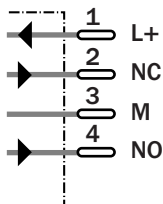


**Connection type**

- IQ40-35NPP-KCM
- IQ40-30NPP-KC1



M12, 4-pin



**See chapter Accessories**

Connector, M12, 4-pin

Technical specifications		IQ40-	35NPP -KCM	30NPP -KC1								
<b>Sensing range S<sub>n</sub></b>	35 mm											
	30 mm											
<b>Electrical configuration</b>	DC 4-wire											
<b>Supply voltage V<sub>s</sub></b>	DC 10 ... 30 V											
Voltage drop U <sub>d</sub>	≤ 2.5 V <sup>1)</sup>											
Power consumption	≤ 15 mA <sup>2)</sup>											
<b>Continuous current I<sub>a</sub></b>	≤ 200 mA											
Time delay before availability t <sub>v</sub>	≤ 30 ms											
Hysteresis H, of s <sub>r</sub>	1 ... 15 %											
Repeatability R	≤ 5 % (U <sub>b</sub> and T <sub>a</sub> constant) <sup>3)</sup>											
Temperature drift, of s <sub>r</sub>	± 10 %											
EMC	According to EN 60947-5-2											
<b>Switching output</b>	PNP											
<b>Output function</b>	Complementary											
<b>Installation</b>	Non-flush											
<b>Connection type</b>	Connector, M12, 4-pin											
<b>Enclosure rating</b>	IP 67 <sup>4)</sup>											
<b>VDE protection class</b>	□											
Max. switching frequency	200 Hz											
	50 Hz											
Dimensions	40 x 40 x 62 mm <sup>5)</sup>											
<b>Short-circuit protection</b>	✓ <sup>6)</sup>											
<b>Reverse polarity protection</b>	✓											
<b>Power-up pulse suppression</b>	✓											
<b>Factor 1 for all metals</b>	✓											
<b>Magnetic field immune</b>	✓											
Shock/vibration stress	30 g, 11 ms/10 ... 55 Hz, 1 mm											
Ambient temperature T <sub>a</sub>	-25 °C ... +70 °C											
<b>Housing material</b>	Plastic											


<sup>1)</sup> at I<sub>a</sub> max and U<sub>b</sub> 24 V  
<sup>2)</sup> without load

<sup>3)</sup> of s<sub>r</sub>  
<sup>4)</sup> according to EN 60529

<sup>5)</sup> Width x height x depth  
<sup>6)</sup> (pulsed)

Order information	
Type	Order no.
IQ40-35NPP-KCM	6 025 813
IQ40-30NPP-KC1	6 025 811

