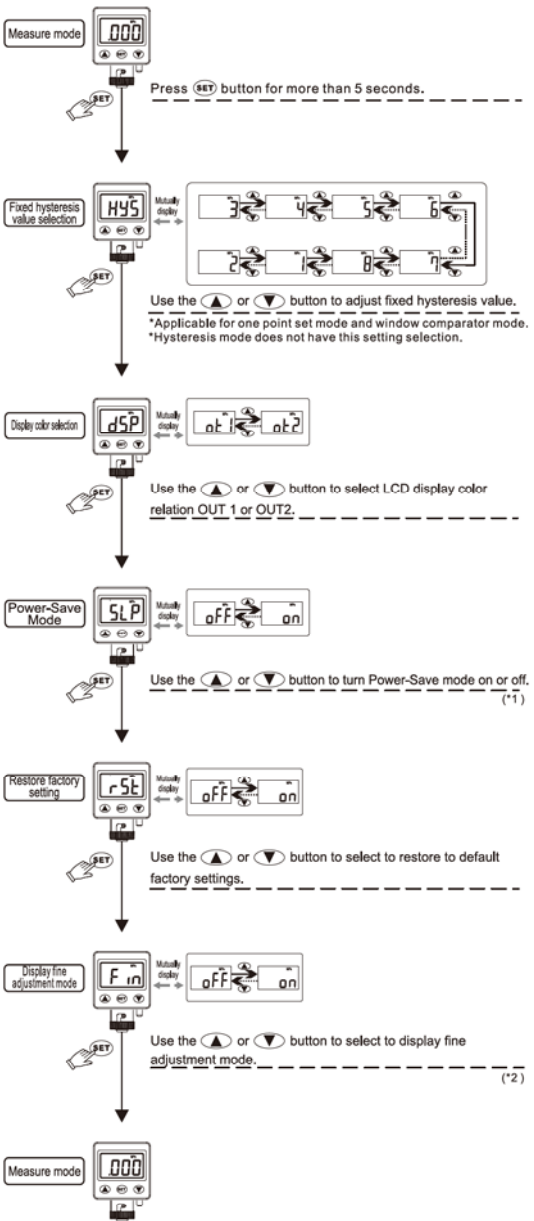


- For your safety, please read the following before using.**
- Do not use corrosive or flammable gas or liquid with this product.
 - Please use within the rating pressure range. Do not apply pressure beyond recommended maximum withstand pressure, permanent damage to the pressure sensor may occur.
 - 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 connecting wiring. Wrong wiring or short circuit will damage and / or cause malfunction.
 - Do not use in environment containing steam or oil vapor.
 - 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.

