

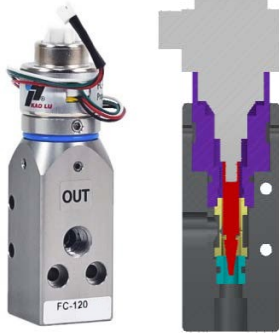
PV 流量比例閥組



日泰展業有限公司
Ritai Enterprise Co., Ltd.

Proportional Flow Control Valve

應用產業 Industrial application



- 氣體混合 Gas Mixing
- 分析儀器 Analytical Instrument
- 半導體設備 Semiconductor equipment
- 高精度、高分辨率流量控制 High Accuracy and High Resolution Flow Control
- 吹瓶機器 Blow Molding
- 本體有不鏽鋼、鋁合金及 Peek 可選擇 Stainless steel, aluminum and Peek body material.
- 密封件有 FFKM 及 FKM 可選擇 FFKM or FKM seals

流量比例閥組是由驅動控制器+PV 流量比例閥所組成的，透過輸入信號 0-10 V、4-20 mA、RS485 Modbus 三種信號中，選一種輸入至驅動器進而控制，PV 流量閥中的馬達來移動軸芯，達到閥體開度由小至大的變化，不管是氣體或液體的控制中，流量都可以呈線性度且精準與微小的控制流量，有助於對客人的機台設備提升。流量比例閥的開發，是針對隨時需要精準調控液體或氣體流量變化的產業。Proportional Flow Control Valve consists of driver and PV series proportional flow valve. With an input signal either through analogue or digital, the needle inside the proportional valve moves proportionally to the signal. This series is able to control the flow rate of air and liquid with high resolution, high accuracy, and high repeatability. It is developed for industries that require a high degree of adjustment in flow rate.

產品規格 Specifications

型號 Model	PV-10	PV-20	PV-120	PV-300
閥門類型 Valve Type	兩口兩位比例式針閥 2-Way Proportional Needle valves			
口徑 Port Size	G 1/8"			
流體 Medium	真空、惰性氣體、油、水...等液體 Vacuum, Compatible gases, oil, water and liquids			
壓力範圍 Pressure Range	-1~7bar			
流量範圍(空氣) Flow Range of air	0~35L/min @6bar	0~65L/min @6bar	0~230L/min @6bar	0~400L/min @6bar
流量範圍(水) Flow Range of water	0~1L/min @6bar	0~1L/min @6bar	0~4L/min @6bar	0~8L/min @6bar
重覆精度 Repeatability	±0.1% F.S.			
流量分辨率(空氣) Flow Resolution of air	0.1 L/min@3bar	0.1L/min@3bar	0.1L~0.2 L/min@3bar	0.3 L/min@3bar
流量分辨率(水) Flow Resolution of water	0.003L/min@3bar	0.003L/min@3bar	0.003~0.005L/min@3bar	0.008L/min@3bar
溫度範圍 Temperature Range	-20 ~84° C			
開關時間(全開到全關) Full stroke time	1.5 sec	1.5 sec	2 sec	2 sec
本體材質 Body material	不鏽鋼 Stainless steel	鋁合金、不鏽鋼或 Peek Aluminum, Stainless steel or Peek	鋁合金 Aluminum	鋁合金、不鏽鋼或 Peek Aluminum, Stainless steel or Peek
密封件 Seals	本體-鋁合金:全 VITON 或 VITON+EPDM Body- Aluminum : All VITON or VITON+EPDM 本體-不鏽鋼或 Peek : 全 FFKM 或 FFKM+EPDM Body- Stainless steel : All FFKM or FFKM+EPDM ----- **若用於真空或水，建議搭配 EPDM.			
防護等級 Ingress Protection	IP 52			

PV 流量比例閥組



Proportional Flow Control Valve

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產品規格 Specifications

型號 Model	PV-1000	PV-1500	PV-2000	PV-3000
閥門類型 Valve Type	兩口兩位比例式針閥 2-Way Proportional Needle valves			
口徑 Port Size	G3/8"		PT 1/2"	
流體 Medium	真空、惰性氣體、油、水...等液體 Vacuum, Compatible gases, oil, water and liquids.			
壓力範圍 Pressure Range	-1~6bar	-1~3 bar	-1~15 bar	-1~20bar
流量範圍(空氣) Flow Range of air	0~1200L/min@5bar	0~1200L/min@3 bar	0~2600L/min@7 bar	0~5000L/min@10bar
流量範圍(水) Flow Range of water	0~28L/min@5bar	0~35L/min@3 bar	0~50L/min@7bar	0~94L/min@10bar
重覆精度 Repeatability	±0.1% F.S.			
流量分辨率(空氣) Flow Resolution of air	0.3~0.5 L/min @3bar	1~2 L/min @3bar	1~2 L/min @3bar	1~2 L/min @3bar
流量分辨率(水) L/min Flow Resolution of water	0.008~0.014 L/min @3bar	0.027~0.055 L/min @3bar	0.027~0.055 L/min @3bar	0.027~0.055 L/min @3bar
溫度範圍 Temperature Range	-20 ~84° C			
開關時間(全開到全關) Full stroke time	2.5 sec	2.5 sec	2.5 sec	5 sec
本體材質 Body material	鋁合金 Aluminum	鋁合金或不鏽鋼 Aluminum or Stainless steel	鋁合金或 Peek Aluminum or Peek	鋁合金或不鏽鋼 Aluminum or Stainless steel
密封件 Seals	本體-鋁合金:全 VITON 或 VITON+EPDM 本體-不鏽鋼或 Peek: 全 FFKM 或 FFKM+EPDM Body- Aluminum : All VITON or VITON+EPDM Body- Stainless steel or Peek : All FFKM or FFKM+EPDM ----- ----- **若用於真空或水·建議搭配 EPDM.			
防護等級 Ingress Protection	IP 52			
*牙口另有 NPT 牙·若有需請洽詢業務·謝謝! There are also NPT port. If you need it, please contact our sales representative, thank you!				

