型號指引 ORDERING CODE

H N - 4 0 2 0 _ - _ E 1

感應方式 SENSING MODE

H 電感型 INDUCTIVE
K 靜電容型 CAPACITIVE
U 光電型 PHOTO TYPE

形狀 SHAPE

N 方型 RECTANGULAR TYPE
X 螺絲型 SCREW TYPE
C 圓管型 TUBULAR TYPE
F 扁型 FLAT TYPE
W 扁平型 PLANE TYPE
P 擴大器內藏型 AMP. INSIDE TYPE
PN 擴大器內藏直立型 AMP. INSIDE TYPE
Q 擴大器分離型 AM. SEPARATED TYPE
S 小五角光電 S SEPARATED AMPLIFIER
Y 超小型光電 Y SIDE WIRING TUBULAR PHOTO SENSOR
DJ 標字檢測 MARKING & DETECTING PHOTO SENSOR

感應面外境 SENSING FACE DIA.

HN-3010-E1 30=30 MM
HX-1201-E1 12=12MM DIA. =M12

檢出距離 DETECTING DISTANCEH

HN-3010-E1 10=10MM
UP-300 D 300=3M

光電開關撿出方式 PHOTO SENSOR DETECTING

D 鏡片反射型 MIRROR REFLEX TYPE
T 對照型 THROUGH-BEAM TYPE
R 直接反射型 REFLEX TYPE

近接開關感應方向 PROXIMITY SWITCH SENSING

BLANK 垂直(空白) VERTICAL
S 水平方向 HORIZONTAL

輸出方式 OUTPUT MODE

C 電壓型 VOLTAGE MODE
N/E NPN 直流型 DC MODE
P PNP 直流型 DC MODE
A SCR 交流二線式 AC 2 WIRE MODE
N10A 類比三線式 ANALOG 3WIREMODE
M 交流、直流共用型 M DC/AC MODE

輸出狀態 OUTPUT STATE

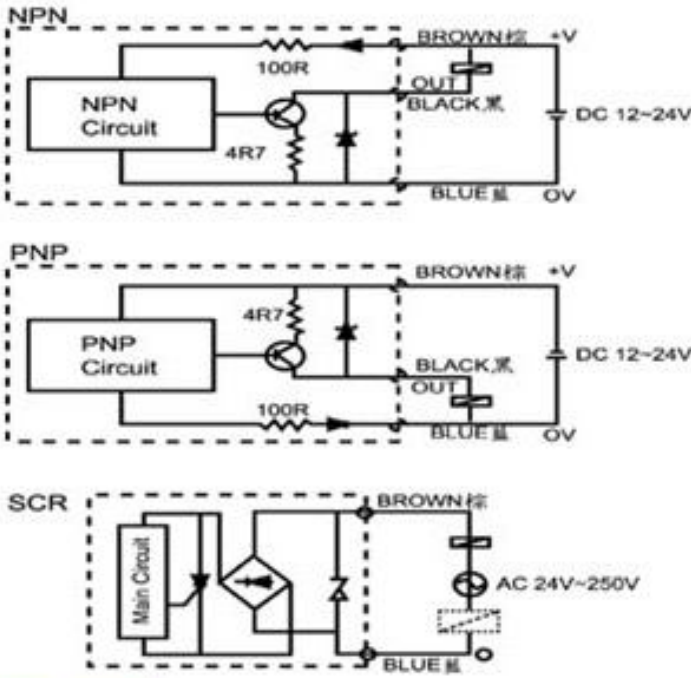
1 常開型 NO: NORMALLY OPEN
2 常閉型 NC: NORMALLY CLOSED

近接開關”規格”辭彙說明
Technical Specifications

內部電路保護功能Circuit Protection Design

保護功能 Protection Circuit / 機種分類 Type	短路保護迴路 Short Circuit Protection Loop.	逆極性保護迴路 Reverse Protection Loop.	突波防止迴路 Surge Wave Prevention Loop.
DC NPN/PNP E1 P1	無 No	有Yes	有Yes
DC NPN/PNP E2 P2	無 No	有Yes	有Yes
交流二線式 AC 2-Wire	無 No	無極性之區別 Without reference to polarity	有Yes

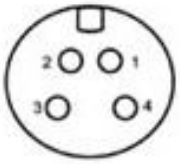
近接開關接線圖



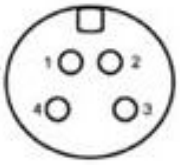
連接器腳位 (Connector pin-out)

中繼接頭CT(角形) Wire connector type

公頭 Sensor (Male)



母線 Connector (Female)

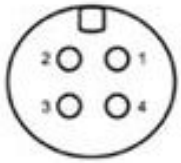


	NO	N.C.
1	棕Brown (+)	棕Brown (+)
2	黑Black (output)	黑Black (output)
3	藍Blue (-)	藍Blue (-)
4	---------	---------

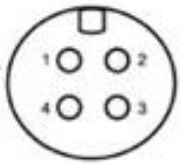
連接器腳位 (Connector pin-out)

防水型(AN/BN): connector type

公頭 Sensor (Male)



母線 Connector (Female)



	NO	N.C.
1	棕Brown (+)	棕Brown (+)
2	---------	白White (output)
3	藍Blue (-)	藍Blue (-)
4	黑Black	---------

結構保護等級
Grade of Protection

IP -6 □

保護特性記號 International Protection

等級 Classification	保護程度 Protective Grade	
4		無論從那方向來的水沫都不會有害的影響 Not affected by water bubbles from all directions.
5		無論從那方向來的，直接噴水也不受影響的。 Not affected by water splash from all directions.
6		無論從那方向來的，在一定壓力下直接噴水的內部也不進水的。 No penetration by direct water spray from all directions under specific water pressure.
7		在設定的水壓條件，放入水中內部而不進水歷時30分鐘 No penetration by water ever when the object is submerged in the water for 30 minutes.
8		可以在指定壓力的水中，長時間使用的開關 Objects which can be used for a long period of time in the water under a specific water pressure.

