

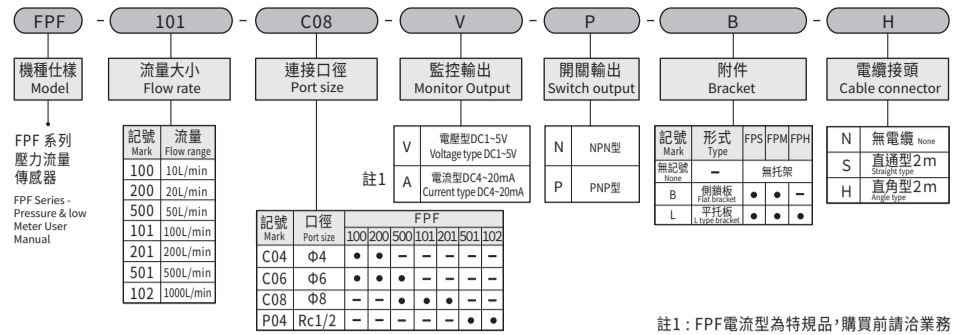


FPF 系列 壓力流量傳感器 操作說明書

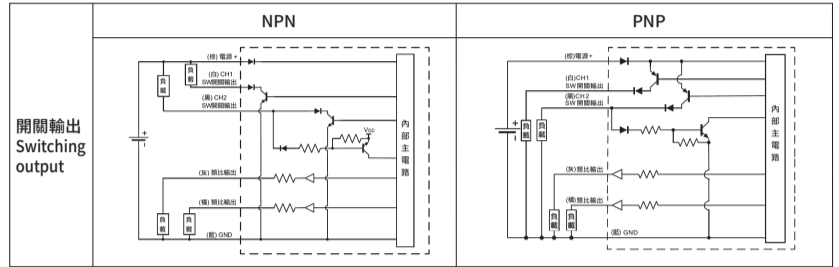
FPF Series - Pressure & Flow Meter User Manual

繁 En

訂購稱呼代號 How to Order



輸出選擇 Output

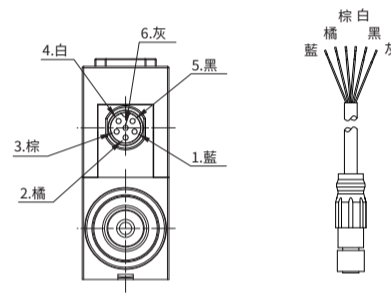


確認開關訊號NPN或PNP型, 並依需求選擇

輸出訊號	電壓型	DC1-5V =流量全刻度0-100%L		DC1-5V =流量全刻度-100-100%L		
		單向	雙向	單向	雙向	
輸出阻抗	電壓型	50k Ω				
	電流型	300 Ω				

輸出訊號具電壓及電流, 請確認輸出訊號, 並依需求選擇

FPF電纜線材規格表 Specification



PIN	線色 Wire color	內容 Content
01	藍 (Blue)	電源-(GND)
02	橘 (Orange)	流量 電壓輸出: 1-5V 負荷阻抗50kΩ以上
03	棕 (Brown)	電源+(24V)
04	白 (White)	CH1(開關輸出1: max50mA)
05	黑 (Black)	CH2(開關輸出2: max50mA)
06	灰 (Grey)	壓力 電壓輸出: 1-5V 負荷阻抗50kΩ以上

※電纜接頭也有直角型, 直角型的接頭為向下引出 (OUT)
※電纜接頭無法旋轉, 若強硬旋轉, 則會造成接頭連接部破損
※FPF電流型為特規品, 購買前請洽業務

使用安全事項與警告

使用安全警告與注意事項分為「危險」、「警告」、「注意」。

危險: 表示如果進行操作, 有可能導致死亡或重傷的危險內容並且危險發生時的緊急性(緊急程度)高的情況。
警告: 表示如果進行錯誤操作, 有可能導致死亡或重傷的危險內容。
注意: 表示如果進行錯誤操作, 有可能導致輕傷或財物損失的危險內容。

關於使用流體

危險

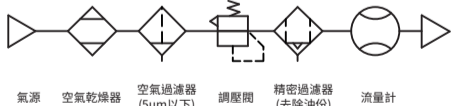
- 嚴禁用於易燃性氣體

注意

- 請使用不含氯、硫磺、酸等腐蝕成分的乾燥氣體, 且不含灰塵及油霧的乾淨氣體。
- 使用壓力範圍, 請參考規格書之額定範圍內使用, 否則會影響感測器的使用壽命。
- 含大量冷凝水的壓縮空氣會造成本產品或其他氣動元件不良的原因, 請設置後冷卻器、空氣乾燥器、冷凝水收集器等對策。
- 由於空壓機產生的過多碳粉會附着在本產品內部, 成為動作不良的原因。
- 各系列的耐壓性不同, 選擇時請多加注意。
- 請遵守測定流量、使用壓力。(使用規範以上的壓力會造成產品損壞)
- 差壓式流量傳感器感測與壓力有關, 如果將流量計串接後, 兩個流量計會因為壓損差, 而數值會有誤差, 屬於正常現象。

