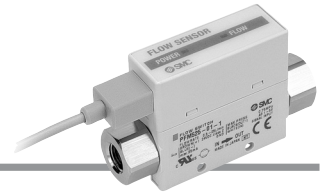


# 2-Color Display Digital Flow Switch Series PFM5

Remote  
sensor unit



## How to Order

Remote  
sensor unit

PFM5 10 - C4 - 1 - - - - -

Type  
5 Remote sensor unit

Rated flow range (Flow rate range)

10	0.2 to 10 (5) l/min
25	0.5 to 25 (12.5) l/min
50	1 to 50 (25) l/min
11	2 to 100 (50) l/min

\* ( ): Fluid: CO<sub>2</sub>

Flow adjustment valve

Nil	None
S	Yes

Port size

Symbol	Description	Flow rate range			
		10	25	50	11
01	Rc1/8	●	●	●	
02	Rc1/4				●
N01	NPT1/8	●	●	●	
N02	NPT1/4				●
F01	G1/8	●	●	●	
F02	G1/4				●
C4	ø4 (5/32") one-touch fitting	●			
C6	ø6 one-touch fitting	●	●	●	●
C8	ø8 (5/16") one-touch fitting		●	●	●
N7	ø1/4 one-touch fitting		●	●	●

Piping entry direction

Nil	Straight
L	Bottom

\* Different combinations of piping entry directions for IN and OUT side are available as made-to-order. (Refer to page 35.)

Made to Order  
(Refer to page 14 and 35.)

Option 2  
(Refer to page 14.)

Option 1  
(Refer to page 14.)

Calibration certificate

Nil	None
A	With calibration certificate

\* The certificate is written in English and Japanese. Other languages are available as specials.

Instruction manual

Nil	With instruction manual (Leaflet: Japanese and English)
N	None

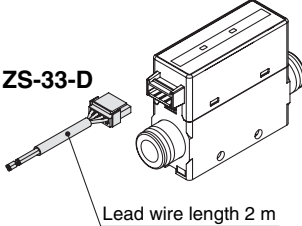
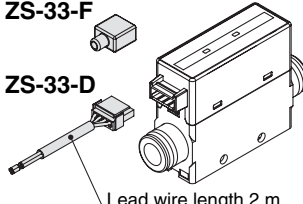
Output specification

No.	Description	Applicable display unit
1	Analog output (1 to 5 V)	PFM30□
2	Analog output (4 to 20 mA)	PFM31□

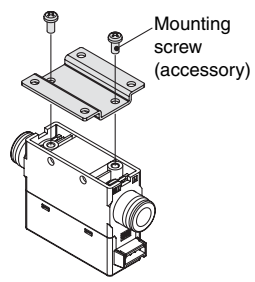
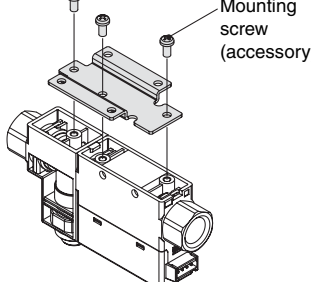
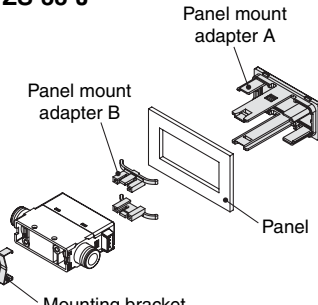
## Piping Variations

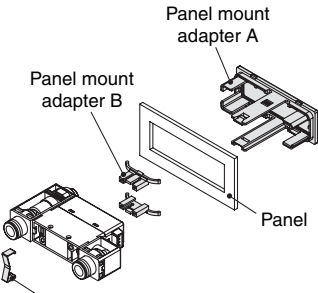
	With one-touch fittings (C4, C6, C8, N7)		Female thread (01, 02, N01, N02, F01, F02)	
	Straight (Nil)	Bottom (L)	Straight (Nil)	Bottom (L)
Without flow adjustment valve (Nil)				
With flow adjustment valve (S)				

## Option 1

Nil	W	Z
With lead wire with connector (2 m)	With lead wire with connector (2 m) + Rubber cover for connector (silicon rubber)	Without lead wire with connector
 <p><b>ZS-33-D</b> Lead wire length 2 m</p>	 <p><b>ZS-33-F</b> <b>ZS-33-D</b> Lead wire length 2 m</p>	

## Option 2

Nil	R	S	T
None	Bracket (For without flow adjustment valve) <b>ZS-33-M</b>	Bracket (For with flow adjustment valve) <b>ZS-33-MS</b>	Panel mount adapter (For without flow adjustment valve) <b>ZS-33-J</b>
	 <p>Mounting screw (accessory)</p>	 <p>Mounting screw (accessory)</p> <p>Piping direction: Cannot be mounted with bottom piping type.</p>	 <p>Panel mount adapter A Panel mount adapter B Panel Mounting bracket</p>

V
Panel mount adapter (For with flow adjustment valve) <b>ZS-33-JS</b>
 <p>Panel mount adapter A Panel mount adapter B Panel Mounting bracket</p>

Each option is not assembled with the product, but shipped together.

### Made to Order

Symbol	Specification/Description
<b>X693</b>	Change of piping entry direction
<b>X694</b>	combination

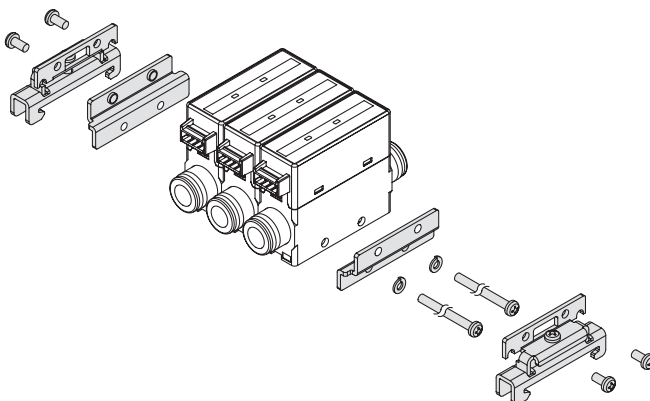
For details, refer to page 35 and 36.

## DIN Rail Mounting Bracket (Order Separately)

### ZS-33-R

#### Stations

1	1 station
2	2 stations
3	3 stations
4	4 stations
5	5 stations



- DIN rail (supplied by customers)
- Port size F02: G1/4 cannot be mounted on the DIN rail.

# Series PFM5

## Specifications

Model		PFM510	PFM525	PFM550	PFM511
<b>Applicable fluid</b>		Dry air, N <sub>2</sub> , Ar, CO <sub>2</sub> (Air quality grade is JIS B8392.1-1, 1.2 to 1.6.2 and ISO8573.1-1, 1.2 to 1.6.2.)			
<b>Rated flow range (Flow rate range)</b> <sup>Note)</sup>	<b>Dry air, N<sub>2</sub>, Ar</b>	0.2 to 10 ℓ/min	0.5 to 25 ℓ/min	1 to 50 ℓ/min	2 to 100 ℓ/min
	<b>CO<sub>2</sub></b>	0.2 to 5 ℓ/min	0.5 to 12.5 ℓ/min	1 to 25 ℓ/min	2 to 50 ℓ/min
<b>Accuracy</b>		±3%F.S. or less			
<b>Repeatability</b>		±1%F.S. or less (Fluid: Dry air)			
<b>Pressure characteristics</b>		±5%F.S. or less (based on 0.35 MPa)			
<b>Temperature characteristics</b>		±2%F.S. (15 to 35°C) ±5%F.S. (0 to 50°C)			
<b>Operating pressure range</b>		-100 kPa to 750 kPa			
<b>Rated pressure range</b>		-70 kPa to 750 kPa			
<b>Proof pressure</b>		1 MPa			
<b>Analog output</b>	<b>Response time</b>	50 msec or 1 s (with response time selection function: 1 s at no-voltage input) → Refer to the internal circuits and wiring examples on page 16.			
	<b>Voltage output</b>	Voltage output: 1 to 5 V Output impedance: 1 k			
	<b>Current output</b>	Current output: 4 to 20 mA Max. load impedance: 600 , Min. load impedance: 50			
<b>Status LED's</b>		Power ON indicator: Lights when power is turned on (Green). Flow rate indicator: Flashes when flow is applied (Green).			
<b>Power supply voltage</b>		24 VDC ±10%			
<b>Current consumption</b>		35 mA or less			
<b>Environmental resistance</b>	<b>Enclosure</b>	IP40			
	<b>Operating fluid temperature</b>	0 to 50°C (with no freezing and condensation)			
	<b>Operating temperature range</b>	Operating: 0 to 50°C    Stored: -10 to 60°C (with no freezing and condensation)			
	<b>Operating humidity range</b>	Operating, Stored: 35 to 85%R.H. (with no condensation)			
	<b>Withstand voltage</b>	1000 VAC for 1 min. between external terminal and case			
	<b>Insulation resistance</b>	50 M or more (500 VDC Mega) between external terminal and case			
	<b>Vibration resistance</b>	Without orifice: 10 to 500 Hz with a 1.5 mm amplitude or 98 m/s <sup>2</sup> acceleration, in each X, Y, Z direction for 2 hrs, whichever is smaller. With orifice: 10 to 150 Hz with a 1.5 mm amplitude or 19.6 m/s <sup>2</sup> acceleration, in each X, Y, Z direction for 2 hrs, whichever is smaller.			
	<b>Impact resistance</b>	490 m/s <sup>2</sup> in X, Y, Z directions 3 times each			

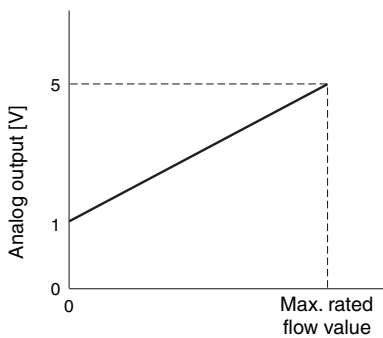
Note: Flow rate unit is based on standard conditions (20°C, 1 atm, 65% RH).

## Piping Specifications / Weight

Part no.	01	02	N01	N02	F01	F02	C4	C6	C6	N7	
<b>Port size</b>	Rc 1/8	Rc 1/4	NPT 1/8	NPT 1/4	G1/8	G1/4	∅4 (5/32") one-touch fitting	∅6 one-touch fitting	∅8 (5/16") one-touch fitting	1/4 one-touch fitting	
<b>Weight</b>	Straight Bottom		Without orifice: 95 g Without orifice: 105 g With orifice: 135 g With orifice: 145 g		Straight Bottom Straight Bottom		Without orifice: 125 g Without orifice: 135 g With orifice: 165 g With orifice: 175 g		Straight Bottom Straight Bottom		Without orifice: 55 g Without orifice: 65 g With orifice: 95 g With orifice: 105 g
<b>Wetted parts material</b>	LCP, PBT, Brass (Electroless nickel plated), HNBR (+ Fluoro coated), FKM (+ Fluoro coated), Silicon, Au, Stainless steel 304										

## Analog Output

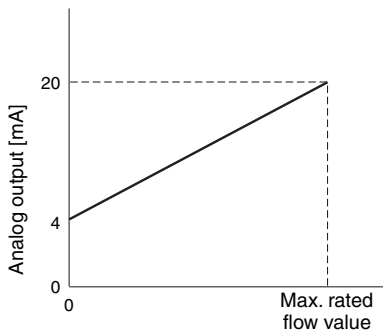
Note: Analog output at maximum rated flow rate when CO<sub>2</sub> is selected is 4.57 [V] for the voltage output type and 18.28 [mA] for the current output type.



