

**SU**

# U-shape Photo Sensor

## ◆Characteristic / 特點 :

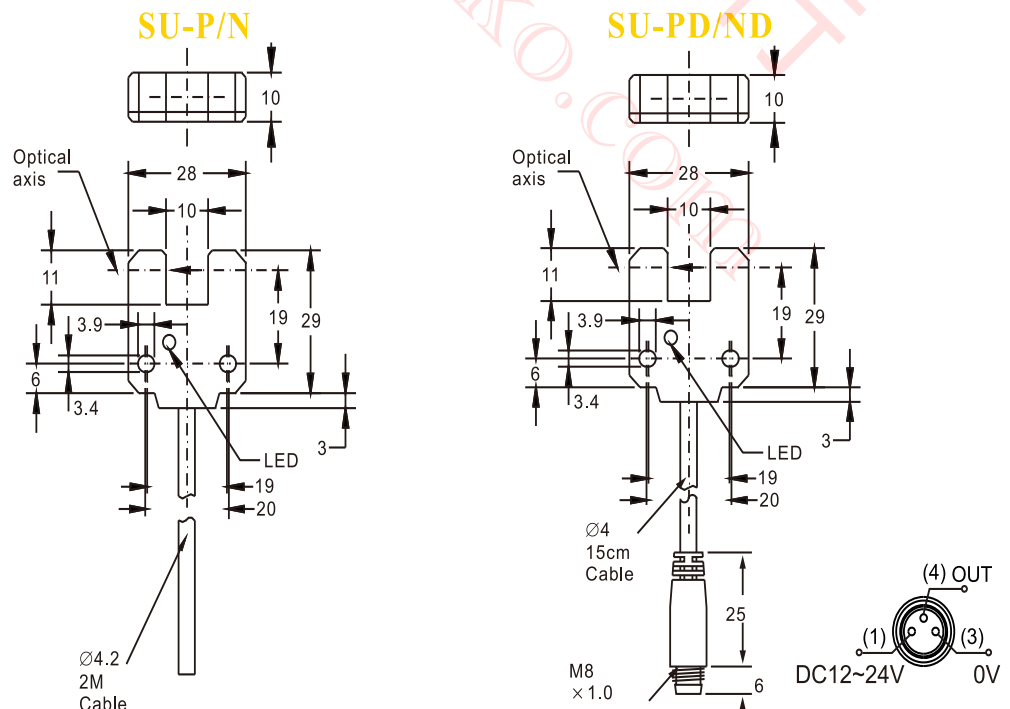
- High-speed response, 1 kHz (DC-light type)  
/ 體積小, 反應速度快約1kHz.
- Sensing distance 10mm, suitable for the detection of small objects.  
/ 檢測距離10mm, 適用於小物體檢測.
- Infrared beam axis 1mm width.  
/ 紅外線光軸檢測寬度1.0mm.



## ◆Specifications / 規格表 :

Model / 型號	SU-N	SU-ND	SU-P	SU-PD
	SU-N2	SU-N2D	SU-P2	SU-P2D
Sensing distance / 檢出距離	10mm			
Min. detection object / 最小檢測物	Opaque / 非透明體 ( Ø0.5 x 10.0mm )			
Emitting light / 發光源	Infrared LED 940nm			
Operating voltage / 工作電壓	DC12 ~ 24 V			
Current Consumption / 消耗電流	20 mA Max.			
Load current / 負載電流	100mA Max. at DC24V			
Output type / 輸出模式	NO Type	N:NPN N.O. (dark operated)		P:PNP N.O. (dark operated)
	NC Type	N2:NPN N.C. (light operated)		P2:PNP N.C. (light operated)
Response time / 反應時間	1 ms Max.			
Ambient illumination/使用環境光源	Incandescent light / 白光 : 1,000 lux max.			
Insulation resistance / 隔離阻抗	20MΩ min. (DC500V)			
Voltage withstandability / 絕緣耐壓	AC500V 60Hz for 60 Sec.			
Operating temperature/工作溫度範圍	-10°C ~ + 55°C			
Ambient humidity/溼度範圍	45% ~ 85% RH 相對溼度			
Protection degree / 防水等級	IP64			
Vibration resistance / 耐震頻率	1.5-mm peak-to-peak amplitude, 10 to 55 Hz, 2 hours each in X, Y, and Z directions			
Shock resistance / 耐震度	50G, repeated 10 times each in X, Y, and Z directions			
Material / 外觀材質	PC			
Wiring method / 出線方式	Pre-wired Ø4.2 x 2 M / 3-wires	M8 pigtailed type / M8 接頭15cm電線式	Pre-wired Ø4.2 x 2 M / 3-wires	M8 pigtailed type / M8 接頭15cm電線式
	Weight / 重量	Approx.55g	Approx.35g	Approx.55g