警告

- 不能作為商用儀表使用
- 不適用於計量法, 因此請不要用於商業交易。請做為工業用感測器使用。
- 除適用流體之外的流體由於不能保證其精度, 因此請不要使用。
- 請先確認調壓閥調整後, 再讓流體流動。(以免施加超過額定壓力的限制, 導致損壞)
- 感測器的一次端使用開關時, 請使用禁油規格的開, 否則, 可能因潤滑油飛濺造成感測器失靈或破損。
- 使用破殼器等液化氣體時, 請務必氣化後使用, 因為液化的氣體進入本產品可能導致產品故障。
- 流體中可能參雜異物, 請將過濾器設置於前端。(建議空氣迴路)



關於佈線

危險

- 電源電壓及輸出請使用規格電壓。(如施加規格以上之電壓, 則可能造成本產品受損或觸電, 最嚴重可能會釀成火災)

警告

- 請勿負載短路。(本產品有加設過載保護, 但無法保護所有錯誤配線, 所以請多加注意配線)
- 請確認配線上的絕緣性。
- 請勿把電線與動力線合為同一配線。(請採用不同配線以免包含開關的控制迴路產生干擾而造成錯誤動作的原因)
- 請勿在通電中進行配線。(以免造成連接器損壞或觸電風險)
- 設置本產品及配線時, 請遠離強電流電線等雜訊源, 而加載於電源線的突波請另外採取防護對策。否則可能造成顯示或輸出變動。
- 在流量計動作過程中, 請勿碰觸端子或插座。(以免觸電、產生運作錯誤或損壞開關)
- 不穩定的電源有時超過額定電源, 或導致本產品損壞, 或導致本產品精度下降。

- 請停止控制裝置、機械裝置後, 在切斷電源的狀態下進行佈線。如果使裝置過快運行有時裝置會進行異常動作, 這樣非常危險。請先使控制裝置、機械裝置保持停止狀態進行通電試驗, 並進行開關資料設定。操作前、操作中請將人體、工具、裝置所帶的靜電充分放電後進行操作。活動部請使用類似機器人用線材的具有耐屈曲性能的線材進行連接佈線。
- 負荷請不要短路, 因為可能導致本產品破裂或燒毀。
- 本產品之電纜接頭含有防護套之接頭, 未使用本產品之接頭, 請做好接頭的防護, 以防止雜質等不良因素導致其問題。
- 配線時, 請確認配線的顏色及端子號碼。(錯誤配線會導致開關損壞、故障與錯誤動作的發生。因此, 在配線前請確認使用說明書上的配線顏色及端子編號後再進行配線, 並請使用容量充足且波動小的DC電源)
- 本產品在通電後由於自身診斷需要耗時約四秒, 這段時間內流量檢出開關不動作。通電後約四秒請設置為無視訊號的程式設定。

注意

- 動作過程中如果發生異常, 請立即切斷電源, 停止使用本產品, 並與銷售店聯繫。
- 本產品的流量請保持在額定流量量程內。
- 變更輸出的設定值時, 控制系統可能會自動動作, 因此請停止裝置運行後再變更輸出設定值。
- 請一年至少定期檢查一次本產品, 確認本產品正常動作。
- 請不要折解本產品, 否則可能會造成故障。
- 外殼材質為樹脂, 去除污漬時請不要使用溶劑、酒精、清洗劑等。
- 請注意斷線或配線電阻產生的逆向電流。與流量感測器相同的電源上連接含流量感測器的其他元件時, 為確認控制盤的輸入裝置動作, 如果使開關輸出線和電源線一極短路或切斷電源線一側, 可能會在流量感測器的開關輸出迴路上產生逆向電流, 造成流量感測器損壞。

關於安裝

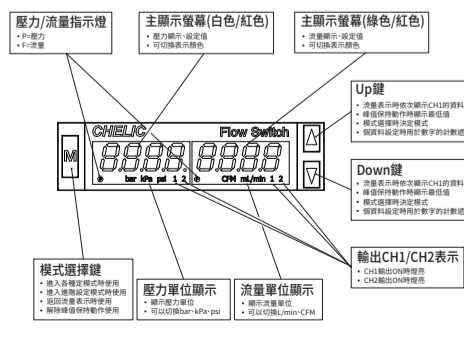
警告

- 請注意流體的方向。(流動方向請依照本體所指示的前頭方向)
- 安裝前請用吹氣清除配管內殘留的污垢。
- 請勿掉落、拍打。(若施加過大的撞擊, 有可能導致內部損壞)
- 在安裝時, 請勿拉扯電線線, 以免拉力過大導致損壞。

注意

- 本產品LCD顯示器之流量, 可能因為角度不同會有看不清楚的情況。
- 請使用適當的扭矩來鎖緊流量計。
- 使用本產品, 請在沒有流量的情況下, 先通電再通氣, 以確保產品零點校正正確。
- 使用差壓式流量計, 請確保提供穩定的壓力源。
- FPX系列大流量計, 在工作壓力方面建議在5bar以上, 若低於5bar則可量測的流量工作範圍會縮小。
- 本產品在飽壓狀態由於差壓特性, 流道內含有壓力差導致氣體不能瞬間歸零, 建議將氣體排出可以瞬間恢復至零點。

