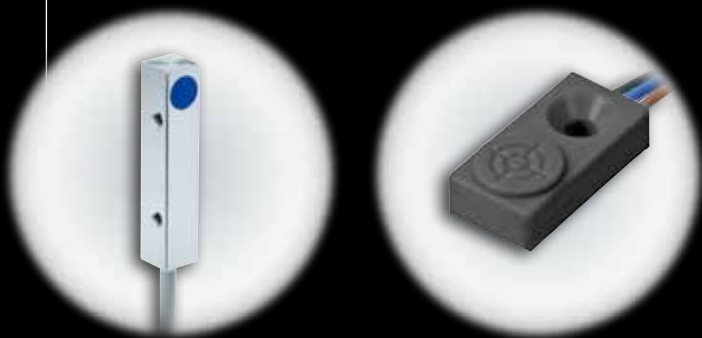


# Inductive sensors

## The metal detectors

### Cubic housings from from Page 702

- Variety of housing sizes for numerous applications
- Plastic or metal housing options
- Switching distances from 1.5 mm to 35 mm
- Numerous connection possibilities
- Flush, quasi-flush and non-flush mounting possibilities



Because of their functional principle, inductive sensors are only suitable for detecting metal objects. But they do this extremely reliably and are also very robust and resistant (e.g. regarding environmental factors), which makes them interesting for numerous industrial applications. They are mainly used wherever the detection of uniform movements is involved – for example as proximity switches for determining the position of transported machine parts such as saddles or hydraulic cylinders, for measuring rotary speeds on vehicle crankshafts, or as pulse generators for motor ignition.

Inductive sensors are extremely precise due to their high repeatability levels. Their simple design and uncomplicated commissioning ensure minimal downtimes. Whether in robotics, in assembly and handling, in factory automation or mechanical engineering: inductive sensors from SensoPart are reliable, require no maintenance, and offer versatile use thanks to the numerous housings and sizes available.

### TYPICAL SENSOPART

- Reliable detection of metallic objects
- Product variants for standard or three-fold switching distances
- Robust cylindrical or cuboid metal housing options
- Simple installation thanks to integrated metric threads
- Different designs for flush, quasi-flush and non-flush mounting
- Switching or analogue output options available
- NAMUR-compliant design on request

## Cylindrical housings

from Page 708

- Variety of housing sizes for numerous applications
- High switching frequency of up to 5 kHz
- Robust stainless steel designs
- With switching or analogue output options
- Highly pressure-resistant sensors for up to 800 bar
- Flush, quasi-flush and non-flush mounting possibilities
- Full-metal "see-through" sensors (metal face)
- Three-fold switching distance
- K-factor 1, switching distance independent of type of metal



### Inductive sensors with standard switching distance

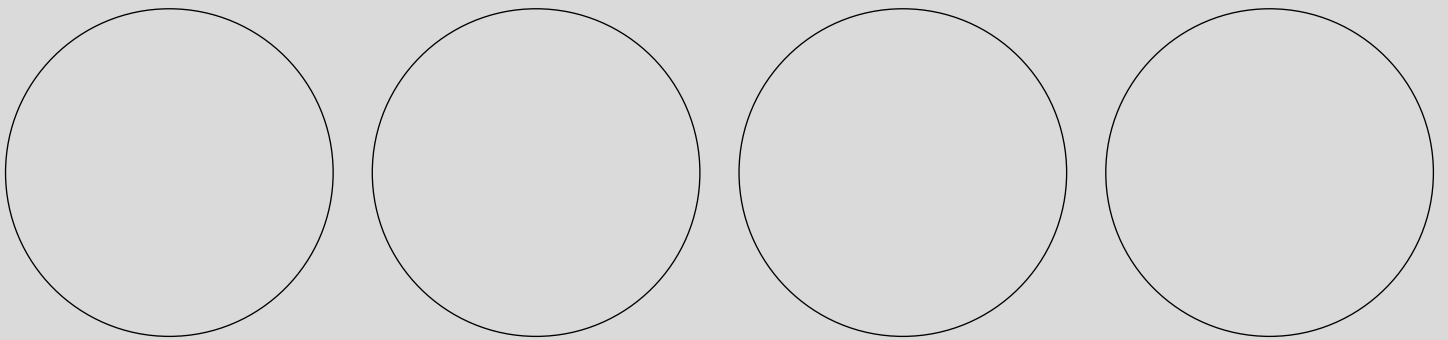
Housing size	Part no.	Type code	Installation	Switching distance	Switching output	Connection type	Page
ø 3 mm	996-09390	IS 33-52	Flush	0.6 mm	PNP / NO	Cable, 3-wire	708
	996-09444	ISN 44-20	Flush	0.8 mm	NAMUR	Cable, 2 m, 2-wire	709
ø 6.5 mm	996-09488	ISZ 46-02	Flush	1.5 mm	PNP / NO	Cable 2 m, 3-wire	713
	996-50590	IS 46-12	Flush	1.5 mm	PNP / NO	Plug, M8x1, 3-wire	714
	996-09401	IS 46-02	Flush	1.5 mm	PNP / NO	Cable, 2 m, 3-wire	714
	996-50586	IS 56-12	Quasi-flush	3 mm	PNP / NO	Plug, M8x1, 3-pin	716
	996-09963	IS 56-42	Quasi-flush	3 mm	PNP / NO	Plug, M12x1, 4-pin	716
	996-09409	IS 56-02	Quasi-flush	3 mm	PNP / NO	Cable, 2 m, 3-wire	716
M4	996-09397	IS 34-52	Flush	0.6 mm	PNP / NO	Cable, 2 m, 3-wire	710
	996-51486	IT 4 BD-PSK3	Flush	1 mm	PNP / NO	Cable, 3-wire	711
M5	697-01005	IMT 5-0B8-PS-K3	Flush	0.8 mm	PNP / NO	Cable 2 m	712
	697-01007	IMT 5-0B8-PS-M3	Flush	0.8 mm	PNP / NO	M8 3-pin	712
M8	697-01009	IMT 8-1B5-PS-K3	Flush	1.5 mm	PNP / NO	Cable 2 m	718
	697-01011	IMT 8-1B5-PS-L4	Flush	1.5 mm	PNP / NO	M12 3-pin	718
	697-01013	IMT 8-2N-PS-K3	Non-flush	2 mm	PNP / NO	Cable 2 m	720
M8	996-50624	IS 48-12T	Flush	1.5 mm	PNP / NO	Plug, M8x1, 3-pin	717
	996-09405	IS 48-02	Flush	1.5 mm	PNP / NO	Cable, 2 m, 3-wire	717
	996-50587	IS 58-12T	Flush	3 mm	PNP / NO	Plug, M8x1, 3-pin	722
	996-09965	IS 58-42	Flush	3 mm	PNP / NO	Plug, M8x1, 4-pin	722
	996-09413	IS 58-02	Flush	3 mm	PNP / NO	Cable, 2 m, 3-wire	722
	697-01015	IMT 8-2N-PS-L4	Non-flush	2 mm	PNP / NO	M12 3-pin	720
M12	697-01016	IMT 12-2B-NS-K3	Flush	2 mm	NPN / NO	Cable 2 m	724
	697-01017	IMT 12-2B-PS-K3	Flush	2 mm	PNP / NO	Cable 2 m	724
	697-01019	IMT 12-2B-PS-L4	Flush	2 mm	PNP / NO	M12 3-pin	724
	697-01023	IMT 12-4N-PS-L4	Non-flush	4 mm	PNP / NO	M12 3-pin	726
	996-51479	IS 512-02 AI	Quasi-flush	6 mm	Analogue output 0 ... 10V / 4 ... 20 mA	Cable, 4-wire	742

# Selection Table Inductive Sensors

Inductive sensors with standard switching distance							
Housing size	Part no.	Type code	Installation	Switching distance	Swichting output	Connection type	Page
M18	697-01027	IMT 18-5B-PS-L4	Flush	5 mm	PNP / NO	M12 3-pin	731
	697-01031	IMT 18-8N-PS-L4	Non-flush	8 mm	PNP / NO	M12 3-pin	732
	996-09435	IS 518-02 A	Quasi-flush	10 mm	Analogue output 0 ... 10V / 4 ... 20 mA	Cable, 4-wire	743
M30	697-01033	IMT 30-10B-PS-K3	Flush	10 mm	PNP / NO	Cable 2 m	737
	697-01035	IMT 30-10B-PS-L4	Flush	10 mm	PNP / NO	M12 3-pin	737

Inductive sensors with increased switching distance								
Housing size	Part no.	Type code	Installation	Switching distance	Swichting output	Connection type	Page	
ø 6.5 mm	697-01040	IDT 6-2B-PS-K3	Flush	2 mm	PNP / NO	Cable 2 m	715	
	697-01042	IDT 6-2B-PS-M3	Flush	2 mm	PNP / NO	M8 3-pin	715	
M8	697-01044	IMT 8-2B-PS-K3	Flush	2 mm	PNP / NO	Cable 2 m	720	
	996-51456	IS 58-14-S	Non-flush	6 mm	PNP / NO	Plug, M8x1, 3-pin	723	
	996-51460	IS 58-44-S	Non-flush	6 mm	PNP / NO	Plug, M8x1, 4-pin	723	
	996-51461	IS 58-04-S	Non-flush	6 mm	PNP / NO	Cable, 3-wire	723	
	697-01046	IMT 8-2B-PS-M3	Flush	2 mm	PNP / NO	M8 3-pin	720	
M12	996-51487	IT 12 BM-PSK3	Flush	6 mm	PNP / NO	Cable, 3-wire	728	
	996-51480	IT 12 BM-PSL4	Flush	6 mm	PNP / NO	Plug, M12x1, 4-pin	728	
	996-51481	IT 12 NBM-PSL4	Non-flush	10 mm	PNP / NO	Plug, M12x1, 4-pin	728	
	996-09969	IS 512-42	Quasi-flush	6 mm	PNP / NO	Plug, M12x1, 4-pin	729	
	996-09421	IS 512-02	Quasi-flush	6 mm	PNP / NO	Cable, 2 m, 3-wire	729	
M12	996-09420	IS 512-01	Quasi-flush	6 mm	NPN / NO	Cable, 2 m, 3-wire	729	
	996-51449	IS 512-44-S	Non-flush	10 mm	PNP / NO	Plug, M12x1, 4-pin	730	
	996-51458	IS 512-04-S	Non-flush	10 mm	PNP / NO	Cable, 2 m, 3-wire	730	
	697-01048	IMT 12-4B-PS-K3	Flush	4 mm	PNP / NO	Cable 2 m	726	
	697-01050	IMT 12-4B-PS-L4	Flush	4 mm	PNP / NO	M12 3-pin	726	
	697-01051	IMT 12-4B-NS-L4	Flush	4 mm	NPN / NO	M12 3-pin	726	
	M18	697-01052	IMT 18-8B-PS-K3	Flush	8 mm	PNP / NO	Cable 2 m	732
		697-01054	IMT 18-8B-PS-L4	Flush	8 mm	PNP / NO	M12 3-pin	732
		996-09973	IS 518-42	Quasi-flush	12 mm	PNP / NO	Plug, M12x1, 4-pin	734
		996-09429	IS 518-02	Quasi-flush	12 mm	PNP / NO	Cable, 2 m, 3-wire	734
996-51453		IS 518-44-S	Non-flush	20 mm	PNP / NO	Plug, M12x1, 4-pin	735	
996-51450		IS 518-04-S	Non-flush	20 mm	PNP / NO	Cable, 3-wire	735	
996-51482		IT 18 BM-PSL4	Flush	10 mm	PNP / NO	Plug, M12x1, 4-pin	736	
M30	996-51483	IT 18 NBM-PSL4	Non-flush	20 mm	PNP / NO	Plug, M12x1, 4-pin	736	
	697-01058	IMT 30-15B-PS-L4	Flush	15 mm	PNP / NO	M12 3-pin	738	
	996-09905	IS 530-42	Quasi-flush	22 mm	PNP / NO	Plug, M12x1, 4-pin	739	
	996-09437	IS 530-02	Quasi-flush	22 mm	PNP / NO	Cable, 2 m, 3-wire	739	
	996-51454	IS 530-44-S	Quasi-flush	22 mm	PNP / NO	Plug, M12x1, 4-pin	740	
	996-51452	IS 530-04-S	Quasi-flush	22 mm	PNP / NO	Cable, 2 m, 3-wire	740	
	996-51484	IT 30 BM-PSL4	Flush	20 mm	PNP / NO	Plug, M12x1, 4-pin	741	
	996-51485	IT 30 NBM-PSL4	Non-flush	40 mm	PNP / NO	Plug, M12x1, 4-pin	741	

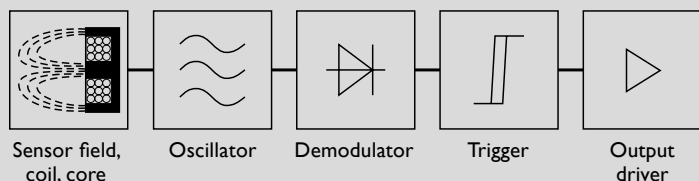
Cubic inductive sensors							
Housing size	Part no.	Type code	Installation	Switching distance	Swichting output	Connection type	Page
40 × 26 × 12 mm	697-01061	IT 12-4B-PS-K3	Flush	4 mm	PNP / NO	Cable 2 m	706
	697-01063	IT 12-4B-PS-M3	Flush	4 mm	PNP / NO	M8 3-pin	706
	697-01065	IT 12-8N-PS-K3	Non-flush	8 mm	PNP / NO	Cable 2 m	706
	697-01067	IT 12-8N-PS-M3	Non-flush	8 mm	PNP / NO	M8 3-pin	706
16 × 8 × 5 mm	697-01068	IT 8-1B5K-PS-K3	Flush	1.5 mm	PNP / NO	Strand, 0.5 m, 3-wire	702
27 × 10 × 7 mm	697-01070	IT10-4N-PS-K3	Non-flush	4 mm	PNP / NO	Cable 2 m	703
25 × 5 × 5 mm	996-50585	IS 455-02	Flush	0.8 mm	PNP / NO	Cable, 2 m, 3-wire	704
40 × 8 × 8 mm	996-50589	IS 588-02	Quasi-flush	3 mm	PNP / NO	Cable, 2 m, 3-wire	705



# Inductive Sensors

## System description

### Method of function

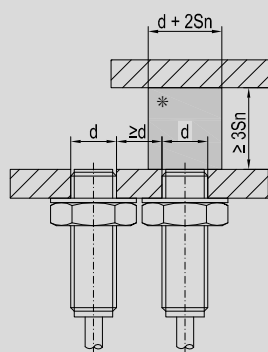


Inductive sensors exploit the interaction of metallic conductors with their alternating electromagnetic fields. Eddy currents are induced in the conductor. They draw energy from the field, reducing the oscillation amplitude. Inductive sensors evaluate this change. The area through which the high-frequency sensor field enters space is described as the active area. It roughly corresponds to the area of the pot core cap.

### Applications

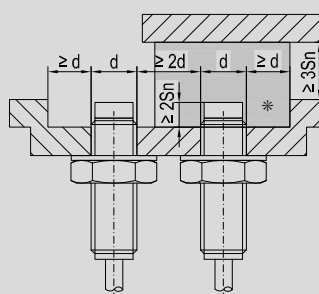
Inductive sensors are suitable for controlling and monitoring machine processes, and for providing signals in counting tasks where metals are involved. In particular, they are characterised by their immunity to vibrations, impacts, dust and dampness, and operate with extreme precision.

### Flush-mountable proximity switches



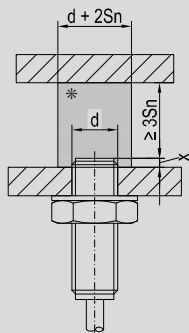
Flush-mountable proximity switches can be embedded in metal up to the active area. The distance to any metal surfaces opposite must be  $\geq 3 S_n$  and the distance between two proximity switches (mounted in series) must be  $\geq d$ .

### Non-flush mountable proximity switches



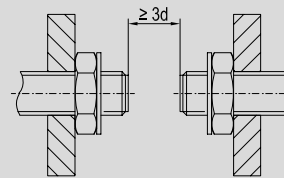
Non-flush mountable proximity switches have no metal housing near the active area. They have a free zone. For this reason they experience no pre-damping of the sensor field and can – unlike flush-mountable sensors – be used at longer switching distances. A metal-free zone, however, must always be maintained around the active area. The distance to any metal surfaces opposite must be  $\geq 3 S_n$  and the distance between two proximity switches (mounted in series) must be  $\geq 2 d$ .

### Quasi-flush-mountable proximity switches



Quasi-flush-mountable proximity switches require a space behind the active area that is kept free of conductive materials. As a result, the nominal switching distance is available without restriction. Whereby the value "x" is the shortest distance between the active area and the conductive material located behind it.

### Opposite mounting



All inductive proximity sensors mounted facing one another require a minimum distance of  $\geq 3 d$  between their active areas.