### Analog Voltage Output (1 to 5 V)

Model	Max. rated flow value [l/min]
<b>PFM510-□-1</b>	10 (5)
<b>PFM525-□-1</b>	25 (12.5)
<b>PFM550-□-1</b>	50 (25)
<b>PFM511-□-1</b>	100 (50)

\* ( ): Fluid: CO<sub>2</sub>



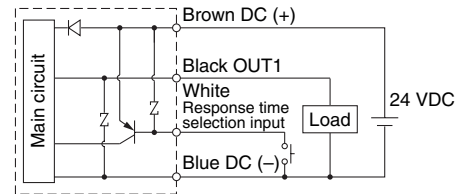
### Analog Current Output (4 to 20 mA)

Model	Max. rated flow value [l/min]
<b>PFM510-□-2</b>	10 (5)
<b>PFM525-□-2</b>	25 (12.5)
<b>PFM550-□-2</b>	50 (25)
<b>PFM511-□-2</b>	100 (50)

\* ( ): Fluid: CO<sub>2</sub>

## Internal Circuits and Wiring Examples

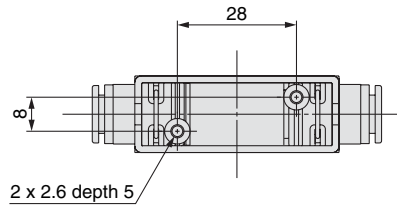
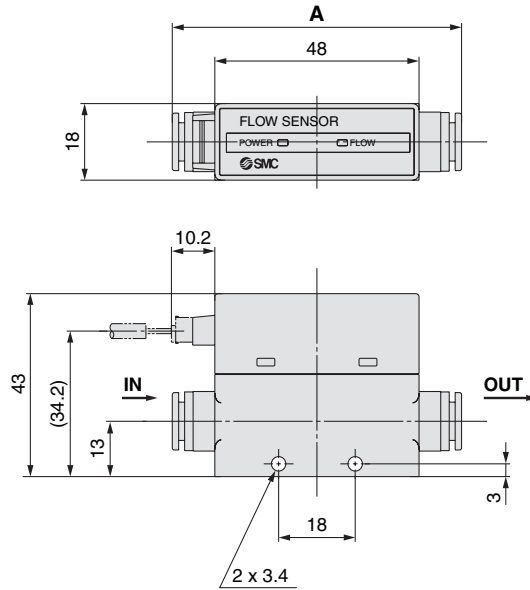
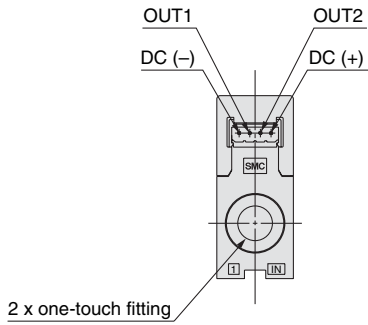
### PFM5□□



# Series PFM5

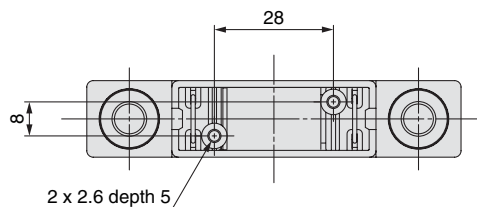
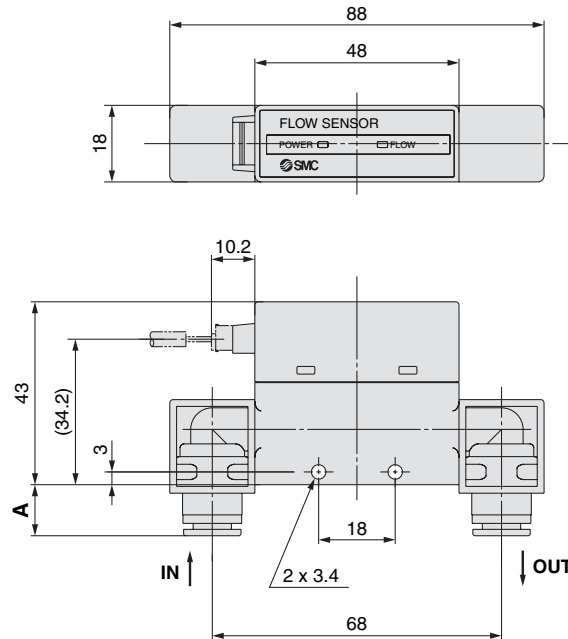
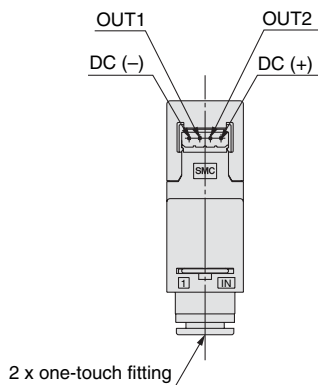
## Dimensions

### PFM5□□-C4/C6/C8/N7



(mm)	
One-touch fitting Applicable tube O.D.	A
ø4 (5/32")	64.2
ø6	64.6
ø8 (5/16")	68
ø1/4	64.6

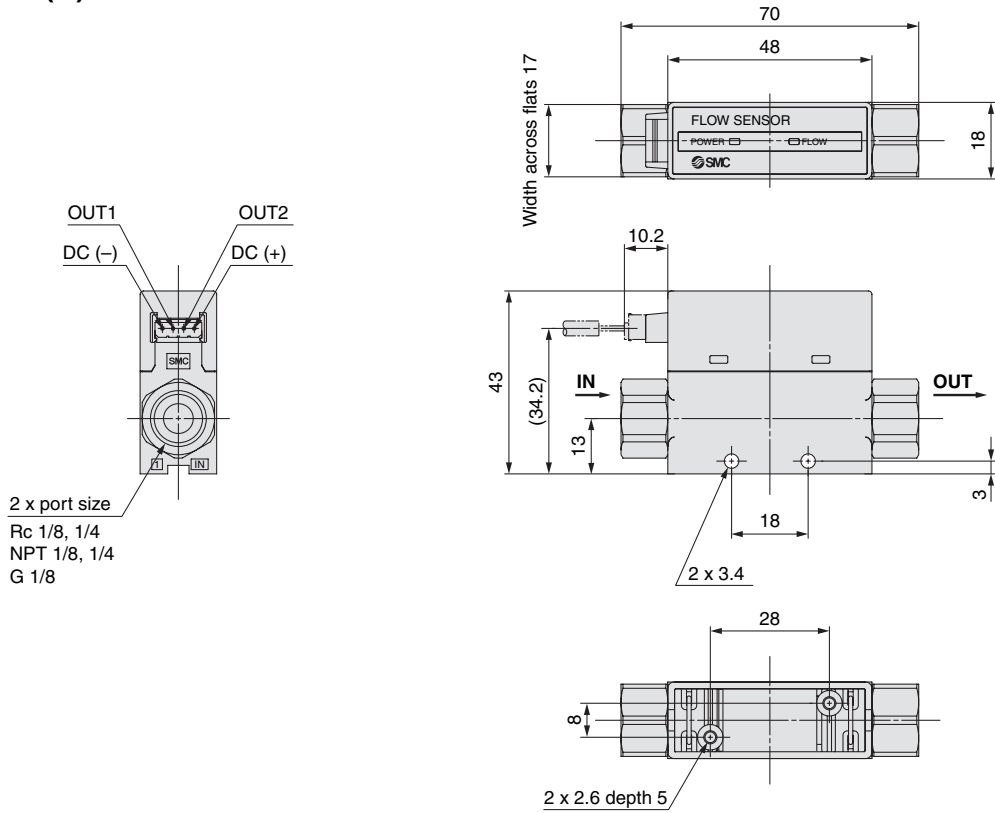
### PFM5□□-C4L/C6L/C8L/N7L



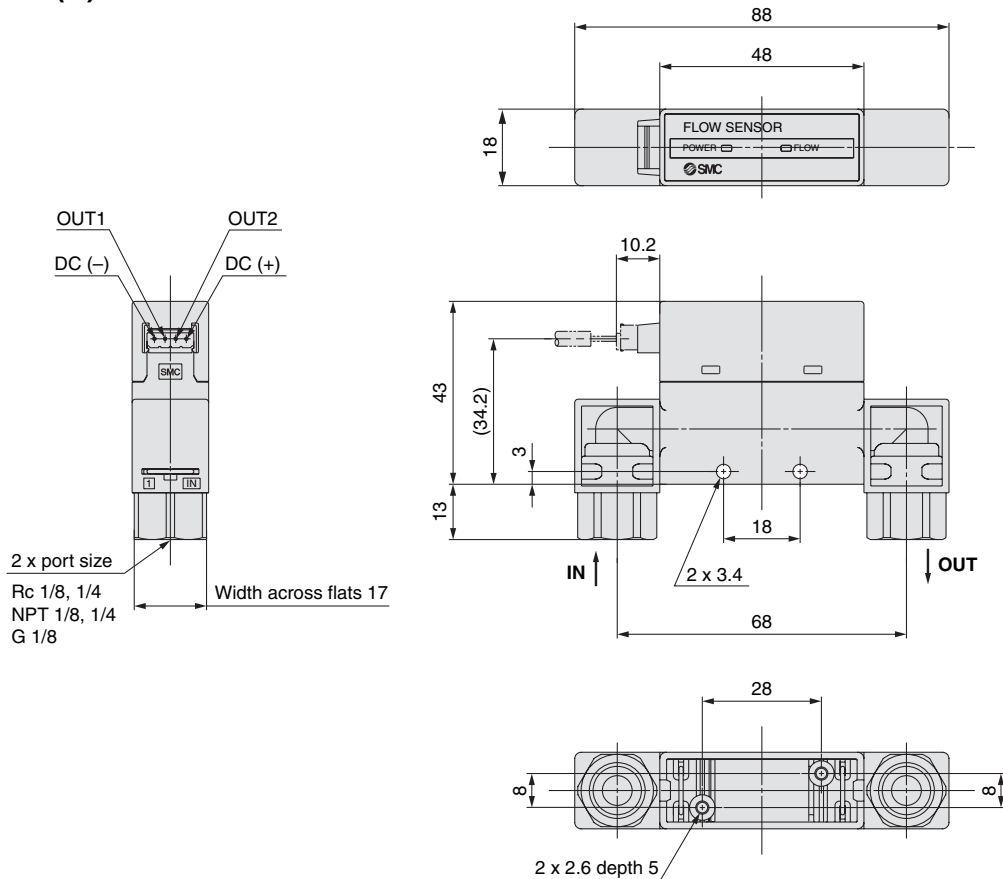
(mm)	
One-touch fitting Applicable tube O.D.	A
ø4 (5/32")	10.1
ø6	10.3
ø8 (5/16")	12
ø1/4	10.3

