

Inductive sensors

The metal detectors

Barrel-type housings

from Page 625

- Smooth housings or housings with metrical threads
Ø 3 mm, Ø 4 mm, Ø 6.5 mm, M4, M5, M8, M12, M18, M30
- Switching frequency up to 5 kHz
- Metal, stainless steel or full-stainless steel versions available
- Switching distances standard (2-fold) or increased (3-fold)
- Switching or analogue output
- Flush, quasi-flush and non-flush mounting possibilities
- Factor 1 sensors, switching distance independent of metal type
- Enclosure rating IP 67, IP 68 up to 100 bar and IP 69K (high-pressure resistant sensors)
- IO-Link version 1.1 integrated

Cubic housings

from Page 673

- Three housing designs for numerous applications
5 x 5 x 25 mm
8 x 8 x 59 mm
40 x 40 x 67 mm
- Switching frequency up to 5 kHz
- Plastic and metal variants
- Switching distances from 1.5 mm to 40 mm
- Switching output
- Flush, quasi-flush and non-flush mounting possibilities
- Enclosure rating IP 67 and IP 68 / IP 69K
- IO-Link version 1.1 integrated



Due to their functional principle, inductive sensors are exclusively suitable for detecting metal objects.

But they do this extremely reliably and are also very robust and resistant (e.g. regarding environmental factors such as high pressure or contamination), 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 moving 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.

Communication via IO-Link 1.1 enables to parameterize these sensors individually and to teach-in SmartFunctions. With these functions, an optimum adaptation to the application requirements is achieved, which was previously only possible with significantly higher costs. Sensor diagnostic data such as switching cycles or sensor temperature can be read out comfortably. This significantly increases the field of applications as well as the sensor reliability.

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.

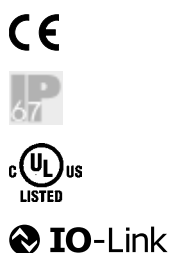
TYPICAL INDUCTIVE SENSORS

- Wide range of barrel-type and cubic sensors
- Product versions with double (standard) and triple (increased) switching distance
- Robust metal housing made of nickel-plated brass/chrome-plated, stainless steel or entirely of stainless steel
- Housing sizes Ø 3 mm, Ø 4 mm, Ø 6.5 mm, M4 to M30 or cubic variants
- Variants with IO-Link 1.1 or analogue output available

Next-generation sensors							
Standard switching distance							
Housing size	Part no.	Type code	Installation	Switching distance	Switching output	Connection type	Page
Ø 3 mm	996-01000	IDT 3-S-B2-PSL-KM3	Flush	1 mm	PNP / NO / IO-Link 1.1	Pigtail 0.2 m with plug, M8x1, 3-pin	625
Ø 4 mm	996-01002	IDT 4-S-B2-PSL-M3M	Flush	1.5 mm	PNP / NO / IO-Link 1.1	Metal plug, M8x1, 3-pin	627
M4	996-01001	IMT 4-S-B2-PSL-KM3	Flush	1 mm	PNP / NO / IO-Link 1.1	Pigtail 0.2 m with plug, M8x1, 3-pin	629
M5	996-01003	IMT 5-S-B2-PSL-M3M	Flush	1.5 mm	PNP / NO / IO-Link 1.1	Metal plug, M8x1, 3-pin	631
Ø 6.5 mm	996-01004	IDT 6-S-B2-PSL-M3M	Flush	2 mm	PNP / NO / IO-Link 1.1	Metal plug, M8x1, 3-pin	633
Ø 6.5 mm	996-01005	IDT 6-S-NB2-PSL-M3M	Non-flush	4 mm	PNP / NO / IO-Link 1.1	Metal plug, M8x1, 3-pin	633
M8	996-01006	IMT 8-S-B2-PSL-M3M	Flush	2 mm	PNP / NO / IO-Link 1.1	Metal plug, M8x1, 3-pin	635
M8	996-01007	IMT 8-S-NB2-PSL-M3M	Non-flush	4 mm	PNP / NO / IO-Link 1.1	Metal plug, M8x1, 3-pin	635
M12	996-01008	IMT 12-S-B2-PSL-L4M	Flush	4 mm	PNP / NO / IO-Link 1.1	Metal plug, M12x1, 4-pin	637
M12	996-01009	IMT 12-S-NB2-PSL-L4M	Non-flush	8 mm	PNP / NO / IO-Link 1.1	Metal plug, M12x1, 4-pin	637
M18	996-01010	IMT 18-S-B2-PSL-L4M	Flush	8 mm	PNP / NO / IO-Link 1.1	Metal plug, M12x1, 4-pin	639
M18	996-01011	IMT 18-S-NB2-PSL-L4M	Non-flush	12 mm	PNP / NO / IO-Link 1.1	Metal plug, M12x1, 4-pin	639
M30	996-01012	IMT 30-S-B2-PSL-L4M	Flush	10 mm	PNP / NO / IO-Link 1.1	Metal plug, M12x1, 4-pin	641
M30	996-01013	IMT 30-S-NB2-PSL-L4M	Non-flush	25 mm	PNP / NO / IO-Link 1.1	Metal plug, M12x1, 4-pin	641
Increased switching distance							
Ø 4 mm	996-01014	IDT 4-S-QB3-PSL-M3M	Quasi-flush	2.5 mm	PNP / NO / IO-Link 1.1	Metal plug, M8x1, 3-pin	643
M5	996-01015	IMT 5-S-QB3-PSL-M3M	Quasi-flush	2.5 mm	PNP / NO / IO-Link 1.1	Metal plug, M8x1, 3-pin	645
Ø 6.5 mm	996-01016	IDT 6-S-QB3-PSL-M3M	Quasi-flush	3 mm	PNP / NO / IO-Link 1.1	Metal plug, M8x1, 3-pin	647
M8	996-01017	IMT 8-S-QB3-PSL-M3M	Quasi-flush	3 mm	PNP / NO / IO-Link 1.1	Metal plug, M8x1, 3-pin	649
M8	996-01018	IMT 8-S-NB3-PSL-M3M	Non-flush	6 mm	PNP / NO / IO-Link 1.1	Metal plug, M8x1, 3-pin	649
M12	996-01019	IMT 12-S-QB3-PSL-L4M	Quasi-flush	6 mm	PNP / NO / IO-Link 1.1	Metal plug, M12x1, 4-pin	651
M12	996-01020	IMT 12-S-NB3-PSL-L4M	Non-flush	10 mm	PNP / NO / IO-Link 1.1	Metal plug, M12x1, 4-pin	651
M18	996-01021	IMT 18-S-QB3-PSL-L4M	Quasi-flush	12 mm	PNP / NO / IO-Link 1.1	Metal plug, M12x1, 4-pin	653
M18	996-01022	IMT 18-S-NB3-PSL-L4M	Non-flush	20 mm	PNP / NO / IO-Link 1.1	Metal plug, M12x1, 4-pin	653
M30	996-01023	IMT 30-S-QB3-PSL-L4M	Quasi-flush	22 mm	PNP / NO / IO-Link 1.1	Metal plug, M12x1, 4-pin	655
M30	996-01024	IMT 30-S-NB3-PSL-L4M	Non-flush	36 mm	PNP / NO / IO-Link 1.1	Metal plug, M12x1, 4-pin	655
Increased switching distance, analogue output							
M8	996-01033	IMT 8-A-QB3-PS-M3M	Quasi-flush	0 ... 4 mm	Analogue output 0 ... 10V	Metal plug, M8x1, 3-pin	657
M12	996-01034	IMT 12-A-QB3-PS-L4M	Quasi-flush	0 ... 6 mm	Analogue output 0 ... 10V / 4 ... 20 mA	Metal plug, M12x1, 4-pin	659
M18	996-01035	IMT 18-A-QB3-PS-L4M	Quasi-flush	0 ... 10 mm	Analogue output 0 ... 10V / 4 ... 20 mA	Metal plug, M12x1, 4-pin	661
M18	996-01036	IMT 18-A-NB3-PS-L4M	Non-flush	0 ... 20 mm	Analogue output 0 ... 10V / 4 ... 20 mA	Metal plug, M12x1, 4-pin	661
M30	996-01037	IMT 30-A-QB3-PS-L4M	Quasi-flush	0 ... 20 mm	Analogue output 0 ... 10V / 4 ... 20 mA	Metal plug, M12x1, 4-pin	663
M30	996-01038	IMT 30-A-NB3-PS-L4M	Non-flush	0 ... 40 mm	Analogue output 0 ... 10V / 4 ... 20 mA	Metal plug, M12x1, 4-pin	663
All-metal housing / Factor 1							
M8	996-01025	IMT 8-FM-S-B2-PSL-M3M	Flush	3 mm	PNP / NO / IO-Link 1.1	Metal plug, M8x1, 3-pin	665
M8	996-01026	IMT 8-FM-S-NB2-PSL-M3M	Non-flush	6 mm	PNP / NO / IO-Link 1.1	Metal plug, M8x1, 3-pin	665
M12	996-01027	IMT 12-FM-S-B2-PSL-L4M	Flush	6 mm	PNP / NO / IO-Link 1.1	Metal plug, M12x1, 4-pin	667
M12	996-01028	IMT 12-FM-S-NB2-PSL-L4M	Non-flush	10 mm	PNP / NO / IO-Link 1.1	Metal plug, M12x1, 4-pin	667
M18	996-01029	IMT 18-FM-S-B2-PSL-L4M	Flush	10 mm	PNP / NO / IO-Link 1.1	Metal plug, M12x1, 4-pin	669
M18	996-01030	IMT 18-FM-S-NB2-PSL-L4M	Non-flush	20 mm	PNP / NO / IO-Link 1.1	Metal plug, M12x1, 4-pin	669
M30	996-01031	IMT 30-FM-S-B2-PSL-L4M	Flush	20 mm	PNP / NO / IO-Link 1.1	Metal plug, M12x1, 4-pin	671
M30	996-01032	IMT 30-FM-S-NB2-PSL-L4M	Non-flush	40 mm	PNP / NO / IO-Link 1.1	Metal plug, M12x1, 4-pin	671
Cubic housing							
5 x 5 x 25	996-01039	IKT 5-S-B2-PSL-KM3	Flush	1.5 mm	PNP / NO / IO-Link 1.1	Metal plug, M8x1, 3-pin	673
8 x 8 x 59	996-01040	IKT 8-S-QB3-PSL-M3M	Quasi-flush	3 mm	PNP / NO / IO-Link 1.1	Metal plug, M8x1, 3-pin	675
8 x 8 x 59	996-01041	IKT 8-S-B2-PSL-M3M	Flush	2 mm	PNP / NO / IO-Link 1.1	Metal plug, M8x1, 3-pin	675
40 x 40 x 67	996-01042	IKT 40-S-B2-PSL-L4M	Flush	20 mm	PNP / NO/NC / IO-Link 1.1	Metal plug, M12x1, 4-pin	677
40 x 40 x 67	996-01043	IKT 40-S-NB3-PSL-L4M	Non-flush	40 mm	PNP / NO/NC / IO-Link 1.1	Metal plug, M12x1, 4-pin	677

IDT 3

Inductive sensor \varnothing 3 mm / standard switching distance



PRODUCT-HIGHLIGHTS

- Various parameterization options
- IO-Link 1.1

Sensor data		Functions	
Rated operating distance S_n	1 mm	Indicator LED yellow	Switching output indicator
Ensured operating distance S_b	≤ 0.81 mm	Adjustment possibilities	N.O. / N.C.
Hysteresis	$\leq 10\% S_r$ typ. ¹	Default settings	Wide variety of adjustment possibilities via IO-Link
Repeatability	≤ 0.02 mm		N.O.
Temperature drift	$\leq 10\% S_r$		
Correction factor steel FE 360	1		
Correction factor V2A	0.8		
Correction factor CuZn	0.6		
Correction factor Al	0.5		
Correction factor Cu	0.45		
Electrical data		Mechanical data	
Operating voltage, $+U_b$	10 ... 30V DC	Dimensions	\varnothing 3 mm x 22 mm
Residual ripple	$\leq 20\% U_b$	Mounting	Flush
No-load current, I_o	≤ 10 mA	Enclosure rating	IP 67 ³
Output current, I_e	≤ 100 mA	Material housing	Stainless steel, V2A
Protective circuits	Induction protection / reverse-polarity protection, U_b / short-circuit protection (Q)	Material active surface	Polyester
Residual current	≤ 0.1 mA	Type of connection	Pigtail 0.2 m with plug, M8x1, 3-pin
Voltage drop, U_D	≤ 2.0 V DC at 100 mA	Ambient temperature: operation	-25 ... +70 °C
Switching output, Q	PNP	Ambient temperature: storage	-25 ... +70 °C
Output function	N.O./N.C. ²	Weight	15 g
Power-on delay	≤ 10 ms	Vibration and impact resistance	EN IEC 60947-5-2
Switching frequency f (ti/tp 1:1)	≤ 3 kHz	Tightening torque	0.15 Nm
		Standard target FE 360	3 mm x 3 mm x 1 mm
IO-Link			
Communication mode	COM 2		
Min. cycletime	10.4 ms		
SIO mode	Compatible		
Length process data	2 Bit		
Specification	1.1		
ISDU	Not compatible		

¹ S_r (Effective switching distance) = $\pm 10\%$ of S_n ² Adjustable / parameterisable via IO-Link ³ With connected IP 67 plug

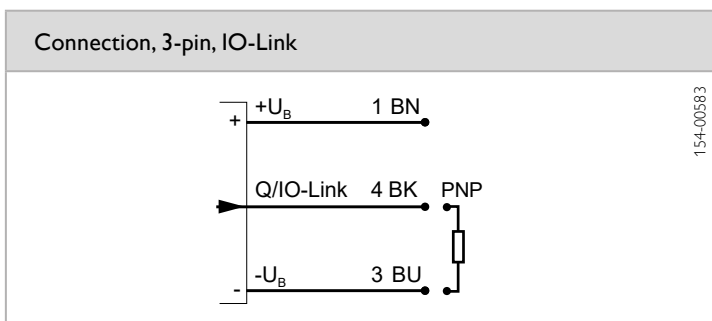
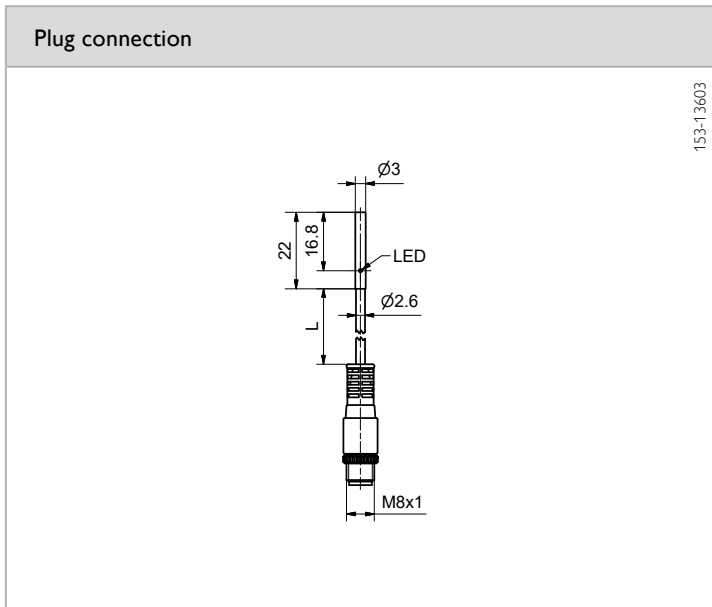


All data measured according to standard EN IEC 60947-5-2 with $U_b = 20 \dots 30$ V DC, $T_A = 23 \text{ °C} \pm 5 \text{ °C}$

The switching distance of the sensor must be multiplied by the correction factor of the material. The switching distance on aluminium is thus $S_{n,AL} = S_n \times CF_{AL}$.

For flush mounting the distance is multiplied by the additional correction factor of the backing material, $S_{n,Al} = S_n \times CF_{AL} \times CF_{mounting\ material}$.

Switching distance	Switching output	Type of connection	Part number	Article number
1 mm	PNP	Pigtail 0.2 m with plug, M8x1, 3-pin, IO-Link	IDT 3-S-B2-PSL-KM3	996-01000



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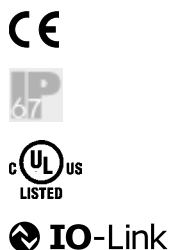
Mounting

155-03390

A: Metal-free zone	a: 2.5 mm
B: Active surface	b: 5 mm
C: Backing material	c: 3 mm
	d: -

IDT 4

Inductive sensor \varnothing 4 mm / standard switching distance



PRODUCT-HIGHLIGHTS

- Various parameterization options
- IO-Link 1.1

Sensor data		Functions	
Rated operating distance S_n	1.5 mm	Indicator LED yellow	Switching output indicator
Ensured operating distance S_b	≤ 1.22 mm	Adjustment possibilities	N.O. / N.C.
Hysteresis	$\leq 10\% S_r$ typ. ¹	Default settings	Wide variety of adjustment possibilities via IO-Link
Repeatability	≤ 0.03 mm		N.O.
Temperature drift	$\leq 10\% S_r$		
Correction factor steel FE 360	1		
Correction factor V2A	0.75		
Correction factor CuZn	0.5		
Correction factor Al	0.4		
Correction factor Cu	0.4		
Electrical data		Mechanical data	
Operating voltage, $+U_b$	10 ... 30V DC	Dimensions	\varnothing 4 mm x 38 mm
Residual ripple	$\leq 20\% U_b$	Mounting	Flush
No-load current, I_o	≤ 10 mA	Enclosure rating	IP 67 ³
Output current, I_e	≤ 200 mA	Material housing	Stainless steel, V2A
Protective circuits	Induction protection / reverse-polarity protection, U_b / short-circuit protection (Q)	Material active surface	POM
Residual current	≤ 0.1 mA	Type of connection	Stainless steel plug, V2A, M8x1, 3-pin
Voltage drop, U_D	≤ 2.0 V DC at 100 mA	Ambient temperature: operation	-25 ... +70 °C
Switching output, Q	PNP	Ambient temperature: storage	-25 ... +70 °C
Output function	N.O./N.C. ²	Weight	11.5 g
Power-on delay	≤ 10 ms	Vibration and impact resistance	EN IEC 60947-5-2
Switching frequency f (ti/tp 1:1)	≤ 3 kHz	Tightening torque	0.15 Nm
		Standard target FE 360	4.5 mm x 4.5 mm x 1 mm
IO-Link			
Communication mode	COM 2		
Min. cycletime	10.4 ms		
SIO mode	Compatible		
Length process data	2 Bit		
Specification	1.1		
ISDU	Not compatible		

¹ S_r (Effective switching distance) = $\pm 10\%$ of S_n ² Adjustable / parameterisable via IO-Link ³ With connected IP 67 plug

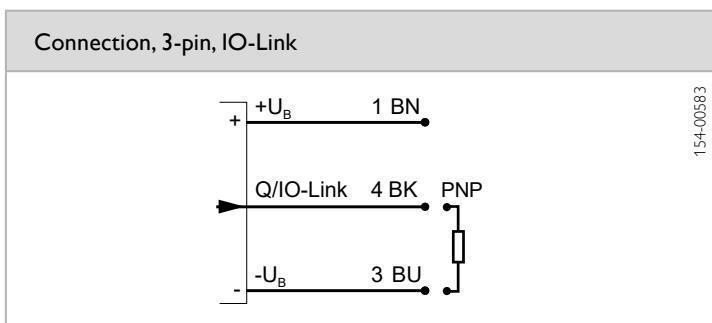
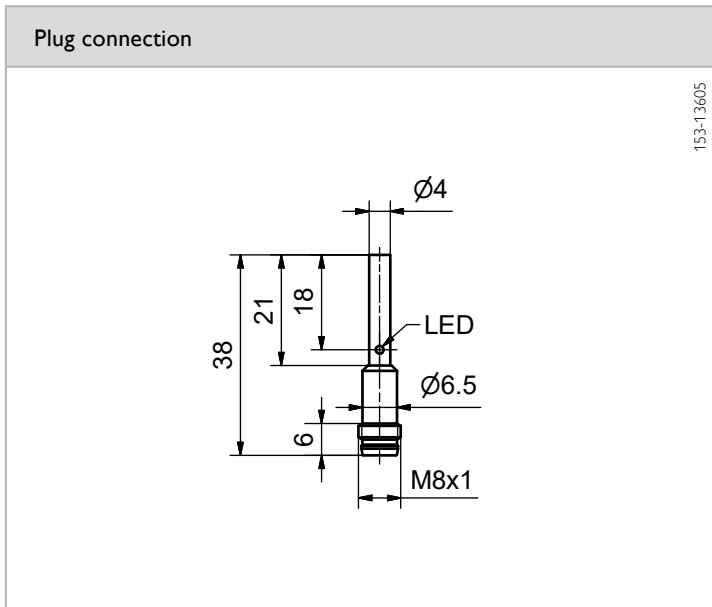


All data measured according to standard EN IEC 60947-5-2 with $U_b = 20 \dots 30$ V DC, $T_A = 23 \text{ °C} \pm 5 \text{ °C}$

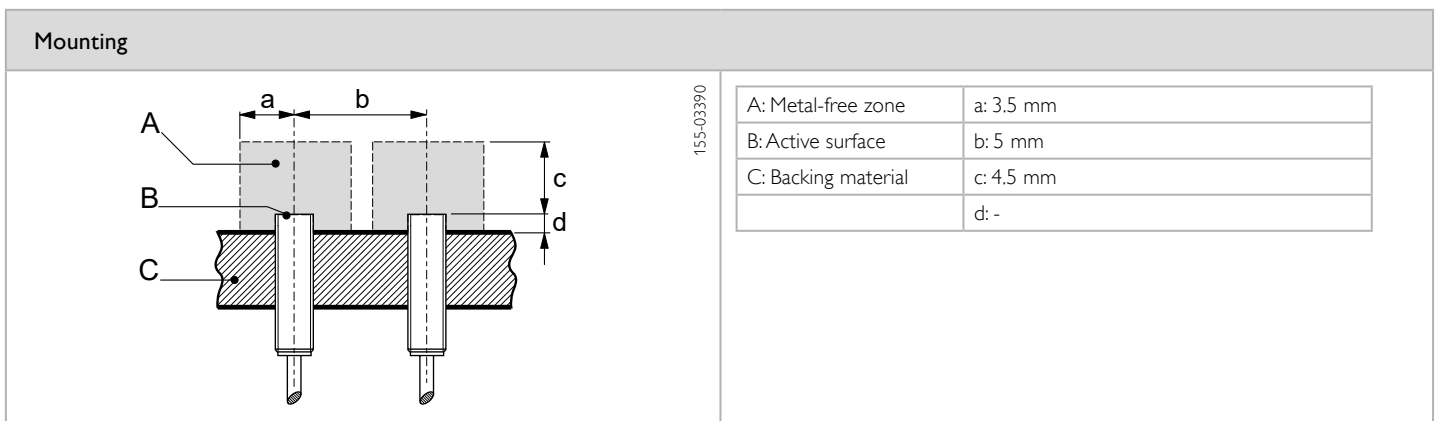
The switching distance of the sensor must be multiplied by the correction factor of the material. The switching distance on aluminium is thus $S_{n,AL} = S_n \times CF_{AL}$

For flush mounting the distance is multiplied by the additional correction factor of the backing material, $S_{n,Al} = S_n \times CF_{AL} \times CF_{mounting\ material}$.

