

SS & ST series

Inductive
proximity sensor



CE
Rohs

- ◆ All DC type with [Short-circuit] & [Polarity reversed] protection.
直流型都附「短路保護」及「極性保護」回路。
- ◆ All AC type with [surge absorbing circuit] to avoid surge damage.
交流型都附「突波吸收回路」可有效的防止突波破壞。
- ◆ High solid compact structure [IP-67] suited to applied in any poor circumstance.
堅固結構「IP-67」適用各種惡劣環境。
- ◆ All models with [operating pilot].
全機種都附「動作指示燈」。



◆ Guiding of model / 型號索引

Tubular type

ST:tubular type

Ex. ST-12 04 N

1 2 3 4

1: Type: ST Tubular type

2: Outline diameter 12mm

05=N5 08=N8 12=M12

18=M6 30=M30

3: Sensing distance

01=1.0mm 02=2.0mm 04=4.0mm

05=5.0mm 08=8.0mm 10=10.0mm

15=15.0mm 20=20.0mm 25=25.0mm

4: Output method

N=NPN P=PNP S=SCR

Square type

SS:square type

Ex. SS-18 15 N

1 2 3 4

1: Type: SS Square type

2: size 17 mm

18=17mm 25=25mm 30=30mm

3: Sensing distance

02=2.0mm 04=4.0mm

05=5.0mm 08=8.0mm

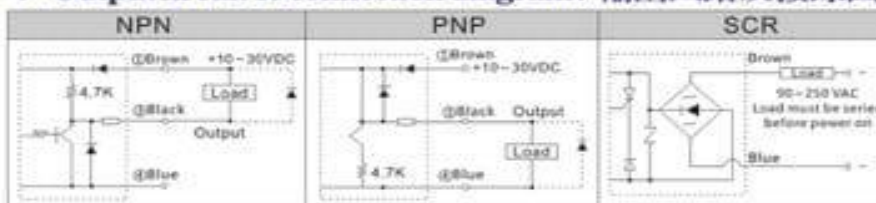
10=10.0mm 15=15.0mm

25=25.0mm

4: Output method

N=NPN P=PNP S=SCR

◆ Output circuit & connection diagram / 輸出回路及接線圖



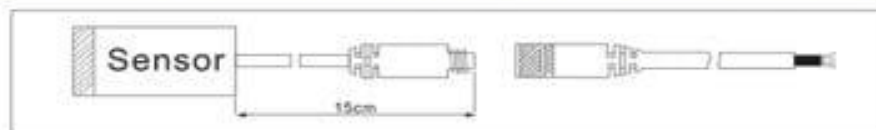
◆ General data / 共同規格

Specification	DC type	AC type
Operating voltage 工作電壓	10~30 VDC	90~250 VAC
Power ripple 電源漣波	<20% of Vp-p	50/60Hz
Output current 輸出電流	150mA max.	100mA max.
Current consumption 消耗電流	10mA max.	2.0mA max.
Residual voltage 殘留電壓	<0.1V	<15V
Leakage current 洩漏電流	<0.8 mA	<4.0 mA
Hysteresis 滯差	<10% of sensing distance	
Thermal drift 溫度漂移	<10 μm/C	
Voltage drift 電壓漂移	<1 μm/V	
Protection circuit 保護回路	Short-circuit & Polarity reversed	surge absorbing circuit
Operating Temperature 工作溫度	-25°C ~ +80°C	
Operating humidity 工作濕度	35%~95% RH	
Protection class 保護等級	IP-67	
Color of sensing face 感應面顏色	NPN=Red; PNP=Green	Blue

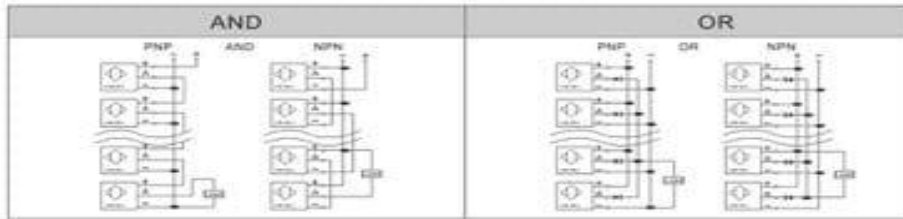
◆ Application hints

While a switching power supply is used, please be sure to ground the FG(Frame ground) and the G(Ground)terminal, if failure to do so, it may resulting malfunction of the sensor for the noise of the switching power supply. Meanwhile, the ripple of the DC power supply is required less than 20% to avoid resulting malfunction of the sensor

◆ M8 lead wire connection [Available for all sensor]



◆ Connecting method of AND & OR

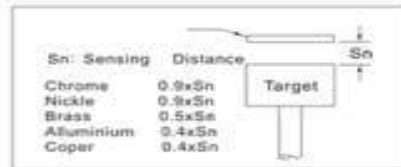


◆ Basic definition of Inductive proximity sensor / 基本定義

• Target/標準檢測物

Which is a steel, 1mm thickness, square form with width equal to the diameter of the sensing surface if the target is made of a different material, the sensing distance must be multiplied by the Correction factor.

