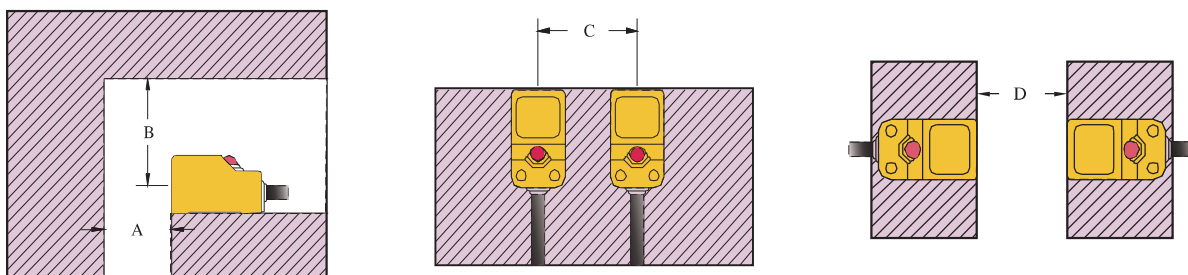


◆ Precautions proper installation / 安裝注意事項：

Influenced by surrounding metals. / 周圍金屬影響

The surrounding metals will influence the sensing performance. Please keep the minimum sensing distance according to the table below.

• SN/TSN系列

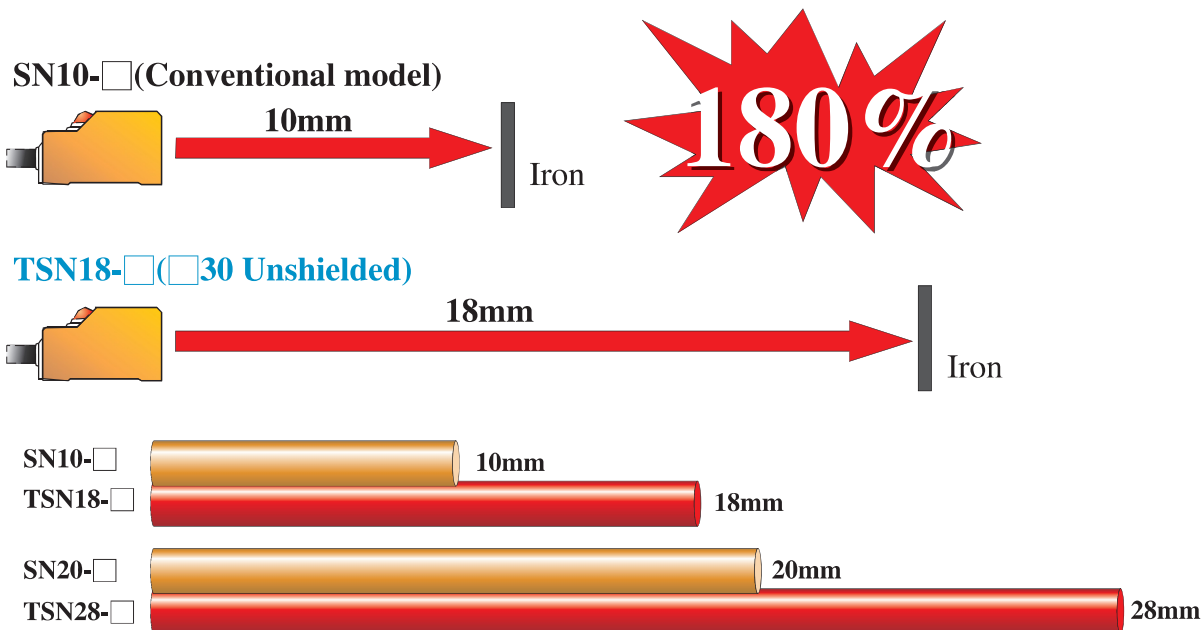


Model	A (mm)	B (mm)	C (mm)	D (mm)
SND04	≥ 15	≥ 20	≥ 30	≥ 30
RN04	≥ 15	≥ 20	≥ 30	≥ 30
RN05	≥ 20	≥ 25	≥ 40	≥ 40
SN10	≥ 40	≥ 30	≥ 60	≥ 60
SN20	≥ 80	≥ 45	≥ 80	≥ 80
TSN18	≥ 72	≥ 54	≥ 180	≥ 180
TSN28	≥ 112	≥ 63	≥ 280	≥ 280

◆ Around Two times longer sensing distance than conventional models.