#### Mounting in steel or non-ferrous metals

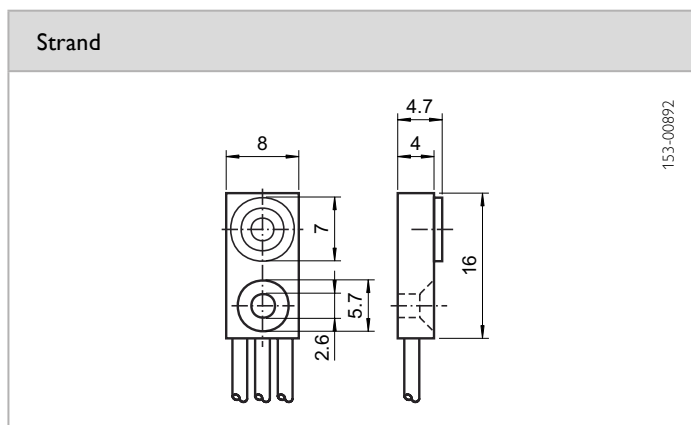
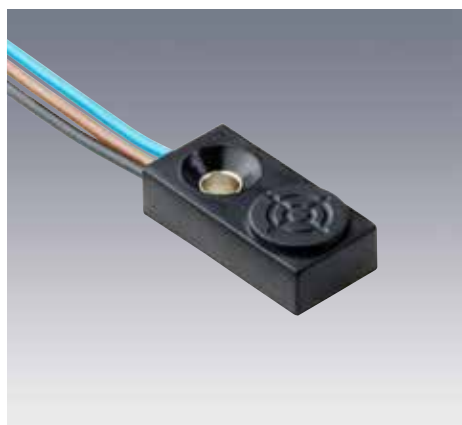
Housing	x in mm
ø 6.5	1
M 8	1
8 x 8	1
M 12	2
M 18	4
M 30	6

#### Mounting in stainless steel

Housing	x in mm
ø 6.5	0
M 8	0
8 x 8	0
M 12	1
M 18	1,5
M 30	2

# IT 8

## Inductive sensor in cubic housing

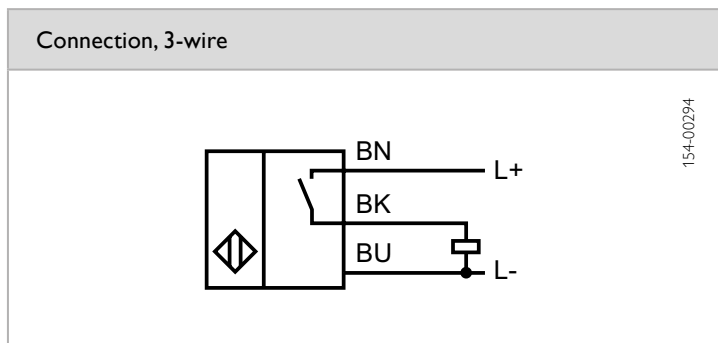


153-00892

Sensor data	
Switching distance	1.5 mm
Ensured switching distance	0 ... 1.215 mm
Hysteresis	~ 5 %
Reduction factor; Al	0.3
Reduction factor; Cu	0.2
Reduction factor; V2A	0.7

Electrical data		Mechanical data	
Operating voltage, +U <sub>B</sub>	5 ... 30V DC	Dimensions	16 x 4.7 x 8 mm
No-load current, I <sub>0</sub>	≤ 15 mA	Enclosure rating	IP 67 <sup>1</sup>
Output current, I <sub>e</sub>	≤ 100 mA	Material, housing	PA
Voltage drop, U <sub>D</sub>	≤ 1.5 V	Material, front surface	PA
Residual current, I <sub>r</sub>	≤ 10 μA	Type of connection	See selection table
Protective circuits	Short-circuit protection (Q)	Ambient temperature: operation	-25 ... +70 °C
Switching output, Q	PNP	Vibration and impact resistance	EN 60947-5-2
Output function	N.O.		
Switching frequency, f (ti/tp 1:1)	≤ 1200 Hz		

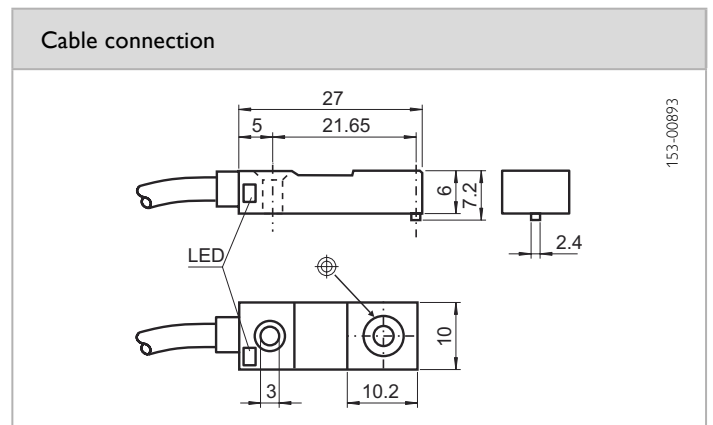
<sup>1</sup>With connected IP 67 plug



154-00294

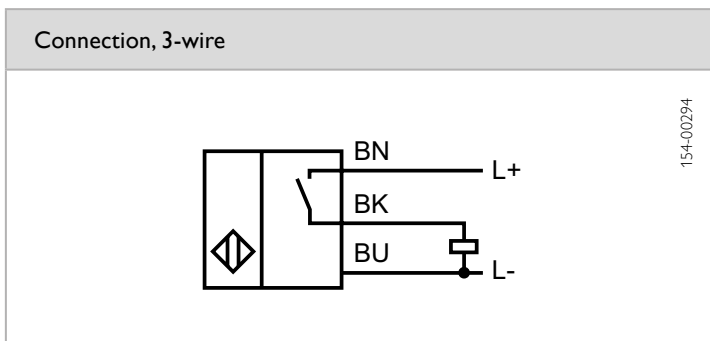
Switching distance	Mounting	Switching output	Type of connection	Part number	Article number
1.5 mm	Flush	PNP	Strand, 0.5 m, 3-wire	IT 8-1B5K-PS-K3	697-01068

## Inductive sensor in cubic housing



Sensor data		Functions	
Switching distance	4 mm	Indicator LED, yellow	Switching output indicator
Ensured switching distance	0 ... 3.24 mm		
Hysteresis	~ 5 %		
Reduction factor; Al	0,4		
Reduction factor; Cu	0,3		
Reduction factor; V2A	0,7		
Electrical data		Mechanical data	
Operating voltage, +U <sub>B</sub>	10 ... 30V DC	Dimensions	27 × 7.2 × 10 mm
No-load current, I <sub>0</sub>	≤ 10 mA	Enclosure rating	IP 67 <sup>1</sup>
Output current, I <sub>e</sub>	≤ 100 mA	Material, housing	PPS
Voltage drop, U <sub>D</sub>	≤ 3V	Material, front surface	PPS
Residual current, I <sub>r</sub>	≤ 0.5 mA	Type of connection	See selection table
Protective circuits	Reverse-polarity protection, U <sub>B</sub> / short-circuit protection (Q)	Ambient temperature: operation	-25 ... +70 °C
Switching output, Q	PNP	Vibration and impact resistance	EN 60947-5-2
Output function	N.O.		
Switching frequency, f (ti/tp 1:1)	≤ 1000 Hz		

<sup>1</sup>With connected IP 67 plug

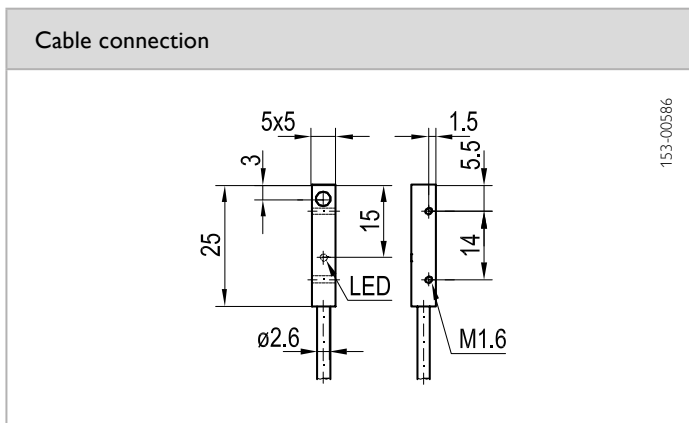


Switching distance	Mounting	Switching output	Type of connection	Part number	Article number
4 mm	Non-flush	PNP	Cable, 2 m, 3-wire	IT 10-4N-PS-K3	697-01070



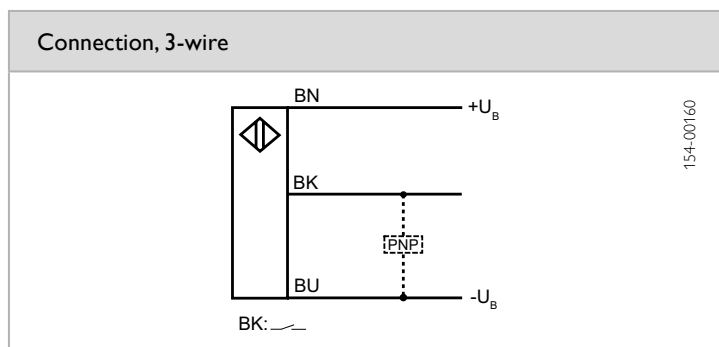
# IS 455

Inductive sensor in cubic housing



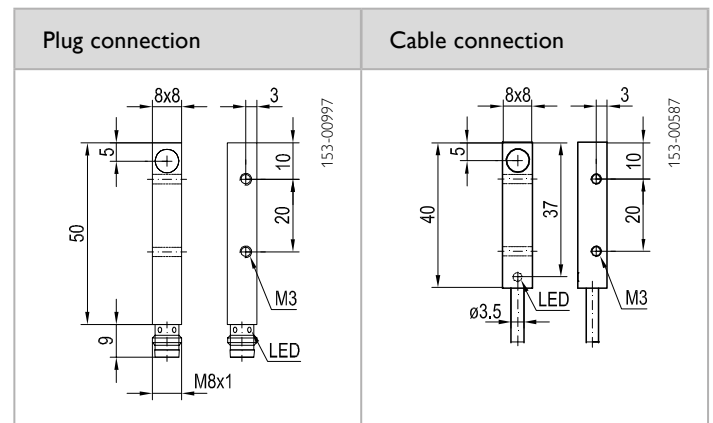
Sensor data		Functions	
Switching distance	0.8 mm	Indicator LED, yellow	Switching output indicator
Repeatability	0.01 mm <sup>1</sup>		
Hysteresis	≤ 10 % <sup>2</sup>		
Reduction factor; Al	0.60		
Reduction factor; Cu	0.60		
Reduction factor; V2A	0.85		
Reduction factor; steel FE 360	1.00		
Reduction factor; brass	0.70		
Electrical data		Mechanical data	
Operating voltage, +U <sub>B</sub>	10 ... 30V DC <sup>3</sup>	Dimensions	5 × 5 × 25 mm
No-load current, I <sub>0</sub>	≤ 10 mA	Mounting	Flush
Output current, I <sub>e</sub>	≤ 200 mA	Enclosure rating	IP 67 <sup>4</sup>
Voltage drop, U <sub>D</sub>	≤ 2V at 200 mA	Material, housing	Brass, chrome-plated
Protective circuits	Reverse-polarity protection, U <sub>B</sub> / short-circuit protection (Q) / induction protection	Material, front surface	Polyester
Switching output, Q	PNP	Type of connection	See selection table
Output function	N.O.	Ambient temperature: operation	-25 ... +70 °C
Switching frequency, f (ti/tp 1:1)	≤ 5000 Hz	Vibration and impact resistance	IEC 60947-5-2 / 7.4

<sup>1</sup> U<sub>B</sub> = 20 ... 30V DC, T<sub>A</sub> = 23 °C ± 5 °C    <sup>2</sup> Refers to switching distance    <sup>3</sup> Max. 20 % ripple, within U<sub>B</sub>    <sup>4</sup> With connected IP 67 plug



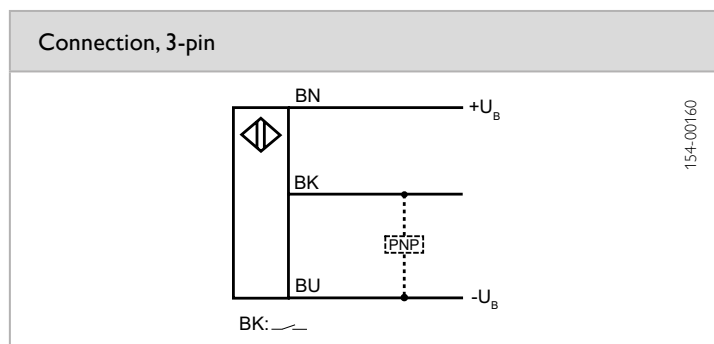
Switching distance	Switching output	Type of connection	Part number	Article number
0.8 mm	PNP	Cable, 2m, 3-wire	IS 455-02	996-50585

## Inductive sensor in cubic housing



Sensor data		Functions	
Switching distance	3 mm	Indicator LED, yellow	Switching output indicator
Repeatability	0.15 mm <sup>1</sup>		
Hysteresis	≤ 10 % <sup>2</sup>		
Reduction factor; Al	0.36		
Reduction factor; Cu	0.27		
Reduction factor; V2A	0.77		
Reduction factor; steel FE 360	1.00		
Reduction factor; brass	0.45		
Electrical data		Mechanical data	
Operating voltage, +U <sub>B</sub>	10 ... 30V DC <sup>3</sup>	Dimensions (plug device)	8 × 8 × 59 mm
No-load current, I <sub>0</sub>	≤ 10 mA	Dimensions (cable device)	8 × 8 × 40 mm
Output current, I <sub>e</sub>	≤ 200 mA	Mounting	Quasi-flush
Voltage drop, U <sub>D</sub>	≤ 2V at 200 mA	Enclosure rating	IP 67 <sup>4</sup>
Protective circuits	Reverse-polarity protection, U <sub>B</sub> / short-circuit protection (Q) / induction protection	Material, housing	Zamac, chrome-plated
Switching output, Q	PNP	Material, front surface	PBTP
Output function	N.O.	Type of connection	See selection table
Switching frequency, f (ti/tp 1:1)	≤ 1000 Hz	Ambient temperature: operation	-25 ... 70 °C
		Vibration and impact resistance	IEC 60947-5-2 / 7.4

<sup>1</sup> U<sub>B</sub> = 20 ... 30V DC, T<sub>A</sub> = 23 °C ± 5 °C    <sup>2</sup> Refers to switching distance    <sup>3</sup> Max. 20 % ripple, within U<sub>B</sub>    <sup>4</sup> With connected IP 67 plug



Switching distance	Switching output	Type of connection	Part number	Article number
3 mm	PNP	Cable, 2 m, 3-wire	IS 588-02	996-50589

# IT 12

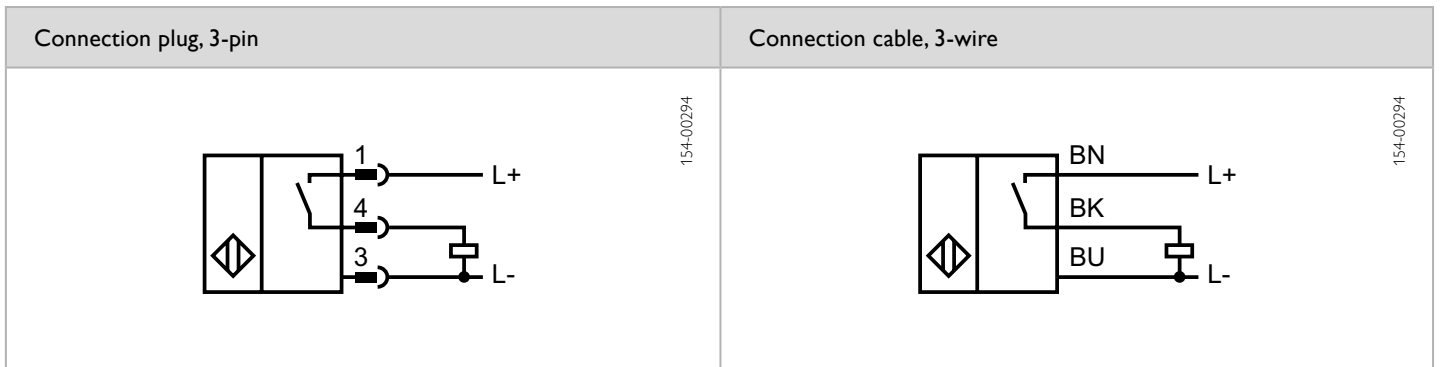
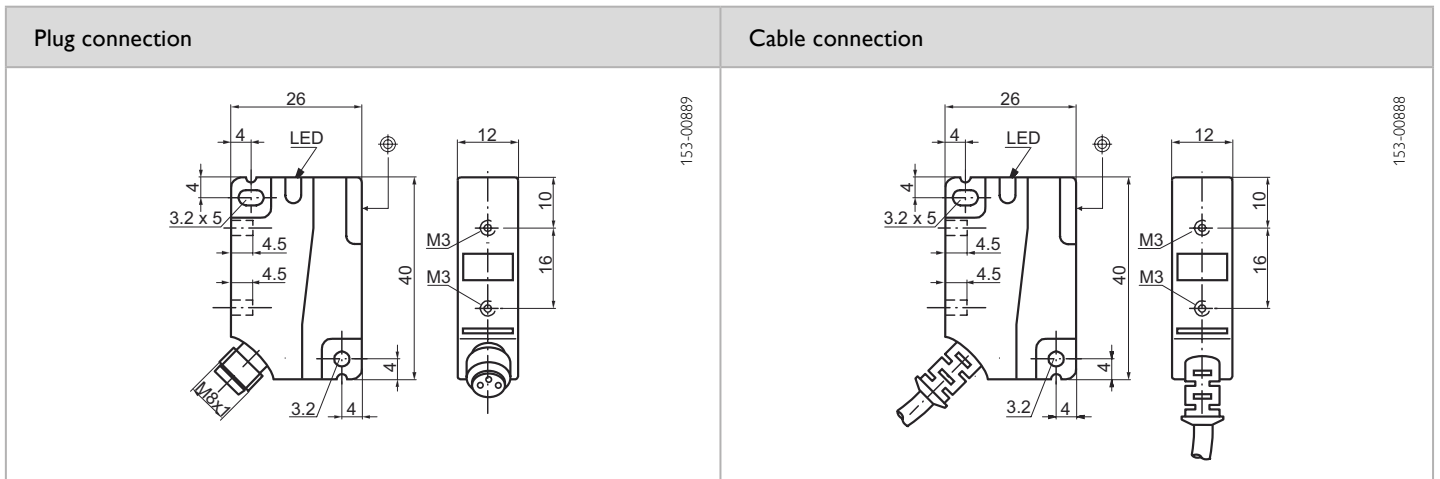
## Inductive sensor in cubic housing



Sensor data		Functions	
Switching distance (Flush)	4 mm	Indicator LED, yellow	Switching output indicator
Ensured switching distance (Flush)	0 ... 3.24 mm		
Switching distance (Non-flush)	8 mm		
Ensured switching distance (Non-flush)	0 ... 6.48 mm		
Hysteresis	~ 5 %		
Reduction factor; AI	0.3		
Reduction factor; Cu	0.2		
Reduction factor; V2A	0.7		
Electrical data		Mechanical data	
Operating voltage, +U <sub>b</sub>	10 ... 30V DC	Dimensions	40 x 26 x 12 mm
No-load current, I <sub>0</sub>	≤ 15 mA	Enclosure rating	IP 67 <sup>1</sup>
Output current, I <sub>e</sub>	≤ 250 mA	Material, housing	PA
Voltage drop, U <sub>D</sub>	≤ 2.5 V	Material, front surface	PA
Residual current, I <sub>r</sub>	≤ 0.01 mA	Type of connection	See selection table
Protective circuits	Reverse-polarity protection, U <sub>b</sub> / short-circuit protection (Q)	Ambient temperature: operation	-25 ... +70 °C
Switching output, Q	PNP	Vibration and impact resistance	EN 60947-5-2
Output function	N.O.		
Switching frequency, f (ti/tp 1:1)	≤ 1400 Hz		