## ◆Dimensions/尺寸圖 :



# U-shape Photo Sensor

# SU15

## ◆Characteristic / 特點 :

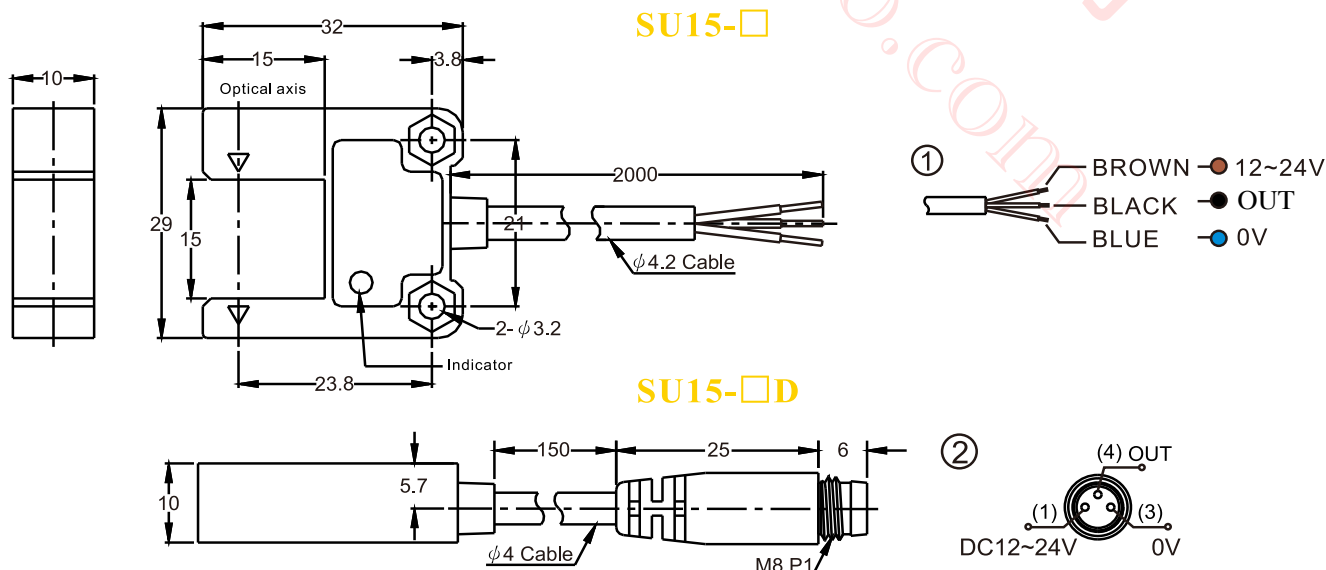
- High-speed response, 1 kHz (DC-light type)  
/ 體積小, 反應速度快約1kHz。
- Wide vane, 15 mm (DC-light type)  
/ 檢測距離15mm, 適用於小物體檢測。
- SU15 has a better prevention of outside light.  
/ SU15對外亂光干擾抵抗優。



## ◆Specifications / 規格表 :

Model / 型號	SU15-N	SU15-ND	SU15-P	SU15-PD
	SU15-N2	SU15-N2D	SU15-P2	SU15-P2D
Sensing distance / 檢出距離	15mm			
Min. detection object / 最小檢測物	Opaque / 非透明體 ( Ø0.5 x 10.0mm )			
Emitting light / 發光源	Infrared LED 940nm			
Operating voltage / 工作電壓	DC12 ~ 24 V			
Current Consumption / 消耗電流	25 mA Max.			
Load current / 負載電流	100mA Max. at DC24V			
Output type / 輸出模式	NO Type	N:NPN N.O. (dark operated)		P:PNP N.O. (dark operated)
	NC Type	N2:NPN N.C. (light operated)		P2:PNP N.C.(light operated)
Response time / 反應時間	1 ms Max.			
Ambient illumination/使用環境光源	Incandescent light / 白光 : 1,000 lux max.			
Insulation resistance / 隔離阻抗	20MΩ min. (DC500V)			
Voltage withstandability / 絕緣耐壓	AC500V 60Hz for 60 Sec.			
Operating temperature/工作溫度範圍	-10°C ~ +55°C			
Ambient humidity/溼度範圍	45% ~ 85% RH 相對溼度			
Protection degree / 防水等級	IP64			
Vibration resistance / 耐震頻率	1.5-mm peak-to-peak amplitude, 10 to 55 Hz, 2 hours each in X, Y, and Z directions			
Shock resistance / 耐震度	50G, repeated 10 times each in X, Y, and Z directions			
Material / 外觀材質	PC			
Wiring method / 出線方式	Pre-wired Ø4.2 x 2 M / 3-wires	M8 pigtailed type / M8 接頭15cm電線式	Pre-wired Ø4.2 x 2 M / 3-wires	M8 pigtailed type / M8 接頭15cm電線式
Weight / 重量	Approx.55g	Approx.35g	Approx.55g	Approx.35g