A. SPECIFICATIONS

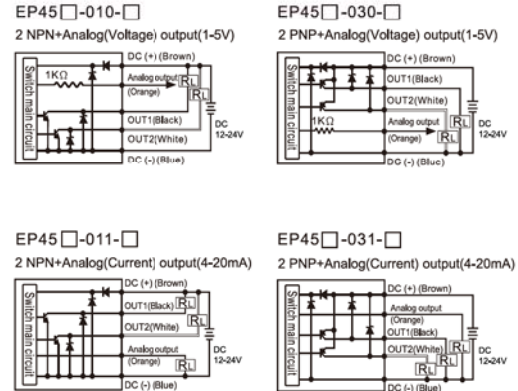
TYPE	EP45P-□-□ (Positive)	EP45V-□-□ (Vacuum)	EP45C-□-□ (Compound)
Rated pressure range	0.000~1.000MPa	0.0~101.3kPa	-100.0~100.0kPa
Setting pressure range	-0.100~1.000MPa	10.0~101.3kPa	-101.0~101.0kPa
Withstand pressure	1.5MPa	300kPa	
Fluid	Air, Non-corrosive / Non-flammable gas		
Set pressure resolution	kPa	—	0.1
	MPa	0.001	—
	kgf/cm ²	0.01	0.001
	bar	0.01	0.001
	psi	0.1	0.01
Power supply voltage	inHg	—	0.1
	12 to 24V DC ±10%, Ripple (P-P) 10% or less		
Current consumption	≤ 40mA (With no load)		
	2 NPN or 2 PNP open collector		
Switch output	125mA		
	30V DC (at NPN output), 24V DC (at PNP output)		
Residual voltage	≤ 1.5V		
	≤ 2.5ms (chattering-proof function: 25ms, 100ms, 250ms, 500ms, 1000ms and 1500ms selections)		
Response time	Yes		
	Voltage		
Voltage output	1~5V (±2.5%)		
	Impedance		
Analog output	About 1kΩ		
	Current		
Display	4~20mA (±2.5%)		
	Linearity		
LCD display	±1% F.S.		
	3½ digit, 7segment (red / green)		
Switch ON Indicator	Orange (1 & 2 Indicator) OUT1 OUT2		
	Updates time		
Indicator accuracy	About 0.2s		
	Repeatability(Switch output)		
Environment	±2% F.S. ±1 digit (ambient temperature: 25 ±3°C)		
	Enclosure		
Vibration	IP65		
	Operation ambient temp. range		
Shock	0 ~ 50°C		
	Storage ambient temp. range		
Temperature characteristic	-10 ~ 60°C (No condensation or freezing)		
	Ambient humidity range		
Port size	35 ~ 85% RH (No condensation)		
	Withstand voltage		
Lead wire	1000V AC in 1-min (between case and lead wire)		
	Insulation resistance		
Weight	50MΩ (at 500V DC, between case and lead wire)		
	Total amplitude 1.5mm or 10G, 10Hz-55Hz-10Hz scan for 1 minute, two hours each direction of X, Y and Z		
Port size	F1: R1/8", M5; F2: NPT1/8", #10-32UNF; F3: G1/8"(BSPP), M5		
	Oil-resistance cable (0.15mm ²)		
Lead wire	Approx. 85g (with 2 meter lead wire)		
	Temperature characteristic		
Port size	±2% F.S. of detected pressure (25°C) at temp. Range of 0~50°C		
	Port size		
Lead wire	F1: R1/8", M5; F2: NPT1/8", #10-32UNF; F3: G1/8"(BSPP), M5		
	Oil-resistance cable (0.15mm ²)		
Weight	Approx. 85g (with 2 meter lead wire)		
	Temperature characteristic		

H. ADVANCE SETTING MODE

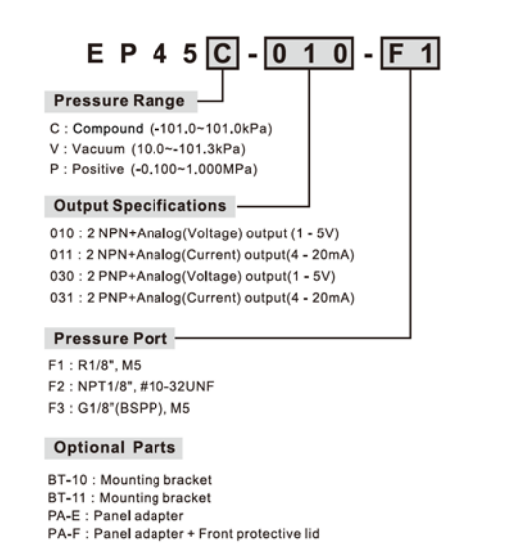


- 【NOTE :】**
- When setting is "on", the power-save mode would be started. Please refer the item "1" in detailed.
 - When setting is "on", the display fine adjustment mode would be started. Please refer the item "2" in detailed.

