

## Slot Type Inductive Sensors

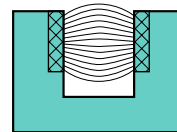
P+F slot sensors are available in a wide variety of sizes and slot widths. They have a relatively straight switching axis between the coils and are particularly suited for applications requiring high speed and repeatability. The smallest models feature high switching frequencies, ideal for "vane monitoring" in flow meters. Larger versions provide accurate position feedback in elevator floor/carriage leveling, edge detection and sheet feed applications.

Slot sensors are designed to meet IP67 ratings and are protected against shock, vibration, and contamination. We offer 3- and 4-wire DC models, 2-wire AC and NAMUR output style sensor. All are CE and UL listed. See our NAMUR product section for available slot sensors with NAMUR outputs.

### Product Features

- Reliable, highly repeatable
- Short circuit & overload protection
- Reverse polarity protection
- CE and cULus listed

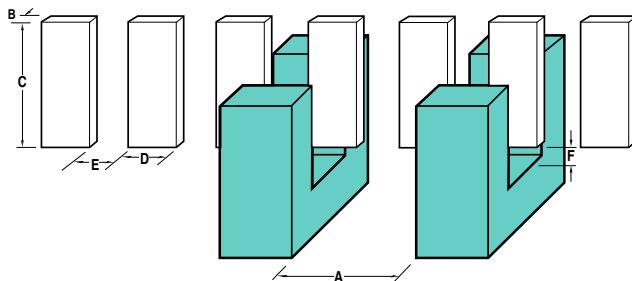
The electromagnetic field is concentrated between the two sides of the slot. The sensor is activated when metal is placed into the space between the sides. The minimum insertion depth from the top and/or the side is approximately 60%.



P+F inductive slot type sensors are available with slot widths from 2 mm to 30 mm. These slot sensors have a relatively straight switching axis between the two coils and are particularly suited for applications requiring high repeatability.

The SJ2 contains a locking mechanism that limits the movement of the target, a useful feature for applications requiring restricted needle movement in measuring devices.

Use the following diagram and table to determine the recommended spacing between sensors.



### Recommended Values When Using P+F Slot Sensors

Models	Minimum Spacing A	Target Width B	Target Height C	Target Length D	Target Spacing E	Target Clearance F
SJ2	0	0.2	7	4.9	1.2	1.5
SJ3.5	0	0.2	11	4.0	2.0	2.0
SJ5	10	0.2	11	5.0	3.0	2.0
SJ5-K	20	0.2	17	9.0	6.0	2.0
SJ10	25	0.5	28	15.0	8.0	3.0
SJ15	30	0.5	33	18.0	12.0	3.0
SJ30	60	0.5	50	27.0	18.0	3.0

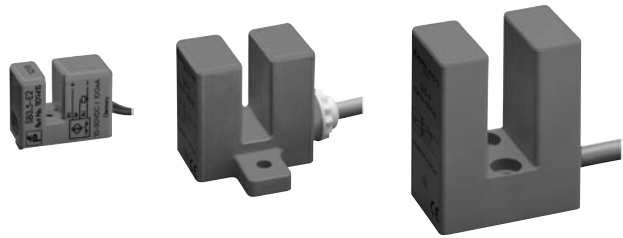
All values given in mm. All values indicate ferrous target.

# Slot Type Inductive Sensors


- 3.5 to 15 mm slot widths
- 3-wire DC and 2-wire AC models
- Available with NAMUR outputs (see NAMUR section)





See pages  
865-872 for  
accessories



## 3-Wire DC Technical Specifications

SUPPLY VOLTAGE	10-30 VDC
LOAD CURRENT (I <sub>L</sub> )	<i>SB3.5</i> 100 mA max. <i>All Other Models</i> 200 mA max.
LEAKAGE CURRENT (OFF-STATE)	≤ 0.5 mA
OUTPUT	<i>Suffix E</i> NPN normally open <i>Suffix E2</i> PNP normally open
VOLTAGE DROP AT I <sub>L</sub> (MAX.)	≤ 3 VDC
SHORT CIRCUIT AND OVERLOAD PROTECTION	Yes
REVERSE POLARITY PROTECTED	Yes
LED INDICATION	See dimension drawings
HOUSING MATERIAL	PBT
STANDARDS	EN 60947-5-2
ENVIRONMENTAL PROTECTION	IP67
AMBIENT TEMPERATURE	-13 °F to +158 °F (-25 °C to +70 °C)
APPROVALS	CE 