**Dimensions**

**PFM5□□-(N)01/(N)02/F01**



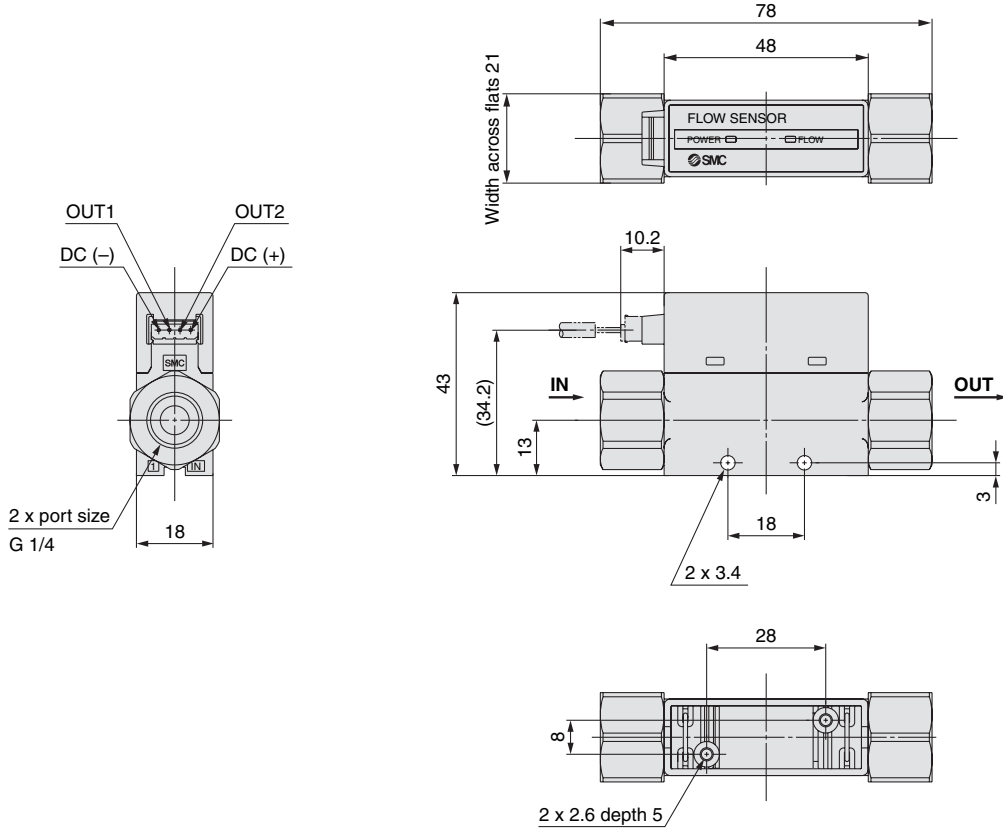
**PFM5□□-(N)01L/(N)02L/F01L**



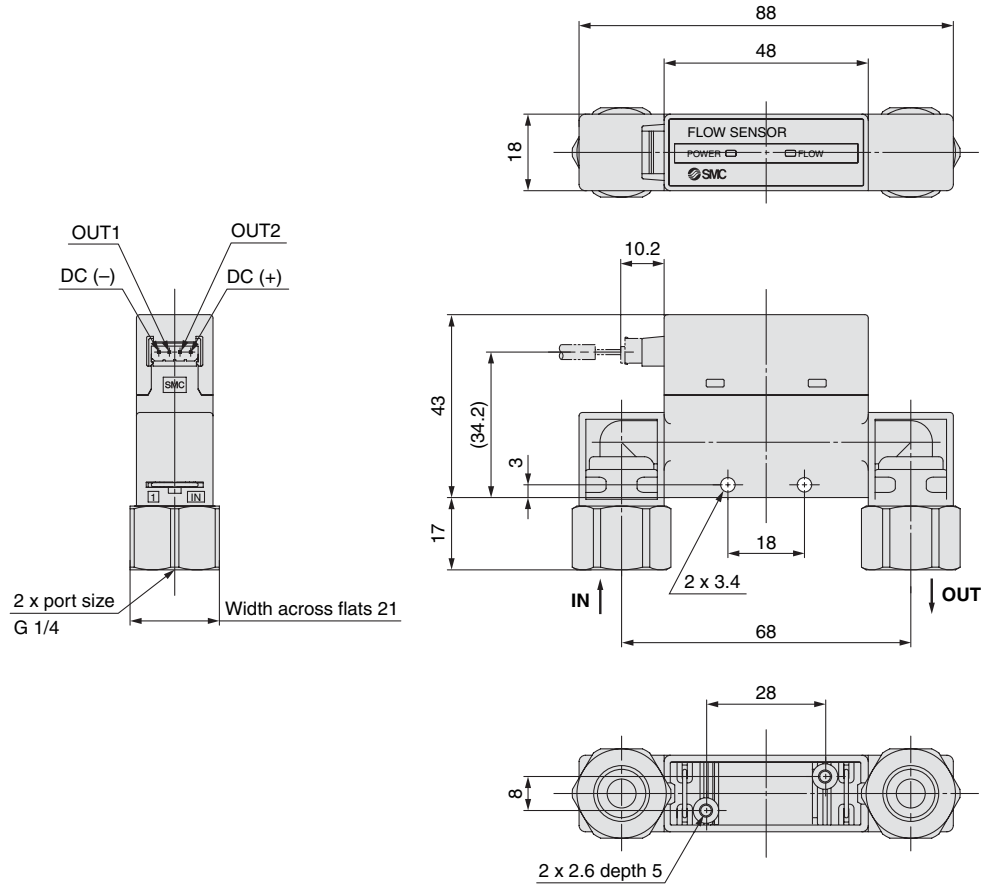
# Series PFM5

## Dimensions

### PFM5□□-F02

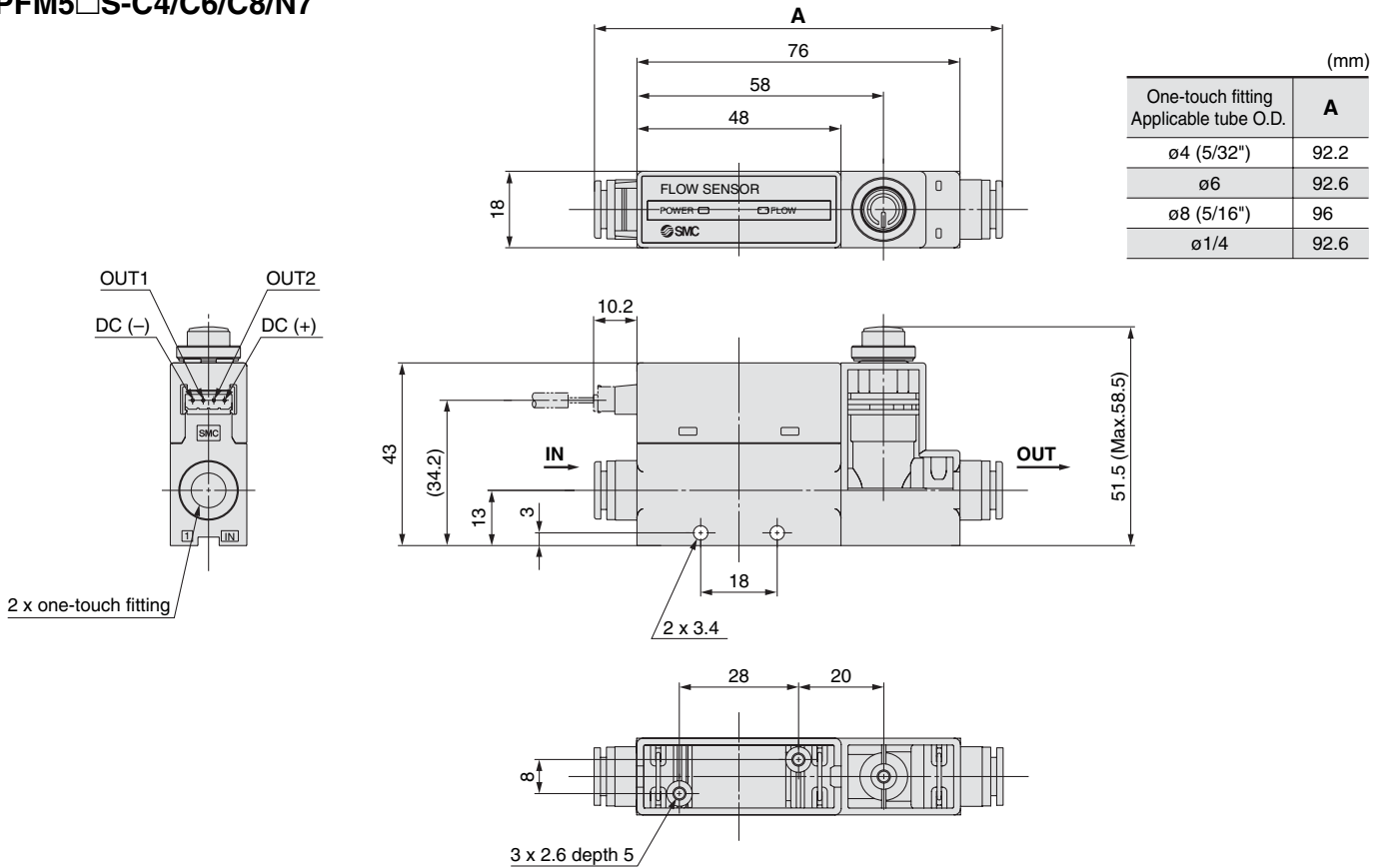


### PFM5□□-F02L

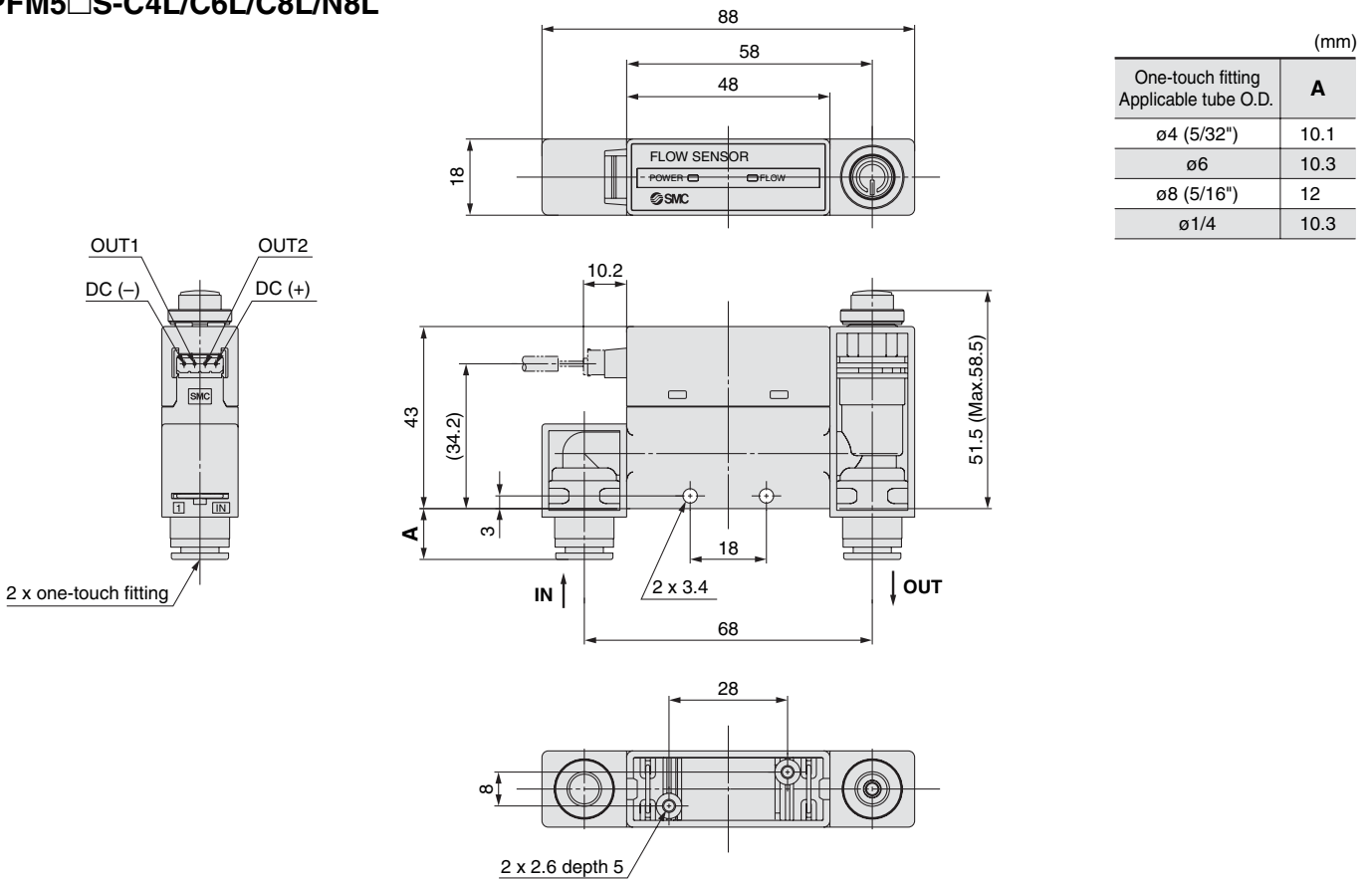


## Dimensions

### PFM5□S-C4/C6/C8/N7



### PFM5□S-C4L/C6L/C8L/N8L

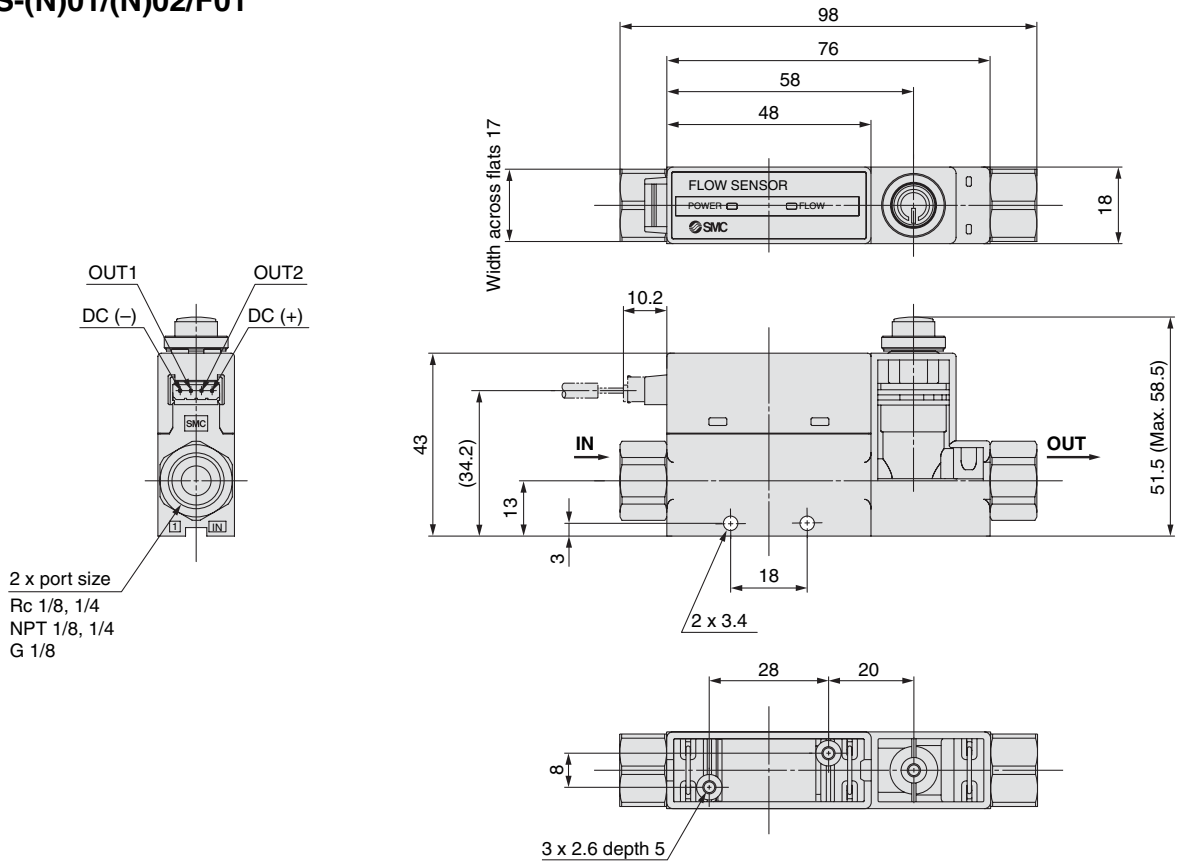




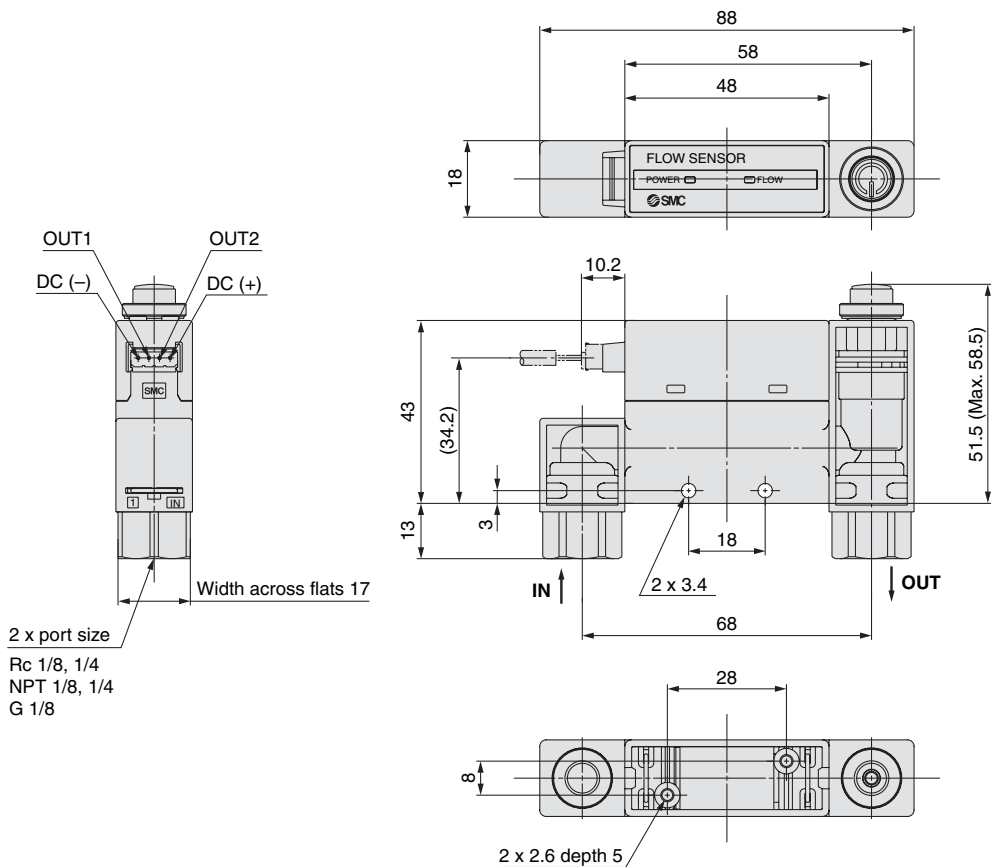
# Series PFM5

## Dimensions

### PFM5□S-(N)01/(N)02/F01

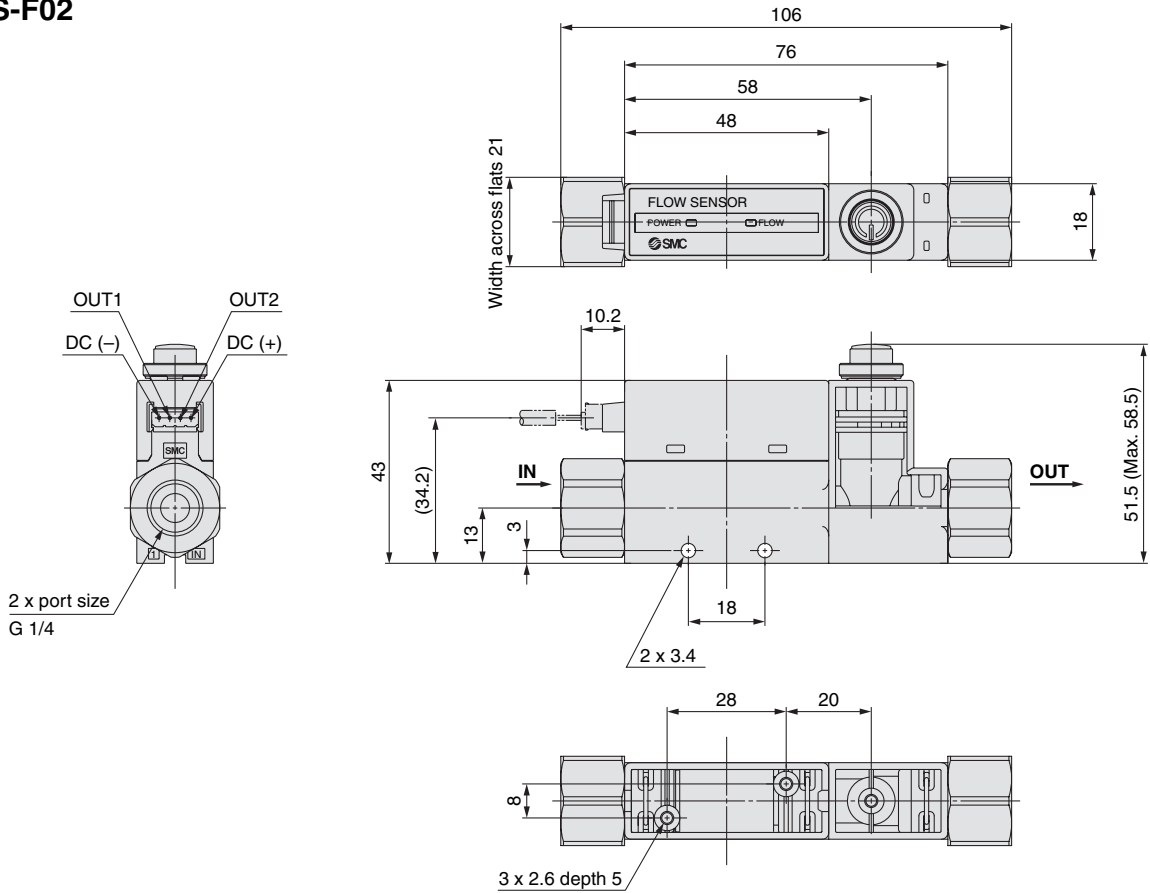


### PFM5□S-(N)01L/(N)02L/F01L

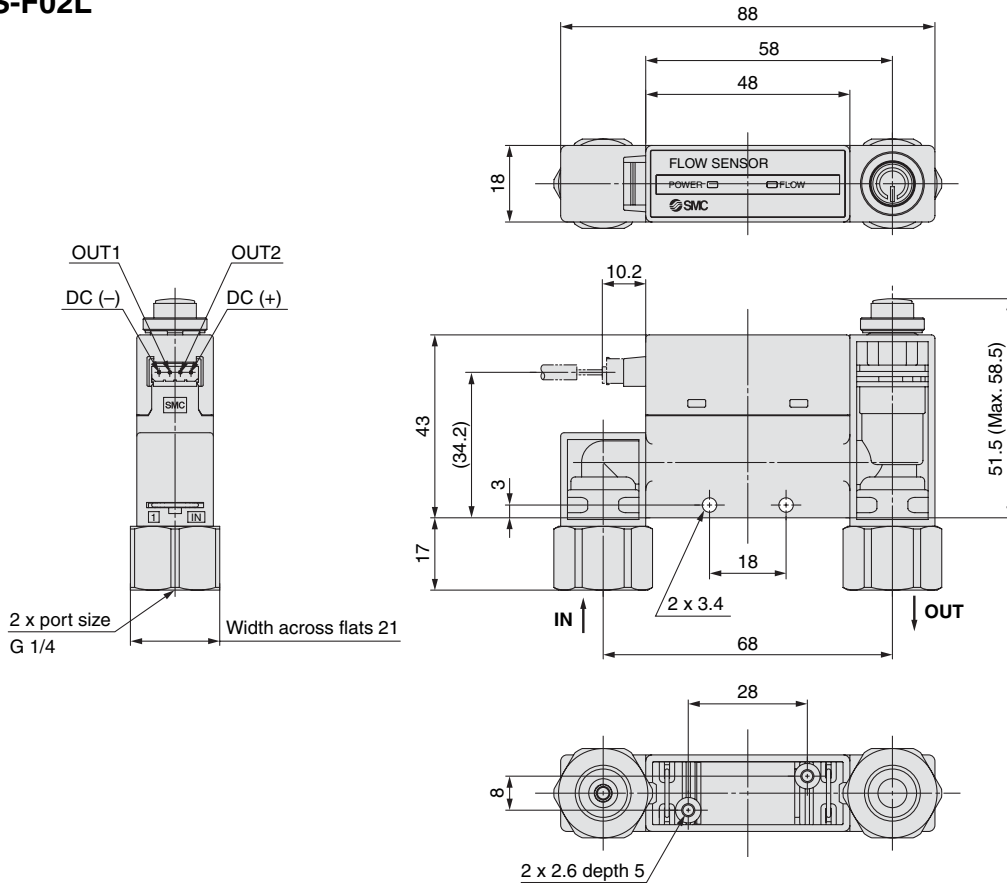


## Dimensions

### PFM5□S-F02



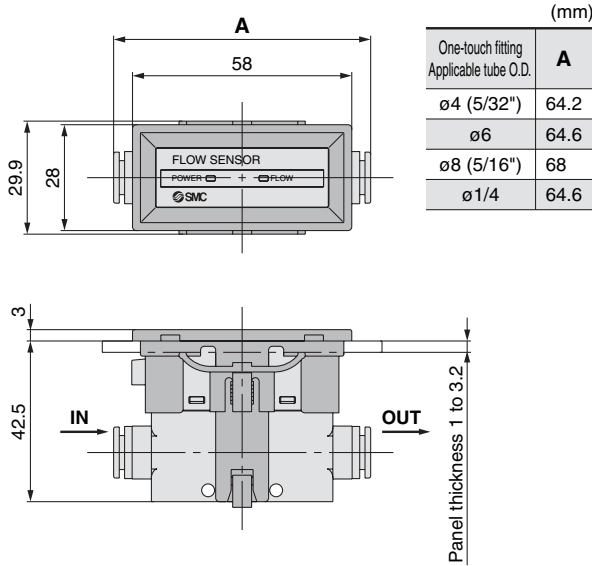
