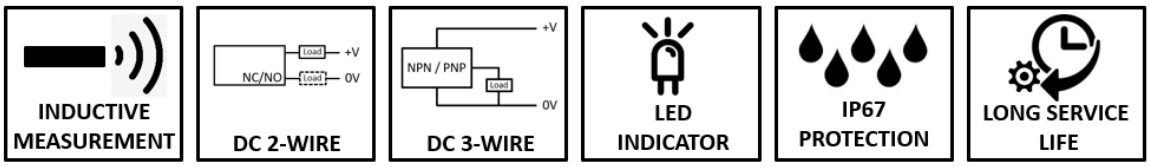
PROXIMITY SENSOR

IPS 100 Series

"Inductive Sensing, For Automation Industry"



- Non–contact detection of ferrous metal objects by inductive principle
- Ø8, Ø12, Ø18 or Ø30 mm models
- DC 2–wire or 3–wire
- Non–flush
- High sensivity, fast feedback
- LED status indicator
- IP67 protection class
- Long service life

IPS series inductive proximity sensors are used to detect ferrous metal objects. These sensors basically contain oscillators for sensing. A magnetic field is created in front of the oscillator windings. When a metal object enters this magnetic field, the oscillations stop and detection takes place. Thus, the output is driven and NO (normally) or NC (normally closed) output signal is generated depending on the sensor type.

APPLICATIONS

In the automation industry;

- Position monitoring of machine parts
- Counting metal objects

TECHNICAL FEATURES

Model (Non-flush Type)		IPS 108 Ø8	IPS 112 Ø12	IPS 118 Ø18	IPS 130 Ø30
Sensing and Setting Distance	Sensing Distance (Sd)	0…2 mm	0…4 mm	0…8 mm	0…15 mm
	Setting Distance	0…1.4 mm	0…2.8 mm	0…5.6 mm	0…11 mm
Standard Sensing Target		8x8x1	12x12x1	25x25x1	45x45x1
Sensing Object		Ferrous metal			
Hystresis		10% of Sensing distance (Sd) max.			
Supply Voltage		10…30VDC(reverse polarity protection)			
Current Consumption	3-wire (PNP/NPN)	≤15 mA			
Leakage current, open state	2-wire	≤1 mA			
Switching capacity	3-wire	≤200mA with overload and short-circuit protection			
	2-wire	1.5 …200 mA with overload and short-circuit protection			
Voltage drop, closed state	3-wire	≤1,5 V			
	2-wire	≤3,5 V			
Internal Pull Up / Pull-Down Resistance	3-wire	22K			
Response Frequency (1)	3-wire	2 kHz			
	2-wire	1 kHz			
First-up delay	3-wire	20 ms			
	2-wire	20 ms			
Electrical Connection		3 x 0.14mm^2 PVC cable (Ø4,5 ±0,10 mm) or M12 connector			
Status Indicator	If there is a target	Blue			
	If there is no target	Yellow			
Protection		IP67			
Operating Temperature		-20…+70°C			
Storage Temperature		-30…+70°C			
Material	Case	Nickel plated brass			
	Cable	PVC			

(1) The response frequency specified here is the average value. The standard detection target is used and the width is set to 2 times the standard detection target, and the distance is 1/2 of the detection distance.

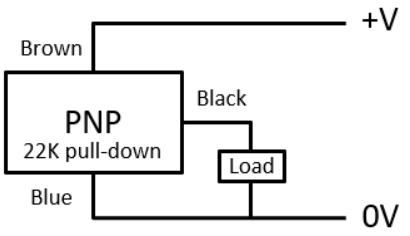
ELECTRICAL CONNECTION AND OUTPUT DIAGRAM

3-WIRE

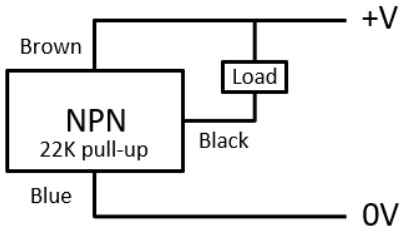
SIGNAL	M12 4 PIN MALE CONNECTOR		CABLE COLOR
	S95 (Standard)	S12	
+V	Pin 1	Pin 2	Brown
N/C	Pin 2	Pin 4	N/C
0V	Pin 3	Pin 1	Blue
Control output	Pin 4	Pin 3	Black