Switching distance	Switching output	Type of connection	Part number	Article number
1.5 mm	PNP	Stainless steel plug, V2A, M8x1, 3-pin, IO-Link	IDT 4-S-B2-PSL-M3M	996-01002



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IMT 4

Inductive sensor M4 / standard switching distance



PRODUCT-HIGHLIGHTS

- Various parameterization options
- IO-Link 1.1

Sensor data		Functions	
Rated operating distance S_n	1 mm	Indicator LED yellow	Switching output indicator
Ensured operating distance S_b	≤ 0.81 mm	Adjustment possibilities	N.O. / N.C.
Hysteresis	$\leq 10\% S_r$ typ. ¹	Default settings	Wide variety of adjustment possibilities via IO-Link
Repeatability	≤ 0.02 mm		N.O.
Temperature drift	$\leq 10\% S_r$		
Correction factor steel FE 360	1		
Correction factor V2A	0.8		
Correction factor CuZn	0.6		
Correction factor Al	0.5		
Correction factor Cu	0.45		
Electrical data		Mechanical data	
Operating voltage, $+U_b$	10 ... 30V DC	Dimensions	M4 x 22 mm
Residual ripple	$\leq 20\% U_b$	Mounting	Flush
No-load current, I_o	≤ 10 mA	Enclosure rating	IP 67 ³
Output current, I_e	≤ 100 mA	Material housing	Stainless steel, V2A
Protective circuits	Induction protection / reverse-polarity protection, U_b / short-circuit protection (Q)	Material active surface	Polyester
Residual current	≤ 0.1 mA	Type of connection	Pigtail 0.2 m with plug, M8x1, 3-pin
Voltage drop, U_D	≤ 2.0 V DC at 100 mA	Ambient temperature: operation	-25 ... +70 °C
Switching output, Q	PNP	Ambient temperature: storage	-25 ... +70 °C
Output function	N.O./N.C. ²	Weight	20 g
Power-on delay	≤ 10 ms	Vibration and impact resistance	EN IEC 60947-5-2
Switching frequency f (ti/tp 1:1)	≤ 3 kHz	Tightening torque	1.5 Nm
		Standard target FE 360	4 mm x 4 mm x 1 mm
IO-Link			
Communication mode	COM 2		
Min. cycletime	10.4 ms		
SIO mode	Compatible		
Length process data	2 Bit		
Specification	1.1		
ISDU	Not compatible		

¹ S_r (Effective switching distance) = $\pm 10\%$ of S_n ² Adjustable / parameterisable via IO-Link ³ With connected IP 67 plug

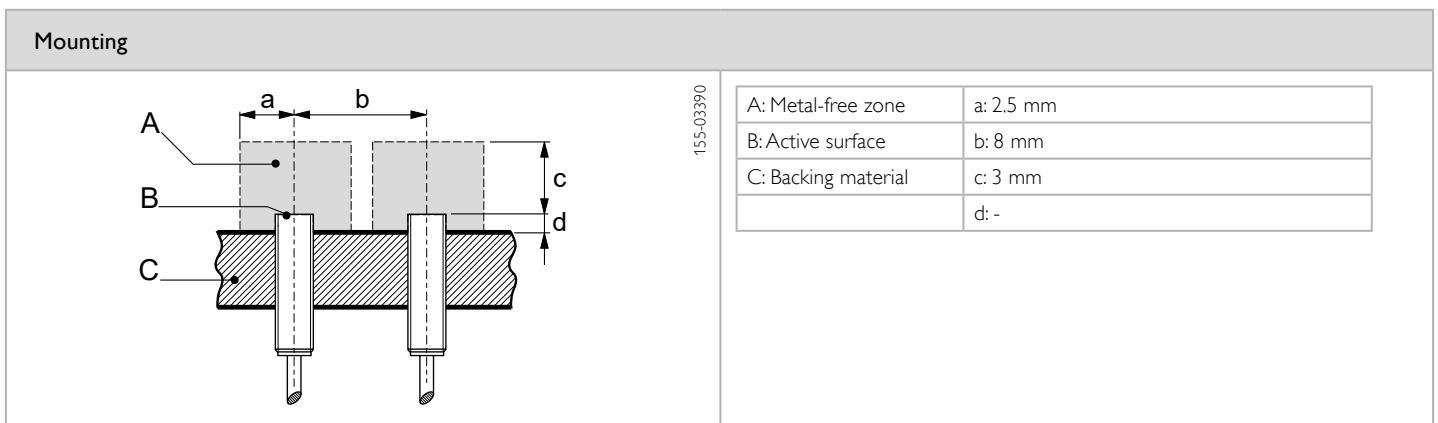
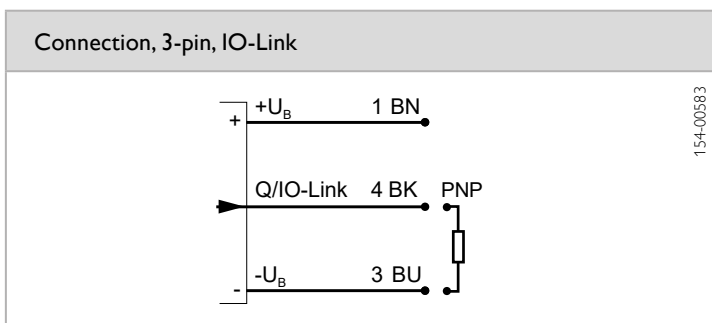
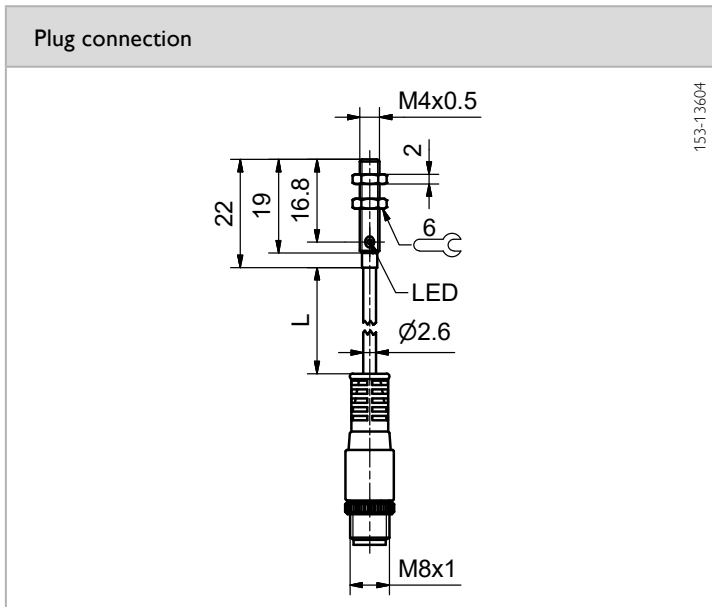


All data measured according to standard EN IEC 60947-5-2 with $U_b = 20 \dots 30$ V DC, $T_A = 23 \text{ °C} \pm 5 \text{ °C}$

The switching distance of the sensor must be multiplied by the correction factor of the material. The switching distance on aluminium is thus $S_{n,AL} = S_n \times CF_{AL}$.

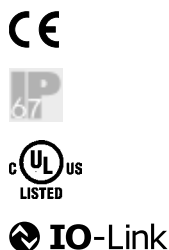
For flush mounting the distance is multiplied by the additional correction factor of the backing material, $S_{n,Al} = S_n \times CF_{AL} \times CF_{mounting\ material}$.

Switching distance	Switching output	Type of connection	Part number	Article number
1 mm	PNP	Pigtail 0.2 m with plug, M8x1, 3-pin, IO-Link	IMT 4-S-B2-PSL-KM3	996-01001



IMT 5

Inductive sensor M5 / standard switching distance



PRODUCT-HIGHLIGHTS

- Various parameterization options
- IO-Link 1.1

Sensor data		Functions	
Rated operating distance S_n	1.5 mm	Indicator LED yellow	Switching output indicator
Ensured operating distance S_b	≤ 1.22 mm	Adjustment possibilities	N.O. / N.C.
Hysteresis	$\leq 10\% S_r$ typ. ¹	Default settings	Wide variety of adjustment possibilities via IO-Link
Repeatability	≤ 0.03 mm		N.O.
Temperature drift	$\leq 10\% S_r$		
Correction factor steel FE 360	1		
Correction factor V2A 1 / 2 mm	0.75		
Correction factor CuZn	0.5		
Correction factor Al	0.4		
Correction factor Cu	0.4		
Electrical data		Mechanical data	
Operating voltage, $+U_b$	10 ... 30V DC	Dimensions	M5 x 38 mm
Residual ripple	$\leq 20\% U_b$	Mounting	Flush
No-load current, I_o	≤ 10 mA	Enclosure rating	IP 67 ³
Output current, I_e	≤ 200 mA	Material housing	Stainless steel, V2A
Protective circuits	Induction protection / reverse-polarity protection, U_b / short-circuit protection (Q)	Material active surface	POM
Residual current	≤ 0.1 mA	Type of connection	Stainless steel plug, V2A, M8x1, 3-pin
Voltage drop, U_D	≤ 2.0 V DC at 200 mA	Ambient temperature: operation	-25 ... +70 °C
Switching output, Q	PNP	Ambient temperature: storage	-25 ... +70 °C
Output function	N.O./N.C. ²	Weight	13.9 g
Power-on delay	≤ 10 ms	Vibration and impact resistance	EN IEC 60947-5-2
Switching frequency f (ti/tp 1:1)	≤ 3 kHz	Tightening torque	1.5 Nm
		Standard target FE 360	5 mm x 5 mm x 1 mm
IO-Link			
Communication mode	COM 2		
Min. cycletime	10.4 ms		
SIO mode	Compatible		
Length process data	2 Bit		
Specification	1.1		
ISDU	Not compatible		

¹ S_r (Effective switching distance) = $\pm 10\%$ of S_n ² Adjustable / parameterisable via IO-Link ³ With connected IP 67 plug

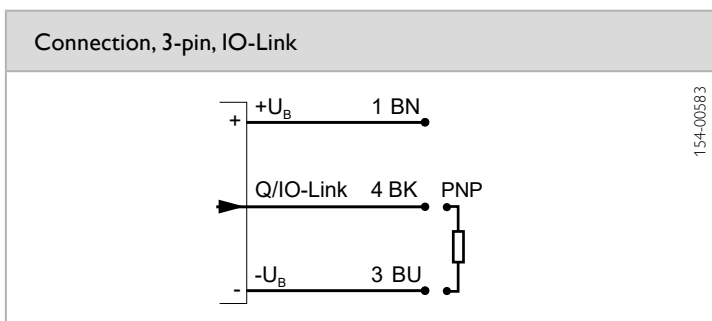
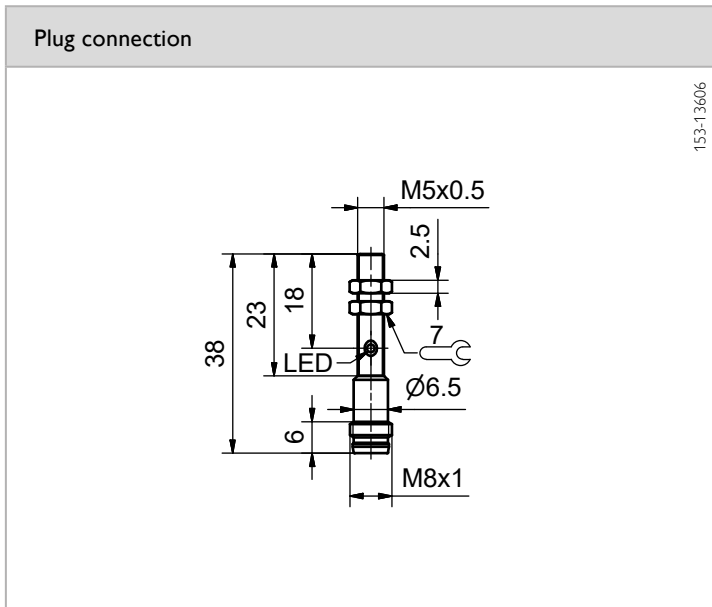


All data measured according to standard EN IEC 60947-5-2 with $U_b = 20 \dots 30$ V DC, $T_A = 23 \text{ °C} \pm 5 \text{ °C}$

The switching distance of the sensor must be multiplied by the correction factor of the material. The switching distance on aluminium is thus $S_{n,AL} = S_n \times CF_{AL}$.

For flush mounting the distance is multiplied by the additional correction factor of the backing material, $S_{n,Al} = S_n \times CF_{AL} \times CF_{mounting\ material}$.

Switching distance	Switching output	Type of connection	Part number	Article number
1.5 mm	PNP	Stainless steel plug, V2A, M8x1, 3-pin, IO-Link	IMT 5-S-B2-PSL-M3M	996-01003



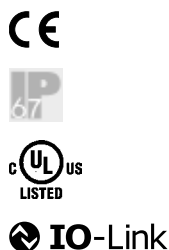
Mounting

A: Metal-free zone	a: 4 mm
B: Active surface	b: 6 mm
C: Backing material	c: 4.5 mm
	d: -

155-03390

IDT 6

Inductive sensor \varnothing 6.5 mm / standard switching distance



PRODUCT-HIGHLIGHTS

- Various parameterization options
- IO-Link 1.1

Sensor data		Functions	
Rated operating distance S_n	2 mm ¹ / 4 mm ²	Indicator LED yellow	Switching output indicator
Ensured operating distance S_b	$\leq 1.62 \text{ mm}^1 / \leq 3.24 \text{ mm}^2$	Adjustment possibilities	N.O. / N.C.
Hysteresis	$\leq 10 \% S_r \text{ typ.}^{1/3} / \leq 20 \% S_r \text{ typ.}^{2/3}$	Default settings	Wide variety of adjustment possibilities via IO-Link
Repeatability	$\leq 0.04 \text{ mm}^1 / \leq 0.2 \text{ mm}^2$		N.O.
Temperature drift	$\leq 10 \% S_r$		
Correction factor steel FE 360	1		
Correction factor V2A	0.7		
Correction factor CuZn	0.4 ¹ / 0.5 ²		
Correction factor Al	0.3 ¹ / 0.45 ²		
Correction factor Cu	0.25 ¹ / 0.4 ²		
Electrical data		Mechanical data	
Operating voltage, +U _b	10 ... 30V DC	Dimensions	\varnothing 6.5 mm x 45 mm
Residual ripple	$\leq 20 \% U_b$	Mounting	Flush / non-flush (see selection table)
No-load current, I ₀	$\leq 10 \text{ mA}$	Enclosure rating	IP 67 ⁵
Output current, I _e	$\leq 200 \text{ mA}$	Material housing	Stainless steel, V2A
Protective circuits	Induction protection / reverse-polarity protection, U _b / short-circuit protection (Q)	Material active surface	PA12 ¹ / PBTP Crastin ²
Residual current	$\leq 0.1 \text{ mA}$	Type of connection	Stainless steel plug, V2A, M8x1, 3-pin
Voltage drop, U _D	$\leq 2.0 \text{ V DC at } 200 \text{ mA}$	Ambient temperature: operation	-25 ... +70 °C
Switching output, Q	PNP	Ambient temperature: storage	-25 ... +70 °C
Output function	N.O./N.C. ⁴	Weight	12.4 g ¹ / 6 g ²
Power-on delay	$\leq 10 \text{ ms}^1 / \leq 80 \text{ ms}^2$	Vibration and impact resistance	EN IEC 60947-5-2
Switching frequency f (ti/tp 1:1)	$\leq 5 \text{ kHz}^1 / \leq 3.5 \text{ kHz}^2$	Tightening torque	0.3 Nm
		Standard target FE 360	6.5 mm x 6.5 mm x 1 mm ¹ / 12 mm x 12 mm x 1 mm ²
IO-Link			
Communication mode	COM 2		
Min. cycletime	10.4 ms		
SIO mode	Compatible		
Length process data	2 Bit		
Specification	1.1		
ISDU	Not compatible		

¹ Flush devices ² Non-flush devices ³ S_r (Effective switching distance) = $\pm 10 \%$ of S_n ⁴ Adjustable / parameterisable via IO-Link ⁵ With connected IP 67 plug



All data measured according to standard EN IEC 60947-5-2 with U_b = 20 ... 30V DC, T_A = 23 °C \pm 5 °C

The switching distance of the sensor must be multiplied by the correction factor of the material. The switching distance on aluminium is thus $S_{n,AL} = S_n \times CF_{AL}$.

For flush mounting the distance is multiplied by the additional correction factor of the backing material, $S_{n,Al} = S_n \times CF_{AL} \times CF_{mounting\ material}$.

Switching distance	Mounting	Switching output	Type of connection	Part number	Article number
2 mm	Flush	PNP	Stainless steel plug, V2A, M8x1, 3-pin, IO-Link	IDT 6-S-B2-PSL-M3M	996-01004
4 mm	Non-flush	PNP	Stainless steel plug, V2A, M8x1, 3-pin, IO-Link	IDT 6-S-NB2-PSL-M3M	996-01005

Plug connection ¹	Plug connection ²
<p style="text-align: right;">153-13607</p>	<p style="text-align: right;">153-13608</p>

Connection, 3-pin, IO-Link
<p style="text-align: right;">154-00583</p>

Mounting									
<p style="text-align: right;">155-03390</p>	<table border="1"> <tr> <td>A: Metal-free zone</td> <td>a: 6 mm¹ / 10 mm²</td> </tr> <tr> <td>B: Active surface</td> <td>b: 14 mm¹ / 20 mm²</td> </tr> <tr> <td>C: Backing material</td> <td>c: 6 mm¹ / 12 mm²</td> </tr> <tr> <td></td> <td>d: -¹ / 6 mm²</td> </tr> </table>	A: Metal-free zone	a: 6 mm ¹ / 10 mm ²	B: Active surface	b: 14 mm ¹ / 20 mm ²	C: Backing material	c: 6 mm ¹ / 12 mm ²		d: - ¹ / 6 mm ²
A: Metal-free zone	a: 6 mm ¹ / 10 mm ²								
B: Active surface	b: 14 mm ¹ / 20 mm ²								
C: Backing material	c: 6 mm ¹ / 12 mm ²								
	d: - ¹ / 6 mm ²								

IMT 8

Inductive sensor M8 / standard switching distance



PRODUCT-HIGHLIGHTS

- Various parameterization options
- IO-Link 1.1

Sensor data		Functions	
Rated operating distance S_n	2 mm ¹ / 4 mm ²	Indicator LED yellow	Switching output indicator
Ensured operating distance S_b	$\leq 1.62 \text{ mm}^1 / \leq 3.24 \text{ mm}^2$	Adjustment possibilities	N.O. / N.C.
Hysteresis	$\leq 10 \% S_r \text{ typ.}^{1/3} / \leq 20 \% S_r \text{ typ.}^{2/3}$	Default settings	Wide variety of adjustment possibilities via IO-Link
Repeatability	$\leq 0.1 \text{ mm}^1 / \leq 0.2 \text{ mm}^2$		N.O.
Temperature drift	$\leq 10 \% S_r$		
Correction factor steel FE 360	1		
Correction factor V2A 1 / 2 mm	0.7 ¹ / 0.75 ²		
Correction factor CuZn	0.45 ¹ / 0.5 ²		
Correction factor Al	0.3 ¹ / 0.45 ²		
Correction factor Cu	0.3 ¹ / 0.4 ²		
Electrical data		Mechanical data	
Operating voltage, $+U_b$	10 ... 30V DC	Dimensions	M8 x 45 mm
Residual ripple	$\leq 20 \% U_b$	Mounting	Flush / non-flush (see selection table)
No-load current, I_o	$\leq 10 \text{ mA}$	Enclosure rating	IP 67 ⁵
Output current, I_e	$\leq 200 \text{ mA}$	Material housing	Stainless steel, V2A
Protective circuits	Induction protection / reverse-polarity protection, U_b / short-circuit protection (Q)	Material active surface	PA12 ¹ / PBTP Crastin ²
Residual current	$\leq 0.1 \text{ mA}$	Type of connection	Stainless steel plug, V2A, M8x1, 3-pin
Voltage drop, U_D	$\leq 2.0 \text{ V DC at } 200 \text{ mA}$	Ambient temperature: operation	-25 ... +70 °C
Switching output, Q	PNP	Ambient temperature: storage	-25 ... +70 °C
Output function	N.O./N.C. ⁴	Weight	13 g ¹ / 12.3 g ²
Power-on delay	$\leq 32 \text{ ms}^1 / \leq 80 \text{ ms}^2$	Vibration and impact resistance	EN IEC 60947-5-2
Switching frequency f (ti/tp 1:1)	$\leq 5 \text{ kHz}^1 / \leq 3.5 \text{ kHz}^2$	Tightening torque	0.3 Nm
		Standard target FE 360	8 mm x 8 mm x 1 mm ¹ / 12 mm x 12 mm x 1 mm ²
IO-Link			
Communication mode	COM 2		
Min. cycletime	10.4 ms		
SIO mode	Compatible		
Length process data	2 Bit		
Specification	1.1		
ISDU	Not compatible		

¹ Flush devices ² Non-flush devices ³ S_r (Effective switching distance) = $\pm 10 \%$ of S_n ⁴ Adjustable / parameterisable via IO-Link ⁵ With connected IP 67 plug



All data measured according to standard EN IEC 60947-5-2 with $U_b = 20 \dots 30 \text{ V DC}$, $T_A = 23 \text{ °C} \pm 5 \text{ °C}$

The switching distance of the sensor must be multiplied by the correction factor of the material. The switching distance on aluminium is thus $S_{n,AL} = S_n \times CF_{AL}$.

For flush mounting the distance is multiplied by the additional correction factor of the backing material, $S_n,Al = S_n \times CF_{AL} \times CF_{mounting\ material}$.

Switching distance	Mounting	Switching output	Type of connection	Part number	Article number
2 mm	Flush	PNP	Stainless steel plug, V2A, M8x1, 3-pin, IO-Link	IMT 8-S-B2-PSL-M3M	996-01006
4 mm	Non-flush	PNP	Stainless steel plug, V2A, M8x1, 3-pin, IO-Link	IMT 8-S-NB2-PSL-M3M	996-01007

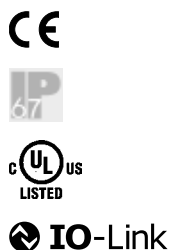
Plug connection ¹	Plug connection ²
153-13609	153-13610

Connection, 3-pin, IO-Link
154-00583

Mounting									
	<div style="display: flex; align-items: center;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg); margin-right: 10px;">155-03390</div> <table border="1"> <tr> <td>A: Metal-free zone</td> <td>a: 6 mm¹ / 10 mm²</td> </tr> <tr> <td>B: Active surface</td> <td>b: 12 mm¹ / 15 mm²</td> </tr> <tr> <td>C: Backing material</td> <td>c: 6 mm¹ / 12 mm²</td> </tr> <tr> <td></td> <td>d: -¹/6 mm²</td> </tr> </table> </div>	A: Metal-free zone	a: 6 mm ¹ / 10 mm ²	B: Active surface	b: 12 mm ¹ / 15 mm ²	C: Backing material	c: 6 mm ¹ / 12 mm ²		d: - ¹ /6 mm ²
A: Metal-free zone	a: 6 mm ¹ / 10 mm ²								
B: Active surface	b: 12 mm ¹ / 15 mm ²								
C: Backing material	c: 6 mm ¹ / 12 mm ²								
	d: - ¹ /6 mm ²								

IMT 12

Inductive sensor M12 / standard switching distance



PRODUCT-HIGHLIGHTS

- Various parameterization options
- IO-Link 1.1

Sensor data		Functions	
Rated operating distance S_n	4 mm ¹ / 8 mm ²	Indicator LED yellow	Switching output indicator
Ensured operating distance S_b	$\leq 3.24 \text{ mm}^1 / \leq 6.48 \text{ mm}^2$	Adjustment possibilities	N.O. / N.C.
Hysteresis	$\leq 20 \% S_r \text{ typ.}^3$	Default settings	Wide variety of adjustment possibilities via IO-Link
Repeatability	$\leq 0.2 \text{ mm}^1 / \leq 0.4 \text{ mm}^2$		N.O.
Temperature drift	$\leq 10 \% S_r$		
Correction factor steel FE 360	1		
Correction factor V2A	0.8 ¹ / 0.75 ²		
Correction factor CuZn	0.54 ¹ / 0.55 ²		
Correction factor Al	0.44 ¹ / 0.7 ²		
Correction factor Cu	0.4 ¹ / 0.45 ²		
Electrical data		Mechanical data	
Operating voltage, $+U_b$	10 ... 30V DC	Dimensions	M12 x 60 mm
Residual ripple	$\leq 20 \% U_b$	Mounting	Flush / non-flush (see selection table)
No-load current, I_o	$\leq 10 \text{ mA}$	Enclosure rating	IP 67 ⁵
Output current, I_e	$\leq 200 \text{ mA}$	Material housing	Brass, nickel-plated
Protective circuits	Induction protection / reverse-polarity protection, U_b / short-circuit protection (Q)	Material active surface	PBTP
Residual current	$\leq 0.1 \text{ mA}$	Type of connection	Metal plug, M12x1, 4-pin
Voltage drop, U_D	$\leq 2.0 \text{ V DC at } 200 \text{ mA}$	Ambient temperature: operation	-25 ... +70 °C
Switching output, Q	PNP	Ambient temperature: storage	-25 ... +70 °C
Output function	N.O./N.C. ⁴	Weight	25 g ¹ / 29 g ²
Power-on delay	$\leq 60 \text{ ms}^1 / \leq 50 \text{ ms}^2$	Vibration and impact resistance	EN IEC 60947-5-2
Switching frequency f (ti/tp 1:1)	$\leq 2.5 \text{ kHz}^1 / \leq 1.4 \text{ kHz}^2$	Tightening torque	10 Nm
		Standard target FE 360	12 mm x 12 mm x 1 mm ¹ / 24 mm x 24 mm x 1 mm ²
IO-Link			
Communication mode	COM 2		
Min. cycletime	10.4 ms		
SIO mode	Compatible		
Length process data	2 Bit		
Specification	1.1		
ISDU	Not compatible		

¹ Flush devices ² Non-flush devices ³ S_r (Effective switching distance) = $\pm 10 \%$ of S_n ⁴ Adjustable / parameterisable via IO-Link ⁵ With connected IP 67 plug



All data measured according to standard EN IEC 60947-5-2 with $U_b = 20 \dots 30 \text{ V DC}$, $T_A = 23 \text{ °C} \pm 5 \text{ °C}$

The switching distance of the sensor must be multiplied by the correction factor of the material. The switching distance on aluminium is thus $S_{n,AL} = S_n \times CF_{AL}$.

For flush mounting the distance is multiplied by the additional correction factor of the backing material, $S_{n,Al} = S_n \times CF_{AL} \times CF_{mounting\ material}$.

