

# Amplifier-Relayed Compact Proximity Switches

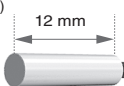

**APT Series**

Very compact amplifier is almost the same size as the cable.



- **Ultra-compact switch head**  
Cylindrical type: 3 mm dia. x 12 mm
- **Amplifier is almost the same size as the cable,**  
4 mm dia x 31 mm
- **Cable between switch head and amplifier**  
is made to bend, optimum for use in high-speed equipment



## ORDER GUIDE

Switch head shape	Sensing distance	Catalog listing	Output type	Operation mode
(3 mm dia.) 	 0.5 mm	<b>APT-N01J</b>	DC2-wire	NO
		<b>APT-N01K</b>		NC

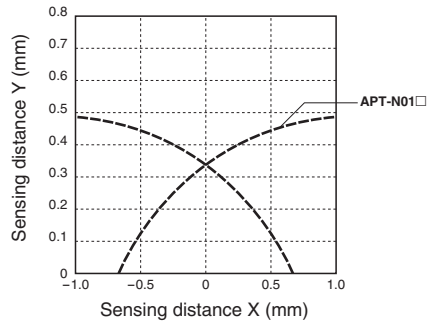
## SPECIFICATIONS

Sensing head shape	3 mm dia	
Catalog listing	<b>APT-N01J</b>	<b>APT-N01K</b>
Actuation method	High-frequency oscillation	
Rated supply voltage	12/24 Vdc	
Operating voltage range	10 to 30 Vdc	
Leakage current	0.8 mA max. (24 Vdc)	
Rated sensing distance	0.5±15% mm	
Standard target object	5x5x1 mm(SPCC)	
Differential travel	15% max. of sensing distance	
Operation mode	N.O. (normally open)	N.C. (normally closed)
Output mode	DC 2-wire type, transistor output	
Control output	Switching current 3 to 50 mA, voltage drop 3.0V max. (at switching current 50 mA, cable 1 m), output dielectric strength 30 Vdc	
Operating frequency	1000 Hz min.	
Temperature characteristics	±20% max. of the sensing distance for the -25 to +70° range when 25° is taken as standard temperature.	
Indicator lamps	Lights (orange) during output	
Operating temperature range	-25 to +70°C	
Insulation resistance	50 MΩ min. (at 500 Vdc)	
Dielectric strength	1000 Vac 50/60 Hz for 1 minute between case and electrically live metal	
Vibration resistance	10 to 55 Hz, 1.5 mm peak-to-peak amplitude, 2 hrs each in X, Y and Z directions	
Shock resistance	500 m/s <sup>2</sup> 3 times each in X, Y and Z directions	
Protection	IP66 (IEC standard)	
Allowable bend-radius(shielded wire and cable)	R30	
Weight	Approx. 11 g (with 1 m cable)	
Circuit protection	Reverse connection protection, surge absorption, load short-circuit protection	

## MOUNTING BRACKET (sold separately)

Name	Appearance	Catalog listing
Relay amplifier mounting bracket (resin type)		APT-PA07
Relay amplifier mounting bracket (metal type)		APT-PA06

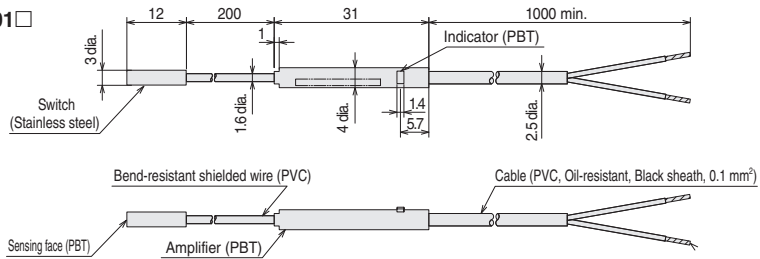
## SENSING AREA DIAGRAMS (typical examples)



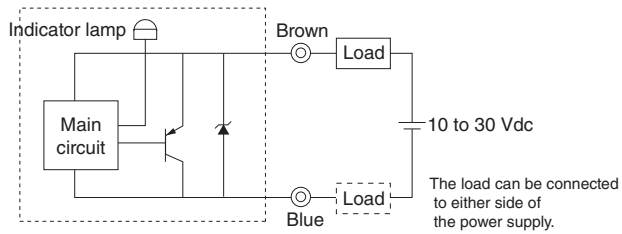
## EXTERNAL DIMENSIONS

(unit: mm)

APT-N01□



## WIRING DIAGRAM



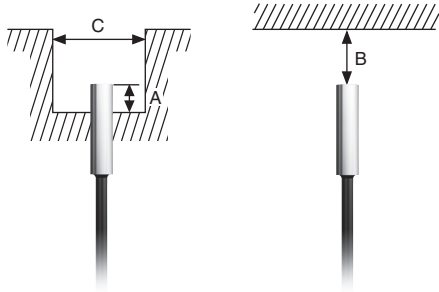
## PRECAUTIONS FOR USE

### 1. Influence of surrounding metal

Metal other than the target object surrounding the switch may influence operating characteristics. Leave space between the switch and surrounding metal as shown below.

Shaded areas indicate surrounding metal other than the target object.

APT-N01



Shaded areas indicate surrounding metal other than the target object.

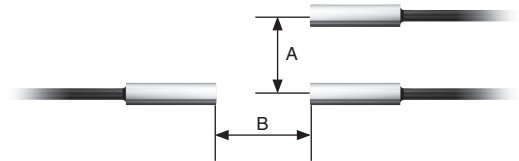
Catalog listing	A(mm)	B(mm)	C(mm)
APT-N01□	0	2.4	5 dia.

### 2. Mutual interference prevention

When mounting proximity switches either parallel to or facing each other, mutual interference may cause the switch to malfunction. Maintain at least the distances indicated in the figures below.

When using standard frequency switches and different frequency switches in an alternate arrangement, maintain at least the distance indicated in parentheses ( ) for both dimensions A and B.

APT-N01



Catalog listing	A(mm)	B(mm)
APT-N01□	11	12(2)

Before use, thoroughly read the "Precautions for use" and "Precautions for handling" in the Technical Guide on pages C-107 to C-113 as well as the instruction manual and product specification for this switch.