		NO (Normally Open)	NC (Normally Closed)
Sensing Target		Presence / Nothing	Presence / Nothing
Load Current		Presence / Nothing	Presence / Nothing
Output Voltage	NPN Output	H / L	H / L
	PNP Output	H / L	H / L
Status Indicator (Blue)		ON / OFF	ON / OFF
Status Indicator (Yellow)		ON / OFF	ON / OFF

PNP NO or NC



NPN NO or NC

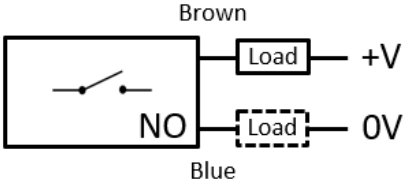


2-WIRE

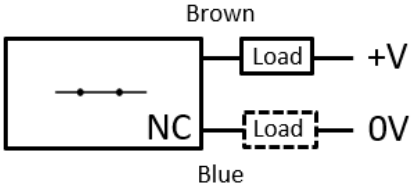
SIGNAL	M12 4 PIN MALE CONNECTOR			CABLE COLOR
	S250 (Standard)		S245	
	NO	NC	NO / NC	
+V	Pin 1	Pin 1	Pin 4	Brown
N/C	Pin 2	Pin 3	Pin 1	N/C
N/C	Pin 3	Pin 4	Pin 2	N/C
0V	Pin 4	Pin 2	Pin 3	Blue

	NO (Normally Open)	NC (Normally Closed)
Sensing Target	Presence / Nothing	Presence / Nothing
Load	Presence / Nothing	Presence / Nothing
Status Indicator (Red)	ON / OFF	ON / OFF

2 WIRE –NO



2 WIRE –NC

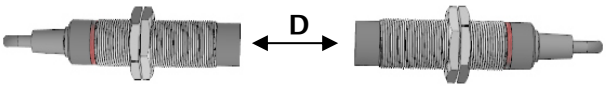


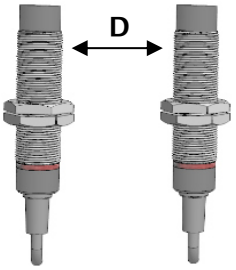
*The load can be connected to any direction.

MOUNTING

Mutual–Interference

When multiple proximity sensors are mounted close together, it may cause malfunction due to mutual interference.
Therefore, attention should be paid to the mounting of the sensors in accordance with the minimum distances specified in the tables below.



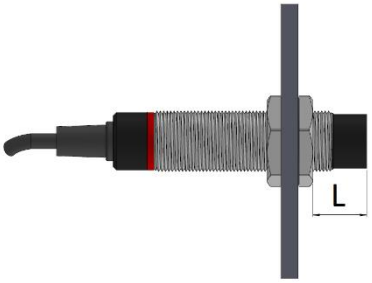


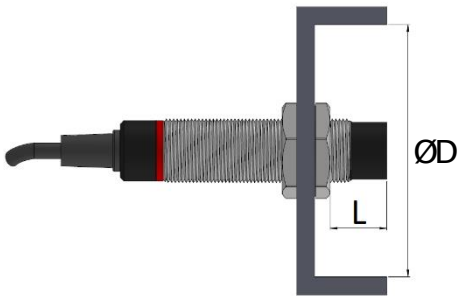
	Face to Face Mounting (mm)
	Non–flush
Ø8	D ≥12
Ø12	D ≥24
Ø18	D ≥48
Ø30	D ≥90

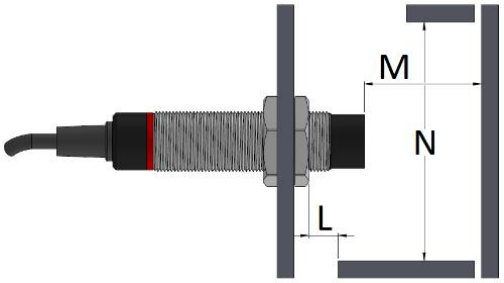
	Parallel Mounting (mm)
	Non–flush
Ø8	D ≥24
Ø12	D ≥36
Ø18	D ≥54
Ø30	D ≥90

Influence By Surrounding Metals

When sensors are mounted on a metal panel, the sensor must be prevented from being affected by any metal object other than the target. Therefore, attention should be paid to the mounting of the sensors in accordance with the minimum distances specified in the tables below.





