

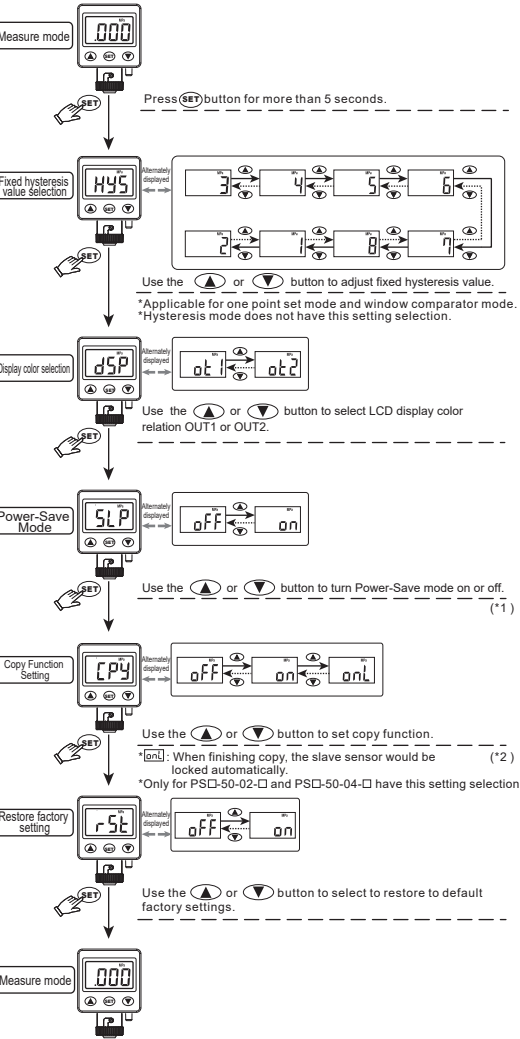
For your safety, please read the following before using.

- Do not use fluid or air that will corrode SUS316L, please confirm the specification details.
- Please use within the rating pressure range. Do not apply pressure beyond recommended maximum withstand pressure, permanent damage to the pressure sensor may occur.
- Do not drop, hit or allow excessive shock. Even if switch body appears undamaged, internal components may be broken and can cause malfunction.
- Turn power off before connect the wiring. Wrong wiring or short circuit will damage and / or cause malfunction.
- This product is not explosion-proof rated. Do not use in atmosphere containing flammable or explosive gases.
- Wiring for pressure sensor should avoid power source line and high voltage line. If use in the same circuit, noise may cause malfunction.
- The product is complied CE certificate, but no surge absorber. If required, please find other way to solve.
- Do not exceed the screw-in torque of 13.6 N.m when installing piping. Exceeding this value may cause malfunction.

A. SPECIFICATIONS

TYPE		PSN-50 (Positive)	PSH-50 (High)	PSV-50 (Vacuum)	PSC-50 (Compound)
Rated pressure range		0.000~1.000MPa	0.000~2.00MPa	0.0~101.3kPa	-100.0~100.0kPa
Set pressure range		-0.100~1.000MPa	-0.100~2.00MPa	10.0~101.3kPa	-101.0~101.0kPa
Withstand pressure		3MPa		300kPa	
Fluid		Fluid or air that will not corrode SUS 316L			
Sealed liquid		Silicon oil			
Set pressure resolution	kPa	—	—	0.1	
	MPa	0.001	0.001(-1.999) 0.01(20.0~)	—	
	kgf/cm ²	0.01	0.01(-19.99) 0.1(20.0~)	0.001	
	bar	0.01	0.01(-19.99) 0.1(20.0~)	0.001	
	psi	0.1	0.1(-199.9) 1(200~)	0.01	
	inHg	—	—	0.1	
Power supply voltage		12 to 24V DC ±10%, Ripple (P-P) 10% or less			
Current consumption		≤ 40mA (With no load)			
Switch output	Output type	2 NPN or 2 PNP open collector			
	Max. load current	125mA			
	Max. supply voltage	30V DC (at NPN output), 24V DC (at PNP output)			
	Residual voltage	≤ 1.5V			
	Response time	≤ 2.5ms (chattering-proof function: 25ms, 100ms, 250ms, 500ms, 1000ms and 1500ms selections)			
Output short circuit protection		Yes			
Analog output	Voltage	1~5V (±2.5% F.S.)			
	Impedance	About 1kΩ			
	Current	4~20mA (±2.5%)			
	Impedance	Max.Load Impedance: 250Ω at power supply of 12V 600Ω at power supply of 24V Min.Load Impedance: 50Ω			
	Linearity	±1% F.S.			
Display	LCD display	3 ½ digital, 7 segment LCD display (Red / Green / Orange) (Sampling rate : 5 times / sec.)			
	Switch on indicator	Orange Indicator 1 : OUT1 & Orange Indicator 2 : OUT2			
	Updates time	About 0.2s			
	Indicator accuracy	±2% F.S. ±1 digit (ambient temperature: 25 ±3°C)			
Repeatability(Switch output)		±0.3% F.S. ±1 digit			
Enclosure		IP65			
Operation ambient temp. range		0 ~ 50°C			
Storage ambient temp. range		-10 ~ 60°C (No condensation or freezing)			
Ambient humidity range		35 ~ 85% RH (No condensation)			
Environment	Withstand voltage	250V AC in 1-min (between case and lead wire)			
	Insulation resistance	50MΩ (at 500V DC, between case and lead wire)			
	Vibration	Total amplitude 1.5mm or 10G, 10Hz-55Hz-10Hz scan for 1 minute, two hours each direction of X, Y and Z			
	Shock	100m/s ² (10G), 3 times each in direction of X, Y and Z			
Temperature characteristic		±3% F.S. of detected pressure (25°C) at temp. Range of 0~50°C			
Port size		R : R1/4", M5 : NPT : NPT1/4", #10-32UNF : G : G1/4"(BSPP), M5			
Lead wire		Ø4 Oil-resistance cable (PVC) - 26 AWG (0.15 mm ²) - 5 cores			
Weight (With 2 meter lead wire)		Approx. 110g (Rear ported)			
		Approx. 150g (Bottom ported)			

