

For Water

Digital Flow Switch

Series PFW



How to order

Integrated display type

PFW7 **20** — **03** — **27** —

Flow rate range

04	0.5 to 4 /min
20	2 to 16 /min
40	5 to 40 /min

Thread type

Nil	Rc
N	NPT
F	G

Port size

Symbol	Size	Flow rate (/min)			Applicable model
		4	16	40	
03	3/8	●	●		PFW704, PFW720
04	1/2		●	●	PFW720, PFW740
06	3/4			●	PFW740

Wiring specification

Nil	3m lead wire with connector
N	Without lead wire

Output specification

27	NPN open collector 2 outputs
67	PNP open collector 2 outputs

Unit specification

Nil	With unit switching function
M	Fixed SI unit (Note)

Note) Fixed units:
Real-time flow rate: /min
Accumulated flow: /

Specifications

Model	PFW704	PFW720	PFW740
Measured fluid	Water		
Detection type	Karman vortex		
Flow rate measurement and setting range	0.5 to 4 (setting is 0.6 to 4) /min	2 to 16 /min	5 to 40 /min
Minimum setting unit	0.05 /min	0.1 /min	0.5 /min
Display units <small>Note 1)</small>	Real-time flow rate	/min, gal (US)/min	
	Accumulated flow	/, gal (US)	
Operating pressure range	0 to 1MPa		
Withstand pressure	1.5MPa		
Accumulated flow range	0 to 999999 /		
Operating temperature range	0 to 50°C (with no condensation)		
Linearity	±5% F.S. or less		
Repeatability	±3% F.S. or less		
Temperature characteristics	±5% F.S. or less (0 to 50°C)		
Output specifications <small>Note 2)</small>	Switch output	NPN open collector	Maximum load current: 80mA, Internal voltage drop: 1V or less (with load current of 80mA) Maximum applied voltage: 30V
		PNP open collector	Maximum load current: 80mA Internal voltage drop: 1.5V or less (with load current of 80mA)
Indicator lights	Lights up when ON, OUT1: Green, OUT2: Red		
Response time	1s or less		
Hysteresis	Hysteresis mode: Variable (can be set from 0), Window comparator mode: Fixed (3 digits) <small>Note 3)</small>		
Power supply voltage	12 to 24VDC (ripple ±10% or less)		
Current consumption	70mA or less		
Withstand voltage	1000VAC for 1 min. between external terminal block and case		
Insulation resistance	50MΩ (500VDC) between external terminal block and case		
Noise resistance	1000Vp-p, Pulse width 1μs, Rise time 1ns		
Vibration resistance	10 to 500Hz at the smaller of amplitude 1.5mm or acceleration 98m/s ² in X, Y, Z directions, 2 hours each		
Impact resistance	490m/s ² in X, Y, Z directions, 3 times each		
Weight	460g (without lead wire)	520g (without lead wire)	700g (without lead wire)
Enclosure	Equivalent to IP65		
Port size (Rc, NPT, G)	3/8	3/8, 1/2	1/2, 3/4

Note 1) For the type with unit switching function [The type without the unit switching function will have a fixed SI unit (/min or /)].

Note 2) The output functions operate only for the real-time flow rate display, and do not operate for the accumulated flow display.

Note 3) Window comparator mode — Since hysteresis is 3 digits, separate P1 and P2 by 7 digits or more. 1 digit is the minimum setting unit (refer to the table above).

How to order



Remote Type
Display Unit

PFW3 0 0 — A —

Flow rate range

1	0.5 to 4 /min
0	2 to 16 /min
2	5 to 40 /min

Output specification

0	NPN open collector 2 outputs
1	PNP open collector 2 outputs

Mounting

A	Panel mount
B	DIN rail, wall mount

Panel mount adapter part no.