### PFM5□S-F02L



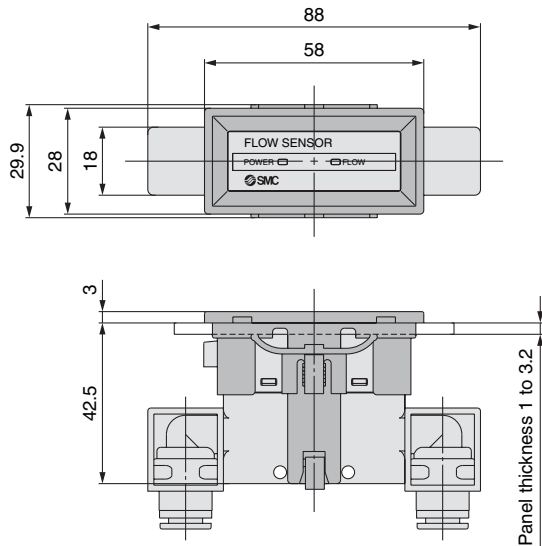
# Series PFM5

## Dimensions

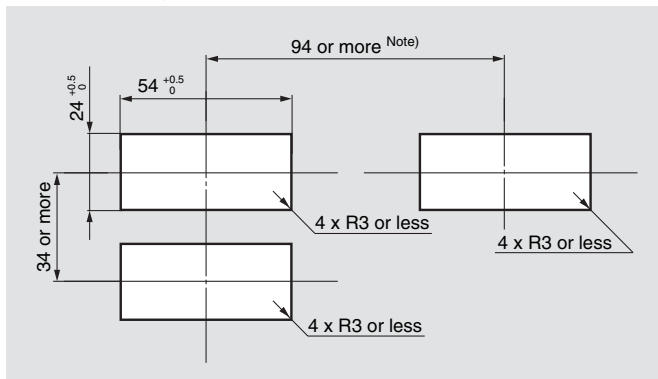
### Panel mount / Without flow adjustment valve / Straight



### Panel mount / Without flow adjustment valve



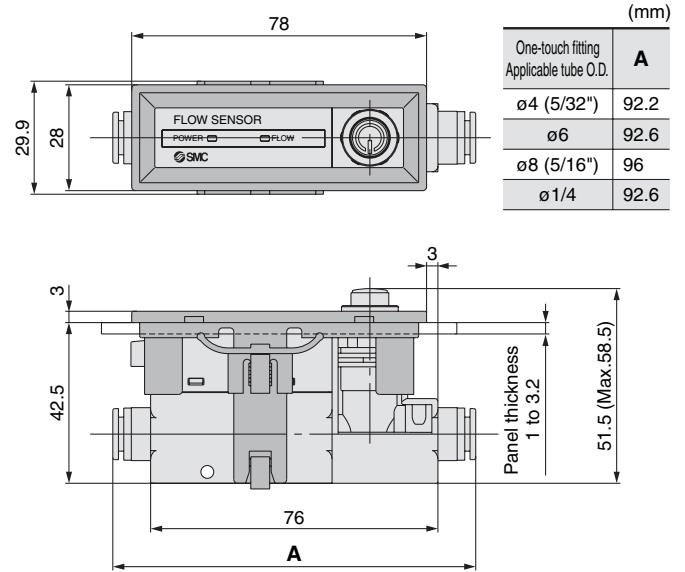
### Panel Fitting Dimensions



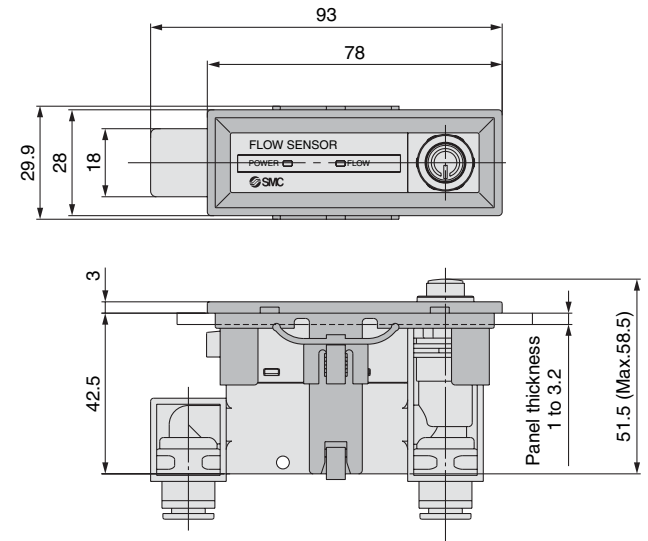
Panel thickness 1 to 3.2 mm

Note) Piping entry direction: Minimum dimensions for bottom side piping. If using straight piping, the piping material and tubing need to be taken into consideration when designing the system. If a bend (R) is used, limit it to R3 or less.

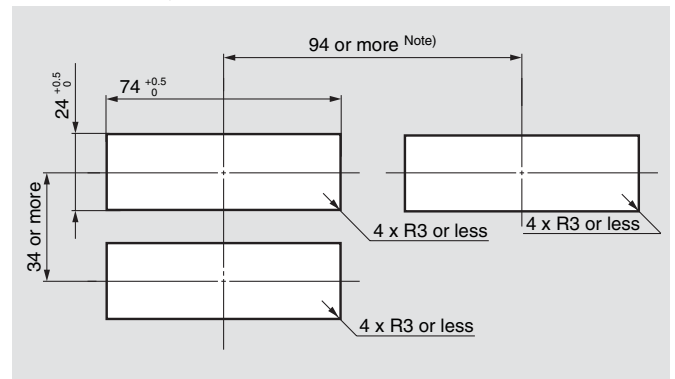