H. ADVANCE SETTING MODE

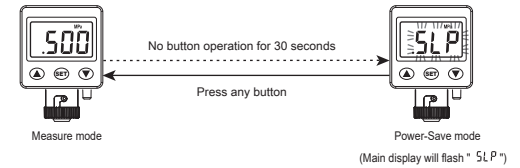


【NOTE :】

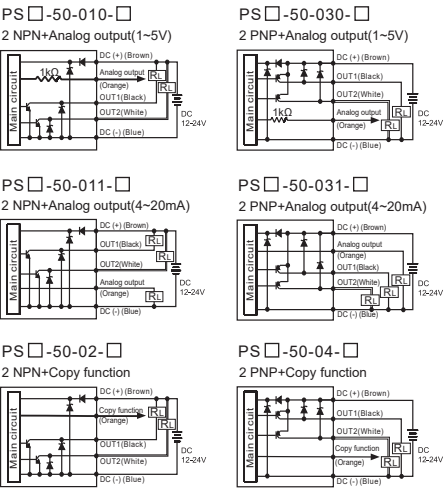
- *1. When setting is " **[Lo]** ", the power-save mode is active. Please refer to the item " **[Lo]** " in detailed.
- *2. When setting " **[Lo]** " or " **[Lo]** ", the display copy function mode is active. Please refer to the item " **[Lo]** " in detailed.

I. POWER-SAVE MODE

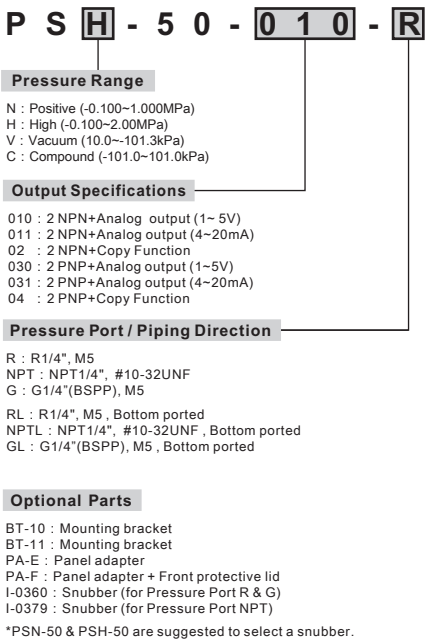
- During Power-Save mode, the main display will turned off if no buttons is pressed after 30 seconds.
- During Power-Save mode, the output LCD may not be synchronize with the output. It is normal and will not affect output operation.
- Press any button to turn-on main display temporarily.



