Inductive sensors

Range of application

Inductive sensors are suitable for the positioning and controlling of machines and systems in many areas of industrial applications.

They are generally used as an alternative to mechanically operated limit switches in cases where unfavourable operating conditions, such as high or low actuating speeds, large switching frequencies, extreme dirt or dust production, high humidity, chemical atmospheres, highly fluctuating actuating distances, etc., occur. Even in the pre-sence of aggressive materials, safe switching is ensured through encapsulation of the contacts.

Design and mode of operation

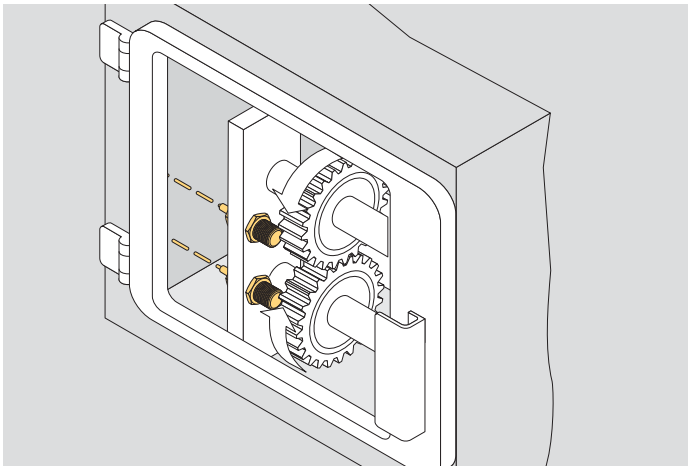
The inductive sensors change their current consumption or their internal resistance with the approach of metal to the sensor surface.

The degree of protection IP 68 even permits safe application under rough ambient conditions.

All inductive sensors shown in this chapter bear the CE mark according to the EMC Directive 2004/108/EC.

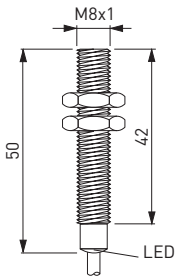
Application

Inductive sensors for standstill monitoring



Features/Options
- Cold-resistant down to -40 °C or heat-resistant up to +120 °C
- High degree of protection IP 68
- Stainless steel enclosure
- Flush mounting
- Long life, no mechanical wear
- Suitable for the food processing industry
- Insensitive to soiling
- With LED
- Enclosure diameter M8 x 1

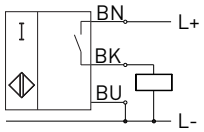
// IS M8 EXTREME



Technical data

Standards	EN 60947-5-2
Enclosure	Stainless steel A1, 1.4305
Front cap	Hostaform C13021
Back cap	Epoxy resin
Connection	cable, PUR (Ø max. 3.25 mm), length 2 m
Cable cross-section	3 x 0.14 mm²
Degree of protection	IP 68 to IEC/EN 60529
Switching elements	1 NO contact, PNP, 3-wire
Switching distance s_n	2 mm
Correction factors	steel (Fe 360): 1, stainless steel: approx. 0.7, brass: approx. 0.5, copper: approx. 0.4, aluminium: approx. 0.4
Rated operating voltage range U_B	6 ... 30 VDC
Residual ripple	≤ 10 %
Switching current	200 mA
Voltage drop	< 1.8 V
Current absorption at 24 VDC	< 12 mA
Hysteresis	< 10 %
Switching frequency	2000 Hz
Repeatability	≤ 3 %
Protection circuit	Inductive interference protection, protection against polarity reversal, short-circuit and overload proof
Ambient temperature	-40 °C ... +50 °C; 0°C ... +120°C