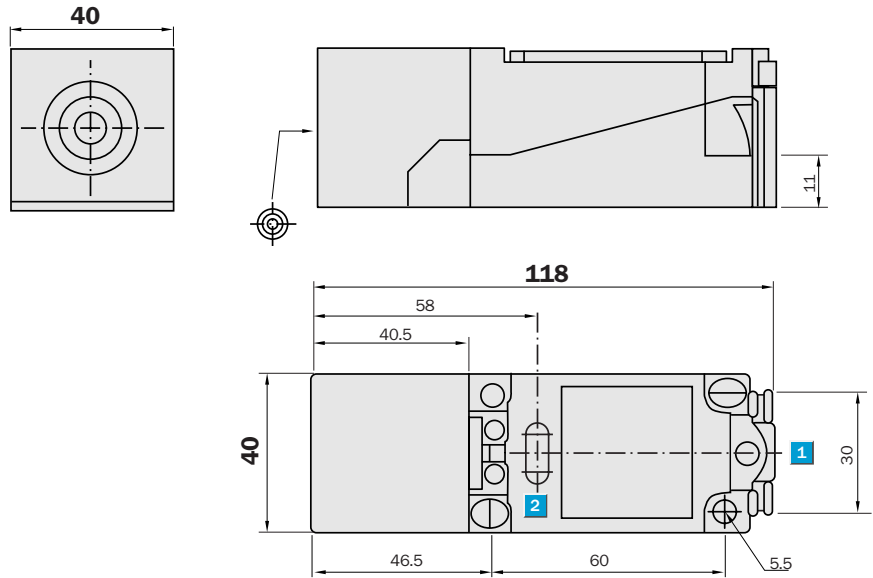


 **Sensing range**  
**15 mm**

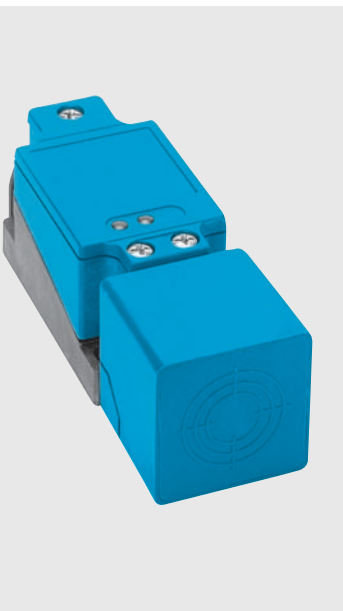
Inductive sensor

- Variable switching zone
- Broad supply voltage range in DC
- Switching output: NO/NC
- Enclosure rating IP 68
- Terminal connection

Dimensional drawing

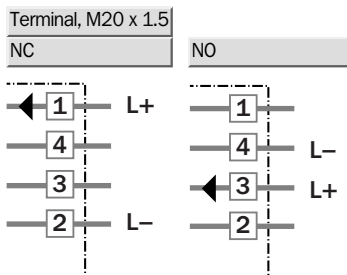


- 1 Connection
- 2 Display LED



Connection type

IQ40-15BDP-KK1



Technical specifications		IQ40-	15BDP-KK1										
<b>Sensing range S<sub>n</sub></b>	15 mm												
<b>Electrical configuration</b>	DC 2-wire												
<b>Supply voltage V<sub>s</sub></b>	DC 5 ... 60 V												
Voltage drop U <sub>d</sub>	≤ 5 V <sup>1)</sup>												
<b>Continuous current I<sub>a</sub></b>	≤ 200 mA												
Residual current	≤ 1 mA												
Temperature drift, of s <sub>r</sub>	± 10 %												
EMC	According to EN 60947-5-2												
<b>Output function</b>	Programmable												
<b>Installation</b>	Flush												
<b>Connection type</b>	Cable gland, Terminal, M20 x 1.5												
<b>Enclosure rating</b>	IP 68 <sup>2)</sup>												
<b>VDE protection class</b>	□												
Max. switching frequency	400 Hz												
Dimensions	40 x 40 x 118 mm <sup>3)</sup>												
<b>Short-circuit protection</b>	✓ <sup>4)</sup>												
<b>Reverse polarity protection</b>	✓												
<b>Power-up pulse suppression</b>	✓												
Shock/vibration stress	30 g, 11 ms/10 ... 55 Hz, 1 mm												
Ambient temperature T <sub>a</sub>	-25 °C ... +70 °C												
<b>Housing material</b>	Plastic, PBT												


<sup>1)</sup> at I<sub>a</sub> max and U<sub>b</sub> 60 V

<sup>2)</sup> according to EN 60529

<sup>3)</sup> Width x height x depth

<sup>4)</sup> (pulsed)