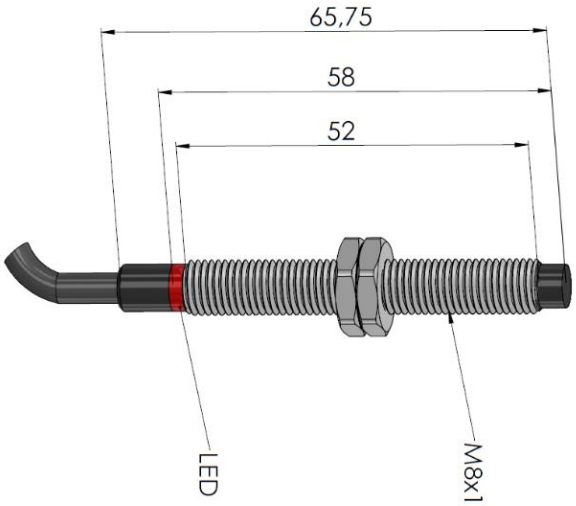


	Mounting against metal objects (mm)			
	L ≥	ØD ≥	M ≥	N ≥
Ø8	8	24	6	24
Ø12	11	36	12	36
Ø18	14	54	24	54
Ø30	15	90	45	90

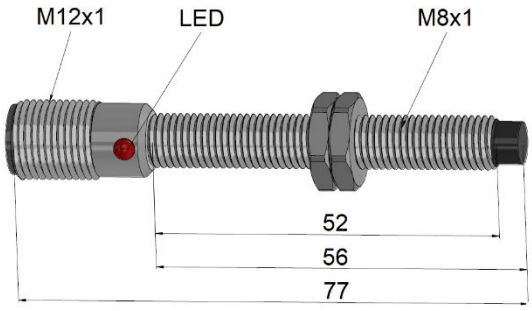
DIMENSIONS (mm)