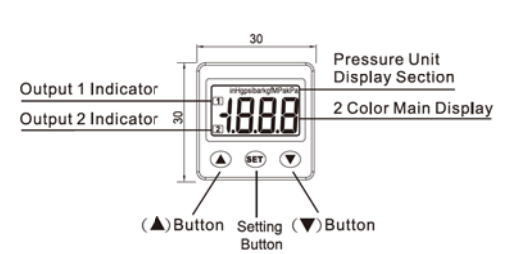
B. OUTPUT CIRCUIT WIRING DIAGRAMS



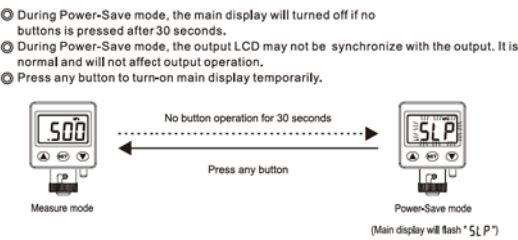
C. ORDERING INFORMATION



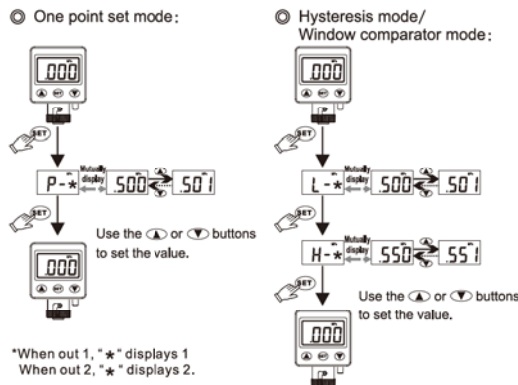
D. PANEL DESCRIPTION



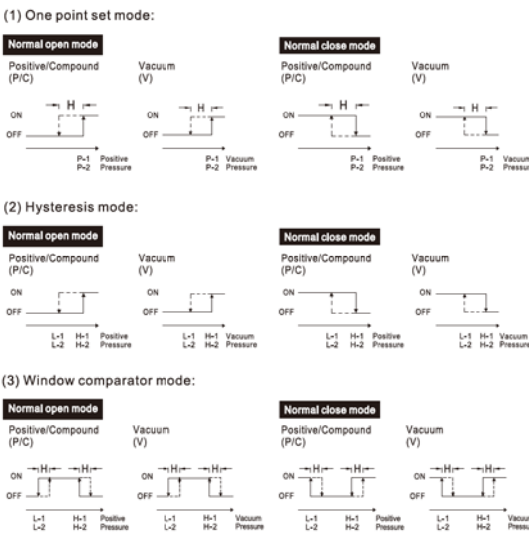
I. POWER-SAVE MODE



J. PRESSURE SETTING MODE

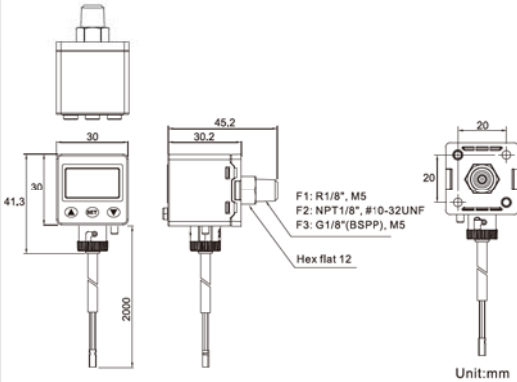


K. OUTPUT TYPE

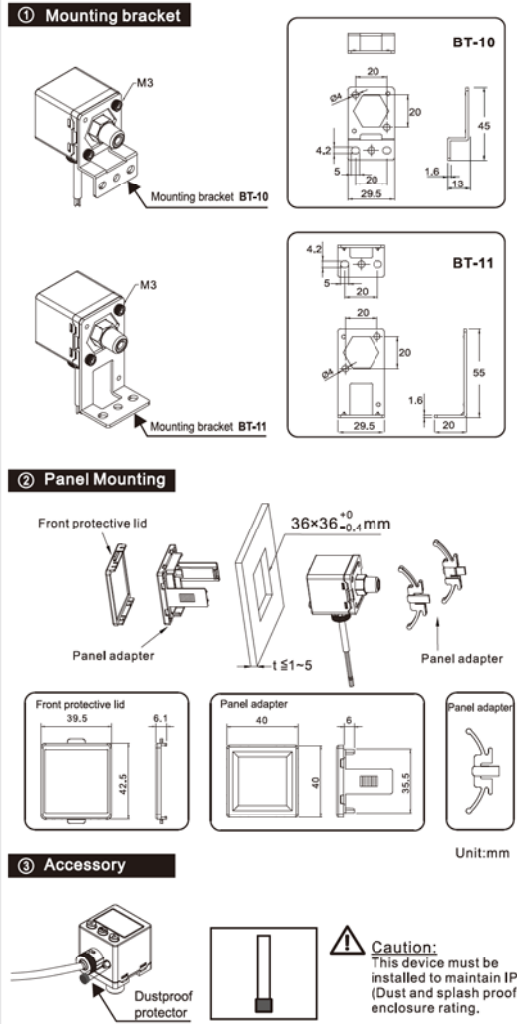


- 【NOTE :】**
- In case hysteresis is set at less than or equal to 2 digits, switch output may chatter if input pressure fluctuates near the set point.
 - When using window comparator mode, the difference between two set points must be greater than the fixed hysteresis, otherwise will cause the switch output to malfunction.

