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 tempe-rature 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

Selection Table Inductive Sensors

SENSOPART

Housing size	Part no.	Type code	Installation	Switching distance	Switchting output	Connection type	Page
Next-generation sensors							
Standard switching distance							
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 … 10 V	Metal plug, M8x1, 3-pin	657
M12	996-01034	IMT 12-A-QB3-PS-L4M	Quasi-flush	0 … 6 mm	Analogue output 0 … 10 V / 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 … 10 V / 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 … 10 V / 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 … 10 V / 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 … 10 V / 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 Ø 3 mm / standard switching distance



PRODUCT-HIGHLIGHTS

- Various parameterization options
- IO-Link 1.1

Sensor data	
Rated operating distance S_n	1 mm
Ensured operating distance S_a	≤ 0.81 mm
Hysteresis	≤ 10 % S_r typ.[1]
Repeatability	≤ 0.02 mm
Temperature drift	≤ 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

Functions	
Indicator LED yellow	Switching output indicator
Adjustment possibilities	N.O. / N.C. Wide variety of adjustment possibilities via IO-Link
Default settings	N.O.

Electrical data	
Operating voltage, $+U_B$	10 … 30 V DC
Residual ripple	≤ 20 % U_B
No-load current, I_0	≤ 10 mA
Output current, Ie	≤ 100 mA
Protective circuits	Induction protection / reverse-polarity protection, U_B / short-circuit protection (Q)
Residual current	≤ 0.1 mA
Voltage drop, U_D	≤ 2.0 V DC at 100 mA
Switching output, Q	PNP
Output function	N.O./N.C.[2]
Power-on delay	≤ 10 ms
Switching frequency f (ti/tp 1:1)	≤ 3 kHz

Mechanical data	
Dimensions	Ø 3 mm x 22 mm
Mounting	Flush
Enclosure rating	IP 67[3]
Material housing	Stainless steel, V2A
Material active surface	Polyester
Type of connection	Pigtail 0.2 m with plug, M8x1, 3-pin
Ambient temperature: operation	-25 … +70 °C
Ambient temperature: storage	-25 … +70 °C
Weight	15 g
Vibration and impact resistance	EN IEC 60947-5-2
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

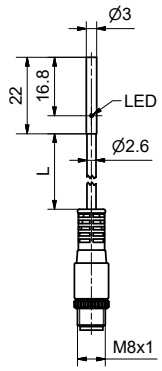
[1] S_r (Effective switching distance) = ± 10 % of S_n [2] Adjustable / parameterisable via IO-Link [3] With connected IP 67 plug

All data measured according to standard EN IEC 60947-5-2 with U_B = 20 ... 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 $S_{n\,AL} = S_n \times CF_{AL}$.
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
1 mm	PNP	Pigtail 0.2 m with plug, M8x1, 3-pin, IO-Link	IDT 3-S-B2-PSL-KM3	996-01000

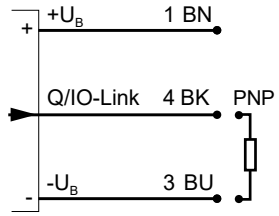
Plug connection

153-13603



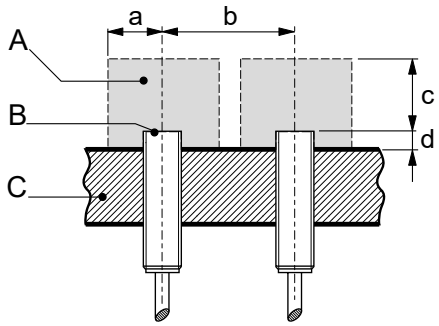
Connection, 3-pin, IO-Link

154-00583



Mounting

155-03390



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

11

IDT 4

Inductive sensor Ø 4 mm / standard switching distance



PRODUCT-HIGHLIGHTS

- Various parameterization options
- IO-Link 1.1

Sensor data	
Rated operating distance S_n	1.5 mm
Ensured operating distance S_a	≤ 1.22 mm
Hysteresis	≤ 10 % S_r typ.[1]
Repeatability	≤ 0.03 mm
Temperature drift	≤ 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

Functions	
Indicator LED yellow	Switching output indicator
Adjustment possibilities	N.O. / N.C. Wide variety of adjustment possibilities via IO-Link
Default settings	N.O.

Electrical data	
Operating voltage, $+U_B$	10 … 30 V DC
Residual ripple	≤ 20 % U_B
No-load current, I_0	≤ 10 mA
Output current, Ie	≤ 200 mA
Protective circuits	Induction protection / reverse-polarity protection, U_B / short-circuit protection (Q)
Residual current	≤ 0.1 mA
Voltage drop, U_D	≤ 2.0 V DC at 100 mA
Switching output, Q	PNP
Output function	N.O./N.C.[2]
Power-on delay	≤ 10 ms
Switching frequency f (ti/tp 1:1)	≤ 3 kHz

Mechanical data	
Dimensions	Ø 4 mm x 38 mm
Mounting	Flush
Enclosure rating	IP 67[3]
Material housing	Stainless steel, V2A
Material active surface	POM
Type of connection	Stainless steel plug, V2A, M8x1, 3-pin
Ambient temperature: operation	-25 … +70 °C
Ambient temperature: storage	-25 … +70 °C
Weight	11.5 g
Vibration and impact resistance	EN IEC 60947-5-2
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

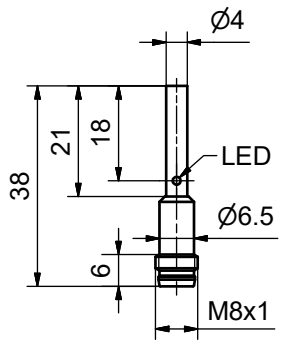
[1] S_r (Effective switching distance) = ± 10 % of S_n [2] Adjustable / parameterisable via IO-Link [3] With connected IP 67 plug

All data measured according to standard EN IEC 60947-5-2 with U_B = 20 ... 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 $S_{n\,AL} = S_n \times CF_{AL}$
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
1.5 mm	PNP	Stainless steel plug,V2A, M8x1, 3-pin, IO-Link	IDT 4-S-B2-PSL-M3M	996-01002

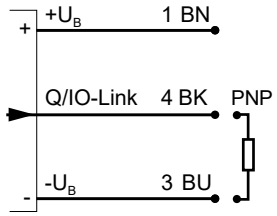
Plug connection

153-13605



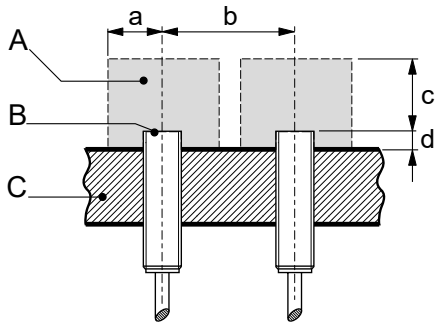
Connection, 3-pin, IO-Link

154-00583



Mounting

155-03390



A: Metal-free zone	a: 3.5 mm
B: Active surface	b: 5 mm
C: Backing material	c: 4.5 mm
	d: -

IMT 4

Inductive sensor M4 / standard switching distance



PRODUCT-HIGHLIGHTS

- Various parameterization options
- IO-Link 1.1

Sensor data	
Rated operating distance S_n	1 mm
Ensured operating distance S_a	≤ 0.81 mm
Hysteresis	≤ 10 % S_r typ.[1]
Repeatability	≤ 0.02 mm
Temperature drift	≤ 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

Functions	
Indicator LED yellow	Switching output indicator
Adjustment possibilities	N.O. / N.C. Wide variety of adjustment possibilities via IO-Link
Default settings	N.O.

Electrical data	
Operating voltage, $+U_B$	10 … 30 V DC
Residual ripple	≤ 20 % U_B
No-load current, I_0	≤ 10 mA
Output current, Ie	≤ 100 mA
Protective circuits	Induction protection / reverse-polarity protection, U_B / short-circuit protection (Q)
Residual current	≤ 0.1 mA
Voltage drop, U_D	≤ 2.0 V DC at 100 mA
Switching output, Q	PNP
Output function	N.O./N.C.[2]
Power-on delay	≤ 10 ms
Switching frequency f (ti/tp 1:1)	≤ 3 kHz

Mechanical data	
Dimensions	M4 x 22 mm
Mounting	Flush
Enclosure rating	IP 67[3]
Material housing	Stainless steel, V2A
Material active surface	Polyester
Type of connection	Pigtail 0.2 m with plug, M8x1, 3-pin
Ambient temperature: operation	-25 … +70 °C
Ambient temperature: storage	-25 … +70 °C
Weight	20 g
Vibration and impact resistance	EN IEC 60947-5-2
Tightening torque	1.5 Nm
Standard target FE 360	4 mm x 4 mm x 1 mm

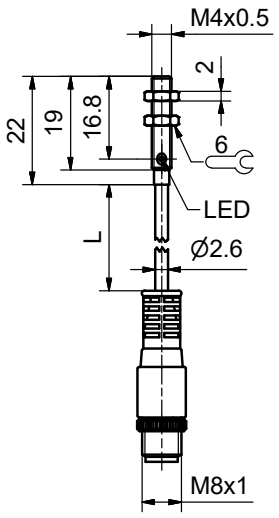
IO-Link	
Communication mode	COM 2
Min. cycletime	10.4 ms
SIO mode	Compatible
Length process data	2 Bit
Specification	1.1
ISDU	Not compatible

[1] S_r (Effective switching distance) = ± 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 ... 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 $S_{n\,AL} = S_n \times CF_{AL}$.
For flush mounting the distance is multiplied by the additional correction factor of the backing material, S_n Al= $S_n \times CF_{AL} \times CF_{\text{mounting material}}$

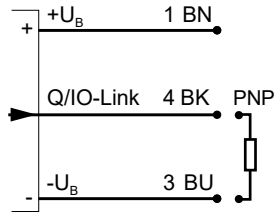
Switching distance	Switching output	Type of connection	Part number	Article number
1 mm	PNP	Pigtail 0.2 m with plug, M8x1, 3-pin, IO-Link	IMT 4-S-B2-PSL-KM3	996-01001

Plug connection



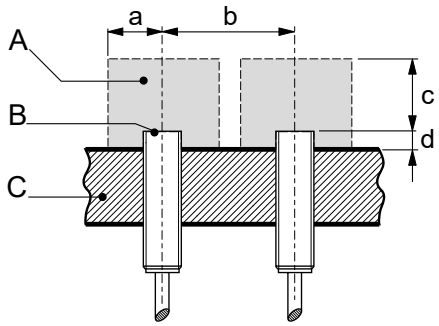
153-13604

Connection, 3-pin, IO-Link



154-00583

Mounting



155-03390

A: Metal-free zone	a: 2.5 mm
B: Active surface	b: 8 mm
C: Backing material	c: 3 mm
	d: -

IMT 5

Inductive sensor M5 / standard switching distance



PRODUCT-HIGHLIGHTS

- Various parameterization options
- IO-Link 1.1

Sensor data	
Rated operating distance S_n	1.5 mm
Ensured operating distance S_a	≤ 1.22 mm
Hysteresis	≤ 10 % S_r typ.[1]
Repeatability	≤ 0.03 mm
Temperature drift	≤ 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

Functions	
Indicator LED yellow	Switching output indicator
Adjustment possibilities	N.O. / N.C. Wide variety of adjustment possibilities via IO-Link
Default settings	N.O.

Electrical data	
Operating voltage, $+U_B$	10 … 30 V DC
Residual ripple	≤ 20 % U_B
No-load current, I_0	≤ 10 mA
Output current, Ie	≤ 200 mA
Protective circuits	Induction protection / reverse-polarity protection, U_B / short-circuit protection (Q)
Residual current	≤ 0.1 mA
Voltage drop, U_D	≤ 2.0 V DC at 200 mA
Switching output, Q	PNP
Output function	N.O./N.C.[2]
Power-on delay	≤ 10 ms
Switching frequency f (ti/tp 1:1)	≤ 3 kHz

Mechanical data	
Dimensions	M5 x 38 mm
Mounting	Flush
Enclosure rating	IP 67[3]
Material housing	Stainless steel, V2A
Material active surface	POM
Type of connection	Stainless steel plug, V2A, M8x1, 3-pin
Ambient temperature: operation	-25 … +70 °C
Ambient temperature: storage	-25 … +70 °C
Weight	13.9 g
Vibration and impact resistance	EN IEC 60947-5-2
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

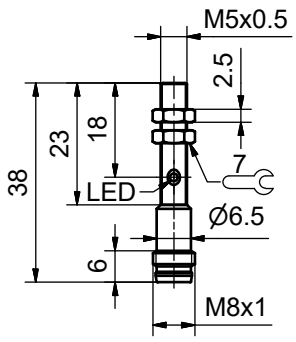
[1] S_r (Effective switching distance) = ± 10 % of S_n [2] Adjustable / parameterisable via IO-Link [4] With connected IP 67 plug

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 $S_{n\,AL} = S_n \times CF_{AL}$.
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
1.5 mm	PNP	Stainless steel plug,V2A, M8x1, 3-pin, IO-Link	IMT 5-S-B2-PSL-M3M	996-01003

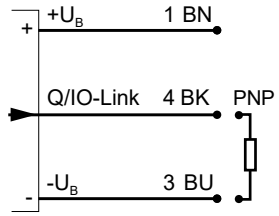
Plug connection

153-13606



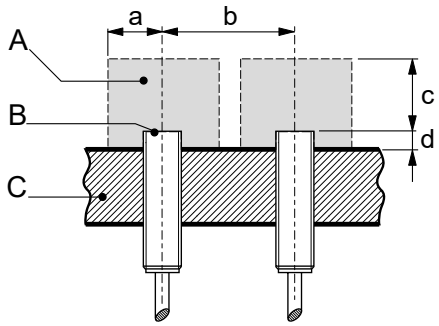
Connection, 3-pin, IO-Link

154-00583



Mounting

155-03390



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

IDT 6

Inductive sensor Ø 6.5 mm / standard switching distance



PRODUCT-HIGHLIGHTS

- Various parameterization options
- IO-Link 1.1

Sensor data	
Rated operating distance S_n	2 mm[1] / 4 mm[2]
Ensured operating distance S_a	≤ 1.62 mm[1] / ≤ 3.24 mm[2]
Hysteresis	≤ 10 % S_r typ.[1/3] / ≤ 20 % S_r typ.[2/3]
Repeatability	≤ 0.04 mm[1] / ≤ 0.2 mm[2]
Temperature drift	≤ 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]

Functions	
Indicator LED yellow	Switching output indicator
Adjustment possibilities	N.O. / N.C. Wide variety of adjustment possibilities via IO-Link
Default settings	N.O.