Switching distance	Mounting	Switching output	Type of connection	Part number	Article number
4 mm	Flush	PNP	Metal plug, M12x1, 4-pin, IO-Link	IMT 12-S-B2-PSL-L4M	996-01008
8 mm	Non-flush	PNP	Metal plug, M12x1, 4-pin, IO-Link	IMT 12-S-NB2-PSL-L4M	996-01009

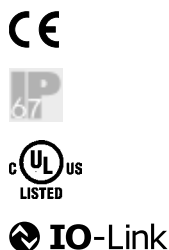
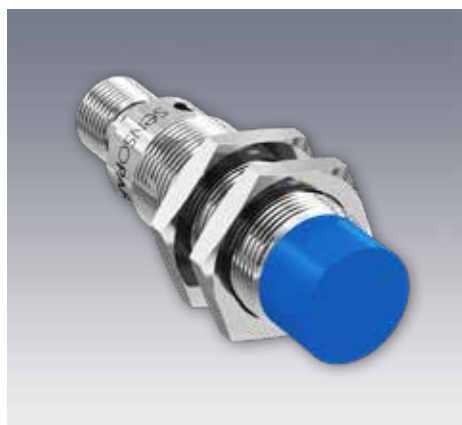
Plug connection ¹	Plug connection ²
<p style="text-align: right;">153-13611</p>	<p style="text-align: right;">153-13612</p>

Connection, 4-pin, IO-Link	
	154-00586

Mounting									
<p style="text-align: right;">155-03390</p>	<table border="1"> <tr> <td>A: Metal-free zone</td> <td>a: 10 mm¹ / 20 mm²</td> </tr> <tr> <td>B: Active surface</td> <td>b: 24 mm¹ / 45 mm²</td> </tr> <tr> <td>C: Backing material</td> <td>c: 12 mm¹ / 24 mm²</td> </tr> <tr> <td></td> <td>d: -1 / 9 mm²</td> </tr> </table>	A: Metal-free zone	a: 10 mm ¹ / 20 mm ²	B: Active surface	b: 24 mm ¹ / 45 mm ²	C: Backing material	c: 12 mm ¹ / 24 mm ²		d: -1 / 9 mm ²
A: Metal-free zone	a: 10 mm ¹ / 20 mm ²								
B: Active surface	b: 24 mm ¹ / 45 mm ²								
C: Backing material	c: 12 mm ¹ / 24 mm ²								
	d: -1 / 9 mm ²								

IMT 18

Inductive sensor M18 / standard switching distance



PRODUCT-HIGHLIGHTS

- Various parameterization options
- IO-Link 1.1

Sensor data		Functions	
Rated operating distance S_n	8 mm ¹ / 12 mm ²	Indicator LED yellow	Switching output indicator
Ensured operating distance S_b	$\leq 6.48 \text{ mm}^1 / \leq 9.72 \text{ mm}^2$	Adjustment possibilities	N.O. / N.C.
Hysteresis	$\leq 10 \% S_r \text{ typ.}^{1/3} / \leq 20 \% S_r \text{ typ.}^{2/3}$	Default settings	Wide variety of adjustment possibilities via IO-Link
Repeatability	$\leq 0.4 \text{ mm}^1 / \leq 0.6 \text{ mm}^2$		N.O.
Temperature drift	$\leq 10 \% S_r$		
Correction factor steel FE 360	1		
Correction factor V2A	0.7 ¹ / 0.75 ²		
Correction factor CuZn	0.4 ¹ / 0.55 ²		
Correction factor Al	0.35 ¹ / 0.45 ²		
Correction factor Cu	0.3 ¹ / 0.4 ²		
Electrical data		Mechanical data	
Operating voltage, $+U_b$	10 ... 30V DC	Dimensions	M18 x 63,5 mm
Residual ripple	$\leq 20 \% U_b$	Mounting	Flush / non-flush (see selection table)
No-load current, I_o	$\leq 10 \text{ mA}$	Enclosure rating	IP 67 ⁵
Output current, I_e	$\leq 200 \text{ mA}$	Material housing	Brass, nickel-plated
Protective circuits	Induction protection / reverse-polarity protection, U_b / short-circuit protection (Q)	Material active surface	PBTP ¹ / PBTP Crastin ²
Residual current	$\leq 0.1 \text{ mA}$	Type of connection	Metal plug, M12x1, 4-pin
Voltage drop, U_D	$\leq 2.0 \text{ V DC}$ at 200 mA	Ambient temperature: operation	-25 ... +70 °C
Switching output, Q	PNP	Ambient temperature: storage	-25 ... +70 °C
Output function	N.O./N.C. ⁴	Weight	51 g
Power-on delay	$\leq 60 \text{ ms}$	Vibration and impact resistance	EN IEC 60947-5-2
Switching frequency f (ti/tp 1:1)	$\leq 1.5 \text{ kHz}^1 / \leq 0.5 \text{ kHz}^2$	Tightening torque	25 Nm
		Standard target FE 360	24 mm x 24 mm x 1 mm ¹ / 36 mm x 36 mm x 1 mm ²
IO-Link			
Communication mode	COM 2		
Min. cycletime	10,4 ms		
SIO mode	Compatible		
Length process data	2 Bit		
Specification	1.1		
ISDU	Not compatible		

¹ Flush devices ² Non-flush devices ³ S_r (Effective switching distance) = $\pm 10 \%$ of S_n ⁴ Adjustable / parameterisable via IO-Link ⁵ With connected IP 67 plug

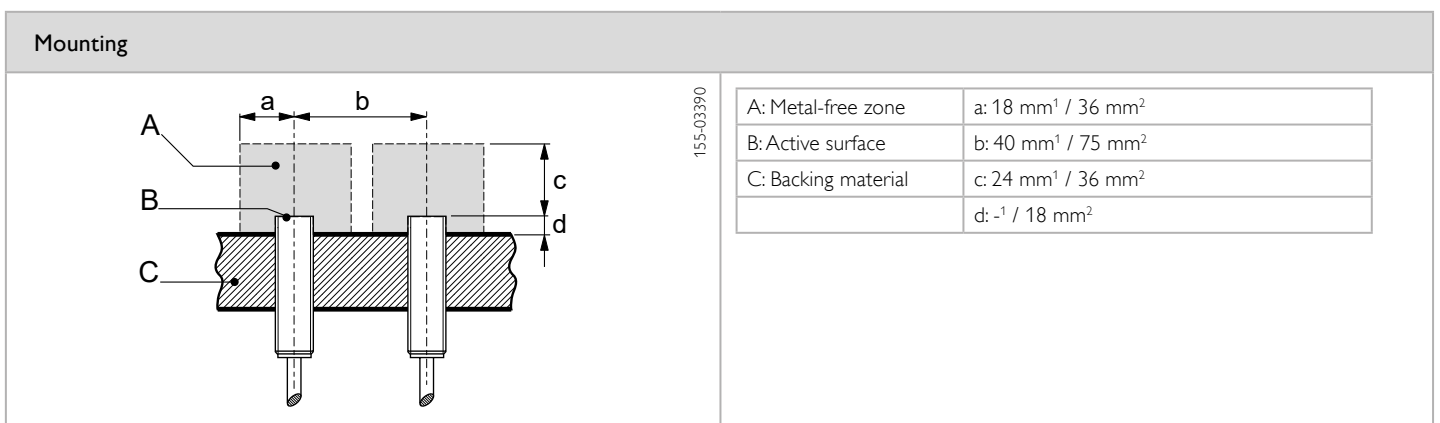
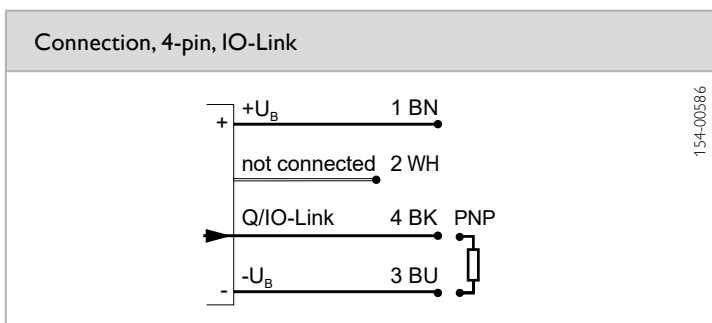
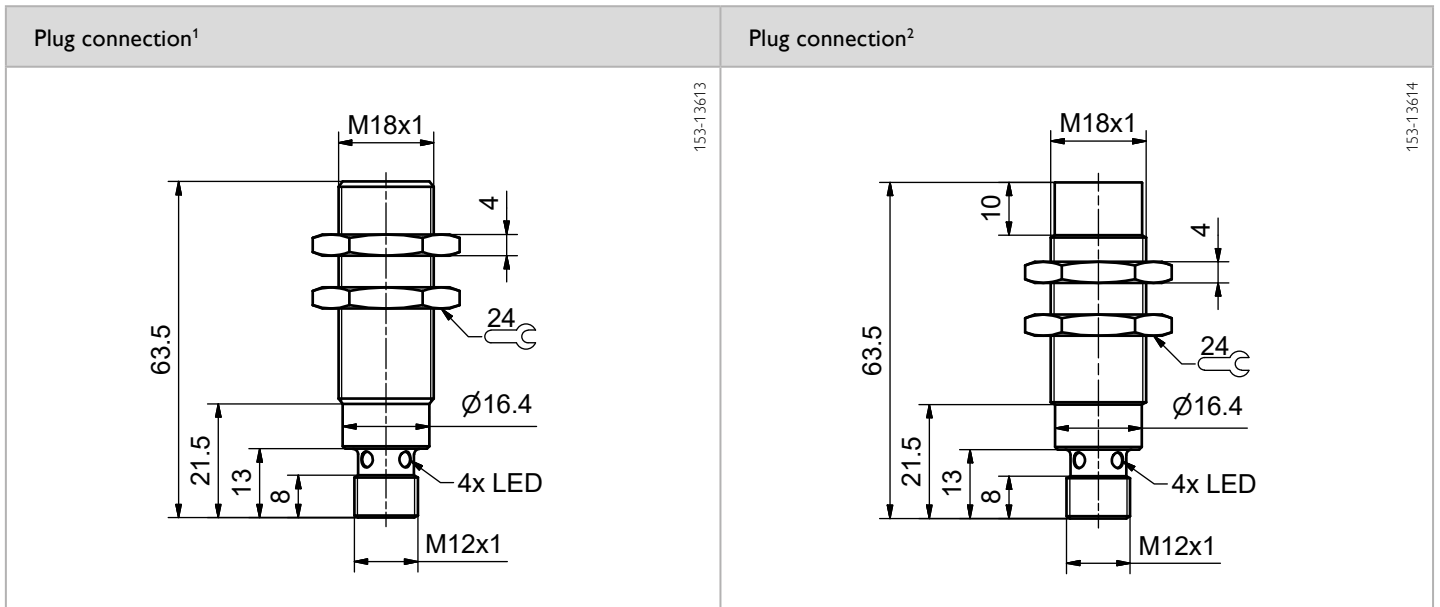


All data measured according to standard EN IEC 60947-5-2 with $U_b = 20 \dots 30 \text{ V DC}$, $T_A = 23 \text{ °C} \pm 5 \text{ °C}$

The switching distance of the sensor must be multiplied by the correction factor of the material. The switching distance on aluminium is thus $S_{n,AL} = S_n \times CF_{AL}$.

For flush mounting the distance is multiplied by the additional correction factor of the backing material, $S_{n,Al} = S_n \times CF_{AL} \times CF_{mounting\ material}$.

Switching distance	Mounting	Switching output	Type of connection	Part number	Article number
8 mm	Flush	PNP	Metal plug M12x1, 4-pin, IO-Link	IMT 18-S-B2-PSL-L4M	996-01010
12 mm	Non-flush	PNP	Metal plug M12x1, 4-pin, IO-Link	IMT 18-S-NB2-PSL-L4M	996-01011



IMT 30

Inductive sensor M30 / standard switching distance



PRODUCT-HIGHLIGHTS

- Various parameterization options
- IO-Link 1.1

Sensor data		Functions	
Rated operating distance S_n	10 mm ¹ / 25 mm ²	Indicator LED yellow	Switching output indicator
Ensured operating distance S_b	≤ 8.1 mm ¹ / ≤ 20.25 mm ²	Adjustment possibilities	N.O. / N.C. Wide variety of adjustment possibilities via IO-Link
Hysteresis	$\leq 20\%$ S_r typ. ³	Default settings	N.O.
Repeatability	≤ 0.5 mm ¹ / ≤ 0.75 mm ²		
Temperature drift	$\leq 10\%$ S_r		
Correction factor steel FE 360	1		
Correction factor V2A	0.8 ¹ / 0.6 ²		
Correction factor CuZn	0.55 ¹ / 0.5 ²		
Correction factor Al	0.45 ¹ / 0.7 ²		
Correction factor Cu	0.4 ¹ / 0.4 ²		
Electrical data		Mechanical data	
Operating voltage, $+U_b$	10 ... 30V DC	Dimensions	M30 x 63,5 mm
Residual ripple	$\leq 20\%$ U_b	Mounting	Flush / non-flush (see selection table)
No-load current, I_o	≤ 10 mA	Enclosure rating	IP 67 ⁵
Output current, I_e	≤ 200 mA	Material housing	Brass, chrome-plated ¹ / Brass, nickel-plated ²
Protective circuits	Induction protection / reverse-polarity protection, U_b / short-circuit protection (Q)	Material active surface	PBTP Crastin ¹ / PBTP ²
Residual current	≤ 0.1 mA	Type of connection	Metal plug, M12x1, 4-pin
Voltage drop, U_D	≤ 2.0 V DC at 200 mA	Ambient temperature: operation	-25 ... +70 °C
Switching output, Q	PNP	Ambient temperature: storage	-25 ... +70 °C
Output function	N.O./N.C. ⁴	Weight	130 g ¹ / 125 g ²
Power-on delay	≤ 70 ms	Vibration and impact resistance	EN IEC 60947-5-2
Switching frequency f (ti/tp 1:1)	≤ 1.2 kHz ¹ / ≤ 0.2 kHz ²	Tightening torque	70 Nm
		Standard target FE 360	30 mm x 30 mm x 1 mm ¹ / 75 mm x 75 mm x 1 mm ²
IO-Link			
Communication mode	COM 2		
Min. cycletime	10,4 ms		
SIO mode	Compatible		
Length process data	2 Bit		
Specification	1.1		
ISDU	Not compatible		

¹ Flush devices ² Non-flush devices ³ S_r (Effective switching distance) = $\pm 10\%$ of S_n ⁴ Adjustable / parameterisable via IO-Link ⁵ With connected IP 67 plug

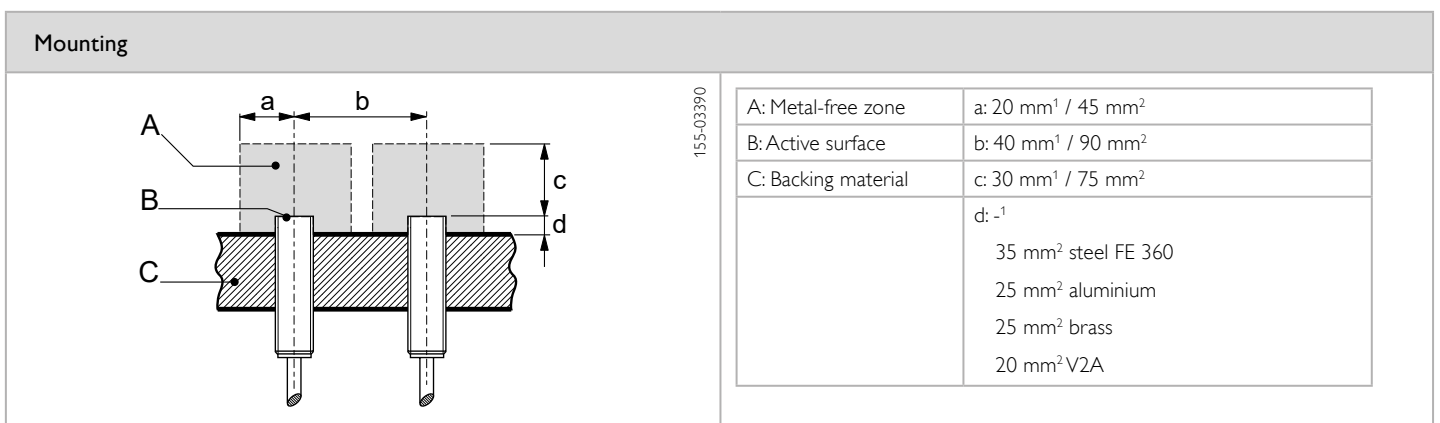
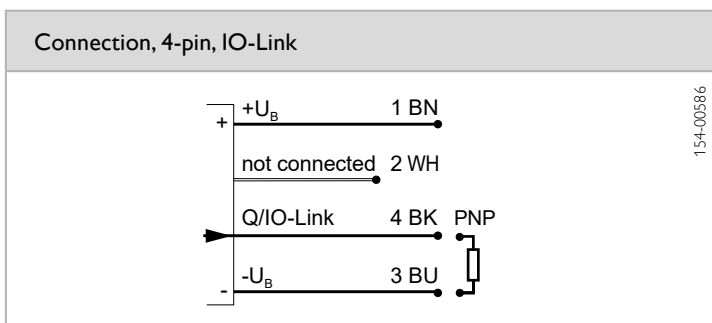
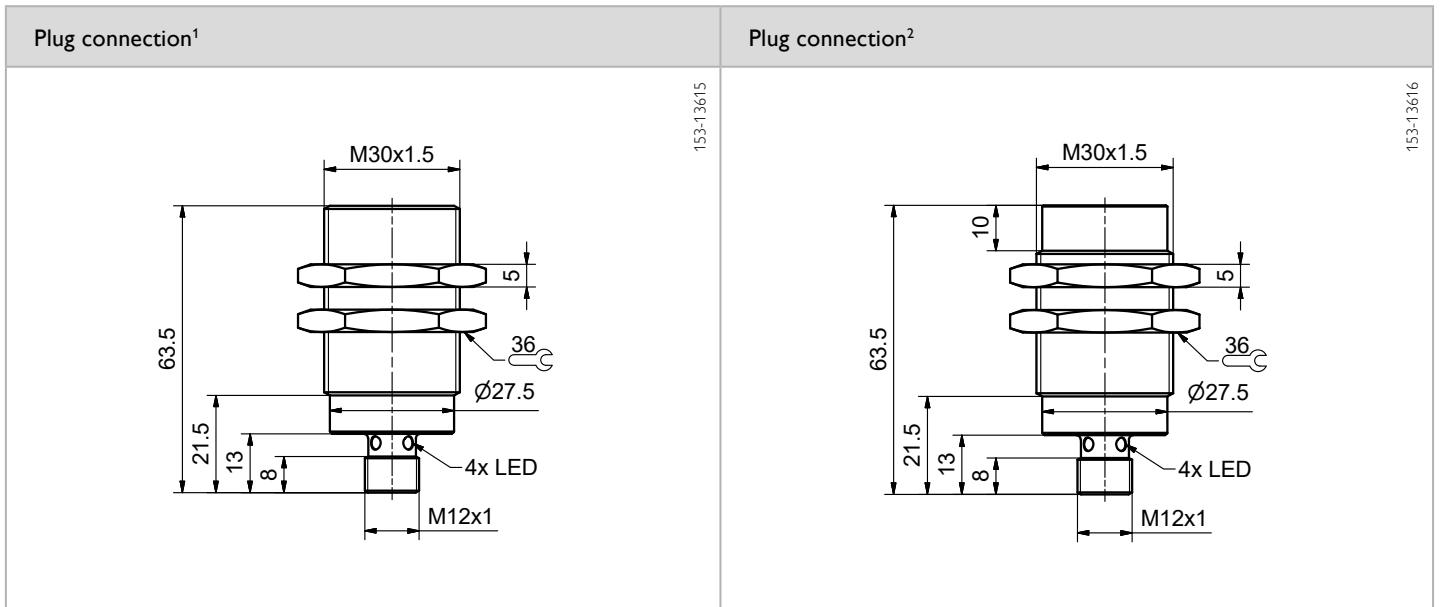


All data measured according to standard EN IEC 60947-5-2 with $U_b = 20 \dots 30$ V DC, $T_A = 23 \text{ °C} \pm 5 \text{ °C}$

The switching distance of the sensor must be multiplied by the correction factor of the material. The switching distance on aluminium is thus $S_{n,AL} = S_n \times CF_{AL}$.

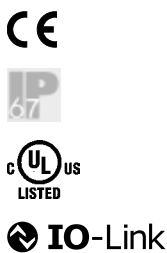
For flush mounting the distance is multiplied by the additional correction factor of the backing material, $S_n,Al = S_n \times CF_{AL} \times CF_{mounting\ material}$.

Switching distance	Mounting	Switching output	Type of connection	Part number	Article number
10 mm	Flush	PNP	Metal plug, M12x1, 4-pin, IO-Link	IMT 30-S-B2-PSL-L4M	996-01012
25 mm	Non-flush	PNP	Metal plug, M12x1, 4-pin, IO-Link	IMT 30-S-NB2-PSL-L4M	996-01013



IDT 4

Inductive sensor Ø 4 mm / increased switching distance



PRODUCT-HIGHLIGHTS

- Increased switching distance
- Excellent repeatability
- IO-Link 1.1

Sensor data		Functions	
Rated operating distance S_n	2.5 mm	Indicator LED yellow	Switching output indicator
Ensured operating distance S_b	≤ 2.03 mm	Adjustment possibilities	N.O. / N.C.
Hysteresis	$3 \% S_r \leq \text{Hyst} \leq 15 \% S_r^1$	Default settings	Wide variety of adjustment possibilities via IO-Link
Repeatability	≤ 0.03 mm		N.O.
Temperature drift	$\leq 10 \% S_r$		
Correction factor steel FE 360	1		
Correction factor V2A	0.6		
Correction factor CuZn	0.36		
Correction factor Al	0.28		
Correction factor Cu	0.25		
Electrical data		Mechanical data	
Operating voltage, $+U_b$	10 ... 30V DC	Dimensions	Ø 4 mm x 38 mm
Residual ripple	$\leq 20 \% U_b$	Mounting	Quasi-flush
No-load current, I_o	≤ 10 mA	Enclosure rating	IP 67 ³
Output current, I_e	≤ 200 mA	Material housing	Nickel silver
Protective circuits	Reverse-polarity protection, U_b / short-circuit protection (Q)	Material active surface	PPE
Residual current	≤ 0.1 mA	Type of connection	Metal plug, M8x1, 3-pin
Voltage drop, U_D	≤ 2.0 V DC	Ambient temperature: operation	-25 ... +70 °C
Switching output, Q	PNP	Ambient temperature: storage	-25 ... +70 °C
Output function	N.O./N.C. ²	Weight	4 g
Power-on delay	≤ 30 ms	Vibration and impact resistance	EN IEC 60947-5-2
Switching frequency f (ti/tp 1:1)	≤ 0.8 kHz	Tightening torque	0.15 Nm
		Standard target FE 360	7.5 mm x 7.5 mm x 1 mm
IO-Link			
Communication mode	COM 2		
Min. cycletime	10.4 ms		
SIO mode	Compatible		
Length process data	7 Bit		
Specification	1.1		
ISDU	Not compatible		

¹ S_r (Effective switching distance) = $\pm 10 \%$ of S_n ² Adjustable / parameterisable via IO-Link ³ With connected IP 67 plug

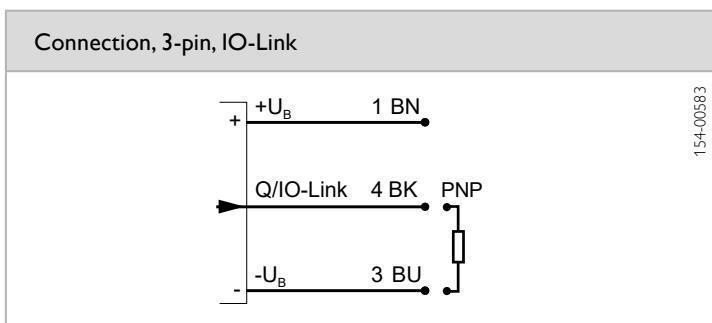
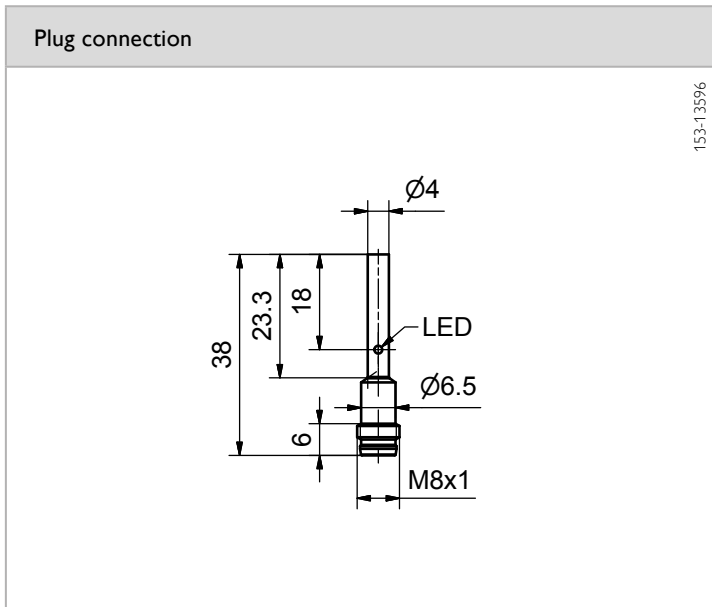


All data measured according to standard EN IEC 60947-5-2 with $U_b = 20 \dots 30$ V DC, $T_A = 23 \text{ °C} \pm 5 \text{ °C}$

The switching distance of the sensor must be multiplied by the correction factor of the material. The switching distance on aluminium is thus $S_{n,AL} = S_n \times CF_{AL}$.

For flush mounting the distance is multiplied by the additional correction factor of the backing material, $S_{n,Al} = S_n \times CF_{AL} \times CF_{mounting\ material}$.