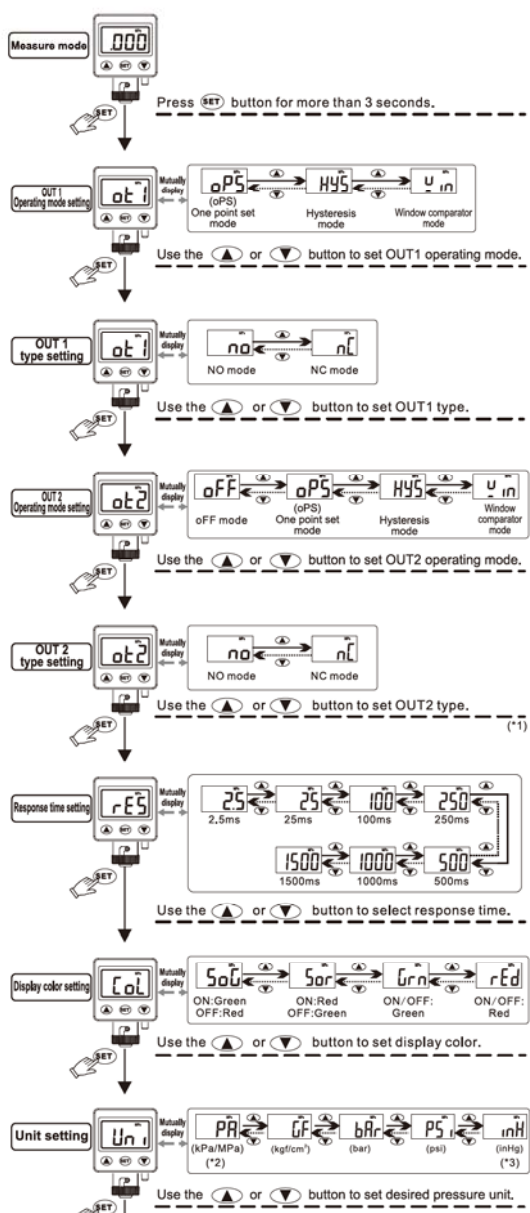
E. DIMENSIONS



F. OPTIONAL PARTS DIMENSIONS

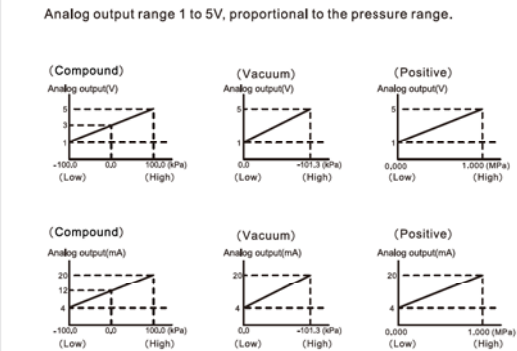


G. INITIAL SETTING MODE



- 【NOTE :】**
- This setting mode will not display when output 2 is set to oFF.
 - Pressure unit is MPa by positive & pressure unit is kPa by vacuum and compound
 - Only applicable for Vacuum/Compound.