Electrical data	
Operating voltage, $+U_B$	10 … 30 V DC
Residual ripple	≤ 20 % U_B
No-load current, I_0	≤ 10 mA
Output current, Ie	≤ 200 mA
Protective circuits	Induction protection / reverse-polarity protection, U_B / short-circuit protection (Q)
Residual current	≤ 0.1 mA
Voltage drop, U_D	≤ 2.0 V DC at 200 mA
Switching output, Q	PNP
Output function	N.O./N.C.[4]
Power-on delay	≤ 10 ms[1] / ≤ 80 ms[2]
Switching frequency f (ti/tp 1:1)	≤ 5 kHz[1] / ≤ 3.5 kHz[2]

Mechanical data	
Dimensions	Ø 6.5 mm x 45 mm
Mounting	Flush / non-flush (see selection table)
Enclosure rating	IP 67[5]
Material housing	Stainless steel, V2A
Material active surface	PA12[1] / PBTP Crastin[2]
Type of connection	Stainless steel plug, V2A, M8x1, 3-pin
Ambient temperature: operation	-25 … +70 °C
Ambient temperature: storage	-25 … +70 °C
Weight	12.4 g[1] / 6 g[2]
Vibration and impact resistance	EN IEC 60947-5-2
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

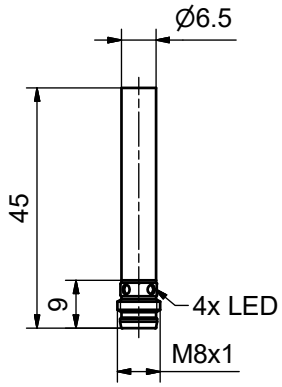
[1] Flush devices [2] Non-flush devices [3] S_r (Effective switching distance) = ± 10 % of S_n [4] Adjustable / parameterisable via IO-Link [5] With connected IP 67 plug

All data measured according to standard EN IEC 60947-5-2 with U_B = 20 ... 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 $S_{n\,AL} = S_n \times CF_{AL}$.
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	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

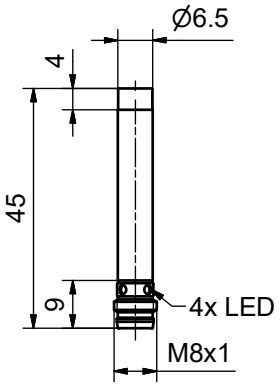
Plug connection[1]

153-13607



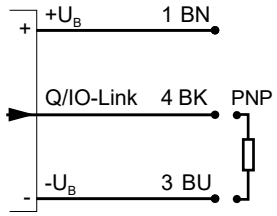
Plug connection[2]

153-13608



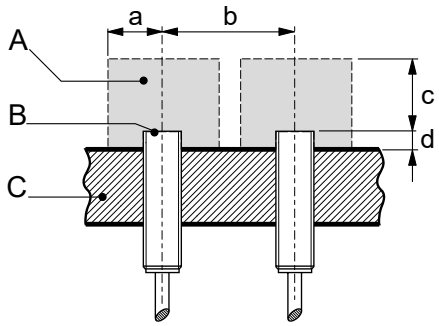
Connection, 3-pin, IO-Link

154-00583



Mounting

155-03390



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]

11

IMT 8

Inductive sensor M8 / standard switching distance



PRODUCT-HIGHLIGHTS

- Various parameterization options
- IO-Link 1.1

Sensor data	
Rated operating distance S_n	2 mm[1] / 4 mm[2]
Ensured operating distance S_a	≤ 1.62 mm[1] / ≤ 3.24 mm[2]
Hysteresis	≤ 10 % S_r typ.[1/3] / ≤ 20 % S_r typ.[2/3]
Repeatability	≤ 0.1 mm[1] / ≤ 0.2 mm[2]
Temperature drift	≤ 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]

Functions	
Indicator LED yellow	Switching output indicator
Adjustment possibilities	N.O. / N.C. Wide variety of adjustment possibilities via IO-Link
Default settings	N.O.

Electrical data	
Operating voltage, $+U_B$	10 … 30 V DC
Residual ripple	≤ 20 % U_B
No-load current, I_0	≤ 10 mA
Output current, Ie	≤ 200 mA
Protective circuits	Induction protection / reverse-polarity protection, U_B / short-circuit protection (Q)
Residual current	≤ 0.1 mA
Voltage drop, U_D	≤ 2.0 V DC at 200 mA
Switching output, Q	PNP
Output function	N.O./N.C.[4]
Power-on delay	≤ 32 ms[1] / ≤ 80 ms[2]
Switching frequency f (ti/tp 1:1)	≤ 5 kHz[1] / ≤ 3.5 kHz[2]

Mechanical data	
Dimensions	M8 x 45 mm
Mounting	Flush / non-flush (see selection table)
Enclosure rating	IP 67[5]
Material housing	Stainless steel, V2A
Material active surface	PA12[1] / PBTP Crastin[2]
Type of connection	Stainless steel plug, V2A, M8x1, 3-pin
Ambient temperature: operation	-25 … +70 °C
Ambient temperature: storage	-25 … +70 °C
Weight	13 g[1] / 12.3 g[2]
Vibration and impact resistance	EN IEC 60947-5-2
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

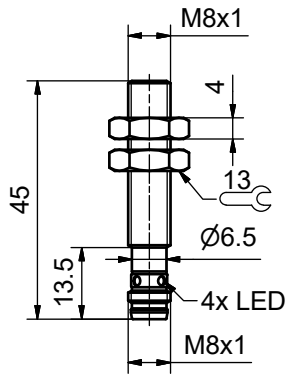
[1] Flush devices [2] Non-flush devices [3] S_r (Effective switching distance) = ± 10 % of S_n [4] Adjustable / parameterisable via IO-Link [5] With connected IP 67 plug

All data measured according to standard EN IEC 60947-5-2 with U_B = 20 ... 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 $S_{n\,AL} = S_n \times CF_{AL}$.
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	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

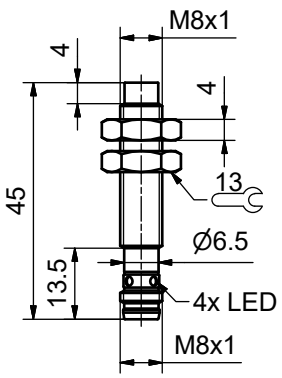
Plug connection[1]

153-13609



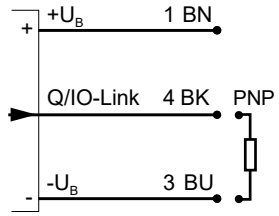
Plug connection[2]

153-13610



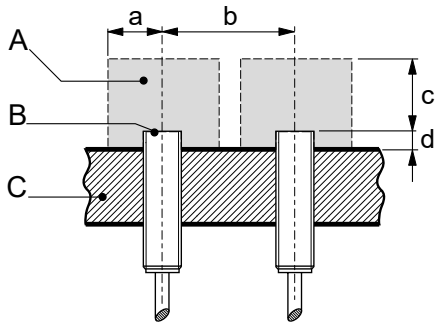
Connection, 3-pin, IO-Link

154-00583



Mounting

155-03390



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]

11

IMT 12

Inductive sensor M12 / standard switching distance



PRODUCT-HIGHLIGHTS

- Various parameterization options
- IO-Link 1.1

Sensor data	
Rated operating distance S_n	4 mm[1] / 8 mm[2]
Ensured operating distance S_a	≤ 3.24 mm[1] / ≤ 6.48 mm[2]
Hysteresis	≤ 20 % S_r typ.[3]
Repeatability	≤ 0.2 mm[1] / ≤ 0.4 mm[2]
Temperature drift	≤ 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]

Functions	
Indicator LED yellow	Switching output indicator
Adjustment possibilities	N.O. / N.C. Wide variety of adjustment possibilities via IO-Link
Default settings	N.O.

Electrical data	
Operating voltage, $+U_B$	10 … 30 V DC
Residual ripple	≤ 20 % U_B
No-load current, I_0	≤ 10 mA
Output current, Ie	≤ 200 mA
Protective circuits	Induction protection / reverse-polarity protection, U_B / short-circuit protection (Q)
Residual current	≤ 0.1 mA
Voltage drop, U_D	≤ 2.0 V DC at 200 mA
Switching output, Q	PNP
Output function	N.O./N.C.[4]
Power-on delay	≤ 60 ms[1] / ≤ 50 ms[2]
Switching frequency f (ti/tp 1:1)	≤ 2.5 kHz[1] / ≤ 1.4 kHz[2]

Mechanical data	
Dimensions	M12 x 60 mm
Mounting	Flush / non-flush (see selection table)
Enclosure rating	IP 67[5]
Material housing	Brass, nickel-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	25 g[1] / 29 g[2]
Vibration and impact resistance	EN IEC 60947-5-2
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

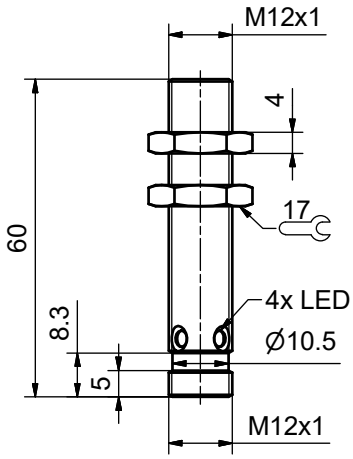
[1] Flush devices [2] Non-flush devices [3] S_r (Effective switching distance) = ± 10 % of S_n [4] Adjustable / parameterisable via IO-Link [5] With connected IP 67 plug

All data measured according to standard EN IEC 60947-5-2 with U_B = 20 ... 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 $S_{n\,AL} = S_n \times CF_{AL}$.
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	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

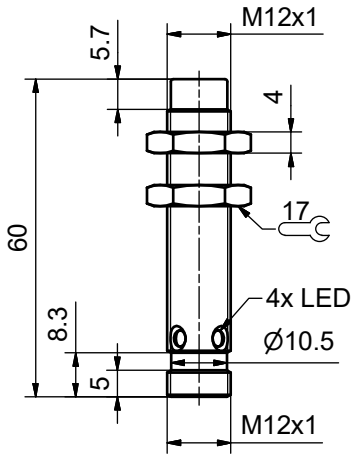
Plug connection[1]

153-13611



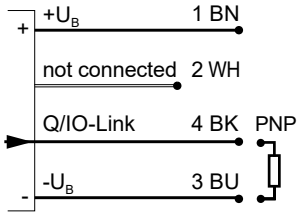
Plug connection[2]

153-13612



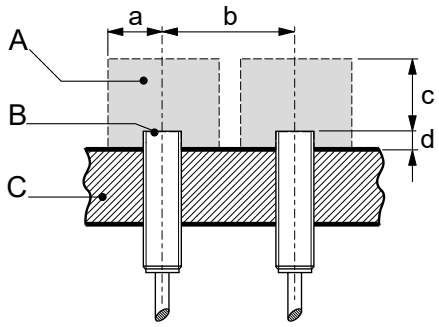
Connection, 4-pin, IO-Link

154-00586



Mounting

155-03390

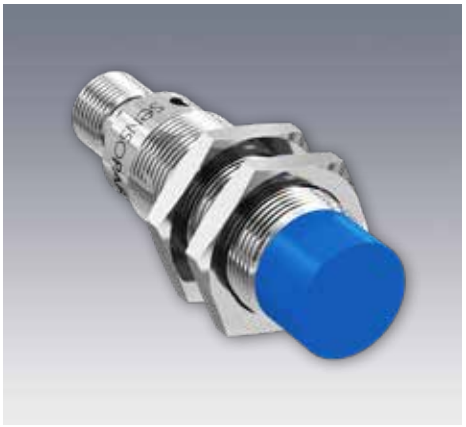


A: Metal-free zone	a: 10 mm[1] / 20 mm[2]
B: Active surface	b: 24 mm[1] / 45 mm[2]
C: Backing material	c: 12 mm[1] / 24 mm[2]
	d: -[1] / 9 mm[2]

11

IMT 18

Inductive sensor M18 / standard switching distance



PRODUCT-HIGHLIGHTS

- Various parameterization options
- IO-Link 1.1

Sensor data	
Rated operating distance S_n	8 mm[1] / 12 mm[2]
Ensured operating distance S_a	≤ 6.48 mm[1] / ≤ 9.72 mm[2]
Hysteresis	≤ 10 % S_r typ.[1/3] / ≤ 20 % S_r typ.[2/3]
Repeatability	≤ 0.4 mm[1] / ≤ 0.6 mm[2]
Temperature drift	≤ 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]

Functions	
Indicator LED yellow	Switching output indicator
Adjustment possibilities	N.O. / N.C. Wide variety of adjustment possibilities via IO-Link
Default settings	N.O.