Description	Panel adapter B
Part No.	ZS-22-02

Unit specification

Nil	With unit switching function
M	Fixed SI unit ^{Note)}

Note) Fixed units:
Real-time flow rate: /min
Accumulated flow: /

Specifications

Model	PFW310	PFW311	PFW300	PFW301	PFW320	PFW321
Flow rate measurement and setting range	0.5 to 4 (setting is 0.6 to 4) /min		2 to 16 /min		5 to 40 /min	
Minimum setting unit	0.05 /min		0.1 /min		0.5 /min	
Display units ^{Note 1)}	Real-time flow rate		/min, gal (US)/min			
	Accumulated flow		/, gal (US)			
Accumulated flow range	0 to 999999 /					
Operating temperature range	0 to 50°C (with no condensation)					
Linearity ^{Note 2)}	±5% F.S. or less					
Repeatability ^{Note 2)}	±3% F.S. or less					
Temperature characteristics ^{Note 2)}	±5% F.S. or less (0 to 50°C)					
Output specifications ^{Note 3)}	Switch output	NPN open collector	Maximum load current: 80mA Maximum applied voltage: 30V Internal voltage drop: 1V or less (with load current of 80mA)			
		PNP open collector	Maximum load current: 80mA Internal voltage drop: 1.5V or less (with load current of 80mA)			
Indicator lights	Lights up when ON, OUT1: Green, OUT2: Red					
Response time	1s or less					
Hysteresis	Hysteresis mode: Variable (can be set from 0) Window comparator mode: Fixed (3 digits) ^{Note 4)}					
Power supply voltage	12 to 24VDC (ripple ±10% or less)					
Current consumption	50mA or less					
Weight	45g					
Enclosure	Equivalent to IP40					

Note 1) For the type with unit switching function [The type without the unit switching function will have a fixed SI unit (/min or /).]

Note 2) The system accuracy when combined with PFW5□□□.

Note 3) The output functions operate only for the real-time flow rate display, and do not operate for the accumulated flow display.

Note 4) Window comparator mode — Since hysteresis is 3 digits, separate P1 and P2 by 7 digits or more. 1 digit is the minimum setting unit (refer to the table above).

Series PFW

How to order

Remote Type
Sensor Unit

PFW5 **20** — **03** **03**

● **Flow rate range**

04	0.5 to 4 /min
20	2 to 16 /min
40	5 to 40 /min

● **Wiring specification**

Nil	3m lead wire with connector
N	Without lead wire

● **Thread type**

Nil	Rc
N	NPT
F	G

● **Port size**

Symbol	Size	Flow rate (/min)			Applicable model
		4	16	40	
03	3/8	●	●		PFW504, 520
04	1/2		●	●	PFW520, 540
06	3/4			●	PFW540

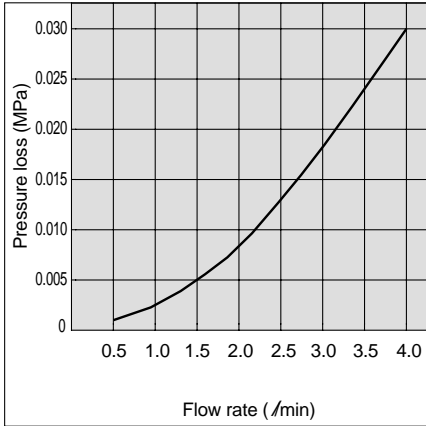


Specifications

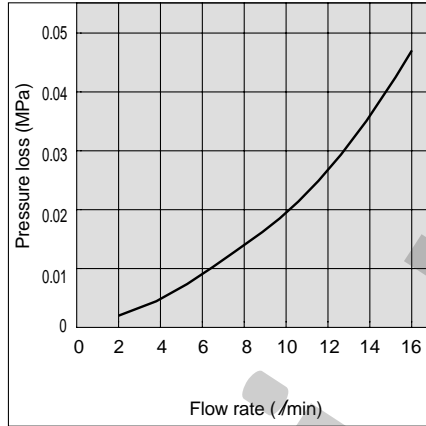
Model	PFW504	PFW520	PFW540
Measured fluid	Water		
Detection type	Karman vortex		
Flow rate measurement range	0.5 to 4 /min	2 to 16 /min	5 to 40 /min
Operating pressure range	0 to 1MPa		
Withstand pressure	1.5MPa		
Operating temperature range	0 to 50°C (with no condensation)		
Power supply voltage	12 to 24VDC (ripple ±10% or less)		
Current consumption	20mA or less		
Weight	410g (without lead wire)	470g (without lead wire)	650g (without lead wire)
Enclosure	Equivalent to IP65		
Port size (Rc, NPT, G)	3/8	3/8, 1/2	1/2, 3/4