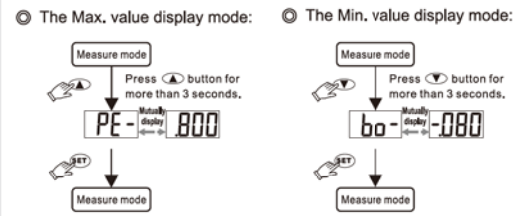
L. ANALOG OUTPUT DESCRIPTION



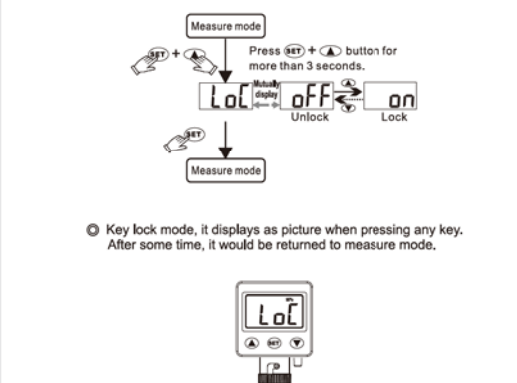
M. ZERO POINT SETTING



N. THE MAX. & MIN. DISPLAY MODE

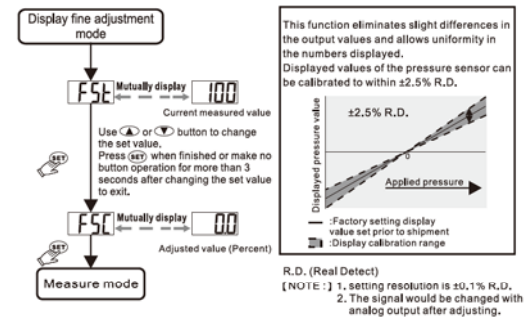


O. KEY LOCK/UNLOCK MODE

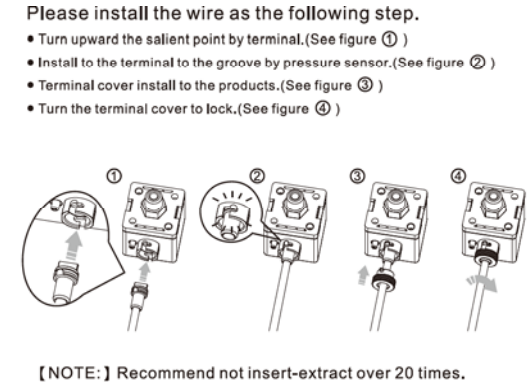


- Key lock mode, it displays as picture when pressing any key. After some time, it would be returned to measure mode.**

P. FINE ADJUSTMENT MODE



Q. WIRE INSTALLATION INSTRUCTION



R. ERROR CODE INSTRUCTION

Error Type	Error Code	Error Condition	Troubleshooting
Excess load current error	Er1	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	Er2	Output 2 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.
Applied pressure error	Er3	During zero reset, ambient pressure is over 3% F.S.	Change input pressure to ambient pressure and perform zero reset again.
System error	Er4	Supply pressure is exceeds the upper limit of pressure setting.	Adjust the pressure within operating pressure range.
	Er5	Supply pressure is exceeds the lower limit of pressure setting.	Adjust the pressure within operating pressure range.
	Er6	Internal system error	Turn power off, and then restart.
	Er7	Internal data error	If error condition remains, please return to factory for inspection.

S. PRESSURE UNIT CONVERSION TABLE

From	To	Pa	kPa	MPa	kgf/cm ²	psi	bar	inHg
1 Pa	1	0.001	0.000001	0.000000001	0.000145038	0.00001	0.0002953	
1 kPa	1000,000	1	0.001000	0.001000	0.0145038	0.145038	0.010000	0.2953
1 MPa	1000000	1000	1	1	14.5038	145.038	10	29.53
1 kgf/cm ²	98066.5	98,066.5	0.0980665	0.0980665	1	14.2233	0.980665	28.9579
1 psi	6895	6.895	0.006895	0.006895	0.07031	1	0.06895	2.036074
1 bar	100000.0	100,000.0	0.100000	0.100000	1.01972	14.5038	1	29.5298
1 inHg	3386.38	3,386.38	0.003386	0.003386	0.034530	0.491141	0.033863	1

數位顯示型壓力傳感器

EP45 系列 CE



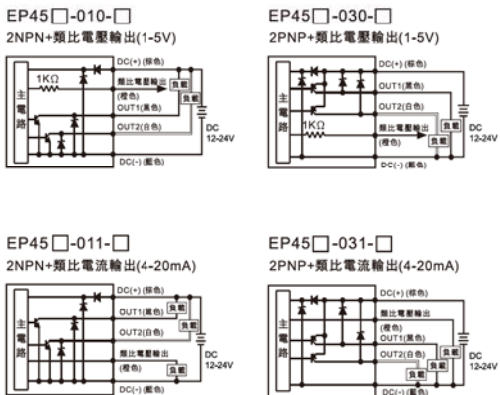
使用本產品應注意事項：

1. 禁止使用於腐蝕性及易燃性的氣體或任何液體。
2. 請在規格範圍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。
3. 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。
4. 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。
5. 本產品請勿使用在有水或油霧的環境中。
6. 本系列產品並未有防塵設計，請勿使用於空氣中含有爆炸性氣體或粉塵環境中。
7. 不可將連接本產品的導線與電源線或其它高壓電線捆綁在一起，以避免雜訊的干擾，而影響到本產品的功能。