防人體和固態異物

Classification	保護程度 Protective Grade		
6		耐塵形	Protection against movement of human body and solid

Mounting Condition
安裝注意事項

■ 齊頭型(可埋入型式)：
因檢測面齊平，故可埋設於鋼鐵中，而不受周圍之金屬影響

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

■ 凸出型 (不可埋入型式)：
檢測面必須與周圍之金屬保持足夠的空間或凸出金屬表面，以免受到周圍金屬干擾而產生誤動作。

■ Non flush type:
A space should be provided between the sensing face and the surrounding metal, or the sensing face should protrude to prevent surrounding interference.

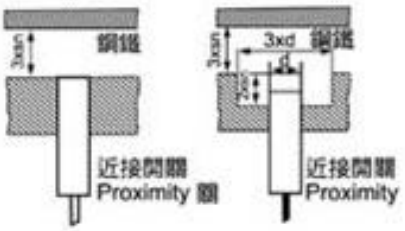
■ 相互干擾防止：
當兩個以上的進接開關面對面，或並排裝設，請保持足夠的間隔距離避免干擾發生。

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

檢出面 Active face

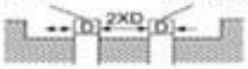
面對面安裝時
Mounted opposite each other
D=efector diameter 近接開關直徑
Sn=nominal sensing range 檢出距離

flush (可埋入型式) n0n-flush (不可埋入型式)



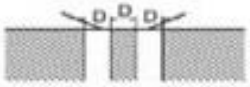
d=efector diameter近接開關直徑
Sn=nominal sensing range 檢出距離

檢出面 active face 檢出面 active face



凸出型並排裝設時
non-flush mountable sensors mounted in parallel

檢出面 active face 檢出面 active face



齊頭型並排裝設時
flush mountable sensors mounted in parallel

■近接開關“規格”詞彙說明
■Technical specifications

■ 修正係數：(參考值非絕對值)
電感式：當被測物為非金屬時，則感應距離將產生改變而縮短，
如此請參考圖表修正其檢出距離。

■ Correction Coefficaent:
Taking an electrical proximity switch as an example, the sensing distance of the electrical inductance proimity 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 on an absolute value).

材質Material 參考值Factor approx

■ 靜電容量式：可檢出金屬、非金屬、玻璃、液體.....等,其檢出距離乃隨電離子的特性(電導常數或非電導常數)水分含量，物體的體積等因素有密切關係，均會影響檢出距離。

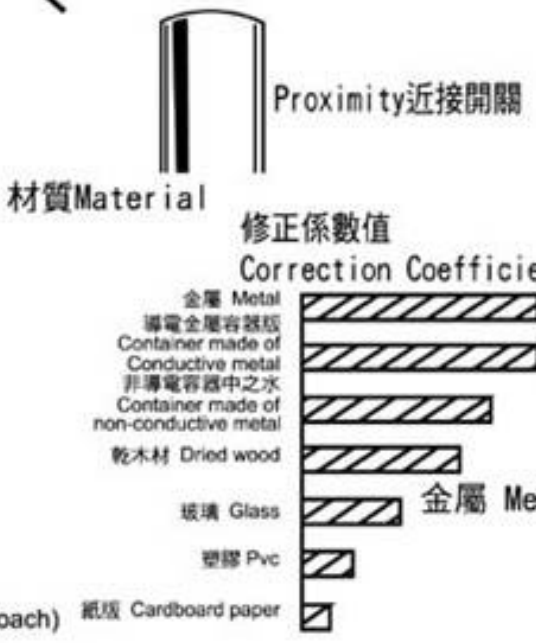
■ Static capacitance proximity switch can sense almost all of the object available. However its sensing distance varies with different electrical characteristics water absorbability and the size of each object.

■ 使用時需將金屬或物體接地，否則開關會產生誤作用。

■ When using a metal sheet or any of each object as a target, please be sure to have them grounded, otherwise the switch will not function.

■ 尾部附有感度調整器，可有效的調整距離。

■ Static capacitance proximity switch is equipped with an inductance on its tail part used to effectively adjust the sensing distance.



■ 現場安裝注意事項：
一、將開關安裝於現場，並將感度調整鈕，調至紅色LED為不亮的位置，
最弱之感度，(被測物未接近狀態)。
二、再將被測物放置開關之感測面(被測物正常運作時移動之路線)在順時方向調至
紅色LED亮燈位置為最佳感度(注意感度設置不可太強，否則常會有誤動作之發生)。

■ Precaution of Installation:
- Install the capactitive proximity switch in the divice and adjust the sensitive knob till Red LED in gloomy light. This is the weakly sensitivity (the sensing target doen't approach)
- Put the sensing target in the sensing side of photo sensor (when the sensing target is operating and moving properly), then adjust the sensitive knob in clockwise way till Red LED in bright light. This is the best sensitivity (to avoid error operation don't set stronger sensitivity)
- 拆下外面螺絲，然後用附屬品之螺絲起子轉動內部之電位計來調整靈敏度。
Unscrew the outer screw and then use the attached screw driver to turn the inside potentiometer to adjust sensitivity.