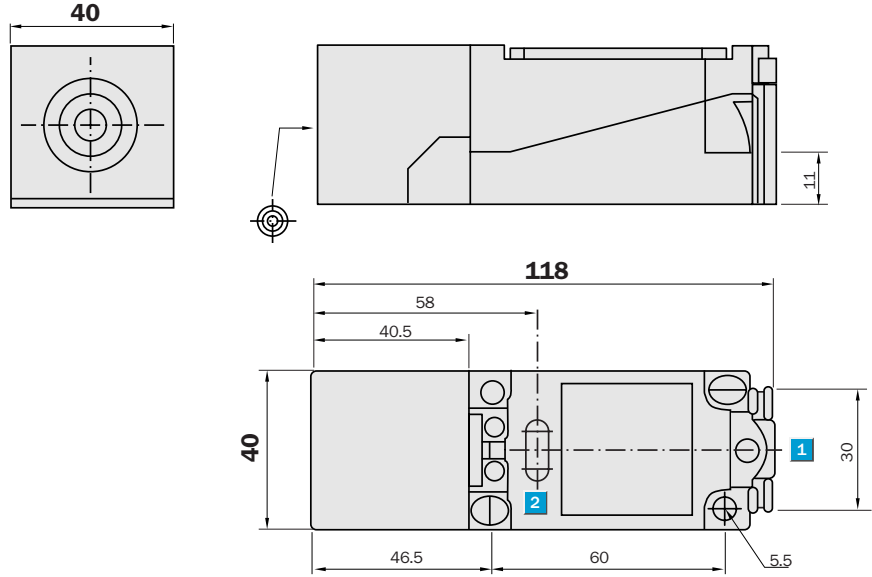
Order information	
<b>Type</b>	<b>Order no.</b>
IQ40-15BDP-KK1	6 025 817

 **Sensing range**  
**15 mm**

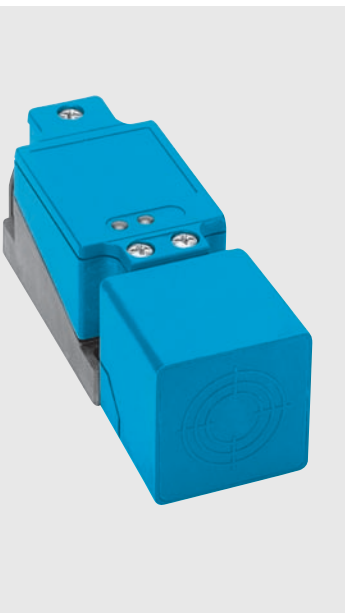
Inductive sensor

- Variable switching zone
- Broad supply voltage range in AC
- Switching output: NO/NC
- Enclosure rating IP 68
- Terminal connection

Dimensional drawing

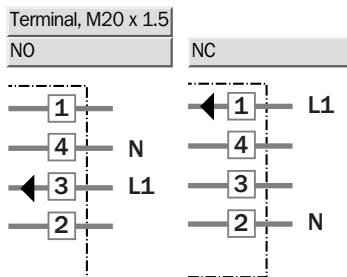


- 1 Connection
- 2 Display LED



Connection type


IQ40-15BAP-KK1



Technical specifications		IQ40-	15BAP-KK1											
<b>Sensing range S<sub>n</sub></b>	15 mm													
<b>Electrical configuration</b>	AC 2-wire													
<b>Supply voltage V<sub>s</sub></b>	AC 20 ... 253 V													
Voltage drop U <sub>d</sub>	≤ 12 V													
<b>Continuous current I<sub>a</sub></b>	≤ 500 mA													
Intermittent current I <sub>k</sub>	3 A (20 ms/0.1Hz)													
Residual current	≤ 1.95 mA													
Temperature drift, of s <sub>r</sub>	± 10 %													
EMC	According to EN 60947-5-2													
<b>Output function</b>	Programmable													
<b>Installation</b>	Flush													
<b>Connection type</b>	Cable gland, Terminal, M20 x 1.5													
<b>Enclosure rating</b>	IP 68 <sup>1)</sup>													
<b>VDE protection class</b>	□													
Max. switching frequency	20 Hz													
Dimensions	40 x 40 x 118 mm <sup>2)</sup>													
<b>Short-circuit protection</b>	✓ <sup>3)</sup>													
<b>Reverse polarity protection</b>	✓													
<b>Power-up pulse suppression</b>	✓													
Shock/vibration stress	30 g, 11 ms/10 ... 55 Hz, 1 mm													
Ambient temperature T <sub>a</sub>	-25 °C ... +70 °C													
<b>Housing material</b>	Plastic, PBT													
<sup>1)</sup> according to EN 60529	<sup>2)</sup> Width x height x depth		<sup>3)</sup> (pulsed)											