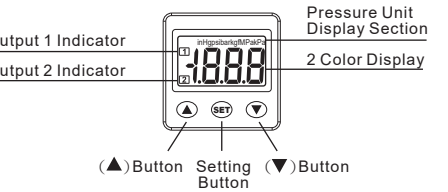
B. OUTPUT CIRCUIT WIRING DIAGRAMS



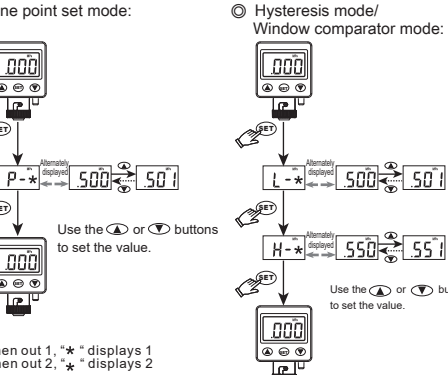
C. ORDERING INFORMATION



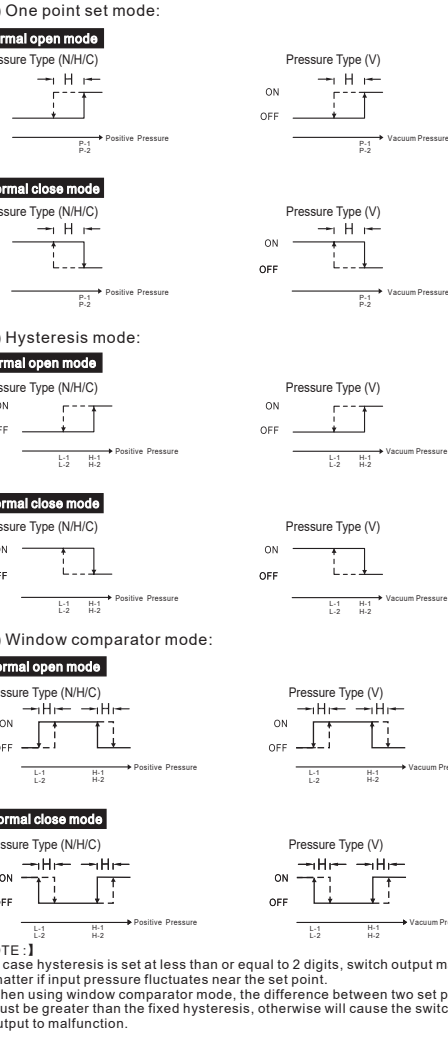
D. PANEL DESCRIPTION



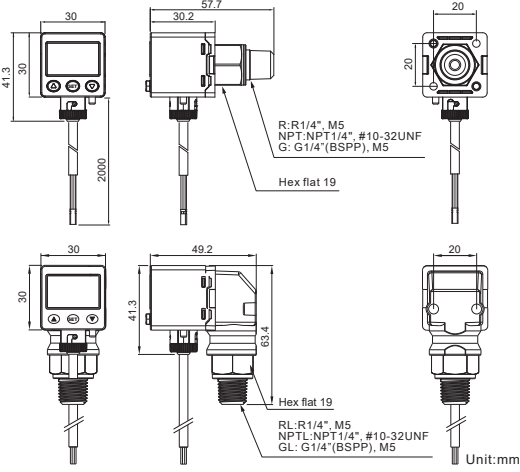
J. PRESSURE SETTING MODE



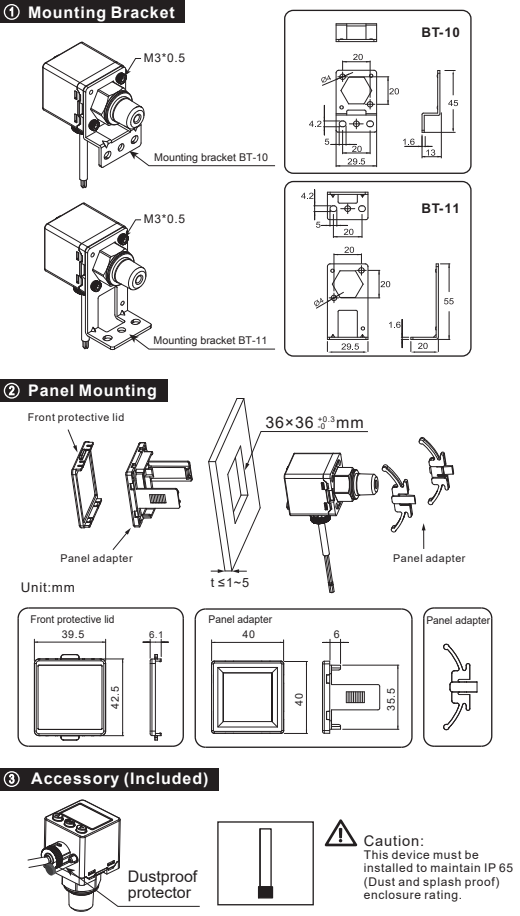
K. OUTPUT TYPE 1



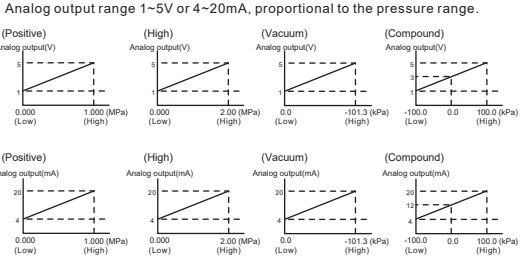
E. DIMENSIONS



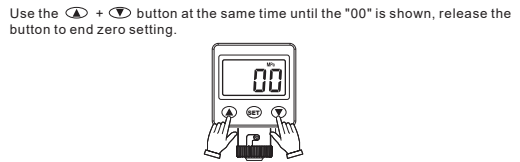
F. OPTIONAL PARTS DIMENSIONS



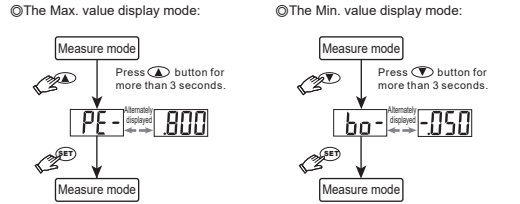
L. ANALOG OUTPUT DESCRIPTION



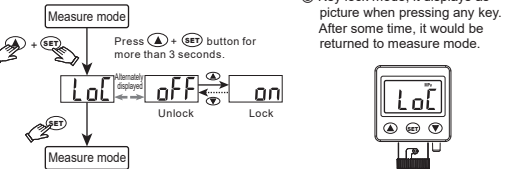
M. ZERO POINT SETTING



N. THE MAX. & MIN. DISPLAY MODE

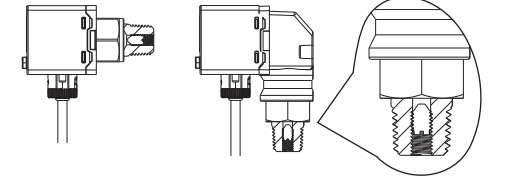


O.KEY LOCK/UNLOCK MODE



P. REMOVABLE SNUBBER INSTALLED

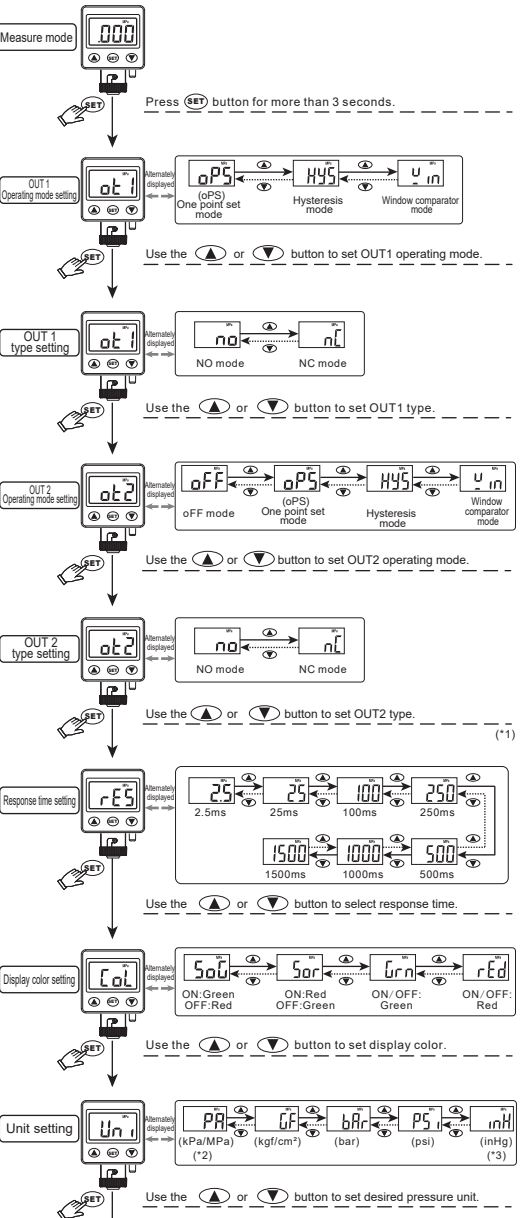
Pressure port equipped with snubber can avoid damage caused by sudden pressure surge of water or oil, improve product durability.



