Http://www.100y.com.tw

# PS/PM series

### INDUCTIVE PROXIMITY SENSOR

CE

DC TYPE WITH SHORT CIRCUIT PROTECTION
 AND POLARITY REVERSED PROTECTION

直流型都附有短路保護和極性反接保護迴路

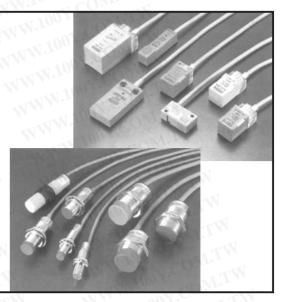
※ AC TYPE WITH SURGE ABSORBING CIRCUIT MAYAVOID SURGE DAMAGED 交流型都附有突波吸收迴路可避免突波破壞

\*\* HIGH SOLID COMPACT STRUCTURE IP-67
SUITED TO BE APPLIED IN THE POOR CIRCUMSTANCE

堅固結構- IP67- 適用各種環境

ALL MODELS WITH OPERATIN LED,
 EASY TO ADJUSTED

全機種附動作指示燈便於安裝調整



# ■ Guiding of Model 型號索引

### **TUBULAR TYPE**

Ex.  $\frac{PM}{\bigcirc} - \frac{12}{\bigcirc} \frac{04}{\bigcirc} - \frac{N}{\bigcirc} \frac{B}{\bigcirc} - \frac{S}{\bigcirc} - \frac{M12}{\bigcirc}$ 

1> TYPE型式 PM= SCREW TYPE螺絲型

2> OUTLINE DIAMETER 外徑 08=M8x1.0 18=M18x1.0 12=M12x1.0 30=M30x1.5

3> SENSING DISTANCE 檢測距離 02=2.0 mm 10=10. mm 05=5.0 mm 15=15.0 mm

4> OUTPUT METHOD 輸出方式 N=NPN P=PNP S=SCR

5> OUTPUT STATUS 輸出狀態 NON= NO TYPE B= NC TYPE B= NC TYPE

6> LENGTH OF BODY 本體長度 NON= STANDARD TYPE S= SHORT TYPE

7> CONNECTING METHOD 接線方式
NON= LEAD WIRE TYPE
M12= M12 CONNECTOR TYPE
PG= M8 LEAD WIRE CONNECTOR TYPE

### **SQUARE TYPE**

1> TYPE型式
PS=SQUARE TYPE PP=PLATE TYP
PL=LONG TYPE BS=MICRO TYPE

2> SENSING DISTANCE檢測距離 04= 4.0 mm 10= 10.0mm 05= 5.0 mm 15= 15.0 mm

3> OUTPUT METHOD 輸出方式 N= NPN P= PNP

4> OUTPUT STATUS輸出狀態 NON= NO TYPE B= NC TYPE B= NC TYPE

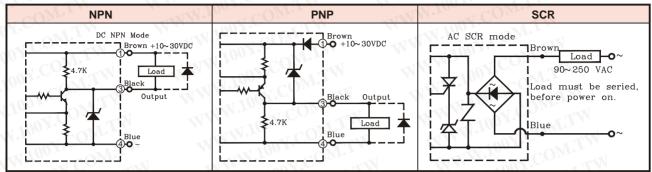
5> DIRECTION OF SENSING
V= VERTICAL TYPE 垂直式
NON= HORIZONTAL TYPE 水平式

6> CONNECTION METHOD接線方式
NON= LEAD WIRE TYPE
PG= M8 LEAD WIRE CONNECTOR TYPE

**NOTE**: THE B<NC> TYPE HAVE NO STOCK MAYBE, ACCEPTED ORDER TO MANUFACTURE



# Output Circuit & Connection Diagram



## General Data

DC Type	AC Type				
10~30 VDC	90~250VAC				
< 20% of Peak to Peak	50/60Hz				
150mA max.	100mA max.				
< 10mA	< 2mA				
< 0.1V	TW WW. 100Y.Co				
< 0.8mA	< 4.0mA				
<10% of Sens	sing Distance				
< 10 μ	um/C				
<1 μ	m/V				
Short Circuit & Polarity Reversed Protection	Surge Protection Circuit				
-20°C~+80°C ; 35	%~95% RH				
OOY.COTTY IV	-67				
3 Cores / 4.2 φ X 2m	2 Cores / 4.2 φ X 2m				
NPN : Red ;PNP ;Green	Blue				
	10~30 VDC  < 20% of Peak to Peak  150mA max.  < 10mA  < 0.1V  < 0.8mA  <10% of Sens  < 10 μ  < 1 μ  Short Circuit &  Polarity Reversed Protection  -20° C~+80° C; 35				