## ◆Dimensions/尺寸圖 :



Fiber

Photo Sensor

Area Sensor

Ultrasonic Sensors

Inductive Proximity Sensor

Capacitive Proximity Sensor

Timer / Counter

Others

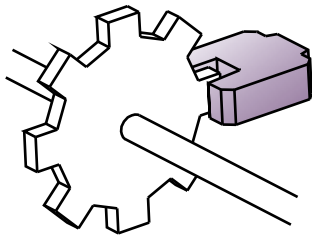
Accessories

**SU**

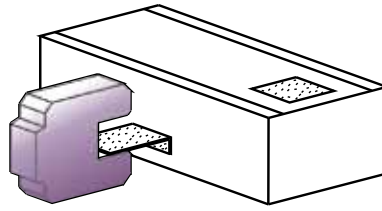
**U-shape Photo Sensor**

Fiber
Photo Sensor
Area Sensor
Ultrasonic Sensors
Inductive Proximity Sensor
Capacitive Proximity Sensor
Timer / Counter
Others
Accessories

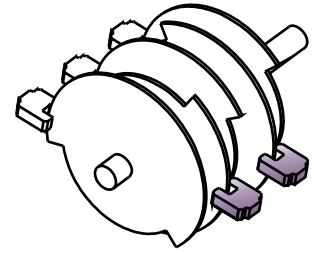
◆Applications / 應用 :



(A) Speed monitoring / 速度檢出



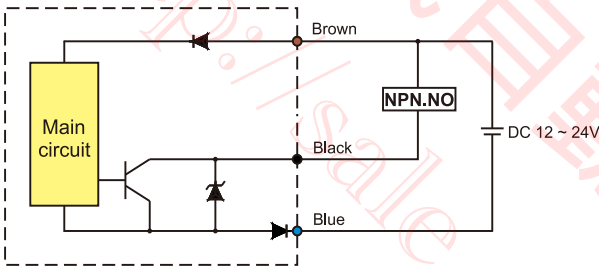
(B) Machine positioning / 位置檢出



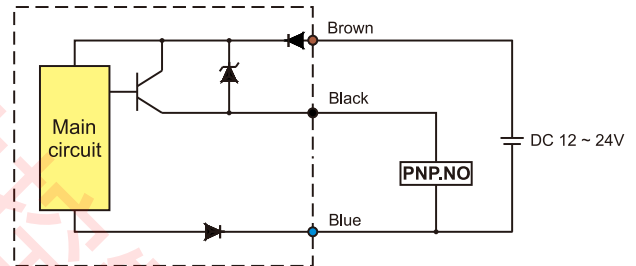
(C) Rotary cam sensing / 定位檢出

◆SU DC Light Output Circuit Diagrams / 接線圖 :

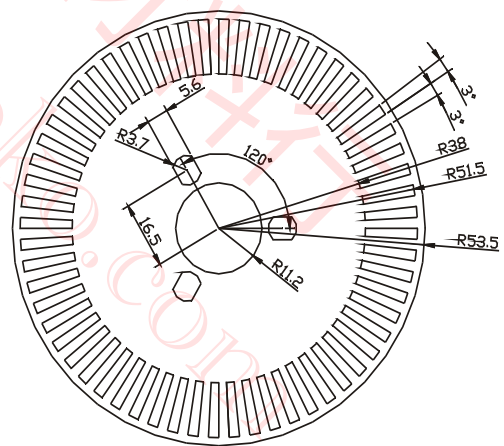
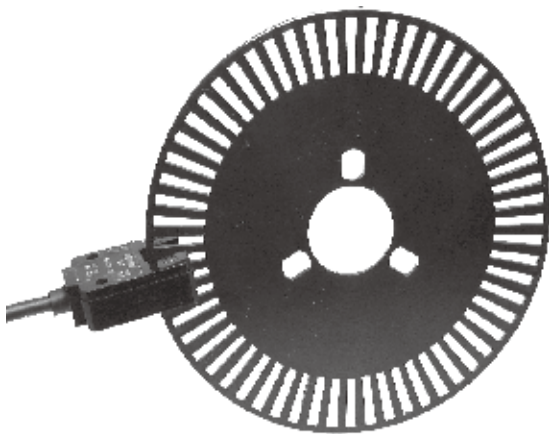
(a) SU-N