A. 規格表

型號		EP45P-□-□ (正壓)	EP45V-□-□ (負壓)	EP45C-□-□ (達壓型)
額定壓力範圍		0.000~1,000MPa	0.0~101.3kPa	-100.0~100.0kPa
設定壓力範圍		-0.100~1,000MPa	10.0~101.3kPa	-101.0~101.0kPa
耐壓力		1.5MPa		300kPa
適用氣體		空氣、非腐蝕性、不可燃性		
壓力單位 設定最小刻度	kPa	—	0.1	
	MPa	0.001	—	
	kgf/cm ²	0.01	0.001	
	bar	0.01	0.001	
	psi	0.1	0.01	
	inHg		— 0.1	
電源電壓		12 to 24V DC ±10%, 濾波緣值 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		
	輸出阻抗	1~5V (±2.5%) 約1kΩ		
	電流輸出	4~20mA (±2.5%)		
	電流型	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		
顯示	直線性	±1% F.S.		
	顯示方式	3½位7段顯示 (紅/綠) 單視窗		
	動作顯示燈	(1/2 顯示) OUT1 OUT2 黃燈		
	更新時間	約0.2秒		
	顯示精度	±2% F.S. ±1 digit (在溫度範圍: 25 ±3°C)		
重複精度		±0.2% F.S. ±1 digit		
	結構保護等級	IP65		
	使用溫度範圍	0 ~ 50°C		
耐環境	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	1000V 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, 1分鐘10Hz~55Hz~10Hz, X, Y, Z 每軸方向各2小時		
耐衝擊	100m/s ² (10G) X, Y, Z 每軸方向各3次			
溫度特性		±2% F.S. 比較參考溫度25°C (0 ~ 50°C溫度範圍內)		
接管口徑		F1: R1/8", M5; F2: NPT1/8", #10-32UNF; F3: G1/8"(BSPF), M5		
電線規格		耐油PVC電線 (0.15mm ²)		
重量		約 86g (包含2公尺的電線)		