**Order information**

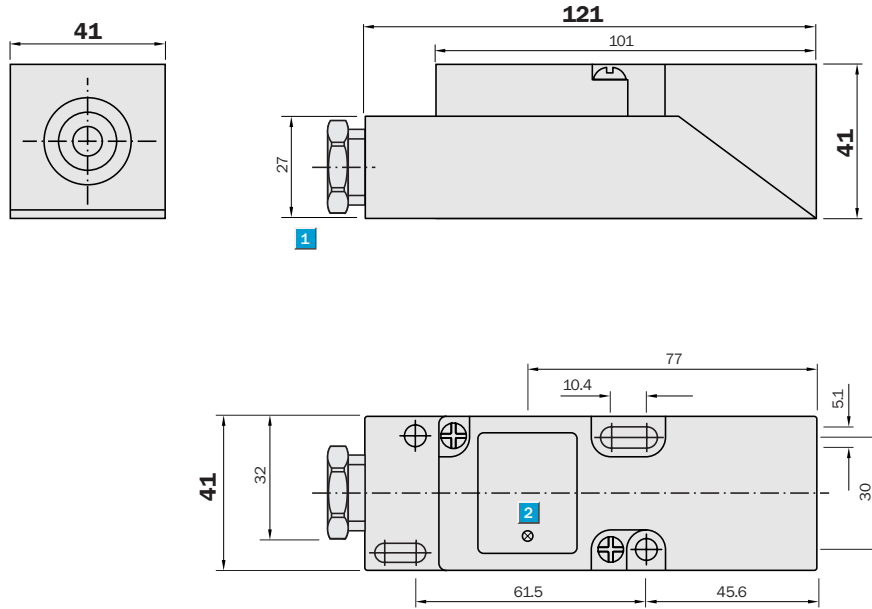
Type	Order no.
IQ40-15BAP-KK1	6 025 816

 **Sensing range**  
15 / 20 mm

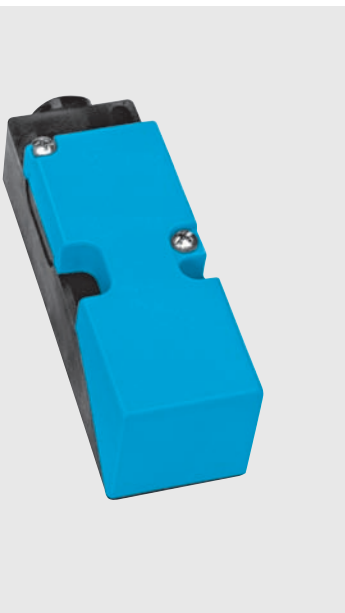
Inductive sensor

- Variable switching zone
- Broad supply voltage range in AC and DC
- Programmable switching output: NO or NC
- Enclosure rating IP 65
- Terminal connection