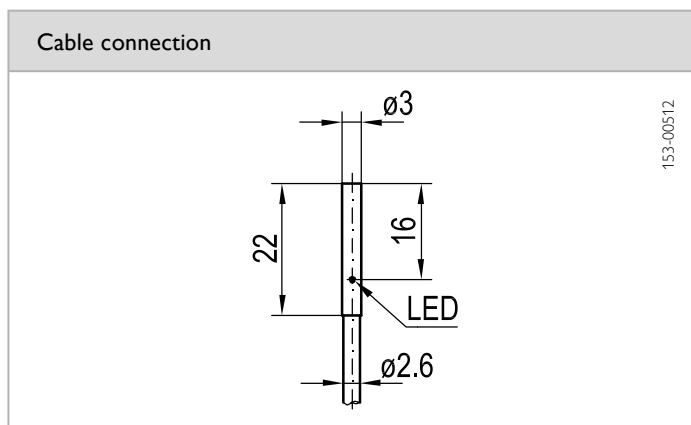
<sup>1</sup>With connected IP 67 plug

Switching distance	Mounting	Switching output	Type of connection	Part number	Article number
4 mm	Flush	PNP	Plug, M8x1, 3-pin	IT 12-4B-PS-M3	697-01063
4 mm	Flush	PNP	Cable, 2 m, 3-wire	IT 12-4B-PS-K3	697-01061
8 mm	Non-flush	PNP	Plug, M8x1, 3-pin	IT 12-8N-PS-M3	697-01067
8 mm	Non-flush	PNP	Cable, 2 m, 3-wire	IT 12-8N-PS-K3	697-01065



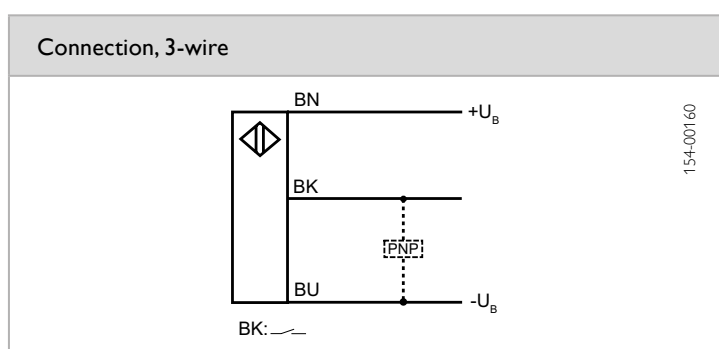
# IS 33

## Inductive sensor with stainless steel housing

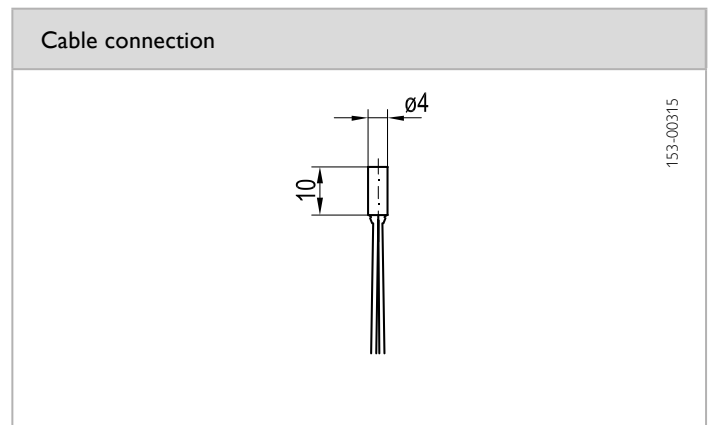


Sensor data		Functions	
Switching distance	0.6 mm	Indicator LED, yellow	Switching output indicator
Reduction factor; Al	0.55		
Reduction factor; Cu	0.50		
Reduction factor; V2A	0.80		
Electrical data		Mechanical data	
Operating voltage, +U <sub>B</sub>	10 ... 30V DC <sup>1</sup>	Dimensions	Ø 3 x 22 mm
No-load current, I <sub>0</sub>	≤ 10 mA	Mounting	Flush
Output current, I <sub>e</sub>	≤ 100 mA	Enclosure rating	IP 67 <sup>2</sup>
Switching frequency, f (ti/tp 1:1)	≤ 5000 Hz	Material, housing	Stainless steel
Switching output, Q	PNP N.O.	Type of connection	See selection table
Output function		Ambient temperature: operation	-25 ... 70 °C

<sup>1</sup> Max. 20 % ripple, within U<sub>B</sub>    <sup>2</sup> With connected IP 67 plug



Switching distance	Switching output	Type of connection	Part number	Article number
0.6 mm	PNP	Cable, 3-wire	IS 33-52	996-09390

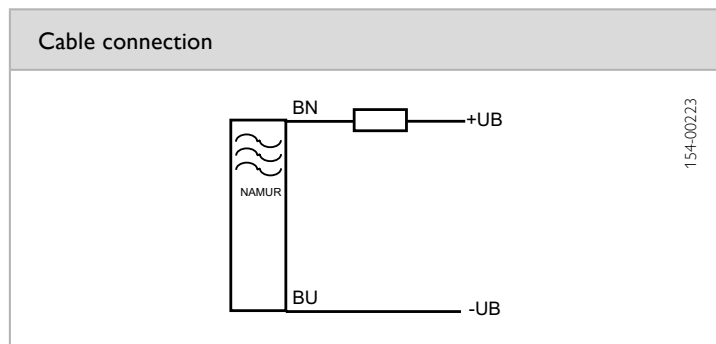


Sensor data	
Switching distance	0.8 mm
Repeatability	0.01 mm <sup>1</sup>
Reduction factor; Al	0.50
Reduction factor; Cu	0.45
Reduction factor; V2A	0.80
Reduction factor; steel FE 360	1.00
Reduction factor; brass	0.55

Electrical data		Mechanical data	
Operating voltage, +U <sub>B</sub> (NAMUR* conditions)	7.7 ... 9 V DC <sup>2</sup>	Dimensions	Ø 4 x 10 mm
Operating voltage, +U <sub>B</sub> (not NAMUR*)	5 ... 30 V DC <sup>2</sup>	Mounting	Flush
Operating resistance, NAMUR	1 kΩ	Enclosure rating	IP 67 <sup>3</sup>
Recommended operating resistance	1 kΩ (5 ... 10 V) / 2.2 kΩ (10 ... 20 V) / 4.7 kΩ (20 ... 30 V)	Material, housing	Stainless steel, V2A
Output current, I <sub>e</sub> (dampened / undampened)	≤ 1 mA / ≥ 2.2 mA	Material, front surface	PA 66
Protective circuits	Short-circuit protection (Q)	Type of connection	See selection table
Switching frequency, f (ti/tp 1:1)	≤ 10000 Hz	Ambient temperature: operation	-25 ... 70 °C
		Vibration and impact resistance	IEC 60947-5-2 / 7.4

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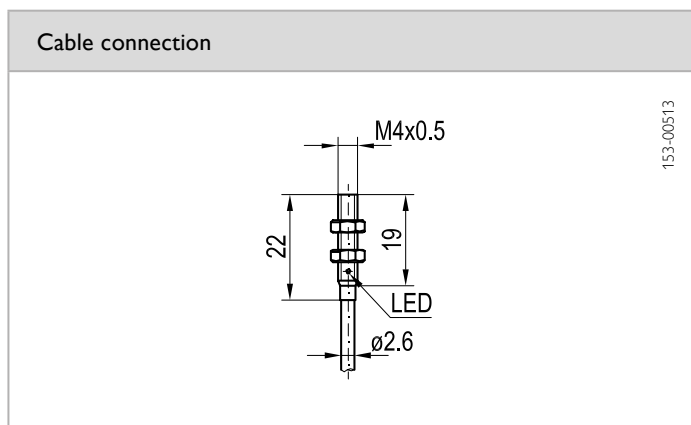
<sup>1</sup> U<sub>B</sub> = 7.7 ... 9 V DC, T<sub>A</sub> = 23 °C ± 5 °C    <sup>2</sup> Max. 20 % ripple, within U<sub>B</sub>    <sup>3</sup> With connected IP 67 plug  
 \* Standardization Association for Measurement and Control in the Chemical and Pharmaceutical Industries



Switching distance	Switching output	Type of connection	Part number	Article number
0.8 mm	NAMUR*	Cable, 2 m, 2-wire	ISN 44-20	996-09444

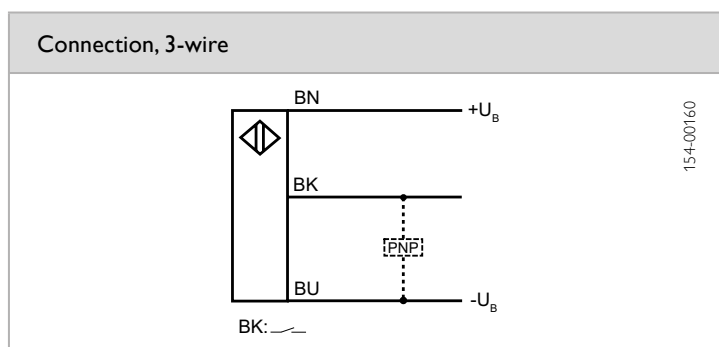
# IS 34

## Inductive sensor with stainless steel housing



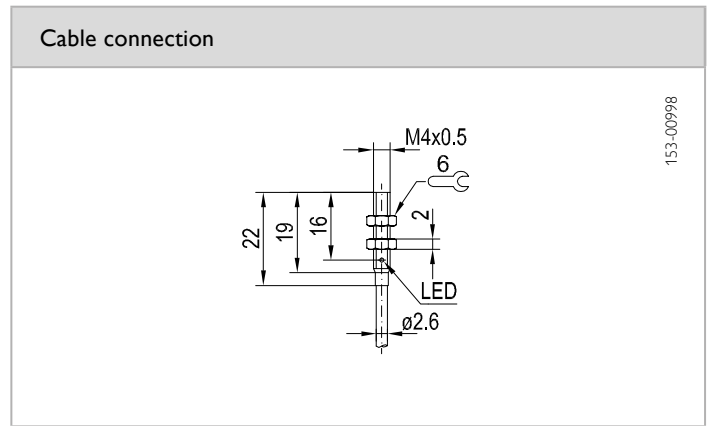
Sensor data		Functions	
Switching distance	0.6 mm	Indicator LED, yellow	Switching output indicator
Repeatability	0.01 mm <sup>1</sup>		
Hysteresis	~ 10 % <sup>2</sup>		
Reduction factor; Al	0.55		
Reduction factor; Cu	0.50		
Reduction factor; V2A	0.80		
Reduction factor; steel FE 360	1.00		
Reduction factor; brass	0.65		
Electrical data		Mechanical data	
Operating voltage, +U <sub>B</sub>	10 ... 30V DC <sup>3</sup>	Dimensions	M4 x 22 mm
No-load current, I <sub>0</sub>	≤ 10 mA	Mounting	Flush
Output current, I <sub>e</sub>	≤ 100 mA	Enclosure rating	IP 67 <sup>4</sup>
Voltage drop, U <sub>D</sub>	≤ 2.0V at 100 mA	Material, housing	Stainless steel, V2A
Protective circuits	Reverse-polarity protection, U <sub>B</sub> / short-circuit protection (Q) / induction protection	Material, front surface	Polyester
Switching output, Q	PNP	Type of connection	See selection table
Output function	N.O.	Ambient temperature: operation	-25 ... +70 °C
Switching frequency, f (ti/tp 1:1)	≤ 5000 Hz	Vibration and impact resistance	IEC 60947-5-2 / 7.4

<sup>1</sup> U<sub>B</sub> = 20 ... 30V DC, T<sub>A</sub> = 23 °C ± 5 °C    <sup>2</sup> Refers to switching distance    <sup>3</sup> Max. 20 % ripple, within U<sub>B</sub>    <sup>4</sup> With connected IP 67 plug



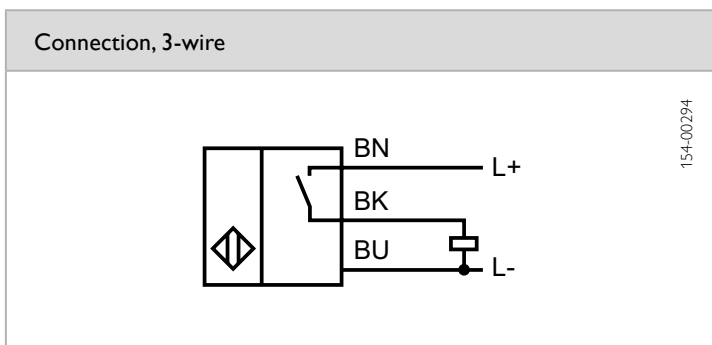
Switching distance	Switching output	Type of connection	Part number	Article number
0.6 mm	PNP	Cable, 2 m, 3-wire	IS 34-52	996-09397

## Inductive sensor with stainless steel housing



Sensor data		Functions	
Switching distance	1 mm	Indicator LED, yellow	Switching output indicator
Hysteresis	1 ... 15 %		
Electrical data		Mechanical data	
Operating voltage, +U <sub>B</sub>	10 ... 30V DC	Dimensions	M4 x 22 mm
Output current, I <sub>e</sub>	≤ 100 mA	Mounting	Flush
Protective circuits	Reverse-polarity protection, U <sub>B</sub>	Enclosure rating	IP 67 <sup>1</sup>
Switching frequency, f (ti/tp 1:1)	≤ 3000 Hz	Material, housing	Stainless steel, V2A
Switching output, Q	PNP	Type of connection	See selection table
Output function	N.O.	Ambient temperature: operation	-25 ... 70 °C

<sup>1</sup> With connected IP 67 plug



Switching distance	Switching output	Type of connection	Part number	Article number
1 mm	PNP	Cable, 3-wire	IT 4 BD-PSK3	996-51486



# IMT 5

## Inductive sensor with stainless steel housing



Plug connection	Cable connection
153-00861	153-00860

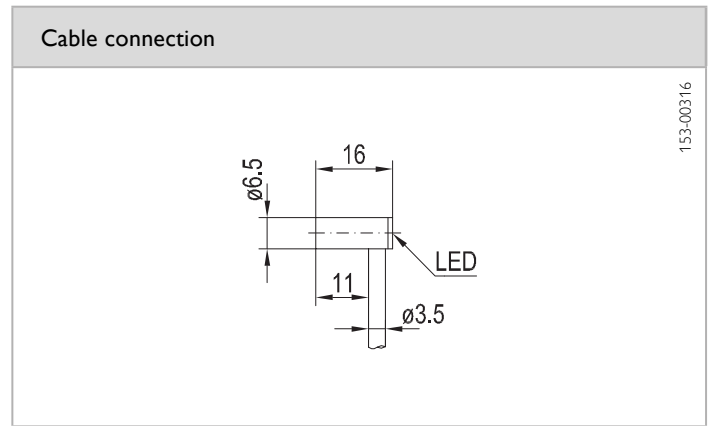
Sensor data		Functions	
Switching distance	0.8 mm	Indicator LED, yellow	Switching output indicator
Ensured switching distance	0 ... 0.648 mm		
Reduction factor; Al	0.45		
Reduction factor; Cu	0.40		
Reduction factor; V2A	0.85 / 0.77 <sup>1</sup>		
Electrical data		Mechanical data	
Operating voltage, +U <sub>B</sub>	10 ... 30V DC	Dimensions (plug device)	M5 x 45 mm
No-load current, I <sub>0</sub>	See selection table	Dimensions (cable device)	M5 x 25 mm
Output current, I <sub>e</sub>	See selection table	Mounting	Flush
Voltage drop, U <sub>D</sub>	≤ 3V	Enclosure rating	IP 67 <sup>2</sup>
Protective circuits	Reverse-polarity protection, U <sub>B</sub> / short-circuit protection (Q)	Material, housing	Stainless steel
Switching output, Q	PNP	Material, front surface	PBT / PC <sup>1</sup>
Output function	N.O.	Type of connection	See selection table
Switching frequency, f (ti/tp 1:1)	≤ 3000 Hz	Ambient temperature: operation	-25 ... +70 °C

<sup>1</sup> IMT 5-0B8-PS-K3    <sup>2</sup> With connected IP 67 plug

Connection plug, 3-pin	Connection cable, 3-wire
154-00294	154-00294

Switching distance	Switching output	Type of connection	No-load current, I <sub>0</sub>	Output current, I <sub>e</sub>	Part number	Article number
0.8 mm	PNP	Plug, M8x1, 3-pin	≤ 15 mA	0,1 ... 100 mA	IMT 5-0B8-PS-M3	697-01007
0.8 mm	PNP	Cable, 2 m, 3-wire	≤ 10 mA	0 ... 200 mA	IMT 5-0B8-PS-K3	697-01005

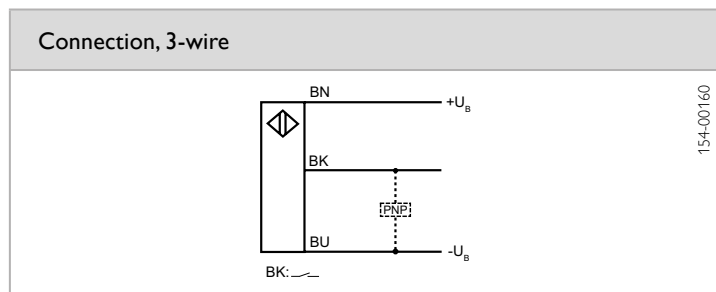
## Inductive sensor with stainless steel housing



Sensor data		Functions	
Switching distance	1.5 mm	Indicator LED, yellow	Switching output indicator
Repeatability	0.02 mm <sup>1</sup>		
Hysteresis	≤ 10 % <sup>2</sup>		
Reduction factor, Al	0.45		
Reduction factor, Cu	0.40		
Reduction factor, V2A	0.80		
Reduction factor, steel FE 360	1.00		
Reduction factor, brass	0.50		
Electrical data		Mechanical data	
Operating voltage, +U <sub>B</sub>	10 ... 30V DC <sup>3</sup>	Dimensions	∅ 6,5 x 16 mm
No-load current, I <sub>0</sub>	≤ 10 mA	Mounting	Flush
Output current, I <sub>e</sub>	≤ 200 mA	Enclosure rating	IP 67 <sup>4</sup>
Voltage drop, U <sub>D</sub>	≤ 2V at 200 mA	Material, housing	Stainless steel, V2A
Protective circuits	Reverse-polarity protection, U <sub>B</sub> / short-circuit protection (Q) / induction protection	Material, front surface	PA 66
Switching output, Q	PNP	Type of connection	See selection table
Output function	N.O.	Ambient temperature: operation	-25 ... 70 °C
Switching frequency, f (ti/tp 1:1)	≤ 5000 Hz	Vibration and impact resistance	IEC 60947-5-2 / 7.4

