



# Photo Electric Switch

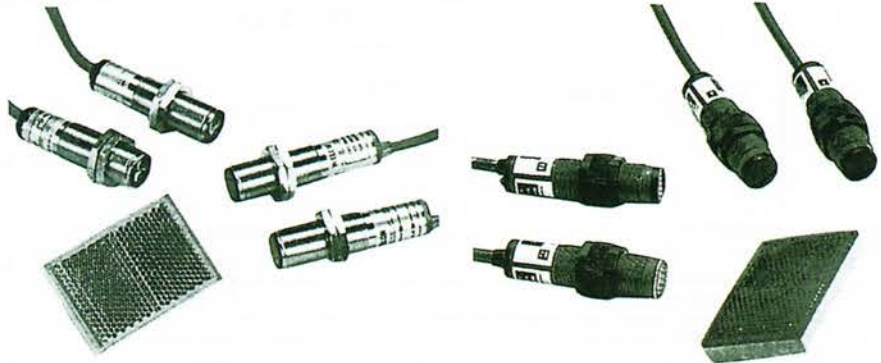
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<p>■ <b>LIGHT INCIDENT:</b></p> <ul style="list-style-type: none"> <li>Refers to the condition when light from an emitter is incident upon, or reaching, the receiver.</li> </ul>	<p>■ <b>LIGHT INTERRUPTED:</b></p> <ul style="list-style-type: none"> <li>Refers to the condition when light from an emitter is not incident</li> </ul>
<p>■ <b>LIGHT SOURCE:</b></p> <ul style="list-style-type: none"> <li>Identifies the source and type of light used in the emitter portion of the device. Typically either a pulse modulated LED or incandescent bulb. May provide infrared, red, green or white light.</li> </ul>	<p>■ <b>RECEIVER:</b></p> <ul style="list-style-type: none"> <li>The section of the photoelectric sensor that contains a photosensor and usually a lens.</li> </ul>
<p>■ <b>SENSING DISTANCE:</b></p> <ul style="list-style-type: none"> <li>The nominal maximum distance at which a photoelectric sensor can detect a standard target.</li> </ul>	<p>■ <b>DETECTABLE OBJECT:</b></p> <ul style="list-style-type: none"> <li>Identifies the required light transmission properties and minimum size dimensions of the object to be detected.</li> </ul>
<p>■ <b>REVERSE POLARITY PROTECTION:</b></p> <ul style="list-style-type: none"> <li>Internal circuitry that prevents damage to a device in the event that proper polarity is not maintained when making connections to the plus and minus terminals of the device.</li> </ul>	<p>■ <b>SHORT-CIRCUIT PROTECTION:</b></p> <ul style="list-style-type: none"> <li>Internal circuitry that prevents damage to a device in the event that the load attached to the output of the device becomes shorted.</li> </ul>
<p>■ <b>DIFFUSE REFLECTIVE:</b></p> <ul style="list-style-type: none"> <li>Detection method with emitter (light source) and receiver in a common housing. Light from the emitter is aimed at the target and reflected by the target back to the receiver.</li> </ul>	<p>■ <b>THRU-BEAM:</b></p> <ul style="list-style-type: none"> <li>Detection method with emitter (light source) and receiver in separate housings. The emitter is aimed at the receiver, and the object being detected passes between the two.</li> </ul>
<p>■ <b>RETROREFLECTIVE:</b></p> <ul style="list-style-type: none"> <li>Detection method with emitter (light source) and receiver in a common housing. Light from the emitter is aimed at a retroreflective target and reflected back to the receiver. The object being detected passes between the emitter/receiver housing and the retroreflective target (reflector).</li> </ul>	<p>■ <b>DIFFERENTIAL TRAVEL:</b></p> <ul style="list-style-type: none"> <li>Also called "hysteresis", differential travel is the property of the sensor that results in the operate point being different from the release point. Typically expressed in % of detecting distance. It identifies the distance between the operate point, resulting from the target approaching the device, and the release point, resulting from the same target moving away from the device.</li> </ul>
<p>■ <b>LIGHT-ON OPERATION: (入光動作)</b></p> <ul style="list-style-type: none"> <li>A control output mode that will result in the output switching device turning on when light from the emitter is incident upon the receiver.</li> </ul>	<p>■ <b>DARK-ON OPERATION:</b></p> <ul style="list-style-type: none"> <li>A control output mode that will result in the output switching device turning on when light from the emitter is not incident upon the receiver (the beam is interrupted).</li> </ul>
<p>■ <b>DIRECTIONAL ANGLE:</b></p> <ul style="list-style-type: none"> <li>Applies to separate and retroreflective types of photoelectric sensors and refers to the angular range within which an emitter, receiver, emitter/receiver or retroreflector can be rotated about the optical axis and still have the sensor operate. The magnitude of the directional angle is equal to twice the maximum allowable angular rotation above or below the optical axis.</li> </ul> <p>DIRECTIONAL ANGLE:</p>	<p>■ <b>DETECTING DISTANCE:</b></p> <ul style="list-style-type: none"> <li>Refers to the distance range within which the photoelectric switch can detect the detectable object. With separate and retroreflective types, the term denotes the maximum distance within which the photoelectric switch can be set stably. With the diffuse and definite reflection types, the term denotes the maximum distance within which the photoelectric switch can stably operate with the standard detectable object.</li> </ul> <p>Thru-Beam type:</p> <p>Retroreflective type:</p> <p>Diffuse reflection type:</p>

# Photo Electric Switch

## FEATURES:

- Diameter M18×1mm
- Supply voltage 12-30 Vdc
- Short circuit protected
- Conforming to IP66
- Fast response



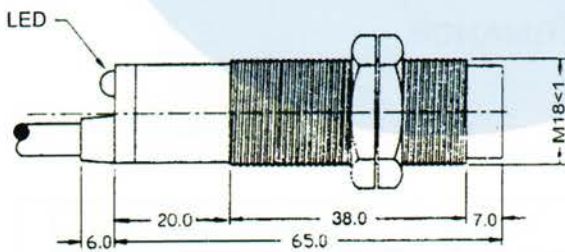
## GENERAL SPECIFICATIONS

Light Source	Infrared LED (940nm)
Detector	Photo-transistor
Operating Indicator	Red LED, Light when output energized
Sealing	Conforming to IP66 (IEC)
Extraneous Light Immunity	3000 Lux 3000
Housing Materials	Plastic Housing: ABS resin Plastic Nut: PBT Lens: Polycarbonate or PMMA Metal Housing: Brass Metal Nut: Brass
Ambient Humidity	35-85% RH
Storage Temperature	-30°C to +70°C (-22°F to 158°F)
Cable Length	2m (6.5') Three Conductor Cable
Weight	about 120g (4.3 oz.) for plastic Housing