Flow Characteristics (Pressure Loss)

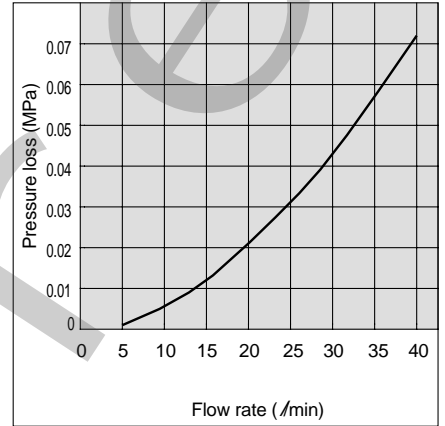
PFW704, 504



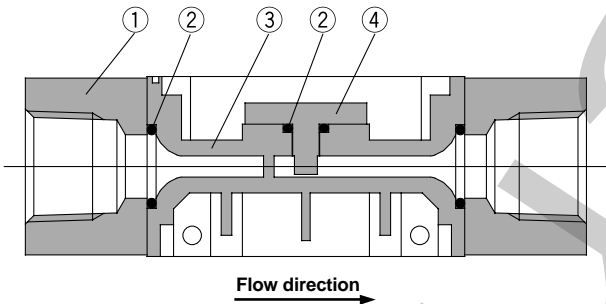
PFW720, 520



PFW740, 540



Sensor Unit Construction



Parts list

No.	Description	Material
1	Attachment	Stainless steel
2	Seal	NBR
3	Body	PPS
4	Sensor	PPS

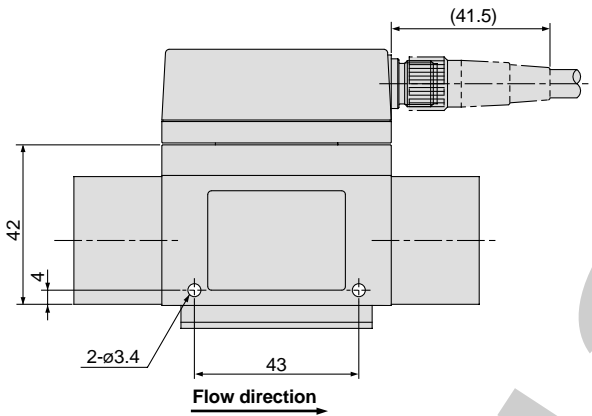
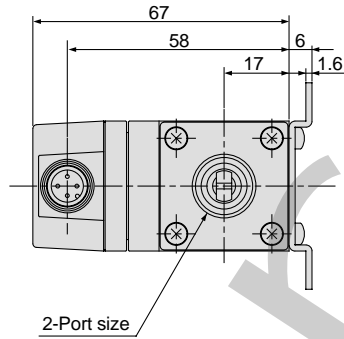
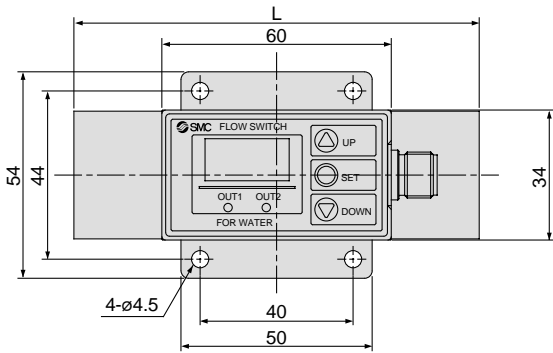


Error correction, connectors, operating part descriptions, and flow rate setting are the same as series PFA for air. Refer to pages 1 through 7.