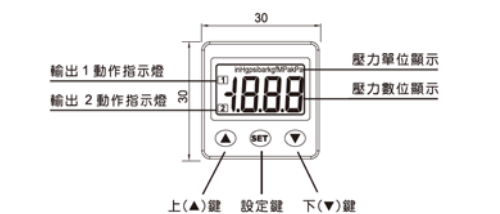
B. 輸出電路接線圖



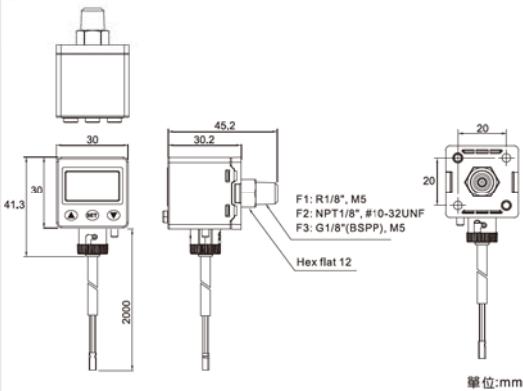
C. 型號規格說明



D. 面板說明

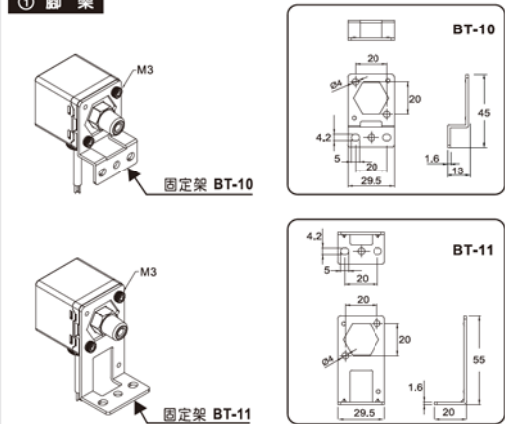


E. 外觀尺寸

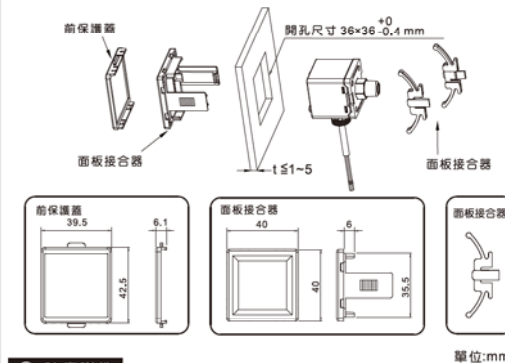


F. 配件類型／尺寸圖

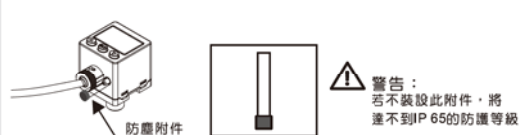
① 腳 架



② 面板型式

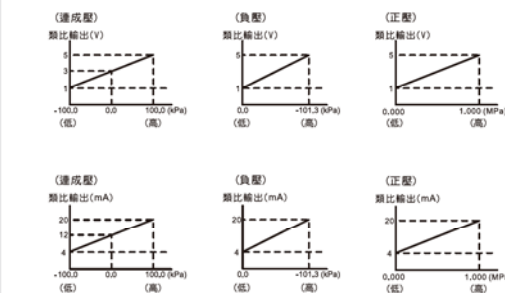


③ 防塵附件



L. 線性類比輸出說明

類比輸出範圍介於1至5V或4-20mA，符合所需壓力範圍值。



M. 歸零設定

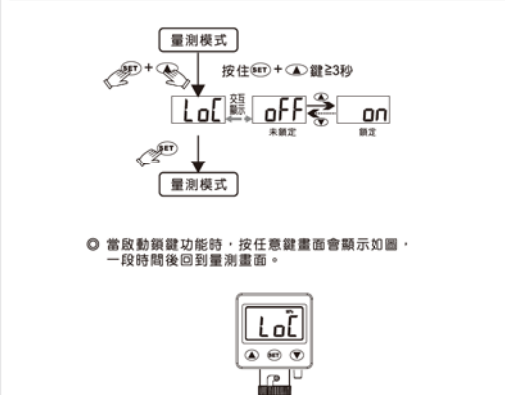
在量測模式下同時按 + 鍵直到顯示為“00”，放開則結束歸零設定。



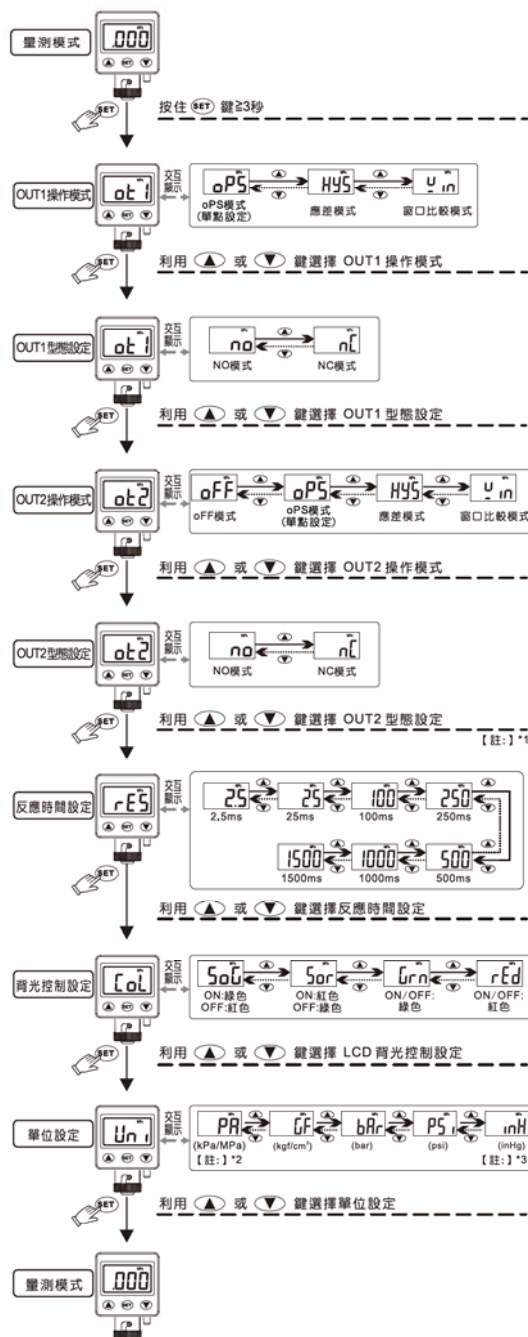
N. 最大/最小值顯示

- **最大值顯示：**
- 圖示說明：在「量測模式」下，按住 鍵 ≥ 3秒，顯示「PE-」及數值「800」。按 鍵可返回「量測模式」。
- **最小值顯示：**
- 圖示說明：在「量測模式」下，按住 鍵 ≥ 3秒，顯示「bo-」及數值「-080」。按 鍵可返回「量測模式」。

O. 按鍵鎖定功能



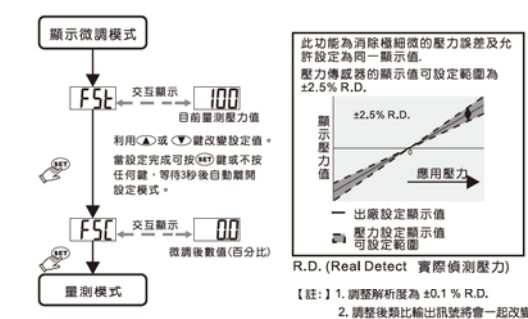
G. 基本設定模式



【註：】

- *1. 當OUT2操作模式為OFF時，就不會有此設定項。
- *2. 正壓單位為MPa，負壓及連成壓為kPa。
- *3. 此單位僅適用於負壓及連成壓。

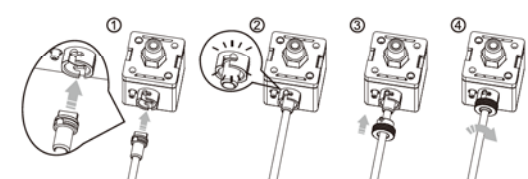