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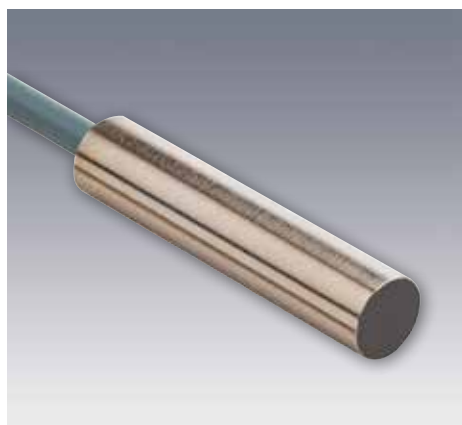
<sup>1</sup> U<sub>B</sub> = 20 ... 30V DC, T<sub>A</sub> = 23 °C ± 5 °C    <sup>2</sup> Refers to switching distance    <sup>3</sup> Max. 20 % ripple, within U<sub>B</sub>    <sup>4</sup> With connected IP 67 plug



Switching distance	Switching output	Type of connection	Part number	Article number
1.5 mm	PNP	Cable, 2m, 3-wire	ISZ 46-02	996-09488

# IS 46

## Inductive sensor with stainless steel housing



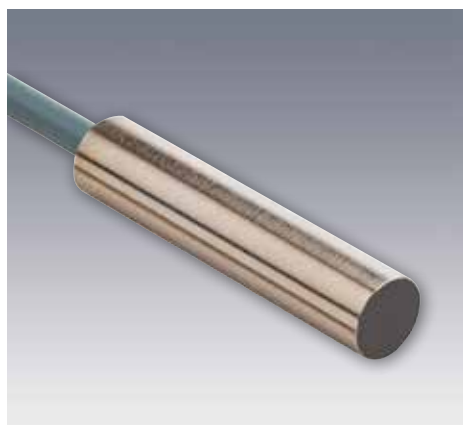
Plug connection	Cable connection
<p>153-00311</p>	<p>153-00310</p>

Sensor data		Functions	
Switching distance	1.5 mm	Indicator LED, yellow	Switching output indicator
Repeatability	0.02 mm <sup>1</sup>		
Hysteresis	≤ 10 % <sup>2</sup>		
Reduction factor; Al	0.45		
Reduction factor; Cu	0.40		
Reduction factor; V2A	0.80		
Reduction factor; steel FE 360	1.00		
Reduction factor; brass	0.50		
Electrical data		Mechanical data	
Operating voltage, +U <sub>B</sub>	10 ... 30V DC <sup>3</sup>	Dimensions (plug device)	∅ 6.5 × 29 mm
No-load current, I <sub>0</sub>	≤ 10 mA	Dimensions (cable device)	∅ 6.5 × 16 mm
Output current, I <sub>e</sub>	≤ 200 mA	Mounting	Flush
Voltage drop, U <sub>D</sub>	≤ 2V at 200 mA	Enclosure rating	IP 67 <sup>4</sup>
Protective circuits	Reverse-polarity protection, U <sub>B</sub> / short-circuit protection (Q) / induction protection	Material, housing	Stainless steel, V2A
Switching output, Q	PNP	Material, front surface	PA 66
Output function	N.O.	Type of connection	See selection table
Switching frequency, f (ti/tp 1:1)	≤ 5000 Hz	Ambient temperature: operation	-25 ... +70 °C
		Vibration and impact resistance	IEC 60947-5-2 / 7.4

<sup>1</sup> U<sub>B</sub> = 20 ... 30V DC, T<sub>A</sub> = 23 °C ± 5 °C    <sup>2</sup> Refers to switching distance    <sup>3</sup> Max. 20 % ripple, within U<sub>B</sub>    <sup>4</sup> With connected IP 67 plug

Connection plug, 3-pin	Connection cable, 3-wire
<p>154-00160</p>	<p>154-00160</p>

Switching distance	Switching output	Type of connection	Part number	Article number
1.5 mm	PNP	Plug, M8x1, 3-pin	IS 46-12	996-50590
1.5 mm	PNP	Cable, 2 m, 3-wire	IS 46-02	996-09401



Plug connection	Cable connection
<p style="text-align: right;">153-00879</p>	<p style="text-align: right;">153-00878</p>

Sensor data		Functions	
Switching distance	2 mm	Indicator LED, yellow	Switching output indicator
Ensured switching distance	0 ... 1.62 mm		
Reduction factor, Al	0.45		
Reduction factor, Cu	0.40 / 0.35 <sup>1</sup>		
Reduction factor, V2A	0.75 / 0.70 <sup>1</sup>		
Electrical data		Mechanical data	
Operating voltage, +U <sub>B</sub>	10 ... 30V DC / 5 ... 30V DC <sup>1</sup>	Dimensions (plug device)	∅ 6.5 x 35 mm
No-load current, I <sub>0</sub>	≤ 15 mA	Dimensions (cable device)	∅ 6.5 x 30 mm
Operating current, I <sub>L</sub>	≤ 100 mA	Mounting	Flush
Voltage drop, U <sub>D</sub>	≤ 3V / ≤ 2.5V <sup>1</sup>	Enclosure rating	IP 67 <sup>2</sup>
Protective circuits	Reverse-polarity protection, U <sub>B</sub> / short-circuit protection (Q)	Material, housing	Brass, nickel-plated
Switching output, Q	PNP	Material, front surface	LCP
Output function	N.O.	Type of connection	See selection table
Switching frequency, f (ti/tp 1:1)	≤ 3000 Hz	Ambient temperature: operation	-25 ... +70 °C

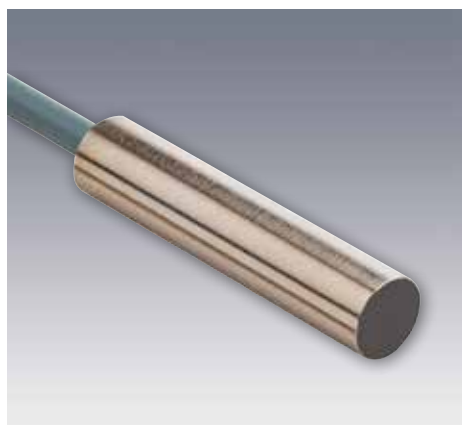
<sup>1</sup> IDT 6 2B-NS-M3    <sup>2</sup> With connected IP 67 plug

Connection plug, 3-pin	Connection cable, 3-wire
<p style="text-align: right;">154-00294</p>	<p style="text-align: right;">154-00294</p>

Switching distance	Switching output	Type of connection	Part number	Article number
2 mm	PNP	Plug, M8x1, 3-pin	IDT 6-2B-PS-M3	697-01042
2 mm	PNP	Cable, 2 m, 3-wire	IDT 6-2B-PS-K3	697-01040

# IS 56

## Inductive sensor



Plug connection (M8x1)	Plug connection (M12x1)	Cable connection
<p>153-00313</p>	<p>153-00314</p>	<p>153-00312</p>

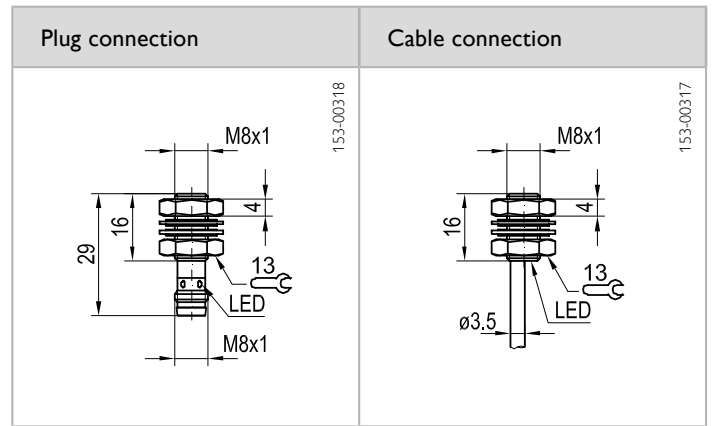
Sensor data		Functions	
Switching distance	3 mm	Indicator LED, yellow	Switching output indicator
Repeatability	0.15 mm <sup>1</sup>		
Hysteresis	≤ 10 % <sup>2</sup>		
Reduction factor; Al	0.26		
Reduction factor; Cu	0.18		
Reduction factor; V2A	0.67		
Reduction factor; steel FE 360	1.00		
Reduction factor; brass	0.35		
Electrical data		Mechanical data	
Operating voltage, +U <sub>B</sub>	10 ... 30V DC <sup>3</sup>	Dimensions	See selection table
No-load current, I <sub>0</sub>	≤ 10 mA	Mounting	Quasi-flush
Output current, I <sub>e</sub>	≤ 200 mA	Enclosure rating	IP 67 <sup>4</sup>
Voltage drop, U <sub>D</sub>	≤ 2V at 200 mA	Material, housing	Brass, chrome-plated
Protective circuits	Reverse-polarity protection, U <sub>B</sub> / Short-circuit protection (Q) / induction protection	Material, front surface	PBTP
Switching output, Q	PNP	Type of connection	See selection table
Output function	N.O.	Ambient temperature: operation	-25 ... +70 °C
Switching frequency, f (ti/tp 1:1)	≤ 1000 Hz	Vibration and impact resistance	IEC 60947-5-2 / 7.4

<sup>1</sup> U<sub>B</sub> = 20 ... 30V DC, T<sub>A</sub> = 23 °C ± 5 °C    <sup>2</sup> Refers to switching distance    <sup>3</sup> Max. 20 % ripple, within U<sub>B</sub>    <sup>4</sup> With connected IP 67 plug

Connection plug, 3-pin	Connection plug, 4-pin	Connection cable, 3-wire
<p>154-00160</p>	<p>154-00224</p>	<p>154-00160</p>

Switching distance	Switching output	Dimensions	Type of connection	Part number	Article number
3 mm	PNP	Ø 6.5 × 60 mm	Plug, M8x1, 3-pin	IS 56-12	996-50586
3 mm	PNP	Ø 6.5 × 66 mm	Plug, M12x1, 4-pin	IS 56-42	996-09963
3 mm	PNP	Ø 6.5 × 45 mm	Cable, 2 m, 3-wire	IS 56-02	996-09409

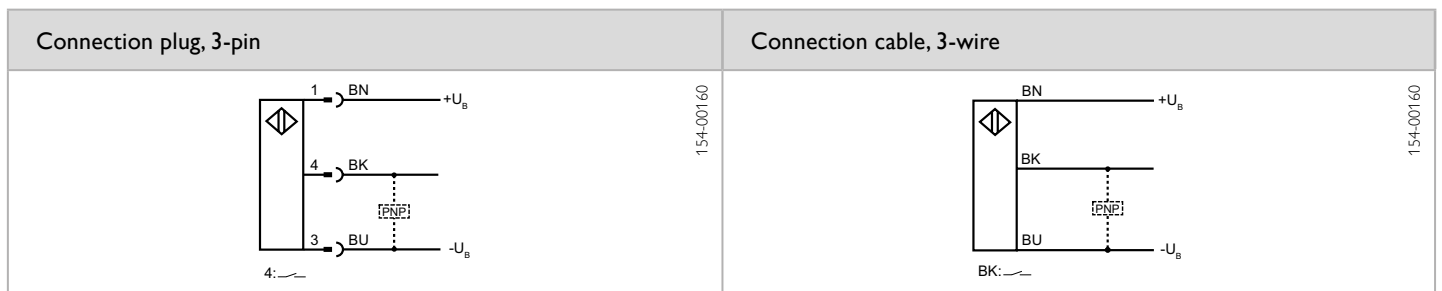
## Inductive sensor with stainless steel housing



Sensor data		Functions	
Switching distance	1.5 mm	Indicator LED, yellow	Switching output indicator
Repeatability	0.02 mm <sup>1</sup>		
Hysteresis	≤ 10 % <sup>2</sup>		
Reduction factor, Al	0.45		
Reduction factor, Cu	0.40		
Reduction factor, V2A	0.80		
Reduction factor, steel FE 360	1.00		
Reduction factor, brass	0.50		
Electrical data		Mechanical data	
Operating voltage, +U <sub>B</sub>	10 ... 30V DC <sup>3</sup>	Dimensions (plug device)	M8 x 29 mm
No-load current, I <sub>0</sub>	≤ 10 mA	Dimensions (cable device)	M8 x 16 mm
Output current, I <sub>e</sub>	≤ 200 mA	Mounting	Flush
Voltage drop, U <sub>D</sub>	≤ 2V at 200 mA	Enclosure rating	IP 67 <sup>4</sup>
Protective circuits	Reverse-polarity protection, U <sub>B</sub> / short-circuit protection (Q) / induction protection	Material, housing	Stainless steel, V2A
Switching output, Q	PNP	Material, front surface	PA 66
Output function	N.O.	Type of connection	See selection table
Switching frequency, f (ti/tp 1:1)	≤ 5000 Hz	Ambient temperature: operation	-25 ... +70 °C
		Vibration and impact resistance	IEC 60947-5-2 / 7.4

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<sup>1</sup> U<sub>B</sub> = 20 ... 30V DC, T<sub>A</sub> = 23 °C ± 5 °C    <sup>2</sup> Refers to switching distance    <sup>3</sup> Max. 20 % ripple, within U<sub>B</sub>    <sup>4</sup> With connected IP 67 plug



Switching distance	Switching output	Type of connection	Part number	Article number
1.5 mm	PNP	Plug, M8x1, 3-pin	IS 48-12T	996-50624
1.5 mm	PNP	Cable, 2 m, 3-wire	IS 48-02	996-09405

# IMT 8-1

## Inductive sensor



Plug connection	Cable connection
<p>153-00863</p>	<p>153-00862</p>

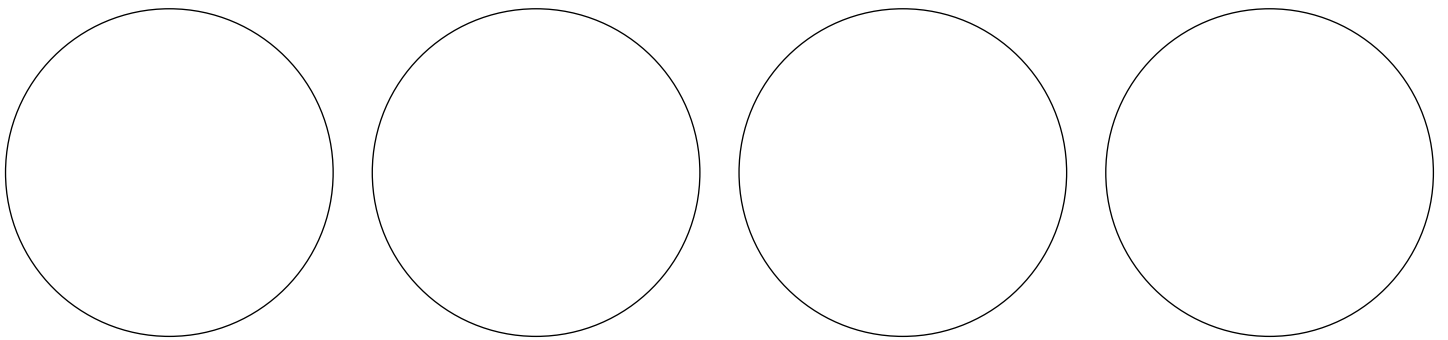
Sensor data		Functions	
Switching distance	1.5 mm	Indicator LED, yellow	Switching output indicator
Ensured switching distance	0 ... 1.215 mm		
Reduction factor; Al	0.45		
Reduction factor; Cu	0.35		
Reduction factor; V2A	0.75		
Electrical data		Mechanical data	
Operating voltage, +U <sub>B</sub>	10 ... 30V DC	Dimensions (plug device)	M8 x 65 mm
No-load current, I <sub>0</sub>	≤ 15 mA	Dimensions (cable device)	M8 x 50 mm
Operating current, I <sub>I</sub>	≤ 100 mA	Mounting	Flush
Voltage drop, U <sub>D</sub>	≤ 3 V	Enclosure rating	IP 67 <sup>1</sup>
Protective circuits	Reverse-polarity protection, U <sub>B</sub> / short-circuit protection (Q)	Material, housing (plug device)	Brass, nickel-plated
Switching output, Q	PNP	Material, housing (cable device)	Brass
Output function	N.O.	Material, front surface	LCP
Switching frequency, f (ti/tp 1:1)	≤ 1500 Hz	Type of connection	See selection table
		Ambient temperature: operation	-25 ... +70 °C

<sup>1</sup>With connected IP 67 plug

Connection plug, 3-pin <sup>2</sup>	Connection cable, 3-wire
<p>154-00294</p>	<p>154-00294</p>

<sup>2</sup> Plug M12x1 3-pin is compatible with M12x1 4- or 5-pin sockets

Switching distance	Switching output	Type of connection	Part number	Article number
1.5 mm	PNP	Plug, M12x1, 3-pin <sup>2</sup>	IMT 8-1B5-PS-L4	697-01011
1.5 mm	PNP	Cable, 2 m, 3-wire	IMT 8-1B5-PS-K3	697-01009





# IMT 8-2

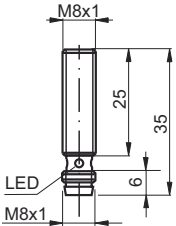
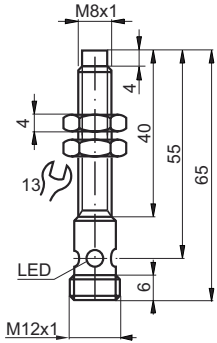
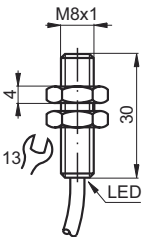
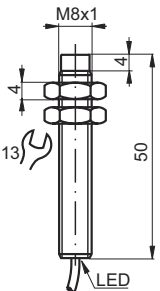
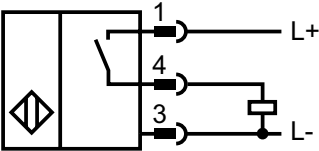
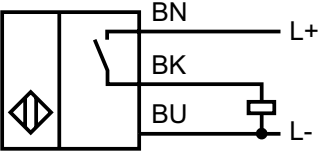
## Inductive sensor