Switching distance	Switching output	Type of connection	Part number	Article number
2.5 mm	PNP	Metal plug, M8x1, 3-pin, IO-Link	IDT 4-S-QB3-PSL-M3M	996-01014



Mounting

155-03390

A: Metal-free zone	a: 4.5 mm
B: Active surface	b: 10 mm
C: Backing material	c: 7.5 mm
	d: 0.5 mm steel FE 360 2.5 mm aluminium

IMT 5

Inductive sensor M5 / increased switching distance



PRODUCT-HIGHLIGHTS

- Increased switching distance
- Excellent repeatability
- IO-Link 1.1

Sensor data		Functions	
Rated operating distance S_n	2.5 mm	Indicator LED yellow	Switching output indicator
Ensured operating distance S_b	≤ 2.03 mm	Adjustment possibilities	N.O. / N.C.
Hysteresis	$3 \% S_r \leq \text{Hyst} \leq 15 \% S_r^1$	Default settings	Wide variety of adjustment possibilities via IO-Link
Repeatability	≤ 0.03 mm		N.O.
Temperature drift	$\leq 10 \% S_r$		
Correction factor steel FE 360	1		
Correction factor V2A 1 / 2 mm	0.67		
Correction factor CuZn	0.42		
Correction factor Al	0.33		
Correction factor Cu	0.3		
Electrical data		Mechanical data	
Operating voltage, $+U_b$	10 ... 30V DC	Dimensions	M5 x 38 mm
Residual ripple	$\leq 20 \% U_b$	Mounting	Quasi-flush
No-load current, I_o	≤ 10 mA	Enclosure rating	IP 67 ³
Output current, I_e	≤ 200 mA	Material housing	Nickel silver
Protective circuits	Reverse-polarity protection, U_b / short-circuit protection (Q)	Material active surface	PPE
Residual current	≤ 0.1 mA	Type of connection	Metal plug, M8x1, 3-pin
Voltage drop, U_D	≤ 2.0 V DC	Ambient temperature: operation	-25 ... +70 °C
Switching output, Q	PNP	Ambient temperature: storage	-25 ... +70 °C
Output function	N.O./N.C. ²	Weight	5 g
Power-on delay	≤ 30 ms	Vibration and impact resistance	EN IEC 60947-5-2
Switching frequency f (ti/tp 1:1)	≤ 0.8 kHz	Tightening torque	1.5 Nm
		Standard target FE 360	7.5 mm x 7.5 mm x 1 mm
IO-Link			
Communication mode	COM 2		
Min. cycletime	10.4 ms		
SIO mode	Compatible		
Length process data	7 Bit		
Specification	1.1		
ISDU	Not compatible		

¹ S_r (Effective switching distance) = $\pm 10 \%$ of S_n ² Adjustable / parameterisable via IO-Link ³ With connected IP 67 plug

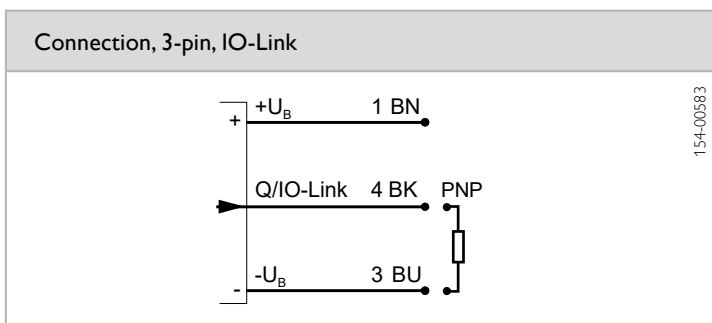
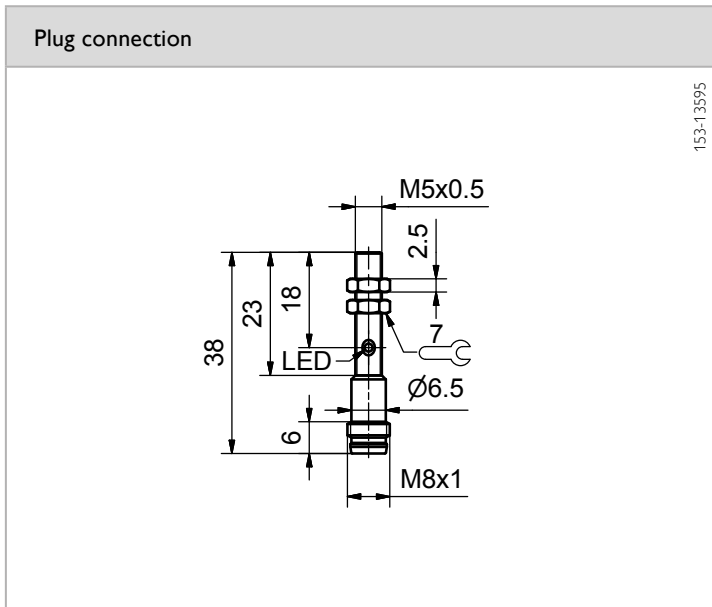


All data measured according to standard EN IEC 60947-5-2 with $U_b = 20 \dots 30$ V DC, $T_A = 23 \text{ °C} \pm 5 \text{ °C}$

The switching distance of the sensor must be multiplied by the correction factor of the material. The switching distance on aluminium is thus $S_{n,AL} = S_n \times CF_{AL}$.

For flush mounting the distance is multiplied by the additional correction factor of the backing material, $S_{n,Al} = S_n \times CF_{AL} \times CF_{\text{mounting material}}$.

Switching distance	Switching output	Type of connection	Part number	Article number
2.5 mm	PNP	Metal plug, M8x1, 3-pin, IO-Link	IMT 5-S-QB3-PSL-M3M	996-01015



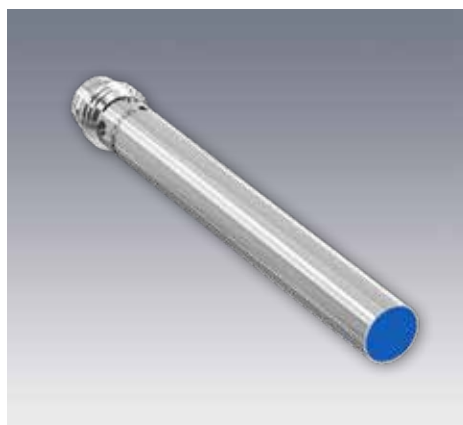
Mounting

A: Metal-free zone	a: 4.5 mm
B: Active surface	b: 10 mm
C: Backing material	c: 7.5 mm
	d: 2 mm

155-03390

IDT 6

Inductive sensor Ø 6,5 mm / increased switching distance



PRODUCT-HIGHLIGHTS

- Increased switching distance
- Excellent repeatability
- IO-Link 1.1

Sensor data		Functions	
Rated operating distance S_n	3 mm	Indicator LED yellow	Switching output indicator
Ensured operating distance S_b	≤ 2.43 mm	Adjustment possibilities	N.O. / N.C.
Hysteresis	$3 \% S_r \leq \text{Hyst} \leq 15 \% S_r^1$	Default settings	Wide variety of adjustment possibilities via IO-Link
Repeatability	≤ 0.15 mm		N.O.
Temperature drift	$\leq 10 \% S_r$		
Correction factor steel FE 360	1		
Correction factor V2A	0.67		
Correction factor CuZn	0.35		
Correction factor Al	0.26		
Correction factor Cu	0.18		
Electrical data		Mechanical data	
Operating voltage, $+U_b$	10 ... 30V DC	Dimensions	Ø 6,5 mm x 60 mm
Residual ripple	$\leq 20 \% U_b$	Mounting	Quasi-flush
No-load current, I_o	≤ 10 mA	Enclosure rating	IP 67 ³
Output current, I_e	≤ 200 mA	Material housing	Brass, chrome-plated
Protective circuits	Reverse-polarity protection, U_b / short-circuit protection (Q)	Material active surface	PBTP
Residual current	≤ 0.1 mA	Type of connection	Metal plug, M8x1, 3-pin
Voltage drop, U_D	≤ 2.0 V DC	Ambient temperature: operation	-25 ... +70 °C
Switching output, Q	PNP	Ambient temperature: storage	-25 ... +70 °C
Output function	N.O./N.C. ²	Weight	5 g
Power-on delay	≤ 30 ms	Vibration and impact resistance	EN IEC 60947-5-2
Switching frequency f (ti/tp 1:1)	≤ 1 kHz	Tightening torque	0.3 Nm
		Standard target FE 360	9 mm x 9 mm x 1 mm
IO-Link			
Communication mode	COM 2		
Min. cycletime	10,4 ms		
SIO mode	Compatible		
Length process data	7 Bit		
Specification	1.1		
ISDU	Not compatible		

¹ S_r (Effective switching distance) = $\pm 10 \%$ of S_n ² Adjustable / parameterisable via IO-Link ³ With connected IP 67 plug

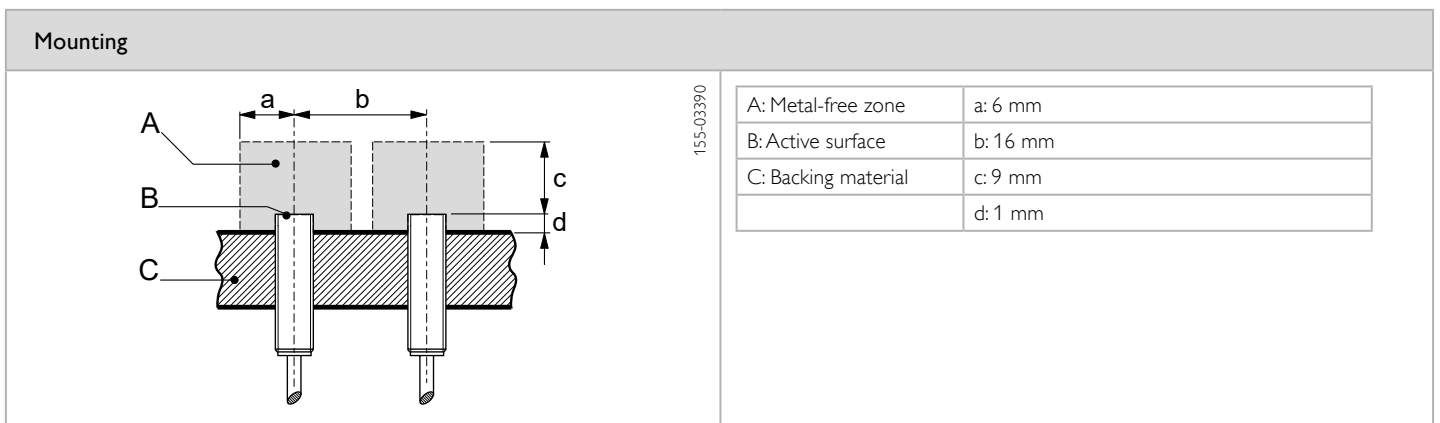
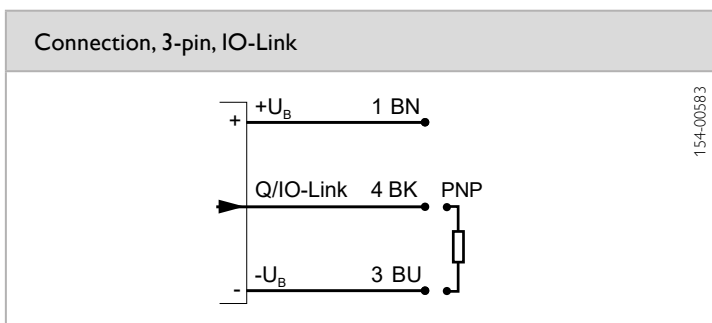
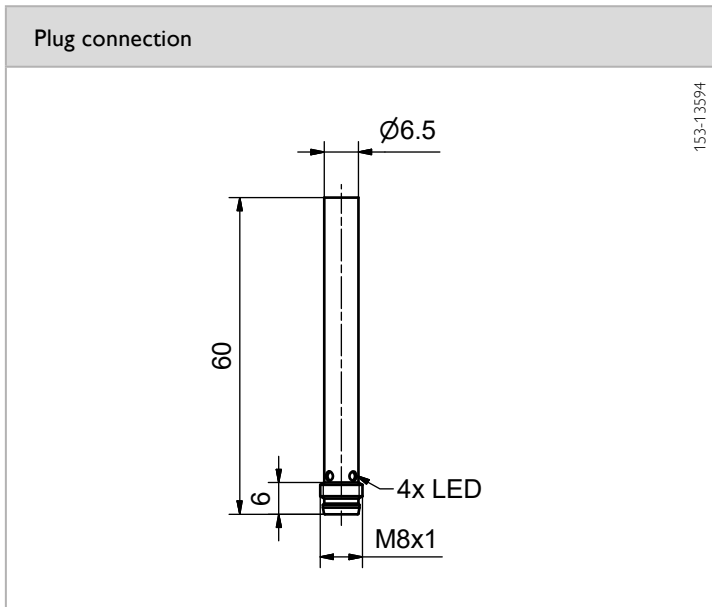


All data measured according to standard EN IEC 60947-5-2 with $U_b = 20 \dots 30$ V DC, $T_A = 23 \text{ °C} \pm 5 \text{ °C}$

The switching distance of the sensor must be multiplied by the correction factor of the material. The switching distance on aluminium is thus $S_{n,AL} = S_n \times CF_{AL}$.

For flush mounting the distance is multiplied by the additional correction factor of the backing material, $S_{n,Al} = S_n \times CF_{AL} \times CF_{mounting\ material}$.

Switching distance	Switching output	Type of connection	Part number	Article number
3 mm	PNP	Metal plug, M8x1, 3-pin, IO-Link	IDT 6-S-QB3-PSL-M3M	996-01016



IMT 8

Inductive sensor M8 / increased switching distance



PRODUCT-HIGHLIGHTS

- Increased switching distance
- Excellent repeatability
- IO-Link 1.1

Sensor data		Functions	
Rated operating distance S_n	3 mm ¹ / 6 mm ²	Indicator LED yellow	Switching output indicator
Ensured operating distance S_b	$\leq 2.43 \text{ mm}^1 / \leq 4.86 \text{ mm}^2$	Adjustment possibilities	N.O. / N.C.
Hysteresis	$3 \% S_r \leq \text{Hyst} \leq 15 \% S_r^3$	Default settings	Wide variety of adjustment possibilities via IO-Link
Repeatability	$\leq 0.15 \text{ mm}^1 / \leq 0.3 \text{ mm}^2$		N.O.
Temperature drift	$\leq 10 \% S_r$		
Correction factor steel FE 360	1		
Correction factor V2A	0.72 ¹ / 0.77 ²		
Correction factor CuZn	0.41 ¹ / 0.55 ²		
Correction factor Al	0.33 ¹ / 0.47 ²		
Correction factor Cu	0.27 ¹ / 0.44 ²		
Electrical data		Mechanical data	
Operating voltage, + U_b	10 ... 30V DC	Dimensions	M8 x 60 mm
Residual ripple	$\leq 20 \% U_b$	Mounting	Quasi-flush / non-flush (see selection table)
No-load current, I_o	$\leq 10 \text{ mA}$	Enclosure rating	IP 67 ⁵
Output current, I_e	$\leq 200 \text{ mA}$	Material housing	Nickel silver; chrome-plated ¹ / Brass, chrome-plated ²
Protective circuits	Reverse-polarity protection, U_b / short-circuit protection (Q)	Material active surface	PBTP
Residual current	$\leq 0.1 \text{ mA}$	Type of connection	Metal plug, M8x1, 3-pin
Voltage drop, U_D	$\leq 2.0 \text{ V DC}$	Ambient temperature: operation	-25 ... +70 °C
Switching output, Q	PNP	Ambient temperature: storage	-25 ... +70 °C
Output function	N.O./N.C. ⁴	Weight	17 g
Power-on delay	$\leq 30 \text{ ms}$	Vibration and impact resistance	EN IEC 60947-5-2
Switching frequency f (ti/tp 1:1)	$\leq 1 \text{ kHz}^1 / 0.5 \text{ kHz}^2$	Tightening torque	8 Nm
		Standard target FE 360	9 mm x 9 mm x 1 mm ¹ / 18 mm x 18 mm x 1 mm ²
IO-Link			
Communication mode	COM 2		
Min. cycletime	10.4 ms		
SIO mode	Compatible		
Length process data	7 Bit		
Specification	1.1		
ISDU	Not compatible		

¹ Quasi-flush devices ² Non-flush devices ³ S_n (Effective switching distance) = $\pm 10 \%$ of S_n ⁴ Adjustable / parameterisable via IO-Link ⁵ With connected IP 67 plug



All data measured according to standard EN IEC 60947-5-2 with $U_b = 20 \dots 30 \text{ V DC}$, $T_A = 23 \text{ °C} \pm 5 \text{ °C}$

The switching distance of the sensor must be multiplied by the correction factor of the material. The switching distance on aluminium is thus $S_{n,AL} = S_n \times CF_{AL}$.

For flush mounting the distance is multiplied by the additional correction factor of the backing material, $S_n,Al = S_n \times CF_{AL} \times CF_{mounting\ material}$.

Switching distance	Mounting	Switching output	Type of connection	Part number	Article number
3 mm	Quasi-flush	PNP	Metal plug, M8x1, 3-pin, IO-Link	IMT 8-S-QB3-PSL-M3M	996-01017
6 mm	Non-flush	PNP	Metal plug, M8x1, 3-pin, IO-Link	IMT 8-S-NB3-PSL-M3M	996-01018

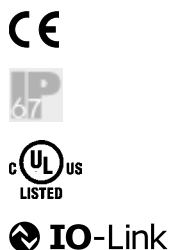
Plug connection ¹	Plug connection ²
<p>153-13586</p>	<p>153-13587</p>

Connection, 3-pin, IO-Link
<p>154-00583</p>

Mounting									
<p>155-03390</p>	<table border="1"> <tr> <td>A: Metal-free zone</td> <td>a: 6 mm¹ / 12 mm²</td> </tr> <tr> <td>B: Active surface</td> <td>b: 16 mm¹ / 30 mm²</td> </tr> <tr> <td>C: Backing material</td> <td>c: 9 mm¹ / 18 mm²</td> </tr> <tr> <td></td> <td>d: 0 mm¹ / 10 mm²</td> </tr> </table>	A: Metal-free zone	a: 6 mm ¹ / 12 mm ²	B: Active surface	b: 16 mm ¹ / 30 mm ²	C: Backing material	c: 9 mm ¹ / 18 mm ²		d: 0 mm ¹ / 10 mm ²
A: Metal-free zone	a: 6 mm ¹ / 12 mm ²								
B: Active surface	b: 16 mm ¹ / 30 mm ²								
C: Backing material	c: 9 mm ¹ / 18 mm ²								
	d: 0 mm ¹ / 10 mm ²								

IMT 12

Inductive sensor M12 / increased switching distance



PRODUCT-HIGHLIGHTS

- Increased switching distance
- Excellent repeatability
- IO-Link 1.1

Sensor data		Functions	
Rated operating distance S_n	6 mm ¹ / 10 mm ²	Indicator LED yellow	Switching output indicator
Ensured operating distance S_B	$\leq 4.86 \text{ mm}^1 / \leq 8.1 \text{ mm}^2$	Adjustment possibilities	N.O. / N.C.
Hysteresis	$3 \% S_r \leq \text{Hyst} \leq 15 \% S_r^3$	Default settings	Wide variety of adjustment possibilities via IO-Link
Repeatability	$\leq 0.3 \text{ mm}$		N.O.
Temperature drift	$\leq 10 \% S_r$		
Correction factor steel FE 360	1		
Correction factor V2A	0.7 ¹ / 0.77 ²		
Correction factor CuZn	0.4 ¹ / 0.56 ²		
Correction factor Al	0.3 ¹ / 0.49 ²		
Correction factor Cu	0.25 ¹ / 0.45 ²		
Electrical data		Mechanical data	
Operating voltage, +U _B	10 ... 30V DC	Dimensions	M12 x 60 mm
Residual ripple	$\leq 20 \% U_B$	Mounting	Quasi-flush / non-flush (see selection table)
No-load current, I ₀	$\leq 10 \text{ mA}$	Enclosure rating	IP 67 ⁵
Output current, I _e	$\leq 200 \text{ mA}$	Material, housing	Brass, chrome-plated
Protective circuits	Reverse-polarity protection, U _B / short-circuit protection (Q)	Material active surface	PBTP
Residual current	$\leq 0.1 \text{ mA}$	Type of connection	Metal plug, M12x1, 4-pin
Voltage drop, U _D	$\leq 2.0 \text{ V DC}$	Ambient temperature: operation	-25 ... +70 °C
Switching output, Q	PNP	Ambient temperature: storage	-25 ... +70 °C
Output function	N.O./N.C. ⁴	Weight	27 g
Power-on delay	$\leq 30 \text{ ms}$	Vibration and impact resistance	EN IEC 60947-5-2
Switching frequency f (ti/tp 1:1)	$\leq 0.8 \text{ kHz}^1 / \leq 0.4 \text{ kHz}^2$	Tightening torque	10 Nm
		Standard target FE 360	18 mm x 18 mm x 1 mm ¹ / 30 mm x 30 mm x 1 mm ²
IO-Link			
Communication mode	COM 2		
Min. cycletime	10.4 ms		
SIO mode	Compatible		
Length process data	7 Bit		
Specification	1.1		
ISDU	Not compatible		

¹ Quasi-flush devices ² Non-flush devices ³ S_r (Effective switching distance) = $\pm 10 \%$ of S_n ⁴ Adjustable / parameterisable via IO-Link ⁵ With connected IP 67 plug



All data measured according to standard EN IEC 60947-5-2 with $U_B = 20 \dots 30 \text{ V DC}$, $T_A = 23 \text{ °C} \pm 5 \text{ °C}$

The switching distance of the sensor must be multiplied by the correction factor of the material. The switching distance on aluminium is thus $S_{n,AL} = S_n \times CF_{AL}$.

For flush mounting the distance is multiplied by the additional correction factor of the backing material, $S_{n,Al} = S_n \times CF_{AL} \times CF_{mounting\ material}$.

Switching distance	Mounting	Switching output	Type of connection	Part number	Article number
6 mm	Quasi-flush	PNP	Metal plug, M12x1, 4-pin, IO-Link	IMT 12-S-QB3-PSL-L4M	996-01019
10 mm	Non-flush	PNP	Metal plug, M12x1, 4-pin, IO-Link	IMT 12-S-NB3-PSL-L4M	996-01020

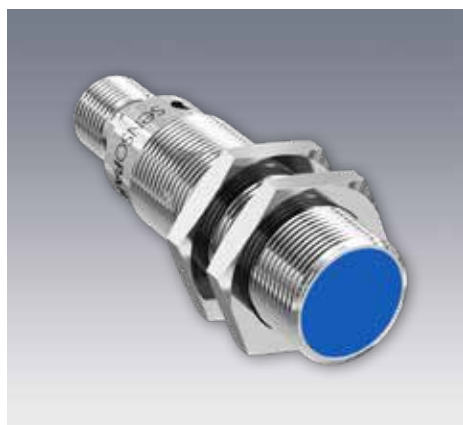
Plug connection ¹	Plug connection ²

Connection, 4-pin, IO-Link	
	154-00586

Mounting									
	<table border="1"> <tr> <td>A: Metal-free zone</td> <td>a: 12 mm¹ / 16 mm²</td> </tr> <tr> <td>B: Active surface</td> <td>b: 30 mm¹ / 45 mm²</td> </tr> <tr> <td>C: Backing material</td> <td>c: 18 mm¹ / 30 mm²</td> </tr> <tr> <td></td> <td>d: 2 mm¹ / 13 mm²</td> </tr> </table>	A: Metal-free zone	a: 12 mm ¹ / 16 mm ²	B: Active surface	b: 30 mm ¹ / 45 mm ²	C: Backing material	c: 18 mm ¹ / 30 mm ²		d: 2 mm ¹ / 13 mm ²
A: Metal-free zone	a: 12 mm ¹ / 16 mm ²								
B: Active surface	b: 30 mm ¹ / 45 mm ²								
C: Backing material	c: 18 mm ¹ / 30 mm ²								
	d: 2 mm ¹ / 13 mm ²								

IMT 18

Inductive sensor M18 / increased switching distance



PRODUCT-HIGHLIGHTS

- Increased switching distance
- Excellent repeatability
- IO-Link 1.1

Sensor data		Functions	
Rated operating distance S_n	12 mm ¹ / 20 mm ²	Indicator LED yellow	Switching output indicator
Ensured operating distance S_B	$\leq 9.72 \text{ mm}^1 / \leq 16.2 \text{ mm}^2$	Adjustment possibilities	N.O. / N.C.
Hysteresis	$3 \% S_r \leq \text{Hyst} \leq 15 \% S_r^3$	Default settings	Wide variety of adjustment possibilities via IO-Link
Repeatability	$\leq 0.6 \text{ mm}^1 / \leq 1 \text{ mm}^2$		N.O.
Temperature drift	$\leq 10 \% S_r$		
Correction factor steel FE 360	1		
Correction factor V2A	0.67 ¹ / 0.69 ²		
Correction factor CuZn	0.4 ¹ / 0.5 ²		
Correction factor Al	0.3 ¹ / 0.44 ²		
Correction factor Cu	0.26 ¹ / 0.42 ²		
Electrical data		Mechanical data	
Operating voltage, $+U_B$	10 ... 30V DC	Dimensions	M18 x 63,5 mm
Residual ripple	$\leq 20 \% U_B$	Mounting	Quasi-flush / non-flush (see selection table)
No-load current, I_o	$\leq 10 \text{ mA}$	Enclosure rating	IP 67 ⁵
Output current, I_e	$\leq 200 \text{ mA}$	Material housing	Brass, chrome-plated
Protective circuits	Reverse-polarity protection, U_B / short-circuit protection (Q)	Material active surface	PBTP
Residual current	$\leq 0.1 \text{ mA}$	Type of connection	Metal plug, M12x1, 4-pin
Voltage drop, U_D	$\leq 2.0 \text{ V DC}$	Ambient temperature: operation	-25 ... +70 °C
Switching output, Q	PNP	Ambient temperature: storage	-25 ... +70 °C
Output function	N.O./N.C. ⁴	Weight	56 g
Power-on delay	$\leq 30 \text{ ms}^1 / \leq 60 \text{ ms}^2$	Vibration and impact resistance	EN IEC 60947-5-2
Switching frequency f (ti/tp 1:1)	$\leq 0.6 \text{ kHz}^1 / \leq 0.5 \text{ kHz}^2$	Tightening torque	25 Nm
		Standard target FE 360	36 mm x 36 mm x 1 mm ¹ / 60 mm x 60 mm x 1 mm ²
IO-Link			
Communication mode	COM 2		
Min. cycletime	10,4 ms		
SIO mode	Compatible		
Length process data	7 Bit		
Specification	1.1		
ISDU	Not compatible		

¹ Quasi-flush devices ² Non-flush devices ³ S_r (Effective switching distance) = $\pm 10 \%$ of S_n ⁴ Adjustable / parameterisable via IO-Link ⁵ With connected IP 67 plug