檢測距離接近原有機型的兩倍

TSC series features 180% longer sensing distance than conventional models. It makes the detection more stable. TSC系列比原有的機型檢測距提升了180%，使檢測更加可靠。



◆ Short Circuit Protection / Reverse Polarity Protection

短路保護/極性保護裝置

The TSC series will activate the short circuit protection/reverse polarity protection to reduce the damage caused by the wrong operation. / 當使用者誤接輸出線或極性相反時，將會啟動短路保護/極性保護，以降低因誤接而所造成的損害。

◆ Waterproof / 防水

IP66 protection. The sensor can be installed outdoors. It can prevent damage caused by immersion or dip in water under regular standard. / 防水等級為IP66，可裝置在室外，在一定標準下能確保不因浸水而造成損壞。

◆ Characteristic / 特點：

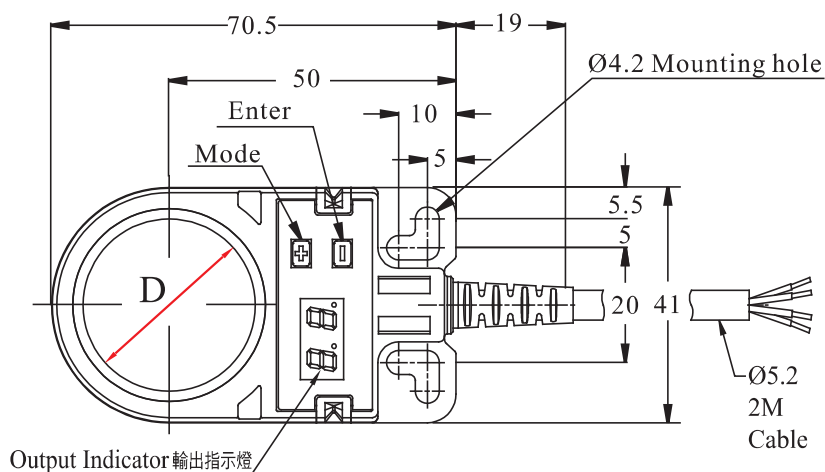
- Suitable for the detection of tiny metal passing.
/ 適合檢測通過的微小金屬。
- The pigtailed type connector makes easy disconnection.
/ 有端子式，讓您能夠迅速的更換。
- Digital sensitivity adjustment.
/ 數字顯示，感測強度，可依據感測物大小而調整。
- Setting by +/- button. / 感度可用(+)(-)鍵設定。
- Clear LED indicator. / 側發光動作LED清晰可見。



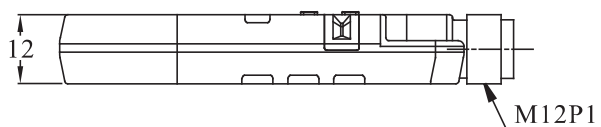
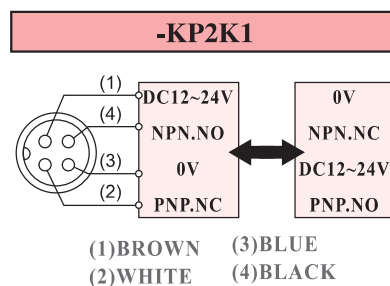
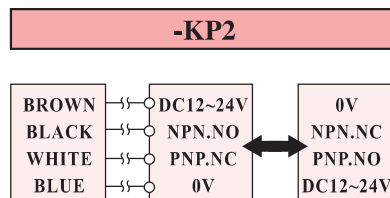
◆ Specifications / 規格表：

Model / 型號	Pre-wired Ø5.2	SID05-KP2	SID10-KP2	SID15-KP2	SID22-KP2	SID30-KP2
	M12 Pigtailed type	SID05-KP2K1	SID10-KP2K1	SID15-KP2K1	SID22-KP2K1	SID30-KP2K1
Sensing hole diameter / 檢測孔直徑		D=5mm	D=10mm	D=15mm	D=22mm	D=30mm
Min. detecting object / 最小檢測物		1mm min.	2mm min.	2mm min.	3mm min.	5mm min.
Operating voltage / 工作電壓		DC 12 ~ 24V				
Current consumption / 消耗電流		30 mA				
Load current / 負載電流		100 mA Max. at DC 24V				
Output method / 輸出模式		NPN N.O./N.C. PNP N.C./N.O.				
Operating temperature / 工作溫度範圍		-20°C ~ +60°C				
Protection degree / 防水等級		IP 64				
Wiring method / 出線方式	SID-□KP2	Ø5.2 x 2M / 4-wires				
	SID-□KP2K1	M12 Pigtailed type/ M12接頭 15cm電線式				
Weight / 重量	SID-□KP2	Approx.100g	Approx.100g	Approx.100g	Approx.96g	Approx.92g
	SID-□KP2K1	Approx.32g	Approx.32g	Approx.32g	Approx.31g	Approx.28g