Electrical data	
Operating voltage, $+U_B$	10 … 30 V DC
Residual ripple	≤ 20 % U_B
No-load current, I_0	≤ 10 mA
Output current, Ie	≤ 200 mA
Protective circuits	Induction protection / reverse-polarity protection, U_B / short-circuit protection (Q)
Residual current	≤ 0.1 mA
Voltage drop, U_D	≤ 2.0 V DC at 200 mA
Switching output, Q	PNP
Output function	N.O./N.C.[4]
Power-on delay	≤ 60 ms
Switching frequency f (ti/tp 1:1)	≤ 1.5 kHz[1] / ≤ 0.5 kHz[2]

Mechanical data	
Dimensions	M18 x 63.5 mm
Mounting	Flush / non-flush (see selection table)
Enclosure rating	IP 67[5]
Material housing	Brass, nickel-plated
Material active surface	PBTP[1] / PBTP Crastin[2]
Type of connection	Metal plug, M12x1, 4-pin
Ambient temperature: operation	-25 … +70 °C
Ambient temperature: storage	-25 … +70 °C
Weight	51 g
Vibration and impact resistance	EN IEC 60947-5-2
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

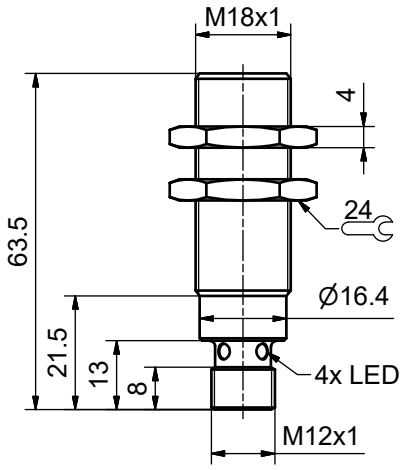
[1] Flush devices [2] Non-flush devices [3] S_r (Effective switching distance) = ± 10 % of S_n [4] Adjustable / parameterisable via IO-Link [5] With connected IP 67 plug

All data measured according to standard EN IEC 60947-5-2 with U_B = 20 ... 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 $S_{n\,AL} = S_n \times CF_{AL}$.
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	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

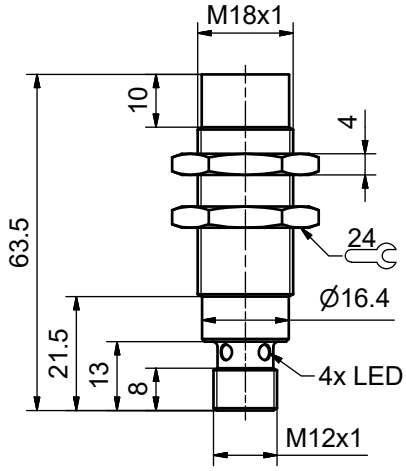
Plug connection[1]

153-13613



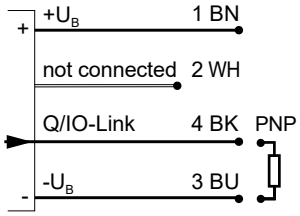
Plug connection[2]

153-13614



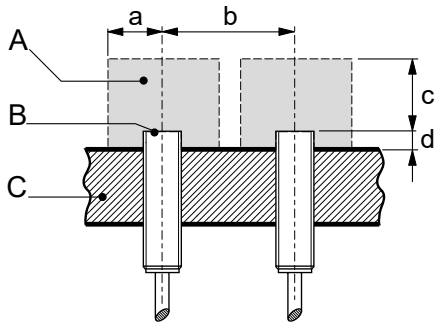
Connection, 4-pin, IO-Link

154-00586



Mounting

155-03390



A: Metal-free zone	a: 18 mm[1] / 36 mm[2]
B: Active surface	b: 40 mm[1] / 75 mm[2]
C: Backing material	c: 24 mm[1] / 36 mm[2]
	d: -[1] / 18 mm[2]

11

IMT 30

Inductive sensor M30 / standard switching distance



PRODUCT-HIGHLIGHTS

- Various parameterization options
- IO-Link 1.1

Sensor data	
Rated operating distance S_n	10 mm[1]/ 25 mm[2]
Ensured operating distance S_a	≤ 8.1 mm[1] / ≤ 20.25 mm[2]
Hysteresis	≤ 20 % S_r typ.[3]
Repeatability	≤ 0.5 mm[1] / ≤ 0.75 mm[2]
Temperature drift	≤ 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]

Functions	
Indicator LED yellow	Switching output indicator
Adjustment possibilities	N.O. / N.C. Wide variety of adjustment possibilities via IO-Link
Default settings	N.O.

Electrical data	
Operating voltage, $+U_B$	10 … 30 V DC
Residual ripple	≤ 20 % U_B
No-load current, I_0	≤ 10 mA
Output current, Ie	≤ 200 mA
Protective circuits	Induction protection / reverse-polarity protection, U_B / short-circuit protection (Q)
Residual current	≤ 0.1 mA
Voltage drop, U_D	≤ 2.0 V DC at 200 mA
Switching output, Q	PNP
Output function	N.O./N.C.[4]
Power-on delay	≤ 70 ms
Switching frequency f (ti/tp 1:1)	≤ 1.2 kHz[1] / ≤ 0.2 kHz[2]

Mechanical data	
Dimensions	M30 x 63.5 mm
Mounting	Flush / non-flush (see selection table)
Enclosure rating	IP 67[5]
Material housing	Brass, chrome-plated[1] / Brass, nickel-plated[2]
Material active surface	PBTP Crastin[1] / PBTP[2]
Type of connection	Metal plug, M12x1, 4-pin
Ambient temperature: operation	-25 … +70 °C
Ambient temperature: storage	-25 … +70 °C
Weight	130 g[1] / 125 g[2]
Vibration and impact resistance	EN IEC 60947-5-2
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

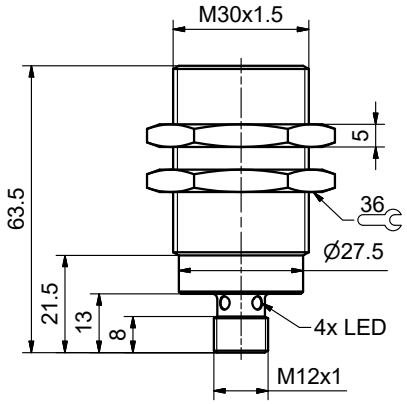
[1] Flush devices [2] Non-flush devices [3] S_r (Effective switching distance) = ± 10 % of S_n [4] Adjustable / parameterisable via IO-Link [5] With connected IP 67 plug

All data measured according to standard EN IEC 60947-5-2 with U_B = 20 ... 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 $S_{n\,AL} = S_n \times CF_{AL}$.
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	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

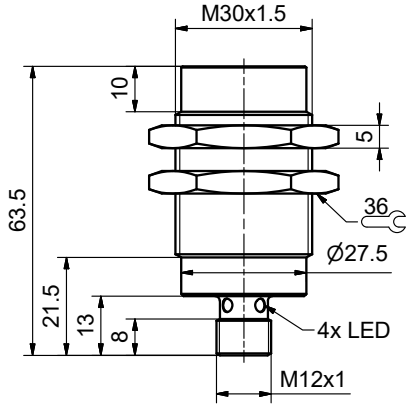
Plug connection[1]

153-13615



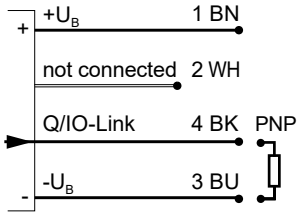
Plug connection[2]

153-13616



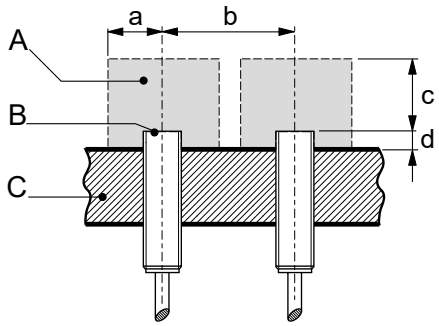
Connection, 4-pin, IO-Link

154-00586



Mounting

155-03390



A: Metal-free zone	a: 20 mm[1] / 45 mm[2]
B: Active surface	b: 40 mm[1] / 90 mm[2]
C: Backing material	c: 30 mm[1] / 75 mm[2]
	d: -[1] 35 mm[2] steel FE 360 25 mm[2] aluminium 25 mm[2] brass 20 mm[2] V2A

11

IDT 4

Inductive sensor Ø 4 mm / increased switching distance



PRODUCT-HIGHLIGHTS

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

Sensor data	
Rated operating distance S_n	2.5 mm
Ensured operating distance S_a	≤ 2.03 mm
Hysteresis	3 % S_r ≤ Hyst ≤ 15 % S_r[1]
Repeatability	≤ 0.03 mm
Temperature drift	≤ 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

Functions	
Indicator LED yellow	Switching output indicator
Adjustment possibilities	N.O. / N.C. Wide variety of adjustment possibilities via IO-Link
Default settings	N.O.

Electrical data	
Operating voltage, $+U_B$	10 … 30 V DC
Residual ripple	≤ 20 % U_B
No-load current, I_0	≤ 10 mA
Output current, Ie	≤ 200 mA
Protective circuits	Reverse-polarity protection, U_B / short-circuit protection (Q)
Residual current	≤ 0.1 mA
Voltage drop, U_D	≤ 2.0 V DC
Switching output, Q	PNP
Output function	N.O./N.C.[2]
Power-on delay	≤ 30 ms
Switching frequency f (ti/tp 1:1)	≤ 0.8 kHz

Mechanical data	
Dimensions	Ø 4 mm x 38 mm
Mounting	Quasi-flush
Enclosure rating	IP 67[3]
Material housing	Nickel silver
Material active surface	PPE
Type of connection	Metal plug, M8x1, 3-pin
Ambient temperature: operation	-25 … +70 °C
Ambient temperature: storage	-25 … +70 °C
Weight	4 g
Vibration and impact resistance	EN IEC 60947-5-2
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

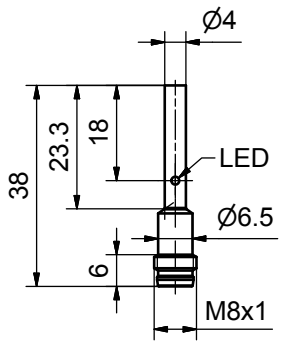
[1] S_r (Effective switching distance) = ± 10 % of S_n [2] Adjustable / parameterisable via IO-Link [3] With connected IP 67 plug

All data measured according to standard EN IEC 60947-5-2 with U_B = 20 ... 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 $S_{n\,AL} = S_n \times CF_{AL}$.
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	IDT 4-S-QB3-PSL-M3M	996-01014

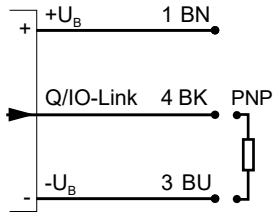
Plug connection

153-13596



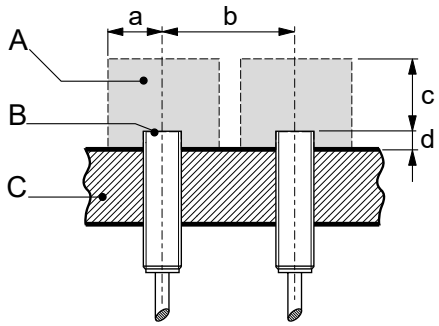
Connection, 3-pin, IO-Link

154-00583



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	
Rated operating distance S_n	2.5 mm
Ensured operating distance S_a	≤ 2.03 mm
Hysteresis	3 % S_r ≤ Hyst ≤ 15 % S_r[1]
Repeatability	≤ 0.03 mm
Temperature drift	≤ 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

Functions	
Indicator LED yellow	Switching output indicator
Adjustment possibilities	N.O. / N.C. Wide variety of adjustment possibilities via IO-Link
Default settings	N.O.

Electrical data	
Operating voltage, $+U_B$	10 … 30 V DC
Residual ripple	≤ 20 % U_B
No-load current, I_0	≤ 10 mA
Output current, Ie	≤ 200 mA
Protective circuits	Reverse-polarity protection, U_B / short-circuit protection (Q)
Residual current	≤ 0.1 mA
Voltage drop, U_D	≤ 2.0 V DC
Switching output, Q	PNP
Output function	N.O./N.C.[2]
Power-on delay	≤ 30 ms
Switching frequency f (ti/tp 1:1)	≤ 0.8 kHz

Mechanical data	
Dimensions	M5 x 38 mm
Mounting	Quasi-flush
Enclosure rating	IP 67[3]
Material housing	Nickel silver
Material active surface	PPE
Type of connection	Metal plug, M8x1, 3-pin
Ambient temperature: operation	-25 … +70 °C
Ambient temperature: storage	-25 … +70 °C
Weight	5 g
Vibration and impact resistance	EN IEC 60947-5-2
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

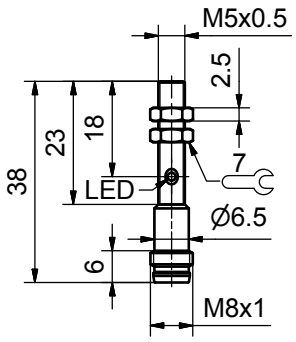
[1] S_r (Effective switching distance) = ± 10 % of S_n [2] Adjustable / parameterisable via IO-Link [3] With connected IP 67 plug

All data measured according to standard EN IEC 60947-5-2 with U_B = 20 ... 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 $S_{n\,AL} = S_n \times CF_{AL}$.
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

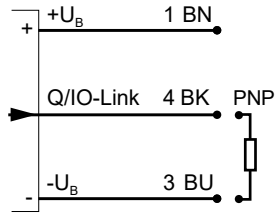
Plug connection

153-13595



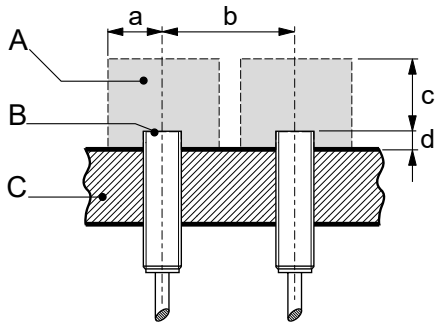
Connection, 3-pin, IO-Link

154-00583



Mounting

155-03390

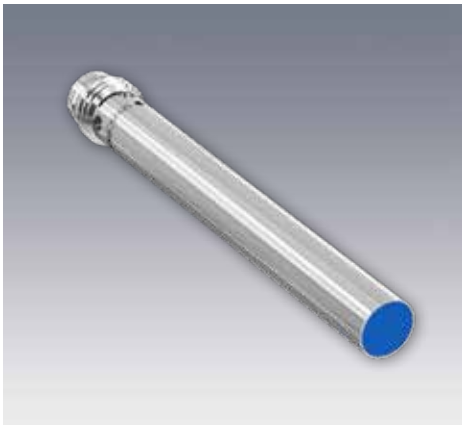


A: Metal-free zone	a: 4.5 mm
B: Active surface	b: 10 mm
C: Backing material	c: 7.5 mm
	d: 2 mm

11

IDT 6

Inductive sensor Ø 6,5 mm / increased switching distance



PRODUCT-HIGHLIGHTS

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

Sensor data	
Rated operating distance S_n	3 mm
Ensured operating distance S_a	≤ 2.43 mm
Hysteresis	3 % S_r ≤ Hyst ≤ 15 % S_r[1]
Repeatability	≤ 0.15 mm
Temperature drift	≤ 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

Functions	
Indicator LED yellow	Switching output indicator
Adjustment possibilities	N.O. / N.C. Wide variety of adjustment possibilities via IO-Link
Default settings	N.O.