(b) SU-P



◆Dimensions/尺寸圖 :



# U-shape Photo Sensor

# SU07

## ◆Characteristic / 特點 :

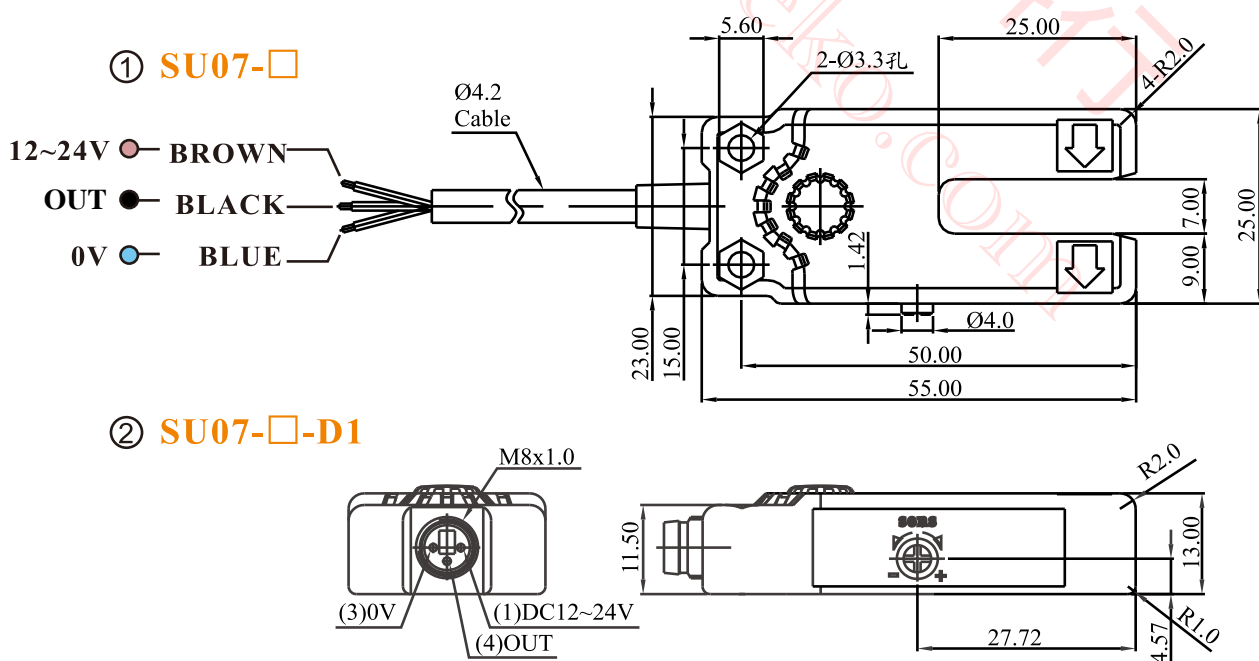
- The optimum sensitivity(12-turn) can be set easily according to different colors.  
/ 可依不同顏色，調整靈敏度(12轉)。
- Suitable for address reading and cut mark sensing.  
/ 適合位置讀取和檢測裁切標記。