### Panel mount / With flow adjustment valve / Straight



### Panel mount / With flow adjustment valve



### Panel Fitting Dimensions

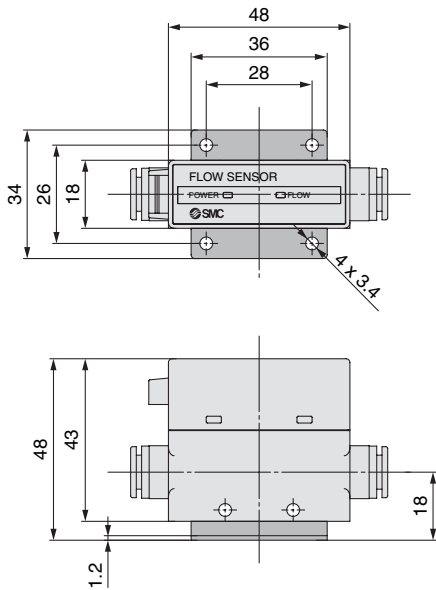


Panel thickness 1 to 3.2 mm

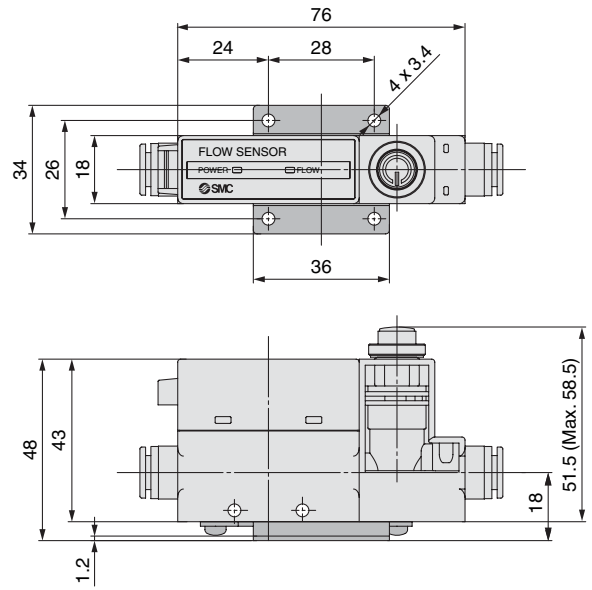
Note) Piping entry direction: Minimum dimensions for bottom side piping. If using straight piping, the piping material and tubing need to be taken into consideration when designing the system. If a bend (R) is used, limit it to R3 or less.

## Dimensions

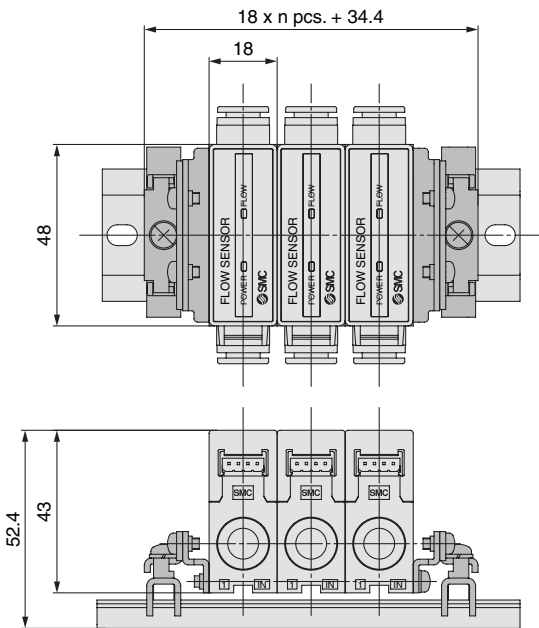
### With bracket / Without flow adjustment valve



### With bracket / With flow adjustment valve

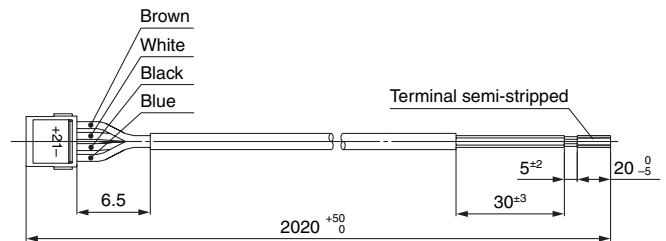


### DIN rail mounting



- DIN rail (supplied by customers)
- Port size, F02: G1/4 cannot be mounted on the DIN rail.