Electrical data	
Operating voltage, $+U_B$	10 … 30 V DC
Residual ripple	≤ 20 % U_B
No-load current, I_0	≤ 10 mA
Output current, Ie	≤ 200 mA
Protective circuits	Reverse-polarity protection, U_B / short-circuit protection (Q)
Residual current	≤ 0.1 mA
Voltage drop, U_D	≤ 2.0 V DC
Switching output, Q	PNP
Output function	N.O./N.C.[2]
Power-on delay	≤ 30 ms
Switching frequency f (ti/tp 1:1)	≤ 1 kHz

Mechanical data	
Dimensions	Ø 6.5 mm x 60 mm
Mounting	Quasi-flush
Enclosure rating	IP 67[3]
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	5 g
Vibration and impact resistance	EN IEC 60947-5-2
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

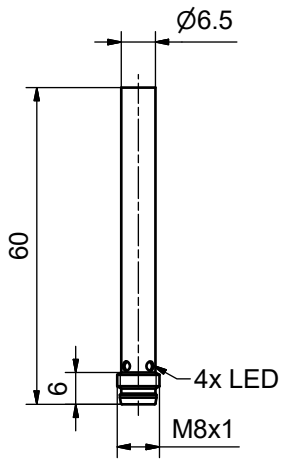
[1] S_r (Effective switching distance) = ± 10 % of S_n [2] Adjustable / parameterisable via IO-Link [3] With connected IP 67 plug

All data measured according to standard EN IEC 60947-5-2 with U_B = 20 ... 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 $S_{n\,AL} = S_n \times CF_{AL}$.
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
3 mm	PNP	Metal plug, M8x1, 3-pin, IO-Link	IDT 6-S-QB3-PSL-M3M	996-01016

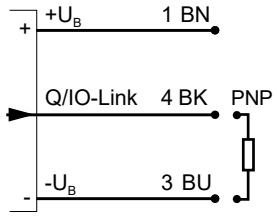
Plug connection

153-13594



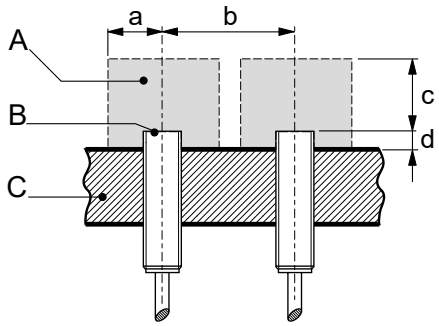
Connection, 3-pin, IO-Link

154-00583



Mounting

155-03390



A: Metal-free zone	a: 6 mm
B: Active surface	b: 16 mm
C: Backing material	c: 9 mm
	d: 1 mm

IMT 8

Inductive sensor M8 / increased switching distance



PRODUCT-HIGHLIGHTS

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

Sensor data	
Rated operating distance S_n	3 mm[1] / 6 mm[2]
Ensured operating distance S_a	≤ 2.43 mm[1] / ≤ 4.86 mm[2]
Hysteresis	3 % S_r ≤ Hyst ≤ 15 % S_r[3]
Repeatability	≤ 0.15 mm[1] / ≤ 0.3 mm[2]
Temperature drift	≤ 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]

Functions	
Indicator LED yellow	Switching output indicator
Adjustment possibilities	N.O. / N.C. Wide variety of adjustment possibilities via IO-Link
Default settings	N.O.

Electrical data	
Operating voltage, $+U_B$	10 … 30 V DC
Residual ripple	≤ 20 % U_B
No-load current, I_0	≤ 10 mA
Output current, Ie	≤ 200 mA
Protective circuits	Reverse-polarity protection, U_B / short-circuit protection (Q)
Residual current	≤ 0.1 mA
Voltage drop, U_D	≤ 2.0 V DC
Switching output, Q	PNP
Output function	N.O./N.C.[4]
Power-on delay	≤ 30 ms
Switching frequency f (ti/tp 1:1)	≤ 1 kHz[1] / 0.5 kHz[2]

Mechanical data	
Dimensions	M8 x 60 mm
Mounting	Quasi-flush / non-flush (see selection table)
Enclosure rating	IP 67[5]
Material housing	Nickel silver, chrome-plated[1] / Brass, chrome-plated[2]
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	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

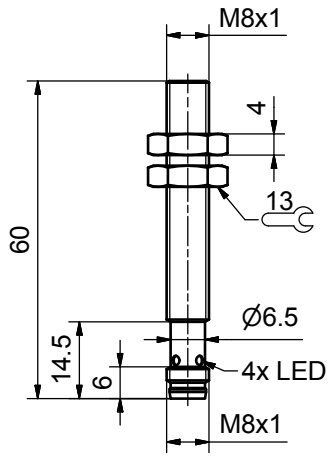
[1] Quasi-flush devices [2] Non-flush devices [3] S_r (Effective switching distance) = ± 10 % of S_n [4] Adjustable / parameterisable via IO-Link [5] With connected IP 67 plug

All data measured according to standard EN IEC 60947-5-2 with U_B = 20 ... 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 $S_{n\,AL} = S_n \times CF_{AL}$.
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	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

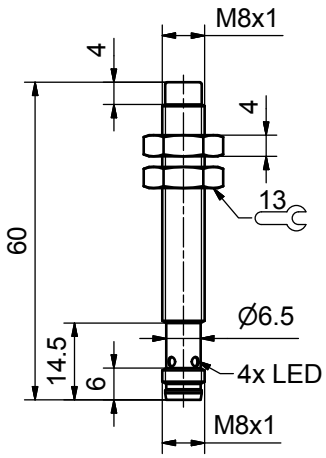
Plug connection[1]

153-13586



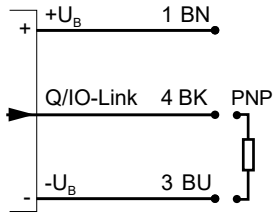
Plug connection[2]

153-13587



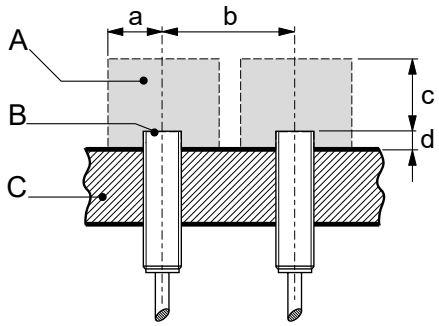
Connection, 3-pin, IO-Link

154-00583



Mounting

155-03390



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]

11

IMT 12

Inductive sensor M12 / increased switching distance



PRODUCT-HIGHLIGHTS

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

Sensor data	
Rated operating distance S_n	6 mm[1] / 10 mm[2]
Ensured operating distance S_a	≤ 4.86 mm[1] / ≤ 8.1 mm[2]
Hysteresis	3 % S_r ≤ Hyst ≤ 15 % S_r[3]
Repeatability	≤ 0.3 mm
Temperature drift	≤ 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]

Functions	
Indicator LED yellow	Switching output indicator
Adjustment possibilities	N.O. / N.C. Wide variety of adjustment possibilities via IO-Link
Default settings	N.O.

Electrical data	
Operating voltage, $+U_B$	10 … 30 V DC
Residual ripple	≤ 20 % U_B
No-load current, I_0	≤ 10 mA
Output current, Ie	≤ 200 mA
Protective circuits	Reverse-polarity protection, U_B / short-circuit protection (Q)
Residual current	≤ 0.1 mA
Voltage drop, U_D	≤ 2.0 V DC
Switching output, Q	PNP
Output function	N.O./N.C.[4]
Power-on delay	≤ 30 ms
Switching frequency f (ti/tp 1:1)	≤ 0.8 kHz[1] / ≤ 0.4 kHz[2]

Mechanical data	
Dimensions	M12 x 60 mm
Mounting	Quasi-flush / non-flush (see selection table)
Enclosure rating	IP 67[5]
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] / 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

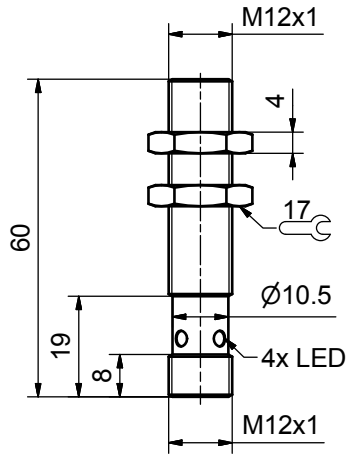
[1] Quasi-flush devices [2] Non-flush devices [3] S_r (Effective switching distance) = ± 10 % of S_n [4] Adjustable / parameterisable via IO-Link [5] With connected IP 67 plug

All data measured according to standard EN IEC 60947-5-2 with U_B = 20 ... 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 $S_{n\,AL} = S_n \times CF_{AL}$.
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	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

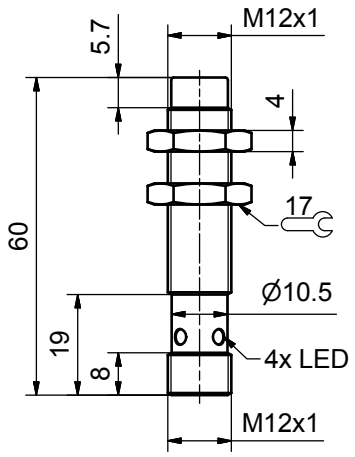
Plug connection[1]

153-13588



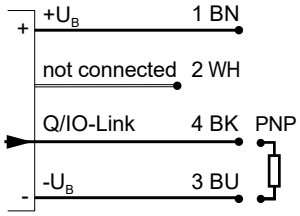
Plug connection[2]

153-13589



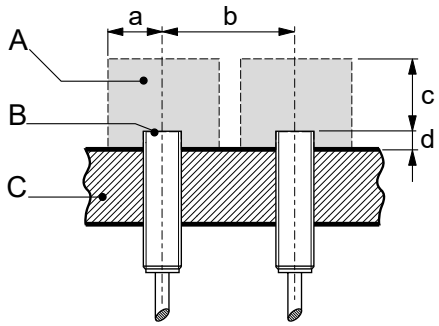
Connection, 4-pin, IO-Link

154-00586



Mounting

155-03390



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	
Rated operating distance S_n	12 mm[1] / 20 mm[2]
Ensured operating distance S_a	≤ 9.72 mm[1] / ≤ 16.2 mm[2]
Hysteresis	3 % S_r ≤ Hyst ≤ 15 % S_r[3]
Repeatability	≤ 0.6 mm[1] / ≤ 1 mm[2]
Temperature drift	≤ 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]

Functions	
Indicator LED yellow	Switching output indicator
Adjustment possibilities	N.O. / N.C. Wide variety of adjustment possibilities via IO-Link
Default settings	N.O.

Electrical data	
Operating voltage, $+U_B$	10 … 30 V DC
Residual ripple	≤ 20 % U_B
No-load current, I_0	≤ 10 mA
Output current, Ie	≤ 200 mA
Protective circuits	Reverse-polarity protection, U_B / short-circuit protection (Q)
Residual current	≤ 0.1 mA
Voltage drop, U_D	≤ 2.0 V DC
Switching output, Q	PNP
Output function	N.O./N.C.[4]
Power-on delay	≤ 30 ms[1] / ≤ 60 ms[2]
Switching frequency f (ti/tp 1:1)	≤ 0.6 kHz[1] / ≤ 0.5 kHz[2]

Mechanical data	
Dimensions	M18 x 63.5 mm
Mounting	Quasi-flush / non-flush (see selection table)
Enclosure rating	IP 67[5]
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	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

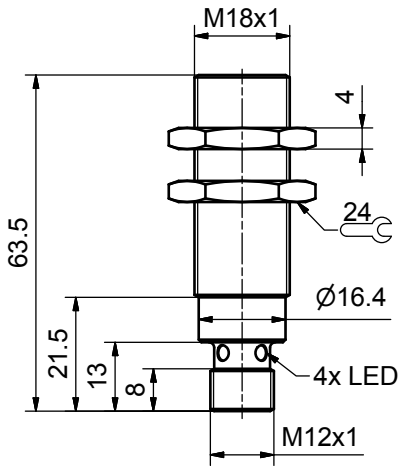
[1] Quasi-flush devices [2] Non-flush devices [3] S_r (Effective switching distance) = ± 10 % of S_n [4] Adjustable / parameterisable via IO-Link [5] With connected IP 67 plug

All data measured according to standard EN IEC 60947-5-2 with U_B = 20 ... 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 $S_{n\,AL} = S_n \times CF_{AL}$.
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	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

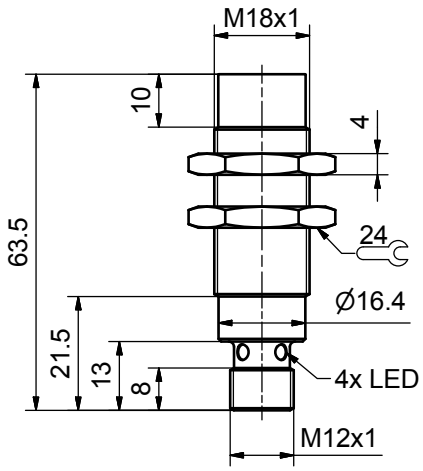
Plug connection[1]

153-13590



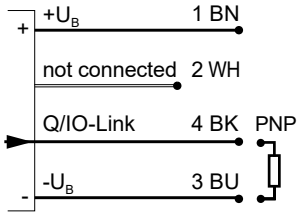
Plug connection[2]

153-13591



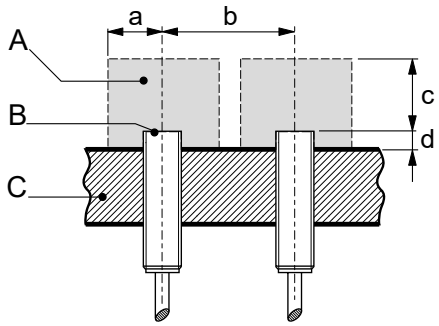
Connection, 4-pin, IO-Link

154-00586



Mounting

155-03390



A: Metal-free zone	a: 18 mm[1] / 30 mm[2]
B: Active surface	b: 44 mm[1] / 78 mm[2]
C: Backing material	c: 36 mm[1] / 60 mm[2]
	d: 2 mm[1] / 20 mm[2]

IMT 30

Inductive sensor M30 / increased switching distance



PRODUCT-HIGHLIGHTS

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

Sensor data	
Rated operating distance S_n	22 mm[1] / 36 mm[2]
Ensured operating distance S_a	≤ 17.82 mm[1] / ≤ 29.16 mm[2]
Hysteresis	3 % S_r ≤ Hyst ≤ 15 % S_r[3]
Repeatability	≤ 1.1 mm[1] / ≤ 2 mm[2]
Temperature drift	≤ 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]

Functions	
Indicator LED yellow	Switching output indicator
Adjustment possibilities	N.O. / N.C. Wide variety of adjustment possibilities via IO-Link
Default settings	N.O.