## ◆Specifications / 規格表 :

Model / 型號	NPN D.on	SU07-N	SU07-ND1
	PNP D.on	SU07-P	SU07-PD1
Sensing distance / 檢出距離	7 mm		
Min. detection object / 最小檢測物	Opaque / 非透明體 ( Ø0.5 x 10.0mm )		
Emitting light / 發光源	Red LED 660 nm		
Operating voltage / 工作電壓	DC12 ~ 24 V		
Current Consumption / 消耗電流	18 mA Max.		
Load current / 負載電流	100mA Max. at DC24V		
Response time / 反應時間	1 ms Max.		
Ambient illumination/使用環境光源	Incandescent light / 白光 : 1,000 lux max.		
Insulation resistance / 隔離阻抗	20MΩ min. (DC500V)		
Voltage withstandability / 絕緣耐壓	AC500V 60Hz for 60 Sec.		
Operating temperature/工作溫度範圍	-10°C ~ +55°C		
Ambient humidity/溼度範圍	35% ~ 85% RH 相對溼度		
Protection degree / 防水等級	IP64		
Vibration resistance / 耐震頻率	1.5 mm peak to peak amplitude, 10 to 55 Hz, 2 hours in X,Y and z directions		
Shock resistance / 耐震度	50 G repeated 10 times each in X,Y and Z directions		
Material / 外觀材質	PC		
Wiring method / 出線方式	Pre-wired Ø4.2 x 2 M / 3-wires		M8 connector / M8 接頭式
Weight / 重量	Approx.65g		Approx.25g

## ◆Dimensions/尺寸圖 :



Fiber

Photo Sensor

Area Sensor

Ultrasonic Sensors

Inductive Proximity Sensor

Capacitive Proximity Sensor

Timer / Counter

Others

Accessories

# SU07

## U-shape Photo Sensor

◆ Microminiature body with 3.5mm thickness only.

NPN Type

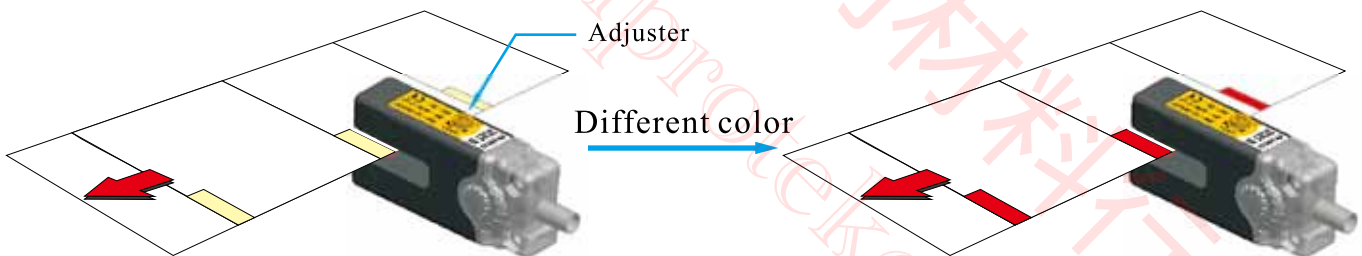
No. of optical axes/model	Operation mode	Timing charts	Output circuit
SU07-N SU07-ND1	D.on	<p>Incident light</p> <p>No incident light</p> <p>Operation indicator (rad) ON OFF</p> <p>Control output ON OFF</p> <p>Output transistor OFF</p> <p>Load Operate (e.g., relay) Reset</p> <p>(Between brown and black leads)</p>	

PNP Type

No. of optical axes/model	Operation mode	Timing charts	Output circuit
SU07-P SU07-PD1	D.on	<p>Incident light</p> <p>No incident light</p> <p>Operation indicator (rad) ON OFF</p> <p>Control output ON OFF</p> <p>Output transistor OFF</p> <p>Load Operate (e.g., relay) Reset</p> <p>(Between brown and black leads)</p>	

◆ Application / 應用例

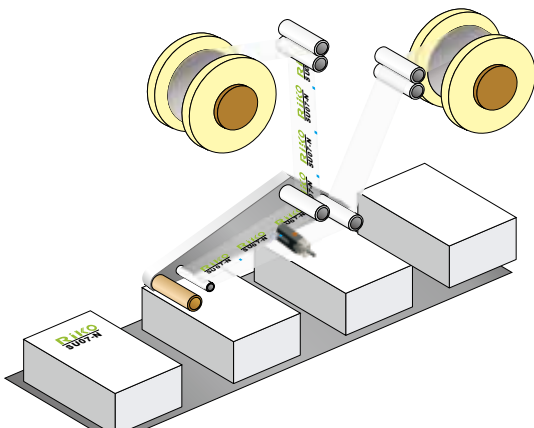
◆ Sealing machine / 封口機



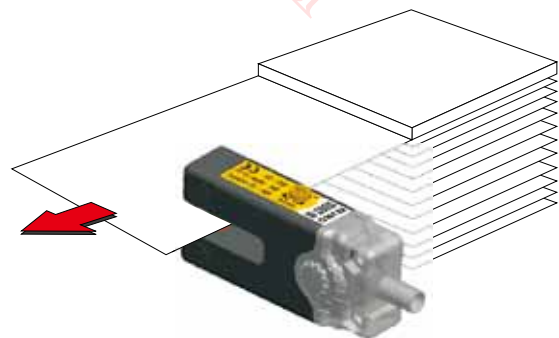
The optimum sensitivity can be set easily according to different colors.

