

Inductive sensors

The metal detectors

Cubic housings from from Page 600

- 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 608

- 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	608
	996-09391	IS 33-51	Flush	0.6 mm	NPN / NO	Cable, 3-wire	608
	996-09444	ISN 44-20	Flush	0.8 mm	NAMUR	Cable, 2 m, 2-wire	609
ø 6.5 mm	996-09488	ISZ 46-02	Flush	1.5 mm	PNP / NO	Cable, 2 m, 3-wire	613
	996-09487	ISZ 46-01	Flush	1.5 mm	NPN / NO	Cable, 2 m, 3-wire	613
	996-50590	IS 46-12	Flush	1.5 mm	PNP / NO	Plug, M8x1, 3-wire	614
	996-50613	IS 46-11 T	Flush	1.5 mm	NPN / NO	Plug, M8x1, 3-wire	614
	996-09401	IS 46-02	Flush	1.5 mm	PNP / NO	Cable, 2 m, 3-wire	614
	996-50586	IS 56-12	Quasi-flush	3 mm	PNP / NO	Plug, M8x1, 3-pin	616
	996-50632	IS 56-11 T	Quasi-flush	3 mm	NPN / NO	Plug, M8x1, 3-pin	616
	996-09963	IS 56-42	Quasi-flush	3 mm	PNP / NO	Plug, M12x1, 4-pin	616
	996-50390	IS 56-41	Quasi-flush	3 mm	NPN / NO	Plug, M12x1, 4-pin	616
	996-09409	IS 56-02	Quasi-flush	3 mm	PNP / NO	Cable, 2 m, 3-wire	616
M4	996-09408	IS 56-01	Quasi-flush	3 mm	NPN / NO	Cable, 2 m, 3-wire	616
	996-09397	IS 34-52	Flush	0.6 mm	PNP / NO	Cable, 2 m, 3-wire	610
	996-09395	IS 34-51	Flush	0.6 mm	NPN / NO	Cable, 2 m, 3-wire	610
M5	996-51486	IT 4 BD-PSK3	Flush	1 mm	PNP / NO	Cable, 3-wire	611
	697-01004	IMT 5-0B8-NS-K3	Flush	0.8 mm	NPN / NO	Cable 2 m	612
	697-01005	IMT 5-0B8-PS-K3	Flush	0.8 mm	PNP / NO	Cable 2 m	612
	697-01006	IMT 5-0B8-NS-M3	Flush	0.8 mm	NPN / NO	M8 3-pin	612
M8	697-01007	IMT 5-0B8-PS-M3	Flush	0.8 mm	PNP / NO	M8 3-pin	612
	697-01008	IMT 8-1B5-NS-K3	Flush	1.5 mm	NPN / NO	Cable 2 m	618
	697-01009	IMT 8-1B5-PS-K3	Flush	1.5 mm	PNP / NO	Cable 2 m	618
	697-01010	IMT 8-1B5-NS-L4	Flush	1.5 mm	NPN / NO	M12 4-pin	618
	697-01011	IMT 8-1B5-PS-L4	Flush	1.5 mm	PNP / NO	M12 4-pin	618
	697-01012	IMT 8-2N-NS-K3	Non-flush	2 mm	NPN / NO	Cable 2 m	620
	697-01013	IMT 8-2N-PS-K3	Non-flush	2 mm	PNP / NO	Cable 2 m	620
	697-01014	IMT 8-2N-NS-L4	Non-flush	2 mm	NPN / NO	M12 4-pin	620

Selection Table Inductive Sensors

Inductive sensors with standard switching distance							
Housing size	Part no.	Type code	Installation	Switching distance	Swichting output	Connection type	Page
M8	996-50624	IS 48-12T	Flush	1.5 mm	PNP / NO	Plug, M8x1, 3-pin	617
	996-50623	IS 48-11T	Flush	1.5 mm	NPN / NO	Plug, M8x1, 3-pin	617
	996-09405	IS 48-02	Flush	1.5 mm	PNP / NO	Cable, 2 m, 3-wire	617
	996-09404	IS 48-01	Flush	1.5 mm	NPN / NO	Cable, 2 m, 3-wire	617
	996-50587	IS 58-12T	Flush	3 mm	PNP / NO	Plug, M8x1, 3-pin	622
	996-50640	IS 58-11T	Flush	3 mm	NPN / NO	Plug, M8x1, 3-pin	622
	996-09965	IS 58-42	Flush	3 mm	PNP / NO	Plug, M8x1, 4-pin	622
	996-09964	IS 58-41	Flush	3 mm	NPN / NO	Plug, M8x1, 4-pin	622
	996-09413	IS 58-02	Flush	3 mm	PNP / NO	Cable, 2 m, 3-wire	622
	996-09412	IS 58-01	Flush	3 mm	NPN / NO	Cable, 2 m, 3-wire	622
	697-01015	IMT 8-2N-PS-L4	Non-flush	2 mm	PNP / NO	M12 4-pin	620
	M12	697-01016	IMT 12-2B-NS-K3	Flush	2 mm	NPN / NO	Cable 2 m
697-01017		IMT 12-2B-PS-K3	Flush	2 mm	PNP / NO	Cable 2 m	624
697-01018		IMT 12-2B-NS-L4	Flush	2 mm	NPN / NO	M12 4-pin	624
697-01019		IMT 12-2B-PS-L4	Flush	2 mm	PNP / NO	M12 4-pin	624
697-01020		IMT 12-4N-NS-K3	Non-flush	4 mm	NPN / NO	Cable 2 m	626
697-01021		IMT 12-4N-PS-K3	Non-flush	4 mm	PNP / NO	Cable 2 m	626
697-01022		IMT 12-4N-NS-L4	Non-flush	4 mm	NPN / NO	M12 4-pin	626
697-01023		IMT 12-4N-PS-L4	Non-flush	4 mm	PNP / NO	M12 4-pin	626
996-51479		IS 512-02 AI	Quasi-flush	6 mm	Analogue output 0 ... 10V / 4 ... 20 mA	Cable, 4-wire	645
M14		996-51193	IS 514-42	Flush	3 mm	PNP / NO	Plug, M12x1, 4-pin
M18	697-01024	IMT 18-5B-NS-K3	Flush	5 mm	NPN / NO	Cable 2 m	632
	697-01025	IMT 18-5B-PS-K3	Flush	5 mm	PNP / NO	Cable 2 m	632
	697-01026	IMT 18-5B-NS-L4	Flush	5 mm	NPN / NO	M12 4-pin	632
	697-01027	IMT 18-5B-PS-L4	Flush	5 mm	PNP / NO	M12 4-pin	632
	697-01028	IMT 18-8N-NS-K3	Non-flush	8 mm	NPN / NO	Cable 2 m	634
	697-01029	IMT 18-8N-PS-K3	Non-flush	8 mm	PNP / NO	Cable 2 m	634
	697-01030	IMT 18-8N-NS-L4	Non-flush	8 mm	NPN / NO	M12 4-pin	634
	697-01031	IMT 18-8N-PS-L4	Non-flush	8 mm	PNP / NO	M12 4-pin	634
M18	996-09435	IS 518-02 A	Quasi-flush	10 mm	Analogue output 0 ... 10V / 4 ... 20 mA	Cable, 4-wire	646
M30	697-01032	IMT 30-10B-NS-K3	Flush	10 mm	NPN / NO	Cable 2 m	639
	697-01033	IMT 30-10B-PS-K3	Flush	10 mm	PNP / NO	Cable 2 m	639
	697-01034	IMT 30-10B-NS-L4	Flush	10 mm	NPN / NO	M12 4-pin	639
	697-01035	IMT 30-10B-PS-L4	Flush	10 mm	PNP / NO	M12 4-pin	639
	697-01036	IMT 30-15N-NS-K3	Non-flush	15 mm	NPN / NO	Cable 2 m	640
	697-01037	IMT 30-15N-PS-K3	Non-flush	15 mm	PNP / NO	Cable 2 m	640
	697-01038	IMT 30-15N-NS-L4	Non-flush	15 mm	NPN / NO	M12 4-pin	640
	697-01039	IMT 30-15N-PS-L4	Non-flush	15 mm	PNP / NO	M12 4-pin	640

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	615
	697-01041	IDT 6-2B-NS-K3	Flush	2 mm	NPN / NO	Cable 2 m	615
	697-01042	IDT 6-2B-PS-M3	Flush	2 mm	PNP / NO	M8 3-pin	615
	697-01043	IDT 6-2B-NS-M3	Flush	2 mm	NPN / NO	M8 3-pin	615
M8	697-01044	IMT 8-2B-PS-K3	Flush	2 mm	PNP / NO	Cable 2 m	620
	996-51456	IS 58-14-S	Non-flush	6 mm	PNP / NO	Plug, M8x1, 3-pin	623
	996-51470	IS 58-13-S	Non-flush	6 mm	NPN / NO	Plug, M8x1, 3-pin	623
	996-51460	IS 58-44-S	Non-flush	6 mm	PNP / NO	Plug, M8x1, 4-pin	623
	996-51463	IS 58-43-S	Non-flush	6 mm	NPN / NO	Plug, M8x1, 4-pin	623
	996-51461	IS 58-04-S	Non-flush	6 mm	PNP / NO	Cable, 3-wire	623
	996-51465	IS 58-03-S	Non-flush	6 mm	NPN / NO	Cabel, 3-wire	623
	697-01045	IMT 8-2B-NS-K3	Flush	2 mm	NPN / NO	Cable 2 m	620
	697-01046	IMT 8-2B-PS-M3	Flush	2 mm	PNP / NO	M8 3-pin	620
	697-01047	IMT 8-2B-NS-M3	Flush	2 mm	NPN / NO	M8 3-pin	620
M12	996-51480	IT 12 BM-PSL4	Flush	6 mm	PNP / NO	Plug, M12x1, 4-pin	628
	996-51481	IT 12 NBM-PSL4	Non-flush	10 mm	PNP / NO	Plug, M12x1, 4-pin	628
	996-09969	IS 512-42	Quasi-flush	6 mm	PNP / NO	Plug, M12x1, 4-pin	629
	996-09968	IS 512-41	Quasi-flush	6 mm	NPN / NO	Plug, M12x1, 4-pin	629
	996-09421	IS 512-02	Quasi-flush	6 mm	PNP / NO	Cable, 2 m, 3-wire	629

Inductive sensors with increased switching distance

Housing size	Part no.	Type code	Installation	Switching distance	Switching output	Connection type	Page
M12	996-09420	IS 512-01	Quasi-flush	6 mm	NPN / NO	Cable, 2 m, 3-wire	629
	996-51449	IS 512-44-S	Non-flush	10 mm	PNP / NO	Plug, M12x1, 4-pin	630
	996-09970	IS 512-43	Non-flush	10 mm	NPN / NO	Plug, M12x1, 4-pin	630
	996-51458	IS 512-04-S	Non-flush	10 mm	PNP / NO	Cable, 2 m, 3-wire	630
	996-51472	IS 512-03-S	Non-flush	10 mm	NPN / NO	Cable, 2 m, 3-wire	630
	697-01048	IMT 12-4B-PS-K3	Flush	4 mm	PNP / NO	Cable 2 m	626
	697-01049	IMT 12-4B-NS-K3	Flush	4 mm	NPN / NO	Cable 2 m	626
	697-01050	IMT 12-4B-PS-L4	Flush	4 mm	PNP / NO	M12 4-pin	626
	697-01051	IMT 12-4B-NS-L4	Flush	4 mm	NPN / NO	M12 4-pin	626
	M18	697-01052	IMT 18-8B-PS-K3	Flush	8 mm	PNP / NO	Cable 2 m
697-01053		IMT 18-8B-NS-K3	Flush	8 mm	NPN / NO	Cable 2 m	634
697-01054		IMT 18-8B-PS-L4	Flush	8 mm	PNP / NO	M12 4-pin	634
697-01055		IMT 18-8B-NS-L4	Flush	8 mm	NPN / NO	M12 4-pin	634
996-09973		IS 518-42	Quasi-flush	12 mm	PNP / NO	Plug, M12x1, 4-pin	636
996-09972		IS 518-41	Quasi-flush	12 mm	NPN / NO	Plug, M12x1, 4-pin	636
996-09429		IS 518-02	Quasi-flush	12 mm	PNP / NO	Cable, 2 m, 3-wire	636
996-09428		IS 518-01	Quasi-flush	12 mm	NPN / NO	Cable, 2 m, 3-wire	636
996-51453		IS 518-44-S	Non-flush	20 mm	PNP / NO	Plug, M12x1, 4-pin	637
996-50327		IS 518-43-S	Non-flush	20 mm	NPN / NO	Plug, M12x1, 4-pin	637
M30	996-51450	IS 518-04-S	Non-flush	20 mm	PNP / NO	Cable, 3-wire	637
	996-51482	IT 18 BM-PSL4	Flush	10 mm	PNP / NO	Plug, M12x1, 4-pin	638
	996-51483	IT 18 NBM-PSL4	Non-flush	20 mm	PNP / NO	Plug, M12x1, 4-pin	638
	697-01056	IMT 30-15B-PS-K3	Flush	15 mm	PNP / NO	Cable 2 m	640
	697-01057	IMT 30-15B-NS-K3	Flush	15 mm	NPN / NO	Cable 2 m	640
	697-01058	IMT 30-15B-PS-L4	Flush	15 mm	PNP / NO	M12 4-pin	640
	697-01059	IMT 30-15B-NS-L4	Flush	15 mm	NPN / NO	M12 4-pin	640
	996-09905	IS 530-42	Quasi-flush	22 mm	PNP / NO	Plug, M12x1, 4-pin	642
	996-50673	IS 530-41	Quasi-flush	22 mm	NPN / NO	Plug, M12x1, 4-pin	642
	996-09437	IS 530-02	Quasi-flush	22 mm	PNP / NO	Cable, 2 m, 3-wire	642
M30	996-09436	IS 530-01	Quasi-flush	22 mm	NPN / NO	Cable, 2 m, 3-wire	642
	996-51454	IS 530-44-S	Quasi-flush	22 mm	PNP / NO	Plug, M12x1, 4-pin	643
	996-51452	IS 530-04-S	Quasi-flush	22 mm	PNP / NO	Cable, 2 m, 3-wire	643
	996-09438	IS 530-03	Quasi-flush	22 mm	NPN / NO	Cable, 2 m, 3-wire	643
	996-51484	IT 30 BM-PSL4	Flush	20 mm	PNP / NO	Plug, M12x1, 4-pin	644
	996-51485	IT 30 NBM-PSL4	Non-flush	40 mm	PNP / NO	Plug, M12x1, 4-pin	644

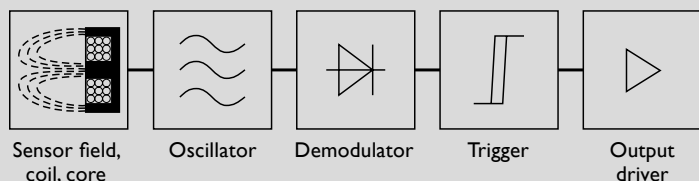
Cubic inductive sensors

Housing size	Part no.	Type code	Installation	Switching distance	Switching output	Connection type	Page
40 x 26 x 12 mm ³	697-01060	IT 12-4B-NS-K3	Flush	4 mm	NPN / NO	Cable 2 m	604
	697-01061	IT 12-4B-PS-K3	Flush	4 mm	PNP / NO	Cable 2 m	604
	697-01062	IT 12-4B-NS-M3	Flush	4 mm	NPN / NO	M8 3-pin	604
	697-01063	IT 12-4B-PS-M3	Flush	4 mm	PNP / NO	M8 3-pin	604
	697-01064	IT 12-8N-NS-K3	Non-flush	8 mm	NPN / NO	Cable 2 m	604
	697-01065	IT 12-8N-PS-K3	Non-flush	8 mm	PNP / NO	Cable 2 m	604
	697-01066	IT 12-8N-NS-M3	Non-flush	8 mm	NPN / NO	M8 3-pin	604
16 x 8 x 5 mm ³	697-01067	IT 12-8N-PS-M3	Non-flush	8 mm	PNP / NO	M8 3-pin	604
	697-01068	IT 8-1B5K-PS-K3	Flush	1.5 mm	PNP / NO	Strand, 0.5 m, 3-wire	600
27 x 10 x 7 mm ³	697-01069	IT 8-1B5K-NS-K3	Flush	1.5 mm	NPN / NO	Strand, 0.5 m, 3-wire	600
	697-01070	IT10-4N-PS-K3	Non-flush	4 mm	PNP / NO	Cable 2 m	601
25 x 5 x 5 mm ³	697-01071	IT10-4N-NS-K3	Non-flush	4 mm	NPN / NO	Cable 2 m	601
	996-50585	IS 455-02	Flush	0.8 mm	PNP / NO	Cable, 2 m, 3-wire	602
50 x 8 x 8 mm ³	996-50607	IS 455-01	Flush	0.8 mm	NPN / NO	Cable, 2 m, 3-wire	602
	996-51280	IS 588-02-X	Quasi-flush	3 mm	PNP / NO	Plug, M8x1, 3-pin	603
40 x 8 x 8 mm ³	996-50589	IS 588-02	Quasi-flush	3 mm	PNP / NO	Cable, 2 m, 3-wire	603
	996-50589	IS 588-01	Quasi-flush	3 mm	NPN / NO	Cable, 2 m, 3-wire	603
40 x 40 x 55 mm ³	810-50001	IT 40 BD-PAL 4	Flush	20 mm	PNP, antivalent (N.O/N.C.)	Plug, M12x1, 4-pin	606
	810-50006	IT 40 NB-PAL4	Non-flush	35 mm	PNP, antivalent (N.O/N.C.)	Plug, M12x1, 4-pin	606
	810-50007	IT 40 NB-NAL4	Non-flush	35 mm	PNP, antivalent (N.O/N.C.)	Plug, M12x1, 4-pin	606
	810-50004	IT 40 B-ACSL 4	Flush	15 mm	AC / DC / NO	Plug, M12x1, 4-pin	607
	810-50005	IT 40 BD-ACSL 4	Flush	20 mm	AC / DC / NO	Plug, M12x1, 4-pin	607
	810-50008	IT 40 NB-ACSL 4	Non-flush	35 mm	AC / DC / NO	Plug, M12x1, 4-pin	607

Inductive Sensors

System description

Method of function

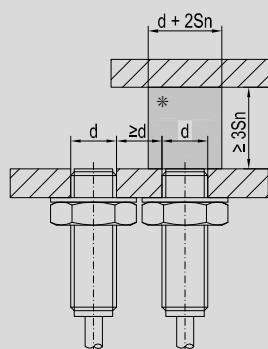


Inductive sensors exploit the interaction of metallic conductors with their alternating electromagnetic fields. Eddy currents are induced in the conductor. They draw energy from the field, reducing the oscillation amplitude. Inductive sensors evaluate this change. The area through which the high-frequency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

Applications

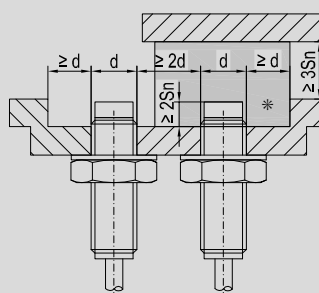
Inductive sensors are suitable for controlling and monitoring machine processes, and for providing signals in counting tasks where metals are involved. In particular, they are characterised by their immunity to vibrations, impacts, dust and dampness, and operate with extreme precision.