Dimensional drawing



- 1 Connection
- 2 Display LED

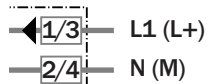


Connection type

- IQ40-15BUP-KKO
- IQ40-20NUP-KKO



Terminal, M20 x 1.5




Technical specifications		IQ40-	15BUP-KKO	20NUP-KKO									
<b>Sensing range S<sub>n</sub></b>	15 mm												
	20 mm												
<b>Electrical configuration</b>	AC/DC 2-wire												
<b>Supply voltage V<sub>s</sub></b>	AC/DC 20 ... 250 V												
Voltage drop U <sub>d</sub> AC/DC	≤ 6.5 V / ≤ 6 V												
<b>Continuous current I<sub>a</sub></b>	≤ 350 mA AC (... + 50 °C)												
<b>Continuous current I<sub>a</sub></b>	≤ 250 mA AC (... + 80 °C)												
<b>Continuous current I<sub>a</sub></b>	≤ 100 mA DC												
Intermittent current I <sub>k</sub>	2.2 A (20 ms/0.5Hz)												
Min. load current	> 5 mA												
Residual current	≤ 2.5 mA (250 V AC)												
Residual current	≤ 1.3 mA (110 V AC)												
Residual current	≤ 0.8 mA (24 V DC)												
Time delay before availability t <sub>v</sub>	≤ 8 ms												
Hysteresis H, of s <sub>r</sub>	1 ... 15 %												
Repeatability R	≤ 10 % (U <sub>b</sub> and T <sub>a</sub> constant) <sup>1)</sup>												
Temperature drift, of s <sub>r</sub>	± 10 %												
EMC	According to EN 60947-5-2												
<b>Output function</b>	Programmable												
<b>Installation</b>	Flush												
	Non-flush												
<b>Connection type</b>	Cable gland, Terminal, M20 x 1.5												
<b>Enclosure rating</b>	IP 65 <sup>2)</sup>												
<b>VDE protection class</b>	□												
Max. switching frequency AC/DC	20 Hz / 55 Hz												
Dimensions	40 x 40 x 121 mm <sup>3)</sup>												
<b>Power-up pulse suppression</b>	✓												
Shock/vibration stress	30 g, 11 ms/10 ... 55 Hz, 1 mm												
Ambient temperature T <sub>a</sub>	-25 °C ... +80 °C												
<b>Housing material</b>	Plastic												

<sup>1)</sup> of s<sub>r</sub>

<sup>2)</sup> according to EN 60529

<sup>3)</sup> Width x height x depth

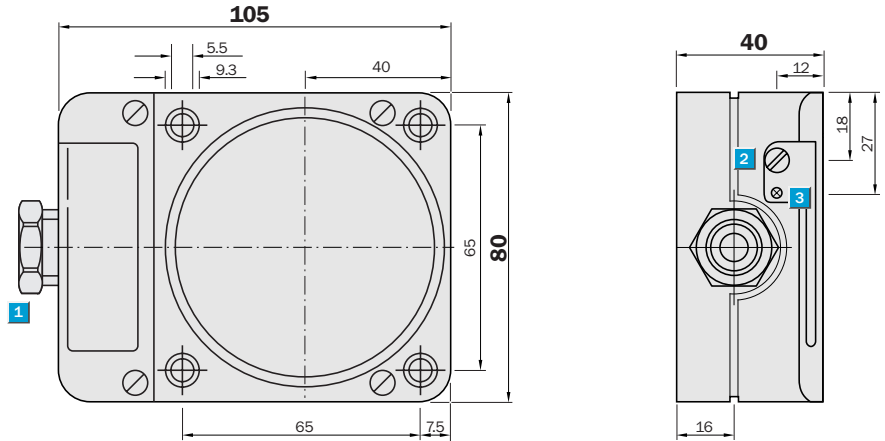
Order information	
Type	Order no.
IQ40-15BUP-KKO	7 902 136
IQ40-20NUP-KKO	7 902 137

 **Sensing range**  
60 mm

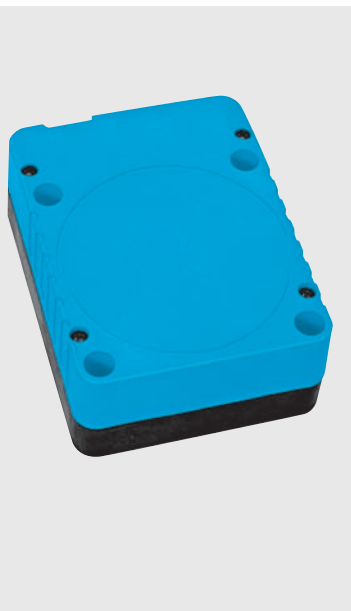
Inductive sensor

- Adjustable switching distance between 20 to 60 mm
- Programmable NO/NC function
- Short-circuit protection (pulsed)
- Terminal connection
- Enclosure rating IP 65