Sensor data		Functions	
Switching distance	2 mm	Indicator LED, yellow	Switching output indicator
Ensured switching distance	0 ... 1.62 mm		
Reduction factor; Al	0.45		
Reduction factor; Cu	0.35 <sup>1</sup> / 0.40 <sup>2</sup>		
Reduction factor; V2A	0.75 / 0.7 <sup>3</sup>		
Electrical data		Mechanical data	
Operating voltage, +U <sub>B</sub>	10 ... 30V DC / 5 ... 30V DC <sup>3</sup>	Dimensions (plug device, flush)	M8 x 35 mm
No-load current, I <sub>0</sub>	≤ 15 mA	Dimensions (plug device, non-flush)	M8 x 65 mm
Operating current, I <sub>L</sub>	≤ 100 mA	Dimensions (cable device, flush)	M8 x 30 mm
Voltage drop, U <sub>D</sub>	≤ 3 V	Dimensions (cable device non-flush)	M8 x 50 mm
Protective circuits	Reverse-polarity protection, U <sub>B</sub> / short-circuit protection (Q)	Mounting	Flush / non-flush (see selection table)
Switching output, Q	PNP	Enclosure rating	IP 67 <sup>3</sup>
Output function	N.O.	Material, housing	Brass, nickel-plated
Switching frequency, f (ti/tp 1:1)	See selection table	Material, front surface (flush)	LCP
		Material, front surface (non-flush)	PBT
		Type of connection	See selection table
		Ambient temperature: operation	-25 ... +70 °C

<sup>1</sup> Non-flush devices    <sup>2</sup> Flush devices    <sup>3</sup> With connected IP 67 plug

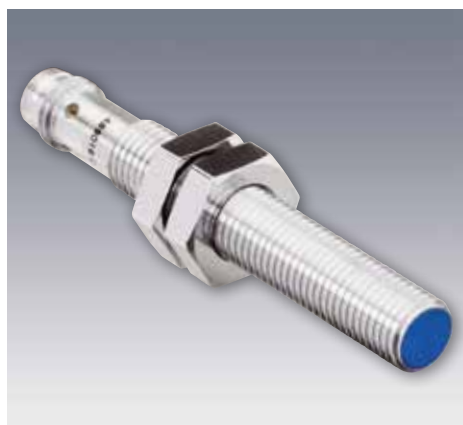
Switching distance	Mounting	Switching output	Switching frequency, f (ti/tp 1:1)	Type of connection	Part number	Article number
2 mm	Flush	PNP	≤ 3000 Hz	Plug, M8x1, 3-pin	IMT 8-2B-PS-M3	697-01046
2 mm	Flush	PNP	≤ 3000 Hz	Cable, 2 m, 3-wire	IMT 8-2B-PS-K3	697-01044
2 mm	Non-flush	PNP	≤ 1500 Hz	Plug, M12x1, 3-pin <sup>4</sup>	IMT 8-2N-PS-L4	697-01015
2 mm	Non-flush	PNP	≤ 1500 Hz	Cable, 2 m, 3-wire	IMT 8-2N-PS-K3	697-01013

Plug connection (flush)	Plug connection (non-flush)
 <p style="text-align: right;">153-00881</p>	 <p style="text-align: right;">153-00865</p>
Cable connection (flush)	Cable connection (non-flush)
 <p style="text-align: right;">153-00880</p>	 <p style="text-align: right;">153-00864</p>
Connection plug, 3-pin <sup>4</sup>	Connection cable, 3-wire
 <p style="text-align: right;">154-00294</p>	 <p style="text-align: right;">154-00294</p>

<sup>4</sup> Plug M12x1 3-pin is compatible with M12x1 4- or 5-pin sockets

# IS 58

## Inductive sensor



Plug connection (M8x1)	Plug connection (M12x1)	Cable connection

Sensor data		Functions	
Switching distance	3 mm	Indicator LED, yellow	Switching output indicator
Repeatability	0.15 mm <sup>1</sup>		
Hysteresis	≤ 15 % <sup>2</sup>		
Reduction factor; Al	0.33		
Reduction factor; Cu	0.27		
Reduction factor; V2A	0.72		
Reduction factor; steel FE 360	1.00		
Reduction factor; brass	0.41		
Electrical data		Mechanical data	
Operating voltage, +U <sub>B</sub>	10 ... 30V DC <sup>3</sup>	Dimensions	See selection table
No-load current, I <sub>0</sub>	≤ 10 mA	Enclosure rating	IP 67 <sup>4</sup>
Output current, I <sub>e</sub>	≤ 200 mA	Mounting	Flush
Voltage drop, U <sub>D</sub>	≤ 2V at 200 mA	Material, housing	Nickel silver; chrome-plated
Protective circuits	Reverse-polarity protection, U <sub>B</sub> / short-circuit protection (Q) / induction protection	Material, front surface	PBTP (PPS)
Switching output, Q	PNP	Type of connection	See selection table
Output function	N.O.	Ambient temperature: operation	-25 ... +70 °C
Switching frequency, f (ti/tp 1:1)	≤ 1000 Hz	Vibration and impact resistance	IEC 60947-5-2 / 7.4

<sup>1</sup> U<sub>B</sub> = 20 ... 30V DC, T<sub>A</sub> = 23 °C ± 5 °C    <sup>2</sup> Refers to switching distance    <sup>3</sup> Max. 20 % ripple, within U<sub>B</sub>    <sup>4</sup> With connected IP 67 plug

Connection plug, 3-pin	Connection plug, 4-pin	Connection cable, 3-wire

Switching distance	Switching output	Dimensions	Type of connection	Part number	Article number
3 mm	PNP	M8 x 60 mm	Plug, M8x1, 3-pin	IS 58-12 T	996-50587
3 mm	PNP	M8 x 66 mm	Plug, M12x1, 4-pin	IS 58-42	9996-09965
3 mm	PNP	M8 x 45 mm	Cable, 2 m, 3-wire	IS 58-02	996-09413

## Inductive sensor with expanded switching distance



Plug connection (M8x1)	Plug connection (M12x1)	Cable connection

Sensor data		Functions	
Switching distance	6 mm	Indicator LED, yellow	Switching output indicator
Repeatability	≤ 0.3 mm		
Reduction factor, Al	0.47		
Reduction factor, Cu	0.44		
Reduction factor, V2A	0.77		
Electrical data		Mechanical data	
Operating voltage, +U <sub>B</sub>	10 ... 30V DC <sup>1</sup>	Dimensions	See selection table
No-load current, I <sub>0</sub>	≤ 10 mA	Enclosure rating	IP 67 <sup>2</sup>
Output current, I <sub>e</sub>	≤ 200 mA	Mounting	Non-flush
Voltage drop, U <sub>0</sub>	≤ 2V at 200 mA	Material, housing	Brass, chrome-plated
Protective circuits	Short-circuit protection (Q) / overload protection	Material, front surface	PBTP
Power On Delay	50 ms	Type of connection	See selection table
Switching output, Q	PNP	Ambient temperature: operation	-25 ... +70 °C
Output function	N.O.		
Switching frequency, f (ti/tp 1:1)	≤ 500 Hz		

<sup>1</sup> Max. 20 % ripple, within U<sub>B</sub>    <sup>2</sup> With connected IP 67 plug

Connection plug, 3-pin	Connection plug, 4-pin	Connection cable, 3-wire

Switching distance	Switching output	Dimensions	Type of connection	Part number	Article number
6 mm	PNP	M8 x 60 mm	Plug, M8x1, 3-pin	IS 58-14-S	996-51456
6 mm	PNP	M8 x 66 mm	Plug, M12x1, 4-pin	IS 58-44-S	996-51460
6 mm	PNP	M8 x 45 mm	Cable, 3-wire	IS 58-04-S	996-51461

# IMT 12-2

## Inductive sensor



Plug connection	Cable connection
<p style="text-align: right;">153-00867</p>	<p style="text-align: right;">153-00866</p>

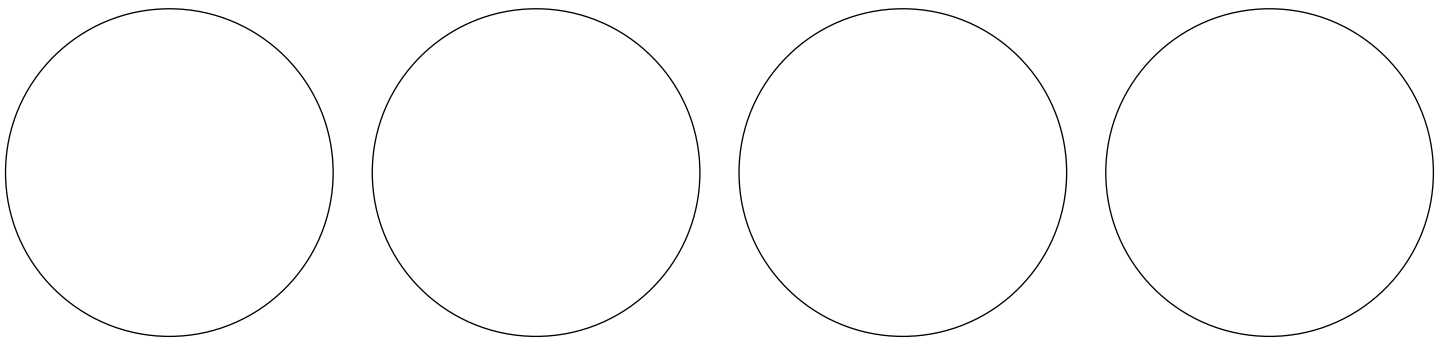
Sensor data		Functions	
Switching distance	2 mm	Indicator LED, yellow	Switching output indicator
Ensured switching distance	0 ... 1.62 mm		
Reduction factor; Al	0.30		
Reduction factor; Cu	0.20		
Reduction factor; V2A	0.70		
Electrical data		Mechanical data	
Operating voltage, +U <sub>B</sub>	10 ... 30V DC	Dimensions (plug device)	M12 × 65 mm
No-load current, I <sub>0</sub>	≤ 17 mA	Dimensions (cable device)	M12 × 50 mm
Operating current, I <sub>I</sub>	≤ 200 mA	Mounting	Flush
Voltage drop, U <sub>D</sub>	≤ 3 V	Enclosure rating	IP 67 <sup>1</sup>
Protective circuits	Reverse-polarity protection, U <sub>B</sub> / short-circuit protection (Q)	Material, housing	Brass, nickel-plated
Switching output, Q	PNP / NPN (see selection table)	Material, front surface	PBT
Output function	N.O.	Type of connection	See selection table
Switching frequency, f (ti/tp 1:1)	≤ 1500 Hz	Ambient temperature: operation	-25 ... +70 °C

<sup>1</sup> With connected IP 67 plug

Connection plug, 3-pin (PNP) <sup>2</sup>	Connection cable, 3-wire (PNP)	Connection cable, 3-wire (NPN)
<p style="text-align: right;">154-00294</p>	<p style="text-align: right;">154-00294</p>	<p style="text-align: right;">154-00293</p>

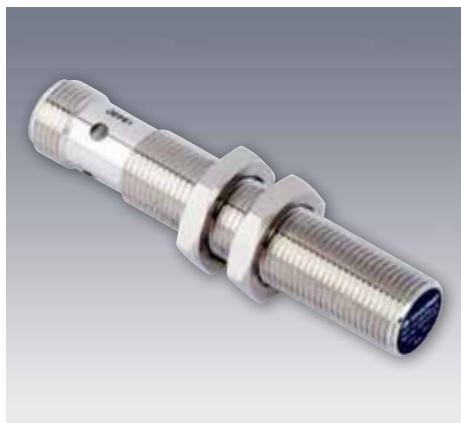
<sup>2</sup> Plug M12x1 3-pin is compatible with M12x1 4- or 5-pin sockets

Switching distance	Switching output	Type of connection	Part number	Article number
2 mm	PNP	Plug, M12x1, 3-pin <sup>2</sup>	IMT 12-2B-PS-L4	697-01019
2 mm	PNP	Cable, 2 m, 3-wire	IMT 12-2B-PS-K3	697-01017
2 mm	NPN	Cable, 2 m, 3-wire	IMT 12-2B-NS-K3	697-01016



# IMT 12-4

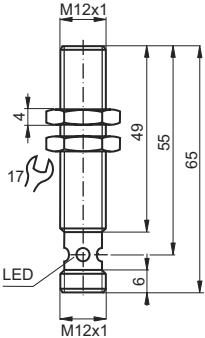
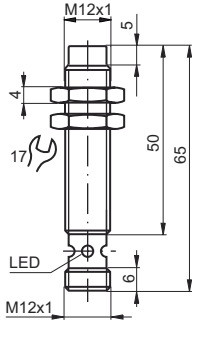
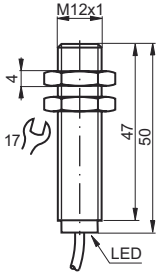
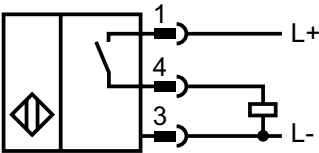
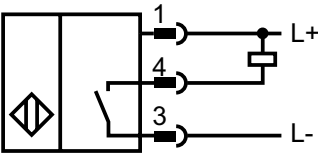
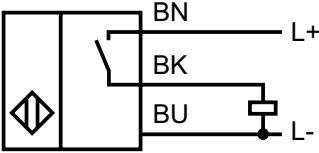
## Inductive sensor



Sensor data		Functions	
Switching distance	4 mm	Indicator LED, yellow	Switching output indicator
Ensured switching distance	0 ... 3.24 mm		
Reduction factor; Al (flush)	0.45 <sup>1</sup> / 0.39 <sup>2</sup>		
Reduction factor; Cu (flush)	0.35		
Reduction factor; V2A (flush)	0.7 <sup>1</sup> / 0.75 <sup>2</sup>		
Reduction factor; Al (non-flush)	0.50		
Reduction factor; Cu (non-flush)	0.40		
Reduction factor; V2A (non-flush)	0.80		
Electrical data		Mechanical data	
Operating voltage, +U <sub>B</sub>	10 ... 30V DC	Dimensions (plug device)	M12 × 65 mm
No-load current, I <sub>0</sub>	≤ 15 mA <sup>3</sup> / ≤ 17 mA <sup>4</sup>	Dimensions (cable device)	M12 × 50 mm
Operating current, I <sub>L</sub>	≤ 200 mA	Mounting	Flush / non-flush (see selection table)
Voltage drop, U <sub>D</sub>	≤ 3V	Enclosure rating	IP 67 <sup>5</sup>
Protective circuits	Reverse-polarity protection, U <sub>B</sub> / short-circuit protection (Q)	Material, housing	Brass, nickel-plated
Switching output, Q	PNP / NPN (see selection table)	Material, front surface	PBT
Output function	N.O.	Type of connection	See selection table
Switching frequency, f (ti/tp 1:1)	See selection table	Ambient temperature: operation	-25 ... +70 °C

<sup>1</sup> PNP variants    <sup>2</sup> NPN variants    <sup>3</sup> Flush devices    <sup>4</sup> Non-flush devices    <sup>5</sup> With connected IP 67 plug

Switching distance	Mounting	Switching output	Switching frequency, f (ti/tp 1:1)	Type of connection	Part number	Article number
4 mm	Flush	PNP	≤ 1000 Hz	Plug, M12x1, 3-pin <sup>6</sup>	IMT 12-4B-PS-L4	697-01050
4 mm	Flush	NPN	≤ 800 Hz	Plug, M12x1, 3-pin <sup>6</sup>	IMT 12-4B-NS-L4	697-01051
4 mm	Flush	PNP	≤ 1000 Hz	Cable, 2 m, 3-wire	IMT 12-4B-PS-K3	697-01048
4 mm	Non-flush	PNP	≤ 1200 Hz	Plug, M12x1, 3-pin <sup>6</sup>	IMT 12-4N-PS-L4	697-01023

Plug connection (flush)	Plug connection (non-flush)
 <p style="text-align: right;">153-00883</p>	 <p style="text-align: right;">153-00869</p>
Cable connection (flush)	
 <p style="text-align: right;">153-00882</p>	
Connection plug, 3-pin (PNP) <sup>6</sup>	Connection plug, 3-pin (NPN) <sup>6</sup>
 <p style="text-align: right;">154-00294</p>	 <p style="text-align: right;">154-00293</p>
Connection cable, 3-wire (PNP)	
 <p style="text-align: right;">154-00294</p>	

<sup>6</sup> Plug M12x1 3-pin is compatible with M12x1 4- or 5-pin sockets



# IT 12

## Inductive sensor with expanded switching distance



Plug connection (flush)	Plug connection (non-flush)	Cable connection (flush)

Sensor data		Functions	
Switching distance <sup>1</sup>	6 mm	Indicator LED, yellow	Switching output indicator
Switching distance <sup>2</sup>	10 mm		
Repeatability <sup>1</sup>	0.3 mm <sup>4</sup>		
Repeatability <sup>2</sup>	0.5 mm <sup>4</sup>		
Hysteresis	≤ 15 % <sup>5</sup>		
Reduction factor; Al <sup>3</sup>	1.00 / 1.00		
Reduction factor; Cu <sup>3</sup>	0.85 / 0.80		
Reduction factor; V2A 1 mm thick <sup>3</sup>	0.50 / no detection		
Reduction factor; V2A 2 mm thick <sup>3</sup>	0.90 / 0.65		
Reduction factor; steel FE 360 <sup>3</sup>	1.00 / 1.00		
Reduction factor; brass <sup>3</sup>	1.30 / 1.40		
Electrical data		Mechanical data	
Operating voltage, +U <sub>B</sub>	10 ... 30V DC <sup>6</sup>	Dimensions	M12 × 60 mm
No-load current, I <sub>0</sub>	≤ 10 mA	Mounting	Flush / non-flush (see selection table)
Operating current, I <sub>I</sub>	≤ 200 mA	Enclosure rating	IP 69K & IP 68 <sup>7</sup>
Voltage drop, U <sub>D</sub>	≤ 2 V at 200 mA	Material, housing	Stainless steel, V2A
Protective circuits	Reverse-polarity protection, U <sub>B</sub> / short-circuit protection (Q) / induction protection	Material, front surface	Stainless steel, V2A
Switching output, Q	PNP	Type of connection	See selection table
Output function	N.O.	Ambient temperature: operation	-25 ... +70 °C
Switching frequency, f (ti/tp 1:1)	See selection table	Vibration and impact resistance	IEC 60947-5-2 / 7.4