Q.PRESSURE UNIT CONVERSION TABLE

From	To	Pa	kPa	MPa	kgf/cm²	psi	bar	inHg
1 Pa	1	0.001	0.000001	0.000010197	0.000145038	0.00001	0.0002953	
1 kPa	1000.000	1	0.001000	0.010197	0.145038	0.010000	0.2953	
1 MPa	1000000	1000	1	10.197	145.038	10	295.2998	
1 kgf/cm²	98066.5	98.0665	0.0980665	1	14.2233	0.980665	28.9579	
1 psi	6895	6.895	0.006895	0.07031	1	0.06895	2.036074	
1 bar	100000.0	100.0000	0.100000	1.01972	14.5038	1	29.52998	
1 inHg	3386.388	3.386388	0.003386	0.034530	0.491141	0.033863	1	

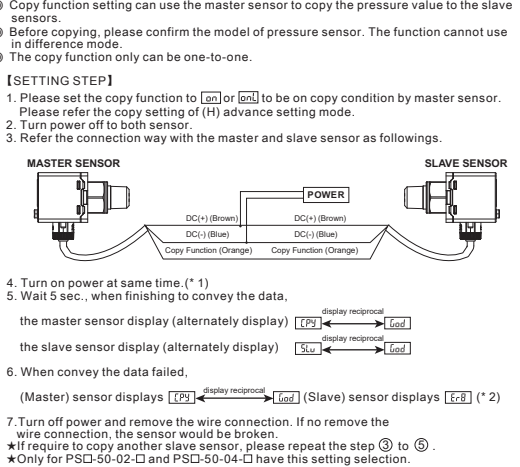
G. INITIAL SETTING MODE



【NOTE :】

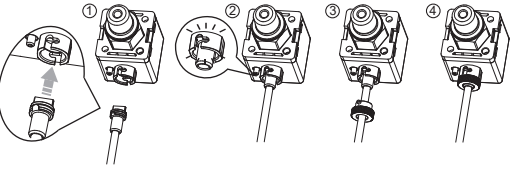
- *1. This setting mode will not display when output 2 is set to off.
- *2. Pressure unit is kPa with positive and high pressure. Pressure unit is MPa with vacuum and compound pressure.
- *3. Only applicable for Vacuum/Compound.

R. COPY FUNCTION SETTING



S. WIRE INSTALLATION INSTRUCTION

- Please install the wire as the following step.
- Turn upward the salient point by terminal. (See figure ①)
 - Install to the terminal to the groove by pressure sensor. (See figure ②)
 - Terminal cover install to the products. (See figure ③)
 - Turn the terminal cover to lock. (See figure ④)



T. ERROR CODE INSTRUCTION

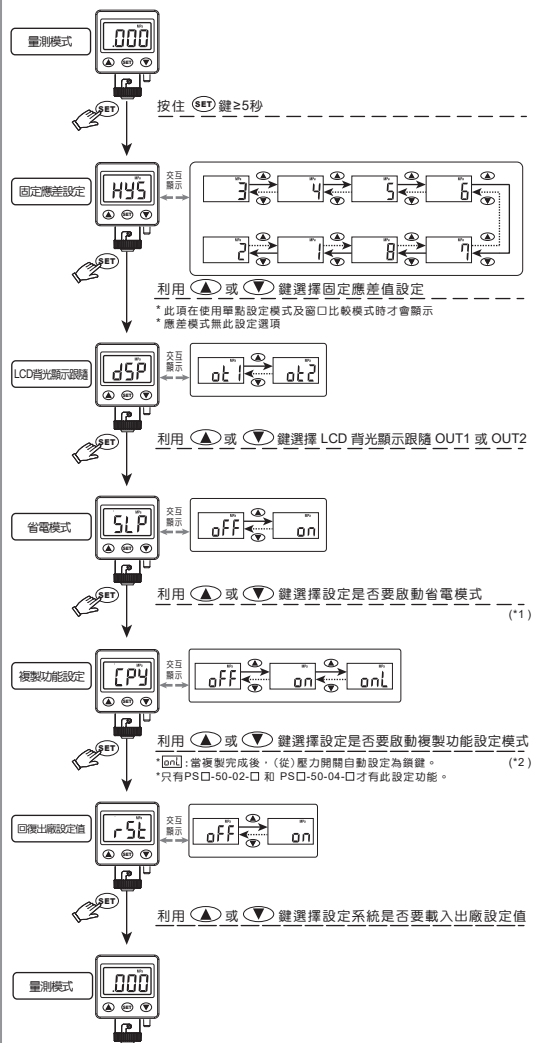
Error Type	Error code	Error Condition	Troubleshooting
Excess load current error	Er 1	Output 1 load current is more than 125 mA	Turn power off and check the cause of overload current or lower the current load under 125 mA, then restart.
Residual pressure error	Er 2	Output 2 load current is more than 125 mA	Change input pressure to ambient pressure and perform zero reset again.
Applied pressure error	HHH	Supply pressure exceeds the upper limit of pressure setting.	Adjust the pressure within operating pressure range.
	LLL	Supply pressure exceeds the lower limit of pressure setting.	
System error	Er 4	Internal system error	
	Er 5	Internal system error	Turn power off, and then restart.
	Er 6	Internal data error	If error condition remains, please return to factory for inspection.
	Er 7	Internal data error	
Copy data error	Er 8	Copy data error	Please check the model no. and wire connection. Restart to turn on power if no return to normal condition, please return to factory for inspection.