Electrical data	
Operating voltage, $+U_B$	10 … 30 V DC
Residual ripple	≤ 20 % U_B
No-load current, I_0	≤ 10 mA
Output current, Ie	≤ 200 mA
Protective circuits	Reverse-polarity protection, U_B / short-circuit protection (Q)
Residual current	≤ 0.1 mA
Voltage drop, U_D	≤ 2.0 V DC
Switching output, Q	PNP
Output function	N.O./N.C.[4]
Power-on delay	≤ 200 ms
Switching frequency f (ti/tp 1:1)	≤ 0.2 kHz[1] / ≤ 0.065 kHz[2]

Mechanical data	
Dimensions	M30 x 73.5 mm
Mounting	Quasi-flush / non-flush (see selection table)
Enclosure rating	IP 67[5]
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[1] / 148 g[2]
Vibration and impact resistance	EN IEC 60947-5-2
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

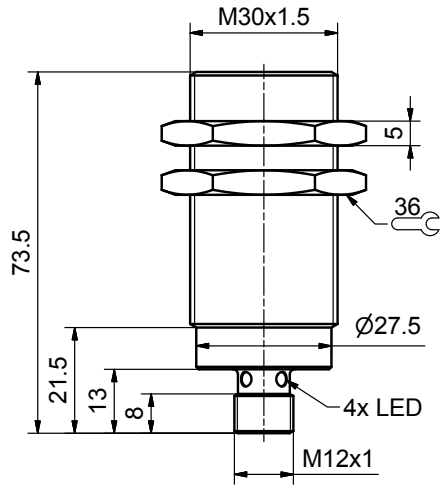
[1] Quasi-flush devices [2] Non-flush devices [3] S_r (Effective switching distance) = ± 10 % of S_n [4] Adjustable / parameterisable via IO-Link [5] With connected IP 67 plug

All data measured according to standard EN IEC 60947-5-2 with U_B = 20 ... 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 $S_{n\,AL} = S_n \times CF_{AL}$.
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	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

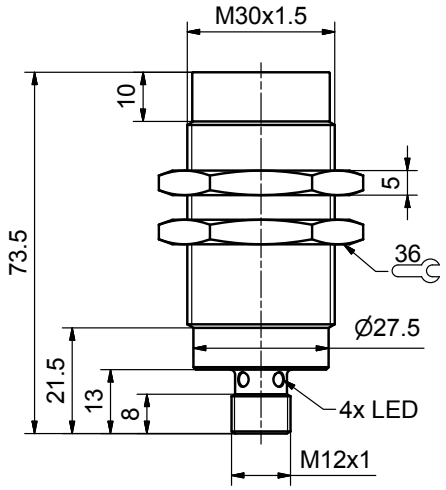
Plug connection[1]

153-13592



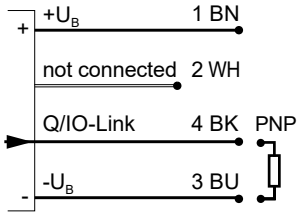
Plug connection[2]

153-13593



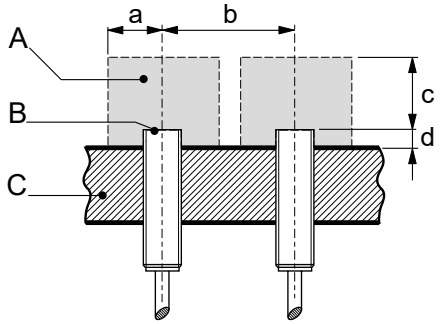
Connection, 4-pin, IO-Link

154-00586



Mounting

155-03390



A: Metal-free zone	a: 37 mm[1] / 55 mm[2]
B: Active surface	b: 80 mm[1] / 150 mm[2]
C: Backing material	c: 66 mm[1] / 120 mm[2]
	d: 0 mm[1] steel FE 360 / 16 mm[2] steel FE 360 4.5 mm[1] aluminium / 6 mm[2] aluminium 4.3 mm[1] brass / 7 mm[2] brass 0 mm[1] V2A / 14 mm[2] V2A

11

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 … 10 V

Sensor data	
Operating range	0 ... 4 mm
Resolution static	≤ 0.1 µm
Resolution dynamic	≤ 0.52 µm
Repeatability	± 0.2 mm
Temperature drift	≤ 5 % (0 … +70 °C) ≤ 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 … 30 V DC
Residual ripple	≤ 20 % U_B
No-load current, I_0	≤ 10 mA
Protective circuits	Reverse-polarity protection, U_B / short-circuit protection (Q)
Load current at voltage output	≤ 15 mA
Power-on delay	≤ 20 ms
Max. load at current output	400 Ω (U_B = 15 V) / 1 kΩ (U_B = 30 V)
Bandwidth	1.6 kHz

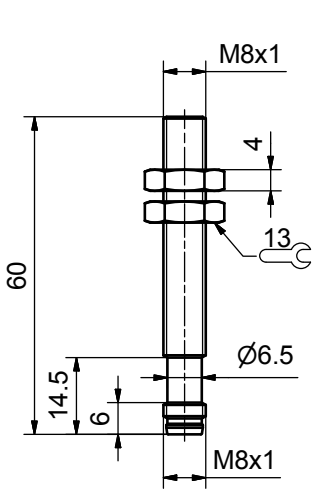
Mechanical data	
Dimensions	M8 x 60 mm
Mounting	Quasi-flush
Enclosure rating	IP 67[1]
Material housing	Brass, chrome-plated
Material active surface	PBTP
Type of connection	Metal plug, M8x1, 3-pin
Ambient temperature: operation	-25 … +70 °C
Ambient temperature: storage	-25 … +70 °C
Weight	17 g
Vibration 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

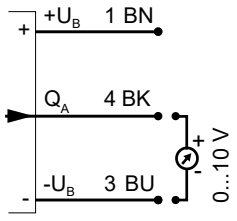
All data measured according to standard EN IEC 60947-5-2 with U_B = 20 ... 30 V DC, T_A = 23 °C ± 5 °C
The switching distance of the sensor must be multiplied by the correction factor of the material. The switching distance on aluminium is thus $S_{n\,AL} = S_n \times CF_{AL}$.
For flush mounting the distance is multiplied by the additional correction factor of the backing material, S_n Al= $S_n \times CF_{AL} \times CF_{\text{mounting material}}$

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

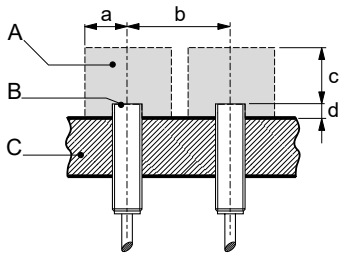
Plug connection



Connection, 3-pin

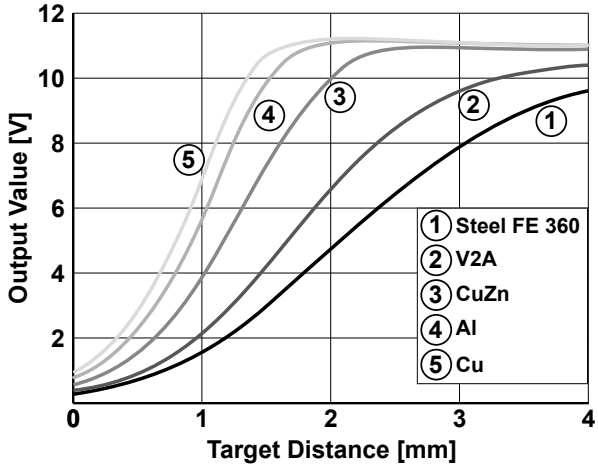


Mounting



A: Metal-free zone	a: 8 mm
B: Active surface	b: 12 mm
C: Backing material	c: 12 mm
	d: 1 mm

Signal process



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	≤ 0.18 µm
Resolution dynamic	≤ 0.9 µm
Repeatability	± 0.32 mm
Temperature drift	≤ 5 % (0 … +70 °C) ≤ 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	≤ 20 % U_B
No-load current, I_0	≤ 10 mA
Protective circuits	Reverse-polarity protection, U_B / short-circuit protection (Q)
Load current at voltage output	≤ 15 mA
Power-on delay	≤ 20 ms
Max. load at current output	400 Ω (U_B = 15 V) / 1 kΩ (U_B = 30 V)
Bandwidth	1 kHz

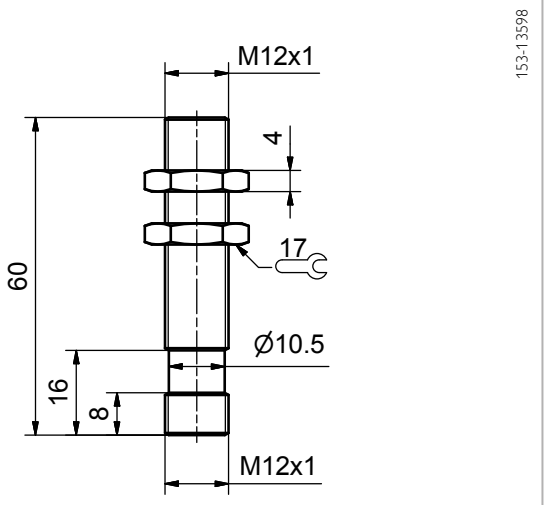
Mechanical data	
Dimensions	M12 x 60 mm
Mounting	Quasi-flush
Enclosure rating	IP 67[1]
Material housing	Brass, chrome-plated
Material active surface	PBTP
Type of connection	Metal plug, M12x1, 4-pin
Ambient temperature: operation	-25 … +70 °C
Ambient temperature: storage	-25 … +70 °C
Weight	27 g
Vibration 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

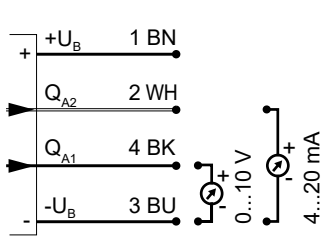
All data measured according to standard EN IEC 60947-5-2 with U_B = 20 ... 30 V DC, T_A = 23 °C ± 5 °C
The switching distance of the sensor must be multiplied by the correction factor of the material. The switching distance on aluminium is thus $S_{n\,AL} = S_n \times CF_{AL}$.
For flush mounting the distance is multiplied by the additional correction factor of the backing material, S_n Al= $S_n \times CF_{AL} \times CF_{\text{mounting material}}$

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

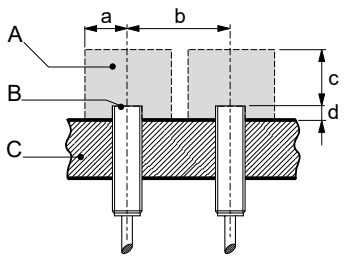
Plug connection



Connection, 4-pin

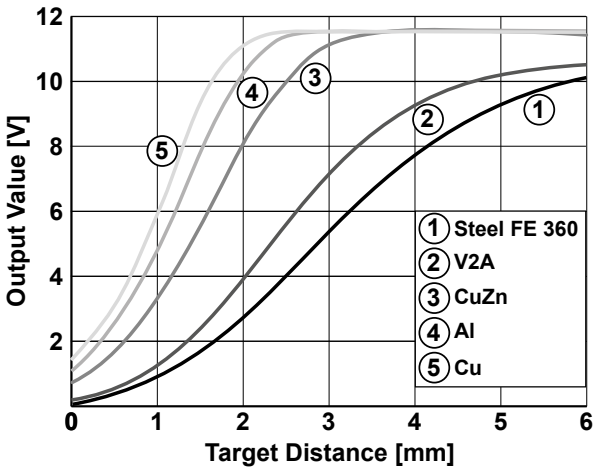


Mounting



A: Metal-free zone	a: 12 mm
B: Active surface	b: 14 mm
C: Backing material	c: 18 mm
	d: 2 mm

Signal process



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	≤ 0.25 µm[1] / ≤ 0.62 µm[2]
Resolution dynamic	≤ 1.24 µm[1] / ≤ 1.9 µm[2]
Repeatability	± 0.2 mm
Temperature drift	≤ 5 % (0 … +70 °C) ≤ 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	≤ 20 % U_B
No-load current, I_0	≤ 10 mA[1] / ≤ 15 mA[2]
Protective circuits	Reverse-polarity protection, U_B / short-circuit protection (Q)
Load current at voltage output	≤ 15 mA
Power-on delay	≤ 20 ms
Max. load at current output	400 Ω (U_B = 15 V) / 1 kΩ (U_B = 30 V)
Bandwidth	0.5 kHz[1] / 0.25 kHz[2]

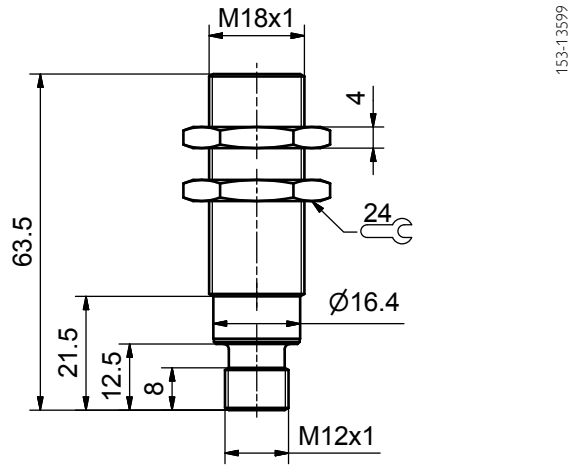
Mechanical data	
Dimensions	M18 x 63.5 mm
Mounting	Quasi-flush / non-flush (see selection table)
Enclosure rating	IP 67[3]
Material housing	Brass, chrome-plated
Material active surface	PBTP
Type of connection	Metal plug, M12x1, 4-pin
Ambient temperature: operation	-25 … +70 °C
Ambient temperature: storage	-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

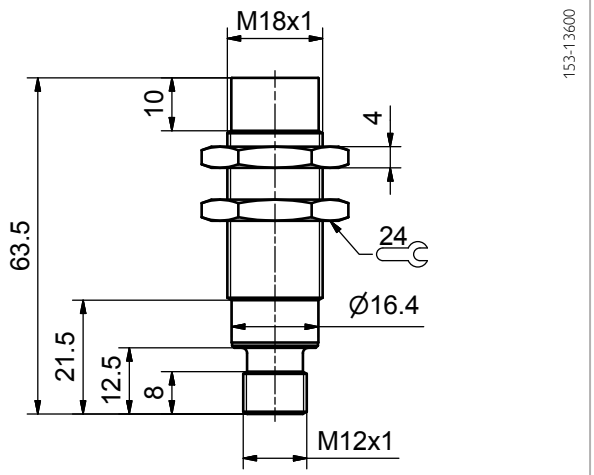
All data measured according to standard EN IEC 60947-5-2 with U_B = 20 ... 30 V DC, T_A = 23 °C ± 5 °C
The switching distance of the sensor must be multiplied by the correction factor of the material. The switching distance on aluminium is thus $S_{n\,AL} = S_n \times CF_{AL}$.
For flush mounting the distance is multiplied by the additional correction factor of the backing material, S_n Al= $S_n \times CF_{AL} \times CF_{\text{mounting material}}$

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

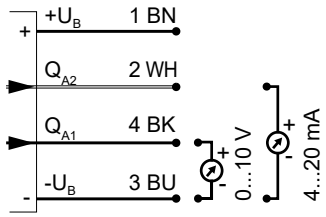
Plug connection[1]