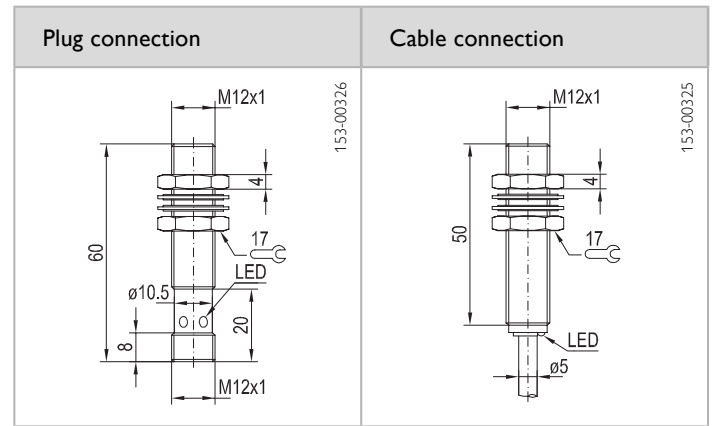
<sup>1</sup> Flush devices    <sup>2</sup> Non-flush devices    <sup>3</sup> Flush / non-flush devices    <sup>4</sup> U<sub>B</sub> = 20 ... 30V DC, T<sub>A</sub> = 23 °C ± 5 °C    <sup>5</sup> Refers to switching distance

<sup>6</sup> Max. 20 % ripple, within U<sub>B</sub>    <sup>7</sup> With connected IP 68 / IP 69K plug

Connection plug, 4-pin	Connection cable, 3-wire

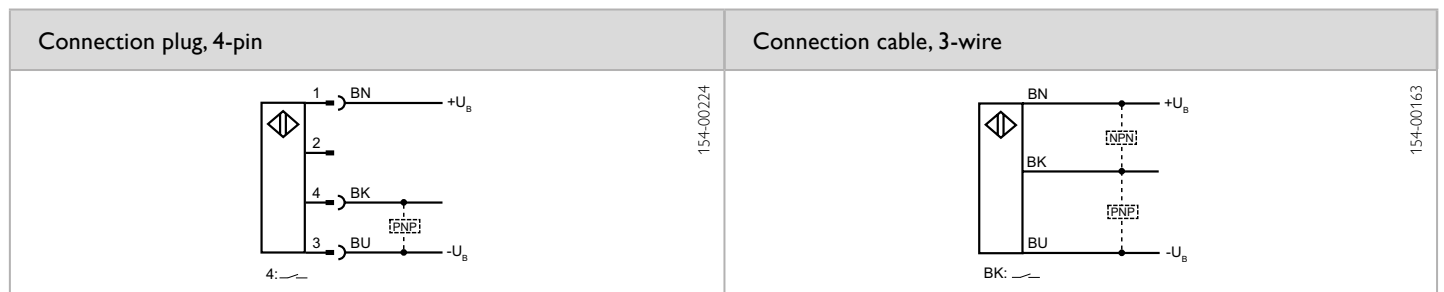
Switching distance	Mounting	Switching output	Switching frequency, f (ti/tp 1:1)	Type of connection	Part number	Article number
6 mm	Flush	PNP	≤ 600 Hz	Plug, M12x1, 4-pin	IT 12 BM-PSL4	996-51480
10 mm	Non-flush	PNP	≤ 400 Hz	Plug, M12x1, 4-pin	IT 12 NBM-PSL4	996-51481
6mm	Flush	PNP	≤ 600 Hz	Cable, 2 m, 3-wire	IT 12 BM-PSK3	996-51487

## Inductive sensor with expanded switching distance



Sensor data		Functions	
Switching distance	6 mm	Indicator LED, yellow	Switching output indicator
Repeatability	0.3 mm <sup>1</sup>		
Hysteresis	≤ 10 % <sup>2</sup>		
Reduction factor; Al	0.30		
Reduction factor; Cu	0.25		
Reduction factor; V2A	0.70		
Reduction factor; steel FE 360	1.00		
Reduction factor; brass	0.40		
Electrical data		Mechanical data	
Operating voltage, +U <sub>B</sub>	10 ... 30V DC <sup>3</sup>	Dimensions	See selection table
No-load current, I <sub>0</sub>	≤ 10 mA	Enclosure rating	IP 67 <sup>4</sup>
Output current, I <sub>e</sub>	≤ 200 mA	Mounting	Quasi-flush
Voltage drop, U <sub>D</sub>	≤ 2V at 200 mA	Material, housing	Brass, chrome-plated
Protective circuits	Reverse-polarity protection, U <sub>B</sub> / short-circuit protection (Q) / induction protection	Material, front surface	PBTP (PPS)
Switching output, Q	PNP / NPN (see selection table)	Type of connection	See selection table
Output function	N.O.	Ambient temperature: operation	-25 ... +70 °C
Switching frequency, f (ti/tp 1:1)	≤ 800 Hz	Vibration and impact resistance	IEC 60947-5-2 / 7.4

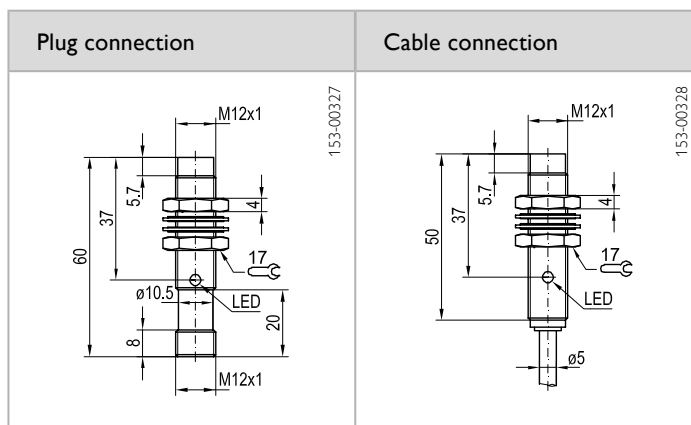
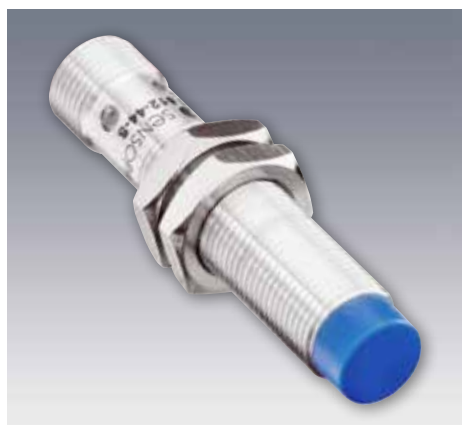
<sup>1</sup> U<sub>B</sub> = 20 ... 30V DC, T<sub>A</sub> = 23 °C ± 5 °C    <sup>2</sup> Refers to switching distance    <sup>3</sup> Max. 20 % ripple, within U<sub>B</sub>    <sup>4</sup> With connected IP 67 plug



Switching distance	Switching output	Dimensions	Type of connection	Part number	Article number
6 mm	PNP	M12 × 60 mm	Plug, M12x1, 4-pin	IS 512-42	996-09969
6 mm	PNP	M12 × 50 mm	Cable, 2 m, 3-wire	IS 512-02	996-09421
6 mm	NPN	M12 × 50 mm	Cable, 2 m, 3-wire	IS 512-01	996-09420

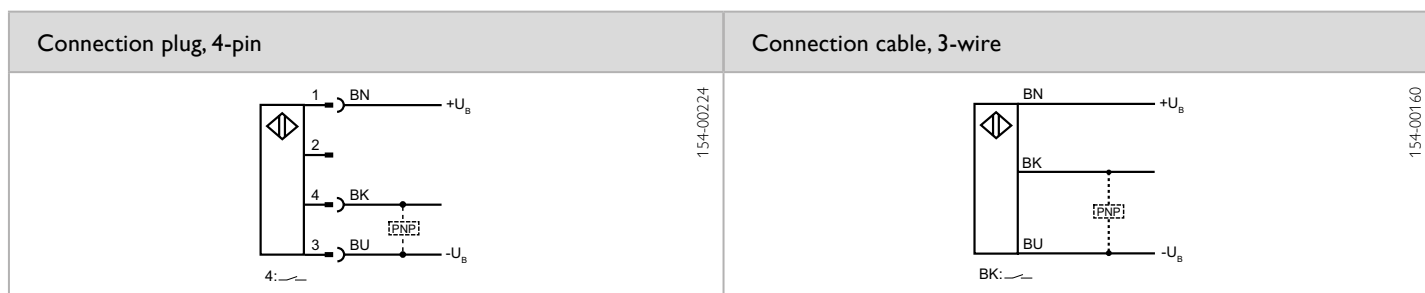
# IS 512

Inductive sensor with expanded switching distance



Sensor data		Functions	
Switching distance	10 mm	Indicator LED, yellow	Switching output indicator
Repeatability	$\leq 0.3 \text{ mm}^1$		
Hysteresis	$\leq 10 \%^2$		
Reduction factor; Al	0.49		
Reduction factor; Cu	0.45		
Reduction factor; V2A	0.77		
Reduction factor; steel FE 360	1.00		
Reduction factor; brass	0.56		
Electrical data		Mechanical data	
Operating voltage, $+U_B$	10 ... 30V DC <sup>3</sup>	Dimensions	See selection table
No-load current, $I_0$	$\leq 10 \text{ mA}$	Enclosure rating	IP 67 <sup>4</sup>
Output current, $I_e$	$\leq 200 \text{ mA}$	Mounting	Non-flush
Voltage drop, $U_D$	$\leq 2 \text{ V}$ at 200 mA	Material, housing	Brass, chrome-plated
Protective circuits	Reverse-polarity protection, $U_B$ / short-circuit protection (Q) / induction protection	Material, front surface	PBTP (PPS)
Switching output, Q	PNP	Type of connection	See selection table
Output function	N.O.	Ambient temperature: operation	-25 ... +70 °C
Switching frequency, $f$ (ti/tp 1:1)	$\leq 400 \text{ Hz}$	Vibration and impact resistance	IEC 60947-5-2 / 7.4

<sup>1</sup>  $U_B = 20 \dots 30 \text{ V DC}$ ,  $T_A = 23 \text{ °C} \pm 5 \text{ °C}$     <sup>2</sup> Refers to switching distance    <sup>3</sup> Max. 20 % ripple, within  $U_B$     <sup>4</sup> With connected IP 67 plug

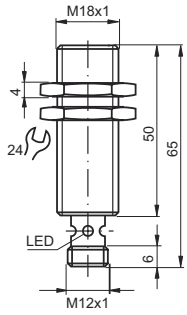
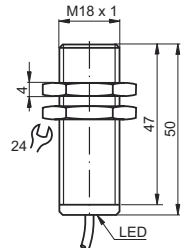


Switching distance	Switching output	Dimensions	Type of connection	Part number	Article number
10 mm	PNP	M12 x 60 mm	Plug, M12x1, 4-pin	IS 512-44-S	996-51449
10 mm	PNP	M12 x 50 mm	Cable, 2 m, 3-wire	IS 512-04-S	996-51458

# IMT 18-5

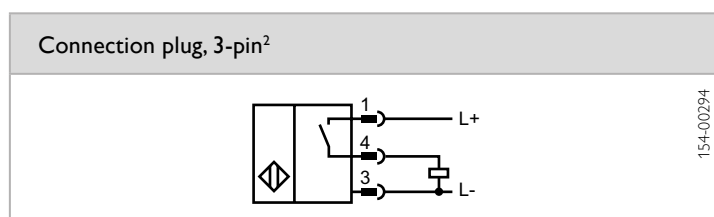
Inductive sensor



Plug connection	Cable connection
	
153-00871	153-00870

Sensor data		Functions	
Switching distance	5 mm	Indicator LED, yellow	Switching output indicator
Ensured switching distance	0 ... 4.05 mm		
Reduction factor, Al	0.30		
Reduction factor, Cu	0.30		
Reduction factor, V2A	0.70		
Electrical data		Mechanical data	
Operating voltage, +U <sub>B</sub>	10 ... 30V DC	Dimensions (plug device)	M18 x 65 mm
No-load current, I <sub>0</sub>	≤ 20 mA	Dimensions (cable device)	M18 x 50 mm
Operating current, I <sub>L</sub>	≤ 200 mA	Mounting	Flush
Voltage drop, U <sub>D</sub>	≤ 3V	Enclosure rating	IP 67 <sup>1</sup>
Protective circuits	Reverse-polarity protection, U <sub>B</sub> / short-circuit protection (Q)	Material, housing	Brass, nickel-plated
Switching output, Q	PNP	Material, front surface	PBT
Output function	N.O.	Type of connection	See selection table
Switching frequency, f (ti/tp 1:1)	≤ 800 Hz	Ambient temperature: operation	-25 ... +70 °C

<sup>1</sup>With connected IP 67 plug



<sup>2</sup> Plug M12x1 3-pin is compatible with M12x1 4- or 5-pin sockets

Switching distance	Switching output	Type of connection	Part number	Article number
5 mm	PNP	Plug, M12x1, 3-pin <sup>2</sup>	IMT 18-5B-PS-L4	697-01027

# IMT 18-8

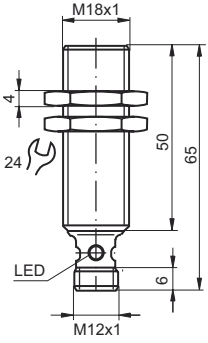
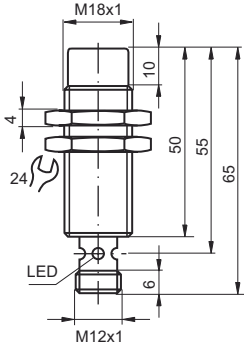
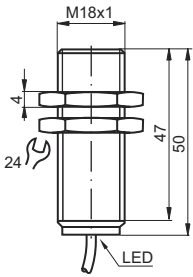
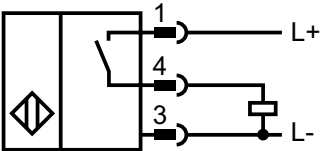
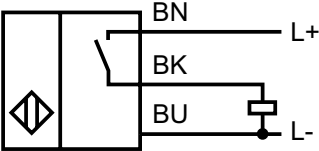
Inductive sensor



Sensor data		Functions	
Switching distance	8 mm	Indicator LED, yellow	Switching output indicator
Ensured switching distance	0 ... 6.48 mm		
Reduction factor; Al	0.45 <sup>1</sup> / 0.50 <sup>2</sup>		
Reduction factor; Cu	0.40		
Reduction factor; V2A	0.70		
Electrical data		Mechanical data	
Operating voltage, +U <sub>B</sub>	10 ... 30V DC	Dimensions (plug device)	M18 x 65 mm
No-load current, I <sub>0</sub>	≤ 15 mA <sup>1</sup> / ≤ 18 mA <sup>2</sup>	Dimensions (cable device)	M18 x 50 mm
Operating current, I <sub>I</sub>	≤ 200 mA	Mounting	Flush / non-flush (see selection table)
Voltage drop, U <sub>D</sub>	≤ 3V	Enclosure rating	IP 67 <sup>3</sup>
Protective circuits	Reverse-polarity protection, U <sub>B</sub> / short-circuit protection (Q)	Material, housing	Brass, nickel-plated
Switching output, Q	PNP	Material, front surface	PBT
Output function	N.O.	Type of connection	See selection table
Switching frequency, f (ti/tp 1:1)	≤ 500 Hz	Ambient temperature: operation	-25 ... +70 °C

<sup>1</sup> Flush devices    <sup>2</sup> Non-flush devices    <sup>3</sup> With connected IP 67 plug

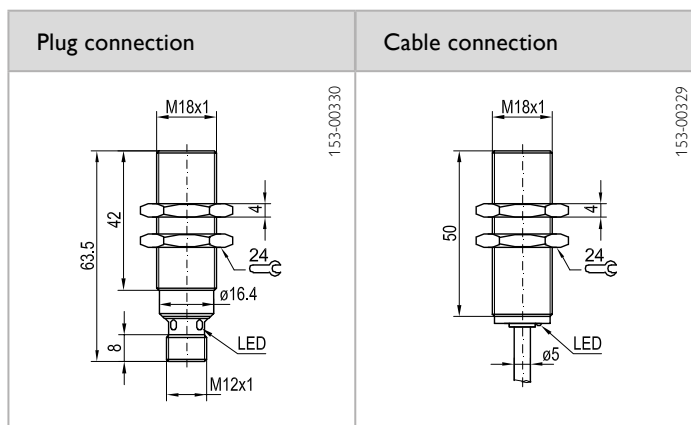
Switching distance	Mounting	Switching output	Type of connection	Part number	Article number
8 mm	Flush	PNP	Plug, M12x1, 3-pin <sup>4</sup>	IMT 18-8B-PS-L4	697-01054
8 mm	Flush	PNP	Cable, 2 m, 3-wire	IMT 18-8B-PS-K3	697-01052
8 mm	Non-flush	PNP	Plug, M12x1, 3-pin <sup>4</sup>	IMT 18-8N-PS-L4	697-01031

Plug connection (flush)	Plug connection (non-flush)
 <p style="text-align: center;">153-00885</p>	 <p style="text-align: center;">153-00873</p>
Cable connection (flush)	
 <p style="text-align: center;">153-00884</p>	
Connection plug, 3-pin <sup>4</sup>	Connection cable, 3-wire
 <p style="text-align: center;">154-00294</p>	 <p style="text-align: center;">154-00294</p>