Flush-mountable proximity switches



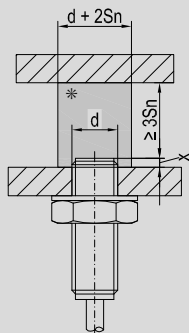
Flush-mountable proximity switches can be embedded in metal up to the active area. The distance to any metal surfaces opposite must be $\geq 3 S_n$ and the distance between two proximity switches (mounted in series) must be $\geq d$.

Non-flush mountable proximity switches



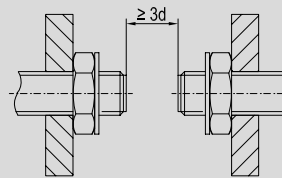
Non-flush mountable proximity switches have no metal housing near the active area. They have a free zone. For this reason they experience no pre-damping of the sensor field and can – unlike flush-mountable sensors – be used at longer switching distances. A metal-free zone, however, must always be maintained 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
∅ 6.5	1
M 8	1
8 x 8	1
M 12	2
M 18	4
M 30	6

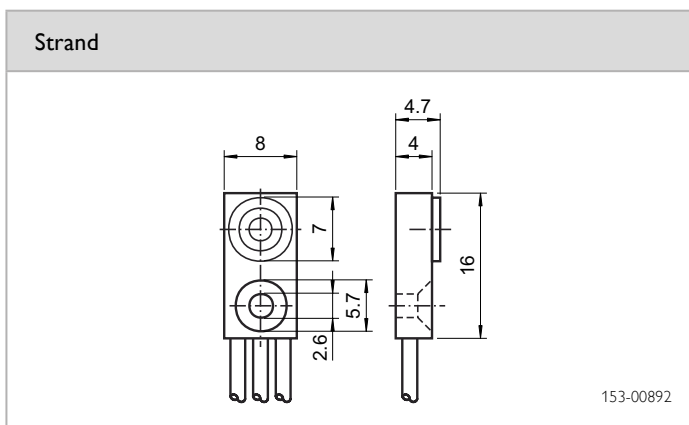
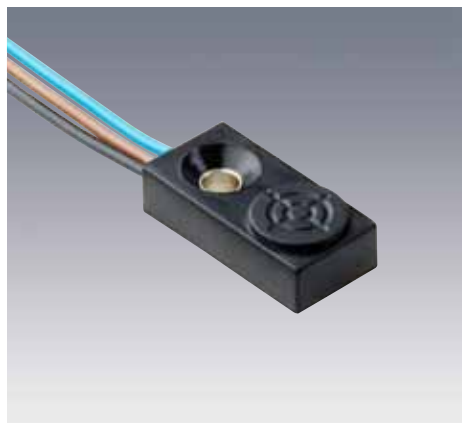
Mounting in stainless steel

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

* Metal-free zone

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

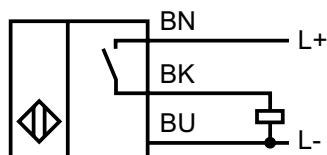
Operating voltage, +U _B	5 ... 30V DC
No-load current, I ₀	≤ 15 mA
Output current, I _e	≤ 100 mA
Voltage drop, U _D	≤ 1.5 V
Residual current, I _r	≤ 10 μA
Protective circuits	Short-circuit protection (Q)
Switching output, Q	PNP / NPN (see Selection Table)
Output function	N.O.
Switching frequency, f (ti/tp 1:1)	≤ 1200 Hz

Mechanical data

Dimensions	16 x 4.7 x 8 mm ³
Enclosure rating	IP 67 ¹
Material, housing	PA
Material, front surface	PA
Type of connection	See Selection Table
Ambient temperature: operation	-25 ... +70 °C
Vibration and impact resistance	EN 60947-5-2

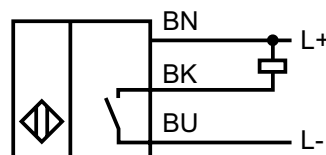
¹With connected IP 67 plug

Connection, 3-wire (PNP)



154-00294

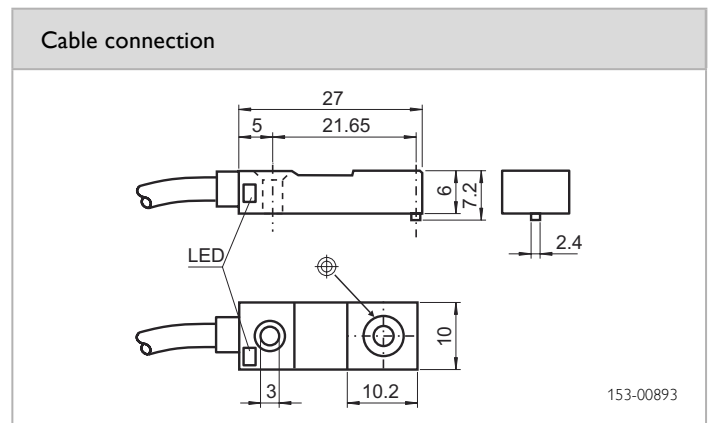
Connection, 3-wire (NPN)



154-00293

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
1.5 mm	Flush	NPN	Strand, 0.5 m, 3-wire	IT 8-1B5K-NS-K3	697-01069

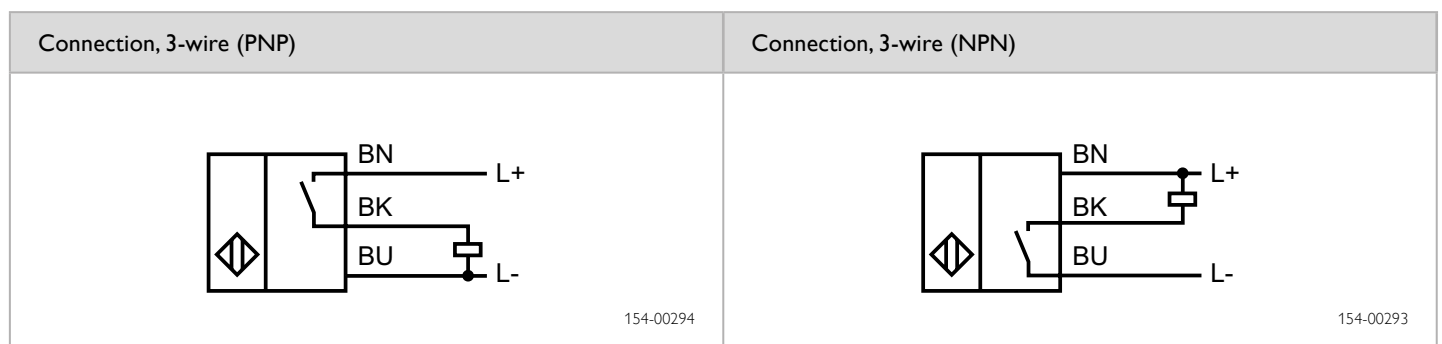
Inductive sensor in cubic housing



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 _B	10 ... 30V DC	Dimensions	27 × 7.2 × 10 mm ³
No-load current, I ₀	≤ 10 mA	Enclosure rating	IP 67 ¹
Output current, I _e	≤ 100 mA	Material, housing	PPS
Voltage drop, U _D	≤ 3V	Material, front surface	PPS
Residual current, I _r	≤ 0.5 mA	Type of connection	See Selection Table
Protective circuits	Reverse-polarity protection, U _B / short-circuit protection (Q) ²	Ambient temperature: operation	-25 ... +70 °C
Switching output, Q	PNP / NPN (see Selection Table)	Vibration and impact resistance	EN 60947-5-2
Output function	N.O.		
Switching frequency, f (ti/tp 1:1)	≤ 1000 Hz		

12

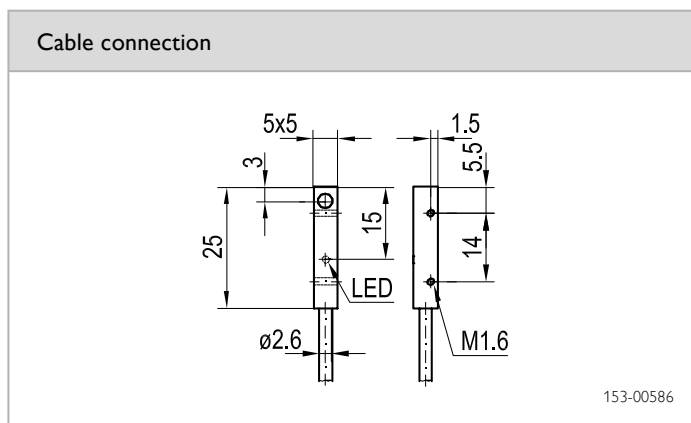
¹With connected IP 67 plug ²PNP variants only



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
4 mm	Non-flush	NPN	Cable, 2 m, 3-wire	IT 10-4N-NS-K3	697-01071

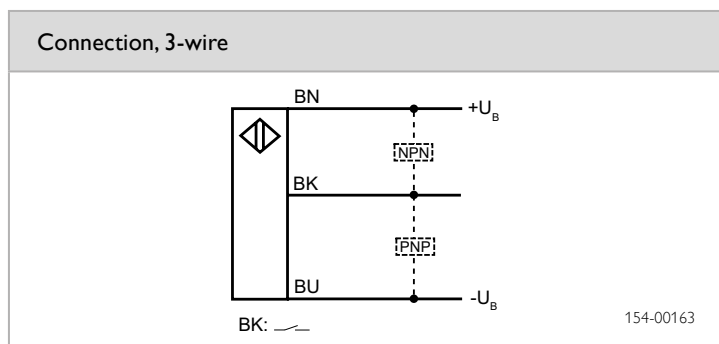
IS 455

Inductive sensor in cubic housing



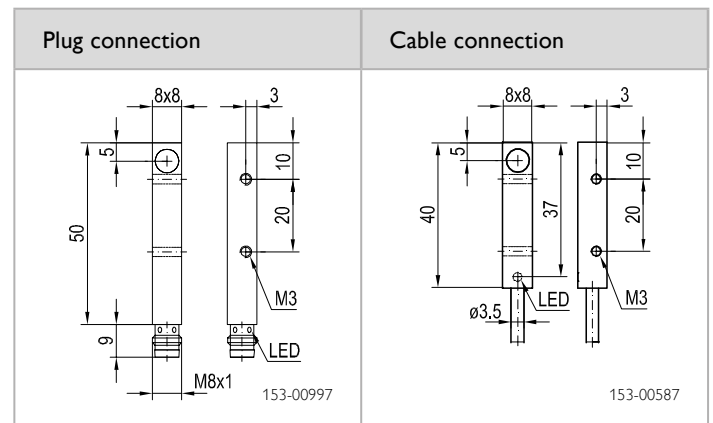
Sensor data		Functions	
Switching distance	0.8 mm	Indicator LED, yellow	Switching output indicator
Repeatability	0.01 mm ¹		
Hysteresis	≤ 10 % ²		
Reduction factor; Al	0.60		
Reduction factor; Cu	0.60		
Reduction factor; V2A	0.85		
Reduction factor; steel FE 360	1.00		
Reduction factor; brass	0.70		
Electrical data		Mechanical data	
Operating voltage, +U _B	10 ... 30V DC ³	Dimensions	5 × 5 × 25 mm ³
No-load current, I ₀	≤ 10 mA	Mounting	Flush
Output current, I _e	≤ 200 mA	Enclosure rating	IP 67 ⁴
Voltage drop, U _D	≤ 2V at 200 mA	Material, housing	Brass, chrome-plated
Protective circuits	Reverse-polarity protection, U _B / short-circuit protection (Q) / induction protection	Material, front surface	Polyester
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)	≤ 5000 Hz	Vibration and impact resistance	IEC 60947-5-2 / 7.4

¹ U_B = 20 ... 30V DC, T_A = 23 °C ± 5 °C ² Refers to switching distance ³ Max. 20 % ripple, within U_B ⁴ 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
0.8 mm	NPN	Cable, 2m, 3-wire	IS 455-01	996-50607

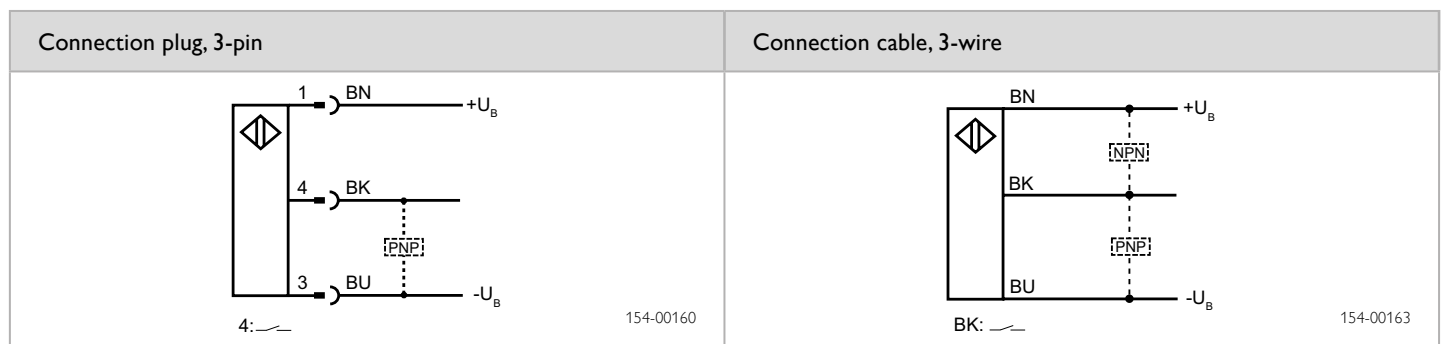
Inductive sensor in cubic housing



Sensor data		Functions	
Switching distance	3 mm	Indicator LED, yellow	Switching output indicator
Repeatability	0.15 mm ¹		
Hysteresis	≤ 10 % ²		
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 _B	10 ... 30V DC ³	Dimensions (plug device)	8 × 8 × 59 mm ³
No-load current, I ₀	≤ 10 mA	Dimensions (cable device)	8 × 8 × 40 mm ³
Output current, I _e	≤ 200 mA	Mounting	Quasi-flush
Voltage drop, U _D	≤ 2V at 200 mA	Enclosure rating	IP 67 ⁴
Protective circuits	Reverse-polarity protection, U _B / 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

12

¹ U_B = 20 ... 30V DC, T_A = 23 °C ± 5 °C ² Refers to switching distance ³ Max. 20 % ripple, within U_B ⁴ With connected IP 67 plug



Switching distance	Switching output	Type of connection	Part number	Article number
3 mm	PNP	Plug, M8x1, 3-pin	IS 588-02-X	996-51280
3 mm	PNP	Cable, 2 m, 3-wire	IS 588-02	996-50589
3 mm	NPN	Cable, 2 m, 3-wire	IS 588-01	996-50650

IT 12

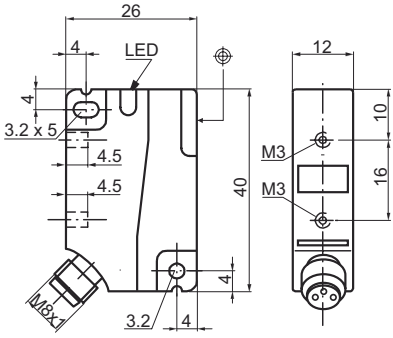
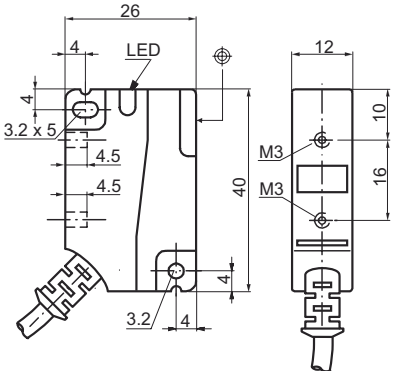
Inductive sensor in cubic housing

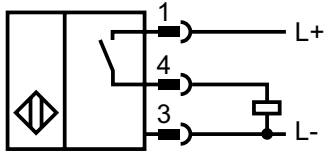
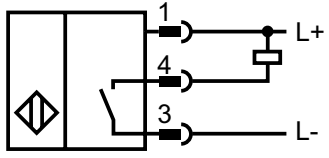
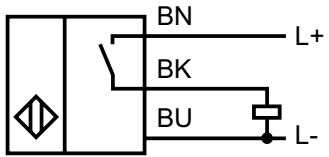
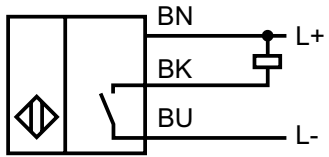