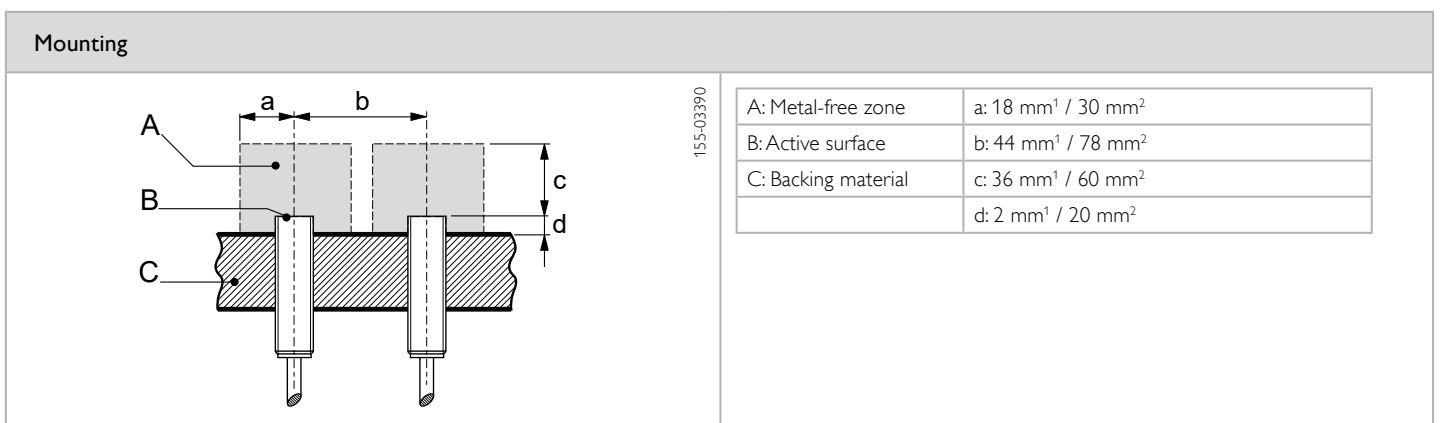
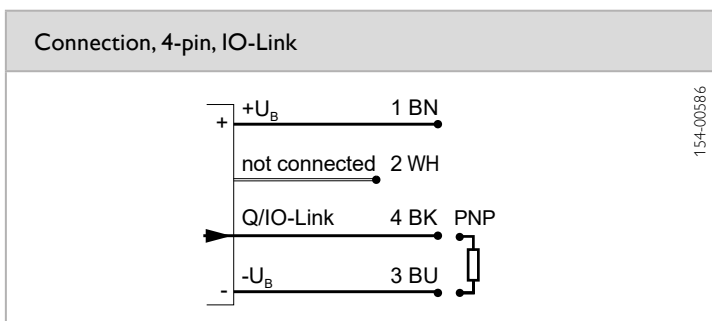
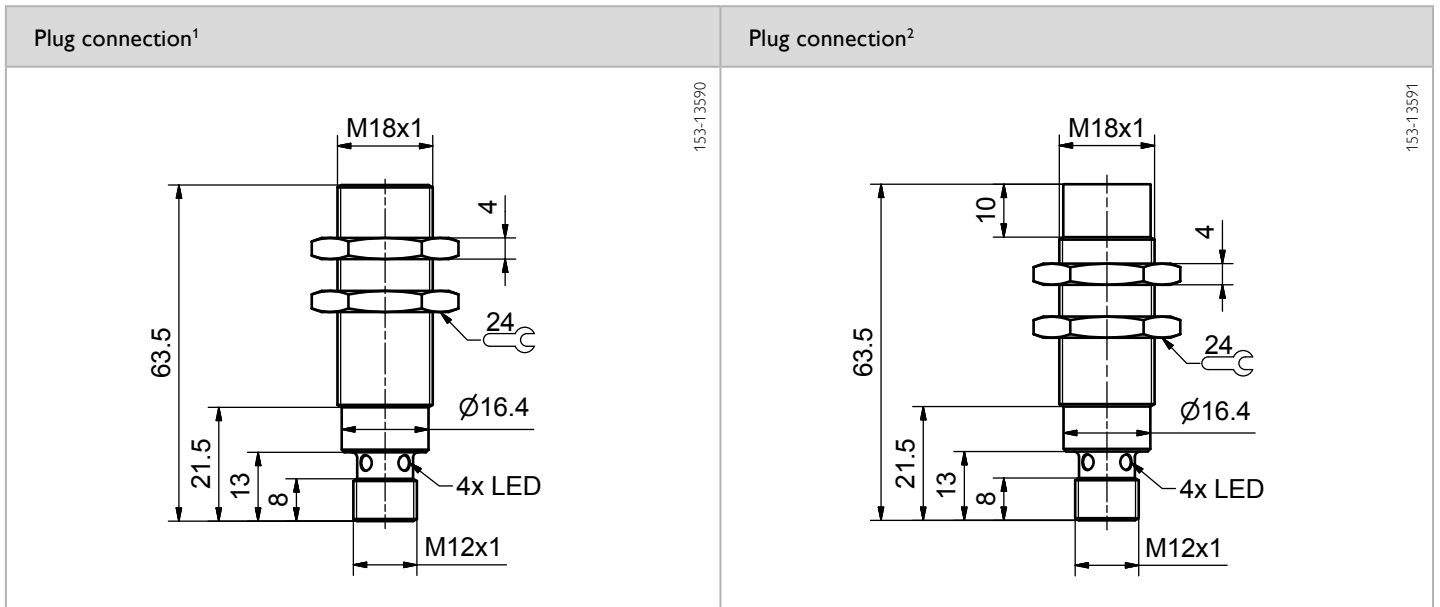


All data measured according to standard EN IEC 60947-5-2 with $U_B = 20 \dots 30 \text{ V DC}$, $T_A = 23 \text{ °C} \pm 5 \text{ °C}$

The switching distance of the sensor must be multiplied by the correction factor of the material. The switching distance on aluminium is thus $S_{n,AL} = S_n \times CF_{AL}$.

For flush mounting the distance is multiplied by the additional correction factor of the backing material, $S_{n,Al} = S_n \times CF_{AL} \times CF_{mounting\ material}$.

Switching distance	Mounting	Switching output	Type of connection	Part number	Article number
12 mm	Quasi-flush	PNP	Metal plug, M12x1, 4-pin, IO-Link	IMT 18-S-QB3-PSL-L4M	996-01021
20 mm	Non-flush	PNP	Metal plug, M12x1, 4-pin, IO-Link	IMT 18-S-NB3-PSL-L4M	996-01022



IMT 30

Inductive sensor M30 / increased switching distance



PRODUCT-HIGHLIGHTS

- Increased switching distance
- Excellent repeatability
- IO-Link 1.1

Sensor data		Functions	
Rated operating distance S_n	22 mm ¹ / 36 mm ²	Indicator LED yellow	Switching output indicator
Ensured operating distance S_B	$\leq 17.82 \text{ mm}^1 / \leq 29.16 \text{ mm}^2$	Adjustment possibilities	N.O. / N.C. Wide variety of adjustment possibilities via IO-Link
Hysteresis	$3 \% S_r \leq \text{Hyst} \leq 15 \% S_r^3$	Default settings	N.O.
Repeatability	$\leq 1.1 \text{ mm}^1 / \leq 2 \text{ mm}^2$		
Temperature drift	$\leq 10 \% S_r$		
Correction factor steel FE 360	1		
Correction factor V2A 1 / 2 mm	0.7 ¹ / 0.73 ²		
Correction factor CuZn	0.43 ¹ / 0.47 ²		
Correction factor Al	0.4 ¹ / 0.43 ²		
Correction factor Cu	0.31 ¹ / 0.39 ²		
Electrical data		Mechanical data	
Operating voltage, +U _B	10 ... 30V DC	Dimensions	M30 x 73,5 mm
Residual ripple	$\leq 20 \% U_B$	Mounting	Quasi-flush / non-flush (see selection table)
No-load current, I ₀	$\leq 10 \text{ mA}$	Enclosure rating	IP 67 ⁵
Output current, I _e	$\leq 200 \text{ mA}$	Material housing	Brass, chrome-plated
Protective circuits	Reverse-polarity protection, U _B / short-circuit protection (Q)	Material active surface	PBTP
Residual current	$\leq 0.1 \text{ mA}$	Type of connection	Metal plug, M12x1, 4-pin
Voltage drop, U _D	$\leq 2.0 \text{ V DC}$	Ambient temperature: operation	-25 ... +70 °C
Switching output, Q	PNP	Ambient temperature: storage	-25 ... +70 °C
Output function	N.O./N.C. ⁴	Weight	155 g ¹ / 148 g ²
Power-on delay	$\leq 200 \text{ ms}$	Vibration and impact resistance	EN IEC 60947-5-2
Switching frequency f (ti/tp 1:1)	$\leq 0.2 \text{ kHz}^1 / \leq 0.065 \text{ kHz}^2$	Tightening torque	70 Nm
		Standard target FE 360	66 mm x 66 mm x 1 mm ¹ / 120 mm x 120 mm x 1 mm ²
IO-Link			
Communication mode	COM 2		
Min. cycletime	10,4 ms		
SIO mode	Compatible		
Length process data	7 Bit		
Specification	1.1		
ISDU	Not compatible		

¹ Quasi-flush devices ² Non-flush devices ³ S_r (Effective switching distance) = $\pm 10 \%$ of S_n ⁴ Adjustable / parameterisable via IO-Link ⁵ With connected IP 67 plug

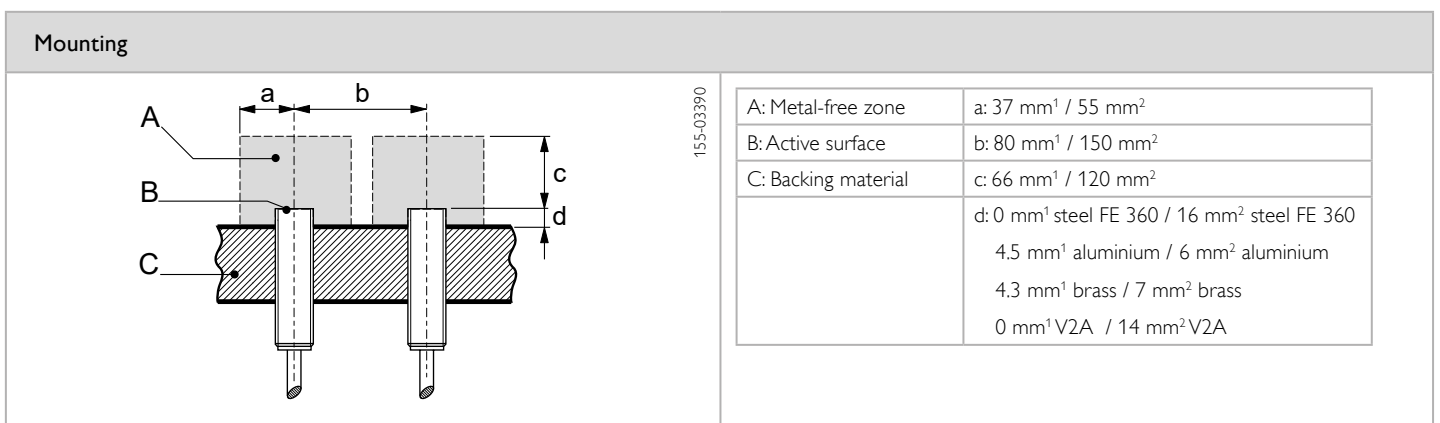
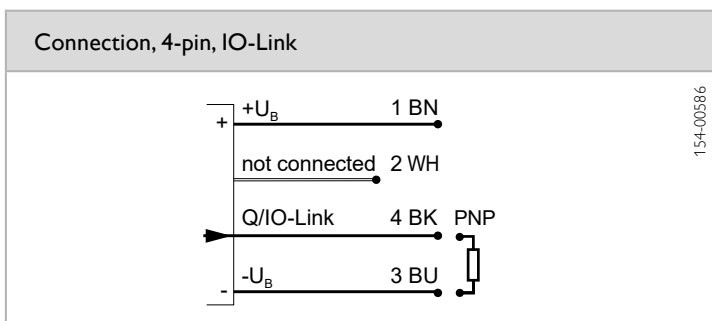
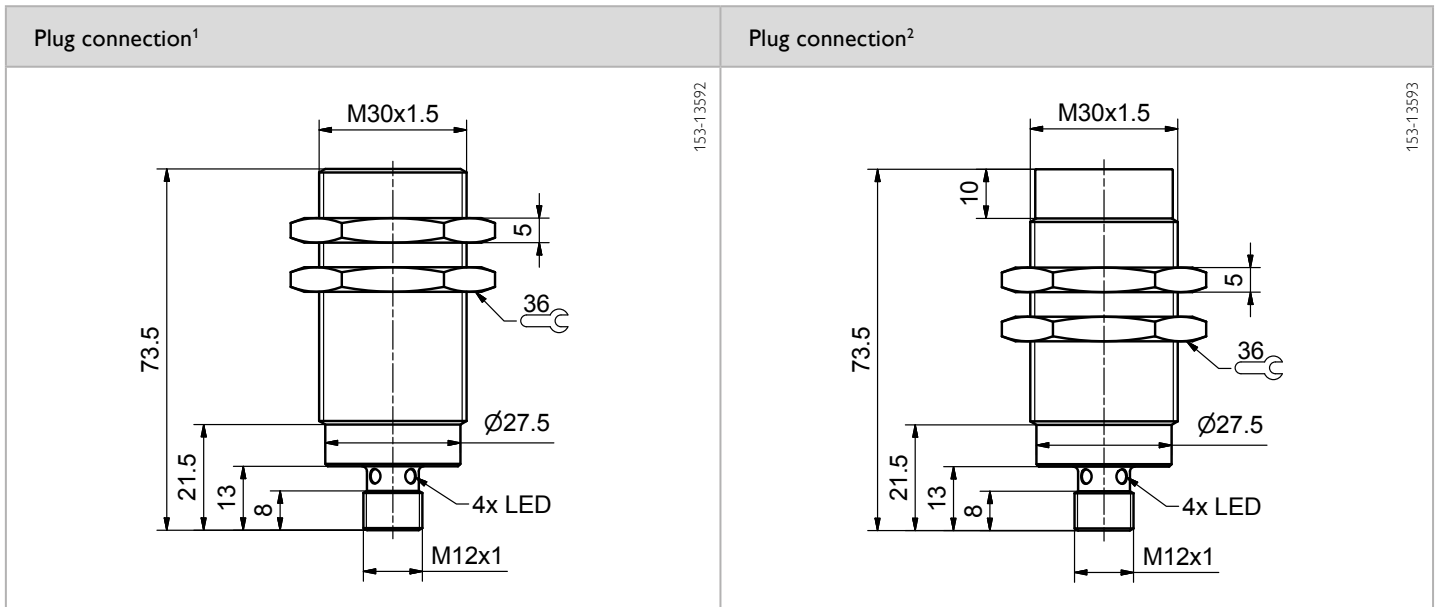


All data measured according to standard EN IEC 60947-5-2 with $U_B = 20 \dots 30 \text{ V DC}$, $T_A = 23 \text{ °C} \pm 5 \text{ °C}$

The switching distance of the sensor must be multiplied by the correction factor of the material. The switching distance on aluminium is thus $S_{n,AL} = S_n \times CF_{AL}$.

For flush mounting the distance is multiplied by the additional correction factor of the backing material, $S_n,Al = S_n \times CF_{AL} \times CF_{mounting\ material}$.

Switching distance	Mounting	Switching output	Type of connection	Part number	Article number
22 mm	Quasi-flush	PNP	Metal plug, M12x1, 4-pin, IO-Link	IMT 30-S-QB3-PSL-L4M	996-01023
36 mm	Non-flush	PNP	Metal plug, M12x1, 4-pin, IO-Link	IMT 30-S-NB3-PSL-L4M	996-01024



IMT 8

Inductive sensor M8 / increased switching distance / analogue output



PRODUCT-HIGHLIGHTS

- Long sensing range
- Outstanding accuracy and temperature stability
- Resolution in μm range
- Analogue output 0 ... 10V

Sensor data

Operating range	0 ... 4 mm
Resolution static	$\leq 0.1 \mu\text{m}$
Resolution dynamic	$\leq 0.52 \mu\text{m}$
Repeatability	$\pm 0.2 \text{ mm}$
Temperature drift	$\leq 5\%$ (0 ... +70 °C) $\leq 10\%$ (-25 ... 0 °C)
Correction factor steel FE 360	1
Correction factor V2A	0.76
Correction factor CuZn	0.5
Correction factor Al	0.4
Correction factor Cu	0.34

Electrical data

Operating voltage, $+U_B$	15 ... 30V DC
Residual ripple	$\leq 20\% U_B$
No-load current, I_0	$\leq 10 \text{ mA}$
Protective circuits	Reverse-polarity protection, U_B / short-circuit protection (Q)
Load current at voltage output	$\leq 15 \text{ mA}$
Power-on delay	$\leq 20 \text{ ms}$
Max. load at current output	400 Ω ($U_B = 15 \text{ V}$) / 1 k Ω ($U_B = 30 \text{ V}$)
Bandwidth	1.6 kHz

Mechanical data

Dimensions	M8 x 60 mm
Mounting	Quasi-flush
Enclosure rating	IP 67 ¹
Material housing	Brass, chrome-plated
Material active surface	PBTP
Type of connection	Metal plug, M8x1, 3-pin
Ambient temperature: operation	-25 ... +70 °C
Ambient temperature: storage	-25 ... +70 °C
Weight	17 g
Vibration and impact resistance	EN IEC 60947-5-2
Tightening torque	8 Nm
Standard target FE 360	12 mm x 12 mm x 1 mm

¹ With connected IP 67 plug

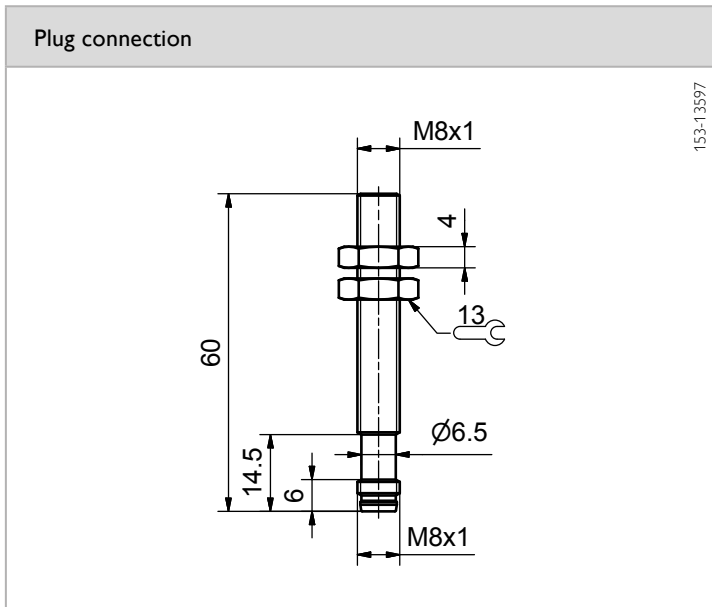


All data measured according to standard EN IEC 60947-5-2 with $U_B = 20 \dots 30 \text{ V DC}$, $T_A = 23 \text{ °C} \pm 5 \text{ °C}$

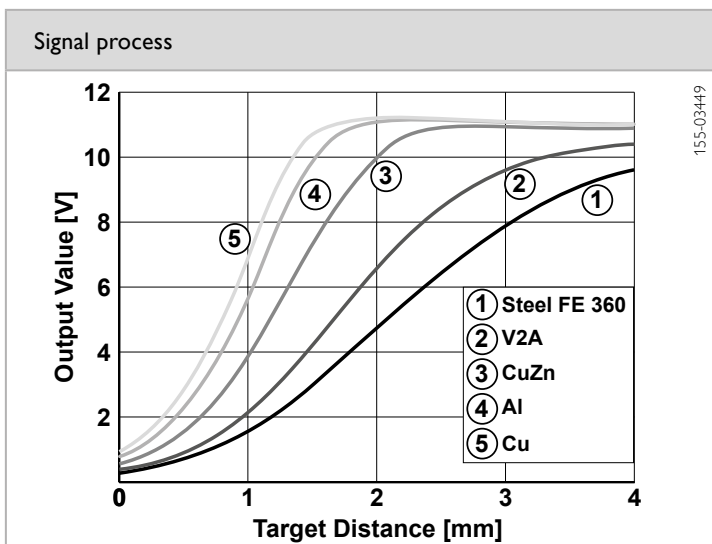
The switching distance of the sensor must be multiplied by the correction factor of the material. The switching distance on aluminium is thus $S_{n,AL} = S_n \times CF_{AL}$.

For flush mounting the distance is multiplied by the additional correction factor of the backing material, $S_n,Al = S_n \times CF_{AL} \times CF_{mounting\ material}$.

Operating range	Analogue output	Type of connection	Part number	Article number
0 ... 4 mm	0 ... 10V	Metal plug, M8x1, 3-pin	IMT 8-A-QB3-PS-M3M	996-01033



Connection, 3-pin	Mounting								
<p>134-00585</p>	<p>155-03390</p> <table border="1"> <tr> <td>A: Metal-free zone</td> <td>a: 8 mm</td> </tr> <tr> <td>B: Active surface</td> <td>b: 12 mm</td> </tr> <tr> <td>C: Backing material</td> <td>c: 12 mm</td> </tr> <tr> <td></td> <td>d: 1 mm</td> </tr> </table>	A: Metal-free zone	a: 8 mm	B: Active surface	b: 12 mm	C: Backing material	c: 12 mm		d: 1 mm
A: Metal-free zone	a: 8 mm								
B: Active surface	b: 12 mm								
C: Backing material	c: 12 mm								
	d: 1 mm								



IMT 12

Inductive sensor M12 / increased switching distance / analogue output



PRODUCT-HIGHLIGHTS

- Long sensing range
- Outstanding accuracy and temperature stability
- Resolution in μm range
- Analogue output 0 ... 10 V or 4 ... 20 mA

Sensor data

Operating range	0 ... 6 mm
Resolution static	$\leq 0.18 \mu\text{m}$
Resolution dynamic	$\leq 0.9 \mu\text{m}$
Repeatability	$\pm 0.32 \text{ mm}$
Temperature drift	$\leq 5 \%$ (0 ... +70 °C) $\leq 10 \%$ (-25 ... 0 °C)
Correction factor steel FE 360	1
Correction factor V2A	0.8
Correction factor CuZn	0.43
Correction factor Al	0.33
Correction factor Cu	0.28

Electrical data

Operating voltage, $+U_B$	15 ... 30 V DC
Residual ripple	$\leq 20 \%$ U_B
No-load current, I_0	$\leq 10 \text{ mA}$
Protective circuits	Reverse-polarity protection, U_B / short-circuit protection (Q)
Load current at voltage output	$\leq 15 \text{ mA}$
Power-on delay	$\leq 20 \text{ ms}$
Max. load at current output	400 Ω ($U_B = 15 \text{ V}$) / 1 k Ω ($U_B = 30 \text{ V}$)
Bandwidth	1 kHz

Mechanical data

Dimensions	M12 x 60 mm
Mounting	Quasi-flush
Enclosure rating	IP 67 ¹
Material housing	Brass, chrome-plated
Material active surface	PBTP
Type of connection	Metal plug, M12x1, 4-pin
Ambient temperature: operation	-25 ... +70 °C
Ambient temperature: storage	-25 ... +70 °C
Weight	27 g
Vibration and impact resistance	EN IEC 60947-5-2
Tightening torque	10 Nm
Standard target FE 360	18 mm x 18 mm x 1 mm

¹ With connected IP 67 plug

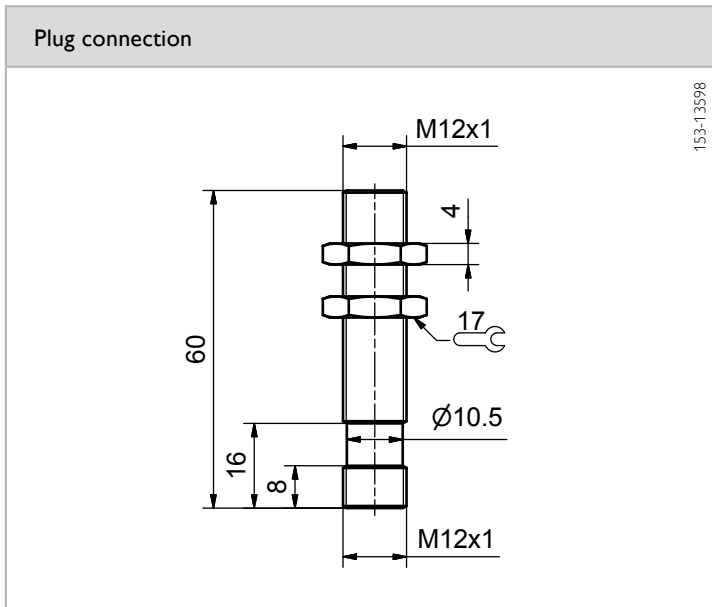


All data measured according to standard EN IEC 60947-5-2 with $U_B = 20 \dots 30 \text{ V DC}$, $T_A = 23 \text{ °C} \pm 5 \text{ °C}$

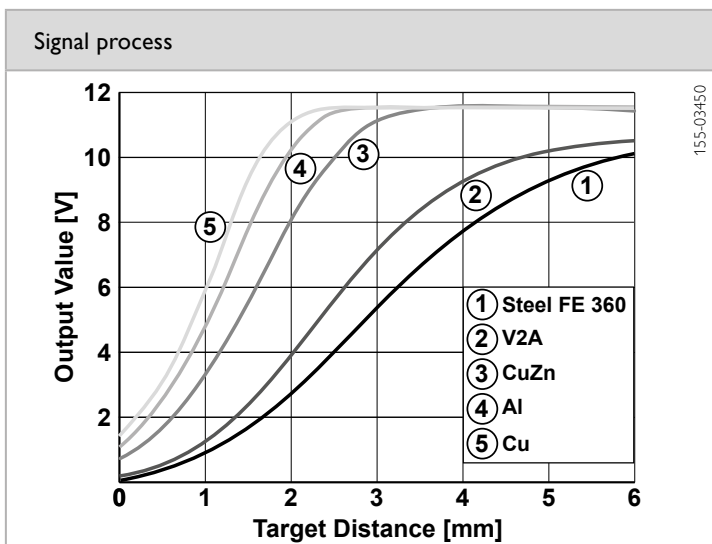
The switching distance of the sensor must be multiplied by the correction factor of the material. The switching distance on aluminium is thus $S_{n,AL} = S_n \times CF_{AL}$.