數位顯示型壓力傳感器 PS-50 系列

- 使用本產品應注意事項：
- 禁止使用會腐蝕SUS316L的流體，請詳細確認規格後再使用。
 - 請在規格表內的額定壓力範圍內使用，若供給之壓力超過最大耐壓會使本產品損壞，導致功能異常。
 - 裝設本產品時，請勿用力撞擊或從高處掉落，即使外觀未受損害也可能因內部零件損壞而導致功能異常。
 - 在連接本產品於電路控制系統時，應先關掉電源，因為錯誤的接線或短路會導致本產品損壞。
 - 本系列產品並未作有防塵驗證，請勿使用於空氣中含有爆炸性氣體或粉塵環境中。
 - 不可將連接本產品的導線與電源線或其它高壓電線纏綁在一起，以避免雜訊的干擾，而影響到本產品的功能。
 - 本壓力開關為符合CE認證品，但無具有耐雷擊突波性。對於耐雷擊突波的保護，請另外在裝置側，採取其他対策對應。
 - 配管鎖附強度13.6N.m。大於此扭力將造成管裂引發故障。

A. 規格表					
型 號		PSN-50 (正壓)	PSH-50 (高壓)	PSV-50 (負壓)	PSC-50 (遠成壓)
額定壓力範圍		0.000~1.000MPa	0.000~2.00MPa	0.0~101.3kPa	-100.0~100.0kPa
設定壓力範圍		-0.100~1.000MPa	-0.100~2.00MPa	10.0~101.3kPa	-101.0~101.0kPa
耐壓力		3MPa			
適用氣體		非腐蝕 SUS 316L 之流體			
元件密封液體		砂油			
壓力單位 設定最小刻度	kPa	—	—	0.1	
	MPa	0.001	0.001(-1.999) 0.0120(0~)	—	
	kgf/cm ²	0.01	0.01(-19.99) 0.120(0~)	0.001	
	bar	0.01	0.01(-19.99) 0.120(0~)	0.001	
	psi	0.1	0.1(-199.9) 1200(—)	0.01	
	inHg	—	—	0.1	
電源電壓		12 to 24V DC ±10%，請波峰値 10% 以下			
消費電流		≤ 40mA 以下(無負載時)			
開關輸出	輸出型態	2 NPN 或 2 PNP 開集極輸出			
	最大負載電流	125mA			
	最大供應電壓	2 NPN 30V DC, 2 PNP 24V DC			
	內部壓降	1.5V 以下			
	反應時間	≤ 2.5ms (預防誤動作功能: 25ms, 100ms, 250ms, 500ms, 1000ms, 1500ms 可選擇)			
輸出短路保護		有			
類比輸出	電壓型	電壓輸出 1~5V (±2.5% F.S.)			
		輸出阻抗 約 1kΩ			
	電流型	電流輸出 4~20mA (±2.5%)			
		負載阻抗最大：250Ω 在電壓為 12V 600Ω 在電壓為 24V 負載阻抗最小：50Ω			
直線性		±1% F.S.			
顯示	顯示方式	3 ½ 位, 7 段 LCD 顯示 (紅色 / 綠色 / 橙色) (取樣率: 5 次 / 秒)			
	動作顯示燈	橙色指示燈 1: OUT1 及 橙色指示燈 2: OUT2			
	更新時間	約 0.2 秒			
	顯示精度	±2% F.S. ±1 digit (在適圍溫度: 25 ±3°C)			
重複精度		±0.3% F.S. ±1 digit			
耐環境	結構保護等級	IP65			
	使用溫度範圍	0 ~ 50°C			
	儲存溫度範圍	-10 ~ 60 °C (無水露及不結冰狀況下)			
	環境濕度範圍	35 ~ 85% RH (無水露)			
	耐電壓	250V AC 1分鐘(引線及塑膠外殼間)			
	絕緣阻抗	50MΩ以上 (500V DC)(引線及塑膠外殼間)			
	耐振動	複振幅 1.5mm, 每 1分鐘 10Hz~55Hz~10Hz, X、Y、Z 每個方向各 2 小時			
耐衝擊	100m/s ² (10G) X、Y、Z 每個方向各 3 次				
溫度特性		±3% F.S. 比較參考溫度 25°C (0 ~ 50°C 溫度範圍內)			
接管口徑		R: R1/4", M5; NPT: NPT1/4", #10-32UNF; G: G1/4"(BSPP), M5			
電線規格		Ø4 耐油 PVC-26 AWG (0.15 mm ²) - 5 芯			
重量 (包含 2公尺的電線)		約 110g (接管朝後): 約 150g (接管朝下)			