Sensor data		Functions	
Switching distance (Flush)	4 mm	Indicator LED, yellow	Switching output indicator
Ensured switching distance (Flush)	0 ... 3.24 mm		
Switching distance (Non-flush)	8 mm		
Ensured switching distance (Non-flush)	0 ... 6.48 mm		
Hysteresis	~ 5 %		
Reduction factor; AI	0.3		
Reduction factor; Cu	0.2		
Reduction factor; V2A	0.7		
Electrical data		Mechanical data	
Operating voltage, +U _B	10 ... 30V DC	Dimensions	40 x 26 x 12 mm ³
No-load current, I ₀	≤ 15 mA	Enclosure rating	IP 67 ¹
Output current, I _e	≤ 250 mA	Material, housing	PA
Voltage drop, U _D	≤ 2.5 V	Material, front surface	PA
Residual current, I _r	≤ 0.01 mA	Type of connection	See Selection Table
Protective circuits	Reverse-polarity protection, U _B / short-circuit protection (Q)	Ambient temperature: operation	-25 ... +70 °C
Switching output, Q	PNP / NPN (see Selection Table)	Vibration and impact resistance	EN 60947-5-2
Output function	N.O.		
Switching frequency, f (ti/tp 1:1)	≤ 1400 Hz		

¹With connected IP 67 plug

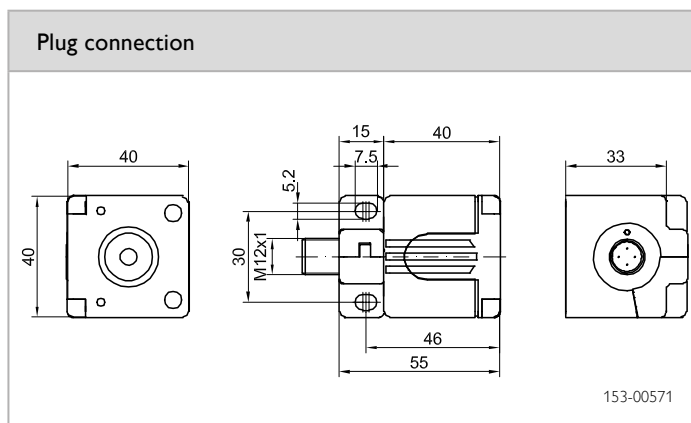
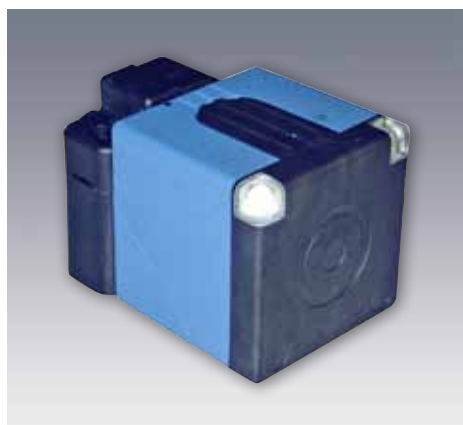
Switching distance	Mounting	Switching output	Type of connection	Part number	Article number
4 mm	Flush	PNP	Plug, M8x1, 3-pin	IT 12-4B-PS-M3	697-01063
4 mm	Flush	NPN	Plug, M8x1, 3-pin	IT 12-4B-NS-M3	697-01062
4 mm	Flush	PNP	Cable, 2 m, 3-wire	IT 12-4B-PS-K3	697-01061
4 mm	Flush	NPN	Cable, 2 m, 3-wire	IT 12-4B-NS-K3	697-01060
8 mm	Non-flush	PNP	Plug, M8x1, 3-pin	IT 12-8N-PS-M3	697-01067
8 mm	Non-flush	NPN	Plug, M8x1, 3-pin	IT 12-8N-NS-M3	697-01066
8 mm	Non-flush	PNP	Cable, 2 m, 3-wire	IT 12-8N-PS-K3	697-01065
8 mm	Non-flush	NPN	Cable, 2 m, 3-wire	IT 12-8N-NS-K3	697-01064

Plug connection	Cable connection
 <p style="text-align: right;">153-00889</p>	 <p style="text-align: right;">153-00888</p>

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

IT 40

Inductive sensor in cubic housing



153-00571

Sensor data		Functions	
Switching distance	15 mm / 20 mm / 35 mm (see Selection Table)	Indicator LED, green	Operating voltage indicator
Reduction factors	See Selection Table	Indicator LED, yellow	Switching output indicator
		Default setting	Max. switching distance
Electrical data		Mechanical data	
Operating voltage, +U _B	15 ... 34V DC	Dimensions	40 x 55 x 40 mm ³
No-load current, I ₀	≤ 30 mA ¹	Mounting	Flush / non-flush See Selection Table
Output current, I _e	≤ 200 mA	Enclosure rating	IP 67 ²
Protective circuits	Short-circuit protection (Q) / overload protection / induction protection	Material, housing	PBT
Power On Delay	100 ms	Type of connection	Plug, M12x1, 4-pin
Switching output, Q	PNP / NPN, antivalent (see Selection Table)	Ambient temperature: operation	-25 ... +85 °C ³
Output function	N.O. / N.C. (see Selection Table)	Ambient temperature: storage	-40 ... +85 °C
Switching frequency, f (ti/tp 1:1)	See Selection Table	Weight	130 g
Connection, BK	N.O.	Vibration and impact resistance	EN 60947-5-2
Connection, WH	N.C.		

¹ At 24V DC ² With connected IP 67 plug ³ Except IT 40 NB-NAL4 (-25 ... +70 °C)

Connection, 4-pin (PNP)	Connection, 4-pin (NPN)	Flush mounting	Non-flush mounting
<p>154-00193</p>	<p>154-00494</p>	<p>155-00087</p>	<p>155-00086</p>

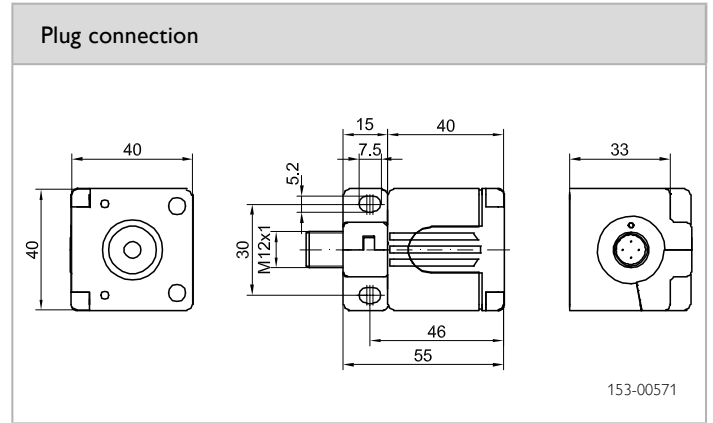
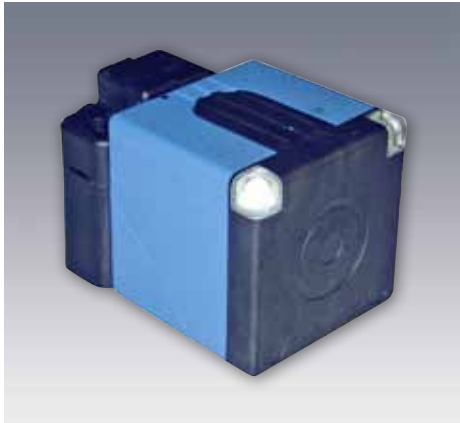
Switching distance	Mounting	Switching output	Switching frequency, f (ti/tp 1:1)	Reduction factors	Part number	Article number
15 mm	Flush ⁴	PNP, antivalent (N.O./N.C.)	100 Hz	Al: 0.20 / Cu: 0.10 / V2A: 0.85	IT 40 B-PAL4	810-50000
15 mm	Flush ⁴	NPN, antivalent (N.O./N.C.)	100 Hz	Al: 0.20 / Cu: 0.10 / V2A: 0.85	IT 40 B-NAL4	810-50002
20 mm	Flush ⁵	PNP, antivalent (N.O./N.C.)	30 Hz	Al: 0.30 / Cu: 0.30 / V2A: 0.70	IT 40 BD-PAL4	810-50001
20 mm	Flush ⁵	NPN, antivalent (N.O./N.C.)	30 Hz	Al: 0.30 / Cu: 0.30 / V2A: 0.70	IT 40 BD-NAL4	810-50003
35 mm	Non-flush ⁶	PNP, antivalent (N.O./N.C.)	30 Hz	Al: 0.45 / Cu: 0.40 / V2A: 0.70	IT 40 NB-PAL4	810-50006
35 mm	Non-flush ⁶	NPN, antivalent (N.O./N.C.)	30 Hz	Al: 0.45 / Cu: 0.40 / V2A: 0.70	IT 40 NB-NAL4	810-50007

⁴ e > 75 mm, r > 25 mm, c > 30 mm

⁵ e > 80 mm, r > 30 mm, c > 40 mm

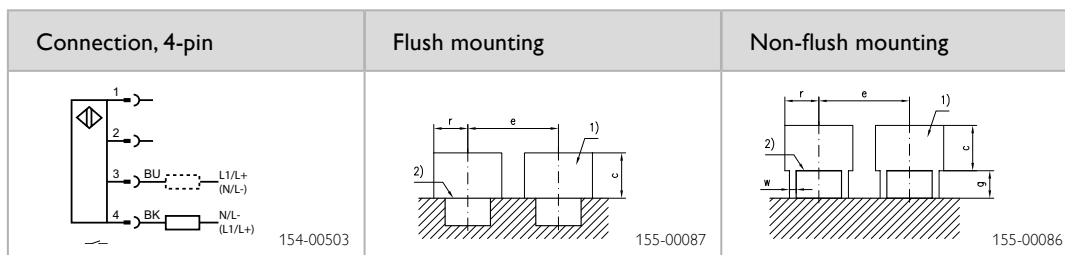
⁶ e > 160 mm, r > 80 mm, g > 40 mm, w > 15 mm, c > 90 mm

Inductive sensor in cubic housing, AC/DC



Sensor data		Functions	
Switching distance	15 mm / 20 mm / 35 mm (see Selection Table)	Indicator LED, green	Operating voltage indicator
Reduction factors	See Selection Table	Indicator LED, yellow	Switching output indicator
		Default setting	Max. switching distance
Electrical data		Mechanical data	
Operating voltage, +U _B	20 ... 320V DC / 20 ... 265 V AC	Dimensions	40 × 55 × 40 mm ³
No-load current, I ₀	1.5 mA ¹	Mounting	Flush / non-flush (see Selection Table)
Output current, I _e	≤ 300 mA	Enclosure rating	IP 67 ²
Protective circuits	Induction protection	Material, housing	PBT
Power On Delay	100 ms	Type of connection	Plug, M12x1, 4-pin
Switching output, Q	AC / DC (see Selection Table)	Ambient temperature: operation	-25 ... +85 °C ³
Output function	N.O.	Ambient temperature: storage	-40 ... +85 °C
Switching frequency, f (ti/tp 1:1)	See Selection Table	Weight	130 g
		Vibration and impact resistance	EN 60947-5-2

¹ at 24V ² With connected IP 67 plug ³ Except IT 40 NB-ACSL4 (-25 ... +70 °C)

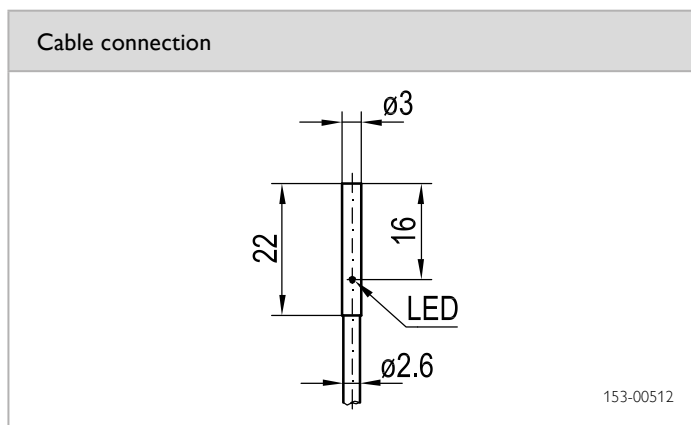
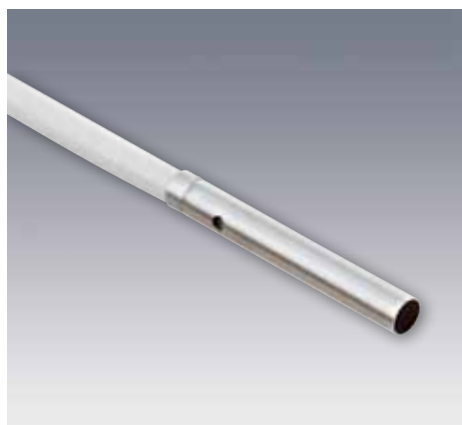


Switching distance	Mounting	Switching output	Switching frequency, f (ti/tp 1:1)	Reduction factors	Part number	Article number
15 mm	Flush ⁴	AC/DC	25 Hz (AC) / 50 Hz (DC)	Al: 0.20 / Cu: 0.10 / V2A: 0.85	IT 40 B-ACSL4	810-50004
20 mm	Flush ⁵	AC/DC	25 Hz (AC) / 30 Hz (DC)	Al: 0.20 / Cu: 0.30 / V2A: 0.70	IT 40 BD-ACSL4	810-50005
35 mm	Non-flush ⁶	AC/DC	25 Hz (AC) / 30 Hz (DC)	Al: 0.45 / Cu: 0.40 / V2A: 0.70	IT 40 NB-ACSL4	810-50008

⁴ e > 75 mm, r > 25 mm, c > 30 mm ⁵ e > 80 mm, r > 30 mm, c > 40 mm ⁶ e > 160 mm, r > 80 mm, g > 40 mm, w > 15 mm, c > 90 mm

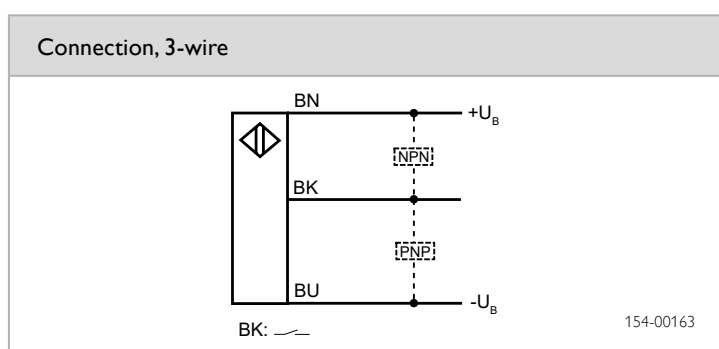
IS 33

Inductive sensor with stainless steel housing

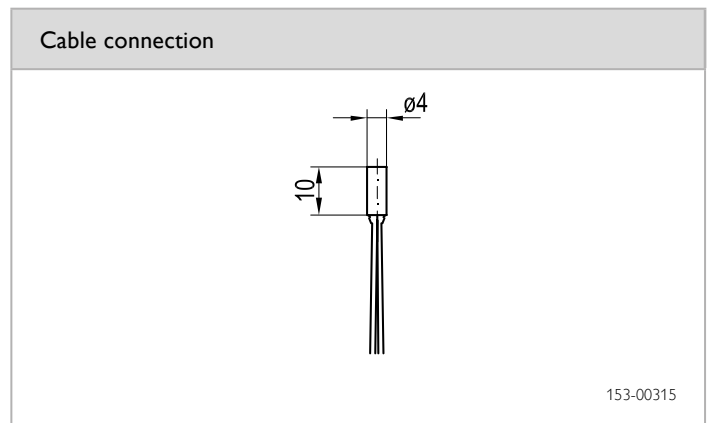
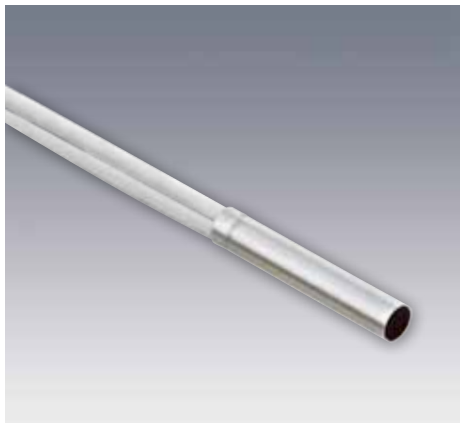


Sensor data		Functions	
Switching distance	0.6 mm	Indicator LED, yellow	Switching output indicator
Reduction factor; Al	0.55		
Reduction factor; Cu	0.50		
Reduction factor; V2A	0.80		
Electrical data		Mechanical data	
Operating voltage, +U _B	10 ... 30V DC ¹	Dimensions	Ø 3 × 22 mm
No-load current, I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

¹ Max. 20 % ripple, within U_B ² 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
0.6 mm	NPN	Cable, 3-wire	IS 33-51	996-09391

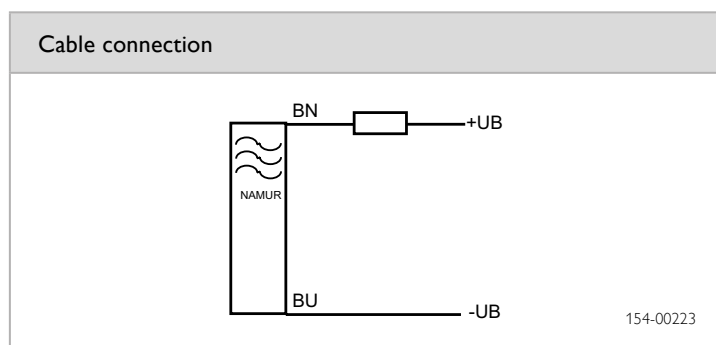


Sensor data	
Switching distance	0.8 mm
Repeatability	0.01 mm ¹
Reduction factor, Al	0.50
Reduction factor, Cu	0.45
Reduction factor, V2A	0.80
Reduction factor, steel FE 360	1.00
Reduction factor, brass	0.55

Electrical data	
Operating voltage, +U _B (NAMUR* conditions)	7.7 ... 9 V DC ²
Operating voltage, +U _B (not NAMUR*)	5 ... 30 V DC ²
Operating resistance, NAMUR	1 kΩ
Recommended operating resistance	1 kΩ (5 ... 10 V) / 2.2 kΩ (10 ... 20 V) / 4.7 kΩ (20 ... 30 V)
Output current, I _e (dampened / undampened)	≤ 1 mA / ≥ 2.2 mA
Protective circuits	Short-circuit protection (Q)
Switching frequency, f (ti/tp 1:1)	≤ 10000 Hz