For flush mounting the distance is multiplied by the additional correction factor of the backing material, $S_{n,Al} = S_n \times CF_{AL} \times CF_{mounting\ material}$.

Operating range	Analogue output	Type of connection	Part number	Article number
0 ... 6 mm	0 ... 10V / 4 ... 20 mA	Metal plug M12x1, 4-pin	IMT 12-A-QB3-PS-L4M	996-01034

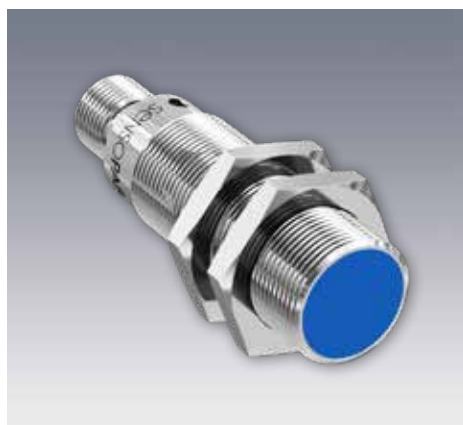


Connection, 4-pin	Mounting								
<p>154-00588</p>	<p>155-03390</p> <table border="1"> <tr> <td>A: Metal-free zone</td> <td>a: 12 mm</td> </tr> <tr> <td>B: Active surface</td> <td>b: 14 mm</td> </tr> <tr> <td>C: Backing material</td> <td>c: 18 mm</td> </tr> <tr> <td></td> <td>d: 2 mm</td> </tr> </table>	A: Metal-free zone	a: 12 mm	B: Active surface	b: 14 mm	C: Backing material	c: 18 mm		d: 2 mm
A: Metal-free zone	a: 12 mm								
B: Active surface	b: 14 mm								
C: Backing material	c: 18 mm								
	d: 2 mm								



IMT 18

Inductive sensor M18 / increased switching distance / analogue output



PRODUCT-HIGHLIGHTS

- Long sensing range
- Outstanding accuracy and temperature stability
- Resolution in μm range
- Analogue output 0 ... 10 V or 4 ... 20 mA

Sensor data

Operating range	0 ... 10 mm ¹ / 0 ... 20 mm ²
Resolution static	$\leq 0.25 \mu\text{m}^1$ / $\leq 0.62 \mu\text{m}^2$
Resolution dynamic	$\leq 1.24 \mu\text{m}^1$ / $\leq 1.9 \mu\text{m}^2$
Repeatability	$\pm 0.2 \text{ mm}$
Temperature drift	$\leq 5 \%$ (0 ... +70 °C) $\leq 10 \%$ (-25 ... 0 °C)
Correction factor steel FE 360	1
Correction factor V2A	0.72 ¹ / 0.74 ²
Correction factor CuZn	0.44 ¹ / 0.48 ²
Correction factor Al	0.34 ¹ / 0.38 ²
Correction factor Cu	0.31 ¹ / 0.34 ²

Electrical data

Operating voltage, +U _B	15 ... 30 V DC
Residual ripple	$\leq 20 \%$ U _B
No-load current, I ₀	$\leq 10 \text{ mA}^1$ / $\leq 15 \text{ mA}^2$
Protective circuits	Reverse-polarity protection, U _B / short-circuit protection (Q)
Load current at voltage output	$\leq 15 \text{ mA}$
Power-on delay	$\leq 20 \text{ ms}$
Max. load at current output	400 Ω (U _B = 15 V) / 1 k Ω (U _B = 30 V)
Bandwidth	0.5 kHz ¹ / 0.25 kHz ²

Mechanical data

Dimensions	M18 x 63.5 mm
Mounting	Quasi-flush / non-flush (see selection table)
Enclosure rating	IP 67 ³
Material housing	Brass, chrome-plated
Material active surface	PBTP
Type of connection	Metal plug, M12x1, 4-pin
Ambient temperature: operation	-25 ... +70 °C
Ambient temperature: storage	-25 ... +70 °C
Weight	56 g
Vibration and impact resistance	EN IEC 60947-5-2
Tightening torque	25 Nm
Standard target FE 360	30 mm x 30 mm x 1 mm ¹ / 60 mm x 60 mm x 1 mm ²

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

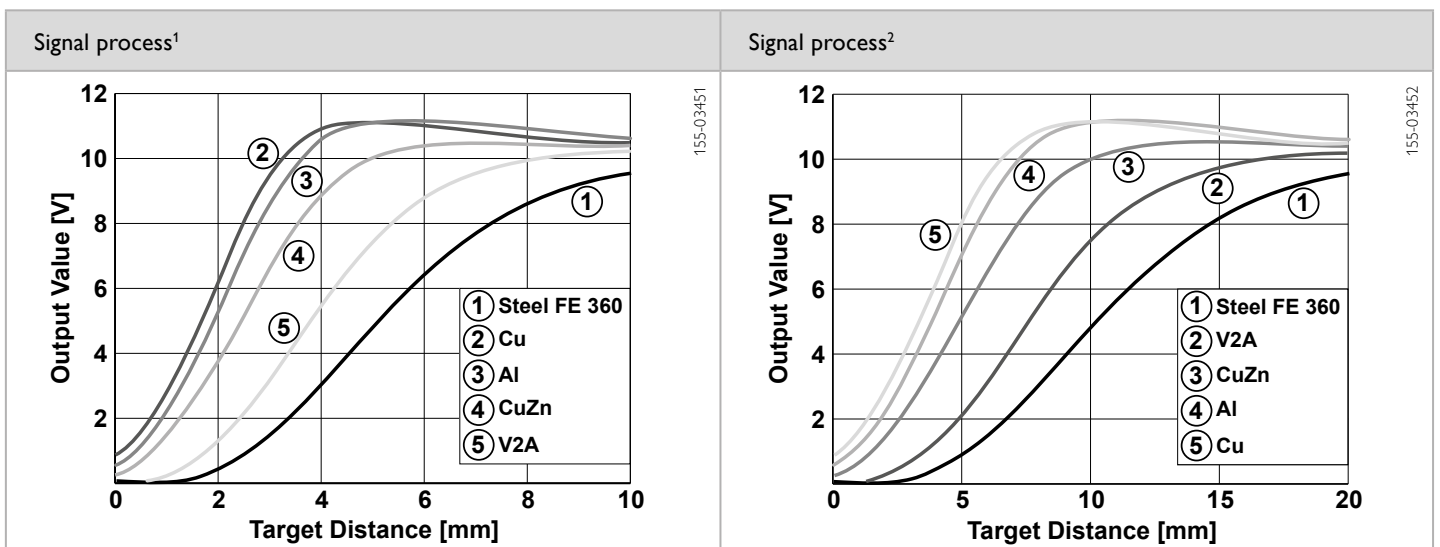
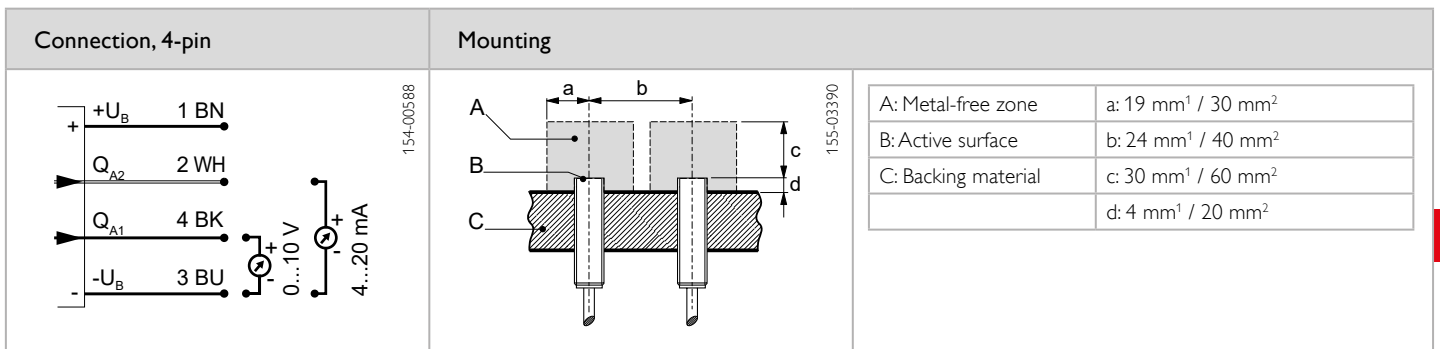
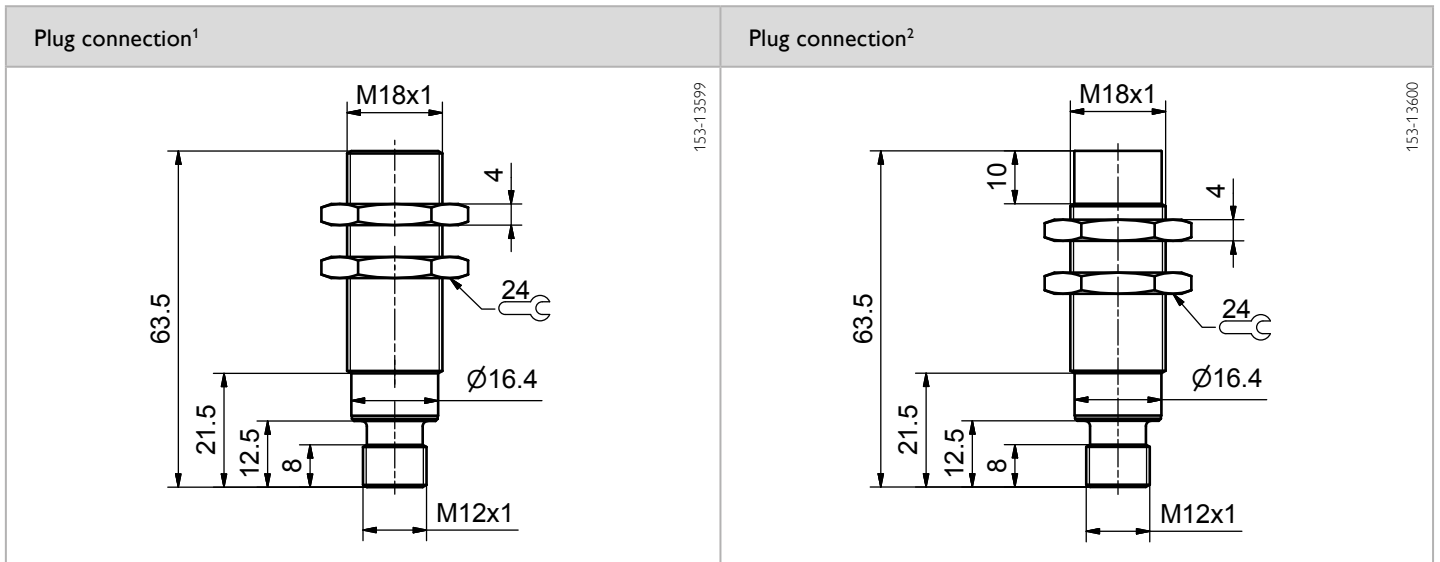


All data measured according to standard EN IEC 60947-5-2 with U_B = 20 ... 30 V DC, T_A = 23 °C ± 5 °C

The switching distance of the sensor must be multiplied by the correction factor of the material. The switching distance on aluminium is thus S_{n,AL} = S_n × CF_{AL}.

For flush mounting the distance is multiplied by the additional correction factor of the backing material, S_{n,Al} = S_n × CF_{AL} × CF_{mounting material}.

Operating range	Mounting	Analogue output	Type of connection	Part number	Article number
0 ... 10 mm	Quasi-flush	0 ... 10V / 4 ... 20 mA	Metal plug, M12x1, 4-pin	IMT 18-A-QB3-PS-L4M	996-01035
0 ... 20 mm	Non-flush	0 ... 10V / 4 ... 20 mA	Metal plug, M12x1, 4-pin	IMT 18-A-NB3-PS-L4M	996-01036



The switching distance of the sensor must be multiplied by the correction factor of the material. The switching distance on aluminium is thus $S_{n,AL} = S_n \times CF_{AL}$.
 For flush mounting the distance is multiplied by the additional correction factor of the backing material, $S_{n,AL} = S_n \times CF_{AL} \times CF_{mounting\ material}$.

IMT 30

Inductive sensor M30 / increased switching distance / analogue output



PRODUCT-HIGHLIGHTS

- Long sensing range
- Outstanding accuracy and temperature stability
- Resolution in μm range
- Analogue output 0 ... 10 V or 4 ... 20 mA

Sensor data

Operating range	0 ... 20 mm ¹ / 0 ... 40 mm ²
Resolution static	$\leq 0.41 \mu\text{m}^1$ / $\leq 1.42 \mu\text{m}^2$
Resolution dynamic	$\leq 1.55 \mu\text{m}^1$ / $\leq 5.5 \mu\text{m}^2$
Repeatability	$\pm 0.02 \text{ mm}^1$ / $\pm 0.35 \text{ mm}^2$
Temperature drift	$\leq 5\%$ (0 ... +70 °C) $\leq 10\%$ (-25 ... 0 °C)
Correction factor steel FE 360	1
Correction factor V2A	0.7 ¹ / 0.76 ²
Correction factor CuZn	0.4 ¹ / 0.49 ²
Correction factor Al	0.32 ¹ / 0.44 ²
Correction factor Cu	0.28 ¹ / 0.4 ²

Electrical data

Operating voltage, +U _B	15 ... 30 V DC
Residual ripple	$\leq 20\%$ U _B
No-load current, I ₀	$\leq 12 \text{ mA}$
Protective circuits	Reverse-polarity protection, U _B / short-circuit protection (Q)
Load current at voltage output	$\leq 15 \text{ mA}$
Power-on delay	$\leq 20 \text{ ms}$
Max. load at current output	400 Ω (U _B = 15 V) / 1 k Ω (U _B = 30 V)
Bandwidth	0.2 kHz ¹ / 0.1 kHz ²

Mechanical data

Dimensions	M30 x 73.5 mm
Mounting	Quasi-flush / non-flush (see selection table)
Enclosure rating	IP 67 ³
Material housing	Brass, chrome-plated
Material active surface	PBTP
Type of connection	Metal plug, M12x1, 4-pin
Ambient temperature: operation	-25 ... +70 °C
Ambient temperature: storage	-25 ... +70 °C
Weight	155 g
Vibration and impact resistance	EN IEC 60947-5-2
Tightening torque	70 Nm
Standard target FE 360	60 mm x 60 mm x 1 mm ¹ / 120 mm x 120 mm x 1 mm ²

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

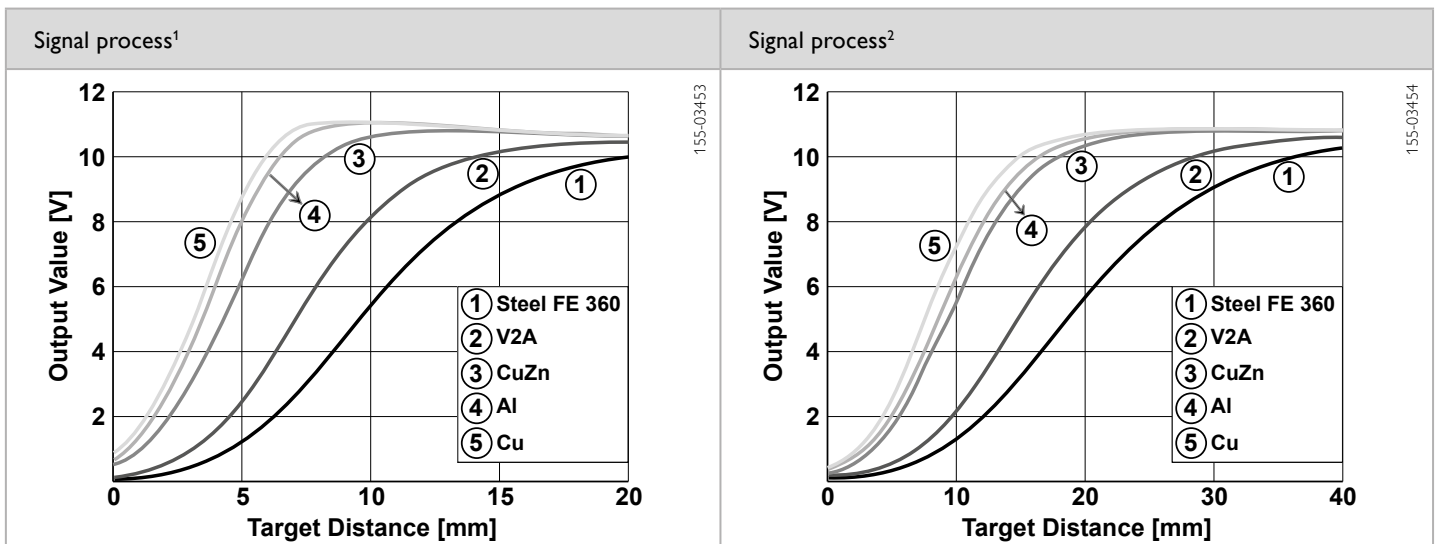
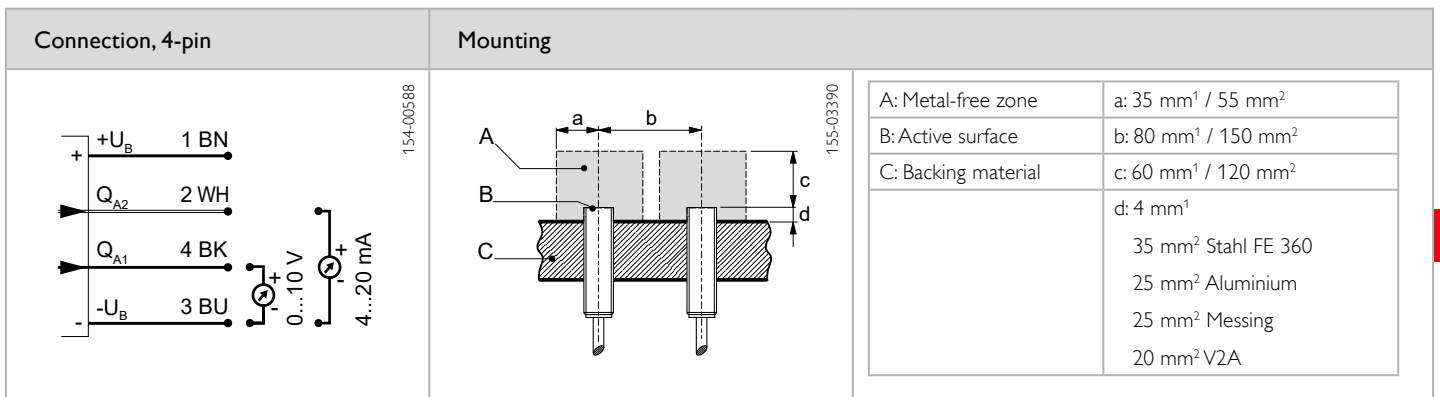
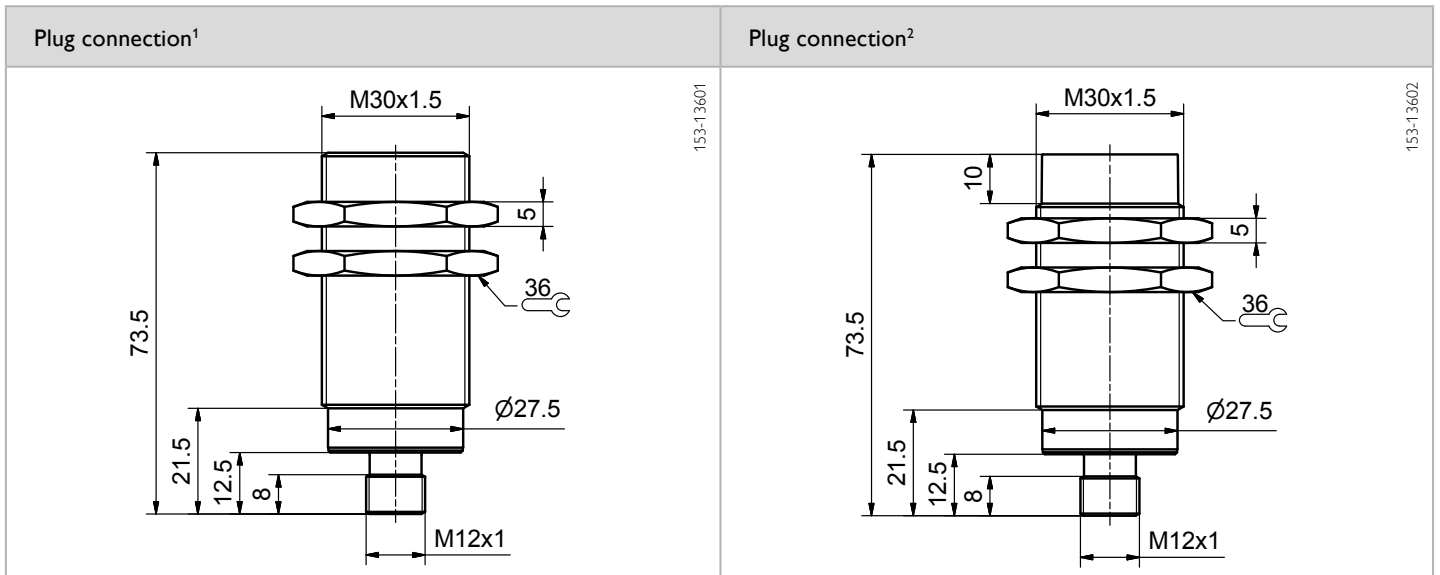


All data measured according to standard EN IEC 60947-5-2 with U_B = 20 ... 30 V DC, T_A = 23 °C ± 5 °C

The switching distance of the sensor must be multiplied by the correction factor of the material. The switching distance on aluminium is thus S_{n,AL} = S_n × CF_{AL}.

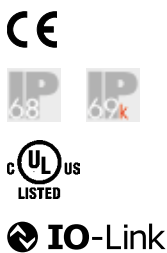
For flush mounting the distance is multiplied by the additional correction factor of the backing material, S_{n,Al} = S_n × CF_{AL} × CF_{mounting material}.

Operating range	Mounting	Analogue output	Type of connection	Part number	Article number
0 ... 20 mm	Quasi-flush	0 ... 10V / 4 ... 20 mA	Metal plug, M12x1, 4-pin	IMT 30-A-QB3-PS-L4M	996-01037
0 ... 40 mm	Non-flush	0 ... 10V / 4 ... 20 mA	Metal plug, M12x1, 4-pin	IMT 30-A-NB3-PS-L4M	996-01038



IMT 8

Inductive sensor M8 / all-metal housing / factor 1



PRODUCT-HIGHLIGHTS

- One-piece full stainless-steel housing
- Long operating range
- Factor 1 sensor on steel and aluminium
- Extremely robust
- Pressure-tight / watertight IP 68 / IP 69K
- IO-Link 1.1

Sensor data		Functions		
Rated operating distance S_n	3 mm ¹ / 6 mm ²	Indicator LED yellow	Switching output indicator	
Ensured operating distance S_b	$\leq 2.43 \text{ mm}^1 / \leq 4.86 \text{ mm}^2$	Adjustment possibilities	N.O. / N.C.	
Hysteresis	$3 \% S_r \leq \text{Hyst} \leq 15 \% S_r^3$	Default settings	Wide variety of adjustment possibilities via IO-Link	
Repeatability	$\leq 0.12 \text{ mm}^1 / \leq 0.2 \text{ mm}^2$		N.O.	
Temperature drift	$\leq 10 \% S_r$			
Electrical data		Mechanical data		
Operating voltage, $+U_b$	10 ... 30V DC	Dimensions	M8 x 60 mm	
Residual ripple	$\leq 20 \% U_b$	Mounting	Flush / non-flush (see selection table)	
No-load current, I_o	$\leq 10 \text{ mA}$	Enclosure rating	IP 68 (100 bar) ^{5/6} / IP 69K ⁶	
Output current, I_e	$\leq 200 \text{ mA}$	Material housing / active surface	Stainless steel, V2A / 1.4305 / AISI 303	
Protective circuits	Reverse-polarity protection, U_b / short-circuit protection (Q)	Type of connection	Stainless steel plug, V2A, M8x1, 3-pin	
Residual current	$\leq 0.1 \text{ mA}$	Ambient temperature: operation	-25 ... +85 °C ⁷	
Voltage drop, U_D	$\leq 2.0 \text{ V DC at } 200 \text{ mA}$	Ambient temperature: storage	-25 ... +85 °C	
Switching output, Q	PNP	Weight	13 g	
Output function	N.O./N.C. ⁴	Vibration and impact resistance	EN IEC 60947-5-2	
Power-on delay	$\leq 10 \text{ ms}$	Tightening torque	8 Nm	
Switching frequency f (ti/tp 1:1)	$1.2 \text{ kHz}^1 / \leq 0.7 \text{ kHz}^2$	Standard target FE 360	9 mm x 9 mm x 1 mm ¹ / 18 mm x 18 mm x 1 mm ²	
IO-Link		Correction factors	Target	Installation material
Communication mode	COM 2	Steel FE 360	1 ^{1/2}	0.8 ¹ / - ²
Min. cycle time	10.4 ms	V2A 1 / 2 mm	0.4/0.8 ¹ / 0.3/0.8 ²	0.8 ¹ / - ²
SIO mode	Compatible	CuZn	1.3 ¹ / 1.35 ²	0.9 ¹ / - ²
Length process data	7 Bit	Al	1 ^{1/2}	1.1 ¹ / - ²
Specification	1.1	Cu	0.9 ¹ / 0.8 ²	-
ISDU	Not compatible			

¹ Flush devices ² Non-flush devices ³ S_r (Effective switching distance) = $\pm 10 \%$ of S_n ⁴ Adjustable / parameterisable via IO-Link ⁵ In zone "IP" ⁶ With connected IP 68 / IP 69K plug

⁷ UL: -25 ... +70 °C



All data measured according to standard EN IEC 60947-5-2 with $U_b = 20 \dots 30 \text{ V DC}$, $T_A = 23 \text{ °C} \pm 5 \text{ °C}$

The switching distance of the sensor must be multiplied by the correction factor of the material. The switching distance on aluminium is thus $S_{n,AL} = S_n \times CF_{AL}$.