◆ Dimensions / 尺寸圖：(unit:mm)



◆ Wiring diagrams / 接線圖：



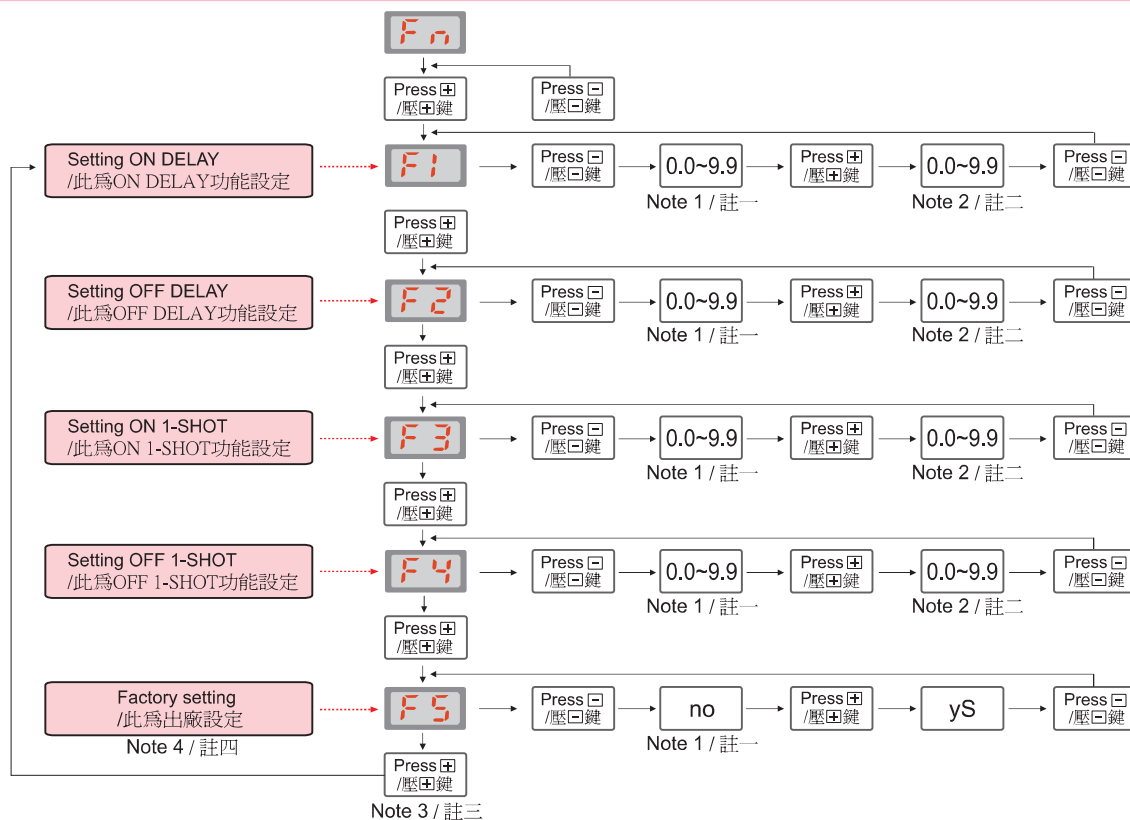
◆ Manual / 使用說明:

• How to adjust sensitivity / 檢測靈敏度之調整方法:

1. Press $\boxed{+}$ button one time as increasing sensitivity (value column as hundred and ten) keep pressing 2 seconds value will be increased to ON and then value stopped.
/ $\boxed{+}$ 鍵每按壓一次，靈敏度個位數加1(目前只顯示十位及百位數)。若壓住不放達2秒以上，顯示器會自動將數值加1，直到SENSOR "ON" 為止，且顯示器將停於 "ON" 之值。
2. Press $\boxed{-}$ button one time as decreasing sensitivity (value column as hundred and ten) keep pressing 2 seconds value will be added to and then value stopped at $\boxed{00}$.
/ $\boxed{-}$ 鍵每按壓一次，靈敏度個位數減1(目前只顯示十位及百位數)。若壓住不放達2秒以上，顯示器會自動將數值減1，且會檢測是否SENSOR "OFF"，若持續不放，則顯示器會停於 $\boxed{00}$ ，不再變化。
3. Value range from $\boxed{00}$ to Max.
/顯示器的顯示值範圍為 $\boxed{00} \sim \text{Max}$ 。
4. When sensor is ON, press $\boxed{+}$ is no function, press $\boxed{-}$ will work.
/在 "ON" 住的情況下作調整， $\boxed{+}$ 鍵會失效，而 $\boxed{-}$ 鍵可正常使用。

• How to set up the function / 進入功能設定之方法:

1. Keep pressing $\boxed{+}$ and $\boxed{-}$ for 2 seconds. $\rightarrow$ $\boxed{Fn}$
/ $\boxed{+}$ & $\boxed{-}$ 鍵同時按壓達約2秒鐘以上，顯示器自動顯示 $\boxed{Fn}$ ，表示已進入功能設定並等待放開按鍵。
2. $\boxed{Fn}$ setting mode: $\boxed{+}$ = selection, $\boxed{-}$ = confirm.
/ $\boxed{+}$ 鍵為選擇鍵， $\boxed{-}$ 鍵為確認鍵。



◆ Characteristic / 特點：

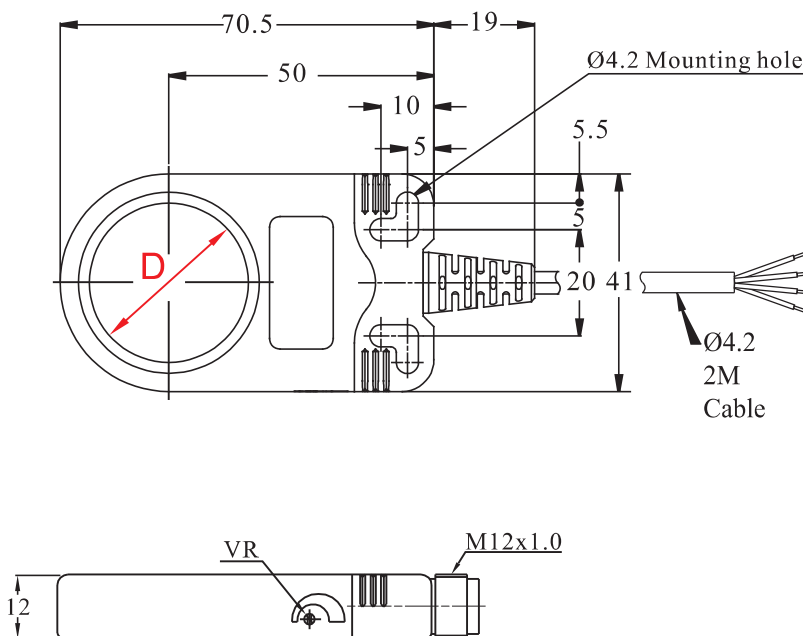
- Suitable for the detection of tiny metal passing.
/ 適合檢測通過的微小金屬。
- The pigtailed type connector makes its replacement easy.
/ 有端子式，讓您能夠迅速的更換。
- 12-turn Sensitivity Adjuster. Users can adjust the sensitivity more optimum according to different objects.
/ 可調式旋鈕(12轉)，可依據感測物的大小而有所調整。
- Dual LED makes you easy to know the current operating situation.
/ 後端雙LED顯示，能夠讓您在使用的時候容易判斷輸出的狀況。



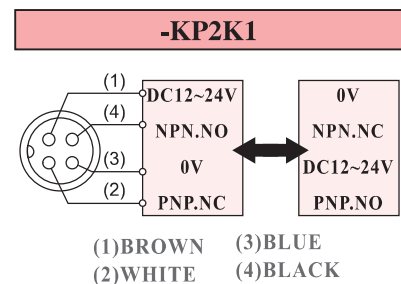
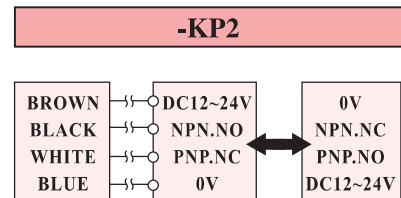
◆ Specifications / 規格表：

Model / 型號	Pre-wired Ø4.2	SIR15-KP2	SIR22-KP2	SIR30-KP2
	M12 Pigtailed type	SIR15-KP2K1	SIR22-KP2K1	SIR30-KP2K1
Sensing hole diameter / 檢測孔直徑		D=15mm	D=22mm	D=30mm
Min. detecting object / 最小檢測物		2mm min.	3mm min.	3mm min.
Operating voltage / 工作電壓		DC 12 ~ 24V		
Current consumption / 消耗電流		15 mA		
Load current / 負載電流		100 mA Max. at DC 24V		
Output method / 輸出模式		NPN N.O./N.C. PNP N.C./N.O.		
Operating temperature / 工作溫度範圍		-20°C ~ +60°C		
Protection degree / 防水等級		IP 66		
Wiring method / 出線方式	SIR-□KP2	Ø4.2 x 2M / 4-wires		
	SIR-□KP2K1	M12 plug-in connector type/ M12接頭式		
Weight / 重量	SIR-□KP2	Approx.86g	Approx.85g	Approx.81g
	SIR-□KP2K1	Approx.30g	Approx.29g	Approx.25g