Mechanical data	
Dimensions	Ø 4 x 10 mm
Mounting	Flush
Enclosure rating	IP 67 ³
Material, housing	Stainless steel, V2A
Material, front surface	PA 66
Type of connection	See Selection Table
Ambient temperature: operation	-25 ... 70 °C
Vibration and impact resistance	IEC 60947-5-2 / 7.4

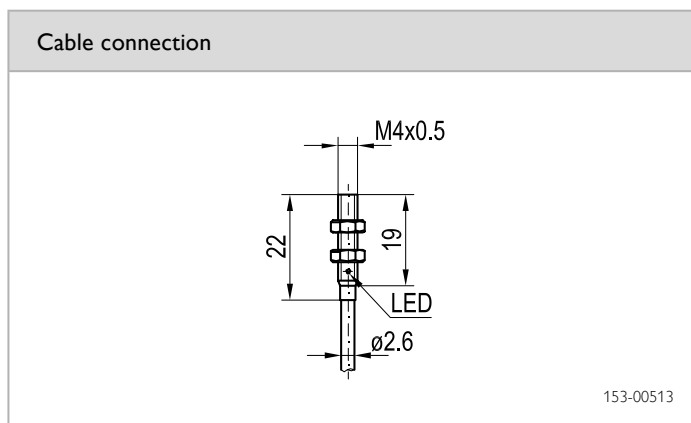
¹ U_B = 7.7 ... 9 V DC, T_A = 23 °C ± 5 °C ² Max. 20 % ripple, within U_B ³ With connected IP 67 plug
 * Standardization Association for Measurement and Control in the Chemical and Pharmaceutical Industries



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

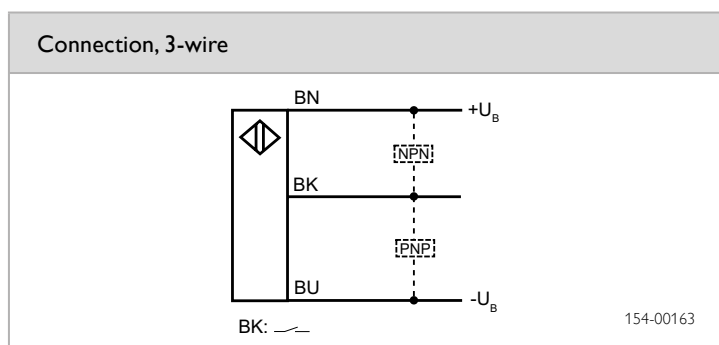
IS 34

Inductive sensor with stainless steel housing



Sensor data		Functions	
Switching distance	0.6 mm	Indicator LED, yellow	Switching output indicator
Repeatability	0.01 mm ¹		
Hysteresis	~ 10 % ²		
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 _B	10 ... 30V DC ³	Dimensions	M4 x 22 mm
No-load current, I ₀	≤ 10 mA	Mounting	Flush
Output current, I _e	≤ 100 mA	Enclosure rating	IP 67 ⁴
Voltage drop, U _D	≤ 2.0V at 100 mA	Material, housing	Stainless steel, V2A
Protective circuits	Reverse-polarity protection, U _B / short-circuit protection (Q) / induction protection	Material, front surface	Polyester
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)	≤ 5000 Hz	Vibration and impact resistance	IEC 60947-5-2 / 7.4

¹ U_B = 20 ... 30V DC, T_A = 23 °C ± 5 °C ² Refers to switching distance ³ Max. 20 % ripple, within U_B ⁴ With connected IP 67 plug

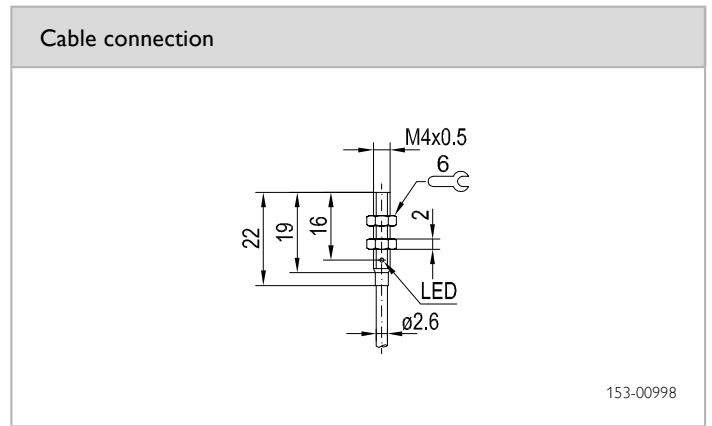


Switching distance	Switching output	Type of connection	Part number	Article number
0.6 mm	PNP	Cable, 2 m, 3-wire	IS 34-52	996-09397
0.6 mm	NPN	Cable, 2 m, 3-wire	IS 34-51	996-09395

Inductive sensor with stainless steel housing

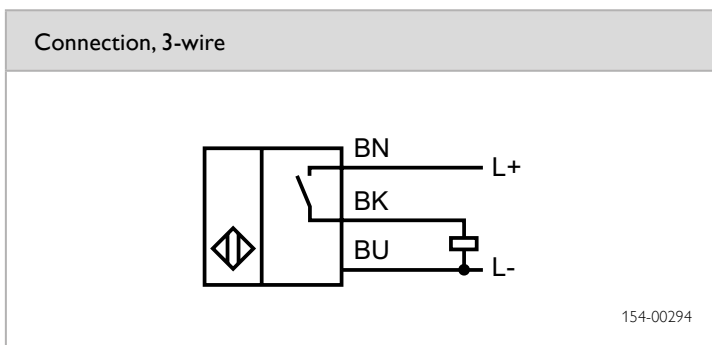


CE



Sensor data		Functions	
Switching distance	1 mm	Indicator LED, yellow	Switching output indicator
Hysteresis	1 ... 15 %		
Electrical data		Mechanical data	
Operating voltage, +U _B	10 ... 30V DC	Dimensions	M4 x 22 mm
Output current, I _e	≤ 100 mA	Mounting	Flush
Protective circuits	Reverse-polarity protection, U _B	Enclosure rating	IP 67 ¹
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

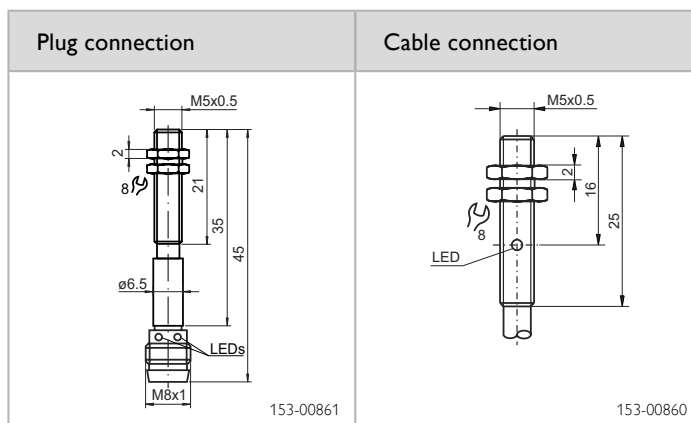
¹ With connected IP 67 plug



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



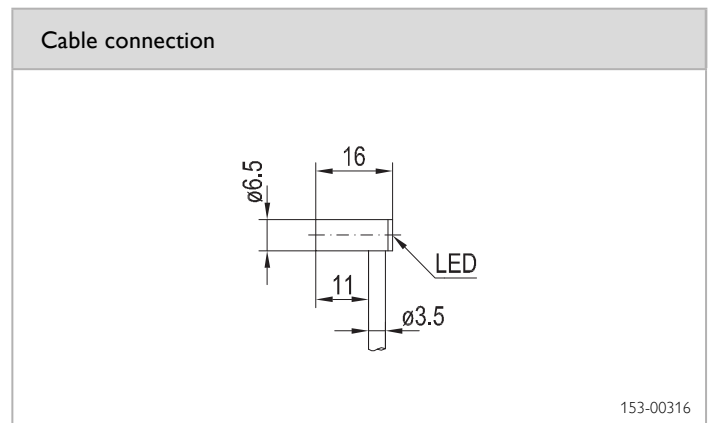
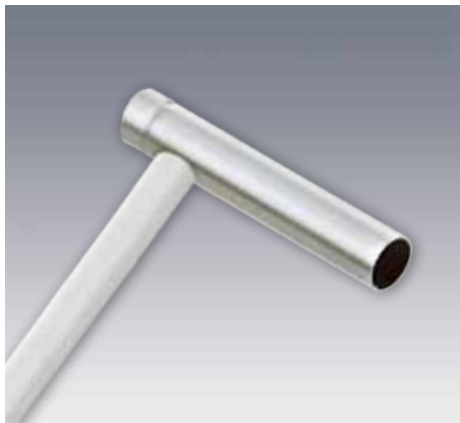
Sensor data		Functions	
Switching distance	0.8 mm	Indicator LED, yellow	Switching output indicator
Ensured switching distance	0 ... 0.648 mm		
Reduction factor; Al	0.45		
Reduction factor; Cu	0.40		
Reduction factor; V2A	0.85 / 0.77 ¹		
Electrical data		Mechanical data	
Operating voltage, +U _B	10 ... 30V DC	Dimensions (plug device)	M5 x 45 mm
No-load current, I ₀	See Selection Table	Dimensions (cable device)	M5 x 25 mm
Output current, I _e	See Selection Table	Mounting	Flush
Voltage drop, U _D	≤ 3V	Enclosure rating	IP 67 ²
Protective circuits	Reverse-polarity protection, U _B / short-circuit protection (Q)	Material, housing	Stainless steel
Switching output, Q	PNP / NPN (see Selection Table)	Material, front surface	PBT / PC ¹
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

¹ IMT 5-0B8-PS-K3 ² With connected IP 67 plug

Connection plug, 3-pin (PNP)	Connection plug, 3-pin (NPN)	Connection cable, 3-wire (PNP)	Connection cable, 3-wire (NPN)
154-00294	154-00293	154-00294	154-00293

Switching distance	Switching output	Type of connection	No-load current, I ₀	Output current, I _e	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	NPN	Plug, M8x1, 3-pin	≤ 12 mA	0,1 ... 100 mA	IMT 5-0B8-NS-M3	697-01006
0.8 mm	PNP	Cable, 2 m, 3-wire	≤ 10 mA	0 ... 200 mA	IMT 5-0B8-PS-K3	697-01005
0.8 mm	NPN	Cable, 2 m, 3-wire	≤ 12 mA	0 ... 100 mA	IMT 5-0B8-NS-K3	697-01004

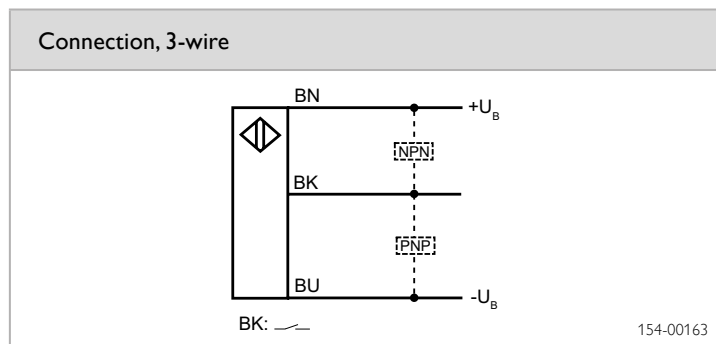
Inductive sensor with stainless steel housing



Sensor data		Functions	
Switching distance	1.5 mm	Indicator LED, yellow	Switching output indicator
Repeatability	0.02 mm ¹		
Hysteresis	≤ 10 % ²		
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 _B	10 ... 30V DC ³	Dimensions	∅ 6,5 x 16 mm
No-load current, I ₀	≤ 10 mA	Mounting	Flush
Output current, I _e	≤ 200 mA	Enclosure rating	IP 67 ⁴
Voltage drop, U _D	≤ 2V at 200 mA	Material, housing	Stainless steel, V2A
Protective circuits	Reverse-polarity protection, U _B / short-circuit protection (Q) / induction protection	Material, front surface	PA 66
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)	≤ 5000 Hz	Vibration and impact resistance	IEC 60947-5-2 / 7.4

12

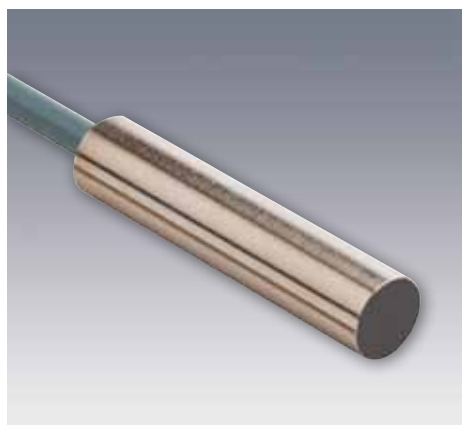
¹ U_B = 20 ... 30V DC, T_A = 23 °C ± 5 °C ² Refers to switching distance ³ Max. 20 % ripple, within U_B ⁴ With connected IP 67 plug



Switching distance	Switching output	Type of connection	Part number	Article number
1.5 mm	PNP	Cable, 2m, 3-wire	ISZ 46-02	996-09488
1.5 mm	NPN	Cable, 2m, 3-wire	ISZ 46-01	996-09487

IS 46

Inductive sensor with stainless steel housing



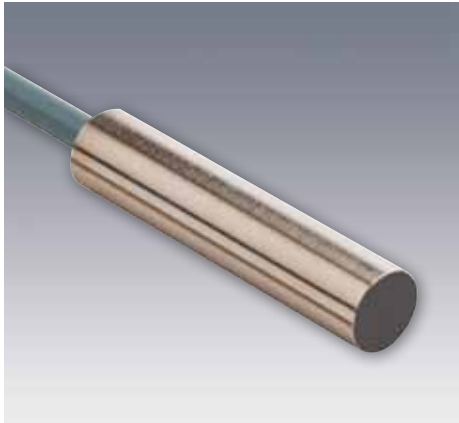
Plug connection	Cable connection
153-00311	153-00310

Sensor data		Functions	
Switching distance	1.5 mm	Indicator LED, yellow	Switching output indicator
Repeatability	0.02 mm ¹		
Hysteresis	≤ 10 % ²		
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 _B	10 ... 30V DC ³	Dimensions (plug device)	∅ 6.5 × 29 mm
No-load current, I ₀	≤ 10 mA	Dimensions (cable device)	∅ 6.5 × 16 mm
Output current, I _e	≤ 200 mA	Mounting	Flush
Voltage drop, U _D	≤ 2V at 200 mA	Enclosure rating	IP 67 ⁴
Protective circuits	Reverse-polarity protection, U _B / short-circuit protection (Q) / induction protection	Material, housing	Stainless steel, V2A
Switching output, Q	PNP / NPN (see Selection Table)	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

¹ U_B = 20 ... 30V DC, T_A = 23 °C ± 5 °C ² Refers to switching distance ³ Max. 20 % ripple, within U_B ⁴ With connected IP 67 plug

Connection plug, 3-pin	Connection cable, 3-wire
<p>4: </p>	<p>BK: </p>
154-00163	154-00163

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	NPN	Plug, M8x1, 3-pin	IS 46-11 T	996-50613
1.5 mm	PNP	Cable, 2 m, 3-wire	IS 46-02	996-09401



Plug connection	Cable connection
<p>153-00879</p>	<p>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, AI	0.45		
Reduction factor, Cu	0.40 / 0.35 ¹		
Reduction factor, V2A	0.75 / 0.70 ¹		
Electrical data		Mechanical data	
Operating voltage, +U _B	10 ... 30V DC / 5 ... 30V DC ¹	Dimensions (plug device)	Ø 6.5 x 35 mm
No-load current, I ₀	≤ 15 mA	Dimensions (cable device)	Ø 6.5 x 30 mm
Operating current, I _L	≤ 100 mA	Mounting	Flush
Voltage drop, U _D	≤ 3V / ≤ 2.5V ¹	Enclosure rating	IP 67 ³
Protective circuits	Reverse-polarity protection, U _B ² / short-circuit protection (Q)	Material, housing	Brass, nickel-plated
Switching output, Q	PNP / NPN (see Selection Table)	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

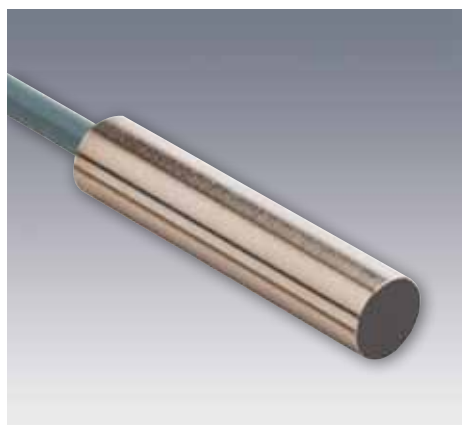
¹ IDT 6 2B-NS-M3 ² Except IDT 6 2B-NS-M3 ³ With connected IP 67 plug

Connection plug, 3-pin (PNP)	Connection plug, 3-pin (NPN)	Connection cable, 3-wire (PNP)	Connection cable, 3-wire (NPN)
<p>154-00294</p>	<p>154-00293</p>	<p>154-00294</p>	<p>154-00293</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	NPN	Plug, M8x1, 3-pin	IDT 6-2B-NS-M3	697-01043
2 mm	PNP	Cable, 2 m, 3-wire	IDT 6-2B-PS-K3	697-01040
2 mm	NPN	Cable, 2 m, 3-wire	IDT 6-2B-NS-K3	697-01041

IS 56

Inductive sensor



Plug connection (M8x1)	Plug connection (M12x1)	Cable connection
153-00313	153-00314	153-00312