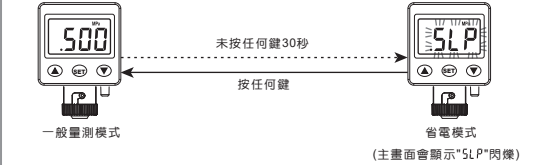
H. 進階設定模式



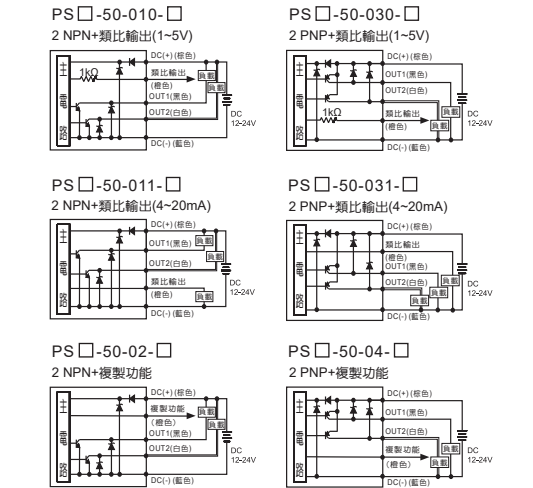
- 【註：】
- *1. 當設定為 **[on]** 時，即啟動省電模式，詳細說明請參考說明書第 10 頁。
 - *2. 當設定為 **[on]** 或 **[on]** 時，即進入顯示複製功能設定模式，詳細說明請參考說明書第 10 頁。

I. 省電模式

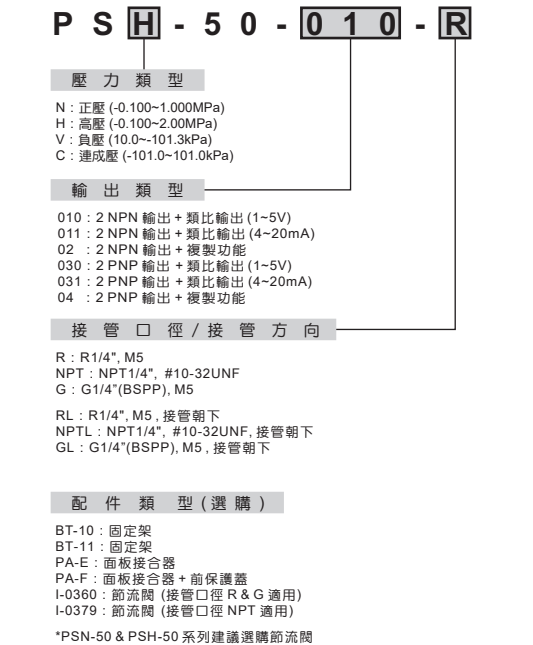
- 當啟動省電模式設定時，壓力傳感器在量測模式下，未按任何鍵 30 秒後，壓力傳感器會進入省電模式。
- 當壓力傳感器處於省電模式時，傳感器動作指示燈可能會有不同步的現象，但不會影響傳感器的動作。
- 當壓力傳感器處於省電模式時，按下任何鍵，壓力傳感器會自動回到一般量測模式。



