

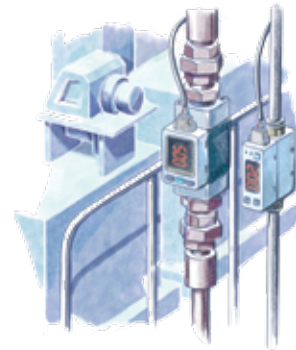


### PFMC 3-Colour Display Flow Switch

The PFMC is a 3 colour display digital flow switch for dry air and N<sub>2</sub>.

#### FEATURES & BENEFITS

- Flow ratio 100:1
- Maximum flow range - 2,000 l/min
- Compact and space saving
- Visualisation of flow rate
- Improved drainage and resists foreign matter
- Pressure loss 75% reduction (20 kPa - 5 kPa)
- Display rotates 90° & can be reversed
- Rotary Display
- Easy screen switching



#### PRODUCT CONFIGURATION



##### 1 MATERIAL

Enclosure - IP65 Monitor Unit IP40

##### 2 OPERATING FLUID TEMPERATURE

±2% F.S (15 to 35°C)  
±5% F.S (0 to 50°C)

##### 3 FLUID

Dry air N<sub>2</sub>

##### 4 RATED FLOW RANGE

5 to 500 l/min  
10 to 1,000 l/min  
20 to 2,000 l/min

##### 5 FUNCTIONS

Output operatoin, display colour, reference condition, setting of response time, display mode, selection of display on sub screen, external input function, accumulated valve hold , forced output function, analogue output free range function, selection of display OFF mode, peak/ bottom value display, keylock function, error display function, orientation correction function.

##### 6 RATED PRESSURE RANGE

0 to 0.8 MPa

##### 7 SETTING

Digital

##### 8 POWER SUPPLY VOLTAGE

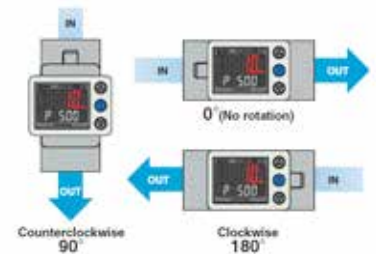
12 to 24 V DC ±10%

##### 9 OUTPUT

NPN/PNP open collector  
Accumulated pulse output  
Analog voltage output  
Analog current output

##### 10 REPEATABILITY

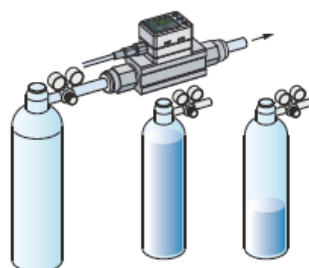
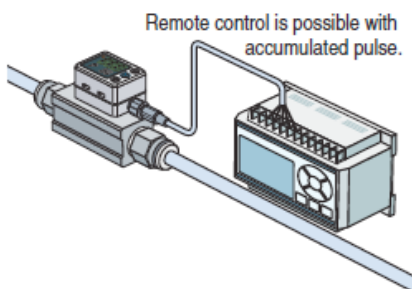
±1% F.S. - Fluid: Dry and air



#### APPLICATIONS



- Accumulated indication shows the operating flow rate or residual amount (of N<sub>2</sub> etc) in a gas cylinder
- Flow control of equipment
- Flow control of the air for spray painting