Dimensional drawing



- 1 Connection
- 2 Potentiometer
- 3 Display LED

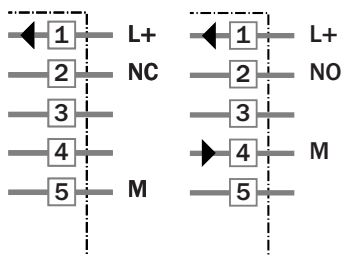


Connection type

IQ80-60NPP-KKO



Terminal, M20 x 1.5



Technical specifications		IQ80-	60NPP -KKO											
<b>Sensing range <math>S_n</math></b>	60 mm													
<b>Electrical configuration</b>	DC 3-wire													
<b>Supply voltage <math>V_s</math></b>	DC 10 ... 36 V													
Voltage drop $U_d$	$\leq 2.5$ V <sup>1)</sup>													
Power consumption	$\leq 15$ mA <sup>2)</sup>													
<b>Continuous current <math>I_a</math></b>	$\leq 250$ mA													
Time delay before availability $t_v$	$\leq 250$ ms													
Hysteresis H, of $s_r$	1 ... 15 %													
Repeatability R	$\leq 10$ % ( $U_b$ and $T_a$ constant) <sup>3)</sup>													
Temperature drift, of $s_r$	$\pm 10$ %													
EMC	According to EN 60947-5-2													
<b>Switching output</b>	PNP													
<b>Output function</b>	Programmable													
<b>Connection type</b>	Cable gland, Terminal, M20 x 1.5													
<b>Enclosure rating</b>	IP 65 <sup>4)</sup>													
<b>VDE protection class</b>	<input type="checkbox"/>													
Max. switching frequency	4 Hz													
Dimensions	80 x 40 x 105 mm <sup>5)</sup>													
<b>Short-circuit protection</b>	✓ <sup>6)</sup>													
<b>Reverse polarity protection</b>	✓													
<b>Power-up pulse suppression</b>	✓													
Shock/vibration stress	30 g, 11 ms/10 ... 55 Hz, 1 mm													
Ambient temperature $T_a$	-25 °C ... +80 °C													
<b>Housing material</b>	Plastic													

<sup>1)</sup> at  $I_a$  max and  $U_b$  24 V  
<sup>2)</sup> without load  
<sup>3)</sup> of  $s_r$   
<sup>4)</sup> according to EN 60529  
<sup>5)</sup> Width x height x depth  
<sup>6)</sup> (pulsed)

## Order information

Type	Order no.
IQ80-60NPP-KKO	7 900 227

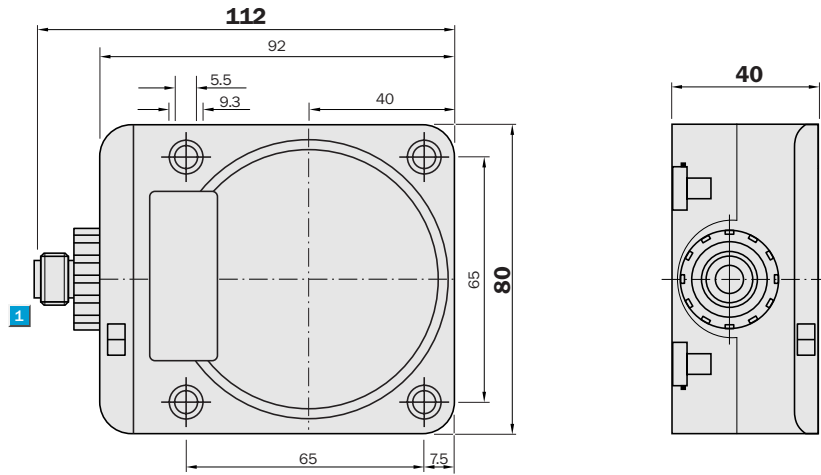


**Sensing range**  
44.55 / 50 mm

Inductive sensor

- Can be installed non-flush, flush or over flush in metal
- Switching distance 50 mm (flush or over flush installation) switching distance max. 5.5 mm reduced (non-flush installation)
- Antivalent output functions
- Connector M12 (rotatable in 45°-steps)
- Enclosure rating IP 67