### Lead wire with connector ZS-33-D



### Cable Specifications of Lead Wire with Connector

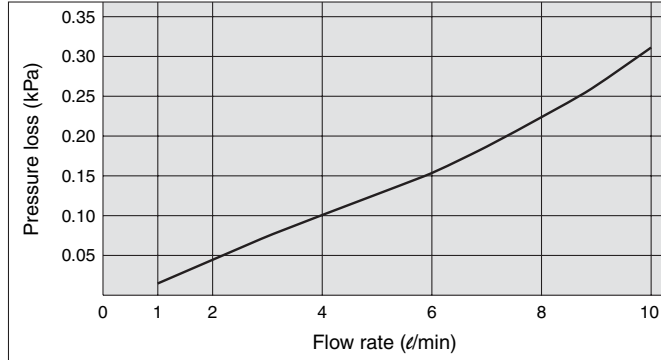
Rated temperature		80°C
Rated voltage		30 V
Number of wires		4
Conductor	Nominal cross section area	AWG26
	Material	Soft copper wire
	Construction	28 / 0.08 mm
	External diameter	Approx. 0.50 mm
Insulation	Material	Cross-linked vinyl chloride resin compound
	External diameter	Approx. 1.00 mm
	Colors	Brown, White, Black, Blue
Sheath	Material	Oil-resistant vinyl chloride resin compound
	Color	Light gray
Finished external diameter		ø3.5 <sup>+0.10</sup> / <sub>-0.25</sub>

\* Connects to the PFM3□□ series.

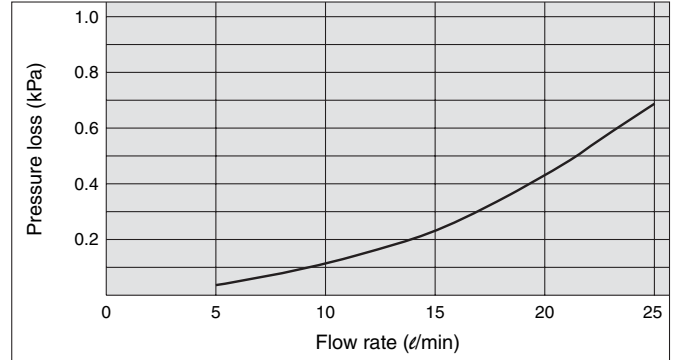
# Series PFM7/PFM5 Common Specifications

## Pressure Loss (Pressure: 350 [kPa])

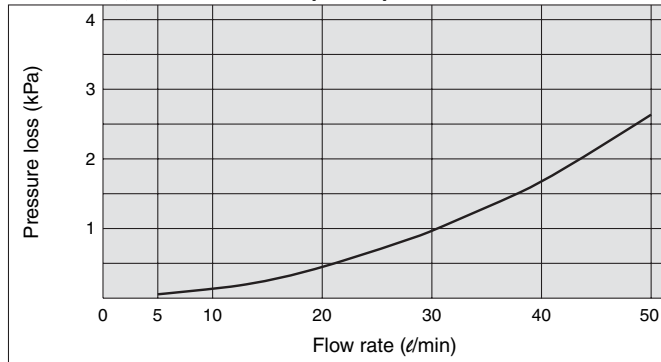
PFM710, 510 / For 10 (ℓ/min)



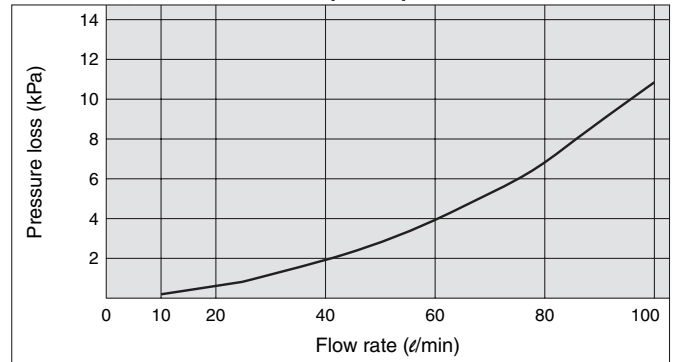
PFM725, 525 / For 25 (ℓ/min)



PFM750, 550 / For 50 (ℓ/min)

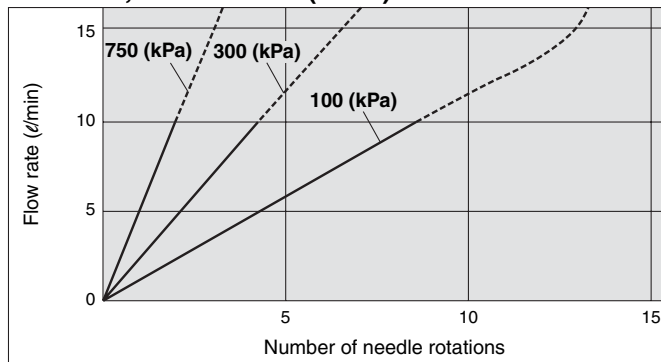


PFM711, 511 / For 100 (ℓ/min)

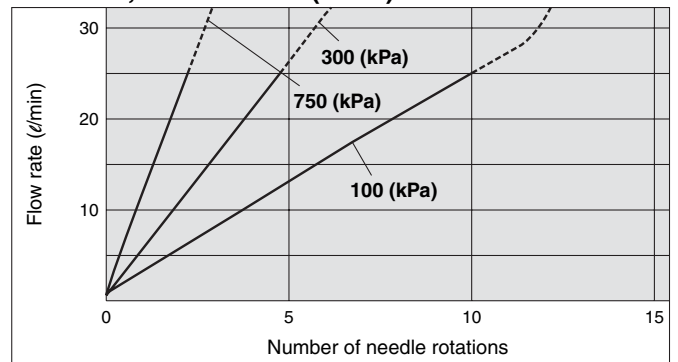


## Flow Characteristics

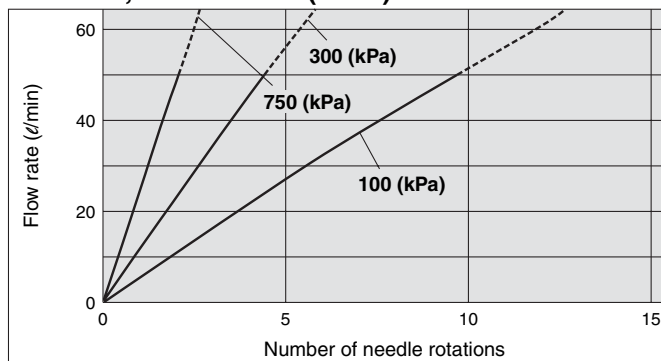
PFM710, 510 / For 10 (ℓ/min)



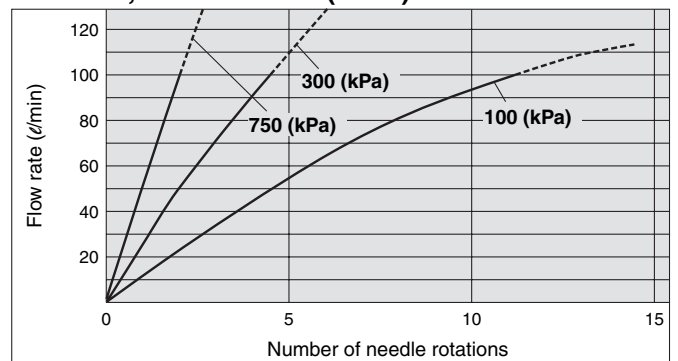
PFM725, 525 / For 25 (ℓ/min)



PFM750, 550 / For 50 (ℓ/min)

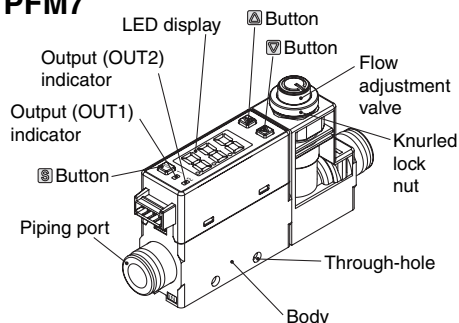


PFM711, 511 / For 100 (ℓ/min)

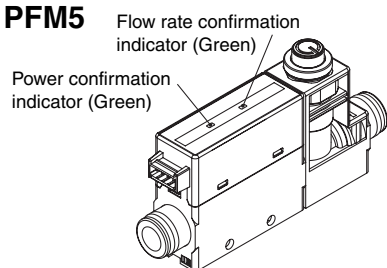


## Parts Description

### PFM7

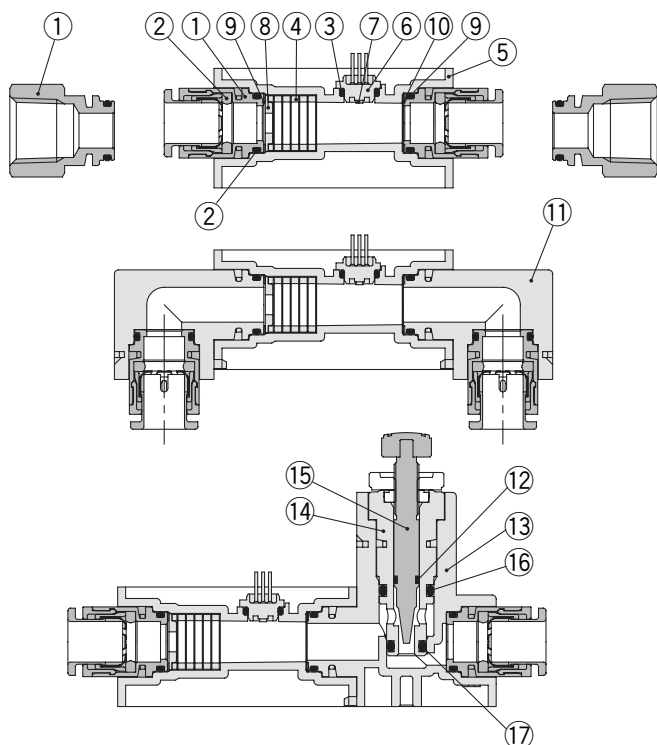


### PFM5



Description	Item
Output (OUT1) indicator (Green)	Illuminates when the output (OUT1) is turned on. Flashes when overcurrent error occurs.
Output (OUT2) indicator (Red)	Illuminates when the output (OUT2) is turned on. Flashes when overcurrent error occurs.
LED display	Indicates the flow rate, set mode state and error code. The display color can be selected between red and green according to the output (OUT1) status.
▲ Button	Selects the operation mode and increases the set value for ON and OFF. Used to transfer to peak indication mode.
▼ Button	Selects the operation mode and decreases the set value for ON and OFF. Used to transfer to bottom indication mode.
Ⓢ Button	Used to make changes in each mode and to enter the set value.
Reset	Reset function is activated by pressing ▲ and ▼ buttons simultaneously. Returns the indicated value to zero and clears errors.
Body	Main body of the flow switch
Flow adjustment valve	Orifice mechanism to adjust the flow rate
Piping port	Connection port for piping
Knurled lock nut	Used to fix the needle.
Power confirmation indicator (Green)	Illuminates when power is supplied.
Flow rate confirmation indicator (Green)	Flashing interval changes according to flow rate. Flashes faster when flow rate is increased. Color changes to red when exceeding the rated flow rate.