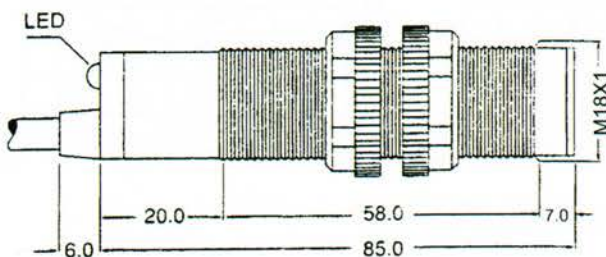
## DIMENSIONS

(unit in mm)

WE Series DC Type  
WM Series DC Type

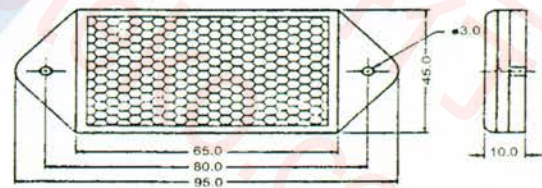


WA Series DC Type

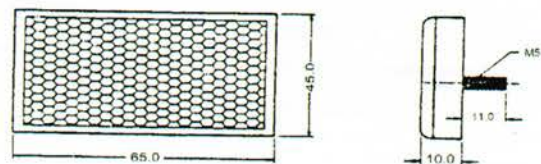


## REFLECTOR

PR-272W



PR-272S





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Operating Principle	Thru-Beam		Retro-Reflective	
Feature	<ul style="list-style-type: none"> <li>• long range detection</li> <li>• small object detectable</li> <li>• 1.2 mS response time</li> </ul>		<ul style="list-style-type: none"> <li>• one-side wiring</li> <li>• easy to align</li> <li>• fast response</li> </ul>	
Defecting distance	0-5 meter		0-2 meter (*1)	
Detecting Capability	>8mm dia. opaque		> 10-40 mm dia. opaque (*2)	
Hysteresis	N/N		N/A	
Mode of Operation	Dark ON		Dark ON	
Max. Switching Rate (Response Time)	400 Hz (1.2mS)		250 Hz (2 mS)	
Power-on Reset Time	20 mS		20mS	
Operating Voltage	12-30 Vdc			
Current Consumption	20 mA (receiver) 25 mA (transmitter)		25 mA	
Curcuit Protection	1. output short circuit 2. reverse polarity of supply voltage			
Max. Load Current	120 mA			
Output Residue Voltage	less than 1.5V (at load current = 120 mA)			
Output Circuit	(see WIRING DIAGRAM)			
	NPN	PNP	NPN	PNP
Model Item *4	WE-T3AD	WE-T4AD	WE-M3D	WE-M4D

Note: \*1 with reflector PR-272S or PR-272W, active area  $A_r = 2240 \text{ mm}^2$

\*2 refer to SENSING PERFORMANCE

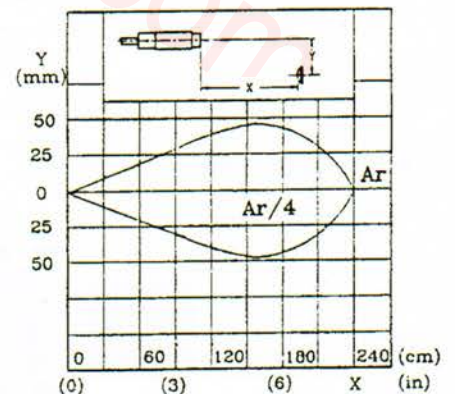
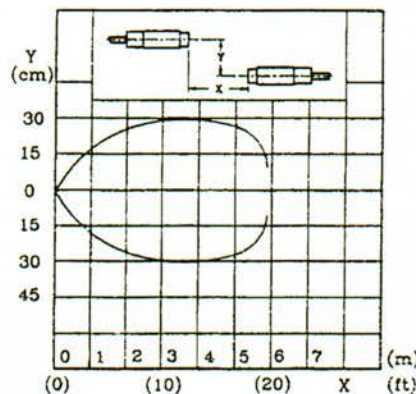
## SENSING PERFORMANCE

Thru-Beam

Retro-Reflective

measured curve

- with 50mm × 50mm white paper
- with 100mm × 100mm white paper
- non-detectable region for 200mm × 200mm white paper
- with 100mm × 100mm for aluminum foil



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Diffuse Reflective		Diffuse Reflective		Background Suppression	
<ul style="list-style-type: none"> <li>transparent material detection possible</li> <li>easy to use</li> <li>fast response</li> </ul>		<ul style="list-style-type: none"> <li>for restricted area applications</li> <li>max sensitivity range at 15-40 mm (*3)</li> </ul>		<ul style="list-style-type: none"> <li>background reflections heavily suppressed</li> <li>max sensitivity range at 18-22 mm (*3)</li> </ul>	
0-200 mm (*2)		0-80 mm (*2)		10-30 mm(*2)	
see SENSING PERFORMANCE (measured curve & non-detectable region)					
20%		N/N		N/A	
Light ON		Light ON		Light ON	
250 Hz (2 mS)		250 Hz (2 mS)		250 Hz (2 mS)	
20 mS		20 mS		2 mS	
12-30 Vdc					
25 mA		25 mA		25 mA	
1. output short circuit 2. reverse polarity of supply voltage					
120 mA					
less than 1.5 V (at load current = 120 mA)					
(see WIRING DIAGRAM)					
NPN	PNP	NPN	PNP	NPN	PNP
WE-R3AL	WE-R4AL	WE-R3BL	WE-R4BL	WE-U3L	WE-U4L

Note: \*3 max. sensitivity range is measured with 50mm × 50mm black paper.

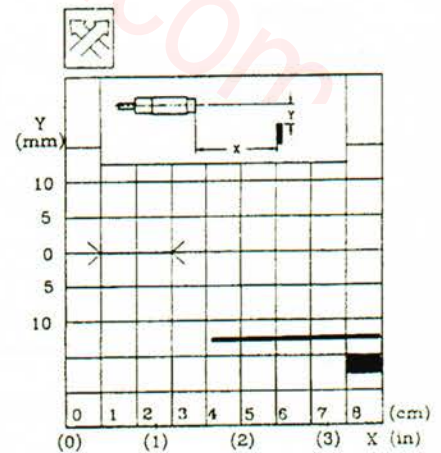
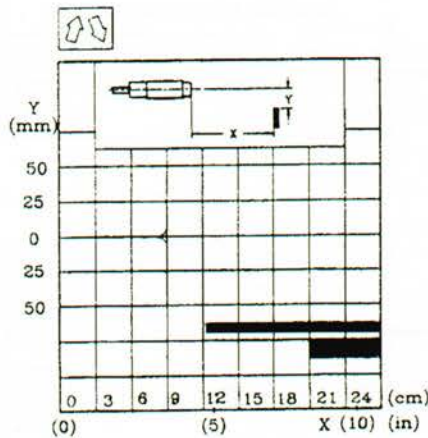
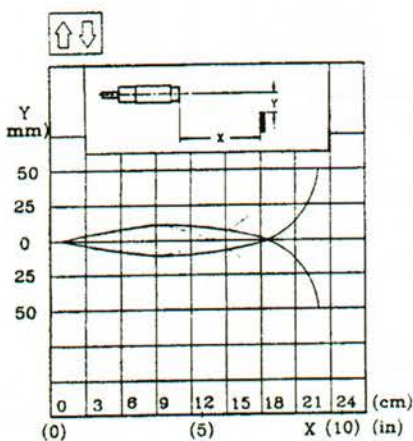
\*4 WE series: DC type, plastic housing; WM series: DC type, metal housing; WA series: AC type, plastic housing.