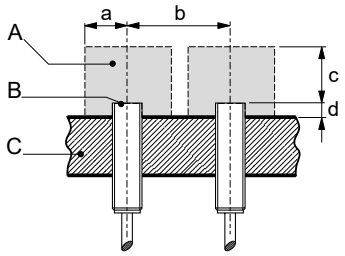
Plug connection[2]



Connection, 4-pin



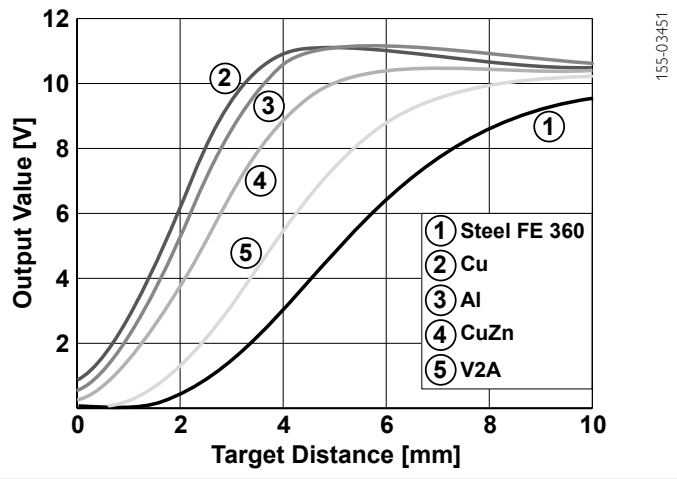
Mounting



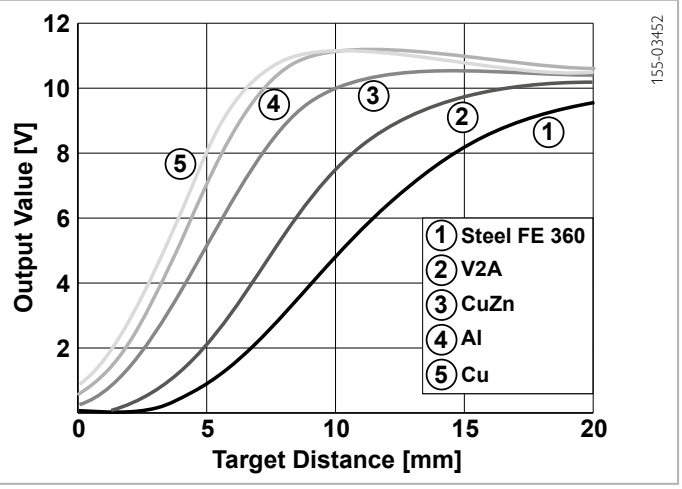
A: Metal-free zone	a: 19 mm[1] / 30 mm[2]
B: Active surface	b: 24 mm[1] / 40 mm[2]
C: Backing material	c: 30 mm[1] / 60 mm[2]
	d: 4 mm[1] / 20 mm[2]

11

Signal process[1]



Signal process[2]



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, $S_n\,Al = S_n \times CF_{AL} \times CF_{\text{mounting material}}$.

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	≤ 0.41 µm[1] / ≤ 1.42 µm[2]
Resolution dynamic	≤ 1.55 µm[1] / ≤ 5.5 µm[2]
Repeatability	± 0.02 mm[1] / ± 0.35 mm[2]
Temperature drift	≤ 5 % (0 … +70 °C) ≤ 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	≤ 20 % U_B
No-load current, I_0	≤ 12 mA
Protective circuits	Reverse-polarity protection, U_B / short-circuit protection (Q)
Load current at voltage output	≤ 15 mA
Power-on delay	≤ 20 ms
Max. load at current output	400 Ω (U_B = 15 V) / 1 kΩ (U_B = 30 V)
Bandwidth	0.2 kHz[1] / 0.1 kHz[2]

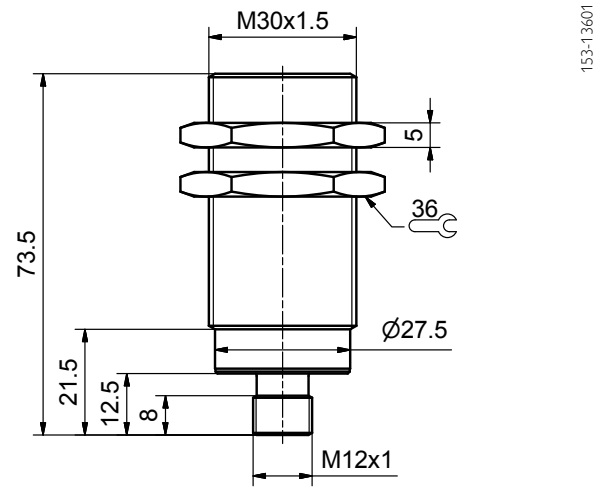
Mechanical data	
Dimensions	M30 x 73.5 mm
Mounting	Quasi-flush / non-flush (see selection table)
Enclosure rating	IP 67[3]
Material housing	Brass, chrome-plated
Material active surface	PBTP
Type of connection	Metal plug, M12x1, 4-pin
Ambient temperature: operation	-25 … +70 °C
Ambient temperature: storage	-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

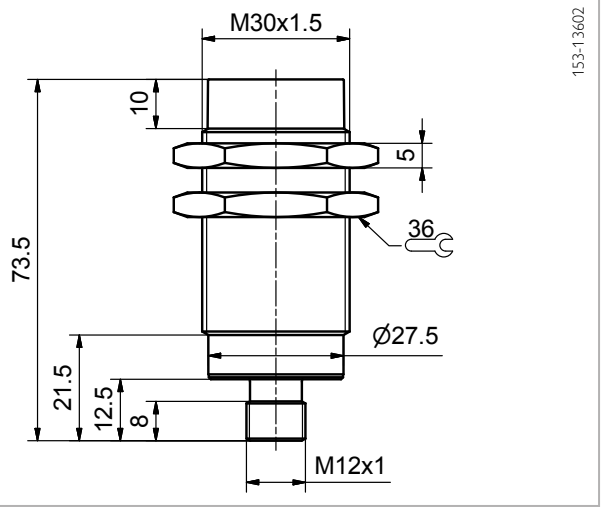
All data measured according to standard EN IEC 60947-5-2 with U_B = 20 ... 30 V DC, T_A = 23 °C ± 5 °C
The switching distance of the sensor must be multiplied by the correction factor of the material. The switching distance on aluminium is thus $S_{n\,AL} = S_n \times CF_{AL}$.
For flush mounting the distance is multiplied by the additional correction factor of the backing material, S_n Al= $S_n \times CF_{AL} \times CF_{\text{mounting material}}$

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

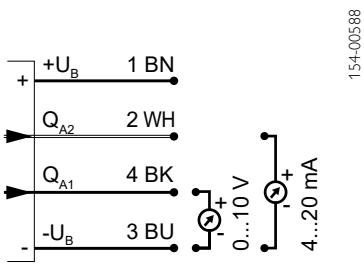
Plug connection[1]



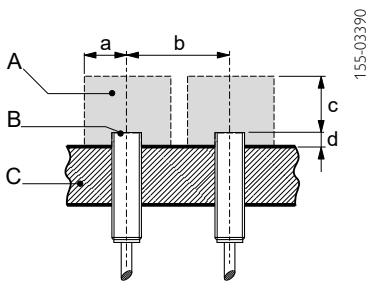
Plug connection[2]



Connection, 4-pin

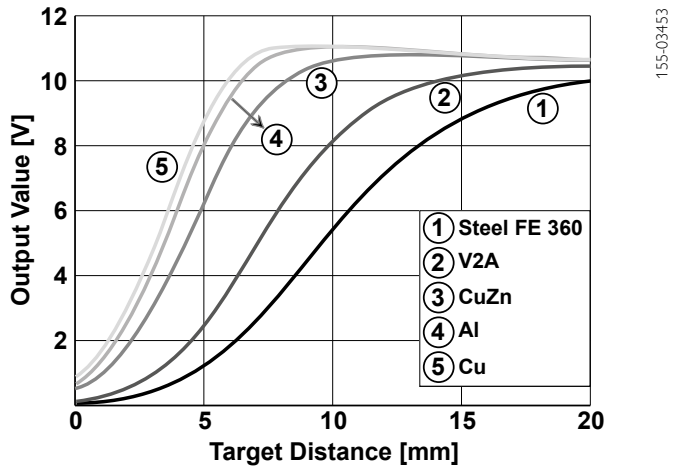


Mounting

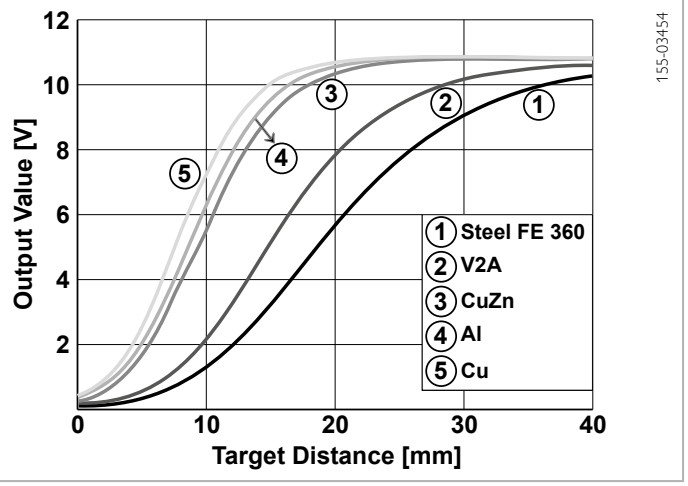


A: Metal-free zone	a: 35 mm[1] / 55 mm[2]
B: Active surface	b: 80 mm[1] / 150 mm[2]
C: Backing material	c: 60 mm[1] / 120 mm[2]
	d: 4 mm[1] 35 mm[2] Stahl FE 360 25 mm[2] Aluminium 25 mm[2] Messing 20 mm[2] V2A

Signal process[1]



Signal process[2]



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	
Rated operating distance S_n	3 mm[1] / 6 mm[2]
Ensured operating distance S_a	≤ 2.43 mm[1] / ≤ 4.86 mm[2]
Hysteresis	3 % S_r ≤ Hyst ≤ 15 % S_r[3]
Repeatability	≤ 0.12 mm[1] / ≤ 0.2 mm[2]
Temperature drift	≤ 10 % S_r

Functions	
Indicator LED yellow	Switching output indicator
Adjustment possibilities	N.O. / N.C. Wide variety of adjustment possibilities via IO-Link
Default settings	N.O.

Electrical data	
Operating voltage, $+U_B$	10 … 30 V DC
Residual ripple	≤ 20 % U_B
No-load current, I_0	≤ 10 mA
Output current, Ie	≤ 200 mA
Protective circuits	Reverse-polarity protection, U_B / short-circuit protection (Q)
Residual current	≤ 0.1 mA
Voltage drop, U_D	≤ 2.0 V DC at 200 mA
Switching output, Q	PNP
Output function	N.O./N.C.[4]
Power-on delay	≤ 10 ms
Switching frequency f (ti/tp 1:1)	1.2 kHz[1] / ≤ 0.7 kHz[2]

Mechanical data	
Dimensions	M8 x 60 mm
Mounting	Flush / non-flush (see selection table)
Enclosure rating	IP 68 (100 bar) [5/6] / IP 69K[6]
Material housing / active surface	Stainless steel, V2A / 1.4305 / AISI 303
Type of connection	Stainless steel plug, V2A, M8x1, 3-pin
Ambient temperature: operation	-25 … +85 °C[7]
Ambient temperature: storage	-25 … +85 °C
Weight	13 g
Vibration and impact resistance	EN IEC 60947-5-2
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

Correction factors	Target	Installation material
Steel FE 360	1[1/2]	0.8[1] / -[2]
V2A 1 / 2 mm	0.4/0.8[1] / 0.3/0.8[2]	0.8[1] / -[2]
CuZn	1.3[1] / 1.35[2]	0.9[1] / -[2]
Al	1[1/2]	1.1[1] / -[2]
Cu	0.9[1] / 0.8[2]	-

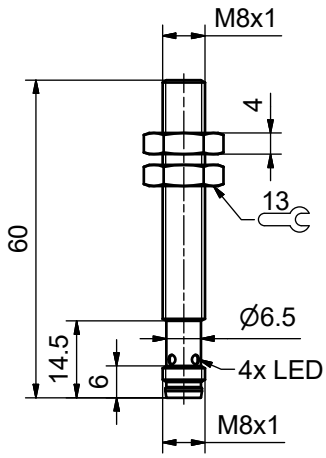
[1] Flush devices [2] Non-flush devices [3] S_r (Effective switching distance) = ± 10 % of S_n [4] Adjustable / parameterisable via IO-Link [5] In zone "P" [6] With connected IP 68 / IP 69K plug
[7] UL: -25 … +70 °C

All data measured according to standard EN IEC 60947-5-2 with U_B = 20 ... 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 $S_{n\,AL} = S_n \times CF_{AL}$.
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	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

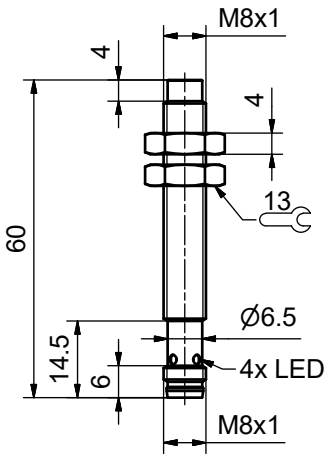
Plug connection[1]

153-13617



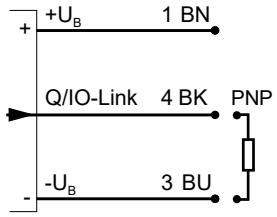
Plug connection[2]

153-13618



Connection, 3-pin, IO-Link

154-00583

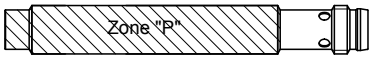


[5] Zone "P"

155-03420

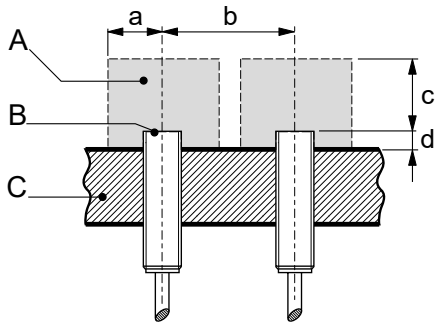


155-03421



Mounting

155-03390



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	
Rated operating distance S_n	6 mm[1] / 10 mm[2]
Ensured operating distance S_a	≤ 4.86 mm[1] / ≤ 8.1 mm[2]
Hysteresis	3 % S_r ≤ Hyst ≤ 15 % S_r[3]
Repeatability	≤ 0.2 mm[1] / ≤ 0.3 mm[2]
Temperature drift	≤ 10 % S_r

Functions	
Indicator LED yellow	Switching output indicator
Adjustment possibilities	N.O. / N.C. Wide variety of adjustment possibilities via IO-Link
Default settings	N.O.