P. 顯示微調功能



Q.線組組裝說明

請按照以下步驟組裝：

- 接頭的防呆裝置朝上。(如圖示 ①)
- 置入產品溝槽內。(如圖示 ②)
- 螺帽對準溝槽置入本體。(如圖示 ③)
- 螺帽旋轉鎖附。(如圖示 ④)



【註：】建議插拔次數勿超過20次

R. 錯誤訊息說明

錯誤名稱	錯誤顯示	錯誤說明	解 決
通電故障	out ₁ Er 1	輸出1負載電流超過125mA	關掉電源，檢查負載電流過大的原因或將負載電流降至125mA以內再開啟電源。
	out ₂ Er 2	輸出2負載電流超過125mA	
殘留壓力錯誤	Er 3	零位設定範圍超過 ±3% F.S.	改變周迴壓力之後，再重新作歸零
使用壓力錯誤	HHH LLL	使用的壓力超過壓力設定值的上限 使用的壓力超過壓力設定值的下限	供給壓力請調整在使用壓力範圍內
系統錯誤	Er 4	內部系統錯誤	切斷電源並重新供電若未回覆正常狀態則需送回原廠分析
	Er 5	內部系統錯誤	
	Er 6	內部資料錯誤	
	Er 7	內部資料錯誤	

S. 壓力單位轉換表

Unit	To	Pa	kPa	MPa	kgf/cm ²	psi	bar	inHg
1 Pa		1	0.001	0.00001	0.000145038	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	295.298
1 kgf/cm ²	98066.5	98.0665		0.0980665	1	14.2233	0.980665	28.9597
1 psi	6895	6.895		0.07031	0.07031	1	0.06895	2.03602
1 bar	100000.0	100	0.0001000	0.0010197	14.5038		1	29.5298
1 inHg	3386.38	3.38638		0.003386	0.034350	0.491141	0.03863	1