◆ Dimensions / 尺寸圖：(unit:mm)



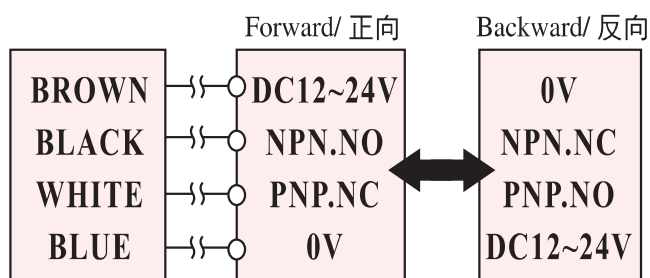
◆ Wiring diagrams / 接線圖：



◆ Introduction / 介紹：

• Output method of KP2 series. / KP2的輸出

SIR□-KP2 includes PNP and NPN two output types. Not only available used on PNP type and NPN type, but also NO/NC switching available. / SIR□-KP2含有PNP與NPN兩種輸出狀態，並且能夠NO/NC切換。



• High brightness dual LED. / 高亮度雙LED燈

The transparent design of rear cover and high brightness dual LED makes you easy to know the current operating situation. / SIR尾蓋為透明狀，並使用高亮度雙LED顯示，能夠讓您在使用的時候容易判斷機體的感應狀況。

Non detecting.



Detecting.



High brightness dual LED.

• Sensitivity Adjuster / 可調式旋鈕

12-turn Sensitivity Adjuster. Users can adjust the sensitivity more optimum according to different objects. / 可調式旋鈕(12轉)，可依據感測物的大小而有所調整。



VR 12-turn Adjuster

• Pre-wired type / Plug-in connector type. 出線式 / 端子式

Pre-wired type or plug-in connector type available. / 有出線式與端子式兩種選擇。

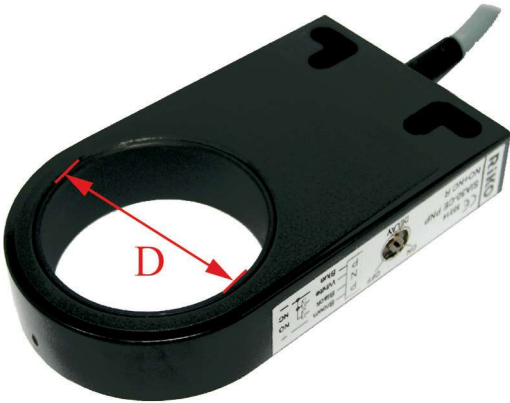
Pre-wired type / 出線式



Plug-in connector / 端子式



◆ Shape / 外觀 :