## SPECIFICATIONS



Model		PFMC7501	PFMC7102	PFMC7202	
Fluid	Applicable fluid	Dry air, N <sub>2</sub> (Air quality grade is JIS B 8392-1 1.1.2 to 1.6.2, ISO 8573-1 1.1.2 to 1.6.2.)			
	Fluid temperature range	0 to 50°C			
Flow	Detection method	Thermal type			
	Rated flow range	5 to 500 L/min	10 to 1000 L/min	20 to 2000 L/min	
	Set point range	Instantaneous flow	5 to 525 L/min	10 to 1050 L/min	20 to 2100 L/min
		Accumulated flow	0 to 999,999,990 L		
	Smallest settable increment	Instantaneous flow	1 L/min		
		Accumulated flow	10 L		
	Accumulated volume per pulse (Pulse width = 50 ms)	1 L/pulse	10 L/pulse		
Accumulated value hold function	Intervals of 2 mins or 5 mins can be selected.				
Pressure	Rated pressure range	0 to 0.8 MPa			
	Proof pressure	1.2 MPa			
	Pressure loss	Refer to "Pressure Loss" graph.			
	Pressure characteristics	±5% F.S. (0 to 0.8 MPa, 0.6 MPa standard)			
Electrical	Power supply voltage	12 to 24 VDC ±10%			
	Current consumption	Ripple (p-p) 10% or less 55 mA or less			
	Protection	Polarity protection			
Accuracy	Display accuracy	±3% F.S.			
	Analog output accuracy	±3% F.S.			
	Repeatability	±1% F.S. (±2% F.S. when response time is set to 0.05 s)			
	Temperature characteristics	±5% F.S. (0 to 50°C, 25°C standard)			
Switch output	Output type	NPN open collector PNP open collector			
	Output mode	Select from Hysteresis, Window comparator, Accumulated output or Accumulated pulse output modes.			
	Switch operation	Select from Normal or Reversed output.			
	Max. load current	80 mA			
	Max. applied voltage (NPN only)	28 VDC			
	Internal voltage drop (Residual voltage)	NPN output type: 1 V or less (at load current of 80 mA) PNP output type: 1.5 V or less (at load current of 80 mA)			
	Response time * <sup>3</sup>	Select from 0.05 s, 0.1 s, 0.5 s, 1 s, or 2 s			
	Hysteresis * <sup>4</sup>	Variable from 0			
Analog output * <sup>5</sup>	Protection	Short circuit protection			
	Output type	Voltage output: 1 to 5 V, Current output: 4 to 20 mA Output impedance: Approx. 1 kW			
	Impedance	Voltage output	Maximum load impedance at power supply voltage of 24 V: 600 W, at power supply voltage of 12 V: 300 W		
		Current output	Minimum load impedance: 50 W		
External input * <sup>7</sup>	Response time	Linked with the response time of the switch output.			
	External input	Input voltage: 0.4 V or less (Reed or Solid state) for 30 ms or longer			
	Input mode	Accumulated value external reset, Peak/Bottom value reset			
Display	Reference condition	Select from Standard condition or Normal condition.			
	Unit * <sup>9</sup>	Instantaneous flow	L/min, cfm (ft <sup>3</sup> /min)		
		Accumulated flow	L, ft <sup>3</sup>		
	Display range	Instantaneous flow	-25 to 525 L/min (Displays [0] when value is within -4 to 4 L/min range.)	-50 to 1050 L/min (Displays [0] when value is within -9 to 9 L/min range.)	-100 to 2100 L/min (Displays [0] when value is within -19 to 19 L/min range.)
		Accumulated flow	0 to 999,999,999 L		
	Minimum display unit	Instantaneous flow	1 L/min		
		Accumulated flow	10 L		
Display	LCD, 2-screen display (Main screen/Sub screen) Main screen: Red/Green, Sub screen: White Main screen: 4 digits, 7 segments, Sub screen: 6 digits, 11 segments				
Environment	Indicator LED	LED ON when switch output is ON. (OUT1/OUT2: Orange)			
	Enclosure	IP65			
	Withstand voltage	250 VAC for 1 min between terminals and housing			
	Insulation resistance	2 MW or more (50 VDC measured via megohmmeter) between terminals and housing			
Standards	Operating temperature range	Operating: 0 to 50°C, Stored: -10 to 60°C (No condensation or freezing)			
	Operating humidity range	Operating/Stored: 35 to 85% RH (No condensation or freezing)			
Piping specification	CE, UL (CSA), RoHS				
Materials of parts in contact with fluid	Rc1/2, NPT1/2, G1/2 Stainless steel 304, PPS, Aluminum alloy, HNBR, Si, Au, GE4F				
Weight	Piping specification	Rc thread NPT thread	160 g	240 g	
		G thread	170 g	245 g	
	Lead wire Bracket		+80 g	+30 g	

### ORDERING CODES



## PFMC 7

501 – F 04 – B – M – – –

#### Rated flow range

501	5 to 500 l/min
102	10 to 1000 l/min
202	20 to 2000 l/min

#### Thread type

-	Rc
N	NPT
F	G

#### Port size

Symbol	Port size	Rated flow range		
		501	102	202
04	1/2	●	●	-
06	3/4	-	-	●

#### Output specification

Symbol	OUT1	OUT2
A	NPN	NPN
B	PNP	PNP
C	NPN	Analogue (1 to 5 V)
D	NPN	Analogue (4 to 20 mA)
E	PNP	Analogue (1 to 5 V)
F	PNP	Analogue (4 to 20 mA)
G	NPN	External input
H	PNP	External input

Note 2) Made to Order

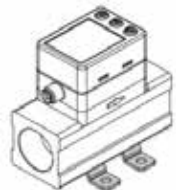
Note 3) Can be selected from accumulated flow external reset and peak/bottom reset

#### Calibration certificate

-	None
A	Yes

#### Option 2

-	No bracket
R	With bracket



Note 6) Each option is not assembled with the product, but shipped together.


#### Unit specifications

-	Unit selection function
M	SI unit only

Note 5) Fixed unit: Instantaneous flow: l/min, Accumulated flow: L

#### Option 1

-	With lead wire and M8 connector (3 m)
N	Without lead wire and M8 connector



Note 4) Each option is not assembled with the product, but shipped together.

**Service & Warranty:** For technical assistance, warranty replacement or repair contact your distributor:

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