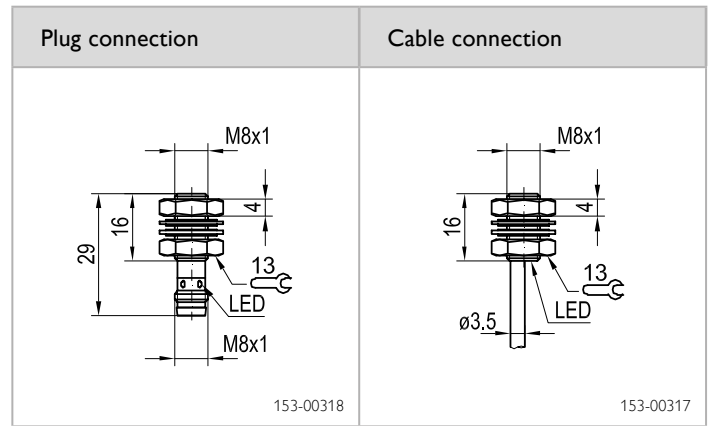
Sensor data		Functions	
Switching distance	3 mm	Indicator LED, yellow	Switching output indicator
Repeatability	0.15 mm ¹		
Hysteresis	≤ 10 % ²		
Reduction factor; Al	0.26		
Reduction factor; Cu	0.18		
Reduction factor; V2A	0.67		
Reduction factor; steel FE 360	1.00		
Reduction factor; brass	0.35		
Electrical data		Mechanical data	
Operating voltage, +U _B	10 ... 30V DC ³	Dimensions	See Selection Table
No-load current, I ₀	≤ 10 mA	Mounting	Quasi-flush
Output current, I _e	≤ 200 mA	Enclosure rating	IP 67 ⁴
Voltage drop, U _D	≤ 2V 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
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)	≤ 1000 Hz	Vibration and impact resistance	IEC 60947-5-2 / 7.4

¹ U_B = 20 ... 30V DC, T_A = 23 °C ± 5 °C ² Refers to switching distance ³ Max. 20 % ripple, within U_B ⁴ With connected IP 67 plug

Connection plug, 3-pin	Connection plug, 4-pin	Connection cable, 3-wire
154-00163	154-00177	154-00163

Switching distance	Switching output	Dimensions	Type of connection	Part number	Article number
3 mm	PNP	∅ 6.5 x 60 mm	Plug, M8x1, 3-pin	IS 56-12	996-50586
3 mm	NPN	∅ 6.5 x 60 mm	Plug, M8x1, 3-pin	IS 56-11 T	996-50632
3 mm	PNP	∅ 6.5 x 66 mm	Plug, M12x1, 4-pin	IS 56-42	996-09963
3 mm	NPN	∅ 6.5 x 66 mm	Plug, M12x1, 4-pin	IS 56-41	996-50390
3 mm	PNP	∅ 6.5 x 45 mm	Cable, 2 m, 3-wire	IS 56-02	996-09409
3 mm	NPN	∅ 6.5 x 45 mm	Cable, 2 m, 3-wire	IS 56-01	996-09408

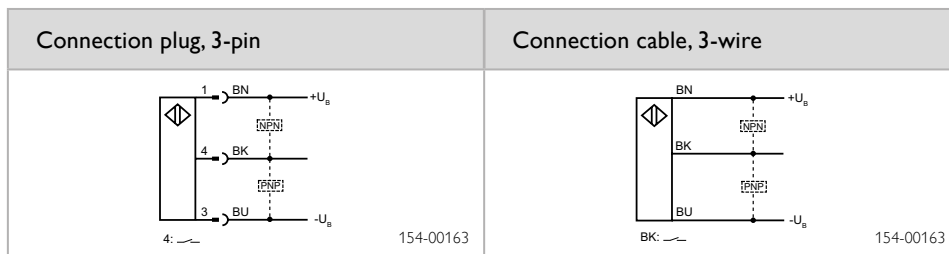
Inductive sensor with stainless steel housing



Sensor data		Functions	
Switching distance	1.5 mm	Indicator LED, yellow	Switching output indicator
Repeatability	0.02 mm ¹		
Hysteresis	≤ 10 % ²		
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 _B	10 ... 30V DC ³	Dimensions (plug device)	M8 x 29 mm
No-load current, I ₀	≤ 10 mA	Dimensions (cable device)	M8 x 16 mm
Output current, I _e	≤ 200 mA	Mounting	Flush
Voltage drop, U _D	≤ 2V at 200 mA	Enclosure rating	IP 67 ⁴
Protective circuits	Reverse-polarity protection, U _B / short-circuit protection (Q) / induction protection	Material, housing	Stainless steel, V2A
Switching output, Q	PNP / NPN (see Selection Table)	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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¹ U_B = 20 ... 30V DC, T_A = 23 °C ± 5 °C ² Refers to switching distance ³ Max. 20 % ripple, within U_B ⁴ 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	NPN	Plug, M8x1, 3-pin	IS 48-11T	996-50623
1.5 mm	PNP	Cable, 2 m, 3-wire	IS 48-02	996-09405
1.5 mm	NPN	Cable, 2 m, 3-wire	IS 48-01	996-09404

IMT 8-1

Inductive sensor



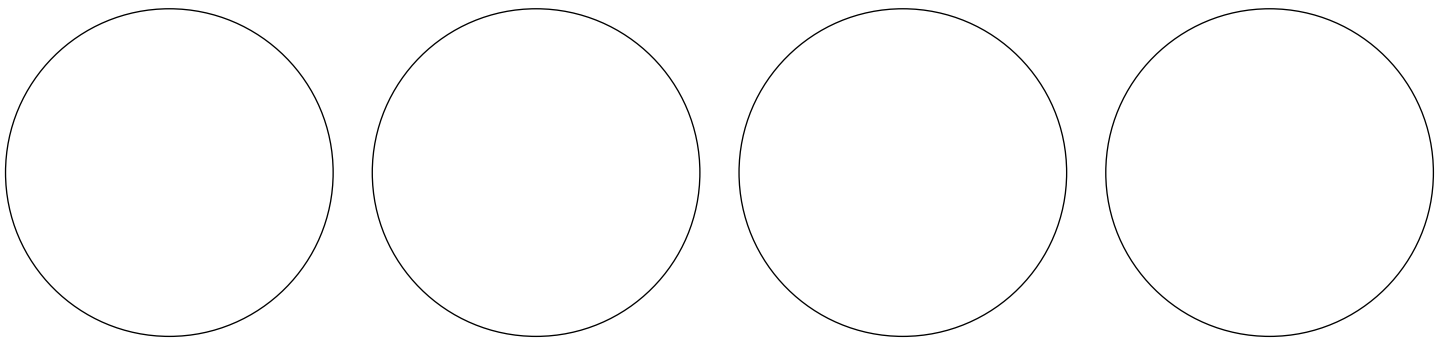
Plug connection	Cable connection
153-00863	153-00862

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 _B	10 ... 30V DC	Dimensions (plug device)	M8 x 65 mm
No-load current, I ₀	≤ 15 mA	Dimensions (cable device)	M8 x 50 mm
Operating current, I _I	≤ 100 mA	Mounting	Flush
Voltage drop, U _D	≤ 3 V	Enclosure rating	IP 67 ¹
Protective circuits	Reverse-polarity protection, U _B / short-circuit protection (Q)	Material, housing (plug device)	Brass, nickel-plated
Switching output, Q	PNP / NPN (see Selection Table)	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

¹With connected IP 67 plug

Connection plug, 3-pin (PNP)	Connection plug, 3-pin (NPN)	Connection cable, 3-wire (PNP)	Connection cable, 3-wire (NPN)
154-00294	154-00293	154-00294	154-00293

Switching distance	Switching output	Type of connection	Part number	Article number
1.5 mm	PNP	Plug, M12x1, 3-pin	IMT 8-1B5-PS-L4	697-01011
1.5 mm	NPN	Plug, M12x1, 3-pin	IMT 8-1B5-NS-L4	697-01010
1.5 mm	PNP	Cable, 2 m, 3-wire	IMT 8-1B5-PS-K3	697-01009
1.5 mm	NPN	Cable, 2 m, 3-wire	IMT 8-1B5-NS-K3	697-01008



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; AI	0.45		
Reduction factor; Cu	0.35 ¹ / 0.40 ²		
Reduction factor; V2A	0.75 / 0.7 ³		
Electrical data		Mechanical data	
Operating voltage, +U _B	10 ... 30V DC / 5 ... 30V DC ³	Dimensions (plug device, flush)	M8 x 35 mm
No-load current, I ₀	≤ 15 mA	Dimensions (plug device, non-flush)	M8 x 65 mm
Operating current, I _I	≤ 100 mA	Dimensions (cable device, flush)	M8 x 30 mm
Voltage drop, U _D	≤ 3V / ≤ 2.5V ³	Dimensions (cable device non-flush)	M8 x 50 mm
Protective circuits	Reverse-polarity protection, U _B ⁴ / short-circuit protection (Q)	Mounting	Flush / non-flush (see Selection Table)
Switching output, Q	PNP / NPN (see Selection Table)	Enclosure rating	IP 67 ⁵
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

¹ Non-flush devices

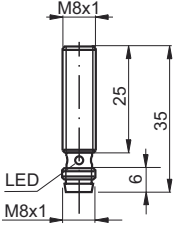
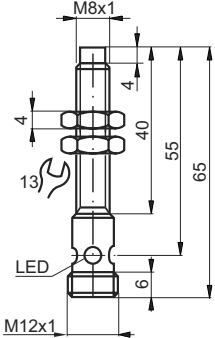
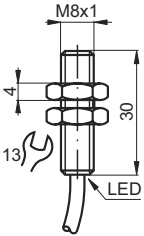
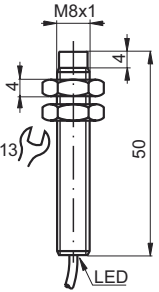
² Flush devices, except IMT 8-2B-NS-M3 (0.35)

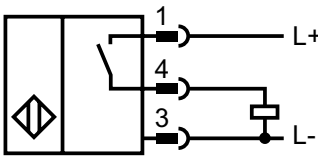
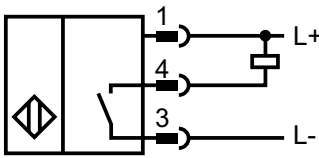
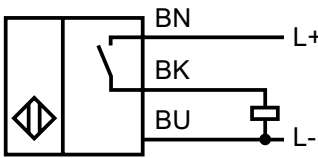
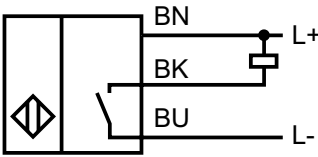
³ IMT 8-2B-NS-M3

⁴ Except IMT 8-2B-NS-M3

⁵ With connected IP 67 plug

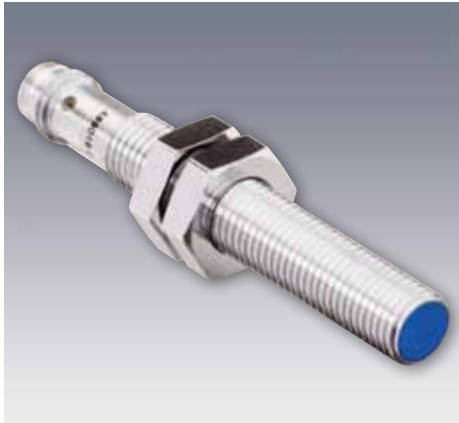
Switching distance	Mounting	Switching output	Switching frequency, f (ti/tp 1:1)	Type of connection	Part number	Article number
2 mm	Flush	PNP	≤ 3000 Hz	Plug, M8x1, 3-pin	IMT 8-2B-PS-M3	697-01046
2 mm	Flush	NPN	≤ 3000 Hz	Plug, M8x1, 3-pin	IMT 8-2B-NS-M3	697-01047
2 mm	Flush	PNP	≤ 3000 Hz	Cable, 2 m, 3-wire	IMT 8-2B-PS-K3	697-01044
2 mm	Flush	NPN	≤ 3000 Hz	Cable, 2 m, 3-wire	IMT 8-2B-NS-K3	697-01045
2 mm	Non-flush	PNP	≤ 1500 Hz	Plug, M12x1, 3-pin	IMT 8-2N-PS-L4	697-01015
2 mm	Non-flush	NPN	≤ 1500 Hz	Plug, M12x1, 3-pin	IMT 8-2N-NS-L4	697-01014
2 mm	Non-flush	PNP	≤ 1500 Hz	Cable, 2 m, 3-wire	IMT 8-2N-PS-K3	697-01013
2 mm	Non-flush	NPN	≤ 1500 Hz	Cable, 2 m, 3-wire	IMT 8-2N-NS-K3	697-01012

<p>Plug connection (flush)</p>	<p>Plug connection (non-flush)</p>
 <p>153-00881</p>	 <p>153-00865</p>
<p>Cable connection (flush)</p>	<p>Cable connection (non-flush)</p>
 <p>153-00880</p>	 <p>153-00864</p>

<p>Connection plug, 3-pin (PNP)</p>	<p>Connection plug, 3-pin (NPN)</p>	<p>Connection cable, 3-wire (PNP)</p>
 <p>154-00294</p>	 <p>154-00293</p>	 <p>154-00294</p>
<p>Connection cable, 3-wire (NPN)</p>		
 <p>154-00293</p>		

IS 58

Inductive sensor



Plug connection (M8x1)	Plug connection (M12x1)	Cable connection
<p>153-00321</p>	<p>153-00323</p>	<p>153-00319</p>

Sensor data		Functions	
Switching distance	3 mm	Indicator LED, yellow	Switching output indicator
Repeatability	0.15 mm ¹		
Hysteresis	≤ 15 % ²		
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 _B	10 ... 30V DC ³	Dimensions	See Selection Table
No-load current, I ₀	≤ 10 mA	Enclosure rating	IP 67 ⁴
Output current, I _e	≤ 200 mA	Mounting	Flush
Voltage drop, U _D	≤ 2V at 200 mA	Material, housing	Nickel silver; chrome-plated
Protective circuits	Reverse-polarity protection, U _B / 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)	≤ 1000 Hz	Vibration and impact resistance	IEC 60947-5-2 / 7.4

¹ U_B = 20 ... 30V DC, T_A = 23 °C ± 5 °C ² Refers to switching distance ³ Max. 20 % ripple, within U_B ⁴ With connected IP 67 plug

Connection plug, 3-pin	Connection plug, 4-pin	Connection cable, 3-wire
<p>154-00163</p>	<p>154-00177</p>	<p>154-00163</p>

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	NPN	M8 x 60 mm	Plug, M8x1, 3-pin	IS 58-11 T	996-50640
3 mm	PNP	M8 x 66 mm	Plug, M12x1, 4-pin	IS 58-42	996-09965
3 mm	NPN	M8 x 66 mm	Plug, M12x1, 4-pin	IS 58-41	996-09964
3 mm	PNP	M8 x 45 mm	Cable, 2 m, 3-wire	IS 58-02	996-09413
3 mm	NPN	M8 x 45 mm	Cable, 2 m, 3-wire	IS 58-01	996-09412

Inductive sensor with expanded switching distance



Plug connection (M8x1)	Plug connection (M12x1)	Cable connection
153-00322	153-00324	153-00320

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 _B	10 ... 30V DC ¹	Dimensions	See Selection Table
No-load current, I ₀	≤ 10 mA	Enclosure rating	IP 67 ²
Output current, I _e	≤ 200 mA	Mounting	Non-flush
Voltage drop, U _o	≤ 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 / NPN (see Selection Table)	Ambient temperature: operation	-25 ... +70 °C
Output function	N.O.		
Switching frequency, f (ti/tp 1:1)	≤ 500 Hz		

¹ Max. 20 % ripple, within U_B ² With connected IP 67 plug

Connection plug, 3-pin	Connection plug, 4-pin	Connection cable, 3-wire
<p>154-00163</p>	<p>154-00177</p>	<p>154-00163</p>

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	NPN	M8 x 60 mm	Plug, M8x1, 3-pin	IS 58-13-S	996-51470
6 mm	PNP	M8 x 66 mm	Plug, M12x1, 4-pin	IS 58-44-S	996-51460
6 mm	NPN	M8 x 66 mm	Plug, M12x1, 4-pin	IS 58-43-S	996-51463
6 mm	PNP	M8 x 45 mm	Cable, 3-wire	IS 58-04-S	996-51461
6 mm	NPN	M8 x 45 mm	Cable, 3-wire	IS 58-03-S	996-51465

IMT 12-2

Inductive sensor



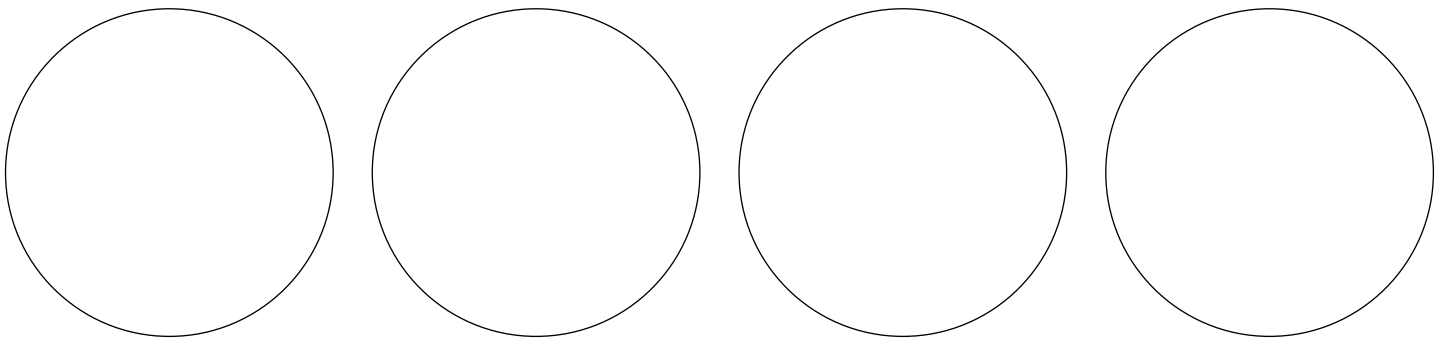
Plug connection	Cable connection
153-00867	153-00866

Sensor data		Functions	
Switching distance	2 mm	Indicator LED, yellow	Switching output indicator
Ensured switching distance	0 ... 1.62 mm		
Reduction factor; AI	0.30		
Reduction factor; Cu	0.20		
Reduction factor; V2A	0.70		
Electrical data		Mechanical data	
Operating voltage, +U _B	10 ... 30V DC	Dimensions (plug device)	M12 × 65 mm
No-load current, I ₀	≤ 17 mA	Dimensions (cable device)	M12 × 50 mm
Operating current, I _I	≤ 200 mA	Mounting	Flush
Voltage drop, U _D	≤ 3V	Enclosure rating	IP 67 ¹
Protective circuits	Reverse-polarity protection, U _B / 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