## SENSING PERFORMANCE

Diffuse Reflective

Diffuse Reflective

Background Suppression





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## WM SERIES: DC TYPE, METAL HOUSING

## WA SERIES: AC TYPE, PLASTIC HOUSING

MODEL ITEM	TYPE	WM Series DC Type			WA Series AC Type		
		Detecting distance	NPN Output	PNP Output	Detecting distance	AC 3 wires	AC 2 wires
Thru-Beam		10M	WM-T3AD	WM-T4AD	5M	WA-T5AD	WA-T6AD
Retro-Reflective		2.4M	WM-M3D WM-M3L	WM-M4D WM-M4L	2M	WA-M5D WA-M5L	WA-M6D WA-M6L
Diffuse Reflective		200mm	WM-R3AL	WM-R4AL	200mm	WA-R5AL	WA-R6AL
Diffuse Reflective		80mm	WM-R3BL	WM-R4BL	80mm	WA-R5BL	WA-R6BL
Background Suppression		30mm	WM-U3L	WM-U4L	30mm	WA-U5L	WA-U6L

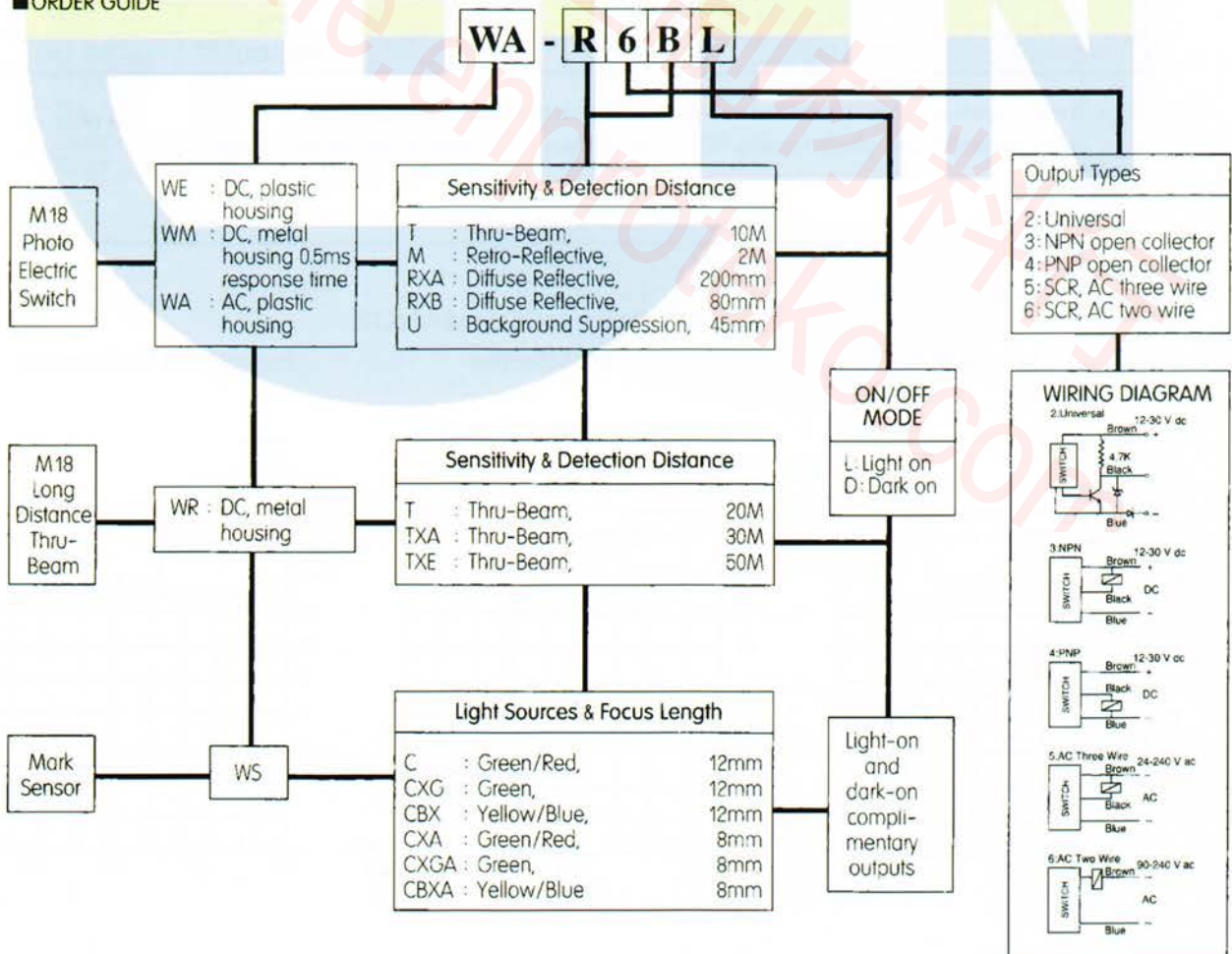
## WR SERIES LONG DISTANCE PHOTOELECTRIC SWITCH

### GENERAL SPECIFICATIONS

Operating Voltage	12-30 Vdc
Operating Principle	Thru-Beam
Response Time	10 ms
Power-on Reset time	30 ms
Max. Load Current	200 mA
Sealing	Conforming to IP66 (IEC)
Housing Material	Brass, Ni plated
Cable Length	2 meter
Circuit Protection	1. output short circuit 2. reverse polarity of supply voltage

MODEL ITEM	OUTPUT CIRCUIT	DETECTING DISTANCE	
		NPN open coll.	PNP open coll.
20 M		WR-T3D	WR-T4D
30M		WR-T3AD	WR-T4AD
50M		WR-T3ED	WR-T4ED

### ORDER GUIDE



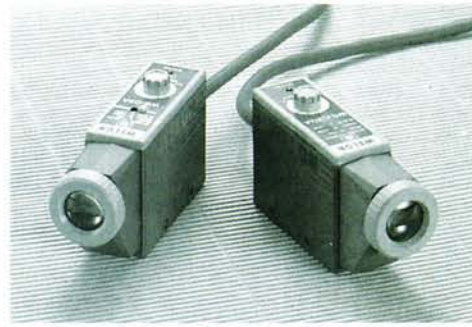


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## FEATURES:

The WS series Mark Sensors used the advanced E/O as well as double side SMT technology, thus enable this series features (1) small spot size, (2) dual light source and (3) economic price. By using the GREEN as well as RED LED as light source simultaneously, the color discrimination capability is greatly enhanced. For economic purpose, the single color model is also introduced.



