CHELIC



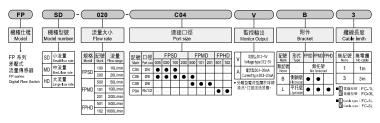
FP-D

數位式流量傳感器(差壓式) 分離型 操作說明書

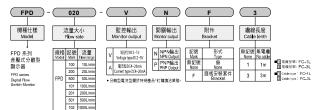
FP-D Series - Flow Meter User Manual



● FP-D 訂購稱呼代號 Code of Order



● FPD 訂購稱呼代號 Code of Order



使用安全事項與警告

使用安全警告與注意事項分為三種「危險」、「警告」、「注意」。

危險: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,

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 ・請勿用於易燃性流體・

注意

使用不受温度、販力影響的品質流量測定本產品的流量。單位為 使用・交通機・座力を書い品質派量物度を発生品的派量。単位物 Lmin。該單位為將品質流量換算為在 20C 1 氣壓 (101kPa) 的體積 流量時的標記單位。

- 警告 ・不能作為商用儀録使用
- 不適用於計量法,因此請不要用於商業交易。請作為工業用威測器 使用。
- 除適用流體之外的流體由於不能保證其續度,因此請不要使用
- 金屬網,用於網整配管中的流量,並不是用於除去異物的師檢程式 ,因此請務必設置篩檢程式。 威測器的一次端使用關時,請使用禁油規格的關。否則,可能因潤
- 滑油、油等飛騰造成感測器失靈或破損。
- 使用碳酸氣等液化氣體時,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

關於佈線

危險

- 電源電壓及輸出請使用規格電壓
- 施加規格電壓以上的電壓可能引起失靈、感測器破損及觸電或火災 此外,請不要使用超過輸出額定的負荷。因為可能導致威測器破損
- 或火災

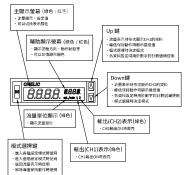
- · 佈線時請確認電線的顏色。錯誤佈線可能引起感測器損壞、故障或
- 失靈,因此請參照使用說明書確認回路的顏色後再進行佈線
- 請確認配線的絕緣。
- 請不要與其他回路接觸、接地或端子間絕緣不良。可能造成威測器流入過電流導致威測器損壞。
- ・本産品使用的電源請使用與交流電源組緣的額定內 DC 穩定電源。 沒有經緣的雷源可能導致觸雷事故。
- 及污品或的電源与時經過額定電源,或導致本產品損壞,或導致本產 品精度下降。
- 連接連接器後請務必安裝連接器防護罩
- 。 直接電流的引出部位及連接器部不要形成壓力。 請停止控制裝置、機械裝置後,在切斷電源的狀態下進行佈線。如 果使裝置過快運行有時裝置會進行異常動作,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,並進行問閱資 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。
- 請不要超過電源電壓範圍使用。如果施加超過使用範圍的電壓或交 流電源,則可能導致本產品破裂或燒毀。 · 本產品及佈線設置時請遠雖強電線等嗓音源。電源線產生的浪湧請

- 另行採取措施。有時顯示或輸出會有變動
- 为门外似间形。 Pinek/13kmin 自身变物 負荷請不要短路。 因為可能等較本產品檢製或燒毀。 金屬主體 (不銹鋼主體、鋁主體)型用電源請使用與交流—次端完 全絕緣的 DC 穩定電源,F.G. 連接電源側的+側或-側的某—側後 使用。為防止威測器的絕緣損壞,金屬主體型的內部電源回路和金 屬主體之間連接有變阻器 (限制電壓約 40V)。金屬主體型的內部電源回路和金屬主體之間不要實施耐電壓試驗和絕緣電阻試驗。需要 實施這些試驗時請將佈線拆下後實施。電源和金屬主體之間的過大 電位差會燒毀內部零元件。此外,金屬主體型的本產品設置、連接 、配線後,裝置、機架的電焊或短路事故的焊接電流或焊接時過渡 性高電壓、浪湧電壓等會導致與連接上述元件間的回路、接地線或 流體回路產生電壓洩露,最後使電線或元件損壞。請在全部拆去主
- 加國四四屆王華經成為"教授使過來或人行政學"的任主即於五王 機或電報「長」建接後其行戰爭等操作。 除溫度特性外,輸出精度還會受到因插電而本身發熱的影響。使用 時請等待待機時間(趙電 5 分鐘後)。
- 本產品在通電後由於自身診斷需要耗時約四秒鐘,這段時間內流量 檢出開關不動作。通電後約四秒鐘請設置為無視訊號的控制回路、