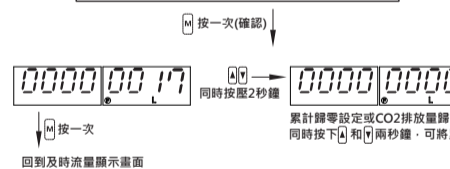
① 螢幕顯示、操作按鍵和功能



1 操作模式/一般模式

■ 累計流量顯示

<及時流量顯示畫面>



■ 峰值保持功能

<及時流量顯示畫面>



峰值重設功能完成, 回到及時流量顯示畫面

■ 鎖鍵功能

鎖鍵

<及時流量顯示畫面>



解鎖

<及時流量顯示畫面>



注: 電源切斷再復歸之後, 解鎖或鎖鍵功能都會保持。
當鎖鍵功能啟動之後, 所有的按鍵動作將不會有動作反應。除了解鎖功能。
當鎖鍵之後, 如果按壓任何一個按鍵, 螢幕將顯示 "Loc" 的字樣。

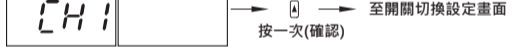
2 標準設定模式

■ 如何進入標準設定模式

<及時流量顯示畫面>



<開關切換>



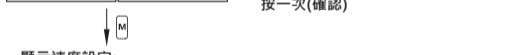
<強制輸出功能>



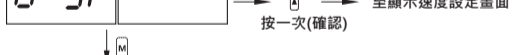
<0點校正>



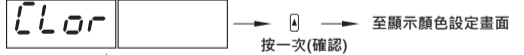
<顯示速度設定>



<顯示顏色設定>



<CO2排放量設定>



<省電模式設定>



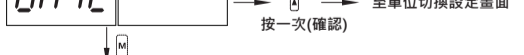
<單位切換設定>



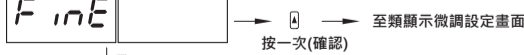
<顯示微調設定>



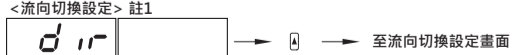
<流向切換設定> 註1



<還原原廠設定>

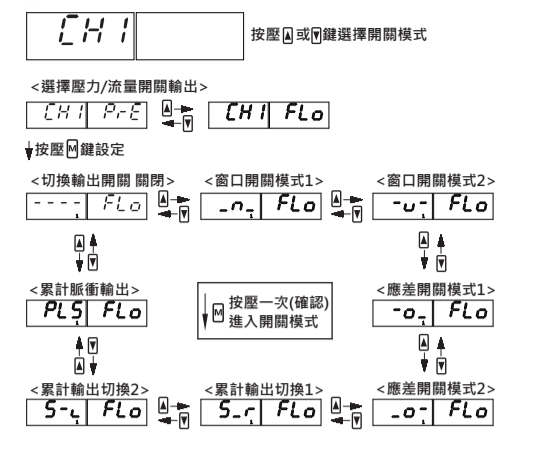


<產品型號提示>

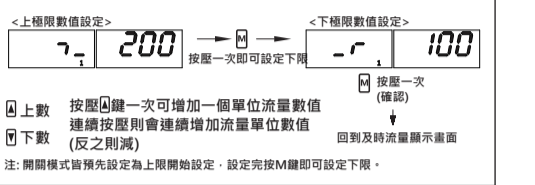


註1: 此功能為雙流向型流量計專用功能

■ 設定輸出切換開關數值功能



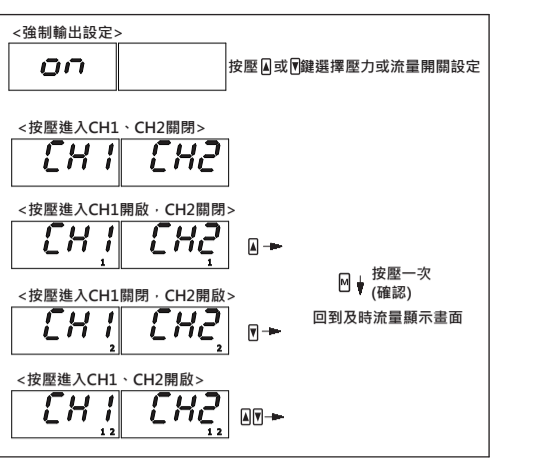
CH1開啟/關閉數值設定



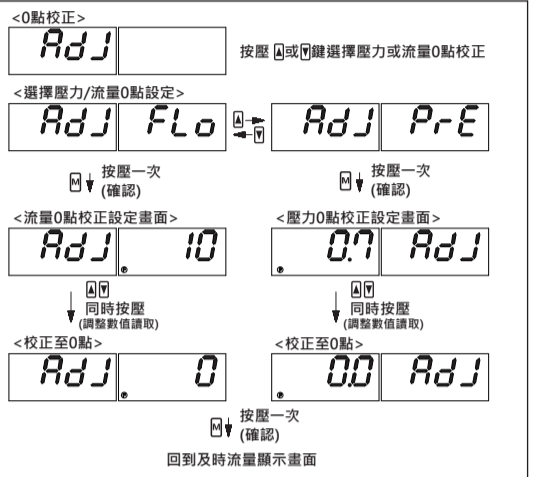
開關動作說明

名稱	LCD顯示	動作說明
窗口開關模式1	- n -	在指定範圍內開關輸出ON
窗口開關模式2	- u -	在指定範圍外開關輸出ON
應差開關模式1	- o -	設定一個應差範圍, 達到指定流量以上時, 開關輸出OFF
應差開關模式2	- o -	設定一個應差範圍, 達到指定流量以上時, 開關輸出ON (顯示HHH值亦維持輸出)
累計輸出切換模式1	S_r	達到累計值以上時, 開關輸出ON
累計輸出切換模式2	S_L	達到累計值以上時, 開關輸出OFF
累計脈衝輸出	PLS	設定一個固定累計值, 當到達累計值時, 丟出一個脈衝訊號(脈衝訊號時間為40ms)
切換輸入開關OFF	- - - -	開關動作OFF