World's First Mark Sensor using BLUE Light  
Germany Patent Pending No. G 94 13 251.8

## GENERAL SPECIFICATIONS

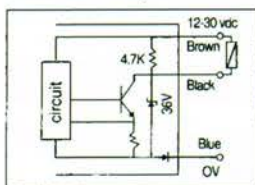
Operating Voltage	12-30 Vdc
Sensing Distance	8mm or 12mm, selectable
Current Consumption	less than 45mA
Power on Reset time	20ms
Response Time	1ms
Circuit Protection	Output short circuit reverse polarity of supply Voltage
Max. Load Current	120mA
Sealing	Conforming to IP66 (IEC)
Cable Length	2 meter, oil retardant, grey color
Wiring Diagram	brown, black, white and blue as standard. Both Light-on and Dark-on outputs included

## MODEL INTRODUCTION

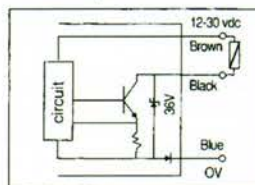
Light Source	Focus Length	Universal Output	NPN Output	PNP Output
Dual Color	Red, Green	WS-C2	WS-C3	WS-C4
	Red, Green	WS-C2A	WS-C3A	WS-C4A
Single Color	Green	WS-C2G	WS-C3G	WS-C4G
	Green	WS-C2GA	WS-C3GA	WS-C4GA
Dual Color	Blue, Yellow	WS-CB2	WS-CB3	WS-CB4
	Blue, Yellow	WS-CB2A	WS-CB3A	WS-CB4A

## OUTPUT CIRCUIT

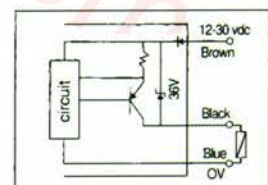
Universal Output



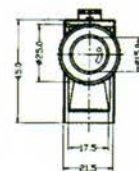
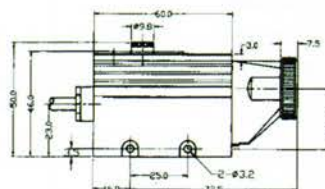
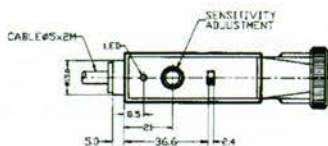
NPN Output



PNP Output



## DIMENSIONS (in mm)





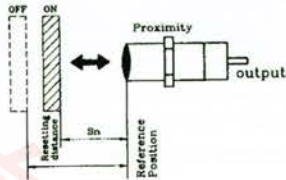
# Photo Electric Switch

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## ■ PROXIMITY SWITCH TECHNICAL SPECIFICATIONS

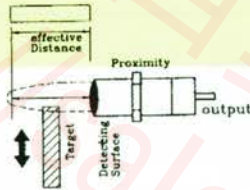
### ■ Sensing Distance: (Sn)

- "Sensing distance" refers to the distance at which the proximity switch operates (or releases) as measured, from the reference position (or reference plane) by moving the target in the specified manner.
- The item "sensing distance" under "specifications" indicates the value(s) when measured with the standard target.



### ■ Effective Distance:

- "Effective distance" refers to the distance from the sensing surface to the passing position of the target which permits the proximity switch to operate without any malfunctions due to temperature or voltage fluctuation.
- The item "effective distance" under "specifications" indicates the value(s) when measured with the standard target.



### ■ Correction Coefficient:

- Taking an electrical proximity switch as an example, the sensing distance of the electrical inductance proximity switch is shorter for a non-metal target. In this case, please refer to the following chart for correction of pick-up distance. (But the correction factor has no an absolute value).
- For example: Sensing distance of copper: S30-10N-1-P-V  
Standard sensing distance: (Sn) x 0.4  
(modulus of copper) = 10 x 0.4 = 4mm

Material	Factor approx
Mild steel	1.0
Aluminium foil	0.65
Stainless Steel	0.7
Brass	0.4
Aluminium	0.3
Copper	0.4

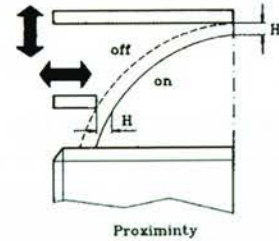


- Static capacitive proximity switch can sense almost all of the object available. However its sensing distance varies with different electrical characteristics water absorbability and the size of each object.
- When using a metal sheet or any other metal object as a target, please be sure to have them grounded, otherwise the switch will not function.
- Static capacitive proximity switch is equipped with an inductance regulator on its tail part used to effectively adjust the sensing distance.

Material	Correction Coefficient
Metal	100%
Container made of conductive metal:	100%
Container made of non-conductive metal:	80%
Dried wood	85%
Glass	40%
PVC	20%
cardboard paper	10%

### ■ Hysteresis: (H)

- Proximity switch hysteresis is the max. difference between the switch-ON point (non detection → detection) and the switch-OFF point (detection → non detection) when the target approaches and recedes from the active face (or from its axis). It is quoted in % on switch-ON point. The difference between the two switching distance is intentionally introduced to avoid undesired switching of the proximity when the target is present just within the sensing range.



### ■ Residual Voltage

- Residual voltage refers to the saturated voltage in an output crystal when the proximity switch is "ON".

### ■ Current Consumption:

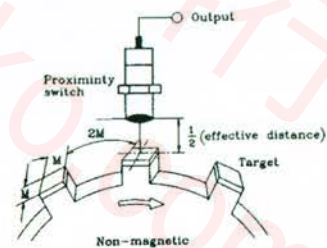
- Current consumption refers to the maximum current when, under no load condition, it is measured between the power inlet terminal and the output terminal.

### ■ Leakage Current:

- "Leakage current" refers to the measured current when the output stage switching element of the AC switching type proximity switch in the OFF state.

### ■ Switching Frequency: (f)

- "Response frequency" refers to the frequency of outputs from the proximity switch per second in response to the movement of each target when brought closer to the switch.
- The item "switching frequency" under "specifications" indicates the value(s) when measured with the standard target.



### ■ Delay in Readiness:

- The output state of the sensor requires 100ms to become ready after the power has been applied. During this time do not use the sensor output signal.