## 2-Wire AC Technical Specifications

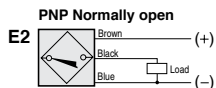
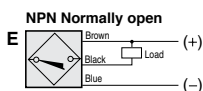
SUPPLY VOLTAGE	20-250 VAC
LOAD CURRENT (I <sub>L</sub> )	500mA max.
LEAKAGE CURRENT (OFF-STATE)	≤ 1.7 mA
OUTPUT	<i>Suffix WS</i> Normally open <i>Suffix WO</i> Normally closed
VOLTAGE DROP AT I <sub>L</sub> (MAX.)	< 7 V
SHORT CIRCUIT AND OVERLOAD PROTECTION	No
REVERSE POLARITY PROTECTED	No
LED INDICATION	See dimension drawings
HOUSING MATERIAL	PBT
STANDARDS	EN 60947-5-2
ENVIRONMENTAL PROTECTION	IP67
AMBIENT TEMPERATURE	-13 °F to +158 °F (-25 °C to +70 °C)
APPROVALS	CE  

## Wiring Diagrams

### 3-Wire DC



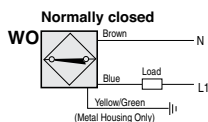
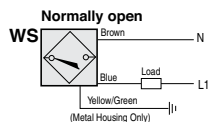
#### Cable Connection



### 2-Wire AC



#### Cable Connection



### Slot Type Sensors

#### 3-Wire DC Cable Models

Model Number	Slot Width (mm)	Electrical Output	Switching Frequency	Housing Material	Cable Jacket/Size	Dwg. No.
SB3.5-E2	3.5	PNP normally open	2 kHz	PBT	0.45-meter wire/26 AWG	1
SJ10-E	10	NPN normally open	1 kHz	PBT	2-meter PVC/18 AWG	2
SJ10-E2	10	PNP normally open	1 kHz	PBT	2-meter PVC/18 AWG	2
SJ15-E	15	NPN normally open	500 Hz	PBT	2-meter PVC/18 AWG	3
SJ15-E2	15	PNP normally open	500 Hz	PBT	2-meter PVC/18 AWG	3

#### 2-Wire AC Cable Models

Model Number	Slot Width (mm)	Electrical Output	Switching Frequency	Housing Material	Cable Jacket/Size	Dwg. No.
SJ15-WS	15	Normally open	25 Hz	PBT	2-meter PVC/18 AWG	4
SJ15-WO	15	Normally closed	25 Hz	PBT	2-meter PVC/18 AWG	4

- ⚡ Stocked item
- Typical delivery 4 weeks or less  
Consult factory for all other models

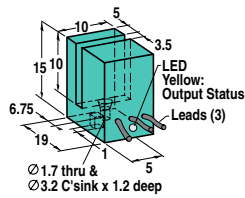


Inductive Slot Type

3-Wire DC and 2-Wire AC

Drawing No. 1

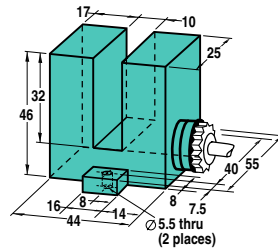
SB3.5-E2 [PNP N.O.]



3.5 mm Slot Width

Drawing No. 2

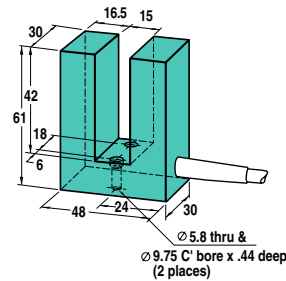
SJ10-E [NPN N.O.]  
SJ10-E2 [PNP N.O.]



10 mm Slot Width

Drawing No. 3

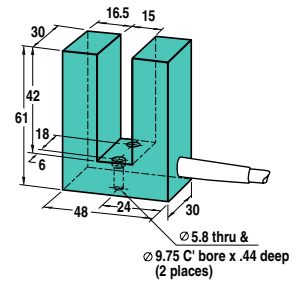
SJ15-E [NPN N.O.]  
SJ15-E2 [PNP N.O.]



15 mm Slot Width

Drawing No. 4

SJ15-WS [N.O.]  
SJ15-WO [N.C.]



15 mm Slot Width

See the NAMUR section on pages 257-280 for more slot sensors.