# Application Hints

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



# Square Type ( Plastic Housing )

	Outline Dimension	Model	Output Method	Sensing Distance	Mounting Method	Sensing Direction	Operating Voltage	Response	
2.0-9.0		LS-04N-V	NPN	4.0mm	Wethou	Direction	10 ~ 30 VDC	2KHZ	
		LS-04P-V	PNP		NEE 10	Vertical			
	2.0 5.0 14.0 5.0	LS-04N	NPN		Non- Flushed	001.			
	20.0   5.0   10.0	LS-04P	PNP		MMM	Horizontal			
	3.5. 17.5 11.0	SP-05N	NPN	5.0mm	Non-	Vortical	10 ~ 30	800HZ	
	30.5	SP-05P	PNP	LIW	Flushed	Vertical	VDC	800HZ	
	21.0	BS-02N	NPN	0.000	Flushed	MAITON	A.COM	TW	
	50.0 → 1 c2.0	BS-02P	PNP	2.0mm	Flushed	UNIW.10	10 ~ 30	01(1)7	
	4.0	BS-04N	NPN	$OW_{II}$	Non-	Vertical	VDC	2KHZ	
		BS-04P PNP	4.0mm	Flushed	W V	100 X	$M_{JJ,J}$		
	15.0	PP-05N NPN	raM. <sup>1</sup>	Fluebad	1111	1.1007	OM.TV		
	25.0	PP-05P	PNP	5.0mm	Flushed	- Vertical	10 ~ 30 VDC	800HZ	
	10.0 + 32.0 + 8.0 + 4.20 X 2	PP-08N	NPN	9.0mm	Non-				
	10.0	PP-08P	PNP	8.0mm	Flushed				
	+46.0}+	PS-04N-V	NPN	4.0mm	WT	Vortical	10 ~ 30	M.Com	
	6.0 Vertical type sensing face	PS-04P-V	PNP		Non-	Vertical		2KHZ	
	60 12.0 LED	PS-04N	NPN		Flushed	Horizontal	VDC	ZKIIZ	
	-15.0 -15.0	PS-04P	PNP	4.011111	$CO_{M',I}$	Tionzontai	WWW.	Juo -	
	Fixed Holes 3.2#x2 ⊕ ⊕ 	PS-05N	NPN	E Omm	Flushed	EW .	10 ~ 30 VDC	800HZ	
	1000 P	PS-05P	PNP	5.0mm					
	17.0	PS-08N	NPN	8.0mm	Non- Flushed	Horizontal			
	25.5 - 3.4	PS-08P	PNP			M.T.W			
	$\frac{1}{5.011}$ R = 1.6	PL-05N	NPN	5.0mm Flushed	WIIN	1	W 10		
	8.0 10.0 LED	PL-05P	N PNP	3.011111	Flushed	Horizontal	10 ~ 30	800HZ	
	17.0	PL-08N	NPN	8.0mm	Non-	Horizontai	VDC	OUUTZ	
	17.0 27.0 35.0 35.0	PL-08P	PNP	0.011111	Flushed	COMP	N	WWW	
	○ Fixed Holes 3.2D	PS-05S	SCR	5.0mm	Flushed	- Horizontal	90 ~ 250	20HZ	
	- 17.0 - 29.0 - 33.0 -	PS-08S	SCR	8.0mm	Non- Flushed	M.COM	VAC		
	Fexed Holes 4.2#X2¬	PS-10N	NPN	10.0mm Flushe	Flushed				
	18.0	PS-10P	PNP		Flustied	Horizontal	10 ~ 30 VDC	500HZ	
	± • • • • • • • • • • • • • • • • • • •	PS-15N	NPN	15 0mm	Non- Flushed	Tiorizoniai		JUUTZ	
	25.0	PS-15P	PNP	15.0mm Flu					
		PS-10S	SCR	10.0mm	Flushed	Horizontal	90 ~ 250	2047	
	25.0 46.0 50.0	PS-15S	SCR	15.0mm	Non- Flushed	Horizontal	VAC	20HZ	