### ■ Environment and Temperature Effect:

- It refers to the change of sensing distance of the proximity switch when the environmental temperature changes between (-)20 to (+)70 celsius degrees. The amount of change taken at (+)23 celsius degrees shall be regarded as standard sensing distance Sn x ± 10% (change effect distance).

### ■ Environment and Voltage Effect:

- It refers to the change of sensing distance of the proximity switch when the applied voltage changes from 10 to 30 VDC or from 24 to 240 VAC. The amount of changed is measured by the sensing distance taken at normal operating voltage Sn x ± 2.5% (change effect distance).



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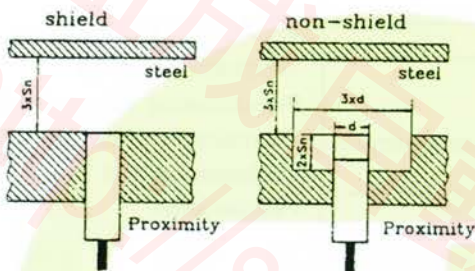
## ■ PROXIMITY SWITCH MOUNTING CONDITION

### ■ Shield Type:

• Since the sensing face of the proximity switch is a shield type, it can be buried in an iron or steel materials stockpile to prevent being effected by any surrounding metal objects.

### ■ Non Shield Type:

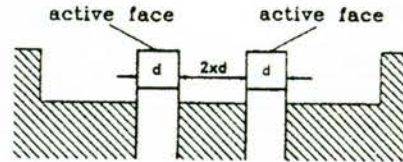
• A space should be provided between the sensing face and the surrounding metals, or the sensing face should protrude to prevent surrounding interference.



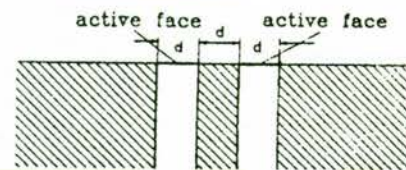
d=diameter of switch  
Sn=sensing distance

### ■ Mutual interference:

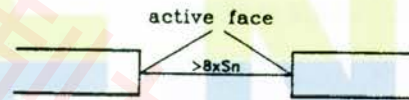
• A minimum distance must be observed when identical cylindrical rectangular sensors are mounted opposite each other or in parallel.



non-shield mountable sensors  
mounted in parallel



shield mountable sensors  
mounted in parallel



mounted opposite each other

d=diameter of switch  
Sn=sensing distance





# Photo Electric Switch

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## GENERAL SPECIFICATIONS

Operating Voltage	DC 10~30V AC 90~250V
Current Consumption	DC type: 10mA max. AC type: 5mA max. Capacitive type: 15mA max.
Sensing Target	Inductive type: magnetic metal. Capacitive type: metal or dielectric material.
Hysteresis	less than 10% Sn (sensing distance).
Load Current	100 mA max.
Operating Temperature	-25°C to +70°C
Operating Humidity	35-95% RH.
Residual Voltage	DC type: 1V max. AC type: 8.5V max.
Insulation Resistance	50 M Ω min. (at 500VDC).
Dielectric Strength	DC type: AC 1000V. AC type: AC 2000V. 50/60 Hz for 1 minute between current-carrying part and ground current.
Leakage Current	DC type: 0.05 mA max. AC type: 2mA max.

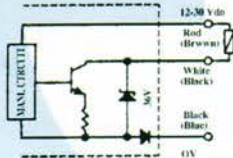


## FEATURES:

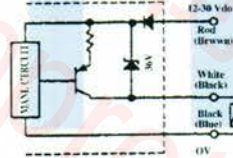
- Wide variety of model
- Wide operating voltage range
- Short circuit protected.
- Conforming to Ip66
- Fast response

## OUTPUT STAGE DIAGRAM

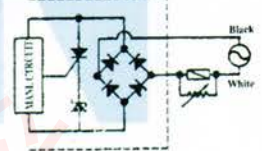
NPN



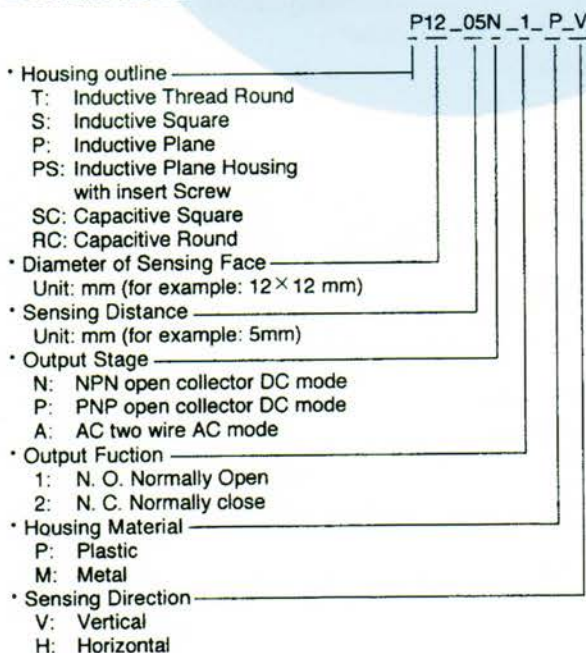
PNP



AC



## ORDER GUIDE



# Photo Electric Switch

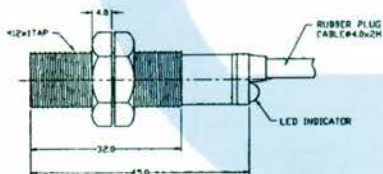
ITEM NO.	TYPE	Inductive Thread Round Metal Body							
		MS12		MS18		M18		M30	
		Shield	Non-Shield	Shield	Non-Shield	Shield	Non-Shield	Shield	Non-Shield
NPN NO		TS12-02N-1	TS12-05N-1	TS18-05N-1	TS18-08N-1			T30-10N-1	T30-15N-1
NPN NC		TS12-02N-2	TS12-05N-2	TS18-05N-2	TS18-08N-2			T30-10N-2	T30-15N-2
PNP NO		TS12-02P-1	TS12-05P-1	TS18-05P-1	TS18-08P-1			T30-10P-1	T30-15P-1
PNP NC		TS12-02P-1	TS12-05P-2	TS18-05P-2	TS18-08P-2			T30-10P-2	T30-15P-2
AC NO						T18-05A-1	T18-08A-1	T30-10A-1	T30-15A-1
Sensing Distance (Sn) (Sn)		2mm ± 10%	5mm ± 10%	5mm ± 10%	8mm ± 10%	5mm ± 10%	8mm ± 10%	10mm ± 10%	15mm ± 10%
Effective Distance		0-1.6mm	0-4mm	0-4mm	0-6.4mm	0-4mm	0-6.4mm	0-8mm	0-12mm
Standard Target (iron)		12 × 12 × 1mm		18 × 18 × 1mm				30 × 30 × 1mm	
Switching Frequency max.		1.5KHZ		1.5KHZ		10 HZ	10 HZ	DC TYPE: 1 KHZ AC TYPE: 10 HZ	
Circuit Protection *1		▲●		▲●				▲●	