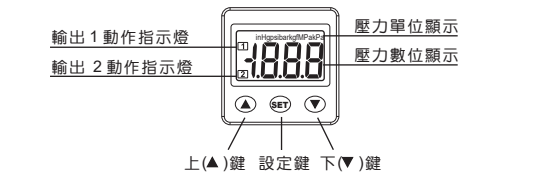
B. 輸出電路接線圖



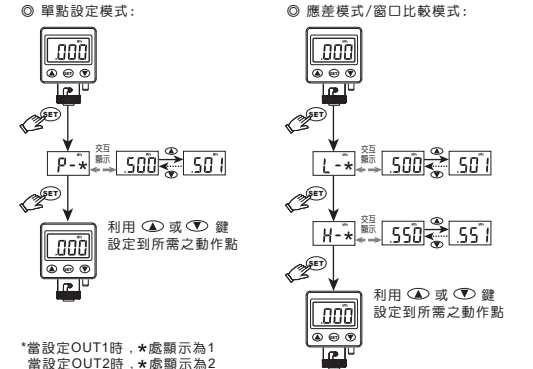
C. 型號規格說明



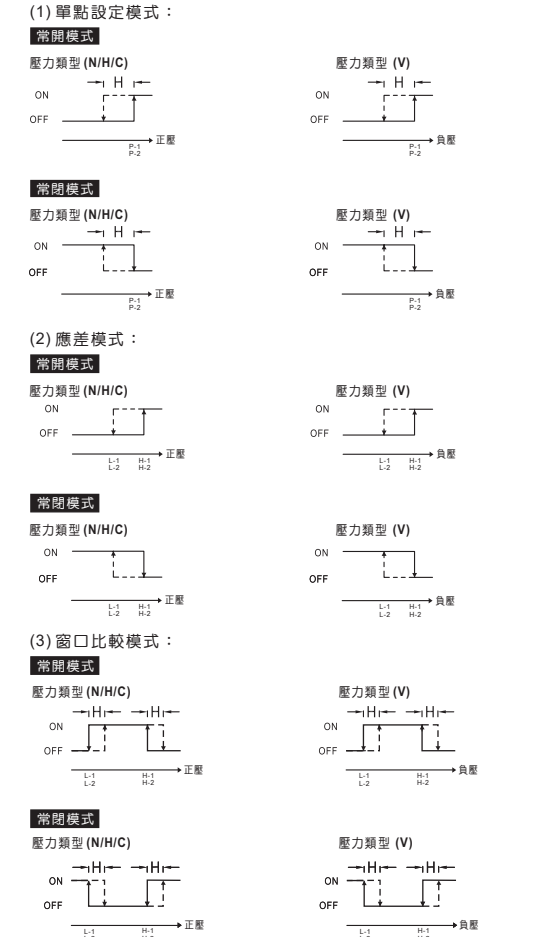
D. 面板說明



J. 壓力設定模式

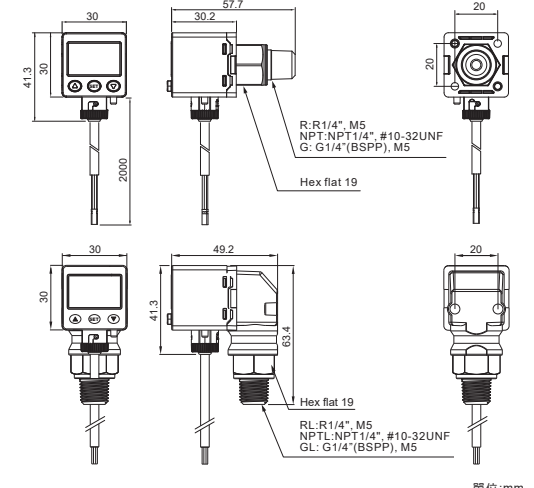


K. 輸出型態

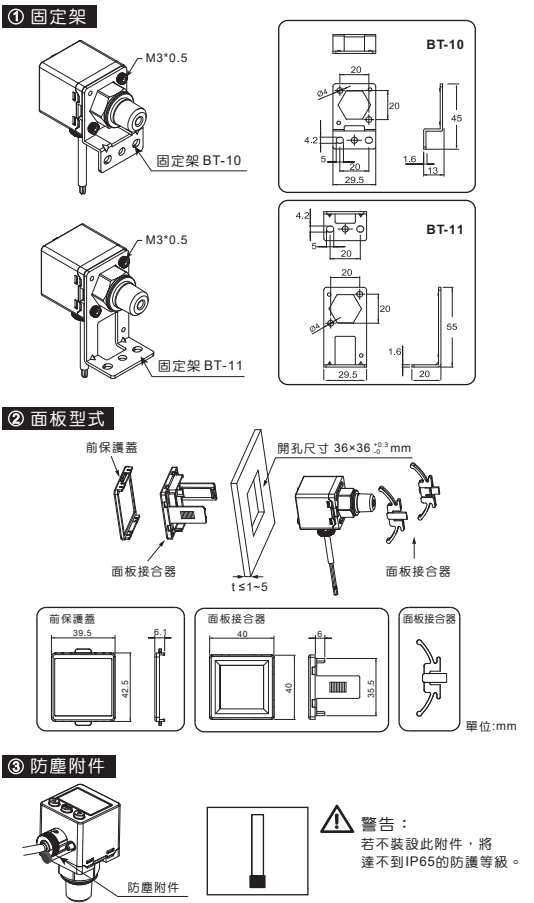


- 【註：】
- *1. 當應差模式時，如壓力設定值在二個 digits 內，若輸入氣壓非常接近壓力設定值，壓力傳感器輸出可能會誤動作。
 - *2. 當設定於窗口比較模式時，設定 2 點之差一定要大於固定應差設定值，否則壓力傳感器輸出會無動作。