## Dimensional drawing

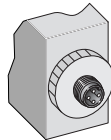


1 Connection

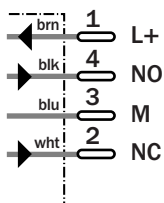


## Connection type

IQ80-50BPP-KCO



M12, 4-pin



## See chapter Accessories

Connector, M12, 4-pin

Technical specifications		IQ80-	50BPP-KCO											
<b>Sensing range S<sub>n</sub></b>	44,55 / 50 / 50 mm													
<b>Electrical configuration</b>	DC 4-wire													
<b>Supply voltage V<sub>s</sub></b>	DC 10 ... 36 V													
Voltage drop U <sub>d</sub>	≤ 2.5 V <sup>1)</sup>													
Power consumption	≤ 20 mA <sup>2)</sup>													
<b>Continuous current I<sub>a</sub></b>	≤ 250 mA													
Hysteresis H, of s <sub>r</sub>	1 ... 15 %													
Repeatability R	≤ 10 % (U <sub>b</sub> and T <sub>a</sub> constant) <sup>3)</sup>													
Temperature drift, of s <sub>r</sub>	± 10 %													
EMC	According to EN 60947-5-2													
<b>Switching output</b>	PNP													
<b>Output function</b>	Complementary													
<b>Installation</b>	Non-flush Overflush Flush													
<b>Connection type</b>	Connector, M12, 4-pin													
<b>Enclosure rating</b>	IP 67 <sup>4)</sup>													
<b>VDE protection class</b>	□													
Max. switching frequency	70 Hz													
Dimensions	80 x 40 x 112 mm <sup>5)</sup>													
<b>Overload protected</b>	✓													
<b>Short-circuit protection</b>	✓ <sup>6)</sup>													
<b>Reverse polarity protection</b>	✓													
<b>Power-up pulse suppression</b>	✓													
Shock/vibration stress	30 g, 11 ms/10 ... 55 Hz, 1 mm													
Ambient temperature T <sub>a</sub>	-25 °C ... +70 °C													
<b>Housing material</b>	PPE, zinc-die cast, nickel special coated													

<sup>1)</sup> at I<sub>a</sub> max and U<sub>b</sub> 24 V  
<sup>2)</sup> without load

<sup>3)</sup> of s<sub>r</sub>  
<sup>4)</sup> according to EN 60529

<sup>5)</sup> Width x height x depth  
<sup>6)</sup> (pulsed)