<sup>4</sup> Plug M12x1 3-pin is compatible with M12x1 4- or 5-pin sockets

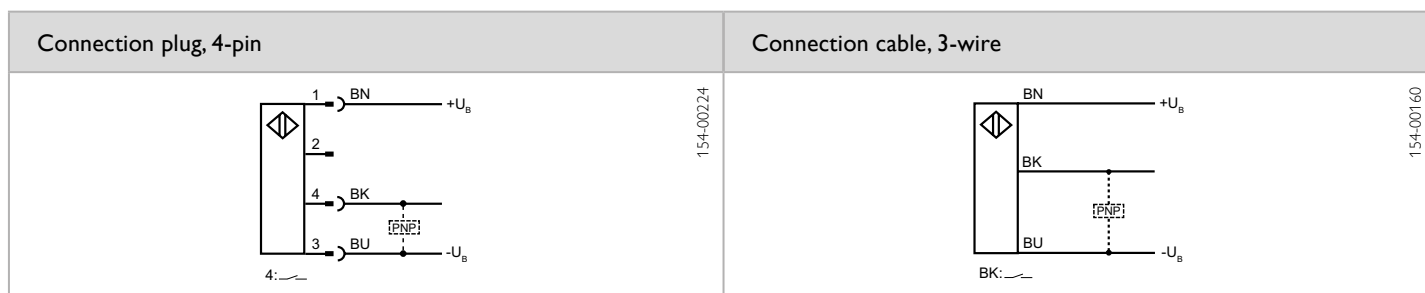
# IS 518

Inductive sensor with expanded switching distance



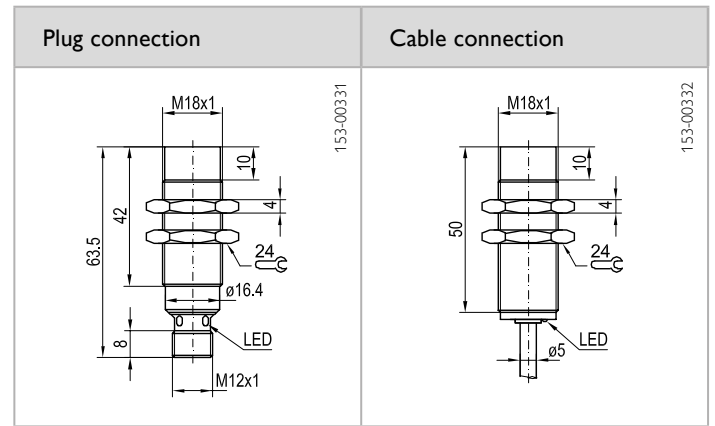
Sensor data		Functions	
Switching distance	12 mm	Indicator LED, yellow	Switching output indicator
Repeatability	0.6 mm <sup>1</sup>		
Hysteresis	≤ 10 % <sup>2</sup>		
Reduction factor; Al	0.26		
Reduction factor; Cu	0.20		
Reduction factor; V2A	0.63		
Reduction factor; steel FE 360	1.00		
Reduction factor; brass	0.33		
Electrical data		Mechanical data	
Operating voltage, +U <sub>B</sub>	10 ... 30V DC <sup>3</sup>	Dimensions	See selection table
No-load current, I <sub>0</sub>	≤ 10 mA	Mounting	Quasi-flush
Output current, I <sub>e</sub>	≤ 200 mA	Enclosure rating	IP 67 <sup>4</sup>
Voltage drop, U <sub>D</sub>	≤ 2V at 200 mA	Material, housing	Brass, chrome-plated
Protective circuits	Reverse-polarity protection, U <sub>B</sub> / short-circuit protection (Q) / induction protection	Material, front surface	PBTP
Switching output, Q	PNP	Type of connection	See selection table
Output function	N.O.	Ambient temperature: operation	-25 ... +70 °C
Switching frequency, f (ti/tp 1:1)	≤ 500 Hz	Vibration and impact resistance	IEC 60947-5-2 / 7.4

<sup>1</sup> U<sub>B</sub> = 20 ... 30V DC, T<sub>A</sub> = 23 °C ± 5 °C    <sup>2</sup> Refers to switching distance    <sup>3</sup> Max. 20 % ripple, within U<sub>B</sub>    <sup>4</sup> With connected IP 67 plug



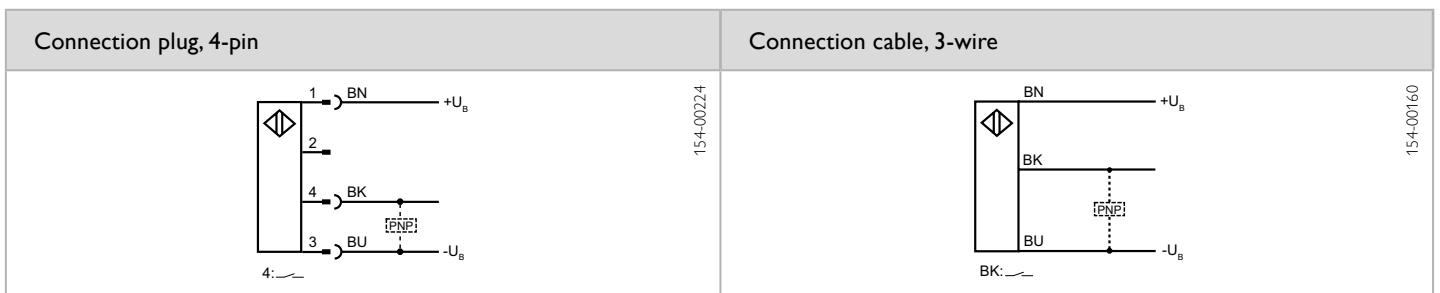
Switching distance	Switching output	Dimensions	Type of connection	Part number	Article number
12 mm	PNP	M18 × 63.5 mm	Plug, M12x1, 4-pin	IS 518-42	996-09973
12 mm	PNP	M18 × 50 mm	Cable, 2 m, 3-wire	IS 518-02	996-09429

Inductive sensor with expanded switching distance



Sensor data		Functions	
Switching distance	20 mm	Indicator LED, yellow	Switching output indicator
Reduction factor, AI	0.40		
Reduction factor, Cu	0.35		
Reduction factor, V2A	0.66		
Electrical data		Mechanical data	
Operating voltage, +U <sub>B</sub>	10 ... 30V DC <sup>1</sup>	Dimensions	See selection table
No-load current, I <sub>0</sub>	≤ 10 mA	Mounting	Non-flush
Output current, I <sub>e</sub>	≤ 200 mA	Enclosure rating	IP 67 <sup>2</sup>
Voltage drop, U <sub>D</sub>	≤ 2V at 200 mA	Material, housing	Brass, nickel-plated
Protective circuits	Short-circuit protection (Q) / overload protection	Type of connection	See selection table
Power On Delay	100 ms	Ambient temperature: operation	-25 ... +70 °C
Switching output, Q	PNP		
Output function	N.O.		
Switching frequency, f (ti/tp 1:1)	≤ 200 Hz		

<sup>1</sup> Max. 20 % ripple, within U<sub>B</sub>    <sup>2</sup> With connected IP 67 plug

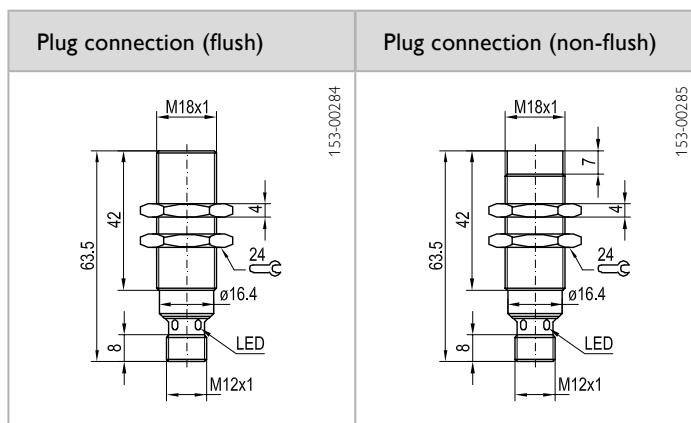


Switching distance	Switching output	Dimensions	Type of connection	Part number	Article number
20 mm	PNP	M18 x 63.5 mm	Plug, M12x1, 4-pin	IS 518-44-S	996-51453
20 mm	PNP	M18 x 50 mm	Cable, 3-wire	IS 518-04-S	996-51450



# IT 18

## Inductive sensor with expanded switching distance

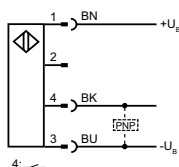


Sensor data		Functions	
Switching distance <sup>1</sup>	10 mm	Indicator LED, yellow	Switching output indicator
Switching distance <sup>2</sup>	20 mm		
Repeatability <sup>1</sup>	0.5 mm <sup>4</sup>		
Repeatability <sup>2</sup>	1 mm <sup>4</sup>		
Hysteresis	≤ 15 % <sup>5</sup>		
Reduction factor; Al <sup>3</sup>	1.00 / 1.00		
Reduction factor; Cu <sup>3</sup>	0.80 / 0.90		
Reduction factor; V2A 1 mm thick <sup>3</sup>	0.50 / 0.30		
Reduction factor; V2A 2 mm thick <sup>3</sup>	0.90 / 0.60		
Reduction factor; steel FE 360 <sup>3</sup>	1.00 / 1.00		
Reduction factor; brass <sup>3</sup>	1.20 / 1.35		
Electrical data		Mechanical data	
Operating voltage, +U <sub>B</sub>	10 ... 30V DC <sup>6</sup>	Dimensions	M18 × 63,5 mm
No-load current, I <sub>0</sub>	≤ 10 mA	Mounting	Flush / non-flush (see selection table)
Operating current, I <sub>I</sub>	≤ 200 mA	Enclosure rating	IP 69K & IP 68 <sup>7</sup>
Voltage drop, U <sub>D</sub>	≤ 2 V at 200 mA	Material, housing	Stainless steel, V2A
Protective circuits	Reverse-polarity protection, U <sub>B</sub> / short-circuit protection (Q) / induction protection	Material, front surface	Stainless steel, V2A
Switching output, Q	PNP	Type of connection	See selection table
Output function	N.O.	Ambient temperature: operation	-25 ... +70 °C
Switching frequency, f (ti/tp 1:1)	≤ 200 Hz	Vibration and impact resistance	IEC 60947-5-2 / 7.4

<sup>1</sup> Flush devices    <sup>2</sup> Non-flush devices    <sup>3</sup> Flush / non-flush devices    <sup>4</sup> U<sub>B</sub> = 20 ... 30V DC, T<sub>A</sub> = 23 °C ± 5 °C    <sup>5</sup> Refers to switching distance

<sup>6</sup> Max. 20 % ripple, within U<sub>B</sub>    <sup>7</sup> With connected IP 68 / IP 69K plug

### Connection, 4-pin

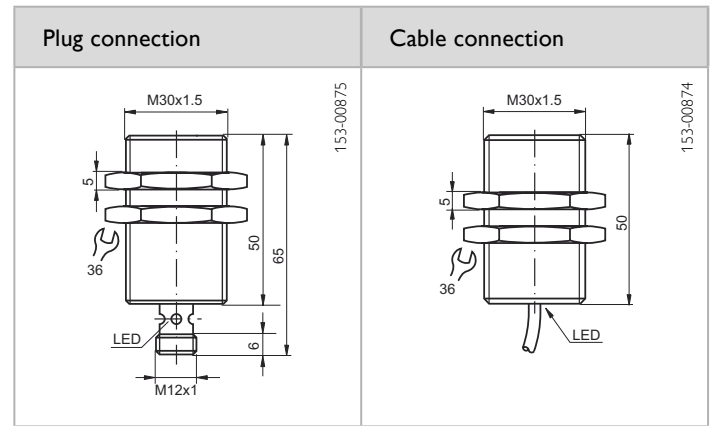
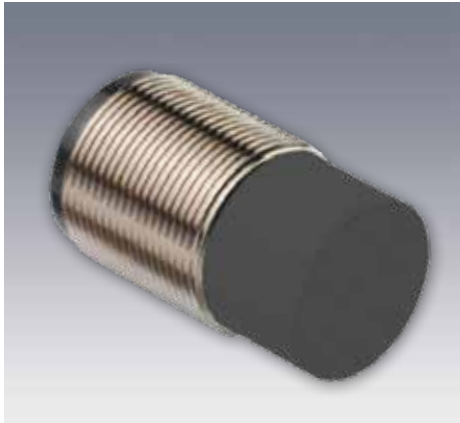


154-00224

Switching distance	Mounting	Switching output	Type of connection	Part number	Article number
10 mm	Flush	PNP	Plug, M12x1, 4-pin	IT 18 BM-PSL4	996-51482
20 mm	Non-flush	PNP	Plug, M12x1, 4-pin	IT 18 NBM-PSL4	996-51483

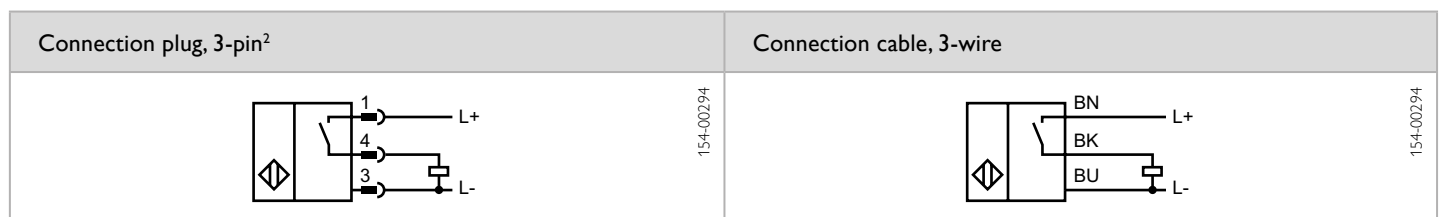
# IMT 30-10

Inductive sensor



Sensor data		Functions	
Switching distance	10 mm	Indicator LED, yellow	Switching output indicator
Ensured switching distance	0 ... 8.1 mm		
Reduction factor, Al	0.30		
Reduction factor, Cu	0.30		
Reduction factor, V2A	0.80		
Electrical data		Mechanical data	
Operating voltage, +U <sub>B</sub>	10 ... 30V DC	Dimensions (plug device)	M30 x 65 mm
No-load current, I <sub>0</sub>	≤ 20 mA	Dimensions (cable device)	M30 x 50 mm
Operating current, I <sub>L</sub>	≤ 200 mA	Mounting	Flush
Voltage drop, U <sub>D</sub>	≤ 3V	Enclosure rating	IP 67 <sup>1</sup>
Protective circuits	Reverse-polarity protection, U <sub>B</sub> / short-circuit protection (Q)	Material, housing	Brass, nickel-plated
Switching output, Q	PNP	Material, front surface	PBT
Output function	N.O.	Type of connection	See selection table
Switching frequency, f (ti/tp 1:1)	≤ 200 Hz	Ambient temperature: operation	-25 ... +70 °C

<sup>1</sup> With connected IP 67 plug

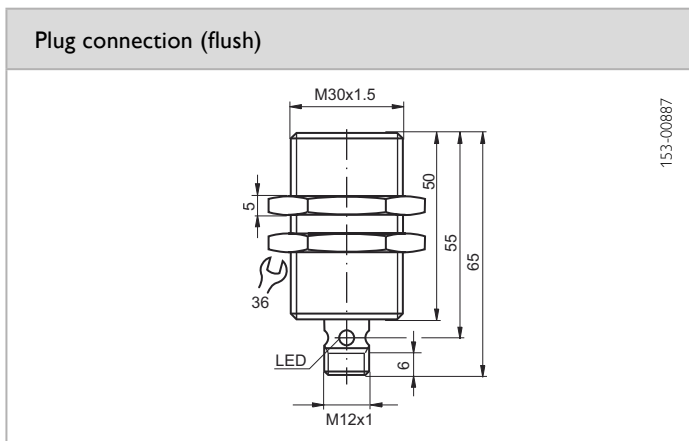
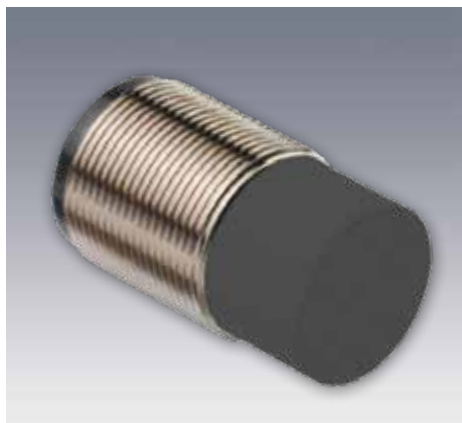


<sup>2</sup> Plug M12x1 3-pin is compatible with M12x1 4- or 5-pin sockets

Switching distance	Switching output	Type of connection	Part number	Article number
10 mm	PNP	Plug, M12x1, 3-pin <sup>2</sup>	IMT 30-10B-PS-L4	697-01035
10 mm	PNP	Cable, 2 m, 3-wire	IMT 30-10B-PS-K3	697-01033

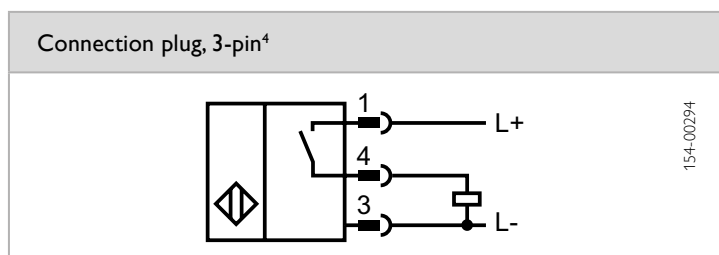
# IMT 30-15

Inductive sensor



Sensor data		Functions	
Switching distance	15 mm	Indicator LED, yellow	Switching output indicator
Ensured switching distance	0 ... 12.15mm		
Reduction factor; Al	0.30 <sup>1</sup> / 0.50 <sup>2</sup>		
Reduction factor; Cu	0.30 <sup>1</sup> / 0.40 <sup>2</sup>		
Reduction factor; V2A	0.75 <sup>1</sup> / 0.80 <sup>2</sup>		
Electrical data		Mechanical data	
Operating voltage, +U <sub>B</sub>	10 ... 30V DC	Dimensions (plug device)	M30 × 65 mm
No-load current, I <sub>0</sub>	≤ 15 mA	Dimensions (cable device)	M30 × 50 mm
Operating current, I <sub>I</sub>	≤ 200 mA	Mounting	Flush / non-flush (see selection table)
Voltage drop, U <sub>D</sub>	≤ 3 V	Enclosure rating	IP 67 <sup>3</sup>
Protective circuits	Reverse-polarity protection, U <sub>B</sub> / short-circuit protection (Q)	Material, housing	Brass, nickel-plated
Switching output, Q	PNP	Material, front surface	PBT
Output function	N.O.	Type of connection	See selection table
Switching frequency, f (ti/tp 1:1)	≤ 200 Hz	Ambient temperature: operation	-25 ... +70 °C

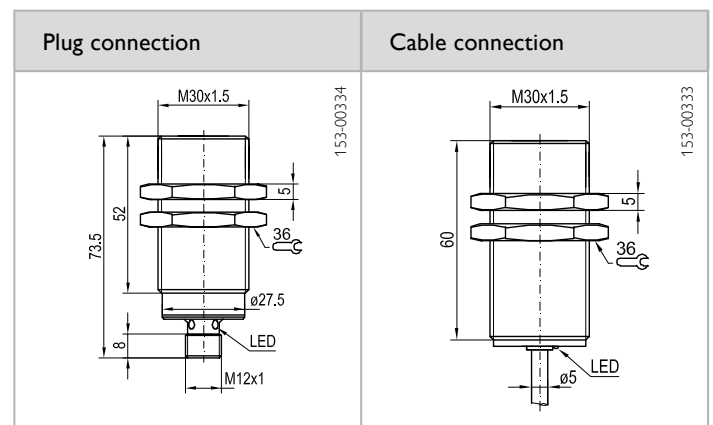
<sup>1</sup> Flush devices    <sup>2</sup> Non-flush devices    <sup>3</sup> With connected IP 67 plug