PM08/PM12 series

# ■ M8/M12 Tubular Type

Outline Dimension	Model	Output	Output	Operating Voltage	Sensing	Response	Mounting
M. T. WALL	DM00 04N	Status	Method	voltage	Direction	Frequency	Method
M8 X 1.0	PM08-01N	NO	NPN	10 ~ 30 VDC		W	Flushed
45.0 10.0	PM08-01NB	NC	PNP		1.0mm	2.5KHZ	
55.0 + 100	PM08-01P	NO NC				$0M_{1.7}$	
COMITY	PM08-01PB PM08-02N	NO				OMA	
8 X 1.0	PM08-02NB	NC	NPN	10 ~ 30 VDC		$COM^{T}$	N
4.0 45.0 10.0	PM08-02P	NO			2.0mm	2.5KHZ	Non- Flushed
59.0	PM08-02PB	NC	PNP	1200		Mon	Tidoned
ON CONT.		NO		THE STATE OF THE S	110	M.Com	
M12 X 1.0	PM12-02N-S PM12-02NB-S	NC	NPN	10 20		OX.CO	
	PM12-02NB-S PM12-02P-S	NO	DM:	10 ~ 30 VDC	2.0mm	2.5KHZ	Flushed
7.0 - 27.0 - 10.0 -	PM12-02PB-S	NC	PNP		WW		
M.100X.COM.TW	PM12-04N-S	NO	COM	10 ~ 30 VDC	4.0mm	2.5KHZ	Non- Flushed
M12 X 1.0	PM12-04NB-S	NC	NPN				
<b>7</b>	PM12-04P-S	NO	PNP				
5.0 - 27.0 - 10.0 - 42.0	PM12-04PB-S	NC					
NAMA TOON COM	PM12-02N	NO	107.CO	10 ~ 30 VDC	2.0mm	2.5KHZ	Flushed
M12 X 1.0	PM12-02NB	NC	NPN				
	PM12-02P	NO	1700				
42.0 10.0	PM12-02PB	NC	PNP				
M. 1007.	PM12-04N	NO	W.100 1	COM	4.0mm	2.5KHZ	Non- Flushed
112 X 1.0	PM12-04NB	NC	NPN	10 ~ 30			
	PM12-04P	NO	100 TO	VDC			
-17.0 - 57.0 - 10.0 - 1	PM12-04PB	NC	PNP				
200 M12 X 1.0 L00	PM12-02S	NO		90 ~ 250 VAC	2.0mm	20HZ	Flushed
	PM12-02SB	NC	SCR				
9-+ + 52.0 + + 1.0	PM12-04S	NO NO	WWW	90 ~ 250 VAC	4.0mm	20HZ	Non- Flushed
20.0	PM12-04SB	NC	SCR				
57.0	PM12-02N-M12	NO		W.100	2.0mm	2.5KHZ	Flushed
M12 X 1.0	PM12-02NB-M12	NC	NPN	10 ~ 30 VDC			
	PM12-02P-M12	NO					
52. 0	PM12-02PB-M12	NC	PNP 🦠			I.TW	
W	PM12-04N-M12	NO	NPN	10 ~ 30 VDC	4.0mm	2.5KHZ	
M12 x 1.0	PM12-04NB-M12	NC					Non-
5.0 30 5	PM12-04P-M12	NO	PNP				Flushed
57. 0	PM12-04PB-M12	NC					