¹ With connected IP 67 plug

Connection plug, 3-pin (PNP)	Connection plug, 3-pin (NPN)	Connection cable, 3-wire (PNP)	Connection cable, 3-wire (NPN)
154-00294	154-00293	154-00294	154-00293

Switching distance	Switching output	Type of connection	Part number	Article number
2 mm	PNP	Plug, M12x1, 3-pin	IMT 12-2B-PS-L4	697-01019
2 mm	NPN	Plug, M12x1, 3-pin	IMT 12-2B-NS-L4	697-01018
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

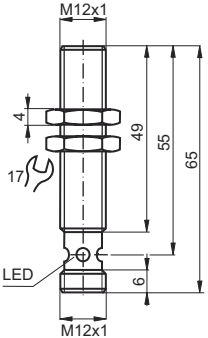
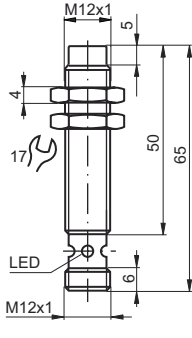
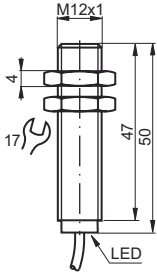
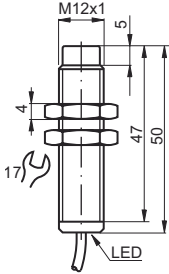
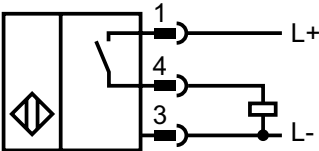
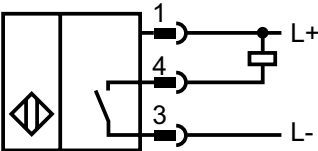
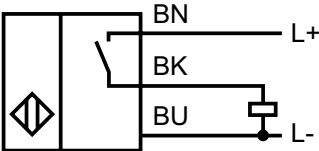
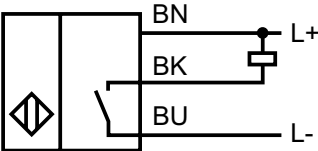
Inductive sensor



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 ¹ / 0.39 ²		
Reduction factor; Cu (flush)	0.35		
Reduction factor; V2A (flush)	0.7 ¹ / 0.75 ²		
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 _B	10 ... 30V DC	Dimensions (plug device)	M12 × 65 mm
No-load current, I ₀	≤ 15 mA ³ / ≤ 17 mA ⁴	Dimensions (cable device)	M12 × 50 mm
Operating current, I _L	≤ 200 mA	Mounting	Flush / non-flush (see Selection Table)
Voltage drop, U _D	≤ 3V	Enclosure rating	IP 67 ⁵
Protective circuits	Reverse-polarity protection, U _B / 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

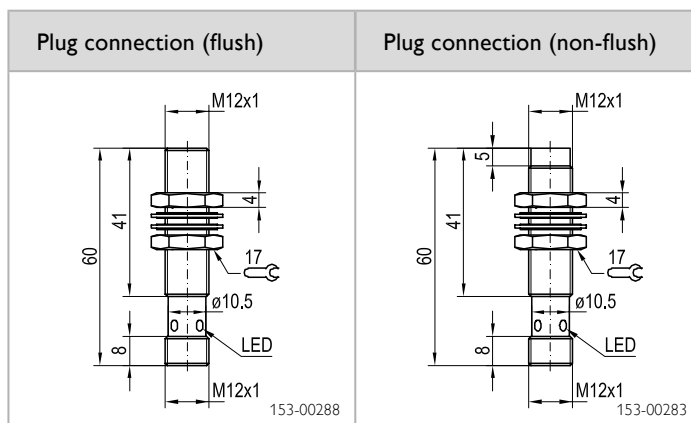
¹ PNP variants ² NPN variants ³ Flush devices ⁴ Non-flush devices ⁵ With connected IP 67 plug

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, M12×1, 3-pin	IMT 12-4B-PS-L4	697-01050
4 mm	Flush	NPN	≤ 800 Hz	Plug, M12×1, 3-pin	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	Flush	NPN	≤ 800 Hz	Cable, 2 m, 3-wire	IMT 12-4B-NS-K3	697-01049
4 mm	Non-flush	PNP	≤ 1200 Hz	Plug, M12×1, 3-pin	IMT 12-4N-PS-L4	697-01023
4 mm	Non-flush	NPN	≤ 1200 Hz	Plug, M12×1, 3-pin	IMT 12-4N-NS-L4	697-01022
4 mm	Non-flush	PNP	≤ 1200 Hz	Cable, 2 m, 3-wire	IMT 12-4N-PS-K3	697-01021
4 mm	Non-flush	NPN	≤ 1200 Hz	Cable, 2 m, 3-wire	IMT 12-4N-NS-K3	697-01020

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)	Cable connection (non-flush)
 <p style="text-align: right;">153-00882</p>	 <p style="text-align: right;">153-00868</p>
Connection plug, 3-pin (PNP)	Connection plug, 3-pin (NPN)
 <p style="text-align: right;">154-00294</p>	 <p style="text-align: right;">154-00293</p>
Connection cable, 3-wire (PNP)	Connection cable, 3-wire (NPN)
 <p style="text-align: right;">154-00294</p>	 <p style="text-align: right;">154-00293</p>

IT 12

Inductive sensor with expanded switching distance

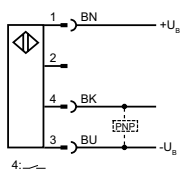


Sensor data		Functions	
Switching distance ¹	6 mm	Indicator LED, yellow	Switching output indicator
Switching distance ²	10 mm		
Repeatability ¹	0.3 mm ⁴		
Repeatability ²	0.5 mm ⁴		
Hysteresis	≤ 15 % ⁵		
Reduction factor; Al ³	1.00 / 1.00		
Reduction factor; Cu ³	0.85 / 0.80		
Reduction factor; V2A 1 mm thick ³	0.50 / no detection		
Reduction factor; V2A 2 mm thick ³	0.90 / 0.65		
Reduction factor; steel FE 360 ³	1.00 / 1.00		
Reduction factor; brass ³	1.30 / 1.40		
Electrical data		Mechanical data	
Operating voltage, +U _B	10 ... 30V DC ⁶	Dimensions	M12 × 60 mm
No-load current, I ₀	≤ 10 mA	Mounting	Flush / non-flush (see Selection Table)
Operating current, I _I	≤ 200 mA	Enclosure rating	IP 69K & IP 68 ⁷
Voltage drop, U _D	≤ 2 V at 200 mA	Material, housing	Stainless steel, V2A
Protective circuits	Reverse-polarity protection, U _B / 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

¹ Flush devices ² Non-flush devices ³ Flush / non-flush devices ⁴ U_B = 20 ... 30V DC, T_A = 23 °C ± 5 °C ⁵ Refers to switching distance

⁶ Max. 20 % ripple, within U_B ⁷ With connected IP 68 / IP 69K plug

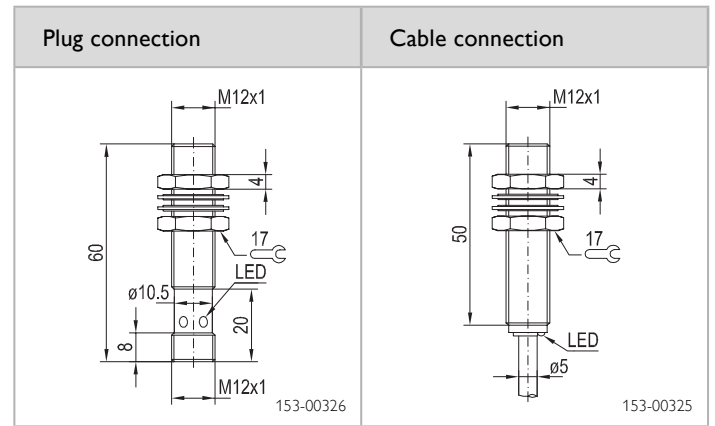
Connection, 4-pin



154-00224

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

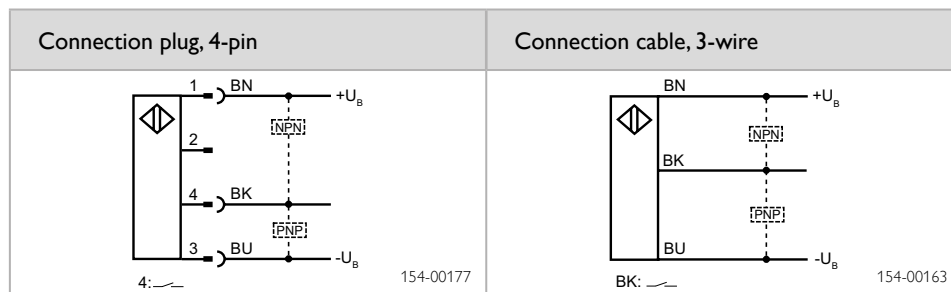
Inductive sensor with expanded switching distance



Sensor data		Functions	
Switching distance	6 mm	Indicator LED, yellow	Switching output indicator
Repeatability	0.3 mm ¹		
Hysteresis	≤ 10 % ²		
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 _B	10 ... 30V DC ³	Dimensions	See Selection Table
No-load current, I ₀	≤ 10 mA	Enclosure rating	IP 67 ⁴
Output current, I _e	≤ 200 mA	Mounting	Quasi-flush
Voltage drop, U _D	≤ 2V 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 / 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

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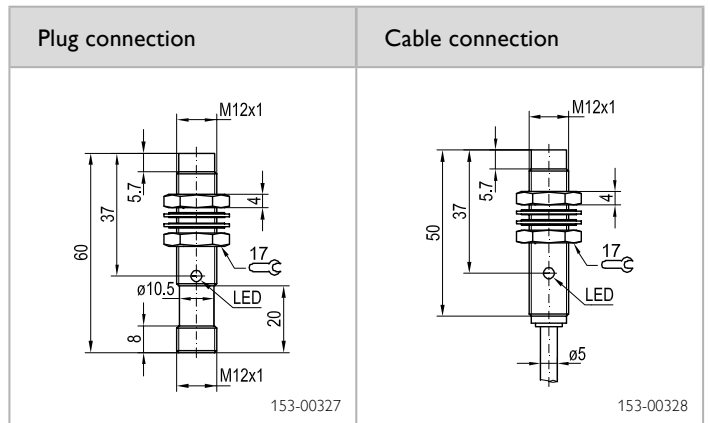
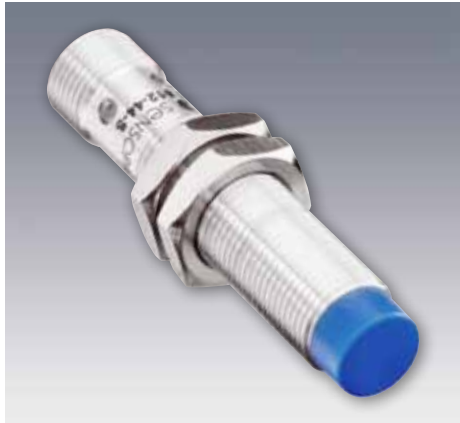
¹ U_B = 20 ... 30V DC, T_A = 23 °C ± 5 °C ² Refers to switching distance ³ Max. 20 % ripple, within U_B ⁴ With connected IP 67 plug



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	NPN	M12 × 60 mm	Plug, M12x1, 4-pin	IS 512-41	996-09968
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

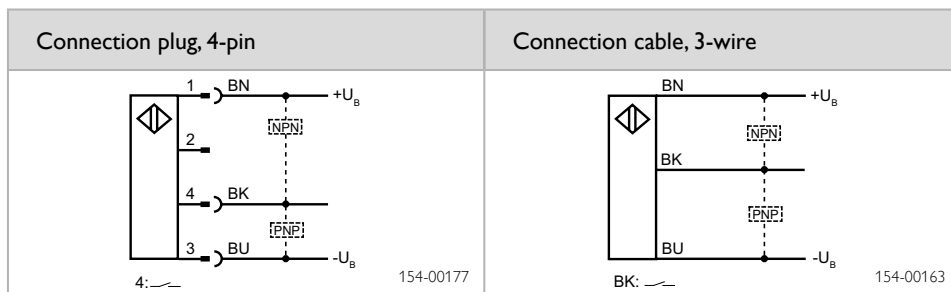
IS 512

Inductive sensor with expanded switching distance



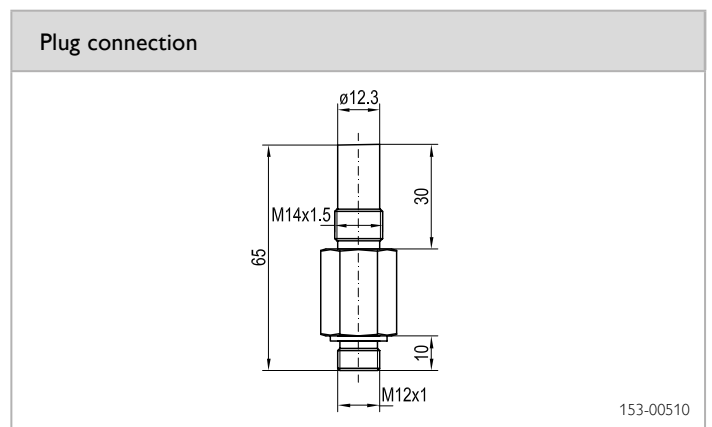
Sensor data		Functions	
Switching distance	10 mm	Indicator LED, yellow	Switching output indicator
Repeatability	$\leq 0.3 \text{ mm}^1$		
Hysteresis	$\leq 10 \%^2$		
Reduction factor; Al	0.49		
Reduction factor; Cu	0.45		
Reduction factor; V2A	0.77		
Reduction factor; steel FE 360	1.00		
Reduction factor; brass	0.56		
Electrical data		Mechanical data	
Operating voltage, $+U_B$	10 ... 30V DC ³	Dimensions	See Selection Table
No-load current, I_0	$\leq 10 \text{ mA}$	Enclosure rating	IP 67 ⁴
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 / 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)	$\leq 400 \text{ Hz}$	Vibration and impact resistance	IEC 60947-5-2 / 7.4

¹ $U_B = 20 \dots 30 \text{ V DC}$, $T_A = 23 \text{ °C} \pm 5 \text{ °C}$ ² Refers to switching distance ³ Max. 20 % ripple, within U_B ⁴ 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	NPN	M12 x 60 mm	Plug, M12x1, 4-pin	IS 512-43	996-09970
10 mm	PNP	M12 x 50 mm	Cable, 2 m, 3-wire	IS 512-04-S	996-51458
10 mm	NPN	M12 x 50 mm	Cable, 2 m, 3-wire	IS 512-03-S	996-51472

Inductive sensor, high-pressure immunity with stainless steel housing



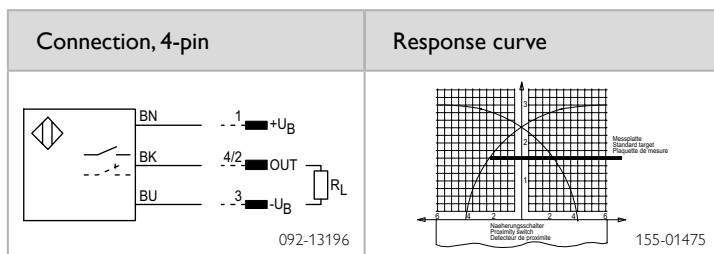
Sensor data	
Switching distance	3 mm
Hysteresis	~ 10 %
High-pressure immunity: maximum	1000 bar
High-pressure immunity: operation	500 bar
Temperature drift	≤ 15 %
Reduction factor; Al	0.40
Reduction factor; Cu	0.35
Reduction factor; V2A	0.66

Electrical data	
Operating voltage, +U _B	10 ... 30V DC
No-load current, I ₀	≤ 15 mA
Output current, I _e	≤ 250 mA
Voltage drop, U _D	≤ 2V at 200 mA
Protective circuits	Reverse-polarity protection, U _B / short-circuit protection (Q)
Power On Delay	10 ms
Switching output, Q	PNP
Output function	N.O.
Switching frequency, f (ti/tp 1:1)	≤ 500 Hz

Mechanical data	
Dimensions	M14 × 65 mm
Mounting	Flush
Enclosure rating	IP 68 ¹
Material, housing	Stainless steel, V2A
Material, front surface	Al ₂ O ₃
Type of connection	See Selection Table
Ambient temperature: operation	-25 ... +85 °C
Weight (plug device)	125 g

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¹With connected IP 68 plug



Switching distance	Switching output	Type of connection	Part number	Article number
3 mm	PNP	Plug, M12x1, 4-pin	IS 514-42	996-51193

IMT 18-5

Inductive sensor



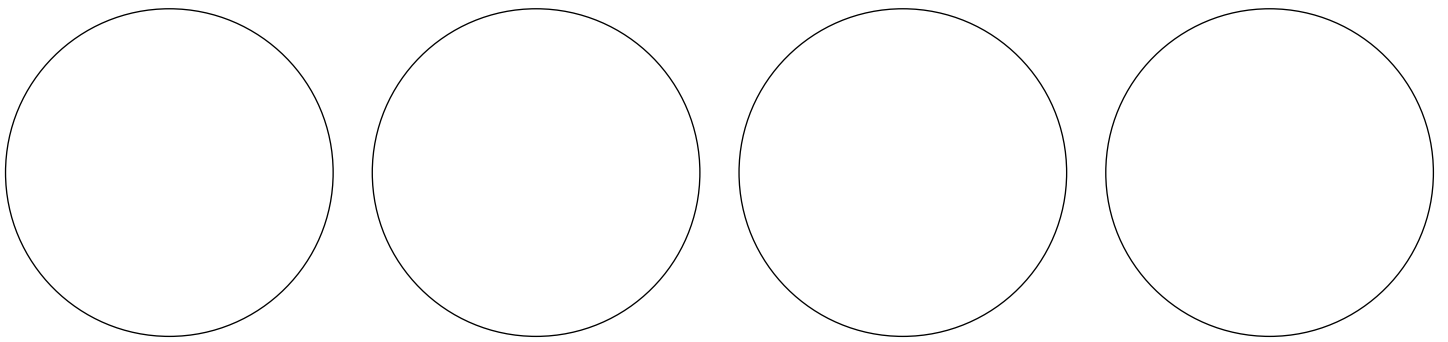
Plug connection	Cable connection
<p>153-00871</p>	<p>153-00870</p>