Contact variants: switch travel/contacts

	3-wire
1 NO contact	**Ex IS M8 b ...** 

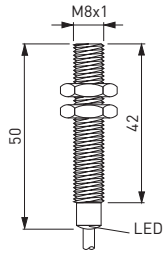
Type code

IS M8 b 2 B B B C B PNP NO 2m Extreme

- Cable length 2 m
- NO function
- PNP output
- PUR cable (A PVC cable)
- 3 wire DC (A 2 wire)
- stainless steel enclosure (A brass, nickeled)
- degree of protection IP68 (A IP 67, C IP 69K)
- ambient temperature -40 ... +50 °C (C 0 ... +120 °C)
- 2 mm switching distance
- b flush
- Enclosure diameter M8
- Inductive sensor

✓ in stock

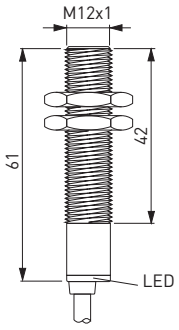
// IS M8 B EXTREME



Inductive sensor	Material Number
IS M8b 2BBBCB PNP NO 2m Extreme	✓ 1202087
IS M8b 2CBBCB PNP NO 2m Extreme	✓ 1202090

Features/Options
- Cold-resistant down to -40 °C or heat-resistant up to +120 °C
- High degree of protection IP 68
- Stainless steel enclosure
- Flush mounting
- Long life, no mechanical wear
- Suitable for the food processing industry
- Insensitive to soiling
- With LED
- Enclosure diameter M12 x 1

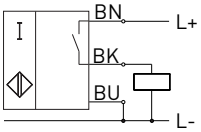
// IS M12 EXTREME



Technical data

Standards	EN 60947-5-2
Enclosure	Stainless steel A1, 1.4305
Front cap	Kepital F25 POM
Back cap	Lexan 923/A
Connection	cable, PUR (Ø max. 4.1 mm), length 2 m
Cable cross-section	3 x 0.25 mm²
Degree of protection	IP 68 to IEC/EN 60529
Switching elements	1 NO contact, PNP, 3-wire
Switching distance s_n	2 or 4 mm
Correction factors	steel (Fe 360): 1, stainless steel: approx. 0.7, brass: approx. 0.5, copper: approx. 0.4, aluminium: approx. 0.4
Rated operating voltage range U_B	10 ... 30 VDC
Residual ripple	≤ 10 %
Switching current	200 mA
Voltage drop	< 1.8 V
Current absorption at 24 VDC	< 15 mA
Hysteresis	< 10 %
Switching frequency	1000 Hz
Repeatability	≤ 3 %
Protection circuit	Inductive interference protection, protection against polarity reversal, short-circuit and overload proof
Ambient temperature	-40 °C ... +50 °C; 0°C ... +120°C

Contact variants: switch travel/contacts

	3-wire
1 NO contact	**Ex IS M12 b ...** 

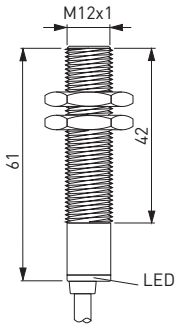
Type code

IS M12 b 2 B B B C B PNP NO 2m Extreme

- Cable length 2 m
- NO function
- PNP output
- PUR cable (A PVC cable)
- 3 wire DC (A 2 wire)
- stainless steel enclosure (A brass, nickeled)
- degree of protection IP68 (A IP 67, C IP 69K)
- ambient temperature -40 ... +50 °C (C 0 ... +120 °C)
- 2 mm switching distance
- b flush
- Enclosure diameter M12
- Inductive sensor

✓ in stock

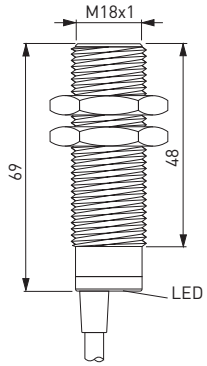
// IS M12 B EXTREME



Inductive sensor	Material Number
IS M12b 2BBBCB PNP NO 2m Extreme	✓ 1202138
IS M12b 2CBBCB PNP NO 2m Extreme	✓ 1202142
IS M12b 4BBBCB PNP NO 2m Extreme	✓ 1202147
IS M12b 4CBBCB PNP NO 2m Extreme	✓ 1202157