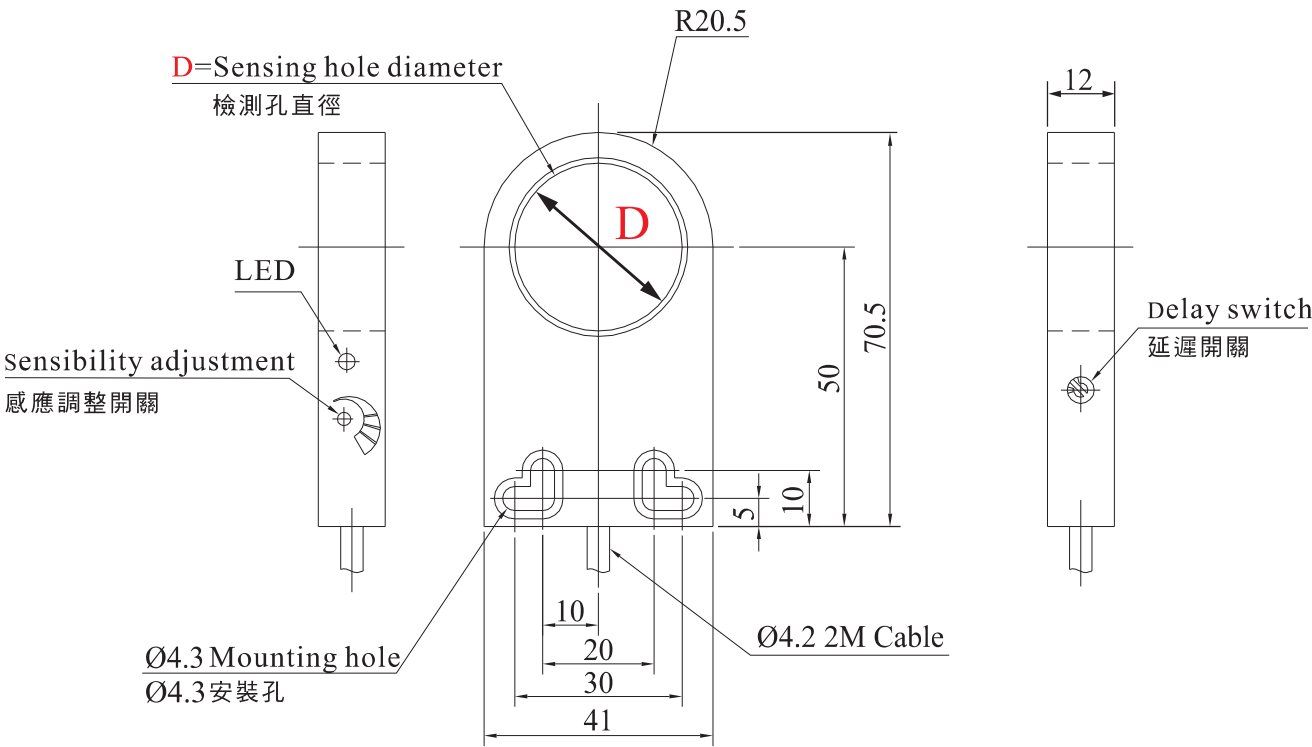


◆ Specifications / 規格表 :

D=Sensing hole diameter / 檢測孔直徑

Output method /輸出模式	NPN N.O./N.C.	SIA05-N	SIA12-N	SIA15-N	SIA22-N	SIA30-N
	PNP N.O./N.C.	SIA05-P	SIA12-P	SIA15-P	SIA22-P	SIA30-P
Sensing hole diameter / 檢測孔直徑		D=5mm	D=12mm	D=15mm	D=22mm	D=30mm
Min. detecting object / 最小檢測物		0.7mm min.	1.2mm min.	2mm min.	3mm min.	
Operating voltage / 工作電壓		DC 10 ~ 30V				
Current consumption / 消耗電流		15 mA				
Load current / 負載電流		100 mA Max. at DC 24V				
Operating temperature / 工作溫度範圍		-20℃ ~ + 60℃				
Protection degree / 防水等級		IP 65				
Wiring method / 出線方式		Ø4.2 x 2 M / 4-wires				
Recommended power unit/應用電源供給單元		ST - 1 . ST - T2				
Weight / 重量		Approx.100g				

◆ Dimensions / 尺寸圖 : (unit:mm)



Inductive / Capacitive Proximity Sensor
PSD18-LA/LV PSC18-LA/LV SC18-LA/LV
HPD HPS
Ø4 M5 Ø6 M8 M12 M18 M30
JN JND KND PN PND RN SN TSN
SID SIR SIA
PKC KC KCM KCP

◆ Shape / 外觀 :

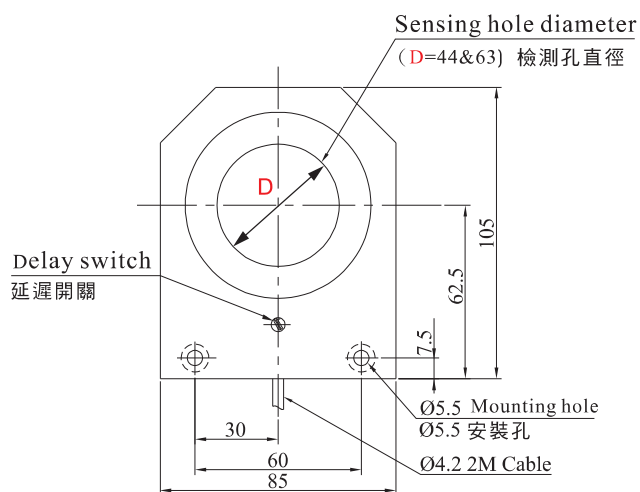


◆ Specifications / 規格表 :