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 _B	10 ... 30V DC	Dimensions (plug device)	M18 x 65 mm
No-load current, I ₀	≤ 20 mA	Dimensions (cable device)	M18 x 50 mm
Operating current, I _I	≤ 200 mA	Mounting	Flush
Voltage drop, U _D	≤ 3 V	Enclosure rating	IP 67 ¹
Protective circuits	Reverse-polarity protection, U _B / 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)	≤ 800 Hz	Ambient temperature: operation	-25 ... +70 °C

¹ With connected IP 67 plug

Connection plug, 3-pin (PNP)	Connection plug, 3-pin (NPN)	Connection cable, 3-wire (PNP)	Connection cable, 3-wire (NPN)
<p>154-00294</p>	<p>154-00293</p>	<p>154-00294</p>	<p>154-00293</p>

Switching distance	Switching output	Type of connection	Part number	Article number
5 mm	PNP	Plug, M12x1, 3-pin	IMT 18-5B-PS-L4	697-01027
5 mm	NPN	Plug, M12x1, 3-pin	IMT 18-5B-NS-L4	697-01026
5 mm	PNP	Cable, 2 m, 3-wire	IMT 18-5B-PS-K3	697-01025
5 mm	NPN	Cable, 2 m, 3-wire	IMT 18-5B-NS-K3	697-01024



IMT 18-8

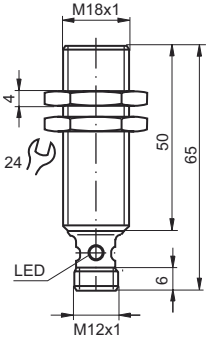
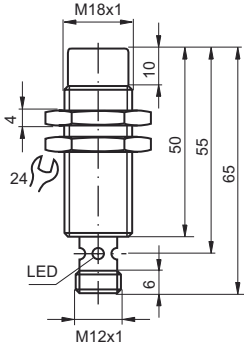
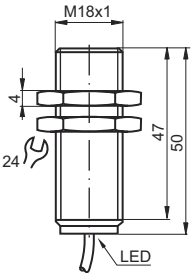
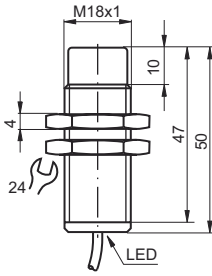
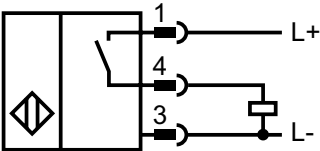
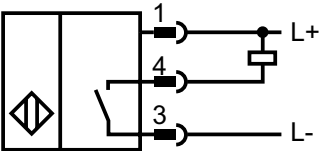
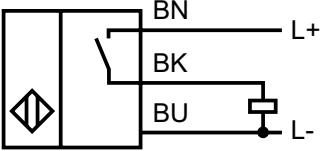
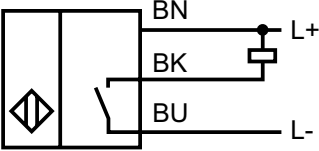
Inductive sensor



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 ¹ / 0.50 ²		
Reduction factor; Cu	0.40		
Reduction factor; V2A	0.70		
Electrical data		Mechanical data	
Operating voltage, +U _B	10 ... 30V DC	Dimensions (plug device)	M18 x 65 mm
No-load current, I ₀	≤ 15 mA ¹ / ≤ 18 mA ²	Dimensions (cable device)	M18 x 50 mm
Operating current, I _I	≤ 200 mA	Mounting	Flush / non-flush (see Selection Table)
Voltage drop, U _D	≤ 3V	Enclosure rating	IP 67 ³
Protective circuits	Reverse-polarity protection, U _B / 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)	≤ 500 Hz	Ambient temperature: operation	-25 ... +70 °C

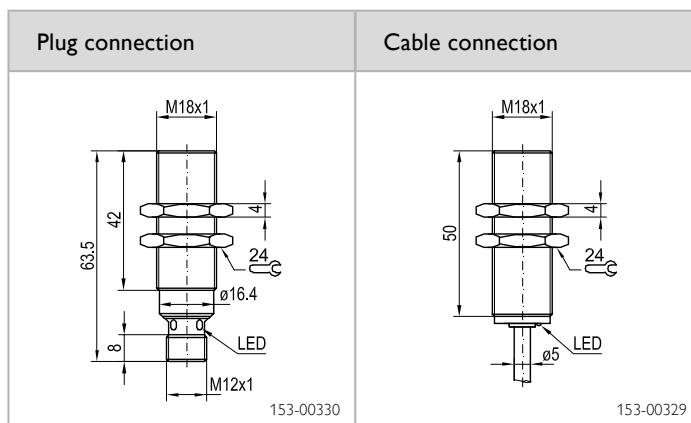
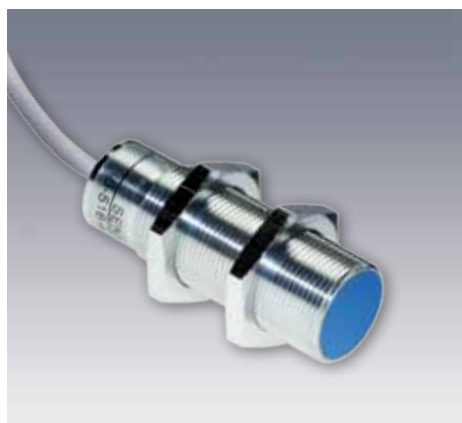
¹ Flush devices ² Non-flush devices ³ With connected IP 67 plug

Switching distance	Mounting	Switching output	Type of connection	Part number	Article number
8 mm	Flush	PNP	Plug, M12x1, 3-pin	IMT 18-8B-PS-L4	697-01054
8 mm	Flush	NPN	Plug, M12x1, 3-pin	IMT 18-8B-NS-L4	697-01055
8 mm	Flush	PNP	Cable, 2 m, 3-wire	IMT 18-8B-PS-K3	697-01052
8 mm	Flush	NPN	Cable, 2 m, 3-wire	IMT 18-8B-NS-K3	697-01053
8 mm	Non-flush	PNP	Plug, M12x1, 3-pin	IMT 18-8N-PS-L4	697-01031
8 mm	Non-flush	NPN	Plug, M12x1, 3-pin	IMT 18-8N-NS-L4	697-01030
8 mm	Non-flush	PNP	Cable, 2 m, 3-wire	IMT 18-8N-PS-K3	697-01029
8 mm	Non-flush	NPN	Cable, 2 m, 3-wire	IMT 18-8N-NS-K3	697-01028

Plug connection (flush)	Plug connection (non-flush)
 <p>153-00885</p>	 <p>153-00873</p>
Cable connection (flush)	Cable connection (non-flush)
 <p>153-00884</p>	 <p>153-00872</p>
Connection plug, 3-pin (PNP)	Connection plug, 3-pin (NPN)
 <p>154-00294</p>	 <p>154-00293</p>
Connection cable, 3-wire (PNP)	Connection cable, 3-wire (NPN)
 <p>154-00294</p>	 <p>154-00293</p>

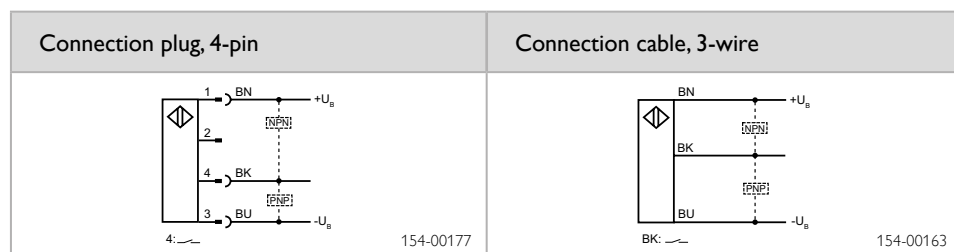
IS 518

Inductive sensor with expanded switching distance



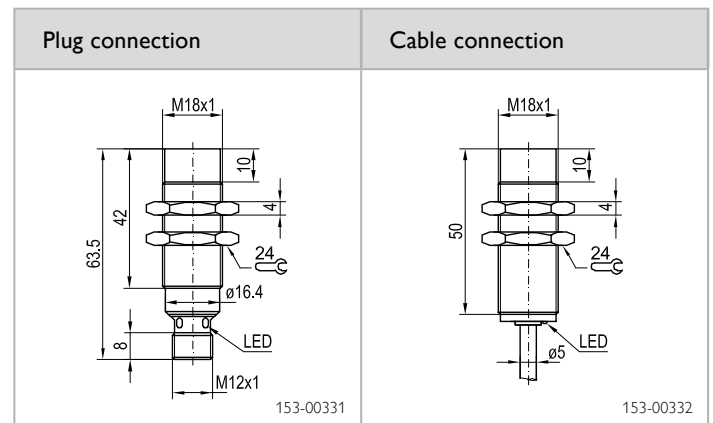
Sensor data		Functions	
Switching distance	12 mm	Indicator LED, yellow	Switching output indicator
Repeatability	0.6 mm ¹		
Hysteresis	≤ 10 % ²		
Reduction factor; Al	0.26		
Reduction factor; Cu	0.20		
Reduction factor; V2A	0.63		
Reduction factor; steel FE 360	1.00		
Reduction factor; brass	0.33		
Electrical data		Mechanical data	
Operating voltage, +U _B	10 ... 30V DC ³	Dimensions	See Selection Table
No-load current, I ₀	≤ 10 mA	Mounting	Quasi-flush
Output current, I _e	≤ 200 mA	Enclosure rating	IP 67 ⁴
Voltage drop, U _D	≤ 2V 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
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)	≤ 500 Hz	Vibration and impact resistance	IEC 60947-5-2 / 7.4

¹ U_B = 20 ... 30V DC, T_A = 23 °C ± 5 °C ² Refers to switching distance ³ Max. 20 % ripple, within U_B ⁴ With connected IP 67 plug



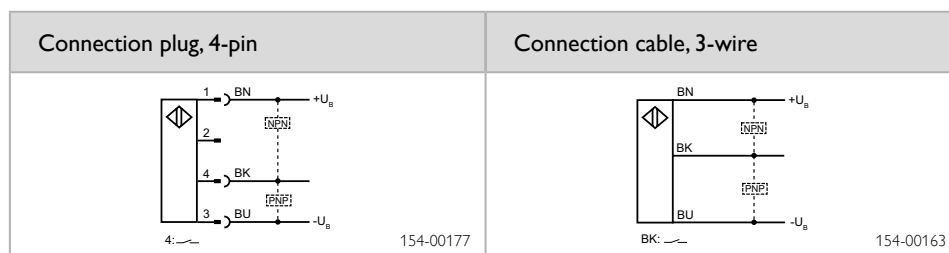
Switching distance	Switching output	Dimensions	Type of connection	Part number	Article number
12 mm	PNP	M18 × 63.5 mm	Plug, M12x1, 4-pin	IS 518-42	996-09973
12 mm	NPN	M18 × 63.5 mm	Plug, M12x1, 4-pin	IS 518-41	996-09972
12 mm	PNP	M18 × 50 mm	Cable, 2 m, 3-wire	IS 518-02	996-09429
12 mm	NPN	M18 × 50 mm	Cable, 2 m, 3-wire	IS 518-01	996-09428

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 _B	10 ... 30V DC ¹	Dimensions	See Selection Table
No-load current, I ₀	≤ 10 mA	Mounting	Non-flush
Output current, I _e	≤ 200 mA	Enclosure rating	IP 67 ²
Voltage drop, U _D	≤ 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 / NPN (see Selection Table)		
Output function	N.O.		
Switching frequency, f (ti/tp 1:1)	≤ 200 Hz		

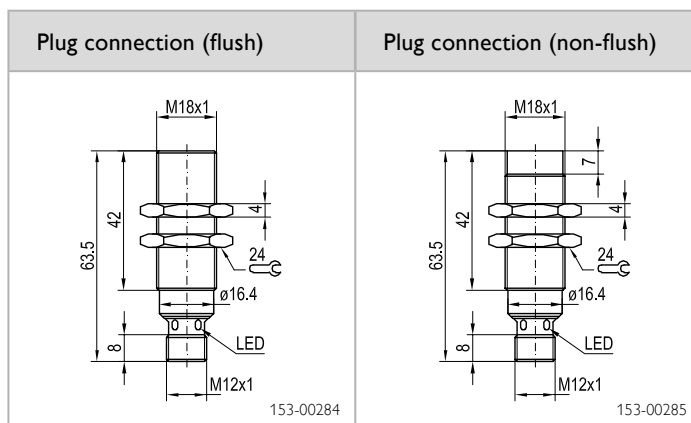
¹ Max. 20 % ripple, within U_B ² With connected IP 67 plug



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	NPN	M18 x 63.5 mm	Plug, M12x1, 4-pin	IS 518-43-S	996-50327
20 mm	PNP	M18 x 50 mm	Cable, 3-wire	IS 518-04-S	996-51450

IT 18

Inductive sensor with expanded switching distance

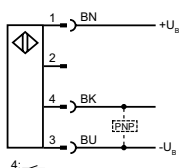


Sensor data		Functions	
Switching distance ¹	10 mm	Indicator LED, yellow	Switching output indicator
Switching distance ²	20 mm		
Repeatability ¹	0.5 mm ⁴		
Repeatability ²	1 mm ⁴		
Hysteresis	≤ 15 % ⁵		
Reduction factor; Al ³	1.00 / 1.00		
Reduction factor; Cu ³	0.80 / 0.90		
Reduction factor; V2A 1 mm thick ³	0.50 / 0.30		
Reduction factor; V2A 2 mm thick ³	0.90 / 0.60		
Reduction factor; steel FE 360 ³	1.00 / 1.00		
Reduction factor; brass ³	1.20 / 1.35		
Electrical data		Mechanical data	
Operating voltage, +U _B	10 ... 30V DC ⁶	Dimensions	M18 × 63,5 mm
No-load current, I ₀	≤ 10 mA	Mounting	Flush / non-flush (see Selection Table)
Operating current, I _I	≤ 200 mA	Enclosure rating	IP 69K & IP 68 ⁷
Voltage drop, U _D	≤ 2 V at 200 mA	Material, housing	Stainless steel, V2A
Protective circuits	Reverse-polarity protection, U _B / 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

¹ Flush devices ² Non-flush devices ³ Flush / non-flush devices ⁴ U_B = 20 ... 30V DC, T_A = 23 °C ± 5 °C ⁵ Refers to switching distance

⁶ Max. 20 % ripple, within U_B ⁷ With connected IP 68 / IP 69K plug

Connection, 4-pin

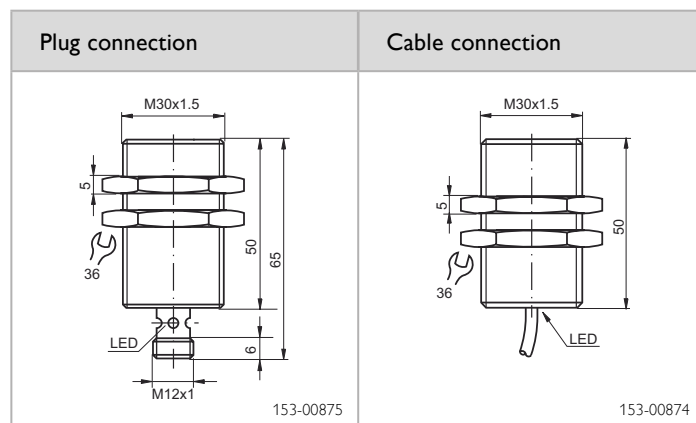
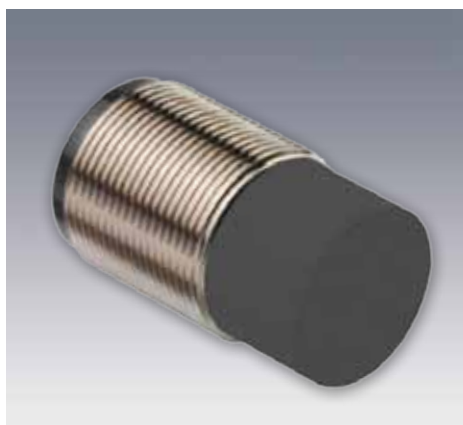


154-00224

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

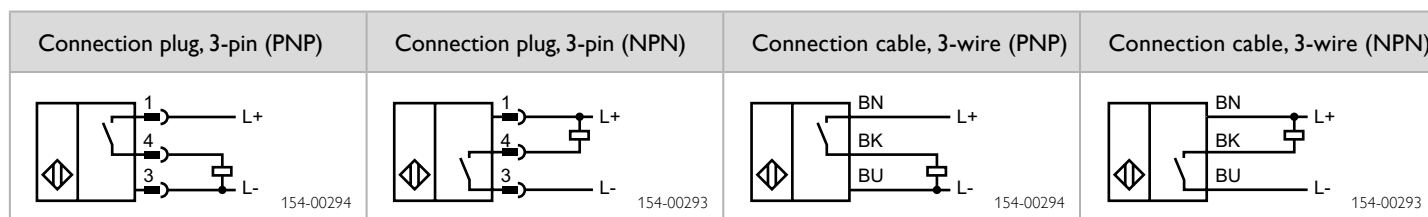
IMT 30-10

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 _B	10 ... 30V DC	Dimensions (plug device)	M30 × 65 mm
No-load current, I ₀	≤ 20 mA	Dimensions (cable device)	M30 × 50 mm
Operating current, I _L	≤ 200 mA	Mounting	Flush
Voltage drop, U _D	≤ 3V	Enclosure rating	IP 67 ¹
Protective circuits	Reverse-polarity protection, U _B / 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)	≤ 200 Hz	Ambient temperature: operation	-25 ... +70 °C

