



**CH1 開啟/關閉數值設定**

<下極限數值設定> → <上極限數值設定>

**上極限** 按 A 鍵一次可增加一個單位流量數值  
連續按 A 鍵可連續增加流量單位數值

**下極限** 按 B 鍵一次可減少一個單位流量數值  
連續按 B 鍵可連續減少流量單位數值

↓ 按 A 鍵一次 (確認)  
CH2 操作模式轉換 (與 CH1 設定方式相同)

↓ 按 A 鍵一次 (確認)  
CH2 開啟/關閉數值設定 (與 CH1 設定方式相同)

↓ 按 A 鍵一次 (確認)  
回到即時流量顯示畫面

**0 點校正模式 - 真面設定**

同時按壓 (調整數值攝取) → 調整數值顯示

↓ 按 A 鍵一次 (確認)  
回到即時流量顯示畫面

**畫面顯示速度設定**

按壓 A 或 B 鍵選擇流量單位  
按壓 B 鍵設定

畫面顯示速度設定

<250>mscc <500>mscc <1000>mscc

↓ 按 A 鍵一次 (確認)  
回到即時流量顯示畫面

**開關動作說明**

名稱	LCD顯示	動作說明
窗口開關模式1		在指定範圍內開關輸出ON
窗口開關模式2		在指定範圍外開關輸出ON
應差開關模式1		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		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		達到累計值以上時，開關輸出ON
累計輸出切換模式2		達到累計值以上時，開關輸出OFF
切換輸入開關OFF		開關動作OFF

**輸出選擇模式**

<輸出選擇模式設定畫面>

按 A 鍵一次 (確認) → 回到即時流量顯示畫面

↓ 按 A 鍵進入 (CH1輸出開啟)

↓ 按 B 鍵進入 (CH2輸出開啟)

↓ 按 A 鍵進入 (CH1和CH2輸出禁啟)

↓ 按 B 鍵進入 (CH1輸出禁啟)

↓ 按 A 鍵進入 (CH2輸出禁啟)

**How to operate - Normal mode**

**Displaying the integrated flow**

<Instantaneous flow rate display>

↓ Press once

**Display unit selection**

→ →

Instantaneous flow rate display (unit: mL/min (or) L/min) → Integrated flow display (unit: mL (or) L)

↓ Press once (determination). Integration reset. Integration is reset when the A and B keys are held down for 2 sec.

<Integrated flow display> →

↓ Press once Press simultaneously for 2 sec.

To instantaneous flow rate display

**Peak hold function**

<Instantaneous flow rate display>

Display unit selection

↓ and press simultaneously

**Peak hold display**

→ →

↓ Being held down (Peak value displayed) ↓ Being held down (Bottom value displayed)

↓ Press once

Reset peak hold function. To instantaneous flow rate display

**Key lock function**

**Key lock**

<Instantaneous flow rate display (key unlock)>

↓ and press simultaneously for 1 sec. → <Instantaneous flow rate display (key lock)>

**Key unlock**

<Instantaneous flow rate display (key lock)>

↓ and press simultaneously for 3 sec. → <Instantaneous flow rate display (key lock)>

**顯示顏色設定**

顯示顏色設定畫面

按 A 或 B 鍵選擇流量單位  
按 A 鍵設定

紅色為開啟 綠色為關閉 常紅 常綠

↓ 按 A 鍵一次  
回到即時流量顯示畫面

**還原原廠設定**

按 A 或 B 鍵選擇流量單位  
按 B 鍵設定

還原原廠設定畫面

↓ 按 A 鍵一次  
回到即時流量顯示畫面

**產品型號顯示**

產品型號顯示

↓ 按 A 鍵一次  
回到即時流量顯示畫面

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>

At instantaneous flow rate display, press key for 3 sec. to enter to standard setting mode. Flash

↓ Press for 3 sec.

<Switch output>

Press once (determination) → To switch output setting display

↓ Press once

<Select output Function>

Press once (determination) → To forchice output setting display

↓ Press once

<0 point adjustment>

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

↓ Press once

<Display speed selection>

Press once (determination) → To display speed setting display

↓ Press once Setting value.

<Displayed color selection>

Press once (determination) → To displayed color setting display

↓ Press once Setting value.

<Reset setting>

Press once (determination) → To reset setting display

↓ Press once

<Model number>

↓ Press once

To instantaneous flow rate display

**Data setting of switch output function**

Press A or B key to select flow rate unit  
Press key to set.