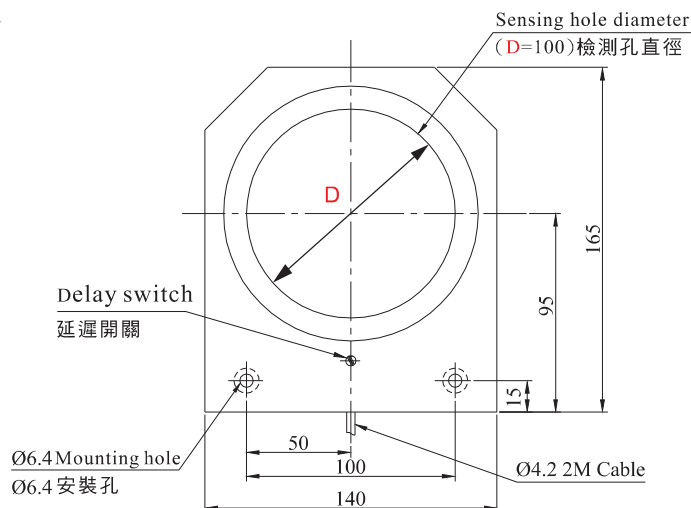
Output method /輸出模式	NPN N.O./N.C.	SIA44-N	SIA63-N	SIA100-N
	PNP N.O./N.C.	SIA44-P	SIA63-P	SIA100-P
Sensing hole diameter / 檢測孔直徑		D=44mm	D=63mm	D=100mm
Min. detecting object / 最小檢測物		5mm min.		10mm min.
Operating voltage / 工作電壓		DC 10 ~ 30V		
Current consumption / 消耗電流		15 mA		
Load current / 負載電流		100 mA Max. at DC 24V		
Operating temperature / 工作溫度範圍		-20°C ~ +60°C		
Protection degree / 防水等級		IP 65		
Wiring method / 出線方式		Ø4.2 x 2 M / 4-wires		
Recommended power unit/應用電源供給單元		ST - 1 . ST - T2		
Weight / 重量		Approx.260g	Approx.220g	Approx.710g

◆ Dimensions / 尺寸圖 : (unit:mm)

SIA44-□ / SIA63-□

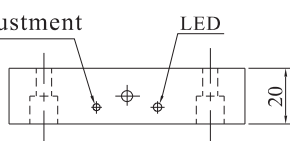


SIA100-□



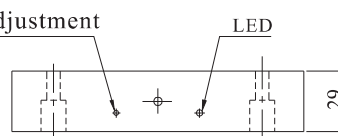
Sensibility adjustment

感應調整開關

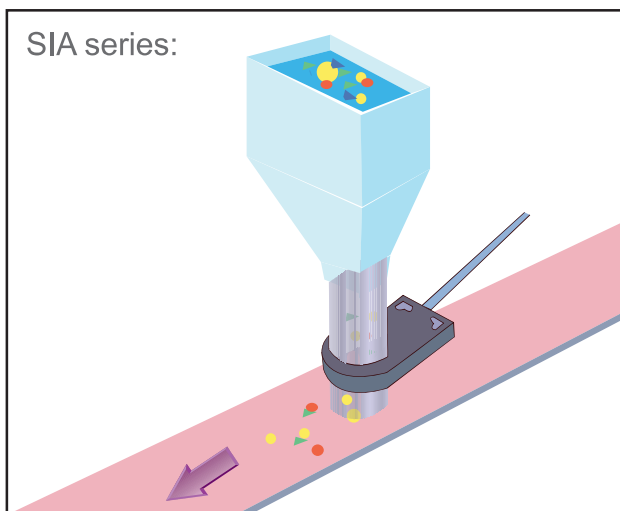


Sensibility adjustment

感應調整開關

PSD18-
LA/LV
PSC18-
LA/LV
SC18-
LA/LVHPD
HPSØ4
M5
Ø6
M8
M12
M18
M30JN
JND
KND
PN
PND
RN
SN
TSNSID
SIR
SIAPKC
KC
KCM
KCP

◆ Inductive Ring Sensor / 環型近接感應器：



GENERAL CHARACTERISTICS

In ring sensors, sensing is made within the ring itself. The sensor is activated when a metallic object is introduced within it. They are particularly suitable for applications where detection of small metal objects such as screws, nuts, washers etc...is requested and also for break detection of continuous metal wires that pass through it.

一般的特性

環型近接感應器的感應裝置就在其環形物中。當有金屬的物體通過此環形物時，感應器便產生作用。特別適合用於檢測細小的金屬物體，例如螺絲釘、螺帽、墊圈等。以及連續金屬線的斷裂檢測。感應器的外罩是塑膠製。內徑為5、12、15、22、25、30、44、63、100 mm。

USE WITH A DELAYED AMPLIFIERS

All types of ring sensor can work in combination with a delayed amplifier of the programmable ALTP series which ensures the sensing of small object in rapid movement.

與延遲輸出共同使用

所有形式的環型近接感應器，都可以運用於可編程序的ALTP系列的延遲放大器，並可確保檢測快速移動的小物體。

EFFECTS OF METAL IN THE CLOSE VICINITY

If a moving metal part is close to the sensing area the functioning can be disturbed. In Order to avoid this, install the units some distance from metallic object. Ensure that this does not interfere with the functioning.