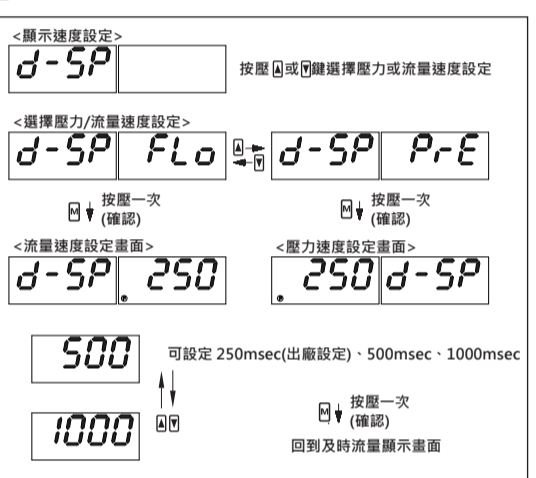
■ 強制輸出設定



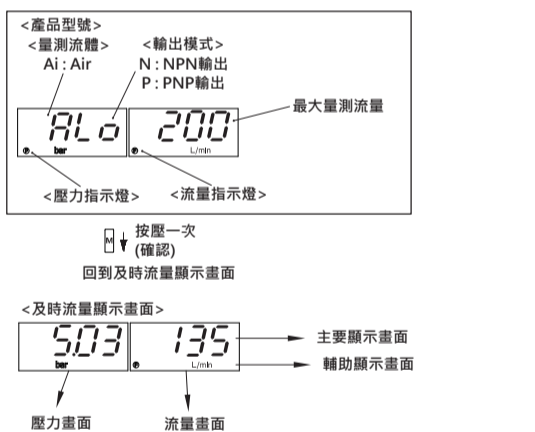
■ 0點校正模式-頁面設定



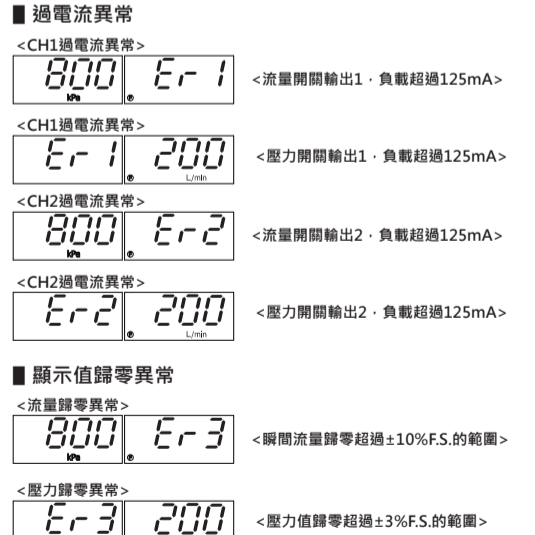
■ 畫面顯示速度設定



■ 產品型號顯示



● 錯誤碼說明與處理



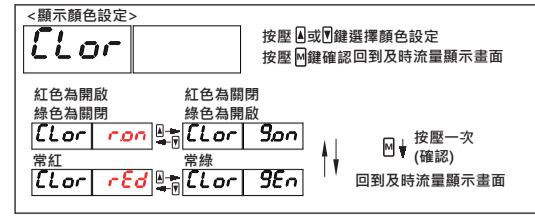
■ 系統錯誤



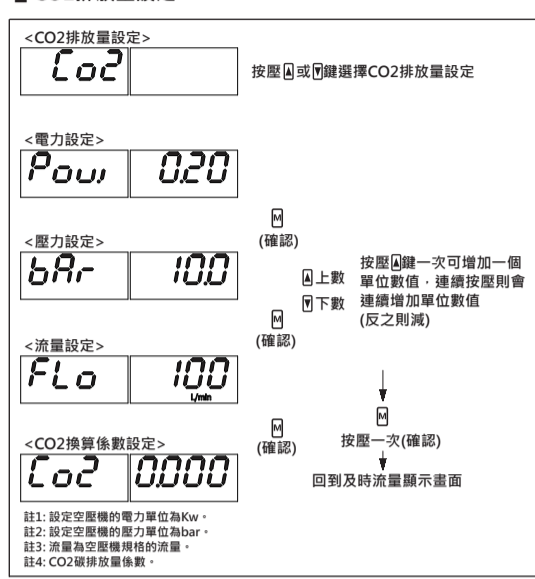
■ 量測錯誤



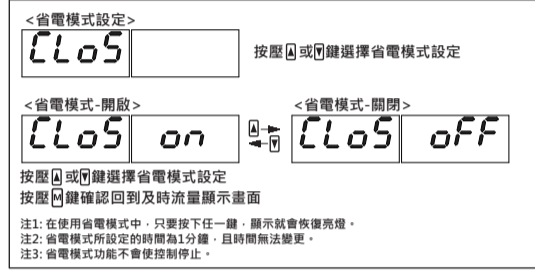
■ 顯示顏色設定



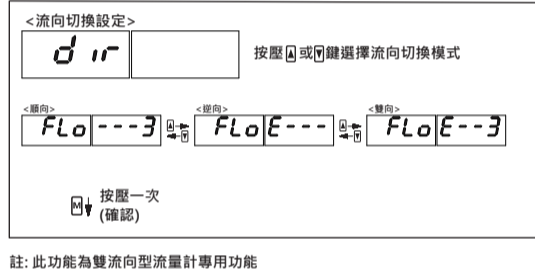
■ CO2排放量設定



■ 省電模式設定



■ 流向切換設定



Safety Precautions

The safety cautions are ranked as<DANGER>,<WARNING>and<CAUTION>in the section.

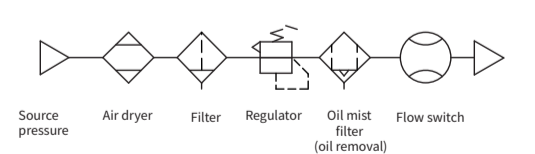
DANGER:When a dangerous situation may occur if handling is mistaken leading to fatal or serious injuries, or when there is a high degree of emergency to a warning.
WARNING:When a dangerous situation may occur if handling is mistaken leading to fatal or serious injuries.
CAUTION:When a dangerous situation may occur if handling is mistaken leading to minor injuries or physical damage.

Working fluid

DANGER
Do not use this product with flammable fluids.

CAUTION
Please use dry air without chlorine, sulfur, acid and other corrosive contentfluid, also clean air without dust and oil mist.
Please refer to the ambient pressure range in the operating pressure ranges pecification or it will affect the life of the sensing component.
Compressed air containing condensate water will cause defects in thisproduct or other pneumatic components. Please install the cooler machine,air dryer, condensate collector or other countermeasures.
Excessive toner generated by the air compressor will adhere to the inside of the product and cause malfunctions.
Please check before purchasing, the pressure resistance of each series are different.
Please observe the measured flow rate and operating pressure. (Using pressure above the specification will cause product damage)

WARNING
This product cannot be used as a business meter.
This product does not conform to measurement laws, and cannot be used for commercial purposes. Use this for factory applications.
Do not use fluids other than the applicable fluid because accuracy cannot be guaranteed.
Please confirm the adjustment of the pressure regulator before allowing fluid to flow. (Don't impose a limit that exceeds the rated pressure and cause damage)
When using a value on the primary side of this product, use only an oil-prohibited specification valve. This sensor could malfunction or fail if exposed to splattering grease, oil, etc. Also, there is a risk of abrasion dust entering the sensor depending on the valve. Install a filter to prevent the dust from entering the sensor.
Vaporize liquidities gas before use. Entry of liquidities gas into this product will result in damage.
Foreign matter may be mixed in the fluid, please install the filter at the front end. (Recommended circuit)