For flush mounting the distance is multiplied by the additional correction factor of the backing material, $S_{n,Al} = S_n \times CF_{AL} \times CF_{mounting\ material}$.

Switching distance	Mounting	Switching output	Type of connection	Part number	Article number
3 mm	Flush	PNP	Stainless steel plug, V2A, M8x1, 3-pin, IO-Link	IMT 8-FM-S-B2-PSL-M3M	996-01025
6 mm	Non-flush	PNP	Stainless steel plug, V2A, M8x1, 3-pin, IO-Link	IMT 8-FM-S-NB2-PSL-M3M	996-01026

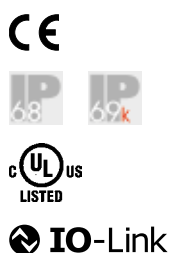
Plug connection ¹	Plug connection ²
<p>153-13617</p>	<p>153-13618</p>

Connection, 3-pin, IO-Link	⁵ Zone "P"
<p>154-00583</p>	<p>135-03420</p> <p>135-03421</p>

Mounting									
<p>155-03390</p>	<table border="1"> <tr> <td>A: Metal-free zone</td> <td>a: 6 mm¹ / 18 mm²</td> </tr> <tr> <td>B: Active surface</td> <td>b: 22 mm¹ / 60 mm²</td> </tr> <tr> <td>C: Backing material</td> <td>c: 9 mm¹ / 18 mm²</td> </tr> <tr> <td></td> <td>d: 0 mm¹ / 14 mm²</td> </tr> </table>	A: Metal-free zone	a: 6 mm ¹ / 18 mm ²	B: Active surface	b: 22 mm ¹ / 60 mm ²	C: Backing material	c: 9 mm ¹ / 18 mm ²		d: 0 mm ¹ / 14 mm ²
A: Metal-free zone	a: 6 mm ¹ / 18 mm ²								
B: Active surface	b: 22 mm ¹ / 60 mm ²								
C: Backing material	c: 9 mm ¹ / 18 mm ²								
	d: 0 mm ¹ / 14 mm ²								

IMT 12

Inductive sensor M12 / all-metal housing / factor 1



PRODUCT-HIGHLIGHTS

- One-piece full stainless-steel housing
- Long operating range
- Factor 1 sensor on steel and aluminium
- Extremely robust
- Pressure-tight / watertight IP 68 / IP 69K
- IO-Link 1.1

Sensor data		Functions		
Rated operating distance S_n	6 mm ¹ / 10 mm ²	Indicator LED yellow	Switching output indicator	
Ensured operating distance S_b	$\leq 4.86 \text{ mm}^1 / \leq 8.1 \text{ mm}^2$	Adjustment possibilities	N.O. / N.C.	
Hysteresis	$3 \% S_r \leq \text{Hyst} \leq 15 \% S_r^3$	Default settings	Wide variety of adjustment possibilities via IO-Link	
Repeatability	$\leq 0.2 \text{ mm}^1 / \leq 0.3 \text{ mm}^2$		N.O.	
Temperature drift	$\leq 10 \% S_r$			
Electrical data		Mechanical data		
Operating voltage, $+U_b$	10 ... 30V DC	Dimensions	M12 x 60 mm	
Residual ripple	$\leq 20 \% U_b$	Mounting	Flush / non-flush (see selection table)	
No-load current, I_o	$\leq 10 \text{ mA}$	Enclosure rating	IP 68 (80 bar) ^{5/6} / IP 69K ⁶	
Output current, I_e	$\leq 200 \text{ mA}$	Material housing / active surface	Stainless steel, V2A / 1.4305 / AISI 303	
Protective circuits	Reverse-polarity protection, U_b / short-circuit protection (Q)	Type of connection	Stainless steel plug, V2A, M12x1, 4-pin	
Residual current	$\leq 0.1 \text{ mA}$	Ambient temperature: operation	-25 ... +85 °C ⁷	
Voltage drop, U_D	$\leq 2.0 \text{ V DC at } 200 \text{ mA}$	Ambient temperature: storage	-25 ... +85 °C	
Switching output, Q	PNP	Weight	25 g	
Output function	N.O./N.C. ⁴	Vibration and impact resistance	EN IEC 60947-5-2	
Power-on delay	$\leq 10 \text{ ms}$	Tightening torque	20 Nm	
Switching frequency f (ti/tp 1:1)	$\leq 0.6 \text{ kHz}^1 / \leq 0.4 \text{ kHz}^2$	Standard target FE 360	18 mm x 18 mm x 1 mm ¹ / 30 mm x 30 mm x 1 mm ²	
IO-Link		Correction factors	Target	Installation material
Communication mode	COM 2	Steel FE 360	1 ^{1/2}	0.7 ¹ / - ²
Min. cycletime	10.4 ms	V2A 1 / 2 mm	0.4/0.8 ¹ / 0.15/0.85 ²	0.8 ¹ / - ²
SIO mode	Compatible	CuZn	1.3 ¹ / 1.4 ²	1.05 ¹ / - ²
Length process data	7 Bit	Al	1 ^{1/2}	1.15 ¹ / - ²
Specification	1.1	Cu	0.85 ¹ / 0.8 ²	-
ISDU	Not compatible			

¹ Flush devices ² Non-flush devices ³ S_r (Effective switching distance) = $\pm 10 \%$ of S_n ⁴ Adjustable / parameterisable via IO-Link ⁵ In zone "P"

⁶ With connected IP 68 / IP 69K plug ⁷ UL: -25 ... +70 °C

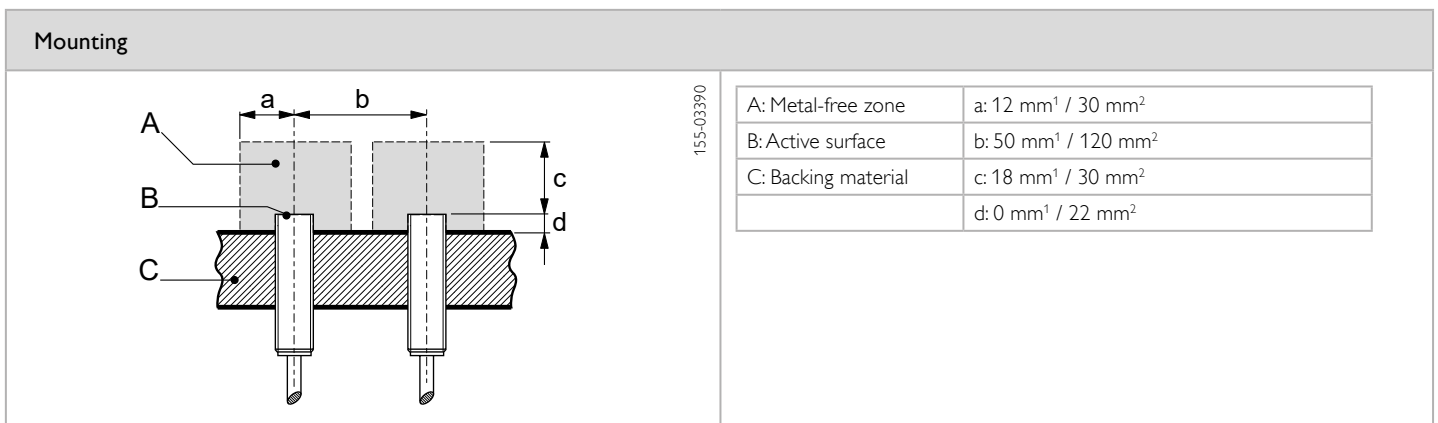
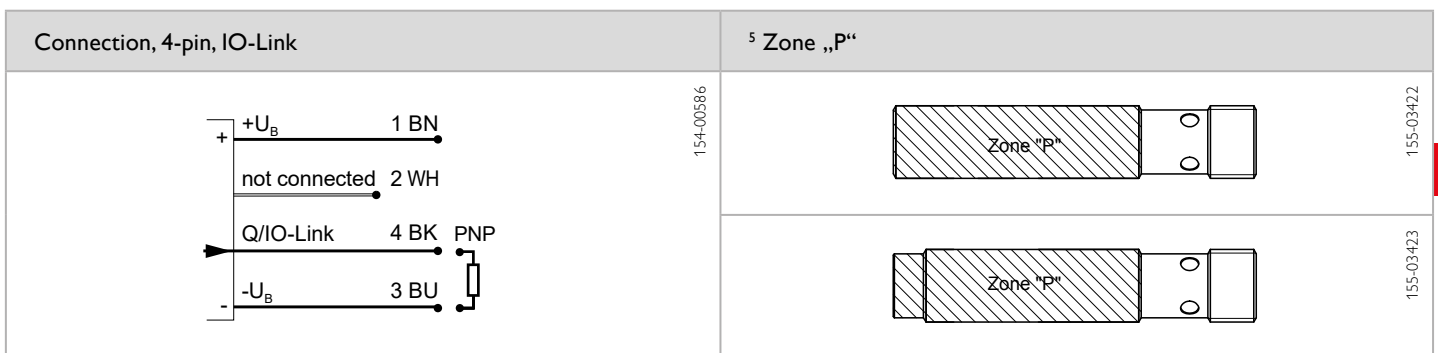
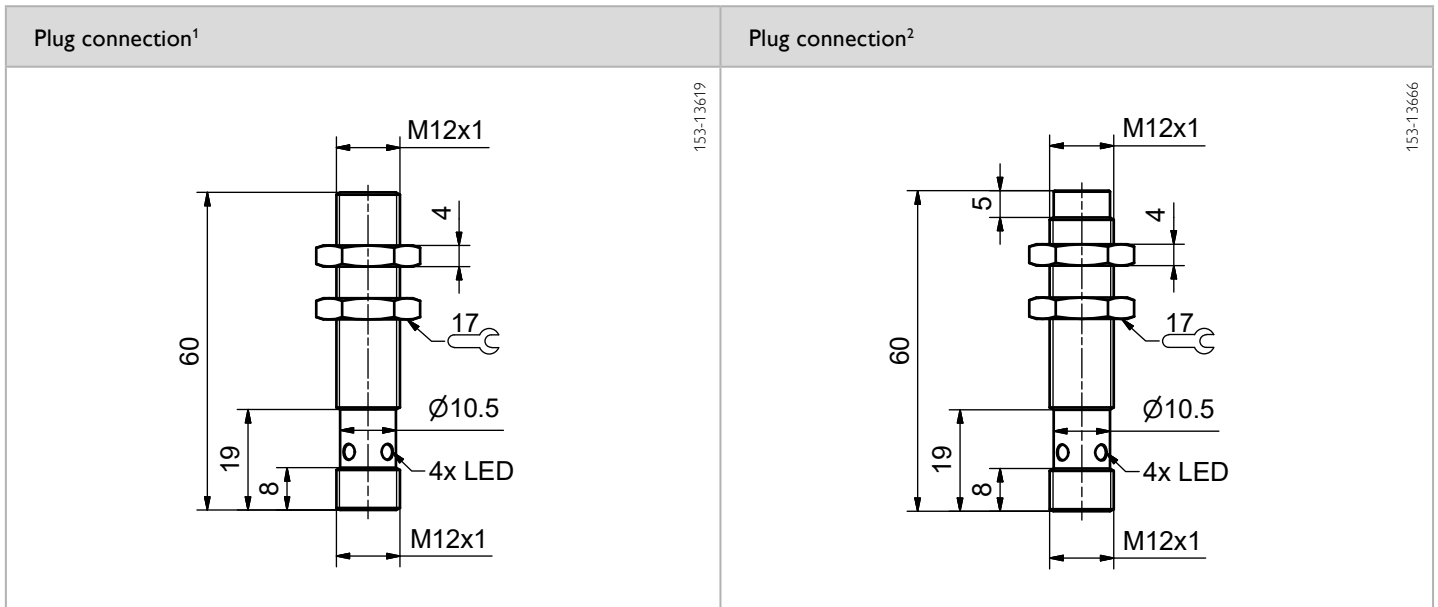


All data measured according to standard EN IEC 60947-5-2 with $U_b = 20 \dots 30 \text{ V DC}$, $T_A = 23 \text{ °C} \pm 5 \text{ °C}$

The switching distance of the sensor must be multiplied by the correction factor of the material. The switching distance on aluminium is thus $S_{n,AL} = S_n \times CF_{AL}$.

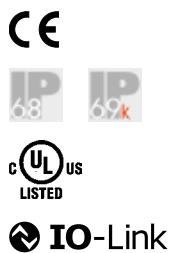
For flush mounting the distance is multiplied by the additional correction factor of the backing material, $S_n,Al = S_n \times CF_{AL} \times CF_{mounting\ material}$.

Switching distance	Mounting	Switching output	Type of connection	Part number	Article number
6 mm	Flush	PNP	Stainless steel plug, V2A, M12x1, 4-pin, IO-Link	IMT 12-FM-S-B2-PSL-L4M	996-01027
10 mm	Non-flush	PNP	Stainless steel plug, V2A, M12x1, 4-pin, IO-Link	IMT 12-FM-S-NB2-PSL-L4M	996-01028



IMT 18

Inductive sensor M18 / all-metal housing / factor 1



PRODUCT-HIGHLIGHTS

- One-piece full stainless-steel housing
- Long operating range
- Factor 1 sensor on steel and aluminium
- Extremely robust
- Pressure-tight / watertight IP 68 / IP 69K
- IO-Link 1.1

Sensor data		Functions		
Rated operating distance S_n	10 mm ¹ / 20 mm ²	Indicator LED yellow	Switching output indicator	
Ensured operating distance S_b	$\leq 8.1 \text{ mm}^1 / \leq 16.2 \text{ mm}^2$	Adjustment possibilities	N.O. / N.C.	
Hysteresis	$3 \% S_r \leq \text{Hyst} \leq 15 \% S_r^3$	Default settings	Wide variety of adjustment possibilities via IO-Link	
Repeatability	$\leq 0.3 \text{ mm}^1 / \leq 0.6 \text{ mm}^2$		N.O.	
Temperature drift	$\leq 10 \% S_r$			
Electrical data		Mechanical data		
Operating voltage, $+U_b$	10 ... 30V DC	Dimensions	M18 x 63,5 mm	
Residual ripple	$\leq 20 \% U_b$	Mounting	Flush / non-flush (see selection table)	
No-load current, I_o	$\leq 10 \text{ mA}$	Enclosure rating	IP 68 (60 bar) ^{5/6} / IP 69K ⁶	
Output current, I_e	$\leq 200 \text{ mA}$	Material housing / active surface	Stainless steel, V2A / 1.4305 / AISI 303	
Protective circuits	Reverse-polarity protection, U_b / short-circuit protection (Q)	Type of connection	Stainless steel plug, V2A, M12x1, 4-pin	
Residual current	$\leq 0.1 \text{ mA}$	Ambient temperature: operation	-25 ... +85 °C ⁷	
Voltage drop, U_D	$\leq 2.0 \text{ V DC at } 200 \text{ mA}$	Ambient temperature: storage	-25 ... +85 °C	
Switching output, Q	PNP	Weight	53 g	
Output function	N.O./N.C. ⁴	Vibration and impact resistance	EN IEC 60947-5-2	
Power-on delay	$\leq 15 \text{ ms}$	Tightening torque	50 Nm	
Switching frequency f (ti/tp 1:1)	$\leq 0.2 \text{ kHz}$	Standard target FE 360	30 mm x 30 mm x 1 mm ¹ / 60 mm x 60 mm x 1 mm ²	
IO-Link		Correction factors	Target	Installation material
Communication mode	COM 2	Stahl FE 360	1 ^{1/2}	0.75 ¹ / - ²
Min. cycletime	10.4 ms	V2A 1 / 2 mm	0.5/0.9 ¹ / 0.2/0.7 ²	0.8 ¹ / - ²
SIO mode	Compatible	CuZn	1.2 ¹ / 1.35 ²	0.75 ¹ / - ²
Length process data	7 Bit	Al	1 ^{1/2}	0.9 ¹ / - ²
Specification	1.1	Cu	0.8 ¹ / 0.9 ²	-
ISDU	Not compatible			

¹ Flush devices ² Non-flush devices ³ S_r (Effective switching distance) = $\pm 10 \%$ of S_n ⁴ Adjustable / parameterisable via IO-Link ⁵ In zone "P" ⁶ With connected IP 68 / IP 69K plug
⁷ UL: -25 ... +70 °C

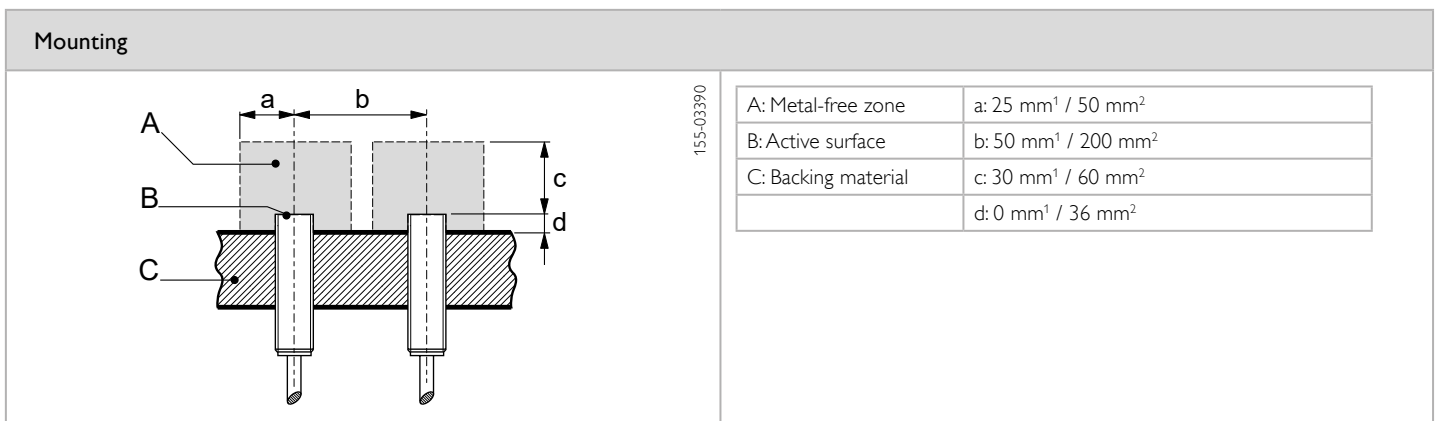
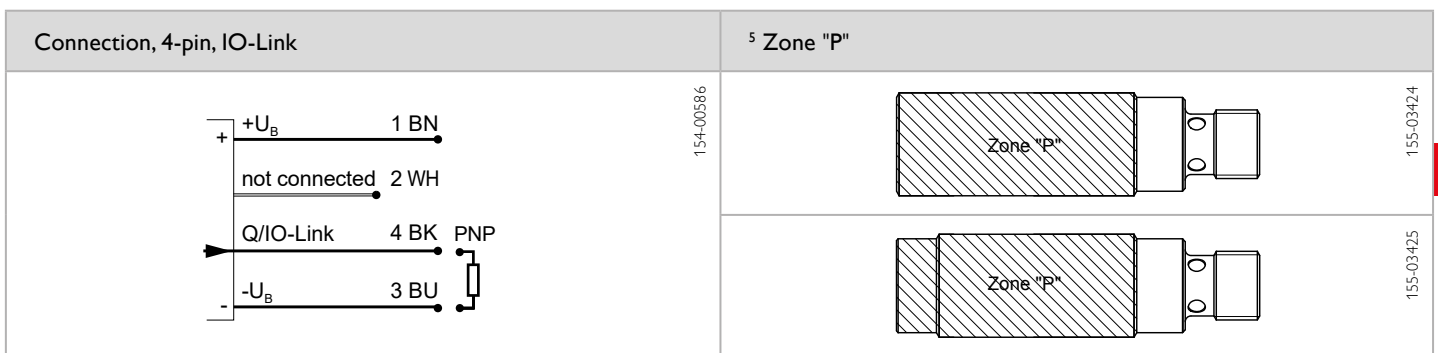
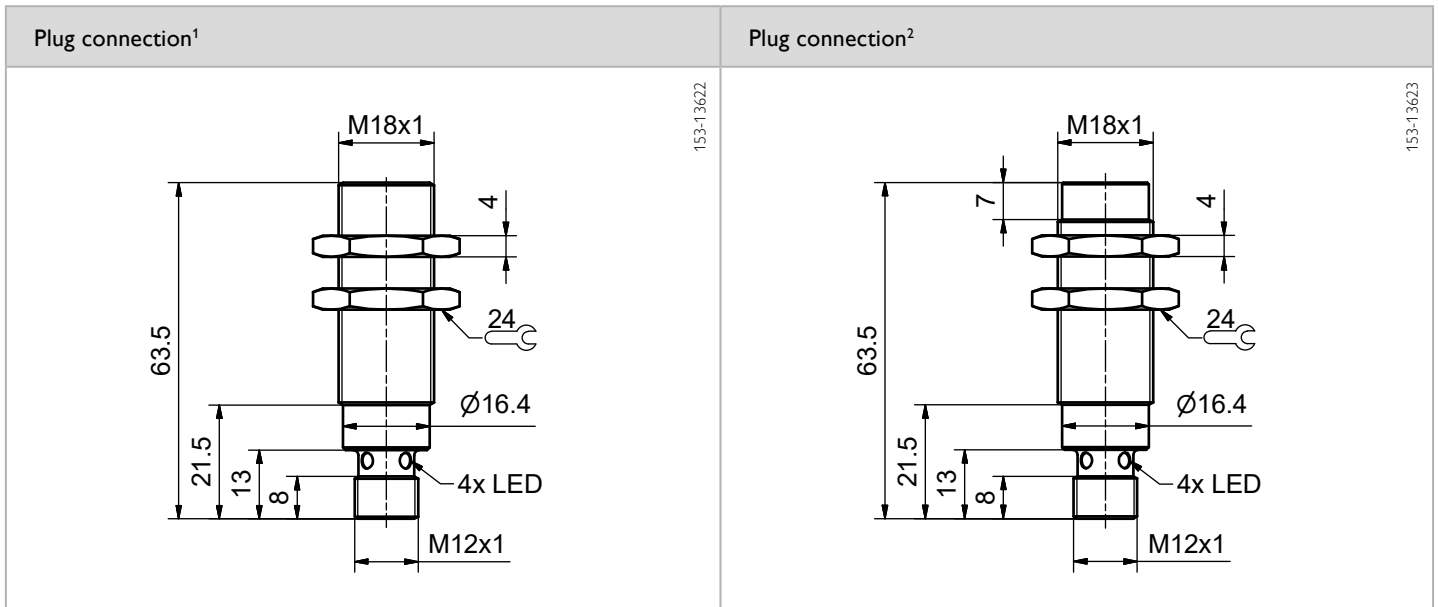


All data measured according to standard EN IEC 60947-5-2 with $U_b = 20 \dots 30 \text{ V DC}$, $T_A = 23 \text{ °C} \pm 5 \text{ °C}$

The switching distance of the sensor must be multiplied by the correction factor of the material. The switching distance on aluminium is thus $S_{n,AL} = S_n \times CF_{AL}$.

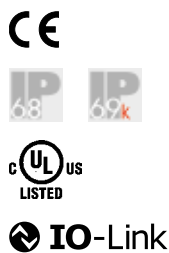
For flush mounting the distance is multiplied by the additional correction factor of the backing material, $S_n,Al = S_n \times CF_{AL} \times CF_{mounting\ material}$.

