

INDUCTIVE SENSORS



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Series ISZL

Key-Features:

- Measurement range up to 24 mm
- Linearity up to ± 0.025 mm
- Resolution up to 0.01 mm
- Analog output: 0...10 V, 4...20 mA
- Protection class IP67
- Temperature range -25...+75 °C
- Cylindrical housing with outer thread
- Measurement on metallic objects
- Teach function
- Linearised output curve

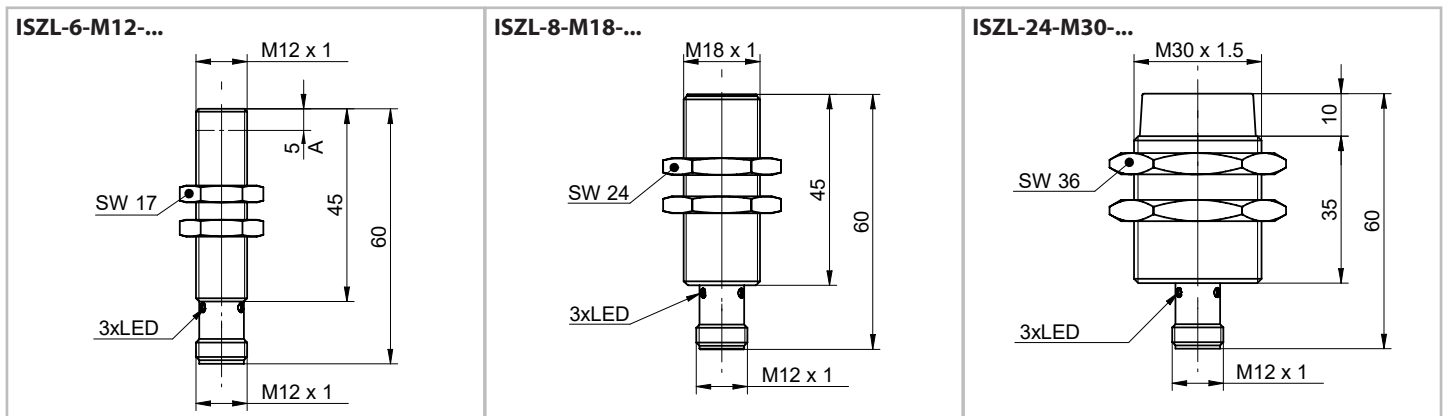
TECHNICAL DATA

Measurement range ¹⁾	[mm]	0...6		0...8		0...24	
Linearity ¹⁾	[mm]	MR 0...4: ±0.025 MR 0...6: ±0.12	MR 0...4: ±0.025 MR 0...6: ±0.06	±0.08		±0.48	
Resolution ¹⁾	[mm]	<0.022		<0.01		<0.04	
Repeatability ¹⁾	[mm]	<0.01		<0.015		<0.02	
Sensitivity		2.67 mA/mm	1.67 V/mm	2 mA/mm	1.25 V/mm	0.67 mA/mm	0.42 V/mm
Response time ¹⁾	[ms]	10					
Refresh rate ¹⁾	[ms]	0.5					
Output signal		4...20 mA	0...10 V	4...20 mA	0...10 V	4...20 mA	0...10 V
Power supply Vs	[VDC]	8...36	12...36		8...36	12...36	
Current consumption ²⁾	[mA]	max. 25	max. 15	max. 20	max. 15	max. 20	
Load resistance		<50 Ω/V * Vs - 250 Ω >500 Ω (Vs = 30...36)	>4 kΩ	<50 Ω/V * Vs - 250 Ω >500 Ω (Vs = 30...36)	>4 kΩ	<50 Ω/V * Vs - 250 Ω >500 Ω (Vs = 30...36)	>4 kΩ
Short circuit protection		yes					
Reverse polarity prot.		yes					
Protection class		IP67					
Operating temperature	[°C]	Vs = 8...30: -25...+75 Vs = 8...36: -25...+60		-25...+75			
Temperature drift max.	[%]	MR 0...4: ±2 MR 0...6: ±5		±4	±3	±6	
Housing material		brass nickel plated					
Connection		connector M12, 5 pins					
Optimal mounting		quasi-flush				non-flush	
Tightening torque	[Nm]	max. 15 (area A: 10)		max. 40		max. 100	

¹⁾ with regard to a norm measurement plate (≥ [3 x MR] x [3 x MR] x 1 mm), mild steel (ST37)