## Construction



### Component Parts

No.	Description	Material	Note
1	Fitting for piping	Brass	Electroless nickel plated
2	O-ring	FKM	Fluoro coated
3	O-ring	HNBR	Fluoro coated
4	Rectifying module	Stainless steel 304	
5	Body	PBT	
6	Sensor housing	LCP	
7	Sensor chip	Silicon	
8	Orifice	Brass	Electroless nickel plated
9	Seal	FKM	Fluoro coated
10	Mesh	Stainless steel 304	
11	Bottom piping adapter	PBT	
12	O-ring	HNBR	Fluoro coated
13	Flow adjustment valve assembly	PBT	
14	Body B	Brass	Electroless nickel plated
15	Needle	Brass	Electroless nickel plated
16	O-ring	HNBR	Fluoro coated
17	O-ring	HNBR	Fluoro coated

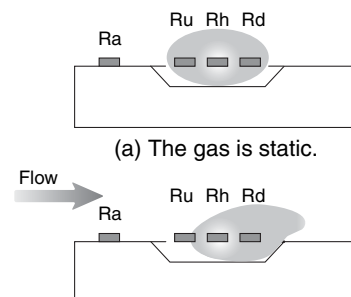
## Detection Principle

This MEMS sensor chip consists of upstream temperature measuring sensor (Ru) and downstream temperature measuring sensor (Rd), which are placed symmetrically from the center of a platinum thin film coated heater (Rh) mounted on a membrane, and an ambient temperature sensor (Ra) for measuring gas temperature.

The principle is as shown in the diagram on the right. (a) When the gas is static, the temperature distribution of heated gas centered around Rh is uniform, and Ru and Rd have the same resistance. (b) When the gas flows from the left side, it upsets the balance of the temperature distribution of heated gas, and the resistance of Rd becomes greater than that of Ru.

The difference in resistance between Ru and Rd is proportional to the gas velocity, so measurement and analysis of the resistance can show the flow direction and velocity of the gas.

Ra is used to compensate the gas and/or ambient temperature.

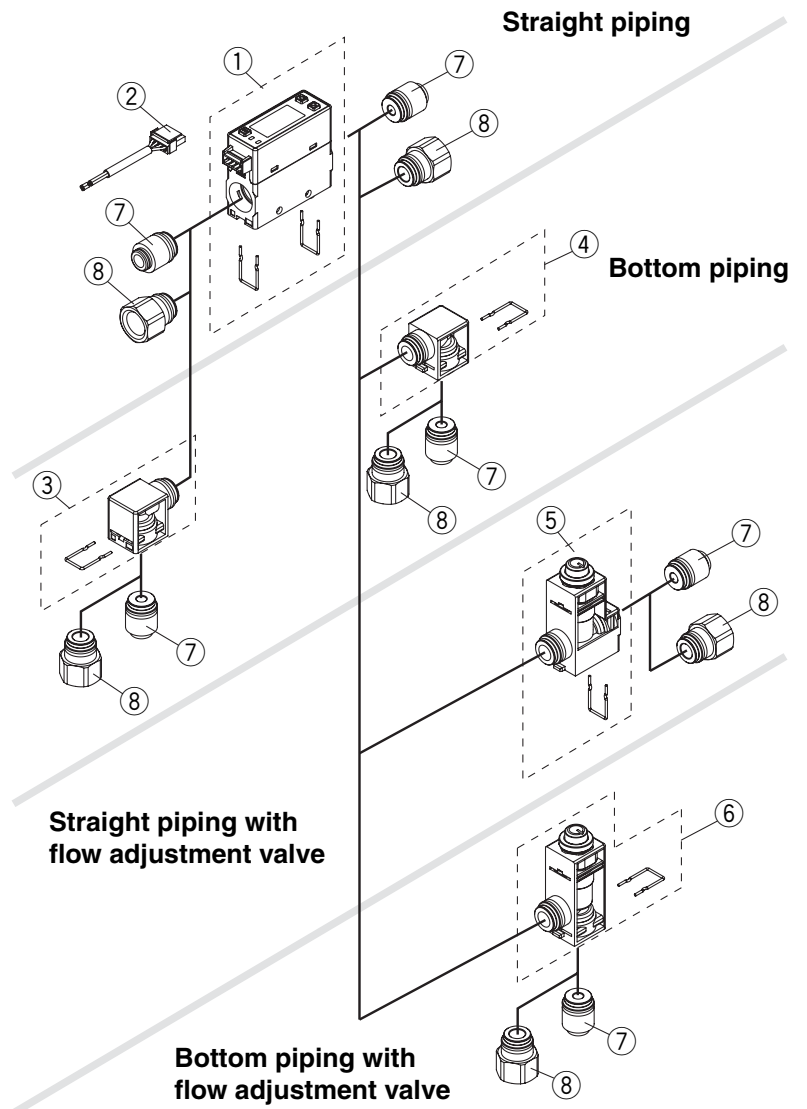


(b) The gas flows from the left side.

# Series PFM7/PFM5

## Component Parts

No.	Description	Model	
1	Body		
2	Lead wire with connector (2 m)	ZS-33-D	
3	IN side Bottom piping adapter (with pin)	ZS-33-P1L	
4	OUT side Bottom piping adapter (with pin)	ZS-33-P2L	
5	For straight piping Flow adjustment valve assembly (with pin)	For 10 $\text{d}/\text{min}$	ZS-33-10N
		For 25 $\text{d}/\text{min}$	ZS-33-25N
		For 50 $\text{d}/\text{min}$	ZS-33-50N
		For 100 $\text{d}/\text{min}$	ZS-33-11N
6	For bottom piping Flow adjustment valve assembly (with pin)	For 10 $\text{d}/\text{min}$	ZS-33-10NL
		For 25 $\text{d}/\text{min}$	ZS-33-25NL
		For 50 $\text{d}/\text{min}$	ZS-33-50NL
		For 100 $\text{d}/\text{min}$	ZS-33-11NL
7	One-touch fitting	$\varnothing 4$ (5/32")	ZS-33-C4
		$\varnothing 6$	ZS-33-C6
		$\varnothing 8$ (5/16")	ZS-33-C8
		$\varnothing 1/4$	ZS-33-N7
8	Female thread	Rc 1/8	ZS-33-01
		NPT 1/8	ZS-33-N01
		G 1/8	ZS-33-F01
		Rc 1/4	ZS-33-02
		NPT 1/4	ZS-33-N02
		G 1/4	ZS-33-F02



# Series PFM Function Details

## ■ Output operation

The output operation can be selected from the following:  
Output (hysteresis mode and window comparator mode) corresponding to real-time flow rate,  
Output corresponding to accumulated flow,  
Accumulated output pulse output

At the time of shipment from the factory, it is set to hysteresis mode and normal output.

## ■ Indication color

The indication color can be selected for each output condition. The selection of the indication color provides visual identification of abnormal values. (The indication color depends on OUT1 setting.)

Green for ON, Red for OFF
Red for ON, Green for OFF
Red all the time
Green all the time

## ■ Selection of operating fluid

The fluid can be selected. If argon (Ar) or carbon dioxide (CO<sub>2</sub>) is used, the setting needs to be changed.

Dry air, N <sub>2</sub>
Argon
CO <sub>2</sub>

Note) When CO<sub>2</sub> is selected, the upper limit of the measured flow rate range will be 1/2 of that for other fluids.

## ■ Selection of indication unit reference

The indication unit reference can be selected between standard conditions and normal conditions.

Standard conditions: Flow rate converted to a volume at 20°C and 1atm (atmosphere)
Normal conditions: Flow rate converted to a volume at 0°C and 1atm (atmosphere)

## ■ Setting of response time

The flow rate may change momentarily during transition between ON (open) and OFF (closed) of the valve. It can be set so that this momentary change is not detected.

0.05 sec.
0.5 sec.
1 sec.
2 sec.

<Principle>

When the switch has been in ON area for a set period of time, the output will turn on (or off).

## ■ Indication mode

The indication mode can be selected between real-time flow rate and accumulated flow.

Real-time flow rate display
Accumulated flow display

## ■ External input function

The external input function can be selected from accumulated value external reset, auto-shift and auto-shift zero.

(Input signal: Connect input line to GND for 30 ms or more.)

External reset: This function resets the accumulated value to "0" when an input signal is applied.

Auto-shift: This function generates an output corresponding to the change in relation to real-time flow rate when an input signal is applied.

Auto-shift zero: This function displays real-time flow rate as "0" when a positive input signal is applied in the auto shift function described above.

Set values and flow rates that are relatively on the negative side are expressed by illumination of the decimal point on the far left.

## ■ Indication resolution

The indication resolution of the PFM710 and 711 series can be changed to enable values to be indicated in smaller steps.

100 resolution	PFM710 by 0.1 $\mu$ /min PFM711 by 1 $\mu$ /min
1000 resolution	PFM710 by 0.01 $\mu$ /min PFM711 by 0.1 $\mu$ /min

## ■ Accumulated value hold

Accumulated value is not cleared even when the power supply is turned off.

The accumulated value is memorized every 2 or 5 min. during measurement, and continues from the last memorized value when the power supply is turned on again.

The life time of the memory element is 1 million access cycles. Take this into consideration before using this function.

## ■ Selection of analog output filter

This selection is available when using a product with an analog output.

A signal with fast response speed can be generated by turning off the analog output filter.

## ■ Selection of power-saving mode

The power-saving mode can be selected.

With this function, if no buttons are pressed for 30 sec., it shifts to power-saving mode.

At the time of shipment from the factory, the product is set to the normal mode (the power-saving mode is turned off).

(When power-saving mode is activated, the decimal point flashes.)

## ■ Setting of secret code

The user can select whether a secret code must be entered to release key lock.

At the time of shipment from the factory, it is set such that the secret code is not required.

## ■ Peak/Bottom value indication

The maximum (minimum) flow rate is detected and updated from when the power supply is turned on. In peak (bottom) value indication mode, this maximum (minimum) flow rate is displayed.

## ■ Keylock function



Prevents operation errors such as accidentally changing setting values.

## ■ Zero clear function

Allows the user to adjust the measured flow rate indication to zero. The adjustment range is  $\pm 7\%$ F.S. of the initial factory setting.

## ■ Error indication function

When an error or abnormality arises, the location and contents are displayed.

Description	Contents	Action
Flow rate error	The flow rate exceeds the upper limit of indicated flow rate range.	Decrease the flow rate.
	There is a reverse flow equivalent to $-5\%$ or more.	Turn the flow to correct direction.
Overcurrent error	Load current of 80 mA or more is applied to the switch output (OUT1).	Eliminate the cause of the overcurrent by turning off the power supply and then turn on it again.
	Load current of 80 mA or more is applied to the switch output (OUT2).	
System error	Possibility of internal circuit damage before factory adjustment.	Stop operation immediately and contact SMC.
	System error. Possibility of data memorizing failure or internal circuit damage.	Reset the unit, and carry out all settings again.
Zero clear error	If zero clear is performed (by holding down  and  buttons simultaneously for 1 sec.) while there is some flow, "Er4" will be displayed for 1 sec.	Perform zero clear of accumulated flow rate when there is no flow.
Flow rate error	The flow rate exceeds the accumulated flow rate range.	Clear the accumulated flow rate. (This error does not matter when the accumulated flow rate is not being used.)

If the error or abnormality cannot be solved by the action above, please contact SMC for further investigation.



# Series PFM7/PFM5

# Made to Order 1

Please contact SMC for detailed specifications, lead times and prices.