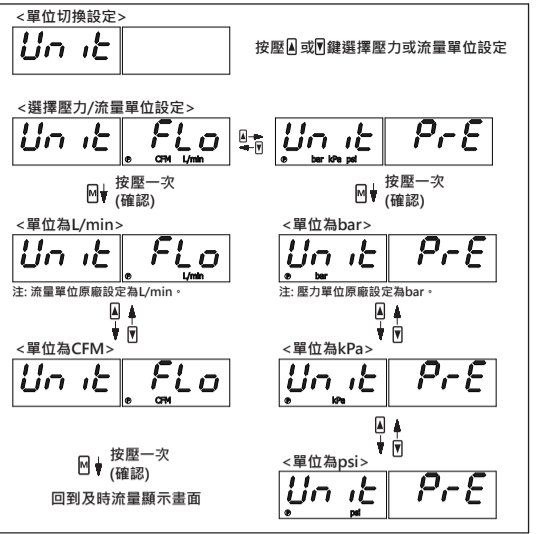


About Wiring

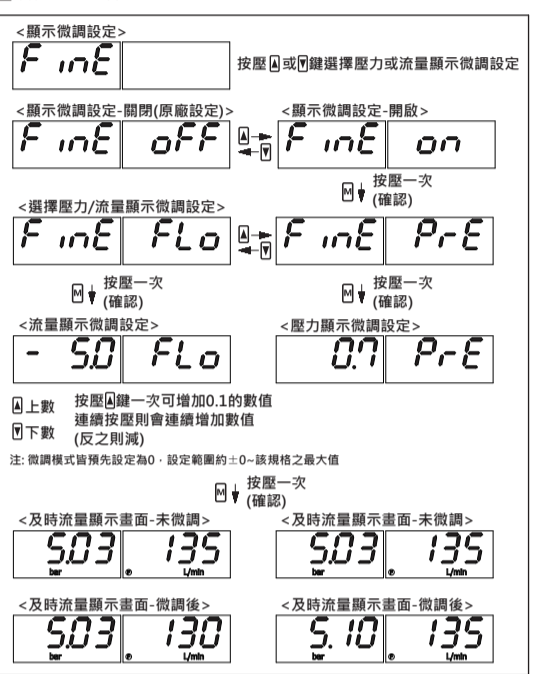
DANGER
Use power voltage and output within the specified voltage.(If voltage exceeding the specified voltage is applied, the sensor could malfunction or be damaged, or electrical shock or fire could occur. Do not use a load exceeding the output rating. Failure to observe this could result in damage to the output or fire.)

WARNING
Do not short-circuit the load. (This product is equipped with overload protection but it cannot protect all wrong wiring, so please pay more attention to wiring.)
Please confirm the insulation while wiring. (Do not mix with other circuits to cause over-current, which may cause damage.)
Do not combine electric wire and power wire together while proceeding wiring. (Please use different wiring to avoid interference caused by the control circuit containing the switch affect wrong operation.)
Do not process wiring while power-on. (Avoid the damage to the connector or risk of electric shock.)
Please keep away from sources of noise such as high-current wires when install and wiring this product. Take additional protective measures against surges loaded on the power line or the display or output could fluctuate.
Do not touch the connectors or sockets during the operation of the flowmeter. (To avoid electric shock, operation error or switch damage)
If power is not stabilized, the peak value could be exceeded. This could damage the product or impair accuracy.

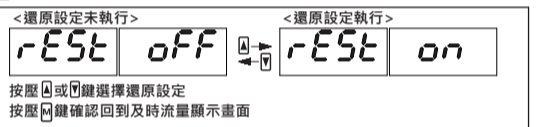
■ 單位切換設定



■ 顯示微調設定



■ 還原原廠設定



- Stop the control device and machine device, and turn the power off before wiring. Starting operation suddenly could result in unpredictable operation and hazards. Conduct an energized test with control devices and machine devices stopped, and set target switch data. Discharge electrostatic accumulated in personnel or tools before and during work. Connect and wire bend-resistant material, such as robot wire material, for movable sections.
- Do not short-circuit the load. This product could rupture or burn.
- The cable connector of this product contains a connector with a protective sleeve. If the connector of this product is not used, please protect the connector to prevent unfavorable factors such as impurities from causing problems.
- When wiring, please confirm the wiring color and terminal number. (Wrong wiring will cause damage to the switch, malfunctions and errors. Therefore, before wiring, please confirm the wiring color and terminal number in the instruction manual before wiring, and use a DC power supply with sufficient capacity and small fluctuations.)
- The product after power-on, it takes 4 seconds detections, within 4 seconds the switch is no movement while flow rate working and take it as no signal program setting.

CAUTION

- If a problem occurs during operation, turn off power and stop using. Then contact your dealer immediately for the issue or question.
- Keep this products flow switch within the rated flow range.
- If the output setting value is change, control system devices could operate unintentionally. Stop devices before changing settings.
- Regularly inspect the product at least once a year or more, and confirm that this is operating correctly.
- Do not disassemble or modify this product. Doing so could result in faults.
- This case is made of resin. Do not use solvent, alcohol or any other detergent in cleaning to remove contamination, etc.
- Check backflow currents caused by broken wiring or wiring resistance. If other devices, including a flow sensor, and the switch output wire and power line's minus side are temporarily short circuited to check the operation of the control panel's input unit, or if the power line's minus side is broken, a backflow current could flow to and damage the flow sensor switch output circuit.

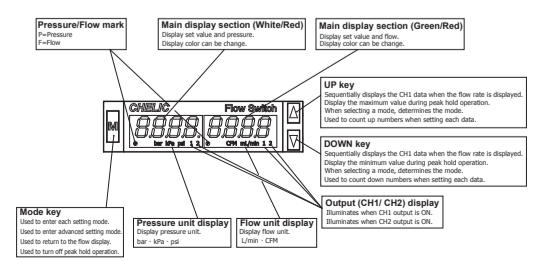
Installation Adjustment

- Note the direction of the fluid. (The flow direction should follow the direction of the arrow indicated by the body)
- Before installation, blow off the dirt remaining in the piping.
- Do not drop or beat. (If an excessive impact is applied, it may cause internal damage)
- During installation, please do not pull the power cord to avoid damage caused by excessive tension.