²⁾ without load

TECHNICAL DRAWING

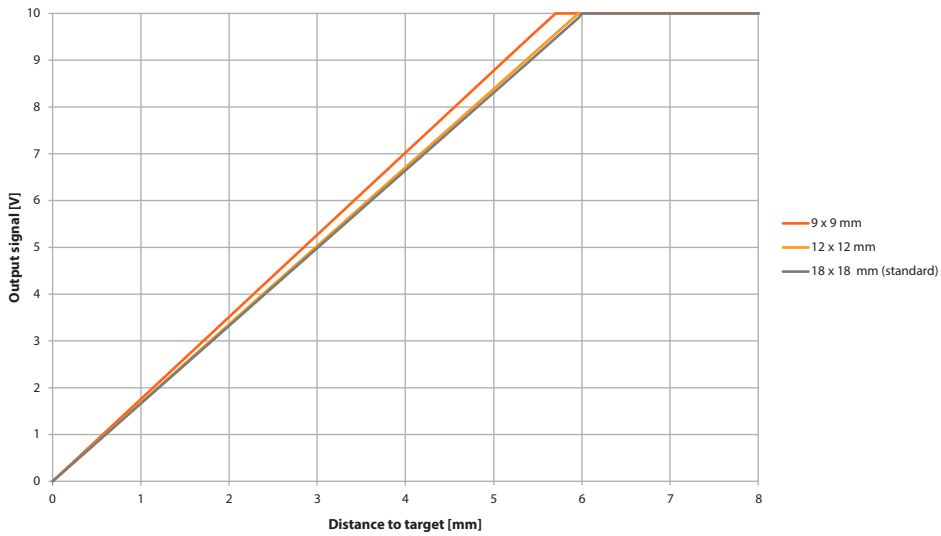


INFLUENCES ON THE MEASUREMENT

Target size

If the target is smaller than the standard target, the maximal measurement range will be reduced. This means that the output will reach its maximum at a shorter distance than shown in the table "Technical Data". If the target is larger than the standard target, there will be only minimal influences.

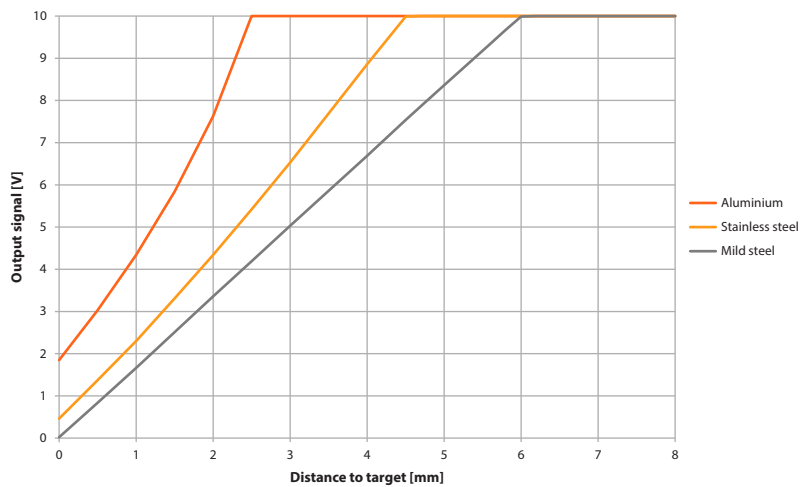
Example: ISZL-6-M12-10V-SA12
(quasi-flush mounted, target: mild steel, thickness 1 mm)



Target material

The sensors are optimized for mild steel targets, which can be identified by its distinctive attraction to magnets (magnetically soft, permeability coefficient $\gg 1$) - i.e. a magnet sticks to it after contact. For other materials the maximal measurement range is reduced.

Example: ISZL-6-M12-10V-SA12
(quasi-flush mounted, target: 18 x 18 x 1 mm)