Symbol

## Changing the piping entry direction combination for IN and OUT side

**X693, X694**

PFM **7** □ □ □ - □ □ □ □ □ □ □ - **X693**

● **Type**

5	Remote sensor unit
7	Integrated display

● **Piping entry direction**  
 (Note) No symbol is entered.

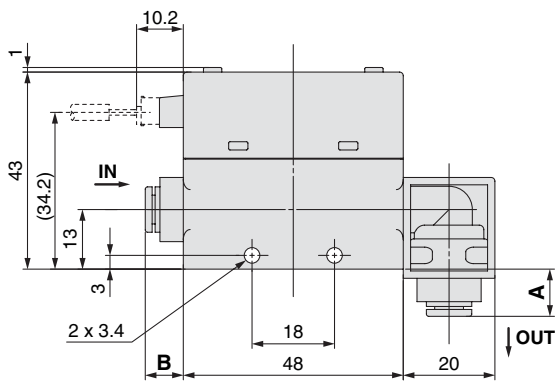
● **Changing the piping entry direction combination**

<b>X693</b>	IN side: Straight / OUT side: Bottom
<b>X694</b>	IN side: Bottom / OUT side: Straight

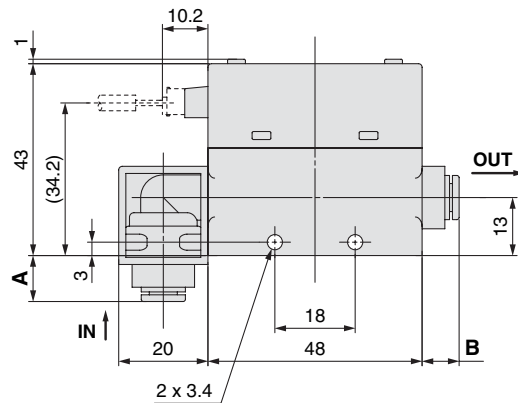
For details of How to Order, refer to page 1 and 13.

## Dimensions

PFM<sub>5</sub> □ □ □ -C4/C6/C8/N7-□-X693

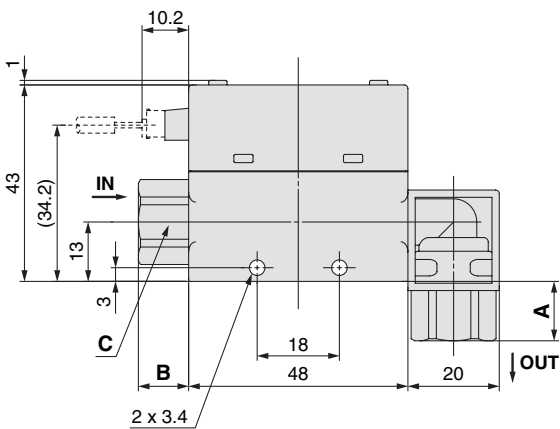


PFM<sub>5</sub> □ □ □ -C4/C6/C8/N7-□-X694

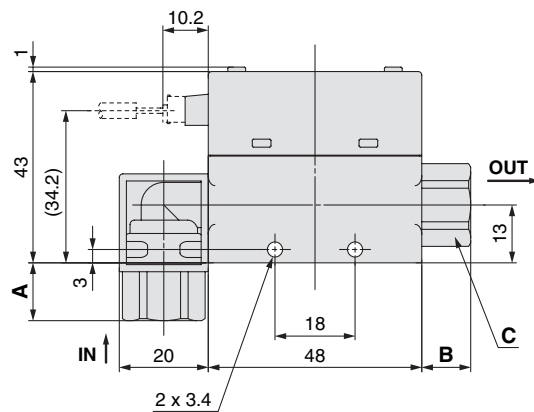


One-touch fitting Applicable tube O.D.		A	B
C4	ø4 (5/32")	10.1	8.1
C6	ø6	10.3	8.3
C8	ø8 (5/16")	12	10
N7	ø1/4	10.3	8.3

PFM<sub>5</sub> □ □ □ -□01/02-□-X693



PFM<sub>5</sub> □ □ □ -□01/02-□-X694



Port size	A	B	C (Width across flats)
Rc 1/8, 1/4 NPT 1/8, 1/4 G 1/8	13	11	17
G 1/4	17	15	21

# Series PFM7/PFM5

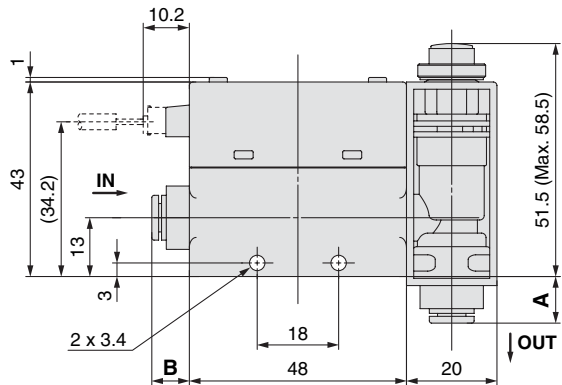
## Made to Order 2

Please contact SMC for detailed specifications, lead times and prices.



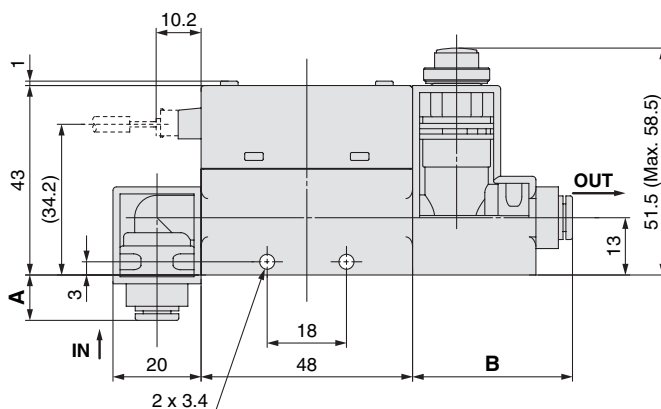
### Dimensions

PFM7□□S-C4/C6/C8/N7-□-X693



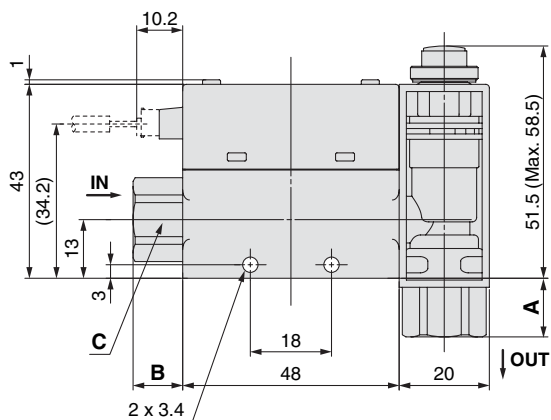
One-touch fitting Applicable tube O.D.	A	B
ø4 (5/32")	10.1	8.1
ø6	10.3	8.3
ø8 (5/16")	12	10
ø1/4	10.3	8.3

PFM7□□S-C4/C6/C8/N7-□-X694



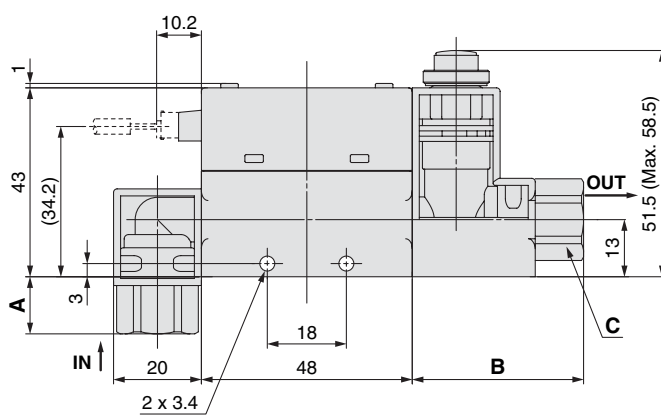
One-touch fitting Applicable tube O.D.	A	B
ø4 (5/32")	10.1	36.1
ø6	10.3	36.3
ø8 (5/16")	12	37
ø1/4	10.3	36.3

PFM7□□S-□01/02-□-X693



Port size	A	B	C (Width across flats)
Rc 1/8, 1/4 NPT 1/8, 1/4 G 1/8	13	11	17
G 1/4	17	15	21

PFM7□□S-□01/02-□-X694



Port size	A	B	C (Width across flats)
Rc 1/8, 1/4 NPT 1/8, 1/4 G 1/8	13	39	17
G 1/4	17	43	21

# Series PFM7/PFM5

## Made to Order 3

Please contact SMC for detailed specifications, lead times and prices.



Symbol  
**X731**

### Compatibility with argon (Ar) and carbon dioxide (CO<sub>2</sub>) mixed gas

The argon-carbon dioxide gas ratio (Ar: CO<sub>2</sub>) can be selected using the push-buttons from among the following: 92 : 8, 90 : 10, 80 : 20, 70 : 30, and 60 : 40. Dimensions are same as those of standard models.

PFM 7   -   -     - X731

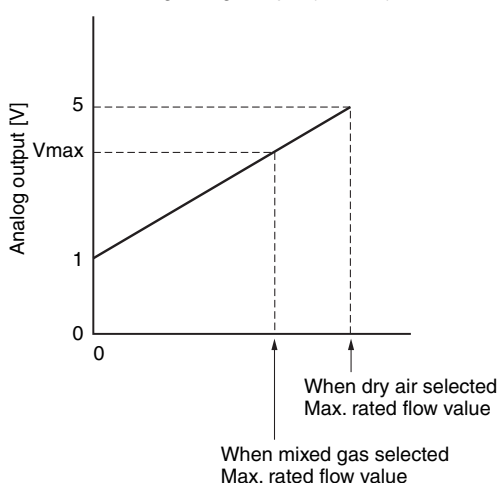
7 Integrated display

For details of How to Order, refer to page 1 and 13.

Model	Gas ratio		Rated flow range	Displayable range	Settable range	Max. analog output	
	Ar	CO <sub>2</sub>				Voltage (Vmax)	Current (Imax)
PFM710	92%	8%	0.2 to 7.0 <i>l</i> /min	0.2 to 7.4 <i>l</i> /min	0 to 7.4 <i>l</i> /min	3.80 V	15.2 mA
	90%	10%					
	80%	20%					
	70%	30%					
	60%	40%					
PFM725	92%	8%	0.5 to 25.0 <i>l</i> /min	0.5 to 26.3 <i>l</i> /min	0 to 26.3 <i>l</i> /min	5.00 V	20.0 mA
	90%	10%	0.5 to 20.0 <i>l</i> /min	0.5 to 21.0 <i>l</i> /min	0 to 21.0 <i>l</i> /min	4.20 V	16.8 mA
	80%	20%					
	70%	30%					
	60%	40%					
PFM750	92%	8%	1.0 to 50.0 <i>l</i> /min	1.0 to 52.5 <i>l</i> /min	0 to 52.5 <i>l</i> /min	5.00 V	20.0 mA
	90%	10%	1.0 to 40.0 <i>l</i> /min	1.0 to 42.0 <i>l</i> /min	0 to 42.0 <i>l</i> /min	4.20 V	16.8 mA
	80%	20%					
	70%	30%					
	60%	40%					
PFM711	92%	8%	2 to 100 <i>l</i> /min	2 to 105 <i>l</i> /min	0 to 105 <i>l</i> /min	5.00 V	20.0 mA
	90%	10%	2 to 90 <i>l</i> /min	2 to 95 <i>l</i> /min	0 to 95 <i>l</i> /min	4.60 V	18.4 mA
	80%	20%					
	70%	30%					
	60%	40%					

### Output characteristics using mixed gas

Analog voltage output (1 to 5 V)



Analog current output (4 to 20 mA)