Electrical data	
Operating voltage, $+U_B$	10 … 30 V DC
Residual ripple	≤ 20 % U_B
No-load current, I_0	≤ 10 mA
Output current, Ie	≤ 200 mA
Protective circuits	Reverse-polarity protection, U_B / short-circuit protection (Q)
Residual current	≤ 0.1 mA
Voltage drop, U_D	≤ 2.0 V DC at 200 mA
Switching output, Q	PNP
Output function	N.O./N.C.[4]
Power-on delay	≤ 10 ms
Switching frequency f (ti/tp 1:1)	≤ 0.6 kHz[1] / ≤ 0.4 kHz[2]

Mechanical data	
Dimensions	M12 x 60 mm
Mounting	Flush / non-flush (see selection table)
Enclosure rating	IP 68 (80 bar) [5/6] / IP 69K[6]
Material housing / active surface	Stainless steel, V2A / 1.4305 / AISI 303
Type of connection	Stainless steel plug, V2A, M12x1, 4-pin
Ambient temperature: operation	-25 … +85 °C[7]
Ambient temperature: storage	-25 … +85 °C
Weight	25 g
Vibration and impact resistance	EN IEC 60947-5-2
Tightening torque	20 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

Correction factors	Target	Installation material
Steel FE 360	1[1/2]	0.7[1] / -[2]
V2A 1 / 2 mm	0.4/0.8[1] / 0.15/0.85[2]	0.8[1] / -[2]
CuZn	1.3[1] / 1.4[2]	1.05[1] / -[2]
Al	1[1/2]	1.15[1] / -[2]
Cu	0.85[1] / 0.8[2]	-

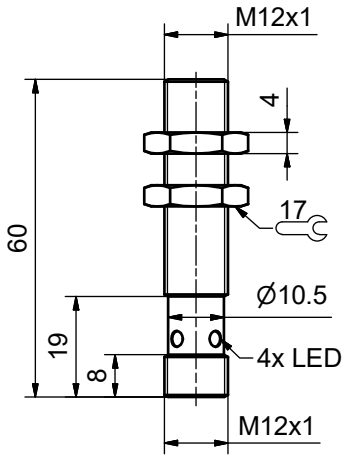
[1] Flush devices [2] Non-flush devices [3] S_r (Effective switching distance) = ± 10 % of S_n [4] Adjustable / parameterisable via IO-Link [5] In zone "P"
[6] With connected IP 68 / IP 69K plug [7] UL: -25 … +70 °C

All data measured according to standard EN IEC 60947-5-2 with U_B = 20 ... 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 $S_{n\,AL} = S_n \times CF_{AL}$.
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	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

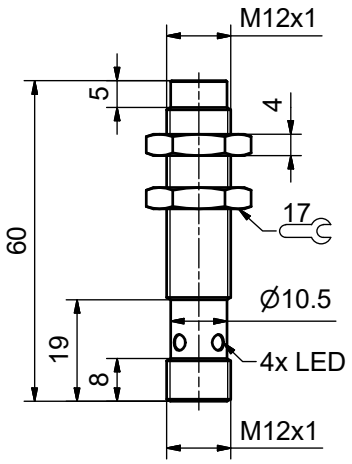
Plug connection[1]

153-13619



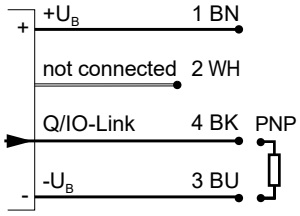
Plug connection[2]

153-13666



Connection, 4-pin, IO-Link

154-00586

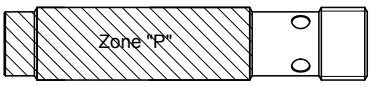


[5] Zone „P“

155-03422

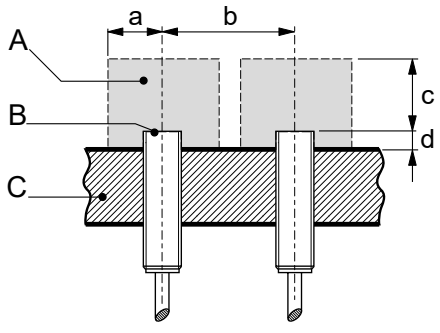


155-03423



Mounting

155-03390



A: Metal-free zone	a: 12 mm[1] / 30 mm[2]
B: Active surface	b: 50 mm[1] / 120 mm[2]
C: Backing material	c: 18 mm[1] / 30 mm[2]
	d: 0 mm[1] / 22 mm[2]

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	
Rated operating distance S_n	10 mm[1] / 20 mm[2]
Ensured operating distance S_a	≤ 8.1 mm[1] / ≤ 16.2 mm[2]
Hysteresis	3 % S_r ≤ Hyst ≤ 15 % S_r[3]
Repeatability	≤ 0.3 mm[1] / ≤ 0.6 mm[2]
Temperature drift	≤ 10 % S_r

Functions	
Indicator LED yellow	Switching output indicator
Adjustment possibilities	N.O. / N.C. Wide variety of adjustment possibilities via IO-Link
Default settings	N.O.

Electrical data	
Operating voltage, $+U_B$	10 … 30 V DC
Residual ripple	≤ 20 % U_B
No-load current, I_0	≤ 10 mA
Output current, Ie	≤ 200 mA
Protective circuits	Reverse-polarity protection, U_B / short-circuit protection (Q)
Residual current	≤ 0.1 mA
Voltage drop, U_D	≤ 2.0 V DC at 200 mA
Switching output, Q	PNP
Output function	N.O./N.C.[4]
Power-on delay	≤ 15 ms
Switching frequency f (ti/tp 1:1)	≤ 0.2 kHz

Mechanical data	
Dimensions	M18 x 63.5 mm
Mounting	Flush / non-flush (see selection table)
Enclosure rating	IP 68 (60 bar)[5/6] / IP 69K[6]
Material housing / active surface	Stainless steel, V2A / 1.4305 / AISI 303
Type of connection	Stainless steel plug, V2A, M12x1, 4-pin
Ambient temperature: operation	-25 … +85 °C[7]
Ambient temperature: storage	-25 … +85 °C
Weight	53 g
Vibration and impact resistance	EN IEC 60947-5-2
Tightening torque	50 Nm
Standard target FE 360	30 mm x 30 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

Correction factors	Target	Installation material
Stahl FE 360	1[1/2]	0.75[1] / -[2]
V2A 1 / 2 mm	0.5/0.9[1] / 0.2/0.7[2]	0.8[1] / -[2]
CuZn	1.2[1] / 1.35[2]	0.75[1] / -[2]
Al	1[1/2]	0.9[1] / -[2]
Cu	0.8[1] / 0.9[2]	-

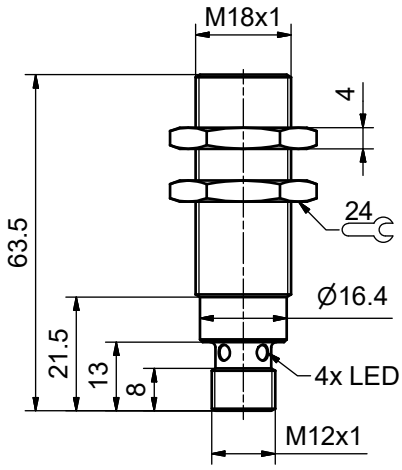
[1] Flush devices [2] Non-flush devices [3] S_r (Effective switching distance) = ± 10 % of S_n [4] Adjustable / parameterisable via IO-Link [5] In zone "P" [6] With connected IP 68 / IP 69K plug
[7] UL: -25 … +70 °C

All data measured according to standard EN IEC 60947-5-2 with U_B = 20 ... 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 $S_{n\,AL} = S_n \times CF_{AL}$.
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	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

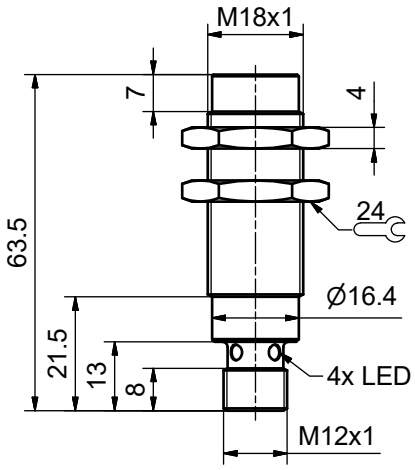
Plug connection[1]

153-13622



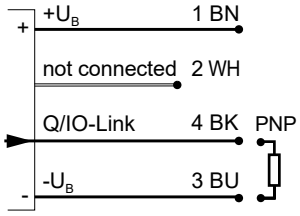
Plug connection[2]

153-13623



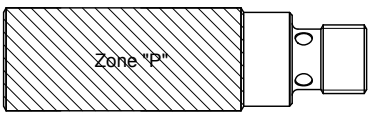
Connection, 4-pin, IO-Link

154-00586



[5] Zone "P"

155-03424

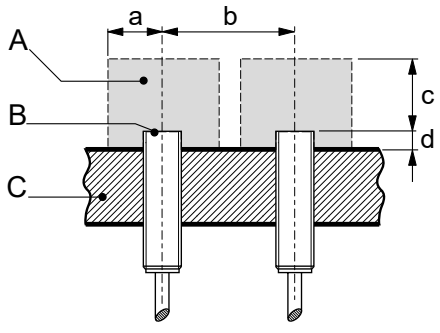


155-03425



Mounting

155-03390



A: Metal-free zone	a: 25 mm[1] / 50 mm[2]
B: Active surface	b: 50 mm[1] / 200 mm[2]
C: Backing material	c: 30 mm[1] / 60 mm[2]
	d: 0 mm[1] / 36 mm[2]

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	
Rated operating distance S_n	20 mm[1] / 40 mm[2]
Ensured operating distance S_a	≤ 16.2 mm[1] / ≤ 32.4 mm[2]
Hysteresis	3 % S_r ≤ Hyst ≤ 15 % S_r[3]
Repeatability	≤ 0.7 mm[1] / ≤ 1.4 mm[2]
Temperature drift	≤ 10 % S_r

Functions	
Indicator LED yellow	Switching output indicator
Adjustment possibilities	N.O. / N.C. Wide variety of adjustment possibilities via IO-Link
Default settings	N.O.

Electrical data	
Operating voltage, +U_B	10 … 30 V DC
Residual ripple	≤ 20 % U_B
No-load current, I_0	≤ 10 mA
Output current, Ie	≤ 200 mA
Protective circuits	Reverse-polarity protection, U_B / short-circuit protection (Q)
Residual current	≤ 0.1 mA
Voltage drop, U_D	≤ 2.0 V DC at 200 mA
Switching output, Q	PNP
Output function	N.O./N.C.[4]
Power-on delay	≤ 20 ms[1] / ≤ 30 ms[2]
Switching frequency f (ti/tp 1:1)	≤ 0.125 kHz[1] / ≤ 0.09 kHz[2]

Mechanical data	
Dimensions	M30 x 63.5 mm
Mounting	Flush / non-flush (see selection table)
Enclosure rating	IP 68 (40 bar) [5/6] / IP 69K[6]
Material housing / active surface	Stainless steel, V2A / 1.4305 / AISI 303
Type of connection	Stainless steel plug, V2A, M12x1, 4-pin
Ambient temperature: operation	-25 … +85 °C[7]
Ambient temperature: storage	-25 … +85 °C
Weight	137 g
Vibration and impact resistance	EN IEC 60947-5-2
Tightening torque	150 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	7 Bit
Specification	1.1
ISDU	Not compatible

Correction factors	Target	Installation material
Steel FE 360	1[1/2]	0.85[1] / -[2]
V2A 1 / 2 mm	0.4/0.75[1] / 0.0/0.2[2]	1.2[1] / -[2]
CuZn	1.3[1] / 1.2[2]	0.6[1] / -[2]
Al	1[1/2]	0.7[1] / -[2]
Cu	0.9[1] / 0.9[2]	-

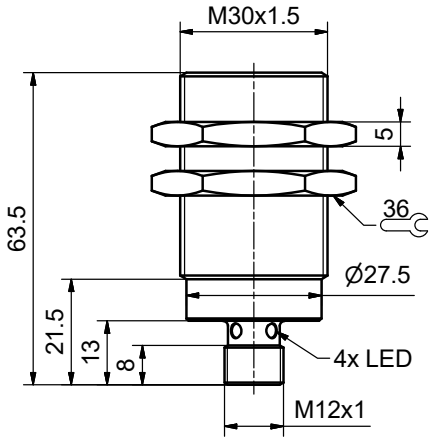
[1] Flush devices [2] Non-flush devices [3] S_r (Effective switching distance) = ± 10 % of S_n [4] Adjustable / parameterisable via IO-Link [5] In zone "P"
[6] With connected IP 68 / IP 69K plug [7] UL: -25 … +70 °C

All data measured according to standard EN IEC 60947-5-2 with U_B = 20 ... 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 $S_{n\,AL} = S_n \times CF_{AL}$.
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	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

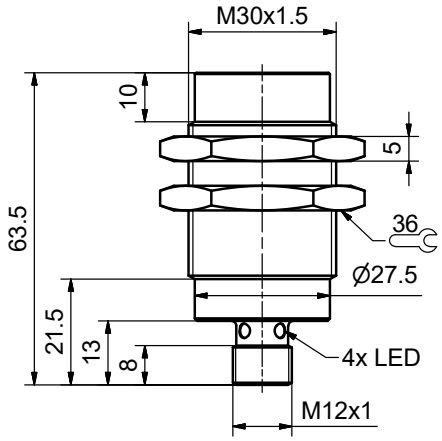
Plug connection[1]

153-13624



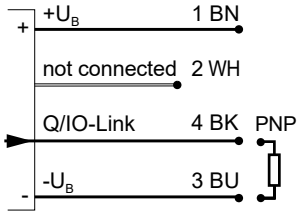
Plug connection[2]

153-13625



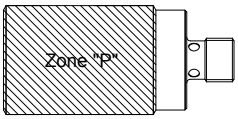
Connection, 4-pin, IO-Link

154-00586

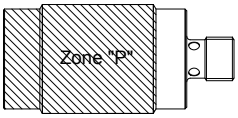


[5] Zone "P"

155-03426

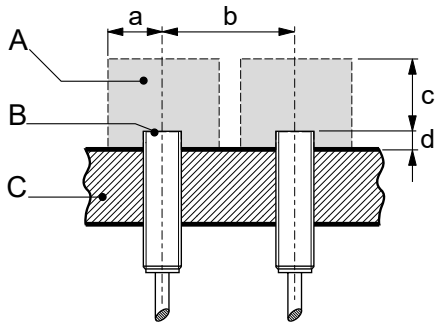


155-03427



Mounting

155-03390



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	
Rated operating distance S_n	1.5 mm
Ensured operating distance S_a	≤ 1.22 mm
Hysteresis	≤ 10 % S_r typ.[1]
Repeatability	≤ 0.03 mm
Temperature drift	≤ 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

Functions	
Indicator LED yellow	Switching output indicator
Adjustment possibilities	N.O. / N.C. Wide variety of adjustment possibilities via IO-Link
Default settings	N.O.

