PY Series Ø3 & M4 DC Proximity Sensors

Miniature Inductive Proximity Sensors: Ø3 (3mm) and M4 (4mm) – DC

- Smallest self-contained inductive proximity sensors available on the market
- Four models available
- Complete overload protection
- IP67 protection degree

PY Series Ø3 & M4 DC Inductive Prox Selection Chart

Part Number	Size	Sensing Range	Housing	Output State*	Logic	Connection	Dimensions
PY3-AN-1A	Ø3*	0.6mm (0.024in)	Shielded	N.O.	NPN	2m (6.5′) axial cable	Figure 1
PY3-AP-1A	Ø3*				PNP	2m (6.5′) axial cable	Figure 1
PY4-AN-1A	4mm				NPN	2m (6.5′) axial cable	Figure 2
PY4-AP-1A	4mm				PNP	2m (6.5′) axial cable	Figure 2

**smooth barrell (no threads)*

Specifications	Ø3	M4
Type	Shielded	
(Sn) Nominal Sensing Distance	0.6mm (0.024in)	
Material Correction Factors (see Glossary)	Table 1	
Differential Travel	≤10%	
Repeat Accuracy	≤5%	
Operating Voltage	10-30VDC	
Ripple	≤20%	
No-load Supply Current	≤10mA	
Load Current	≤100mA	
Leakage Current	≤10µA	
Voltage Drop	≤2.0 V	
Output Type	NPN or PNP/N.O. only/three wire	
Switching Frequency	5KHz	
(tv) Time Delay Before Availability	10ms	
Input Voltage Transient Protection	Up to 30VDC	
Input Power Polarity Reversal Protection	Yes	
Output Power Short-Circuit Protection	Yes (switch autoresets after overload is removed)	
Temperature Range	-25° to +70° C (-13° to 158° F)	
Temperature Drift	10% Sr	
Protection Degree (DIN 40 050)	IEC IP67	
LED Indicators	Yellow (output energized)	
Housing Material	Stainless steel	Nickel-plated brass
Sensing Face Material	Polyester	
Tightening Torque	0.8Nm (7.08in-lbs)	
Weight	23g (0.81 oz)	

Dimensions

Figure 1

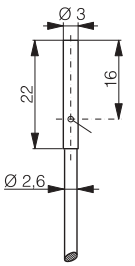
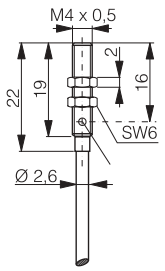
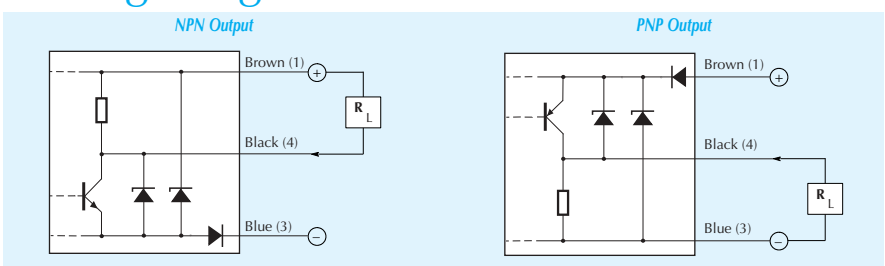


Figure 2



Wiring Diagrams



Material Influence

The nominal sensing distance **S(n)** is defined using precisely defined measuring conditions (see **Operating Distance**). Other conditions may result in a reduction of the operating distance. The tables below show the influence different target materials have on the operating distances of the sensors.

Material Influence: Table 1

Target Material	*Operating distance*
Steel type FE 360	S(n) x 1.00
Brass	S(n) x 0.64
Aluminum	S(n) x 0.55
Copper	S(n) x 0.51
Stainless steel (V2A)	S(n) x 0.85

When using foils, an **increase** in the usable operating distance can be expected.

Material Influence: Table 2

Target Material	*Operating distance*
Steel type FE 360	S(n) x 1.00
Brass	S(n) x 0.44
Aluminum	S(n) x 0.36
Copper	S(n) x 0.32
Stainless steel (V2A)	S(n) x 0.69

When using foils, an **increase** in the usable operating distance can be expected.

Material Influence: Table 3

Target Material	*Operating distance*
Steel type FE 360	S(n) x 1.00
Brass	S(n) x 1.00
Aluminum	S(n) x 1.30
Copper	S(n) x 0.89
SS (1mm thick)	S(n) x 0.57
SS (2mm thick)	S(n) x 0.90

When using foils, a **decrease** in the usable operating distance can be expected.