#### Order information

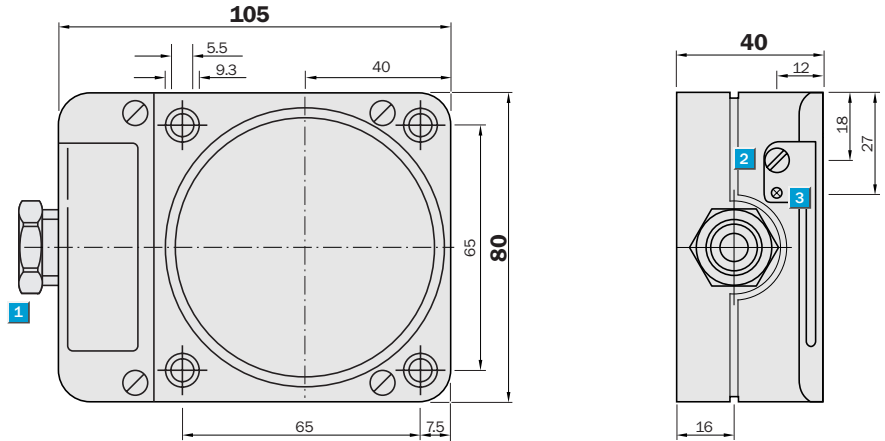
Type	Order no.
IQ80-50BPP-KCO	6 026 473

**Sensing range**  
60 mm

Inductive sensor

- Adjustable switching distance between 20 and 60 mm
- Broad supply voltage range in AC and DC
- Programmable switching output: NO or NC
- Enclosure rating IP 65
- Terminal connection

Dimensional drawing



- 1 Connection
- 2 Potentiometer
- 3 Display LED

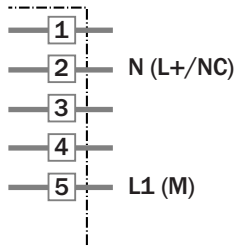
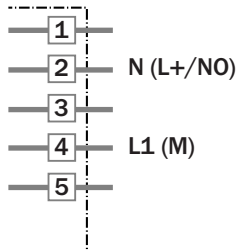


Connection type

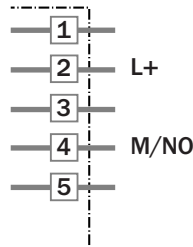
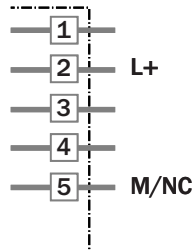
IQ80-60NUP-KKO



Terminal, M20 x 1.5  
AC / DC (NPN)



DC (PNP)



Technical specifications		IQ80-	60NUP- KKO											
<b>Sensing range <math>S_n</math></b>	60 mm													
<b>Electrical configuration</b>	AC/DC 2-wire													
<b>Supply voltage <math>V_s</math></b>	AC/DC 20 ... 250 V													
Voltage drop $U_d$ AC/DC	$\leq 6.5$ V / $\leq 6$ V													
<b>Continuous current <math>I_a</math></b>	$\leq 350$ mA AC (... + 50 °C)													
<b>Continuous current <math>I_a</math></b>	$\leq 250$ mA AC (... + 80 °C)													
<b>Continuous current <math>I_a</math></b>	$\leq 100$ mA DC													
Intermittent current $I_k$	2.2 A 20 ms/0.5 Hz													
Min. load current	> 5 mA													
Residual current	$\leq 2.5$ mA (250 V AC)													
Residual current	$\leq 1.3$ mA (110 V AC)													
Residual current	$\leq 0.8$ mA (24 V DC)													
Time delay before availability $t_v$	$\leq 8$ ms													
Hysteresis H, of $s_r$	1 ... 15 %													
Repeatability R	$\leq 10$ % ( $U_b$ and $T_a$ constant) <sup>1)</sup>													
Temperature drift, of $s_r$	$\pm 10$ %													
EMC	According to EN 60947-5-2													
<b>Switching output</b>	PNP/NPN config.													
<b>Output function</b>	Programmable													
<b>Installation</b>	Non-flush													
<b>Connection type</b>	Cable gland, Terminal, M20 x 1.5													
<b>Enclosure rating</b>	IP 65 <sup>2)</sup>													
<b>VDE protection class</b>	<input type="checkbox"/>													
Max. switching frequency	4 Hz													
Dimensions	80 x 40 x 105 mm <sup>3)</sup>													
<b>Power-up pulse suppression</b>	✓													
Shock/vibration stress	30 g, 11 ms/10 ... 55 Hz, 1 mm													
Ambient temperature $T_a$	-25 °C ... +80 °C													
<b>Housing material</b>	Plastic													

<sup>1)</sup> of  $s_r$

<sup>2)</sup> according to EN 60529

<sup>3)</sup> Width x height x depth

#### Order information

Type	Order no.
IQ80-60NUP-KKO	7 902 138