Electrical data	
Operating voltage, $+U_B$	10 … 30 V DC
Residual ripple	≤ 20 % U_B
No-load current, I_0	≤ 10 mA
Output current, Ie	≤ 200 mA
Protective circuits	Induction protection / reverse-polarity protection, U_B / short-circuit protection (Q)
Residual current	≤ 0.1 mA
Voltage drop, U_D	≤ 2.0 V DC at 100 mA
Switching output, Q	PNP
Output function	N.O./N.C.[2]
Power-on delay	≤ 10 ms
Switching frequency f (ti/tp 1:1)	≤ 3 kHz

Mechanical data	
Dimensions	5 mm x 5 mm x 25 mm
Mounting	Flush
Enclosure rating	IP 67[3]
Material housing	Brass, chrome-plated
Material active surface	Polyester
Type of connection	Pigtail 0.2 m with plug, M8x1, 3-pin
Ambient temperature: operation	-25 … +70 °C
Ambient temperature: storage	-25 … +70 °C
Weight	6.5 g
Vibration and impact resistance	EN IEC 60947-5-2
Tightening torque	-
Standard target FE 360	5 mm x 5 mm x 1 mm

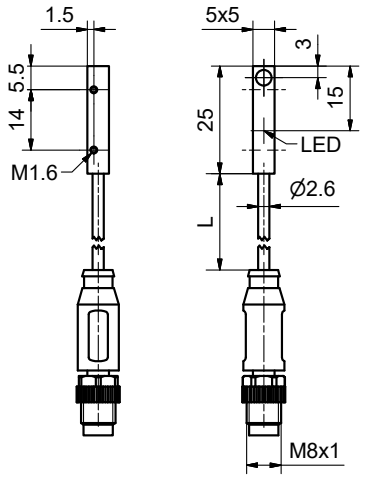
IO-Link	
Communication mode	COM 2
Min. cycletime	10.4 ms
SIO mode	Compatible
Length process data	2 Bit
Specification	1.1
ISDU	Not compatible

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

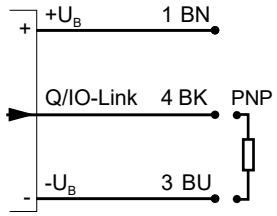
All data measured according to standard EN IEC 60947-5-2 with U_B = 20 ... 30 V DC, T_A = 23 °C ± 5 °C
The switching distance of the sensor must be multiplied by the correction factor of the material. The switching distance on aluminium is thus $S_{n\,AL} = S_n \times CF_{AL}$.
For flush mounting the 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
1.5 mm	PNP	Pigtail 0.2 m with plug, M8x1, 3-pin, IO-Link	IKT 5-S-B2-PSL-KM3	996-01039

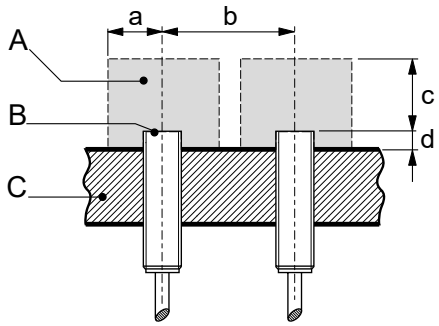
Plug connection



Connection, 3-pin, IO-Link



Mounting

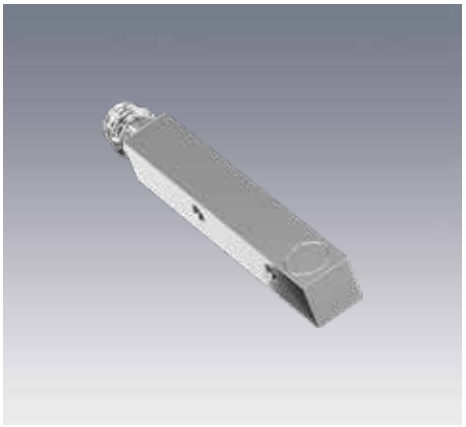


A: Metal-free zone	a: 4 mm
B: Active surface	b: 6 mm
C: Backing material	c: 4.5 mm
	d: -

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IKT 8

Inductive sensor 8 x 8 / cubic housing



PRODUCT-HIGHLIGHTS

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

Sensor data	
Rated operating distance S_n	3 mm[1] / 2 mm[2]
Ensured operating distance S_a	≤ 2.43 mm[1] / ≤ 1.62 mm[2]
Hysteresis	3 % Sr ≤ Hyst ≤ 15 % Sr[3/1] / ≤ 20 % S_r typ.[3/2]
Repeatability	≤ 0.15 mm[1] / ≤ 0.04 mm[2]
Temperature drift	≤ 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]

Functions	
Indicator LED yellow	Switching output indicator
Adjustment possibilities	N.O. / N.C. Wide variety of adjustment possibilities via IO-Link
Default settings	N.O.

Electrical data	
Operating voltage, $+U_B$	10 … 30 V DC
Residual ripple	≤ 20 % U_B
No-load current, I_0	≤ 10 mA
Output current, Ie	≤ 200 mA
Protective circuits	Induction protection / reverse-polarity protection, U_B / short-circuit protection (Q)
Residual current	≤ 0.1 mA
Voltage drop, U_D	≤ 2.0 V DC at 100 mA
Switching output, Q	PNP
Output function	N.O./N.C.[4]
Power-on delay	≤ 50 ms[1] / ≤ 60 ms[2]
Switching frequency f (ti/tp 1:1)	≤ 1 kHz[1] / ≤ 5 kHz[2]

Mechanical data	
Dimensions	8 mm x 8 mm x 59 mm
Mounting	Quasi-flush / flush (see selection table)
Enclosure rating	IP 67[5]
Material housing	Brass, chrome-plated[1] / Zamac[2]
Material active surface	PBTP[1] / PBTP Crastin[2]
Type of connection	Metal plug, M8x1, 3-pin
Ambient temperature: operation	-25 … +70 °C
Ambient temperature: storage	-25 … +70 °C
Weight	14 g[1] / 12 g[2]
Vibration and impact resistance	EN IEC 60947-5-2
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

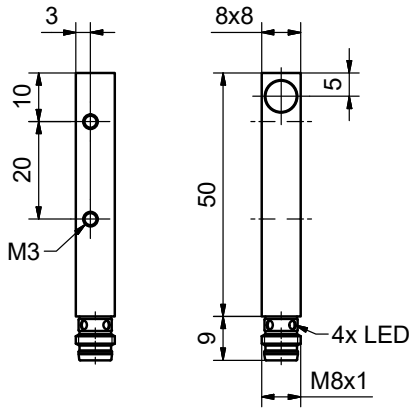
[1] Quasi-flush devices [2] Flush devices [3] S_r (Effective switching distance) = ± 10 % of S_n [4] Adjustable / parameterisable via IO-Link [5] With connected IP 67 plug

All data measured according to standard EN IEC 60947-5-2 with U_B = 20 ... 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 $S_{n\,AL} = S_n \times CF_{AL}$.
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	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

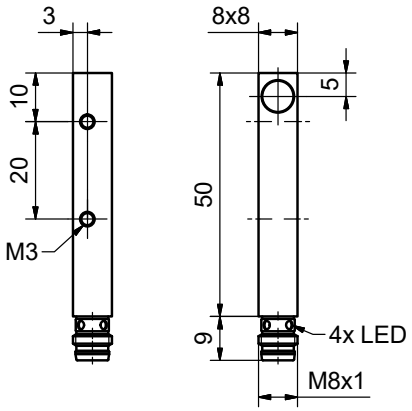
Plug connection[1]

153-13627



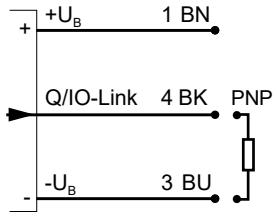
Plug connection[2]

153-13628



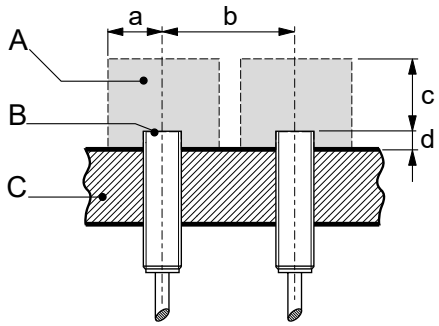
Connection, 3-pin, IO-Link

154-00583



Mounting

155-03390

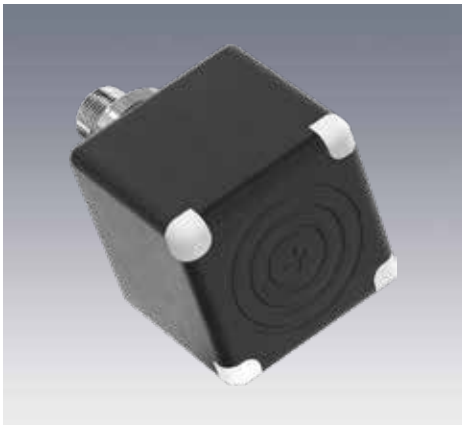


A: Metal-free zone	a: 6 mm[1] / 8 mm[2]
B: Active surface	b: 16 mm[1] / 16 mm[2]
C: Backing material	c: 9 mm[1] / 6 mm[2]
	d: 1 mm[1] / -[2]

11

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	
Rated operating distance S_n	20 mm[1] / 40 mm[2]
Ensured operating distance S_a	≤ 16.2 mm[1] / ≤ 32.4 mm[2]
Hysteresis	≤ 15 % S_r typ.[3]
Repeatability	≤ 0.75 mm[1] / ≤ 1.5 mm[2]
Temperature drift	≤ 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]

Functions	
Indicator LED, green	Operating voltage indicator
Indicator LED yellow	Switching output indicator
Adjustment possibilities	N.O. / N.C. Wide variety of adjustment possibilities via IO-Link
Default settings	N.O. / N.C.

Electrical data	
Operating voltage, $+U_B$	10 … 30 V DC
Residual ripple	≤ 10 % U_B
No-load current, I_0	≤ 30 mA
Output current, Ie	≤ 200 mA
Protective circuits	Induction protection / reverse-polarity protection, U_B / short-circuit protection (Q)
Residual current	≤ 0.01 mA
Voltage drop, U_D	≤ 2.5 V DC at 200 mA
Switching output, Q	PNP
Output function	N.O./N.C.[4]
Switching frequency f (ti/tp 1:1)	≤ 0.1 kHz

Mechanical data	
Dimensions	40 mm x 40 mm x 67 mm
Mounting	Flush / non-flush (see selection table)
Enclosure rating	IP 68 / IP 69K[5]
Material housing	PA GF
Material active surface	PA GF
Type of connection	Metal plug, M12x1, 4-pin
Ambient temperature: operation	-25 … +85 °C
Ambient temperature: storage	-25 … +85 °C
Weight	120 g[1] / 130 g[2]
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

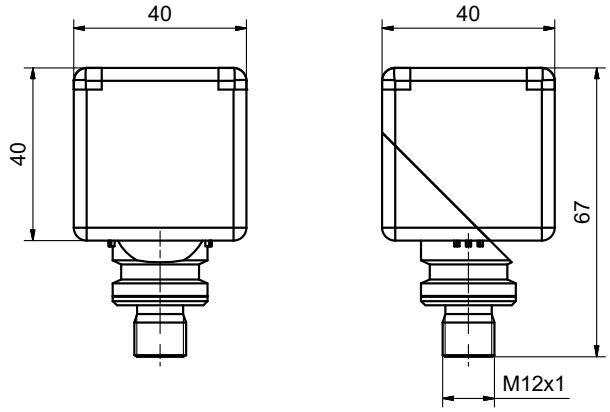
[1] Flush devices [2] Non-flush devices [3] S_r (Effective switching distance) = ± 10 % of S_n [4] Adjustable / parameterisable via IO-Link [5] With connected IP 68 / IP 69K plug

All data measured according to standard EN IEC 60947-5-2 with U_B = 20 ... 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 $S_{n\,AL} = S_n \times CF_{AL}$.
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	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

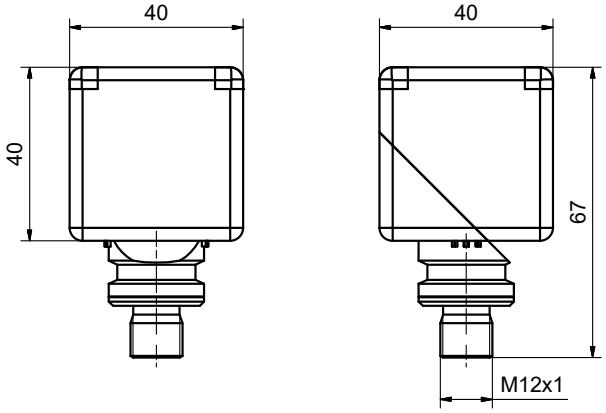
Plug connection[1]

153-13629



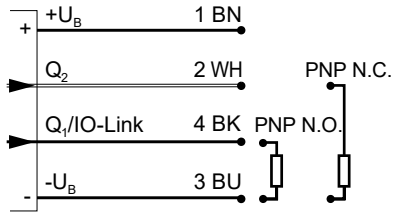
Plug connection[2]

153-13630



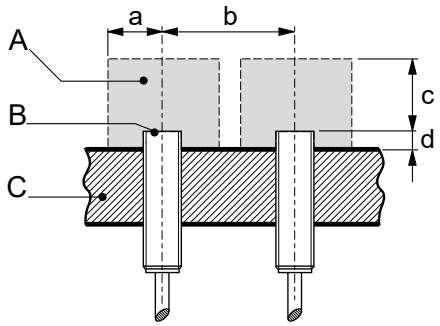
Connection, 4-pin, IO-Link

154-00594



Mounting

155-03390



A: Metal-free zone	a: 25 mm[1] / 80 mm[2]
B: Active surface	b: 60 mm[1] / 150 mm[2]
C: Backing material	c: 30 mm[1] / 90 mm[2]
	d: -[1] / 40 mm[2]

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