Ø8

–With Cable–

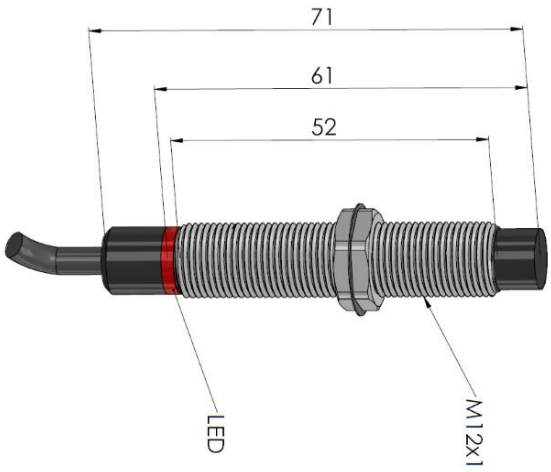


–With M12 Connector–

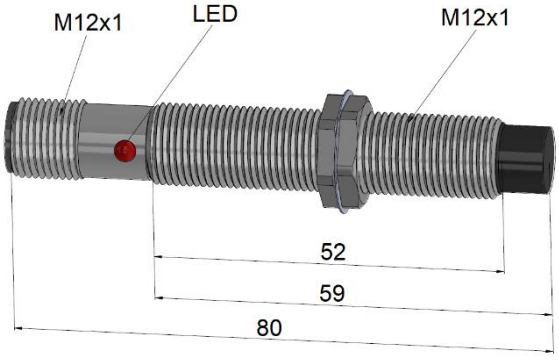


Ø12

–With Cable–

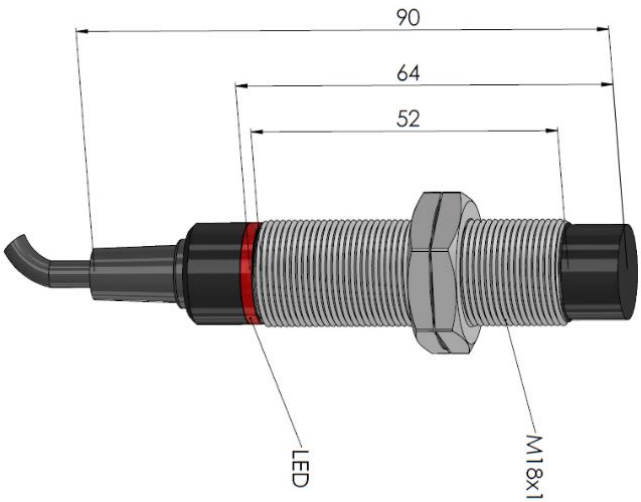


–With M12 Connector–

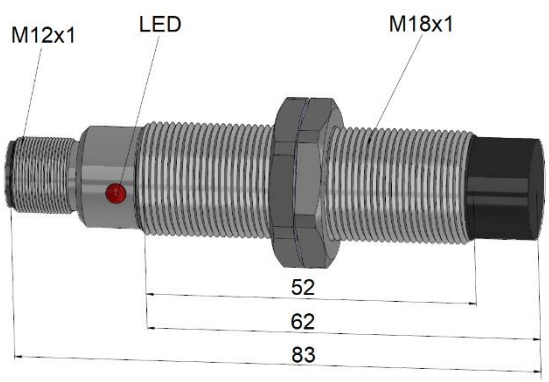


Ø18

–With Cable–

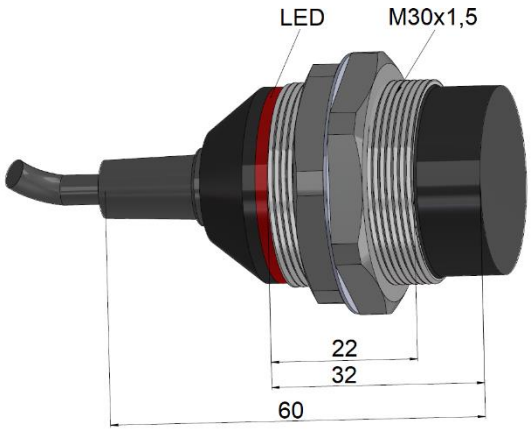


–With M12 Connector–

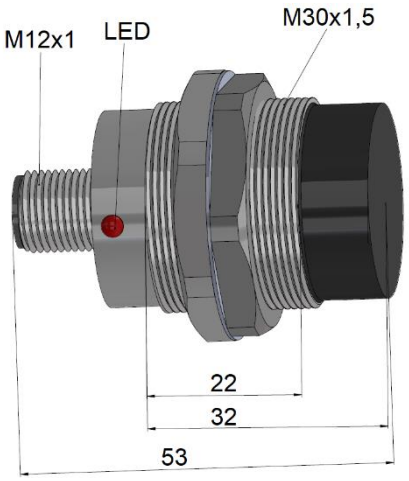


Ø30

–With Cable–



–With M12 Connector–



ORDER CODE

Model

108: Ø8 mm
112: Ø12 mm
118: Ø18 mm
130: Ø30 mm

Switching Function

NC : Normally Closed
NO: Normally Open

Electrical Connection

2–wire:
2M : 2m cable (std)
S250: M12/4 pin male conn. (std)
S245: M12/4 pin male conn.

3–wire:
2M : 2m cable (std)
S95: M12/4 pin male conn. (std)
S12: M12/4 pin male conn.

*Optional others

IPS 1XX	-	XXX	-	XX	-	XX	-	XX

Output / Conn. type

2W : DC 2–wire
PNP : DC 3–wire PNP
NPN : DC 3–wire NPN

Mounting Type

NF : Non–Flush