# ■ M18 Tubular Type

Outline Dimension	Model	Output Status	Output Method	Operating Voltage	Sensing Direction	Response Frequency	Mounting Method	
M18 X 1.0	PM18-05N-S	NO	NDN	XIV.100	MOD	I		
29.0 ( LED	PM18-05NB-S	NC	NPN	10 ~ 30 VDC	F 0	000117	Flushed	
24.0 27.0 10.0 2.0	PM18-05P-S	NO	PNP		5.0mm	800HZ		
24.0 27.0 10.0	PM18-05PB-S	NC	PNF	WWW				
M18 X 1.0	PM18-08N-S	NO	NPN	10 ~ 30 VDC	TOTAL C	DE TW	Non- Flushed	
29.0 (C)	PM18-08NB-S	NC NC	NFN N		8.0mm	800HZ		
24.0 6.0 27.0 10.0	PM18-08P-S	NO	PNP		V.S.	COOLIE		
43.0	PM18-08PB-S	NC	PNP		W.100	<sup>1</sup> CO <sub>M·</sub> ,		
M18 X 1.0	PM18-05N	NO	NPN	N	NW.100	ST COM	Flushed	
8 ( ) LED	PM18-05NB	NC	NPN	10 ~ 30 VDC	5.0mm	800HZ		
24.0 40.0 10.0	PM18-05P	NO	PNP					
50.0	PM18-05PB	NC	TY					
M18 X 1.0	PM18-08N	NO	NPN PNP	10 ~ 30 VDC	8.0mm	800HZ	Non- Flushed	
	PM18-08NB	NC						
24.0 6.0 40.0 10.0	PM18-08P	NO						
56.0	PM18-08PB	NC	J COM	, i ·		W.Ing	TCOM.	
Polymid Housing	PM18-08N-P	NO 10	NPN	10 ~ 30 VDC	8.0mm	800HZ	Non- Flushed	
M18 X 1.0	PM18-08NB-P	NC						
)- LED	PM18-08P-P	NO	PNP	10 ~ 30	8.0mm	800HZ	Non-	
·	PM18-08PB-P	NC	SCR	10 ~ 30	8.0mm	20HZ	Non- Flushed	
48.0 71.0	PM18-08S-P	NO						
WWW.	PM18-08SB-P	NC	100	VDC				
M18 x 1.0	PM18-05S	NO	SCR 90 ~ 250	5.0mm	20HZ	Flushed		
40.0 10.0	PM18-05SB	NC	VAC				riusiled	
M18 X 1.0	PM18-08S	NO	MMM	90 ~ 250	OM.TW	· · · · ·	Non-	
24.0 6.0 40.0 10.0 56.0	PM18-08SB	NC	SCR	VAC	8.0mm	20HZ	Flushed	
ПП <u>М18 X 1.0</u>	PM18-05N-M12	NO		1. 100 .	COM.	-XX		
+ MIZ X 1	Pm18-05NB-M12	NC	NPN	10 ~ 30	FOOM	000117		
27.0	PM18-05P-M12	NO	DND	VDC	5.0mm	800HZ	Flushed	
24. 0 - 37. 0 - 55. 0	PM18-05PB-M12	NC	PNP	1111				
ΠΠ M18 X 1.0	PM18-08N-M12	NO	NDN					
S MIS X	Pm18-08NB-M12	NC	NPN	10 ~ 30	9.0	000117	Non-	
	PM18-08P-M12	NO	DND	VDC	8.0mm	800HZ	Flushed	
43. 0 61. 0	PM18-08PB-M12	NC	PNP					

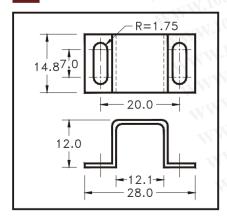


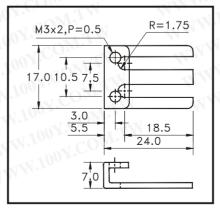
W.100Y.COM.TW

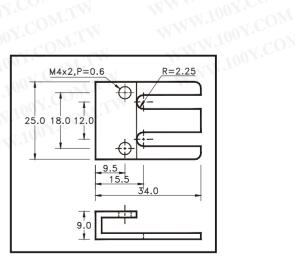
# M30 Tubular Type

Outline Dimension	Model	Output Status	Output Method	Operating Voltage	Sensing Direction	Response Frequency	Mounting Method
M50 X 1.5	PM30-10N-S	NO	NDN	10 ~ 30 VDC		T.L.	
	PM30-10NB-S	NC	NPN		001.00	MTW	
	PM30-10P-S	NO	PNP		10.0mm	500HZ	Flushed
36.0 25.0 10.0 3.0	PM30-10PB-S	NC		MMM.	100Y.C	VIII	
M30 X 1.5	PM30-15N-S	NO	Wini	WWW	· You	COMP	N
	PM30-15NB-S	NC	NPN	10 ~ 30 VDC	15.0mm	500HZ	Non- Flushed
	PM30-15P-S	NO	DÚD				
36.0 10.0 25.0 10.0 3.0 45.0	PM30-15PB-S	NC	PNP		NW.100		
M30 X 1.5	PM30-10N	NO	MIN	10 ~ 30 VDC	10.0mm	500HZ	Flushed
41.5	PM30-10NB	NC	NPN				
	PM30-10P	NO	PNP				
	PM30-10 PB	NC					
11.5 1.50 X 1.5 1.5 1.50 X 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5	PM30-15N	NO	NPN	10 ~ 30 VDC	15.0mm	500HZ	Non- Flushed
	PM30-15NB	NC					
	PM30-15P	NO	CON				
	PM30-15PB	NC	PNP				
41.5 S6.0 40.0 10.0 3.0	PM30-10S	NO	SCR	90 ~ 250 VAC	10.0mm	20HZ	Flushed
	PM30-10SB	NO					
PM30-15SB	PM30-15S	NO	SCR	90 ~ 250 VAC	15.0mm	20HZ	Non- Flushed
	PM30-15SB	NO					