NOTE: \*1 ▲Output short circuit protection, ●Reverse polarity protection of supply voltage

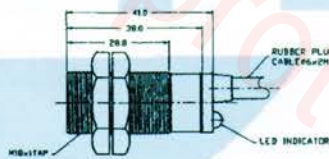
## DIMENSIONS

(unit: mm)

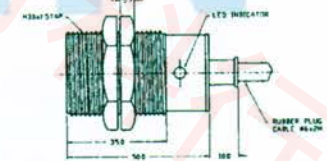
MS12 Shield



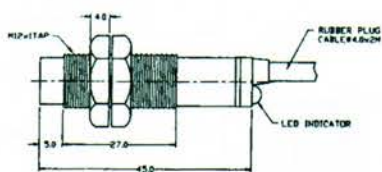
MS18 Shield



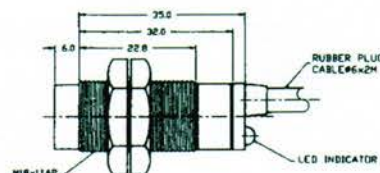
MS30 Shield



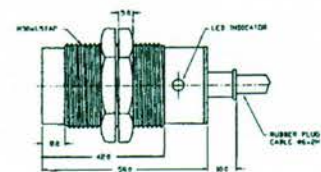
MS12 No-Shield



MS18 No-Shield



MS30 No-Shield





# Photo Electric Switch

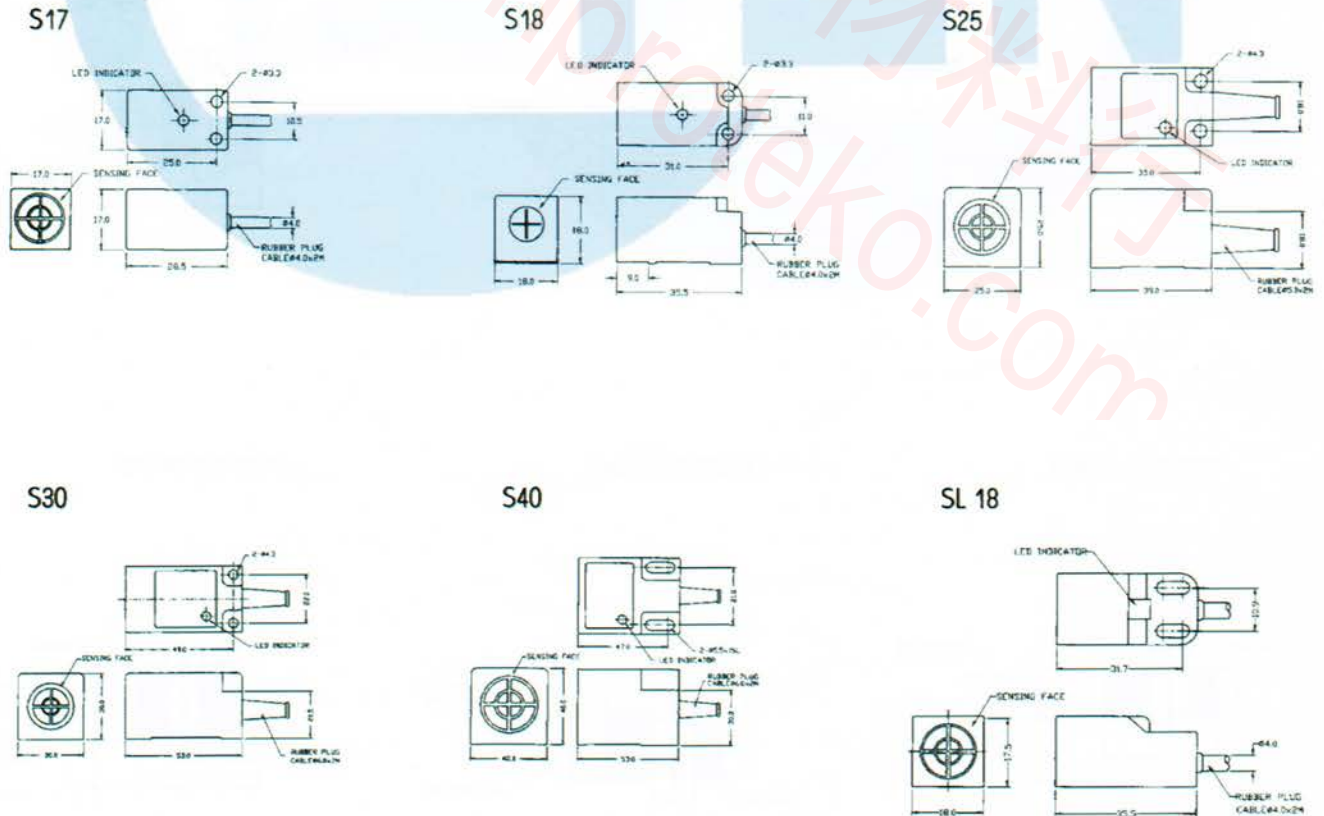
光電開關

ITEM NO. TYPE	Inductive Square Plastic Body										
	S17		S18		SL18	S25		S30		S40	
	DC	DC	AC	DC	DC	AC	DC	AC	DC	AC	
NPN NO	S17-05N-1	S18-05N-1		S18-05N-1L	S25-07N-1		S30-10N-1		S40-20N-1		
NPN NC	S17-05N-2	S18-05N-2		S18-05N-2L	S25-07N-2		S30-10N-2		S40-20N-2		
PNP NO	S17-05P-1	S18-05P-1		S18-05P-1L	S25-07P-1		S30-10P-1		S40-20P-1		
PNP NC	S17-05P-2	S18-05P-2		S18-05P-2L	S25-07P-2		S30-10P-2		S40-20P-2		
AC NO			S18-04A-1			S25-07A-1		S30-10A-1		S40-20A-1	
Sensing Distance (Sn) (Sn)	5mm ± 10%	5mm ± 10%	4mm ± 10%	5mm ± 10%	7mm ± 10%		10mm ± 10%		20mm ± 10%		
Effective Distance	0-4mm	0-4mm	0-3mm	0-4mm	0-5.6mm		0-8mm		0-16mm		
Standard Target (Iron)	17×17×1mm	18×18×1mm		18×18×1mm	25×25×1mm		30×30×1mm		40×40×1mm		
Switching Frequency max. (f)	1.5KHZ		10HZ	1.5KHZ	1KHZ	10HZ	1KHZ	10HZ	600HZ	10HZ	
Circuit Protection *1	▲●	▲●		▲●	▲●		▲●		▲●		