注意

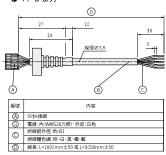
- 上心 動作過程中如果發生異常,請立即切斷電源,停止使用本產品,並 與銷售店聯繫。
- 本產品的流量請保持在額定流量量程內。
- · 本產品請在使用壓力範围內使用。 · 變更輸出的設定值時,控制系裝置可能會自動動作,因此請停止裝置運行後再變更輸出設定值。
- 請一年至少定期檢查一次本產品,確認本產品正常動作。
- 高・丁二ン (大田) (本語 大田) (
- 將粘有稀薄中性洗滌劑的毛巾等摶乾後擦拭外殼
- "我们可得吗?" · 前注電腦線型配線電阻產生的逆向電源。與発量成測器相同的電源 上連接合流量成測器的其他元件時,為確認控制態的輸入裝置作動 ,如果使開關輸出線和電源線一極短路或者切斷電源線一側,可能 會在流量感測器的開關輸出回路上產生逆向電流,造成流量感測器

① 螢幕顯示、操作按鍵和功能



♠ FP-D 雷纜線材規格表

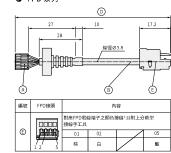
● FP-D系列



電線端子 1.25Px5pin

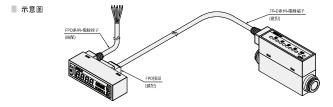
示意圏	PIN	線色	內容
01 02 03 04 04 05	01	棕	電源+(24V)
	02	白	CH1(開開輸出1: max50mA)
	03	黑	CH2(開闢輸出2:max50mA)
	04	楢	電壓輸出: 1-5V 阻抗50kΩ以上 電流輸出:4-20mA 阻抗300Ω以下
	05	藍	電源一(GND)

● FPD系列

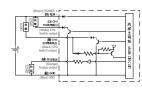


■ 電線端子 1.25Px5pin

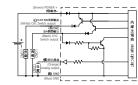
示意圖	PIN	線色	內容
01 02 03 04 04	01	棕	電源+(24V)
	02	ė	電壓輸出: 1-5V 阻抗50kΩ以上 電流輸出:4-20mA 阻抗300Ω以下
	03	無	N.C
	04	檔	N.C
	ΛE	被	雷海—/GND)



▶ FP-D 系列 - NPN 型輸出電路 FP-D Series - NPN Output



▶ FP-D系列 - PNP 型輸出電路 FP-D Series - PNP Output







果計學學說定域CO2排放單個學驗定 同時授下圖和圖兩秒經,可將果計的量與每



■峰值保持功能

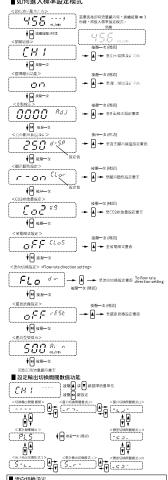


Q功能完成,回到即時消量顯示畫面

省維功能



■如何進入標準設定模式



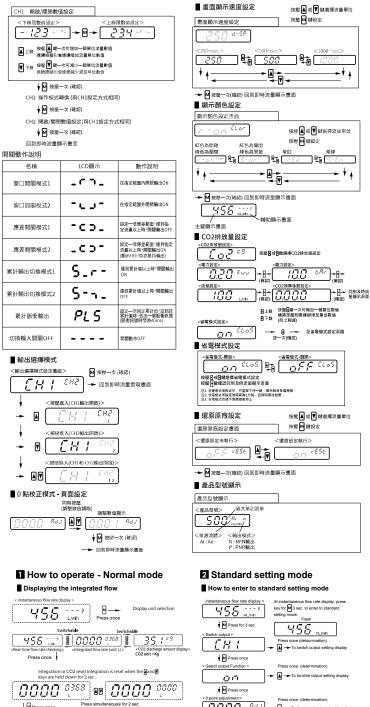
■流向切換設定

FLo

明 FLo

³ ∰ FLo

2標準設定模式



Note: Integration is reset with the external input. See auto reference function.

Note: Integration is also reset or Integrating function display setting is keepingwhen nower is turned OFF.

432

455 ...

455 ···→

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

[EHI]

†

Peak hold function

Peak hold display

♦ Being held down

Press once

Key lock function

L<u>oc</u>

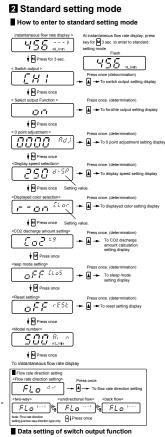
Key unlock

455

antaneous flow rate display (key lock) >

455 PER

481-0-



Press ▲ or ▼ key to select flow rate unit Press M key to set.

₩

S_r--

Warning / Caution to secure safety Safety caution are ranked by the safety ca **WARNING>**, **CAUTION>**

DANGER: When a dangerous situation may occur, or when there is high urgency to a warning leading to fatal or serious injuries, if handing is mistaken.

WARNING: When a dangerous situation may occur if handing is mistaken, leading to fatal or serious injuries.

CAUTION: When a dangerous situation may occur if handing is mistaken, leading to minor injuries or physical damages.

Flow unit

DANGER
 Do not use this product with flammable fluids.