◆ Detecting printing TAB marks / 檢測印刷控制標記

◆ Overlap sensing of paper / 檢測重疊紙



Detecting on TAB machine to ensure each box with a TAB.



Detecting paper feed on different printing machines.



# U-shape Photo Sensor

# SU30

### ◆Characteristic / 特點 :

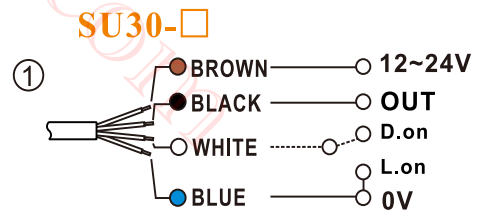
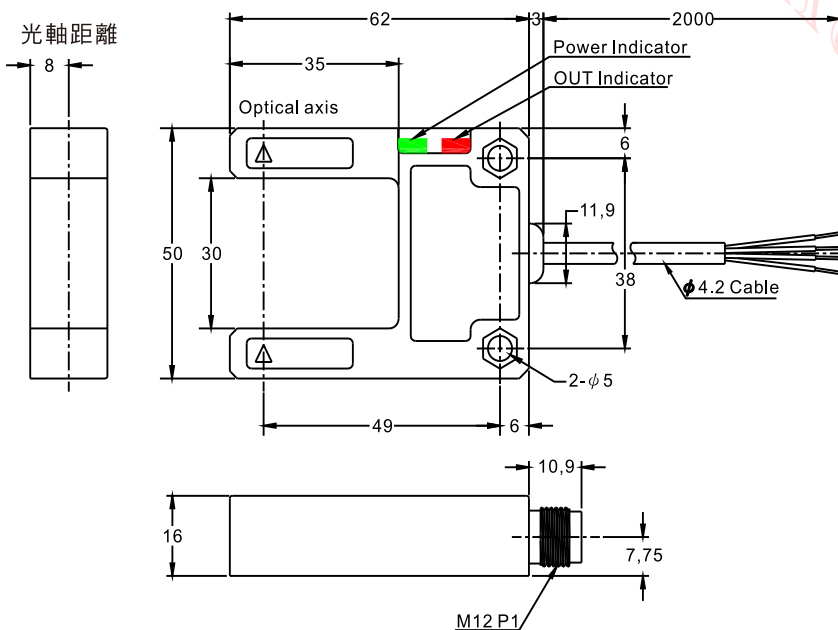
- Two indicators (power/sensing). Easy to recognize.  
雙指示燈(電源指示/感應指示)容易辨認。
- The distance is 7mm between front edge and first optic axis.  
/第一光軸與前端相距7mm。
- L. on/D. on switch available.  
/可作L.on/D.on選擇。



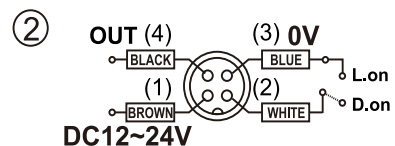
### ◆Specifications / 規格表 :

Model / 型號	NPN L.on/D.on	SU30-N	SU30-NK1
	PNP L.on/D.on	SU30-P	SU30-PK1
Sensing distance / 檢出距離	30 mm		
Min. detection object / 最小檢測物	Opaque / 非透明體 ( Ø1.0 x 10.0mm )		
Emitting light / 發光源	Infrared LED 940 nm		
Operating voltage / 工作電壓	DC12 ~ 24 V		
Current Consumption / 消耗電流	20 mA Max.		
Load current / 負載電流	100mA Max. at DC24V		
Response time / 反應時間	1 ms Max.		
Ambient illumination/使用環境光源	Incandescent light / 白光 : 3,000 lux max.		
Insulation resistance / 隔離阻抗	20MΩ min. (DC500V)		
Voltage withstandability / 絕緣耐壓	AC500V 60Hz for 60 Sec.		
Operating temperature/工作溫度範圍	-20°C ~ + 60°C		
Ambient humidity/溼度範圍	35% ~ 85% RH 相對溼度		
Protection degree / 防水等級	IP64		
Vibration resistance / 耐震頻率	1.5 mm peak to peak amplitude, 10 to 55 Hz, 2 hours in X,Y and z directions		
Shock resistance / 耐震度	50 G repeated 10 times each in X,Y and Z directions		
Material / 外觀材質	PC		
Wiring method / 出線方式	Pre-wired Ø4.2 x 2 M / 4-wires		M12 pigtailed type / M12 接頭式
Weight / 重量	Approx.86g		Approx.26g