Features/Options
- Cold-resistant down to -40 °C or heat-resistant up to +120 °C
- High degree of protection IP 68
- Stainless steel enclosure
- Flush mounting
- Long life, no mechanical wear
- Suitable for the food processing industry
- Insensitive to soiling
- With LED
- Enclosure diameter M18 x 1

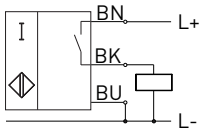
// IS M18 EXTREME



Technical data

Standards	EN 60947-5-2
Enclosure	Stainless steel A1, 1.4305
Front cap	Kepital F25 POM
Back cap	Lexan 923/A
Connection	cable, PUR (Ø max. 4.1 mm), length 2 m
Cable cross-section	3 x 0.25 mm²
Degree of protection	IP 68 to IEC/EN 60529
Switching elements	1 NO contact, PNP, 3-wire
Switching distance s_n	5 or 8 mm
Correction factors	steel (Fe 360): 1, stainless steel: approx. 0.7, brass: approx. 0.5, copper: approx. 0.4, aluminium: approx. 0.4
Rated operating voltage range U_B	10 ... 30 VDC
Residual ripple	≤ 10 %
Switching current	200 mA
Voltage drop	< 1.8 V
Current absorption at 24 VDC	< 15 mA
Hysteresis	< 10 %
Switching frequency	1000 Hz or 400 Hz
Repeatability	≤ 3 %
Protection circuit	Inductive interference protection, protection against polarity reversal, short-circuit and overload proof
Ambient temperature	-40 °C ... +50 °C; 0°C ... +120°C

Contact variants: switch travel/contacts

	3-wire
1 NO contact	**Ex IS M18 b ...** 

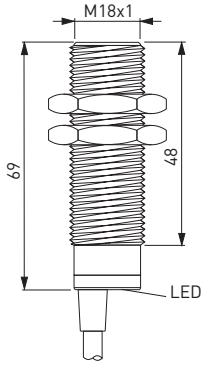
Type code

	IS	M18	b	5	B	B	B	C	B	PNP	NO	2m	Extreme

- Cable length 2 m
- NO function
- PNP output
- PUR cable (A PVC cable)
- 3 wire DC (A 2 wire)
- stainless steel enclosure (A brass, nickeled)
- degree of protection IP68 (A IP 67, C IP 69K)
- ambient temperature -40 ... +50 °C (C 0 ... +120 °C)
- 5 mm switching distance
- b flush
- Enclosure diameter M12
- Inductive sensor

✓ in stock

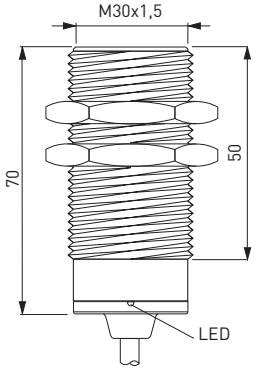
// IS M18 B EXTREME



Inductive sensor	Material Number
IS M18b 5BBBCB PNP NO 2m Extreme	✓ 1202185
IS M18b 5CBBCB PNP NO 2m Extreme	✓ 1202187
IS M18b 8BBBCB PNP NO 2m Extreme	✓ 1202189
IS M18b 8CBBCB PNP NO 2m Extreme	✓ 1202191

Features/Options
- Cold-resistant down to -40 °C or heat-resistant up to +120 °C
- High degree of protection IP 68
- Stainless steel enclosure
- Flush mounting
- Long life, no mechanical wear
- Suitable for the food processing industry
- Insensitive to soiling
- With LED
- Enclosure diameter M30 x 1.5