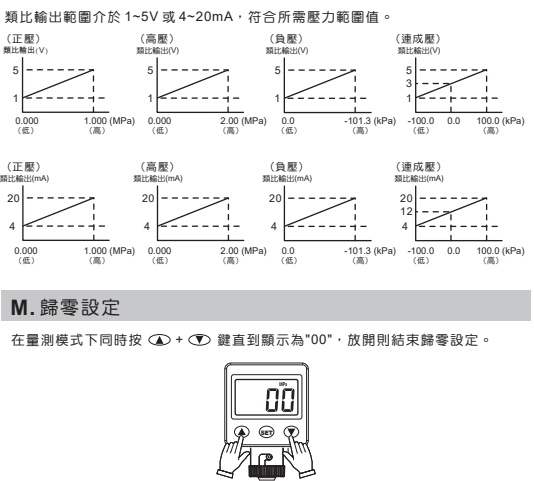
E. 外觀尺寸



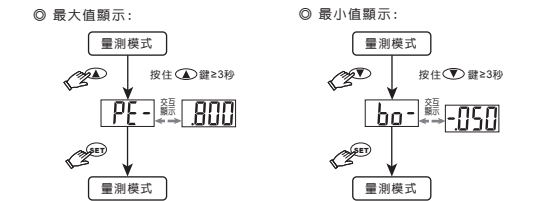
F. 配件類型 / 尺寸圖



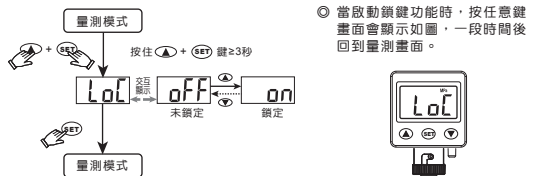
L. 線性類比輸出說明



N. 最大/最小值顯示

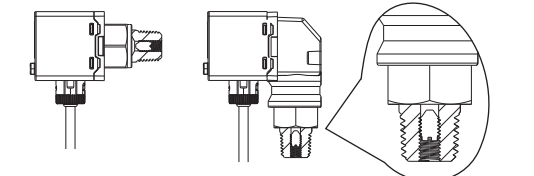


O. 按鍵鎖定功能



P. 拆除式節流閥裝置

接頭內部之節流閥裝置可降低管路內的水或油因瞬間衝擊造成產品損壞，提高產品耐震性。

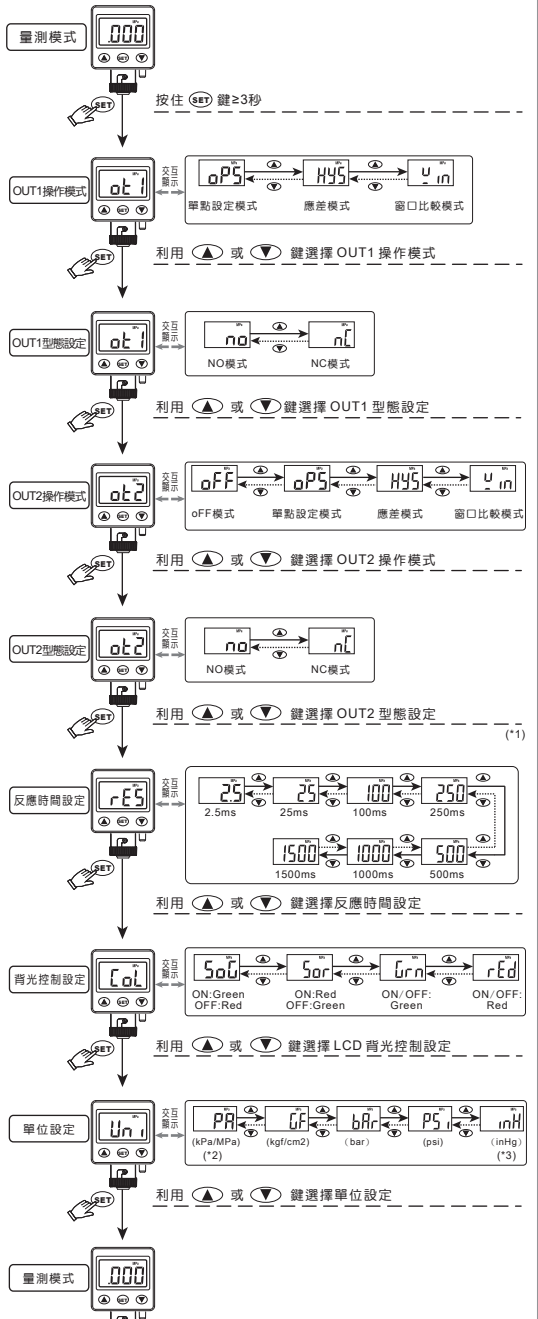


*如遇阻塞情形，可使用一字起子將節流閥拆除清潔。

Q. 壓力單位轉換表

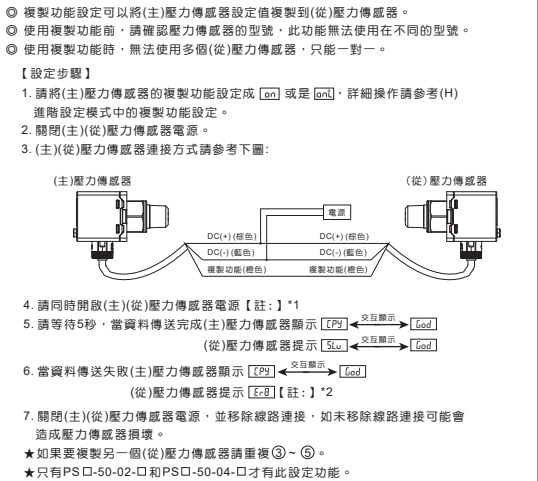
From	To	Pa	kPa	MPa	kgf/cm ²	psi	bar	inHg
1 Pa	1	0.001	0.000001	0.000010197	0.000145038	0.00001	0.0002953	
1 kPa	1000.000	0.001000	0.001000	0.010197	0.145038	0.010000	0.2953	
1 MPa	1000000.0	1000	1	10.197	145.038	10	295.2998	
1 kgf/cm ²	98066.5	98.0665	0.0980665	1	14.2233	0.980665	28.9579	
1 psi	6895	6.895	0.006895	0.07031	1	0.06895	2.30674	
1 bar	100000.0	100.0000	0.100000	1.01972	14.5038	1	29.52998	
1 inHg	3386.388	3.386388	0.003388	0.034530	0.491141	0.033863	1	

G. 基本設定模式



- 【註：】
- *1. 當 OUT2 操作模式為 OFF 時，就不會有此設定項。
 - *2. 正壓及高壓單位為 MPa，負壓及遠成壓為 kPa。
 - *3. 此單位僅適用於負壓及遠成壓。

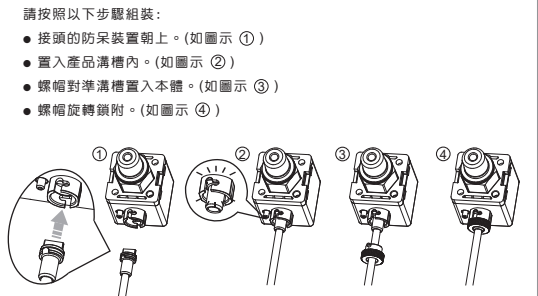
R. 複製功能設定



- 【註：】
- *1. 請注意，如果電源開啟不同步，設定內容可能無法複製。
 - *2. 當資料傳送失敗，請確認接線是否正確，並重複步驟 ③ ~ ⑤。

- 如何取消(主)壓力傳感器的複製功能設定:
- 當(主)壓力傳感器顯示 **[Err]**，交互顯示 **[Err]**，請按 **[Err]** 即可關閉複製功能設定模式。

S. 線組組裝說明



T. 錯誤訊息說明

錯誤名稱	錯誤顯示	錯誤說明	解決
過電流錯誤	Err1	輸出 1 負載電流超過 125mA	關閉電源，檢查負載電流過大的原因或將負載電流降至 125mA 以內再重啟電源。
過電流錯誤	Err2	輸出 2 負載電流超過 125mA	
殘留壓力錯誤	Err3	零值設定範圍超過 ±3% F.S. (PSH-50 系列為 ±1.5% F.S.)	改變周遭壓力之後，再重新作歸零。
使用壓力錯誤	HHH	使用的壓力超過壓力設定值的上限	供給壓力調整在使用壓力範圍內。
使用壓力錯誤	LLL	使用的壓力超過壓力設定值的下限	
系統錯誤	Err4	內部系統錯誤	切斷電源並重新供電，若無回復正常狀態則需送回原廠分析。
系統錯誤	Err5	內部系統錯誤	
系統錯誤	Err6	內部資料錯誤	
系統錯誤	Err7	內部資料錯誤	
複製資料錯誤	Err8	複製資料錯誤	請檢查型號及接線是否正确，並重新供電，若無回復正常狀態則需送回原廠分析。