金屬接近感應區域的影響

如果有移動的金屬零件靠近感應區域時，感應功能可能會被干擾。為了避免此情況發生，在裝置時，請與金屬物體保持一段距離，以確保不會干擾到感應功能。

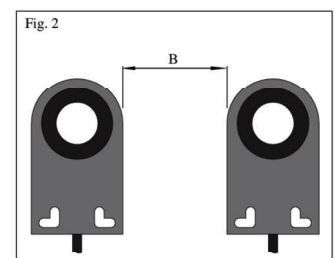
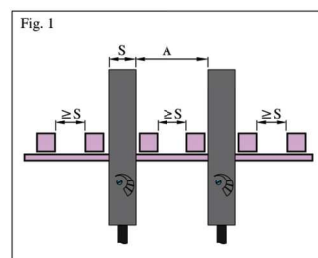
MINIMUM DISTANCE BETWEEN SENSORS									
MODEL	SIA05	SIA12	SIA15	SIA22	SIA25	SIA30	SIA44	SIA63	SIA100
A(Fig.1)mm	25	30	30	60	20	60	300	300	600
B(Fig.2)mm	10	10	10	20	1	20	250	250	650

USE OF SENSOR

A distance equal to the width of the sensor should be left between each object that passes through the sensor. If more than one sensor is to be installed in close vicinity, the minimum distance indicated between sensors should be observed.

感應器的使用

通過感應器的每件物體，其間隔距離，至少要有了一個感應器寬度的距離。如果有超過一個以上的感應器，被裝置在鄰近區域，相互間距離，必須遵守如附表所示的最小距離。



SELECTION OF RING SENSOR

Selection should be made based on the minimum hole diameter required. In this way the sensitivity adjustment can be made within normal parameters

環型光電感應器的選擇

依據最小洞徑做選擇。如此敏銳性的調整可以在正常值內，而不會有不正當運作的風險。

Model	Length mm	Diameter mm
SIA05	1	0.7
SIA12	2	1.2
SIA15	2	1.2
SIA22	6	3
SIA25	7	4
SIA30	7	4
SIA44	9	5
SIA63	12	6
SIA100	20	12

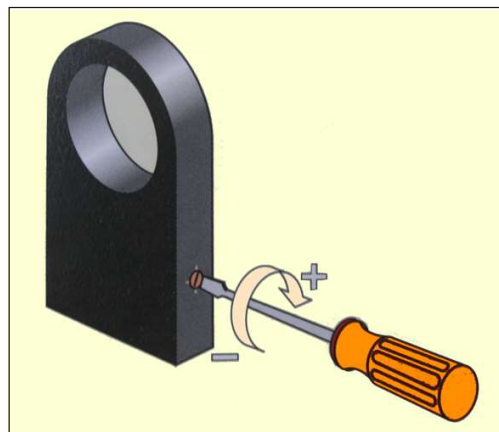
◆ Inductive Ring Sensors / 環型近接感應器：

SENSITIVITY ADJUSTMENT

After having followed the instructions regarding the choice of the most suitable unit it is recommended that the sensitivity adjustment be carried out when the sensor is installed in the final position taking into account how much metal mass is close by which could alter its functioning. The sensitivity increases turning the trimmer clockwise.

靈敏度的調整

根據操作指南的指示，挑選最適合的型號後，強烈建議在最後安裝定位後，再做敏銳度的調整，並注意是否有任何的金屬物體會影響到它的正常功能。順時針方向旋轉可增加敏銳度。



SWITCHING FREQUENCY

The switch frequency of inductive ring sensors depends on delayed impulse time (when inserted) according to the formula:

$$\text{Switching frequency (Hz)} = \frac{1}{(T \text{ impulse} + 10) \text{ ms}}$$

Vice versa, switching frequency will be as per chart beside.

動作頻率

環型近接感應器的切換頻率取決於被測物通過時延遲的脈衝時間，並依據以下公式：

$$\text{切換頻率 (Hz)} = \frac{1}{(T \text{ 脈衝} + 10) \text{ ms}}$$

同理可證，切換頻率將如右側圖表。

Model	Sw. Frequency Hz(min.~Max.)
SIA05	600~1500
SIA12	600~1000
SIA15	600~1000
SIA22	600~1000
SIA25	600~800
SIA30	600~800
SIA44	600~600
SIA63	600~200
SIA100	≤ 100

DELAY ON DE-ENERGIZATION

All our inductive ring sensors, NPN and PNP amplified versions, are supplied with an ON-OFF switch to activate and deactivate delay on de-energization 100ms. This delay allows the sensor to detect small metallic objects passing rapidly through the sensitivity area of the ring.

輸出延遲

所有我們的環型近接感應器(NPN和PNP放大型式)都備有ON-OFF開關，以控制輸出供給的延遲100ms。這個延遲提供感應器能夠檢測出金屬小物體快速的通過感應區域。