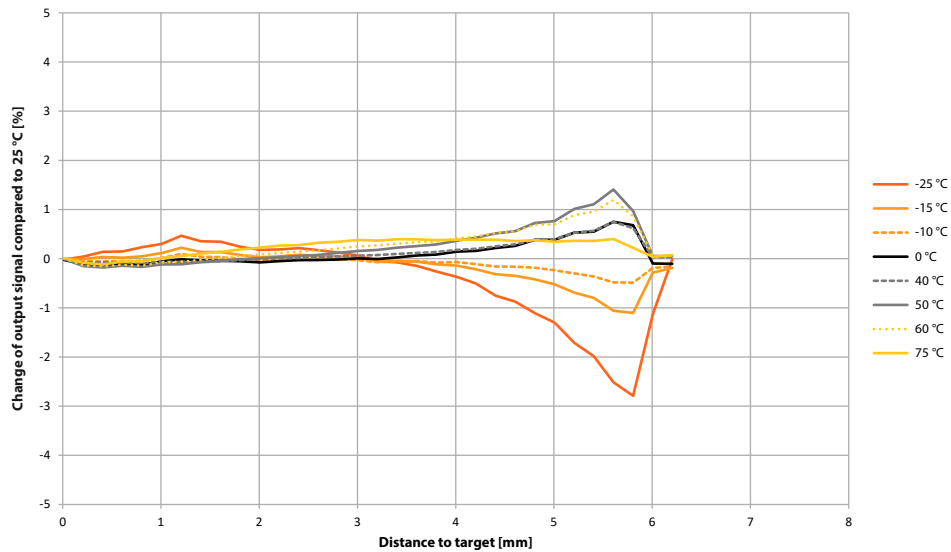


INFLUENCES ON THE MEASUREMENT

Temperature influence

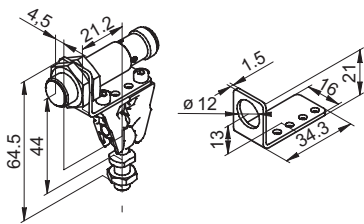
Inductive sensors are susceptible to temperature changes – i.e. the output value at a given distance between sensor and target changes slightly if the temperature varies. Please note that the values mentioned in the datasheet do also include production tolerances, so a single sensor can have even smaller drifts.

Example: ISZL-6-M12-10V-SA12
(quasi-flush mounted, target: mild steel, 18 x 18 x 1 mm)

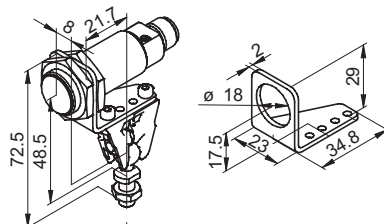


ACCESSORIES MOUNTING SETS

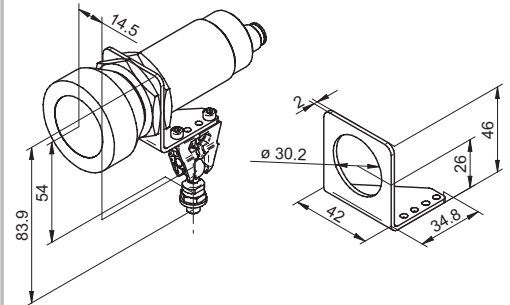
Mounting set ISMZ-M12 for ISZL-6-M12



Mounting set ISMZ-M18 for ISZL-8-M18



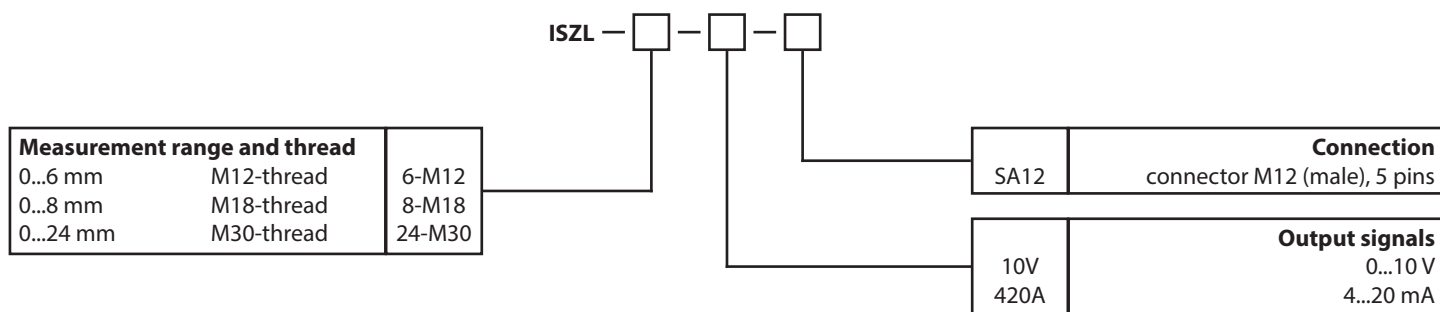
Mounting set ISMZ-M30 for ISZL-24-M30



The mounting sets consist of:

- Clamps (stainless steel)
- Ball pivot (galvanised steel)
- Mounting panel (stainless steel)

ORDER CODE



ACCESSORIES

Cable with connector (female) M12, 5 poles, shielded

K5P2M-S-M12	2 m, straight connector
K5P5M-S-M12	5 m, straight connector
K5P10M-S-M12	10 m, straight connector
K5P2M-SW-M12	2 m, angular connector
K5P5M-SW-M12	5 m, angular connector
K5P10M-SW-M12	10 m, angular connector

Mounting sets

ISMZ-M12	Mounting set for sensors with M12 thread
ISMZ-M18	Mounting set for sensors with M18 thread
ISMZ-M30	Mounting set for sensors with M30 thread

Mating connector (female) M12, 5 poles, shielded

D5-G-M12-S	straight, for self assembly
D5-W-M12-S	angular, for self assembly

Digital displays

WAY-AX-S	2 channel, power supply 18...30 VDC
WAY-AX-S-AC	2 channel, power supply 115...230 VAC

For more information and options please refer to the [WAY-AX data sheet](#).

Subject to change without prior notice.

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