NOTE: \*1 ▲ Output short circuit protection, ● Reverse polarity protection of supply voltage

## ■ DIMENSIONS

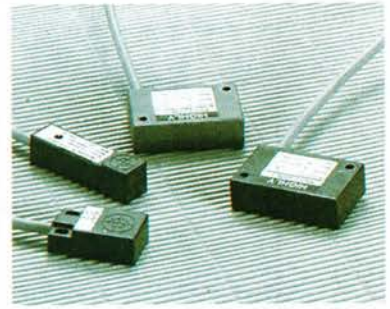
(unit: mm)





# Photo Electric Switch

光電開關



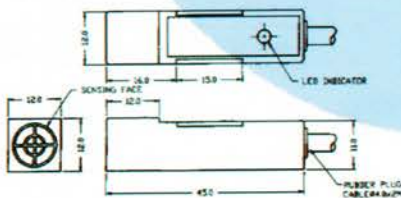
ITEM NO.	TYPE	Inductive Plane Plastic Body		
		P12		P18
		Vertical Sensing	Horizontal Sensing	Horizontal Sensing
NPN NO		P12-05N-1-P-V	P12-05N-1-P-H	P18-05N-1-P-H
NPN NC		P12-05N-2-P-V	P12-05N-2-P-H	P18-05N-2-P-H
PNP NO		P12-05P-1-P-V	P12-05P-1-P-H	P18-05P-1-P-H
PNP NC		P12-05P-2-P-V	P12-05P-2-P-H	P18-05P-2-P-H
AC NO				
Sensing Distance (Sn) (Sn)		5mm ± 10%		
Effective Distance		0-4mm		
Standard Target (iron)		12 x 12 x 1 mm	18 x 18 x 1 mm	
Switching Frequency max.		15 KHZ		
Circuit Protection *1		▲ ●		

NOTE: \*1 ▲ Output short circuit protection, ● Reverse polarity protection of supply voltage

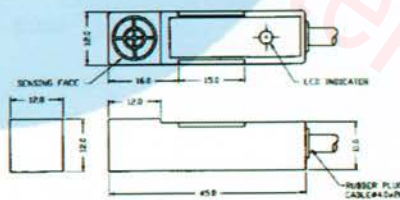
## DIMENSIONS

(unit: mm)

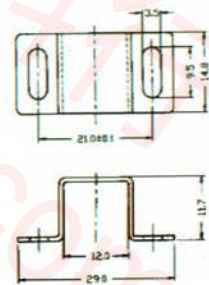
P12-V Vertical Sensing



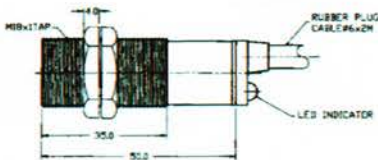
P12-H Horizontal Sensing



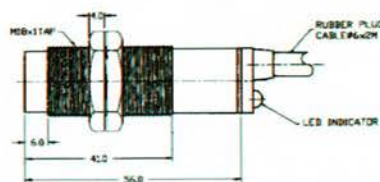
Fixed bracket (for TYPE P12)



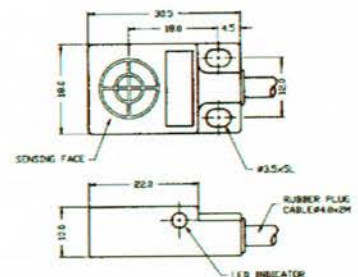
M18 Shield  
T18-05A-1



M18 No-Shield  
T18-08A-1



P18-H





# Photo Electric Switch

光電開關

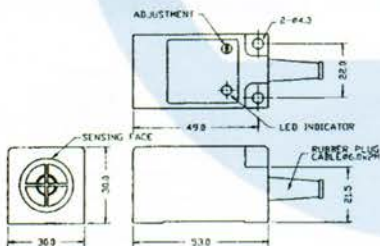
ITEM NO. Output Circuit	TYPE	Capacitive Square Plastic Body		Capacitive Round Plastic Body		
		SC30		RC20	RC34	
		DC		DC	DC	AC
NPN NO		SC30-15N-1	RC20-10N-1	RC34-25N-1		
NPN NC		SC30-15N-2	RC20-10N-2	RC34-25N-2		
PNP NO						
PNP NC						
AC NO					RC34-25A-1	
Sensing Distance (Sn) (Sn)		15mm ± 10%	10mm ± 10%	25mm ± 10%		
Effective Distance		0-12mm Adjustable *1	0-8mm Adjustable *1	0-20mm Adjustable *1		
Standard Target (iron)		15 x 15 x 1 mm	10 x 10 x 1 mm	25 x 25 x 1 mm		
Detectable Target		Conductor and Electric-medium (glass, wood, water, oil, plastic ..... etc.)				
Switching Frequency Max.		40 HZ	70 HZ	40 HZ	40 HZ	

NOTE: \*1 Adjustable distance please refer to ■ correction coefficient (Page 13)

## ■ DIMENSIONS

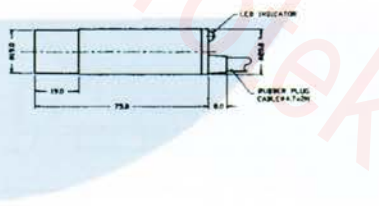
(unit: mm)

SC30



Fixed bracket (for TYPE SC30, S30)

RC20

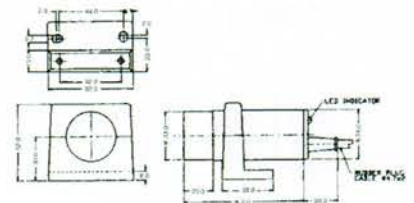
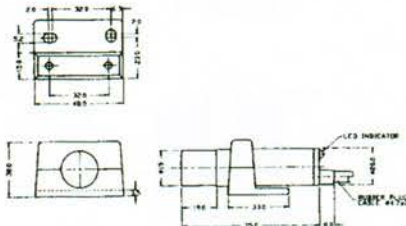
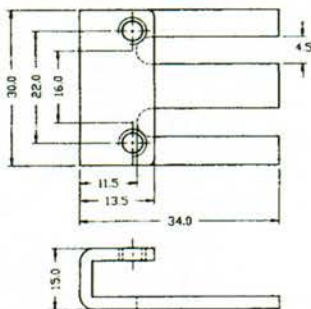


Fixed bracket (for TYPE RC20)

RC34



Fixed bracket (for TYPE RC34)

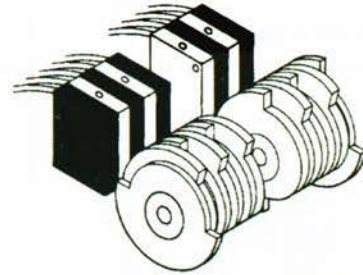


# Photo Electric Switch

## FEATURES:

no minimum space between adjacent sensors needed, fast response, short circuited protected, low cost.