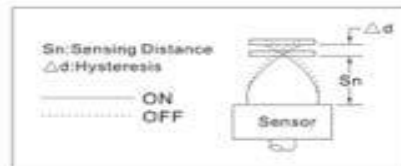
標準檢測物是方鋼薄片,厚度1mm,長度等於感應器的感應面直徑。如果標準檢測物的材質不是鋼則感應距離請係右圖的修正系數修正。



• Hysteresis/滯差

Hysteresis is the different distance between the operating points that the target is approaching and leaving the sensing area of the sensor, the value is expressed as a percentage of the sensing distance ($\Delta d/S_n\%$).

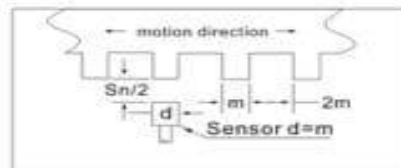
滯差是感應器的動作點與復歸點的距離,一般是以動作點與復歸點的距離除以感應距離后以百分比表示。



• Switch frequency/響應頻率

It is the maximum response frequency per second, based on a pulse ratio 1:2, the sketch shows the condition of test.

響應頻率是以ON:OFF比=1:2的條件所測得每秒最高響應頻率。測試條件如右圖所示。



• Accuracy (Repetition)/重複精度

Tolerance of operating position that sensor is certainly operated under the same condition

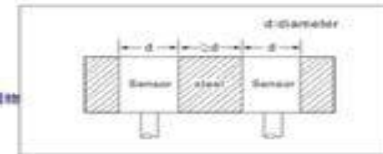
在相同的條件下所測得的重大動作點與最小動作點的差值。

◆ Notice of installing for the Inductive proximity sensor/安裝注意事項

• Flushed type/埋入式

A proximity sensor can be flushed mounted in metal and surrounded by metal up to the level of the sensing face

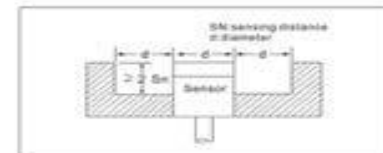
近接感應器可完全埋入金屬物即感應面四周可受金屬物包圍



• Non-flushed/非埋入式

A proximity sensor can be mounted in metal, clear zone of 3 times of the diameter of the sensing surface must be keep

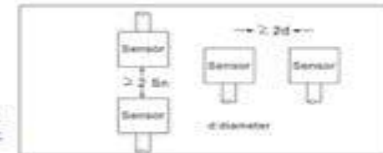
近接感應器感應面四周不可受金屬物包圍,淨空範圍必須是近接感應器感應面直徑的三倍距離以上。



• Mutual interference/互相干擾

To install the inductive proximity sensors of the same model by face to face or side by side, please set the minimum distance between the sensors larger than the diameter of sensor, to avoid the malfunction.

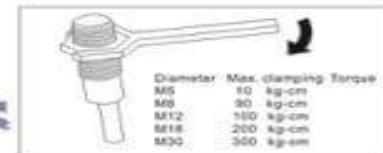
近接感應器不可以面對面或並排方式安裝,如果要以上述方式安裝務必保持近接感應器感應面直徑的一倍以上距離以上。



• Clamping torque/鎖緊扭力

Be sure to set a spring washer when fixing the sensor. Don't tighten the mounting screw of PM series with a clamping torque higher than the right value.

安裝近接感應器時務必使用止滑墊以防止滑脫,安裝PM系列近接感應器時務必鎖緊扭力請勿超出最大扭矩值以免損壞近接感應器。



• Notice of wiring/配線注意事項

To avoid being influenced by noise, try best to separate the cable of the sensor from the power lines and high tension lines, if extend the sensor cable, please use a cable which diameter as same as that

避免雜訊干擾,請盡量將感應器的電線與動力線或高壓線分離,不要綁在一起。

如果要延長感應器的電線請盡量使用與感應器的電線相同規格之電線。