PV 流量比例閥組



Proportional Flow Control Valve

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型號選擇 Ordering Code

PV □ □ — □ — □ — □ □

Type

I	Integrated
S	Split

Type

20	0~65 LPM@6Bar	G 1/8"
120	0~230 LPM@6Bar	
300	0~400 LPM@6Bar	
1000	0~1200 LPM@5Bar	G 3/8"
1500	0~2600 LPM@7Bar	
3000	0~5000 LPM@10Bar	PT 1/2"

Body Material

-	Aluminum
SUS	Stainless Steel
*Only for PV-20、PV-300、PV-1500、PV-3000	

Seal

For SUS Body	
-	FFKM
V	Viton

Input Signal

E	0 – 10V
A	4 – 20 mA
R	RS485 Modbus

Wiring

L1	1m (Standard)
L2	2m (Customized)
L3	3m (Customized)

*註 1：若控制訊號選擇 0-10V，請留意最小的驅動電流為 3mA。

For Command Signal type 0-10V, the minimum driving current is 3mA

註 2：以上標示流量為用於空氣流量，若使用於液體，流量需另外計算。

The indicated flow rate is air, please consult for liquid flow rate

註 3：如需訂製特別流量範圍，請洽詢本公司 Please contact us for customized flow range

★註 4：以上產品組合於出貨前皆一對一校正完成。安裝該產品時，需依產品序號一對一配對(比例閥本體序號和控制器序號需相同)，避免混搭造成產品不良情形。

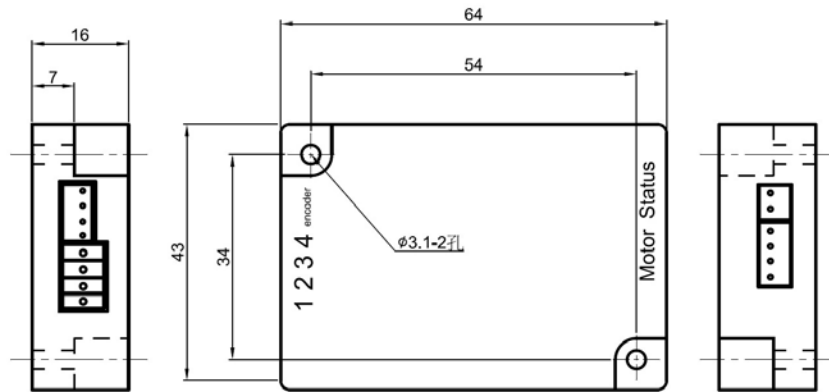
FC and PM series are calibrated in pair. Before operating, please ensure the serial numbers on FC and PM are in pair in order to prevent potential leakage issue.

驅動器



Proportional Valve Driver

日泰展業有限公司
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驅動器主要是提供了 PV 比例閥所需要的電源和控制信號(步驟和方向) , 並以類比訊號(0-10VDC/4-20mA/RS485 Modbus)轉換為雙極步進馬達之步驟控制。

Driver provides series PV valve with the required power and control signal (step and direction). It controls the step of a bipolar stepper motor with an analogue signal (0-10 VDC/4-20mA/RS485 Modbus).

接線方式 Wiring



編號 No.	功能 Function
1	DC24V +
2	DC24V -
3	Signal + 、 RS485 +
4	Signal - 、 RS458-

產品特色 Features

- ◆ 體積小 compact
- ◆ 低成本 low cost
- ◆ 靈敏度高 High sensitive
- ◆ 類比/數位訊號 Analog / Digital signal
- ◆ 簡易控制 easy-control
- ◆ 線性全流量控制

Full scale linearity flow rate control

規格 Specifications

輸入訊號 Input signal	0-10V / 4-20mA / RS485
工作電源 Supply	DC24V (≤12W)
指示燈狀態 Indicator LED Status	on/off 燈亮表示馬達運轉(LED on is motor running) on/off 燈熄表示馬達停止(LED off is motor stopping) on/off 閃爍表示馬達故障(LED flashing is motor error)
馬達狀態輸出 Motor Status output	Sink 50mA
環境溫度 Ambient Temp.	0-60°C
線材長度 Cable Length	一米或五米 1 meter or 5 meter