ITEM NO.	FREQUENCY	
	COLOR	Oscillation Frequency
Output Circuit	Lo	Hi
	Black color	Gray color
NPN NO	PS12-04N-1-B	PS12-04N-1-G
NPN NC	PS12-04N-2-B	PS12-04N-2-G
PNP NO	PS12-04P-1-B	PS12-04P-1-G
PNP NC	PS12-04P-2-B	PS12-04P-2-G
Sensing Distance (Sn) (Sn)	4mm ± 10%	4mm ± 10%
Effective Distance	0-3mm	0-3mm
Standard Target (iron)	12 × 12 × 1mm	12 × 12 × 1mm
Switching Frequency Max.	500HZ	500HZ
Circuit Protection *1	▲ ●	▲ ●

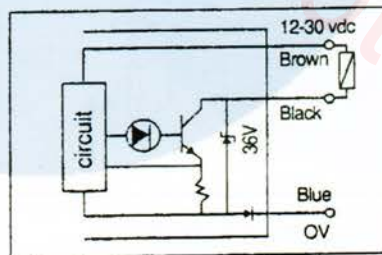


There are different colors between adjacent sensors (for example: BGBG...) to prevent mutual interference.

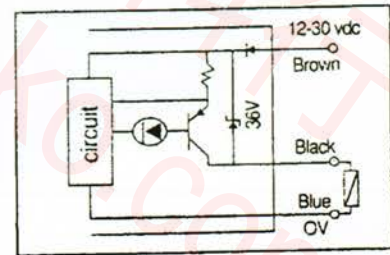
NOTE: \*1 ▲ Output short circuit protection, ● Reverse polarity protection of supply voltage

## OUTPUT STAGE DIAGRAM

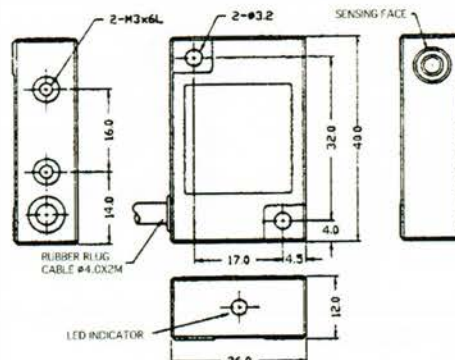
NPN



PNP



## DIMENSIONS

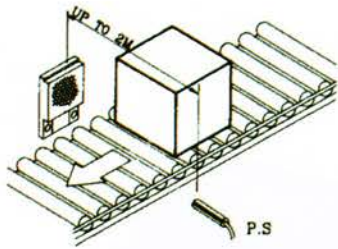


(unit: mm)

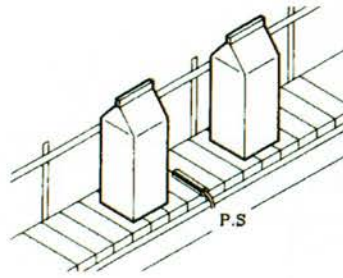


# Photo Electric Switch

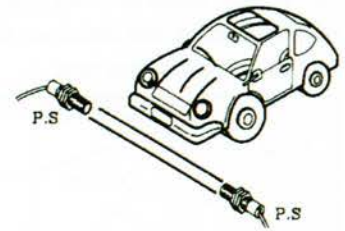
光電開關



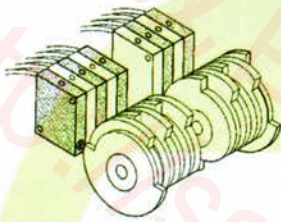
Detection of luggage  
 APPROPRIATE TYPE:  
 Retro-Reflective Photoelectric Switch



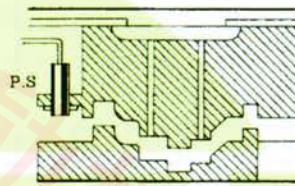
Counting or detection of MILK Boxes  
 APPROPRIATE TYPE:  
 Diffuse Reflective Photoelectric Switch



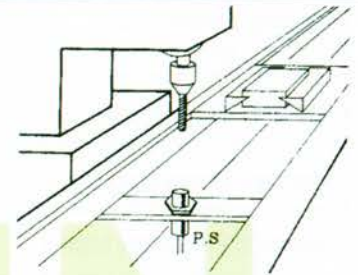
Detection of presenting cars in parking lot  
 APPROPRIATE TYPE:  
 Thru-Beam Photoelectric Switch



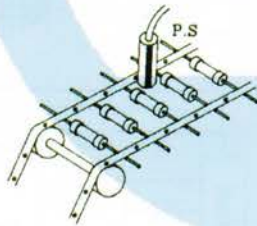
Mechanical procedure control  
 APPROPRIATE TYPE:  
 Type PS12 Proximity Switch



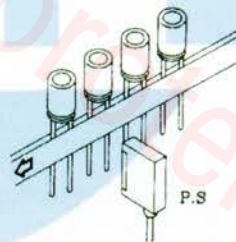
Confirmation of tooling up-down position  
 APPROPRIATE TYPE:  
 Inductive Proximity Switch



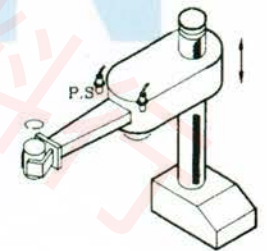
Positioning of processing parts  
 APPROPRIATE TYPE:  
 Inductive Proximity Switch



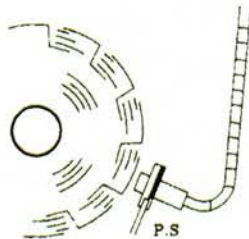
Detection of resistor  
 APPROPRIATE TYPE:  
 Capacitive Proximity Switch



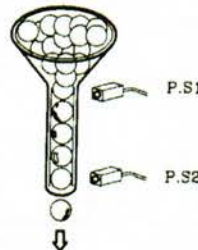
Detection of electrolytic capacitor  
 APPROPRIATE TYPE:  
 Inductive Proximity Switch



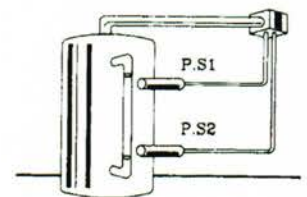
Positioning of robot arm  
 APPROPRIATE TYPE:  
 Inductive Proximity Switch



Detection of wave in high speed rotation  
 APPROPRIATE TYPE:  
 Inductive Proximity Switch



Detection of steel ball  
 APPROPRIATE TYPE:  
 Inductive Proximity Switch



Detection of powder/liqwid position control  
 APPROPRIATE TYPE:  
 Capacitive Proximity Switch