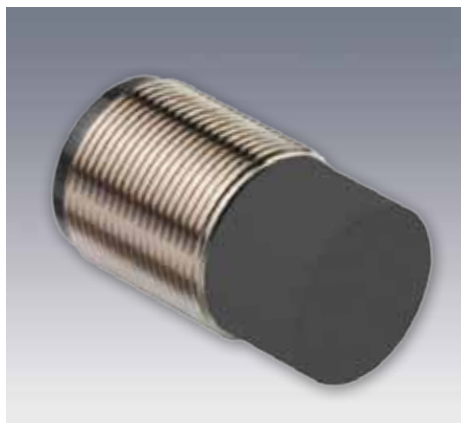
¹With connected IP 67 plug



Switching distance	Switching output	Type of connection	Part number	Article number
10 mm	PNP	Plug, M12x1, 3-pin	IMT 30-10B-PS-L4	697-01035
10 mm	NPN	Plug, M12x1, 3-pin	IMT 30-10B-NS-L4	697-01034
10 mm	PNP	Cable, 2 m, 3-wire	IMT 30-10B-PS-K3	697-01033
10 mm	NPN	Cable, 2 m, 3-wire	IMT 30-10B-NS-K3	697-01032

IMT 30-15

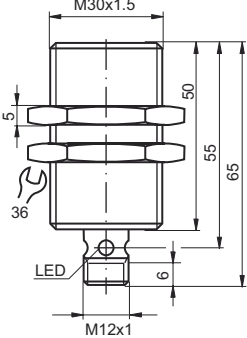
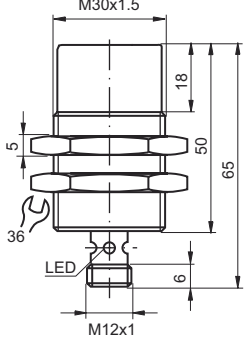
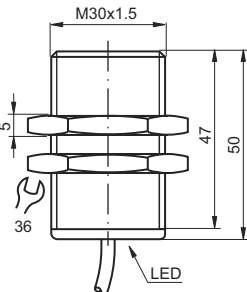
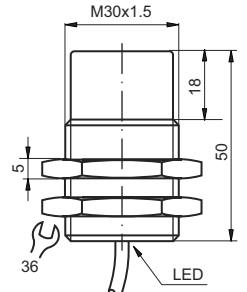
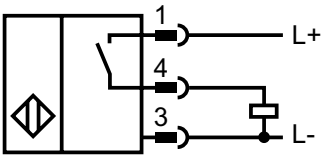
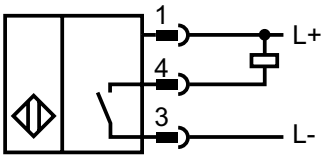
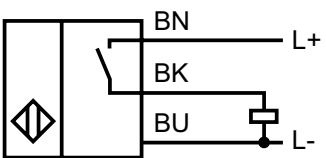
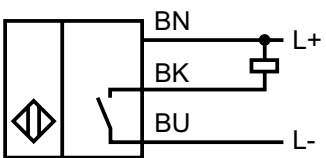
Inductive sensor



Sensor data		Functions	
Switching distance	15 mm	Indicator LED, yellow	Switching output indicator
Ensured switching distance	0 ... 12.15mm		
Reduction factor; Al	0.30 ¹ / 0.50 ²		
Reduction factor; Cu	0.30 ¹ / 0.40 ²		
Reduction factor; V2A	0.75 ¹ / 0.80 ²		
Electrical data		Mechanical data	
Operating voltage, +U _B	10 ... 30V DC	Dimensions (plug device)	M30 x 65 mm
No-load current, I ₀	≤ 15 mA / ≤ 20 mA ³	Dimensions (cable device)	M30 x 50 mm
Operating current, I _I	≤ 200 mA	Mounting	Flush / non-flush (see Selection Table)
Voltage drop, U _D	≤ 3V	Enclosure rating	IP 67 ⁴
Protective circuits	Reverse-polarity protection, U _B / 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)	≤ 200 Hz	Ambient temperature: operation	-25 ... +70 °C

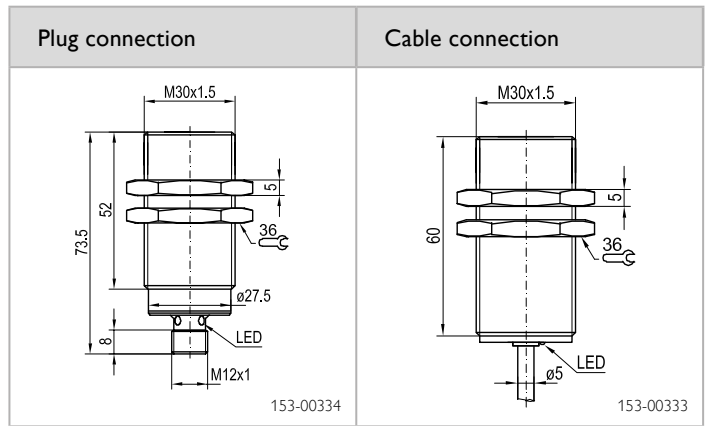
¹ Flush devices ² Non-flush devices ³ IMT 30-15N-PS-L4 and IMT 30-15N-NS-L4 ⁴ With connected IP 67 plug

Switching distance	Mounting	Switching output	Type of connection	Part number	Article number
15 mm	Flush	PNP	Plug, M12x1, 3-pin	IMT 30-15B-PS-L4	697-01058
15 mm	Flush	NPN	Plug, M12x1, 3-pin	IMT 30-15B-NS-L4	697-01059
15 mm	Flush	PNP	Cable, 2 m, 3-wire	IMT 30-15B-PS-K3	697-01056
15 mm	Flush	NPN	Cable, 2 m, 3-wire	IMT 30-15B-NS-K3	697-01057
15 mm	Non-flush	PNP	Plug, M12x1, 3-pin	IMT 30-15N-PS-L4	697-01039
15 mm	Non-flush	NPN	Plug, M12x1, 3-pin	IMT 30-15N-NS-L4	697-01038
15 mm	Non-flush	PNP	Cable, 2 m, 3-wire	IMT 30-15N-PS-K3	697-01037
15 mm	Non-flush	NPN	Cable, 2 m, 3-wire	IMT 30-15N-NS-K3	697-01036

Plug connection (flush)	Plug connection (non-flush)
 <p>153-00887</p>	 <p>153-00877</p>
Cable connection (flush)	Cable connection (non-flush)
 <p>153-00886</p>	 <p>153-00876</p>
Connection plug, 3-pin (PNP)	Connection plug, 3-pin (NPN)
 <p>154-00294</p>	 <p>154-00293</p>
Connection cable, 3-wire (PNP)	Connection cable, 3-wire (NPN)
 <p>154-00294</p>	 <p>154-00293</p>

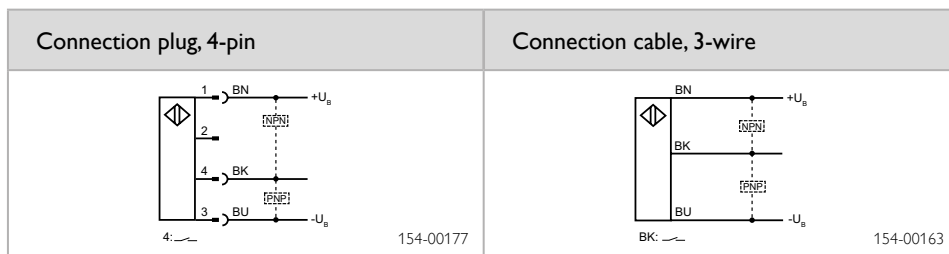
IS 530

Inductive sensor with expanded switching distance



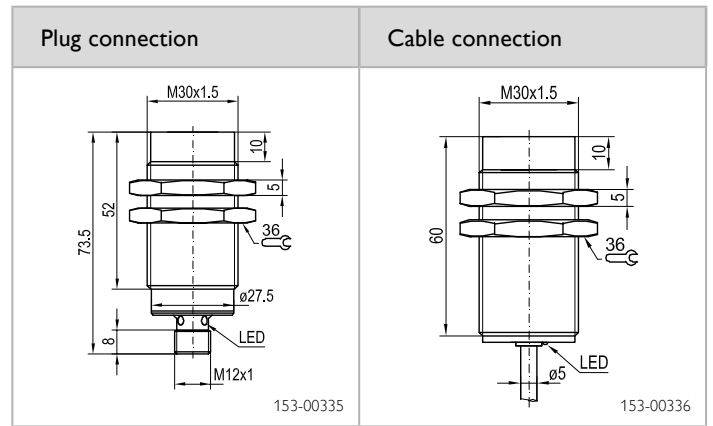
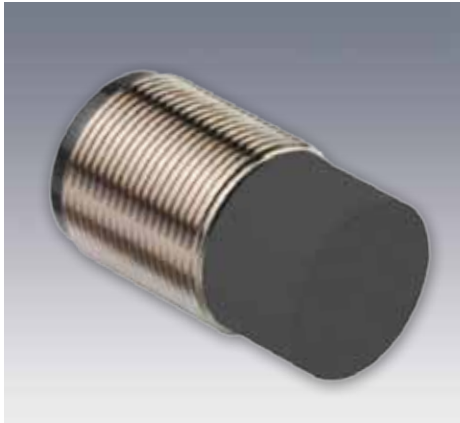
Sensor data		Functions	
Switching distance	22 mm	Indicator LED, yellow	Operating voltage indicator
Repeatability	1.1 mm ¹		
Hysteresis	≤ 10 % ²		
Reduction factor; Al	0.40		
Reduction factor; Cu	0.35		
Reduction factor; V2A	0.66		
Reduction factor; steel FE 360	1.00		
Reduction factor; brass	0.35		
Electrical data		Mechanical data	
Operating voltage, +U _B	10 ... 30V DC ³	Dimensions	See Selection Table
No-load current, I ₀	≤ 10 mA	Mounting	Quasi-flush
Output current, I _e	≤ 200 mA	Enclosure rating	IP 67 ⁴
Voltage drop, U _D	≤ 2V 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
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

¹ U_B = 20 ... 30V DC, T_A = 23 °C ± 5 °C ² Refers to switching distance ³ Max. 20 % ripple, within U_B ⁴ With connected IP 67 plug



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	NPN	M30 × 73.5 mm	Plug, M12x1, 4-pin	IS 530-41	996-50673
22 mm	PNP	M30 × 60 mm	Cable, 2 m, 3-wire	IS 530-02	996-09437
22 mm	NPN	M30 × 60 mm	Cable, 2 m, 3-wire	IS 530-01	996-09436

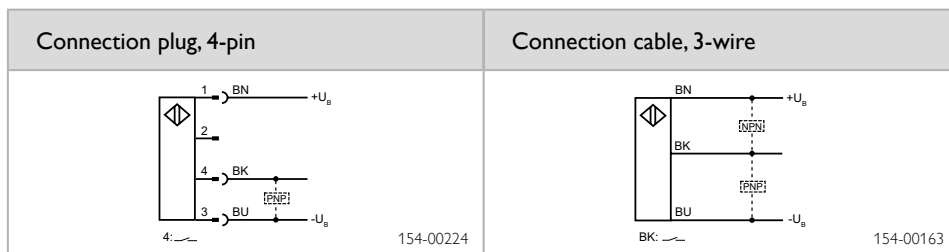
Inductive sensor with expanded switching distance



Sensor data		Functions	
Switching distance	40 mm	Indicator LED, yellow	Operating voltage indicator
Repeatability	2 mm ¹		
Hysteresis	≤ 10 % ²		
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 _B	10 ... 30V DC ³	Dimensions	See Selection Table
No-load current, I ₀	≤ 10 mA	Mounting	Non-flush
Output current, I _e	≤ 200 mA	Enclosure rating	IP 67 ⁴
Voltage drop, U _D	≤ 2V 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
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)	≤ 100 Hz	Vibration and impact resistance	IEC 60947-5-2 / 7.4

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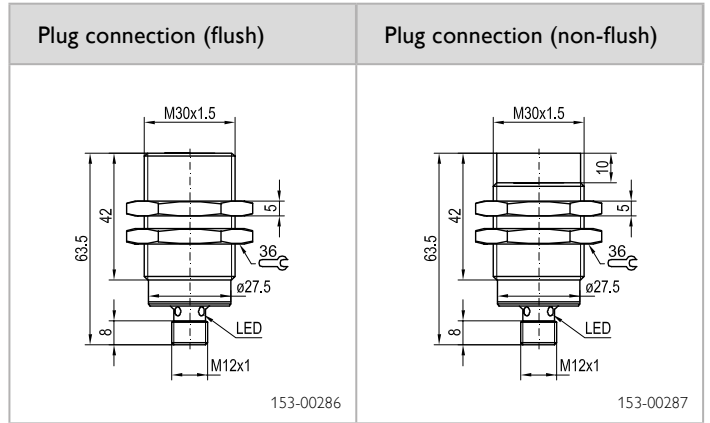
¹ U_B = 20 ... 30V DC; T_A = 23 °C ± 5 °C ² Refers to switching distance ³ Max. 20 % ripple, within U_B ⁴ With connected IP 67 plug



Switching distance	Switching output	Dimensions	Type of connection	Part number	Article number
40 mm	PNP	M30 x 73.5 mm	Plug, M12x1, 4-pin	IS 530-44-S	996-51454
40 mm	PNP	M30 x 60 mm	Cable, 2 m, 3-wire	IS 530-04-S	996-51452
40 mm	NPN	M30 x 60 mm	Cable, 2 m, 3-wire	IS 530-03	996-09438

IT 30

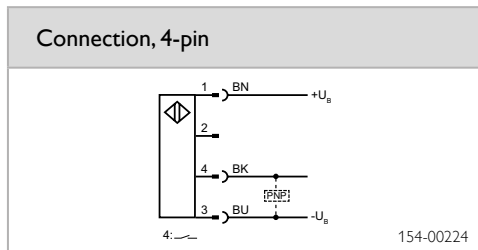
Inductive sensor with expanded switching distance



Sensor data		Functions	
Switching distance ¹	20 mm	Indicator LED, yellow	Switching output indicator
Switching distance ²	40 mm		
Repeatability ¹	1 mm ⁴		
Repeatability ²	2 mm ⁴		
Hysteresis	≤ 15 % ⁵		
Reduction factor; Al ³	1.00 / 1.00		
Reduction factor; Cu ³	0.90 / 0.90		
Reduction factor; V2A 1 mm thick ³	0.35 / no detection		
Reduction factor; V2A 2 mm thick ³	0.70 / 0.25		
Reduction factor; steel FE 360 ³	1.00 / 1.00		
Reduction factor; brass ³	1.30 / 1.20		
Electrical data		Mechanical data	
Operating voltage, +U _B	10 ... 30V DC ⁶	Dimensions	M30 × 63.5 mm
No-load current, I ₀	≤ 10 mA	Mounting	Flush / non-flush (see Selection Table)
Operating current, I _I	≤ 200 mA	Enclosure rating	IP 69K & IP 68 ⁷
Voltage drop, U _D	≤ 2 V at 200 mA	Material, housing	Stainless steel, V2A
Protective circuits	Reverse-polarity protection, U _B / 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

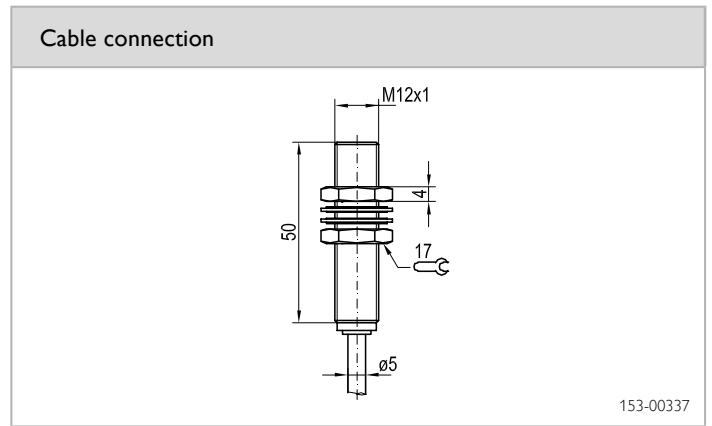
¹ Flush devices ² Non-flush devices ³ Flush / non-flush devices ⁴ U_B = 20 ... 30V DC, T_A = 23 °C ± 5 °C ⁵ Refers to switching distance

⁶ Max. 20 % ripple, within U_B ⁷ 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

Inductive sensor with analogue output



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

Electrical data	
Operating voltage, +U _B	15 ... 30V DC ¹
No-load current, I ₀	≤ 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 ²
Mounting	Quasi-flush
Material, housing	Brass, chrome-plated
Type of connection	See Selection Table
Ambient temperature: operation	-10 ... +60 °C

¹ Max. 10 % ripple, within U_B ²With connected IP 67 plug

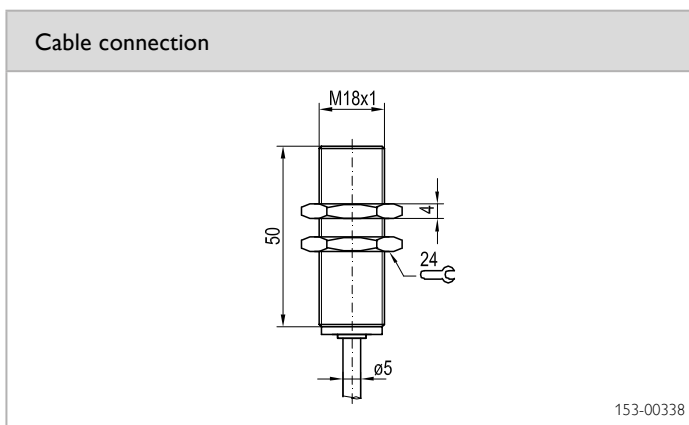
Connection, 4-wire	Characteristic output curve
<p>154-00215</p>	<p>091-13282</p>

12

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	
Switching distance	0 ... 10 mm
Repeatability	≤ 0.3 mm

Electrical data	
Operating voltage, +U _B	15 ... 30V DC ¹
No-load current, I ₀	≤ 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	M18 × 50 mm
Mounting	Quasi-flush
Enclosure rating	IP 67 ²
Material, housing	Brass, chrome-plated
Type of connection	See Selection Table
Ambient temperature: operation	-10 ... +60 °C

¹ Max. 10 % ripple, within U_B ² With connected IP 67 plug

Connection, 4-wire	Characteristic output curve
<p>154-00215</p>	<p>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