<Switch output OFF>

<Window operation 1>

<Window operation 2>

↓ Press once (determination)

<Hysteresis operation 1>

<Hysteresis operation 2>

↓ Press once (determination)

<Integrated output 1>

<Integrated output 2>

<Hysteresis operation 1>

<Hysteresis operation 2>

↓ Press once (determination)

**Select function output mode**

<Select function output>

Press once (determination) → To instantaneous flow rate display

↓

<Being held down (CH1 output ON)>

↓

<Being held down (CH2 output ON)>

↓

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

**Warning / Caution to secure safety**

Safety caution are ranked by the safety caution as **<DANGER>**, **<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 handling is mistaken.

**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 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 (microleaks) on the primary side (upstream) of the sensor. The sensor's meshing rectifies flow in the pipe. It does not filter out foreign substances, so provide a filter.

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**

**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**

- Check wire colors when wiring. Incorrect wiring connections could result in sensor damage, problems, and malfunctions.
- Check wiring insulation.
- Check that stress is 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 or impair accuracy.
- 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 robotic wire material, for movable sections.
- Do not use this product at levels exceeding the power voltage range. If voltage exceeding this range is applied or if AC power is applied, the controller could rupture or burn.
- 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.

- Do not short-circuit the load. This product could rupture or burn.
- Connect either the plus or minus side of the power supply to the FG. For metal body (stainless steel, aluminum) power supplies, use DC-stabilized power separated from the AC primary side. A varistor (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 will burn internal parts. After installation, connecting and wiring the metal body, electrical welding of the device or frame, or short 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 FC 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 (5minutes and over after energizing) before starting operation.
- This product does not use speed control for four seconds after 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.

**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.
- If the output setting value is changed, 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 it 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. This may damage the resin. Wipe off dirt with a rag soaked in a diluted neutral detergent solution and wrung out well.

- Check backflow currents caused by broken wiring or wiring resistance. If other devices, including a flow sensor, are connected to the same power as the 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 circuit.

**Names and Functions of Each Parts**

**Main display (Green/Red)**  
Displays flow rate, various switch settings. Indication color is selectable

**Sub-display (Green/Red)**  
Displays flow direction, machine status. Indication color is selectable

**Unit display (Green)**  
Displays flow rate unit

**Up key**  
When flow rate is displayed = Displays the CH1 data  
During peak hold operation = Displays the maximum value  
When selecting a mode = Sets the mode  
When setting each data = Increases the value, etc.

**Down key**  
When flow rate is displayed = Displays the CH2 data  
During peak hold operation = Displays the maximum value  
When setting each data = Increases the value, etc.

**Switch output indicator (CH2)**  
Lights when switch output (CH2) turns on.

**Switch output indicator (CH 1)**  
Lights when switch output (CH1) turns on.

**Mode key**  
Press to enter each setting mode  
Press to advance setting mode  
Press to return to flow display  
Press to cancel peak hold operation

**CH1 ON/OFF data setting**

<Lower limit data settings> → <Upper limit data settings>

Count UP Press A key once to increase by one figure and press it continuously to keep set figure increased.

Count down Press B key once to decrease by one figure and press it continuously to keep set figure decreased.

↓ Press once (determination)

CH2 operation mode change (Set same as CH1)!

↓ Press once (determination)

CH2 ON/OFF data setting (Set same as CH1)

↓ Press once (determination)

To instantaneous flow rate display

**Switch action description**

Mode	LCD display	Action description
Window operation 1		Switch output ON within the specified range
Window operation 2		Switch output ON outside the specified range
Hysteresis operation 1		Set a hysteresis range, when it reaches the specified flow rate or more, the switch output is OFF.
Hysteresis operation 2		Set a hysteresis range, when it reaches the specified flow rate or more, the switch output is ON. (Display flow HHH value and main output)
Integrated output 1		When reaches the specified flow rate or more, the switch output is ON.
Integrated output 2		When reaches the specified flow rate or more, the switch output is OFF.
Switch output to OFF		Switch to OFF

**Reset to the initial setting**

Reset setting Press A or B key to select response time  
Press key to set.

<Reset is not executed>

<Reset is executed>

↓ Press once (determination)

To instantaneous flow rate display

**Model number display**

Model number display

Full scale flow rate

<Model number>

<Working fluid> / <Switch output>  
A: Air N: NPN output P: PNP output