### ◆Dimensions/尺寸圖 :



**SU30-□K1**



# SU30

## U-shape Photo Sensor

### ◆Characteristic / 特點 :

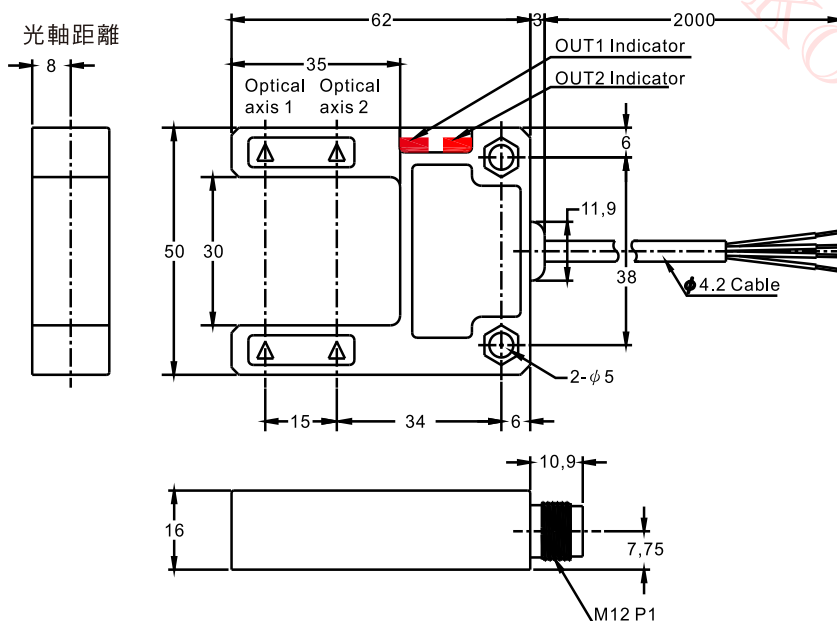
- Two indicators (OUT1 Indicator/OUT2 Indicator). Easy to recognize.  
雙指示燈(OUT1 Indicator/OUT2 Indicator)容易辨認。
- The distance is 7mm between front edge and first optic axis. The distance is 15mm between two optic axes.  
第一光軸與前端相距7mm，兩光軸相距15mm。
- Two optic axes react respectively.  
兩光軸各自獨立感應。



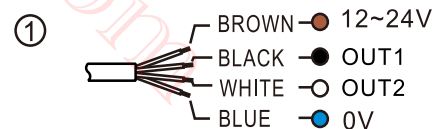
### ◆Specifications / 規格表 :

Model / 型號	NPN D.on	SU30-2N	SU30-2NK1
	PNP D.on	SU30-2P	SU30-2PK1
Sensing distance / 檢出距離	30 mm		
Min. detection object / 最小檢測物	Opaque / 非透明體 ( Ø1.0 x 10.0mm )		
Emitting light / 發光源	Infrared LED 940 nm		
Operating voltage / 工作電壓	DC12 ~ 24 V		
Current Consumption / 消耗電流	30 mA Max.		
Load current / 負載電流	100mA Max. at DC24V		
Response time / 反應時間	1 ms Max.		
Ambient illumination/使用環境光源	Incandescent light / 白光 : 1,000 lux max.		
Insulation resistance / 隔離阻抗	20MΩ min. (DC500V)		
Voltage withstandability / 絕緣耐壓	AC500V 60Hz for 60 Sec.		
Operating temperature/工作溫度範圍	-20°C ~ + 60°C		
Ambient humidity/溼度範圍	35% ~ 85% RH 相對溼度		
Protection degree / 防水等級	IP64		
Vibration resistance / 耐震頻率	1.5 mm peak to peak amplitude, 10 to 55 Hz, 2 hours in X,Y and z directions		
Shock resistance / 耐震度	50 G repeated 10 times each in X,Y and Z directions		
Material / 外觀材質	PC		
Wiring method / 出線方式	Pre-wired Ø4.2 x 2 M / 4-wires	M12 Plug-in connector type / M12接頭式	
Weight / 重量	Approx.86g		Approx.26g

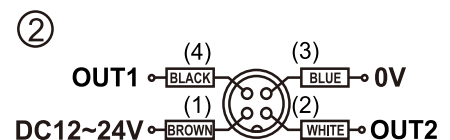
### ◆Dimensions/尺寸圖 :



#### SU30-2□



#### SU30-2□K1



# SU30

## U-shape Photo Sensor

◆Microminiature body with 3.5mm thickness only.