Switching distance	Mounting	Switching output	Type of connection	Part number	Article number
10 mm	Flush	PNP	Stainless steel plug, V2A, M12x1, 4-pin, IO-Link	IMT 18-FM-S-B2-PSL-L4M	996-01029
20 mm	Non-flush	PNP	Stainless steel plug, V2A, M12x1, 4-pin, IO-Link	IMT 18-FM-S-NB2-PSL-L4M	996-01030



IMT 30

Inductive sensor M30 / all-metal housing / factor 1



PRODUCT-HIGHLIGHTS

- One-piece full stainless-steel housing
- Long operating range
- Factor 1 sensor on steel and aluminium
- Extremely robust
- Pressure-tight / watertight IP 68 / IP 69K
- IO-Link 1.1

Sensor data		Functions		
Rated operating distance S_n	20 mm ¹ / 40 mm ²	Indicator LED yellow	Switching output indicator	
Ensured operating distance S_b	$\leq 16.2 \text{ mm}^1 / \leq 32.4 \text{ mm}^2$	Adjustment possibilities	N.O. / N.C.	
Hysteresis	$3 \% S_r \leq \text{Hyst} \leq 15 \% S_r^3$	Default settings	Wide variety of adjustment possibilities via IO-Link	
Repeatability	$\leq 0.7 \text{ mm}^1 / \leq 1.4 \text{ mm}^2$		N.O.	
Temperature drift	$\leq 10 \% S_r$			
Electrical data		Mechanical data		
Operating voltage, $+U_b$	10 ... 30V DC	Dimensions	M30 x 63,5 mm	
Residual ripple	$\leq 20 \% U_b$	Mounting	Flush / non-flush (see selection table)	
No-load current, I_o	$\leq 10 \text{ mA}$	Enclosure rating	IP 68 (40 bar) ^{5/6} / IP 69K ⁶	
Output current, I_e	$\leq 200 \text{ mA}$	Material housing / active surface	Stainless steel, V2A / 1.4305 / AISI 303	
Protective circuits	Reverse-polarity protection, U_b / short-circuit protection (Q)	Type of connection	Stainless steel plug, V2A, M12x1, 4-pin	
Residual current	$\leq 0.1 \text{ mA}$	Ambient temperature: operation	-25 ... +85 °C ⁷	
Voltage drop, U_D	$\leq 2.0 \text{ V DC at } 200 \text{ mA}$	Ambient temperature: storage	-25 ... +85 °C	
Switching output, Q	PNP	Weight	137 g	
Output function	N.O./N.C. ⁴	Vibration and impact resistance	EN IEC 60947-5-2	
Power-on delay	$\leq 20 \text{ ms}^1 / \leq 30 \text{ ms}^2$	Tightening torque	150 Nm	
Switching frequency f (ti/tp 1:1)	$\leq 0.125 \text{ kHz}^1 / \leq 0.09 \text{ kHz}^2$	Standard target FE 360	60 mm x 60 mm x 1 mm ¹ / 120 mm x 120 mm x 1 mm ²	
IO-Link		Correction factors	Target	Installation material
Communication mode	COM 2	Steel FE 360	1 ^{1/2}	0.85 ¹ / - ²
Min. cycletime	10.4 ms	V2A 1 / 2 mm	0.4/0.75 ¹ / 0.0/0.2 ²	1.2 ¹ / - ²
SIO mode	Compatible	CuZn	1.3 ¹ / 1.2 ²	0.6 ¹ / - ²
Length process data	7 Bit	Al	1 ^{1/2}	0.7 ¹ / - ²
Specification	1.1	Cu	0.9 ¹ / 0.9 ²	-
ISDU	Not compatible			

¹ Flush devices ² Non-flush devices ³ S_r (Effective switching distance) = $\pm 10 \%$ of S_n ⁴ Adjustable / parameterisable via IO-Link ⁵ In zone "P"

⁶ With connected IP 68 / IP 69K plug ⁷ UL: -25 ... +70 °C



All data measured according to standard EN IEC 60947-5-2 with $U_b = 20 \dots 30 \text{ V DC}$, $T_A = 23 \text{ °C} \pm 5 \text{ °C}$

The switching distance of the sensor must be multiplied by the correction factor of the material. The switching distance on aluminium is thus $S_{n,AL} = S_n \times CF_{AL}$.

For flush mounting the distance is multiplied by the additional correction factor of the backing material, $S_{n,Al} = S_n \times CF_{AL} \times CF_{mounting\ material}$.

Switching distance	Mounting	Switching output	Type of connection	Part number	Article number
20 mm	Flush	PNP	Stainless steel plug, V2A, M12x1, 4-pin, IO-Link	IMT 30-FM-S-B2-PSL-L4M	996-01031
40 mm	Non-flush	PNP	Stainless steel plug, V2A, M12x1, 4-pin, IO-Link	IMT 30-FM-S-NB2-PSL-L4M	996-01032

Plug connection ¹	Plug connection ²
<p>153-13624</p>	<p>153-13625</p>

Connection, 4-pin, IO-Link	⁵ Zone "P"
<p>154-00586</p>	<p>155-03426</p> <p>155-03427</p>

Mounting									
<p>155-03390</p>	<table border="1"> <tr> <td>A: Metal-free zone</td> <td>a: 45 mm¹ / 90 mm²</td> </tr> <tr> <td>B: Active surface</td> <td>b: 110 mm¹ / 300 mm²</td> </tr> <tr> <td>C: Backing material</td> <td>c: 60 mm¹ / 120 mm²</td> </tr> <tr> <td></td> <td>d: 0 mm¹ / 16 mm²</td> </tr> </table>	A: Metal-free zone	a: 45 mm ¹ / 90 mm ²	B: Active surface	b: 110 mm ¹ / 300 mm ²	C: Backing material	c: 60 mm ¹ / 120 mm ²		d: 0 mm ¹ / 16 mm ²
A: Metal-free zone	a: 45 mm ¹ / 90 mm ²								
B: Active surface	b: 110 mm ¹ / 300 mm ²								
C: Backing material	c: 60 mm ¹ / 120 mm ²								
	d: 0 mm ¹ / 16 mm ²								

IKT 5

Inductive sensor 5 x 5 / cubic housing



PRODUCT-HIGHLIGHTS

- Various parameterization options
- IO-Link 1.1

Sensor data		Functions	
Rated operating distance S_n	1.5 mm	Indicator LED yellow	Switching output indicator
Ensured operating distance S_b	≤ 1.22 mm	Adjustment possibilities	N.O. / N.C.
Hysteresis	$\leq 10\% S_r$ typ. ¹	Default settings	Wide variety of adjustment possibilities via IO-Link
Repeatability	≤ 0.03 mm		N.O.
Temperature drift	$\leq 10\% S_r$		
Correction factor steel FE 360	1		
Correction factor V2A 1 / 2 mm	0.85		
Correction factor CuZn	0.7		
Correction factor Al	0.6		
Correction factor Cu	0.6		
Electrical data		Mechanical data	
Operating voltage, $+U_b$	10 ... 30V DC	Dimensions	5 mm x 5 mm x 25 mm
Residual ripple	$\leq 20\% U_b$	Mounting	Flush
No-load current, I_o	≤ 10 mA	Enclosure rating	IP 67 ³
Output current, I_e	≤ 200 mA	Material housing	Brass, chrome-plated
Protective circuits	Induction protection / reverse-polarity protection, U_b / short-circuit protection (Q)	Material active surface	Polyester
Residual current	≤ 0.1 mA	Type of connection	Pigtail 0.2 m with plug, M8x1, 3-pin
Voltage drop, U_D	≤ 2.0 V DC at 100 mA	Ambient temperature: operation	-25 ... +70 °C
Switching output, Q	PNP	Ambient temperature: storage	-25 ... +70 °C
Output function	N.O./N.C. ²	Weight	6.5 g
Power-on delay	≤ 10 ms	Vibration and impact resistance	EN IEC 60947-5-2
Switching frequency f (ti/tp 1:1)	≤ 3 kHz	Tightening torque	-
		Standard target FE 360	5 mm x 5 mm x 1 mm
IO-Link			
Communication mode	COM 2		
Min. cycletime	10.4 ms		
SIO mode	Compatible		
Length process data	2 Bit		
Specification	1.1		
ISDU	Not compatible		

¹ S_r (Effective switching distance) = $\pm 10\%$ of S_n ² Adjustable / parameterisable via IO-Link ³ With connected IP 67 plug

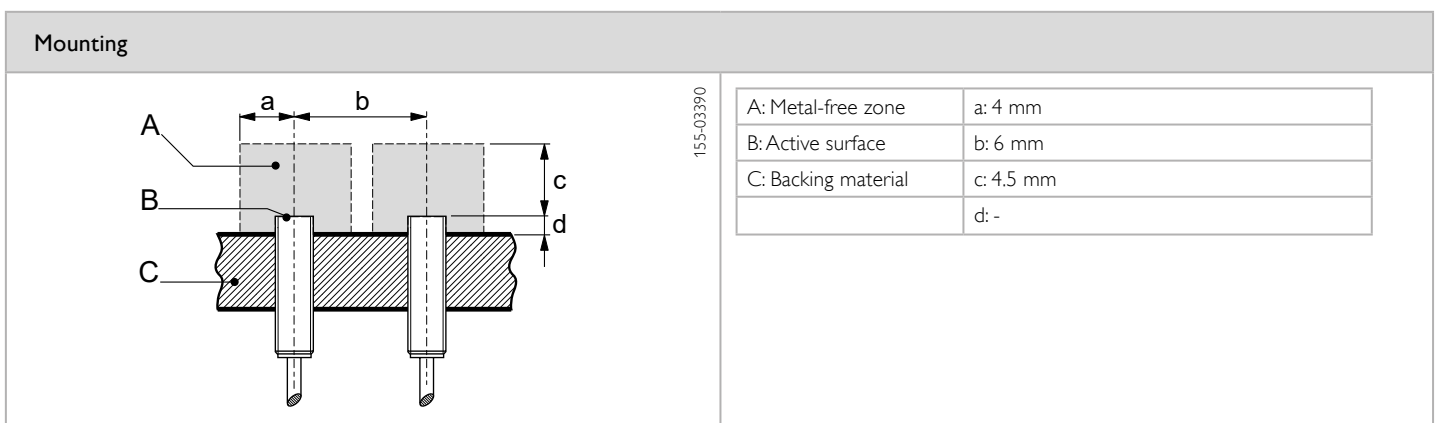
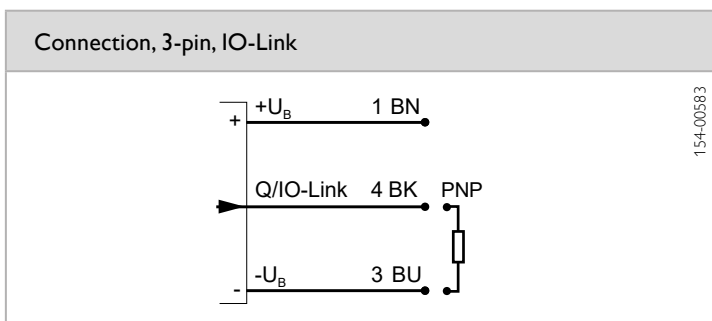
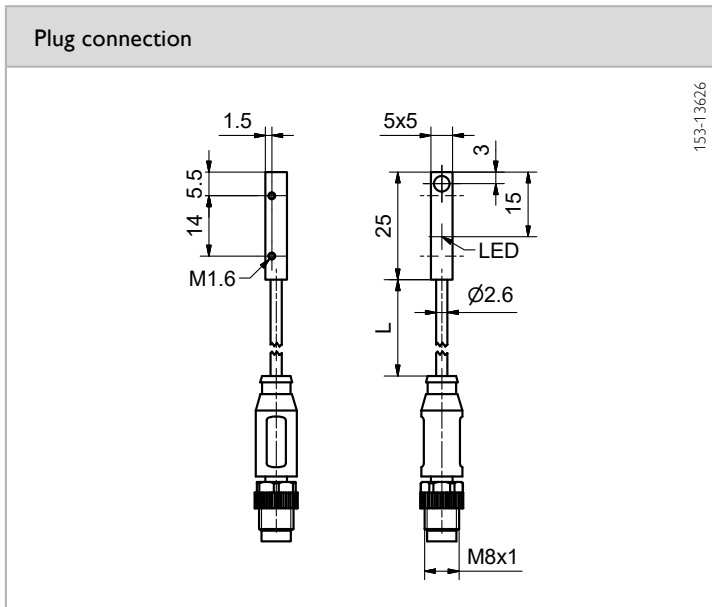


All data measured according to standard EN IEC 60947-5-2 with $U_b = 20 \dots 30$ V DC, $T_A = 23 \text{ °C} \pm 5 \text{ °C}$

The switching distance of the sensor must be multiplied by the correction factor of the material. The switching distance on aluminium is thus $S_{n,AL} = S_n \times CF_{AL}$.

For flush mounting the distance is multiplied by the additional correction factor of the backing material, $S_{n,Al} = S_n \times CF_{AL} \times CF_{mounting\ material}$.

Switching distance	Switching output	Type of connection	Part number	Article number
1.5 mm	PNP	Pigtail 0.2 m with plug, M8x1, 3-pin, IO-Link	IKT 5-S-B2-PSL-KM3	996-01039



IKT 8

Inductive sensor 8 x 8 / cubic housing



PRODUCT-HIGHLIGHTS

- Various parameterization options
- IO-Link 1.1
- Increased switching distance*

Sensor data		Functions	
Rated operating distance S_n	3 mm ¹ / 2 mm ²	Indicator LED yellow	Switching output indicator
Ensured operating distance S_b	$\leq 2.43 \text{ mm}^1 / \leq 1.62 \text{ mm}^2$	Adjustment possibilities	N.O. / N.C.
Hysteresis	3 % $S_r \leq \text{Hyst} \leq 15 \% S_r^{3/1} / \leq 20 \% S_r \text{ typ.}^{3/2}$	Default settings	Wide variety of adjustment possibilities via IO-Link
Repeatability	$\leq 0.15 \text{ mm}^1 / \leq 0.04 \text{ mm}^2$		N.O.
Temperature drift	$\leq 10 \% S_r$		
Correction factor steel FE 360	1		
Correction factor V2A 1 / 2 mm	0.84 ¹ / 0.8 ²		
Correction factor CuZn	0.54 ¹ / 0.6 ²		
Correction factor Al	0.44 ¹ / 0.5 ²		
Correction factor Cu	0.39 ¹ / 0.45 ²		
Electrical data		Mechanical data	
Operating voltage, + U_B	10 ... 30V DC	Dimensions	8 mm x 8 mm x 59 mm
Residual ripple	$\leq 20 \% U_B$	Mounting	Quasi-flush / flush (see selection table)
No-load current, I_0	$\leq 10 \text{ mA}$	Enclosure rating	IP 67 ⁵
Output current, I_e	$\leq 200 \text{ mA}$	Material housing	Brass, chrome-plated ¹ / Zamac ²
Protective circuits	Induction protection / reverse-polarity protection, U_B / short-circuit protection (Q)	Material active surface	PBTP ¹ / PBTP Crastin ²
Residual current	$\leq 0.1 \text{ mA}$	Type of connection	Metal plug, M8x1, 3-pin
Voltage drop, U_D	$\leq 2.0 \text{ V DC}$ at 100 mA	Ambient temperature: operation	-25 ... +70 °C
Switching output, Q	PNP	Ambient temperature: storage	-25 ... +70 °C
Output function	N.O./N.C. ⁴	Weight	14 g ¹ / 12 g ²
Power-on delay	$\leq 50 \text{ ms}^1 / \leq 60 \text{ ms}^2$	Vibration and impact resistance	EN IEC 60947-5-2
Switching frequency f (ti/tp 1:1)	$\leq 1 \text{ kHz}^1 / \leq 5 \text{ kHz}^2$	Tightening torque	-
		Standard target FE 360	9 mm x 9 mm x 1 mm ¹ / 8 mm x 8 mm x 1 mm ²
IO-Link			
Communication mode	COM 2		
Min. cycletime	10,4 ms		
SIO mode	Compatible		
Length process data	7 Bit ¹ / 2 Bit ²		
Specification	1.1		
ISDU	Not compatible		

¹ Quasi-flush devices ² Flush devices ³ S_r (Effective switching distance) = $\pm 10 \%$ of S_n ⁴ Adjustable / parameterisable via IO-Link ⁵ With connected IP 67 plug

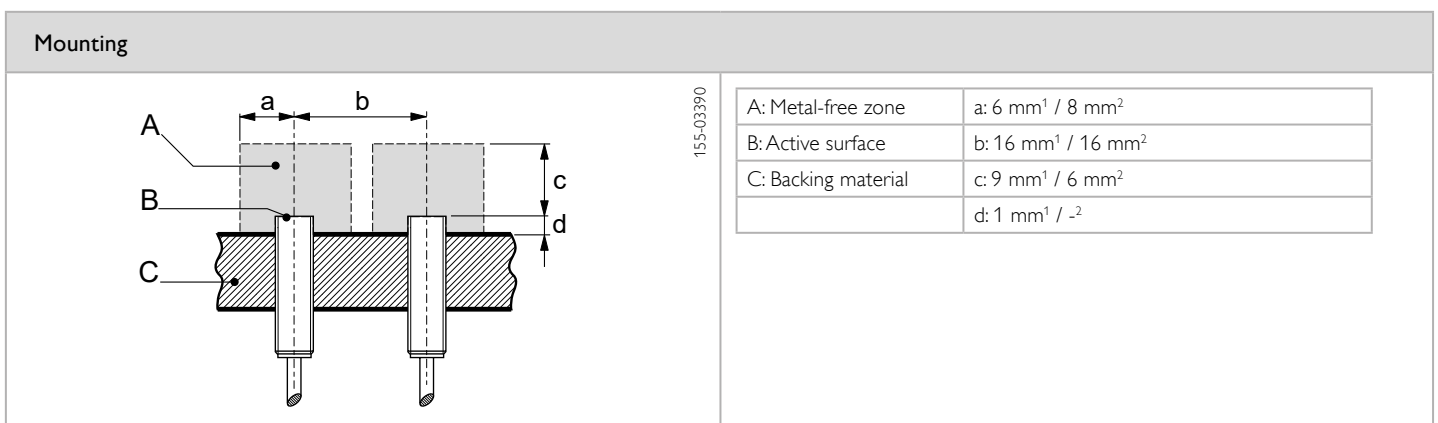
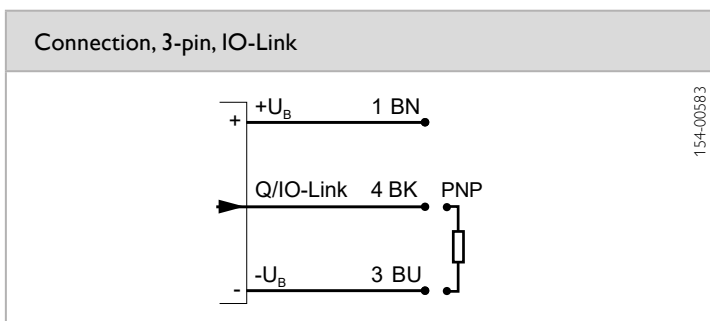
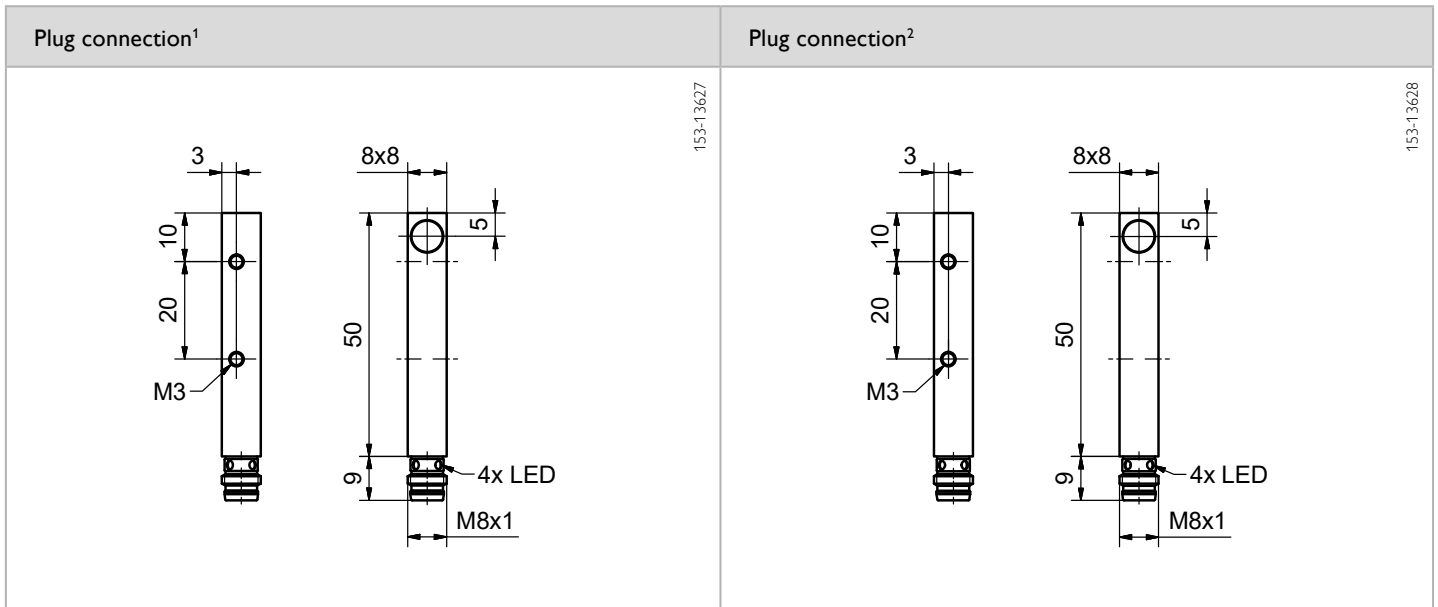


All data measured according to standard EN IEC 60947-5-2 with $U_B = 20 \dots 30 \text{ V DC}$, $T_A = 23 \text{ °C} \pm 5 \text{ °C}$

The switching distance of the sensor must be multiplied by the correction factor of the material. The switching distance on aluminium is thus $S_{n,AL} = S_n \times CF_{AL}$.

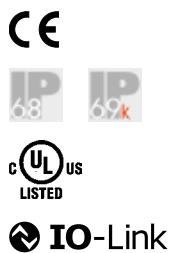
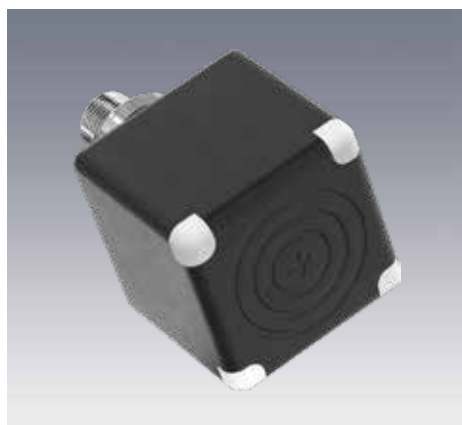
For flush mounting the distance is multiplied by the additional correction factor of the backing material, $S_n,Al = S_n \times CF_{AL} \times CF_{mounting\ material}$.

Switching distance	Mounting	Switching output	Type of connection	Part number	Article number
3 mm*	Quasi-flush	PNP	Metal plug, M8x1, 3-pin, IO-Link	IKT 8-S-QB3-PSL-M3M	996-01040
2 mm	Flush	PNP	Metal plug, M8x1, 3-pin, IO-Link	IKT 8-S-B2-PSL-M3M	996-01041



IKT 40

Inductive sensor 40 x 40 / cubic housing



PRODUCT-HIGHLIGHTS

- Easy click-mounting
- Extremely flexible sensor solution
- Enclosure rating IP 68 and IP 69K
- Active area mountable in 5 directions
- Increased switching distance*

Sensor data		Functions	
Rated operating distance S_n	20 mm ¹ / 40 mm ²	Indicator LED, green	Operating voltage indicator
Ensured operating distance S_b	$\leq 16.2 \text{ mm}^1 / \leq 32.4 \text{ mm}^2$	Indicator LED yellow	Switching output indicator
Hysteresis	$\leq 15 \% S_r \text{ typ.}^3$	Adjustment possibilities	N.O. / N.C. Wide variety of adjustment possibilities via IO-Link
Repeatability	$\leq 0.75 \text{ mm}^1 / \leq 1.5 \text{ mm}^2$	Default settings	N.O. / N.C.
Temperature drift	$\leq 10 \% S_r$		
Correction factor steel FE 360	1		
Correction factor V2A 1 / 2 mm	0.78 ¹ / 0.85 ²		
Correction factor CuZn	0.4 ¹ / 0.25 ²		
Correction factor Al	0.34 ¹ / 0.2 ²		
Correction factor Cu	0.3 ¹ / 0.1 ²		
Electrical data		Mechanical data	
Operating voltage, + U_b	10 ... 30V DC	Dimensions	40 mm x 40 mm x 67 mm
Residual ripple	$\leq 10 \% U_b$	Mounting	Flush / non-flush (see selection table)
No-load current, I_o	$\leq 30 \text{ mA}$	Enclosure rating	IP 68 / IP 69K ⁵
Output current, I_e	$\leq 200 \text{ mA}$	Material housing	PA GF
Protective circuits	Induction protection / reverse-polarity protection, U_b / short-circuit protection (Q)	Material active surface	PA GF
Residual current	$\leq 0.01 \text{ mA}$	Type of connection	Metal plug, M12x1, 4-pin
Voltage drop, U_D	$\leq 2.5 \text{ V DC at } 200 \text{ mA}$	Ambient temperature: operation	-25 ... +85 °C
Switching output, Q	PNP	Ambient temperature: storage	-25 ... +85 °C
Output function	N.O./N.C. ⁴	Weight	120 g ¹ / 130 g ²
Switching frequency f (ti/tp 1:1)	$\leq 0.1 \text{ kHz}$	Vibration and impact resistance	EN IEC 60947-5-2
		Tightening torque	2.5 Nm
		Standard target FE 360	60 mm x 60 mm x 1 mm ¹ / 120 mm x 120 mm x 1 mm ²
IO-Link			
Communication mode	COM 2		
Min. cycletime	10.4 ms		
SIO mode	Compatible		
Length process data	2 Bit		
Specification	1.1		
ISDU	Not compatible		

¹ Flush devices ² Non-flush devices ³ S_r (Effective switching distance) = $\pm 10 \%$ of S_n ⁴ Adjustable / parameterisable via IO-Link ⁵ With connected IP 68 / IP 69K plug



All data measured according to standard EN IEC 60947-5-2 with $U_b = 20 \dots 30 \text{ V DC}$, $T_A = 23 \text{ °C} \pm 5 \text{ °C}$

The switching distance of the sensor must be multiplied by the correction factor of the material. The switching distance on aluminium is thus $S_{n,AL} = S_n \times CF_{AL}$.

For flush mounting the distance is multiplied by the additional correction factor of the backing material, $S_{n,Al} = S_n \times CF_{AL} \times CF_{mounting\ material}$.

Switching distance	Mounting	Switching output	Type of connection	Part number	Article number
20 mm	Flush	PNP	Metal plug, M12x1, 4-pin, IO-Link	IKT 40-S-B2-PSL-L4M	996-01042
40 mm*	Non-flush	PNP	Metal plug, M12x1, 4-pin, IO-Link	IKT 40-S-NB3-PSL-L4M	996-01043