CAUTION

- The flow rate of the LCD display of this product may be unclear due to different angles.
- Please use proper torque to lock the flowmeter.
- When using this product, please turn on the power and then ventilate when there is no flow to ensure that the zero point calibration of the product is correct.
- When using a differential pressure flow meter, make sure to provide a stable pressure source.
- For the FPX series, the working pressure is recommended to be above 5bar. If it is lower than 5bar, the working range of the measurable flow will be reduced.
- Due to the differential pressure characteristics of this product in the saturated state, the gas cannot be returned to zero instantaneously due to the pressure difference in the flow channel. It is recommended that the gas be discharged to instantly return to zero.

① Display/operating section names and functions



How to operate/ Normal mode

Displaying the integrated flow

<instantaneous flow rate display>

Press once → Display unit selection

<Real-time flow rate checking>

<Integrated flow rate (unit: L)>

CO2 unit = Kg

Press once (determination) → Integration or CO2 reset

Press simultaneously for 2 sec. → Integration or CO2 reset when the [M] and [M] keys are held down for 2 sec.

Real-time flow rate checking

Peak-holding function

<instantaneous flow rate display>

[M] and [M] press simultaneously → PEA 135

<High-peak displayed>

<Low-peak value display>

Press once → Reset peak-holding function, to real-time flow rate display.

Key lock function

• Key lock

<instantaneous flow rate display>

[M] and [M] press simultaneously for 1 sec. → <Real time flow rate display (lock)>

• Unlock

<instantaneous flow rate display>

[M] and [M] press simultaneously for 3 sec. → <Instantaneous flow rate display (unlock)>

Note: Keys are unlocked when the controller is shipped. Lock keys if necessary. The key lock/unlock state is held even if power is turned OFF. While key lock, all the operations are not accepted excluding the key lock release operation. While key lock, if the key is operated, it becomes a "Loc" display.

Standard setting mode

How to enter to Standard setting mode

<instantaneous flow rate display>

Display unit selection 3 times

Press for 3 sec → CH1

<Switch output>

Press once (determination) → To switch output setting display

<Select output Function>

Press once (determination) → To forcible cutput setting display

<0 point adjustment>

Press once (determination) → To 0 point adjustment setting display

<Display speed selection>

Press once (determination) → To display speed setting display

<Displayed color selection>

Press once (determination) → To displayed color setting display

<CO2 discharge amount setting>

Press once (determination) → To CO2 discharge amount calculation setting display

<Sleep mode setting>

Press once (determination) → To sleep mode setting display

<Unit switch setting>

Press once (determination) → To unit switch setting display

<Display fine turning setup page>

Press once (determination) → To fine turning setting display

<Flow direction setting> Note1

Press once (determination) → To flow direction setting display

<Reset setting>

Press once (determination) → To reset setting display

<Model number>

To instantaneous flow rate display

Note1: Dual flow-direction type only

Data setting of switch output function

CH1

Press [M] or [M] key to select flow rate unit.
Press [M] key to set.

<Pressure/Flow switch output selection>

<Switch output OFF>

<Window operation 1>

<Window operation 2>

<Integrated pulse output>

Press once (determination) ON/OFF data setting

<Hysteresis operation 1>

<Hysteresis operation 2>

<Integrated output 2>

<Integrated output 1>

<Hysteresis operation 2>

CH1 ON/OFF data setting

<Upper limit data setting>

Press once for lower limit setting.

<Lower limit data setting>

Press once (determination)

[M] Value up Press [M] key once to increase by one figure and press it continuously to keep set figure increased.

[M] Value down (vice versa)

Real-time flow rate checking

Note: The switch mode is preset to the upper limit to start setting, after setting, press the M key to set the lower limit.

Switch action description

Mode	LCD display	Action description
Window operation 1	- n -	Switch output ON within the specified range
Window operation 2	- u -	Switch output ON outside the specified range
Hysteresis operation 1	- o -	Set a hysteresis range, when it reaches the specified flow rate or more, the switch output is OFF.
Hysteresis operation 2	- o -	Set a hysteresis range, when it reaches the specified flow rate or more, the switch output is ON. (Display shows HIGH value and maintain output)
Integrated output 1	5 - r	When reaches the specified flow rate or more, the switch output is ON.
Integrated output 2	5 - L	When reaches the specified flow rate or more, the switch output is OFF.
Integrated pulse output	PLS	Set up an upper limit and trigger a pulse signal for 40ms when the count gets over it.
Switch output to OFF	- - - -	Switch to OFF

Select function output mode

<Select function output>

Press [M] or [M] key to select pressure or flow select function output

<Being held down (CH1 & CH2 output OFF)>

<Being held down (CH1 output ON)>

Press once (determination) → To instantaneous flow rate display

<Being held down (CH2 output ON)>

Press once (determination) → To instantaneous flow rate display

<Being held down (CH1 & CH2 output ON)>

0 point adjustment mode- display setting

<0 point adjustment>

Press [M] or [M] key to select pressure or flow adjustment mode

<Pressure/Flow 0 point setting selection>

Press once (determination)