NPN Type

No. of optical axes/model	Operation mode	Timing charts	Output circuit																
1 axis SU30-N SU30-NK1	D.on	Incident light No incident light Operation indicator (rad) ON Control output ON Output transistor OFF Load Operate (e.g., relay) Reset (Between brown and black leads)																	
2 axis SU30-2N SU30-2NK1	D.on	<table border="1"> <thead> <tr> <th>Optical axis1</th> <th>Optical axis2</th> </tr> </thead> <tbody> <tr> <td>Incident light </td> <td>Incident light </td> </tr> <tr> <td>No incident light </td> <td>No incident light </td> </tr> <tr> <td>Operation indicator (rad) ON </td> <td>Operation indicator (rad) OFF </td> </tr> <tr> <td>Control output ON </td> <td>Control output ON </td> </tr> <tr> <td>Output transistor OFF </td> <td>Output transistor OFF </td> </tr> <tr> <td>Load Operate (e.g., relay) Reset </td> <td>Load Operate (e.g., relay) Reset </td> </tr> <tr> <td>(Between brown and black (white) leads)</td> <td>(Between brown and black (white) leads)</td> </tr> </tbody> </table>	Optical axis1	Optical axis2	Incident light	Incident light	No incident light	No incident light	Operation indicator (rad) ON	Operation indicator (rad) OFF	Control output ON	Control output ON	Output transistor OFF	Output transistor OFF	Load Operate (e.g., relay) Reset	Load Operate (e.g., relay) Reset	(Between brown and black (white) leads)	(Between brown and black (white) leads)	
Optical axis1	Optical axis2																		
Incident light	Incident light																		
No incident light	No incident light																		
Operation indicator (rad) ON	Operation indicator (rad) OFF																		
Control output ON	Control output ON																		
Output transistor OFF	Output transistor OFF																		
Load Operate (e.g., relay) Reset	Load Operate (e.g., relay) Reset																		
(Between brown and black (white) leads)	(Between brown and black (white) leads)																		

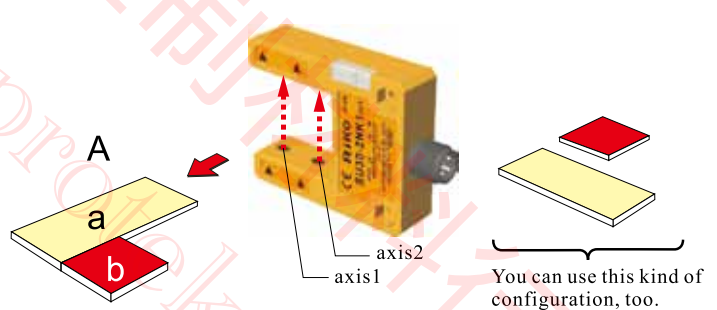
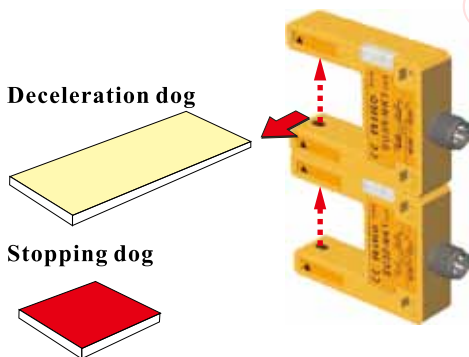
◆To detect the retardation and stop locations on stacker cranes and guided trolleys.

(1)One optic axis:

For retardation and stopping, you have to use two sensors.

(2)Two optic axes:

Just need to use one sensor if you change the shape of dock like A. It will have the same application like (1).



The first optic axis detects the retardation on a.  
The second optic axis detects the stopping on b.

◆Two optic axes sensors can be mounted side by side to read the positions.

(A application of 8 optic axes)