<sup>4</sup> Plug M12x1 3-pin is compatible with M12x1 4- or 5-pin sockets

Switching distance	Mounting	Switching output	Type of connection	Part number	Article number
15 mm	Flush	PNP	Plug, M12x1, 3-pin <sup>5</sup>	IMT 30-15B-PS-L4	697-01058

## Inductive sensor with expanded switching distance



Sensor data		Functions	
Switching distance	22 mm	Indicator LED, yellow	Operating voltage indicator
Repeatability	1.1 mm <sup>1</sup>		
Hysteresis	≤ 10 % <sup>2</sup>		
Reduction factor, Al	0.40		
Reduction factor, Cu	0.35		
Reduction factor, V2A	0.66		
Reduction factor, steel FE 360	1.00		
Reduction factor, brass	0.35		
Electrical data		Mechanical data	
Operating voltage, +U <sub>B</sub>	10 ... 30V DC <sup>3</sup>	Dimensions	See selection table
No-load current, I <sub>0</sub>	≤ 10 mA	Mounting	Quasi-flush
Output current, I <sub>e</sub>	≤ 200 mA	Enclosure rating	IP 67 <sup>4</sup>
Voltage drop, U <sub>D</sub>	≤ 2V at 200 mA	Material, housing	Brass, chrome-plated
Protective circuits	Reverse-polarity protection, U <sub>B</sub> / short-circuit protection (Q) / induction protection	Material, front surface	PBTP
Switching output, Q	PNP / NPN (see selection table)	Type of connection	See selection table
Output function	N.O.	Ambient temperature: operation	-25 ... +70 °C
Switching frequency, f (ti/tp 1:1)	≤ 200 Hz	Vibration and impact resistance	IEC 60947-5-2 / 7.4

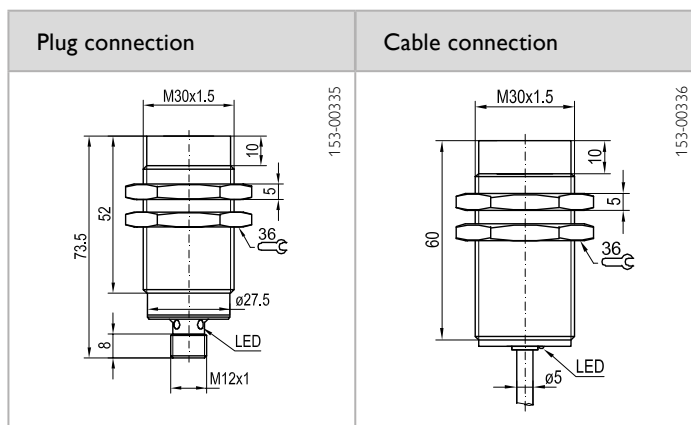
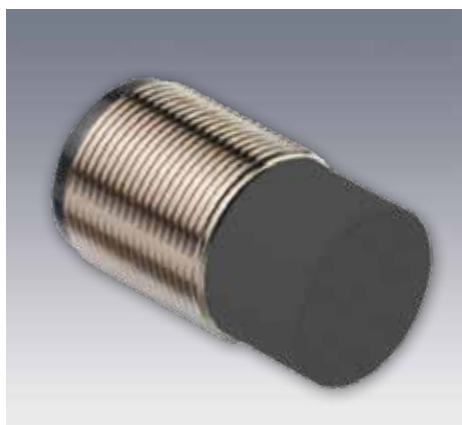
<sup>1</sup> U<sub>B</sub> = 20 ... 30V DC, T<sub>A</sub> = 23 °C ± 5 °C    <sup>2</sup> Refers to switching distance    <sup>3</sup> Max. 20 % ripple, within U<sub>B</sub>    <sup>4</sup> With connected IP 67 plug

Connection plug, 4-pin	Connection cable, 3-wire

Switching distance	Switching output	Dimensions	Type of connection	Part number	Article number
22 mm	PNP	M30 × 73.5 mm	Plug, M12x1, 4-pin	IS 530-42	996-09905
22 mm	PNP	M30 × 60 mm	Cable, 2 m, 3-wire	IS 530-02	996-09437

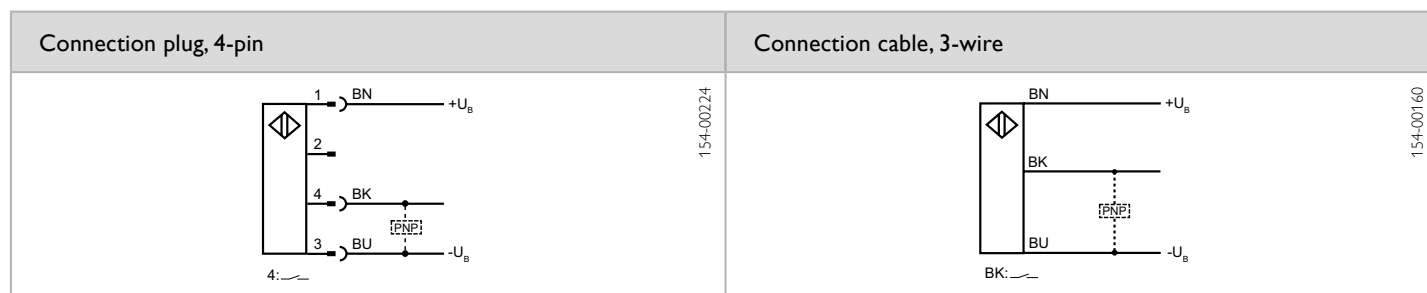
# IS 530

Inductive sensor with expanded switching distance



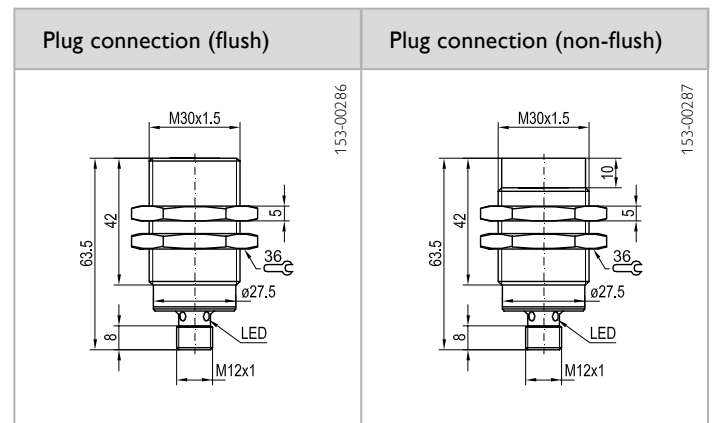
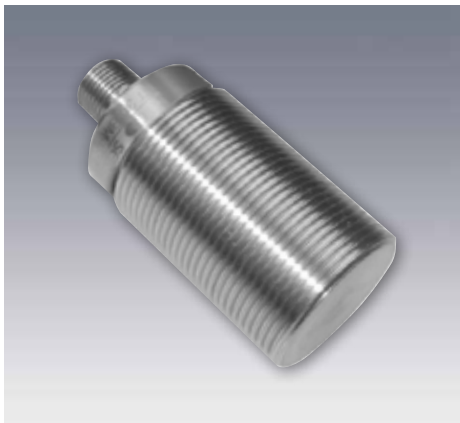
Sensor data		Functions	
Switching distance	40 mm	Indicator LED, yellow	Operating voltage indicator
Repeatability	2 mm <sup>1</sup>		
Hysteresis	≤ 10 % <sup>2</sup>		
Reduction factor; Al	0.42		
Reduction factor; Cu	0.37		
Reduction factor; V2A	0.78		
Reduction factor; steel FE 360	1.00		
Reduction factor; brass	0.47		
Electrical data		Mechanical data	
Operating voltage, +U <sub>B</sub>	10 ... 30V DC <sup>3</sup>	Dimensions	See selection table
No-load current, I <sub>0</sub>	≤ 10 mA	Mounting	Non-flush
Output current, I <sub>e</sub>	≤ 200 mA	Enclosure rating	IP 67 <sup>4</sup>
Voltage drop, U <sub>D</sub>	≤ 2V at 200 mA	Material, housing	Brass, chrome-plated
Protective circuits	Reverse-polarity protection, U <sub>B</sub> / short-circuit protection (Q) / induction protection	Material, front surface	PBTP
Switching output, Q	PNP	Type of connection	See selection table
Output function	N.O.	Ambient temperature: operation	-25 ... +70 °C
Switching frequency, f (ti/tp 1:1)	≤ 100 Hz	Vibration and impact resistance	IEC 60947-5-2 / 7.4

<sup>1</sup> U<sub>B</sub> = 20 ... 30V DC, T<sub>A</sub> = 23 °C ± 5 °C    <sup>2</sup> Refers to switching distance    <sup>3</sup> Max. 20 % ripple, within U<sub>B</sub>    <sup>4</sup> With connected IP 67 plug



Switching distance	Switching output	Dimensions	Type of connection	Part number	Article number
40 mm	PNP	M30 × 73.5 mm	Plug, M12x1, 4-pin	IS 530-44-S	996-51454
40 mm	PNP	M30 × 60 mm	Cable, 2 m, 3-wire	IS 530-04-S	996-51452

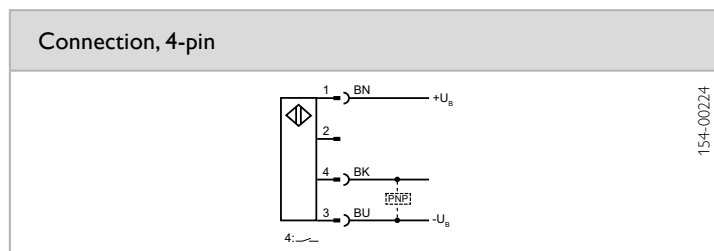
## Inductive sensor with expanded switching distance



Sensor data		Functions	
Switching distance <sup>1</sup>	20 mm	Indicator LED, yellow	Switching output indicator
Switching distance <sup>2</sup>	40 mm		
Repeatability <sup>1</sup>	1 mm <sup>4</sup>		
Repeatability <sup>2</sup>	2 mm <sup>4</sup>		
Hysteresis	≤ 15 % <sup>5</sup>		
Reduction factor; Al <sup>3</sup>	1.00 / 1.00		
Reduction factor; Cu <sup>3</sup>	0.90 / 0.90		
Reduction factor; V2A 1 mm thick <sup>3</sup>	0.35 / no detection		
Reduction factor; V2A 2 mm thick <sup>3</sup>	0.70 / 0.25		
Reduction factor; steel FE 360 <sup>3</sup>	1.00 / 1.00		
Reduction factor; brass <sup>3</sup>	1.30 / 1.20		
Electrical data		Mechanical data	
Operating voltage, +U <sub>B</sub>	10 ... 30V DC <sup>6</sup>	Dimensions	M30 × 63.5 mm
No-load current, I <sub>0</sub>	≤ 10 mA	Mounting	Flush / non-flush (see selection table)
Operating current, I <sub>L</sub>	≤ 200 mA	Enclosure rating	IP 69K & IP 68 <sup>7</sup>
Voltage drop, U <sub>D</sub>	≤ 2V at 200 mA	Material, housing	Stainless steel, V2A
Protective circuits	Reverse-polarity protection, U <sub>B</sub> / short-circuit protection (Q) / induction protection	Material, front surface	Stainless steel, V2A
Switching output, Q	PNP	Type of connection	See selection table
Output function	N.O.	Ambient temperature: operation	-25 ... +70 °C
Switching frequency, f (ti/tp 1:1)	See selection table	Vibration and impact resistance	IEC 60947-5-2 / 7.4

<sup>1</sup> Flush devices    <sup>2</sup> Non-flush devices    <sup>3</sup> Flush / non-flush devices    <sup>4</sup> U<sub>B</sub> = 20 ... 30V DC, T<sub>A</sub> = 23 °C ± 5 °C    <sup>5</sup> Refers to switching distance

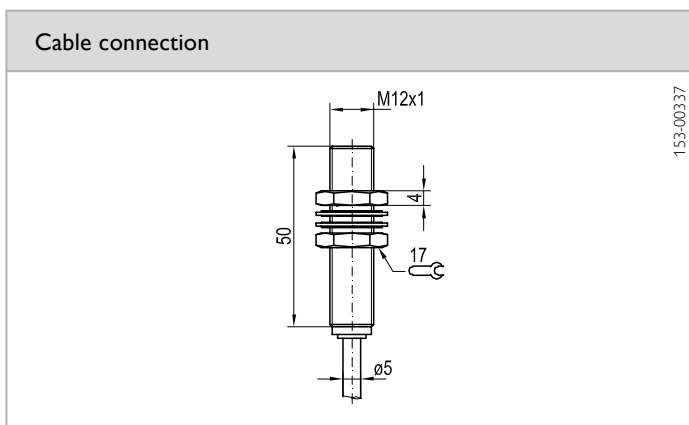
<sup>6</sup> Max. 20 % ripple, within U<sub>B</sub>    <sup>7</sup> With connected IP 68 / IP 69K plug



Switching distance	Mounting	Switching output	Switching frequency, f (ti/tp 1:1)	Type of connection	Part number	Article number
20 mm	Flush	PNP	≤ 100 Hz	Plug, M12x1, 4-pin	IT 30 BM-PSL4	996-51484
40 mm	Non-flush	PNP	≤ 90 Hz	Plug, M12x1, 4-pin	IT 30 NBM-PSL4	996-51485

# IS 512-02 AI

Inductive sensor with analogue output



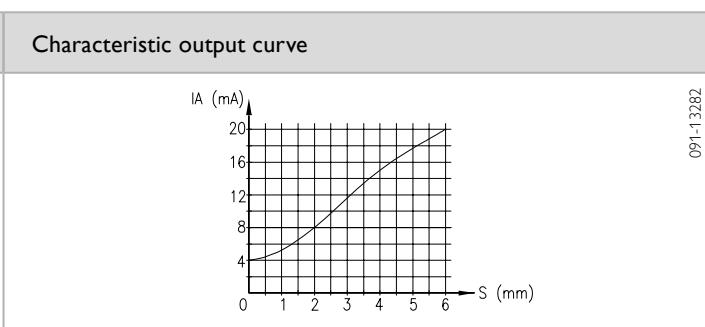
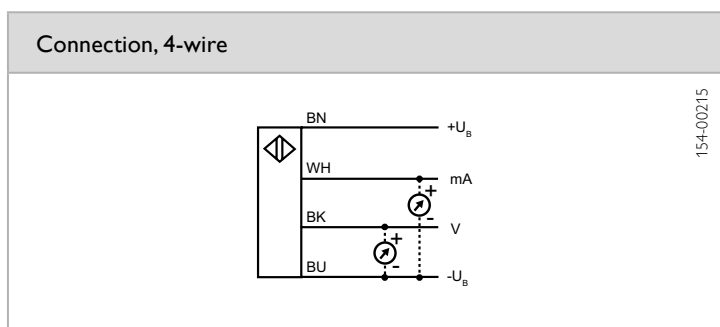
Sensor data	
Switching distance	0 ... 6 mm
Repeatability	≤ 0.3 mm

Electrical data	
Operating voltage, +U <sub>B</sub>	15 ... 30V DC <sup>1</sup>
No-load current, I <sub>0</sub>	≤ 10 mA
Min. load resistance	0 Ω
Max. load resistance	200 Ω
Protective circuits	Short-circuit protection (Q) / overload protection
Analogue output	0 ... 10V / 4 ... 20 mA

Mechanical data	
Dimensions	M12 × 50 mm
Enclosure rating	IP 67 <sup>2</sup>
Mounting	Quasi-flush
Material, housing	Brass, chrome-plated
Type of connection	See selection table
Ambient temperature: operation	-10 ... +60 °C

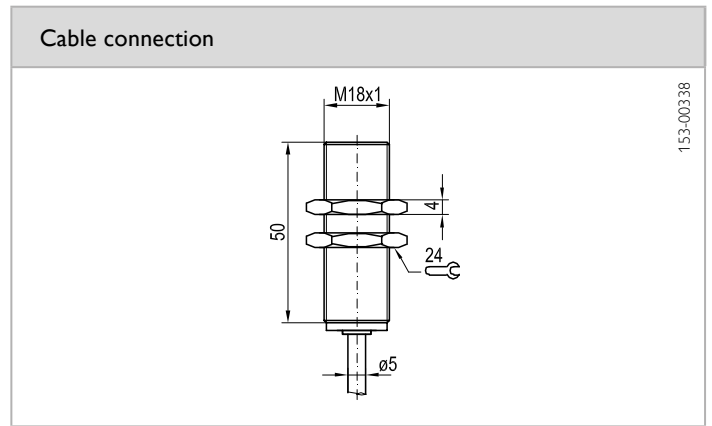
<sup>1</sup> Max. 10 % ripple, within U<sub>B</sub>    <sup>2</sup> With connected IP 67 plug



Switching distance	Analogue output	Type of connection	Part number	Article number
6 mm	0 ... 10V / 4 ... 20 mA	Cable, 4-wire	IS 512-02 AI	996-51479

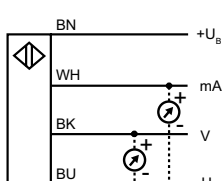
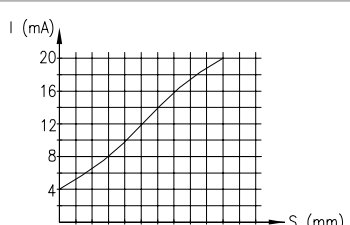
# IS 518-02 A

Inductive sensor with analogue output



Sensor data		Mechanical data	
Switching distance	0 ... 10 mm	Dimensions	M18 x 50 mm
Repeatability	≤ 0.3 mm	Mounting	Quasi-flush
Electrical data		Enclosure rating	IP 67 <sup>2</sup>
Operating voltage, +U <sub>B</sub>	15 ... 30V DC <sup>1</sup>	Material, housing	Brass, chrome-plated
No-load current, I <sub>0</sub>	≤ 10 mA	Type of connection	See selection table
Min. load resistance	0 Ω	Ambient temperature: operation	-10 ... +60 °C
Max. load resistance	200 Ω		
Protective circuits	Short-circuit protection (Q) / overload protection		
Analogue output	0 ... 10V / 4 ... 20 mA		

<sup>1</sup> Max. 10 % ripple, within U<sub>B</sub>    <sup>2</sup>With connected IP 67 plug

Connection, 4-wire	Characteristic output curve
 <p style="text-align: right;">154-00215</p>	 <p style="text-align: right;">091-13294</p>

Switching distance	Analogue output	Type of connection	Part number	Article number
10 mm	0 ... 10V / 4 ... 20 mA	Cable, 4-wire	IS 518-02 A	996-09435