<Flow-0 point setting display>

Press once (determination)

<Pressure-0 point setting display>

Press once (determination)

Press simultaneously (adjustment value setting)

<Adjust to 0 point>

Press once (determination) → To instantaneous flow rate display

<Adjust to 0 point>

Press once (determination) → To instantaneous flow rate display

Setting of display speed

<Display speed selection>

Press [M] or [M] key to select pressure or flow display speed mode

<Pressure/Flow display speed selection>

Press once (determination)

Press once (determination)

<Flow-speed setting display>

Press once (determination)

<Pressure-speed setting display>

Press once (determination)

250msec (Initial set) · 500msec · 1000msec

Press once (determination) → To instantaneous flow rate display

Setting of display color

<Color setting display>

Press [M] or [M] to select response time.
Press [M] key to set.

Red when ON
Green when OFF
Always RED

Red when OFF
Green when ON
Always Green

Press once (determination) → To instantaneous flow rate display

CO2 discharge amount calculation setting

<CO2 discharge amount setting>

Press [M] or [M] to select CO2 discharge amount setting

<Power input>

[M] Value up
[M] Value down

<discharge pressure>

(SET) Press [M] key once to increase by one figure and press it continuously to keep set figure increased. (vice versa)

<discharge flow rate>

(SET) Press [M] key once to increase by one figure and press it continuously to keep set figure increased. (vice versa)

<CO2 conversion>

(SET) Press Once (determination) → To instantaneous flow rate display

Note1: Compressor's power input (kW).
Note2: Compressor's discharge pressure input (bar).
Note3: Compressor's flow rate input (L/min).
Note4: CO2 conversion coefficient input (kg(CO2)/kwh).

Sleep mode setting

<Sleep mode setting>

Press [M] or [M] to select sleep mode setting

Press [M] or [M] to select sleep mode setting.
Press [M] key to set.

<Sleep mode-ON>

<Sleep mode-OFF>

Note1: Press any key in power saving mode and the display resume lighting up.
Note2: The power saving mode will last for 1 minute each time.
Note3: The control functions remains intact in power saving mode.

Flow direction setting

<Flow direction setting>

Press [M] or [M] to select flow direction setting

<forward direction>

<reverse direction>

<Dual flow-direction>

Press once (determination)

Note: Dual flow-direction type only.

Unit switch setting

<Unit switch setting>

Press [M] or [M] key to select pressure or flow unit switch setting

<Pressure/Flow unit setting selection>

Press once (determination)

<Unit: L/min>

Note: Initial setting unit: L/min

<Unit: bar>

Note: Initial setting unit: bar

<Unit: CFM>

Press once (determination)

<Unit: kPa>

Press once (determination)

<Unit: psi>

To instantaneous flow rate display

Display fine turning setup page

<Display fine turning setup page>

Press [M] or [M] key to display the advanced setup for pressure or flow

<Fine turning setup-OFF>

<Fine turning setup-ON>

Press once (determination)

<Pressure/Flow display fine turning setup page>

Press once (determination)

<Setup to fine tune the flow display>

Press once (determination)

<Setup to fine tune the pressure display>

Press once (determination)

[M] Value up Press [M] key once to raise the value by 0.1; press and hold it to raise continuously

[M] Value down (vice versa)

Note: The fine tuning mode comes with default value at 80°; the setup range spans from the negative to positive of its maximum value

instantaneous flow rate display

<Before fine tuning>

Press once (determination)

<After fine tuning>

<Before fine tuning>

<After fine tuning>

Reset to the initial setting

<Reset is not executed>

<Reset is executed>

Press [M] or [M] to reset.
Press [M] to set. To instantaneous flow rate display

Mode number display

<Mode number>

Full scale flow rate

<Working fluid> <Switch output>

N : NPN output
P : PNP output

Press once (determination) → To instantaneous flow rate display

<instantaneous flow rate display>

Main display section
Sub-display section

Pressure
Flow mark

Error code messages and troubleshooting

■ Overcurrent error

<CH1- Overcurrent error>

<Load of flow switch output channel 1 goes over 125mA>

<CH1- Overcurrent error>

<Load of pressure switch output channel 1 goes over 125mA>

<CH2- Overcurrent error>

<Load of flow switch output channel 2 goes over 125mA>

<CH2- Overcurrent error>

<Load of pressure switch output channel 2 goes over 125mA>

■ Readings reset error

<Flow reading reset error>

<The instant flow reset goes over ±10%>

<Pressure reading reset error>

<The pressure reset goes over ±3%>

■ System error

<System error (memory, data access, system parameter anomalies)>

■ Measurement error

<Pressure goes over the upper limit>

<Please set input pressure in display range of the product >

<Instant flow goes over the upper limit>

<Please set the flow in display range of the product>

<Pressure goes below the lower limit>

<Please set input pressure in display range of the product >

<Instant flow goes below the lower limit>

<Please set the flow in given direction>