## Fixed Bracket



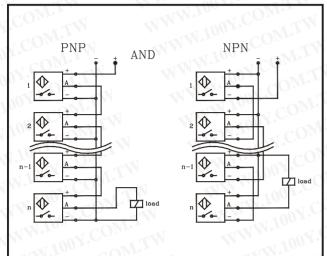


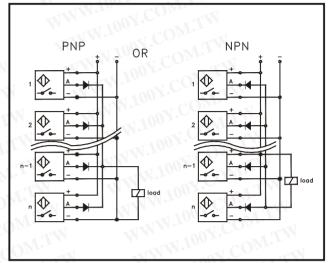




# INDUCTIVE PROXIMITY SENSOR CE

# Connecting Method of AND & OR





# Basic Definition of Inductive Proximity Sensor

### **Target**

Which is steel, 1 mm thick ness, square form with width lengths 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 Factors.

### Accuracy < Repetition >

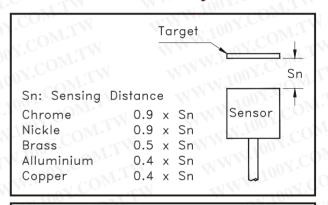
Tolerance of operating position that sensor is certainly operated under the same conditions .

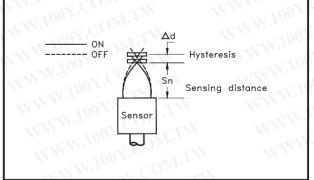
### **Hysteresis**

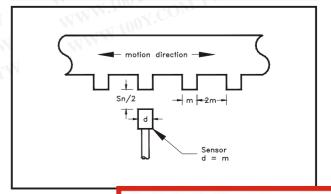
Hysteresis is the different distance between the operating points that the target is approaching and leaving the sensing area of the sensor , The value is expressed as a percentage of the sensing distance , <  $\triangle$  d/Sn% > .

### **Switch frequency**

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





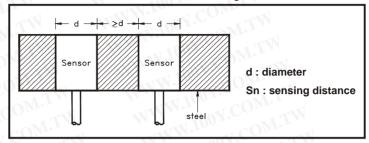




# How To Install Induction Proximity Sensor

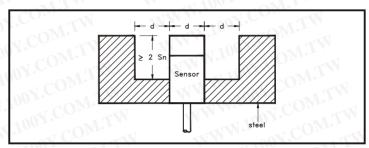
### Flushed type

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



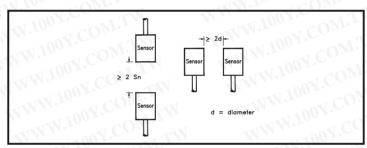
#### Non-flushed

A proximity sensor cannot be flushed in metal, a clear zone of 3 time of the diameter of the sensing surface must be keeped.



#### Mutual Interference

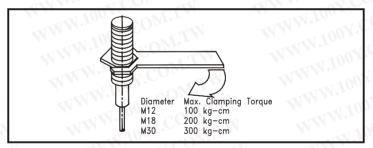
Installing inductive proximity sensors of the same model face to face or side by side , please set the minimum distance between the sensors larger than the diameter of sensor , to avoid the malfunction .



### **Clampling torque**

Be sure to set a spring washer when fixing the sensor .

Don't tighten the sensor's mounting screw of PM series , with a clamping torque higher the right values .



### Wiring

To avoid being influenced by noised . Try best to separate the cable of the sensor from power lines and high

If extend the sensor cable , use a cable which diameter as same as that .