CAUTION

• This product's flow rate is measured at a mass flow unaffected by temperature or pressure. The unit is l/min, but this is the display when the mass flow is converted to volumetric flow at 20°C 1 barometric pressure (101 kPa)

- 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 sensor for factory applications.
- Do not use fluids other than the applicable fluid because accuracy cannot be guaranteed.
- Compressed air from the compressor contains drainage (water, oxidized oil, foreign substances, etc.), so install a filter, air dryer, and oil mist filter (microalescer) on the primary side (upstream) of the sensor. The sensor's mesting rectifies flow in the pipe. It does not filter out foreign substances, so provide a filter pipe.
- When using a valve 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 liquidified gas before use. Entry of liquidified gas into this product will result in damage.

Wiring

DANUSE
WE 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 aload exceeding the output rating, Failure to observe this could result in damage to the output or fire.

- WARNING

 Check wire colors when wiring. Incorrect wiring connections could result in sensor damage, problems, and malfunctions.

 Check wiring insulation.

 Check wiring insulation.

 Check wiring insulation.

 Check that wires do not contact other circuits and that there are no ground faults or insulation faults across terminals. An over current could flow in and damage the sensor.

 Use a DC stabilized power supply, within the specified rating, insulated from the AC power supply, Failure to insulate the power supply could result in electrical shock. If power is not stabilized, the peak value could be exceeded. This could damage the product he peak value could be exceeded. This could damage the product Attach a connector cover after connecting connectors.

 Check that stress is not directly applied to cable leadout or connector sections.

 Stop the control device and machine devices, 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 movolite sections.

 Do not use this product at levels exceeding the power voltage repose.

 Separate this product and its wiring as far away as possible from sources of noise such as high-voltage lines. Provide separate measures for surge applied to the power cable. The display or output could fluctuate.

Count down Press key once to decrease by one figure and press it continuously to keep sel figure de

OFF data setting (Set same as CH1)

LCD display

- 0 -

-_-

-0-

Action description

Switch output ON within the specified range

Switch output ON outside the specified range

Press key once to increase by one figure and press it continuously to keep set figure in

CH1 ON/OFF data setting

Window operation 1

Window operation 2

Hysteresis operation 1

• Do not short-circuit the load. This product could rupture or burnary content either the plus or minus side of the power supply, to the Good or created body octories the side of the power supply, in the Good or created body interest the side of the power supply in the Good or created body interest power separated from the AC primary side. A variator (limit voltage 40 V) is connected between the metal body internal power circuit and metal body to prevent dielectric breakdown of the sensor. Do not conduct a withstand voltage test or insulation resistance test between the internal power circuit and metal body. Disconnect wiring if this testing is required. An excessive potential difference between power and metal body the metal body, bectract welding of the device or frome, or stort circuit accidents, etc., could cause welding current, excessive high voltage caused by welding, or surge voltage, etc., to run through wiring or ground line connected between such devices, damaging lines or devices. Conduct work such as electric welding after removing this product and F.C connection of the wiring.

WARNING

• Analog output accuracy is also affected by self generation of heat cause by energizing in addition to temperature characteristics. Provide enough stand-by time (Sminutes and over after energizing) before staring operation.

• This product does not use speed control for four seconds are power is turned on to complete self-diagnostics. Provide a control circuit and program that ignore signals for four seconds after power is turned on.

- power is turned on.

 CAUTION

 If a problem occurs during operation, immediately turn power off, stop use, and contact your dealer.

 Keep this product's flow within the rated flow range.

 Use this product within the working pressure range.

 Use this product within the working pressure range.

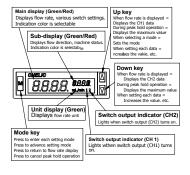
 Use this product within the working pressure range.

 Regularly inspect the product at least once a year or more, and confirm that it is operating correctly.

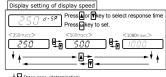
 Do not disassemble or modify this product. Doing so could result in faults.

 This cases in made of resin. Do not use solvent, alcholo or any other or the product of the product product of the product product of the product of the product product product of the product product

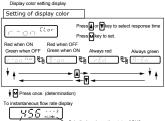
① Names and Functions of Each Parts







- Press once. (determination)
- Setting of display color



ay shows the state of CH1



alue up Press D key once to increase by one figure and press it continously to keep set figure increased to the exercit. on (tos) — Sleep mode setting

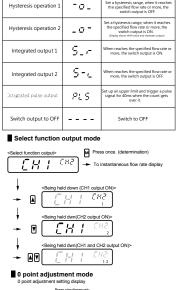
Press or to select sleep mode setting.
Press lept to set.
Note: Press any key in power saving mod
Note: The power saving mode will last fo
Note: The control functions remains inte Reset to the initial setting

	Press a or key to select response ti
Reset setting	Press Mkey to set.
<reset executed="" is="" not=""></reset>	<reset executed="" is=""> ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐</reset>

Press once. (determination

Model number display

500 8, 0 N : NPN output P : PNP output



883 🖳 🗓

| 883

₩ Press (detern