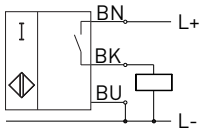
// IS M30 EXTREME



Technical data

Standards	EN 60947-5-2
Enclosure	Stainless steel A1, 1.4305
Front cap	Lexan 923/A
Back cap	Lexan 923/A
Connection	cable, PUR (Ø max. 4,6 mm), length 2 m
Cable cross-section	3 x 0.35 mm²
Degree of protection	IP 68 to IEC/EN 60529
Switching elements	1 NO contact, PNP, 3-wire
Switching distance s_n	10 mm
Correction factors	steel (Fe 360): 1, stainless steel: approx. 0.7, brass: approx. 0.5, copper: approx. 0.4, aluminium: approx. 0.4
Rated operating voltage range U_B	10 ... 30 VDC
Residual ripple	≤ 10 %
Switching current	200 mA
Voltage drop	< 1.8 V
Current absorption at 24 VDC	< 15 mA
Hysteresis	< 10 %
Switching frequency	300 Hz
Repeatability	≤ 3 %
Protection circuit	Inductive interference protection, protection against polarity reversal, short-circuit and overload proof
Ambient temperature	-40 °C ... +50 °C; 0°C ... +120°C

Contact variants: switch travel/contacts

	3-wire
1 NO contact	**Ex IS M30 b ...** 

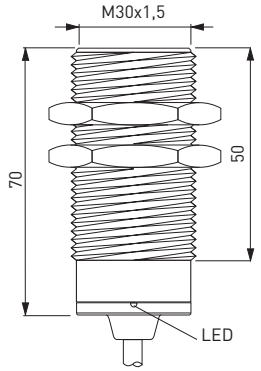
Type code

IS M30 b 10 B B B C B PNP NO 2m Extreme

- Cable length 2 m
- NO function
- PNP output
- PUR cable (A PVC cable)
- 3 wire DC (A 2 wire)
- stainless steel enclosure (A brass, nickeled)
- degree of protection IP68 (A IP 67, C IP 69K)
- ambient temperature -40 ... +50 °C (C 0 ... +120 °C)
- 10 mm switching distance
- b flush
- Enclosure diameter M12
- Inductive sensor

✓ in stock

// IS M30 B EXTREME



Inductive sensor	Material Number
IS M30b 10BBBCB PNP NO 2m Extreme	✓ 1202198
IS M30b 10CBBCB PNP NO 2m Extreme	✓ 1202200

PRODUCTION PROCESS
MOULDING OF SENSORS

LEGEND

	A/F
	Double insulated
	Positive break NC contact
	Positive break travel/angle
	Latching point
	Wire breakage detection
	Wire pull detection
	Actuated
	Not actuated
	Type examination-tested
	Approval for Russia
	CSA/UL approval, Canada
	Directive-compliance, see Declaration of Conformity
I_e	Rated operating current
I_{the}	Thermal test current
U_e	Rated operating voltage
U_i	Rated insulation voltage
U_{imp}	Rated impulse withstand voltage
s_{ao}	Assured operation distance
s_{ar}	Assured release distance
s_n	Nominal distance

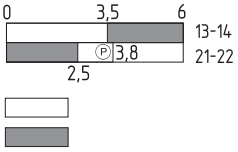


Image sources:
Fotostudio Udo Kowalski, Wuppertal
www.fotodesignkowalski.com
www.fotolia.de
www.istockphoto.com

steute develops and manufactures safe switchgear for demanding and critical application. Besides a comprehensive standard range of products for »Wireless, Automation, Extreme and Meditec« applications, we also and increasingly develop customised switchgear in all four business fields. Some examples: emergency pullwire switches for the mining industry, position switches for industrial automation and con-trol panels for laser surgery. Our head office is in Löhne, Westphalia, Germany; worldwide sales are conducted through steute's subsidiaries and trading partners.

steute
Schaltgeräte GmbH & Co. KG
Brückenstraße 91
32584 Löhne, Deutschland/Germany
Telefon/Phone + 49 (0) 57 31 7 45-0
Telefax/Fax + 49 (0) 57 31 7 45-200
info@steute.com
www.steute.com

07.2017