Series PFW

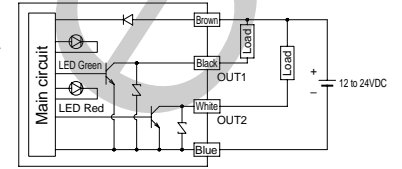
Dimensions/Integrated Display Type for Water

PFW704/720

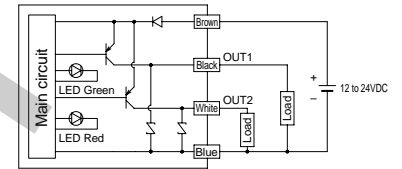


Model	Dimension L
PFW704	100
PFW720	106

Internal circuit and wiring examples

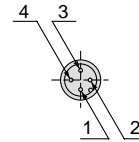


PFW7□□-□□-27□ (-M)



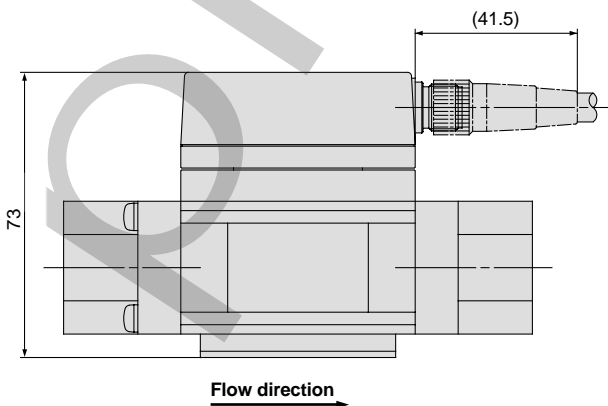
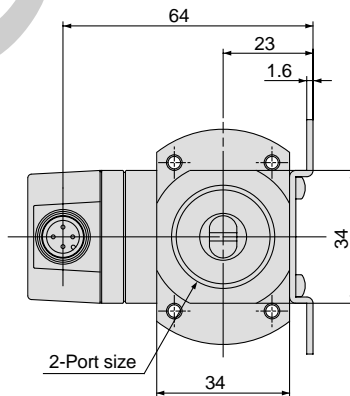
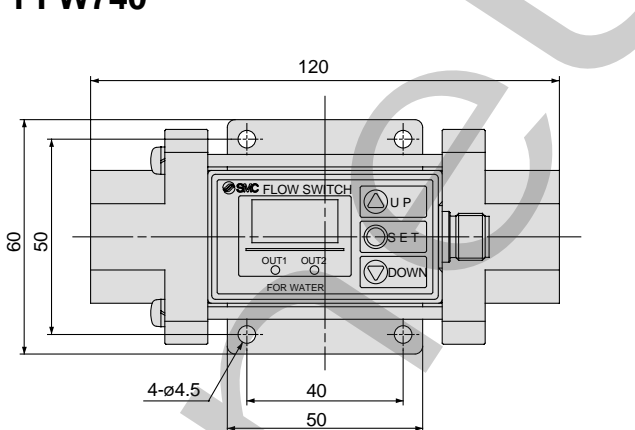
PFW7□□-□□-67□ (-M)

Connector pin numbers



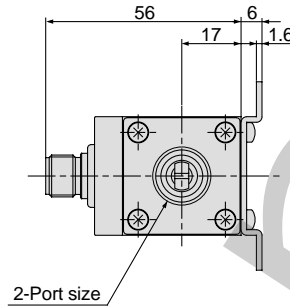
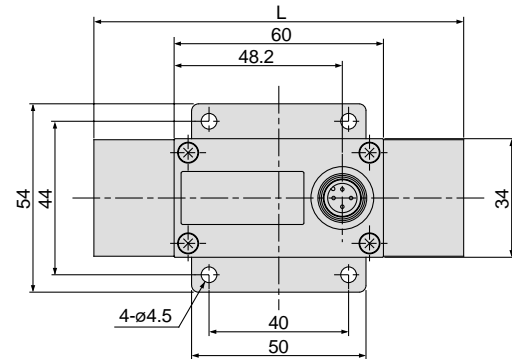
Pin no.	Pin description
1	DC (+)
2	OUT2
3	DC (-)
4	OUT1

PFW740

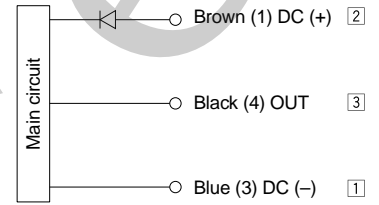


Dimensions/Remote Type Sensor Unit for Water

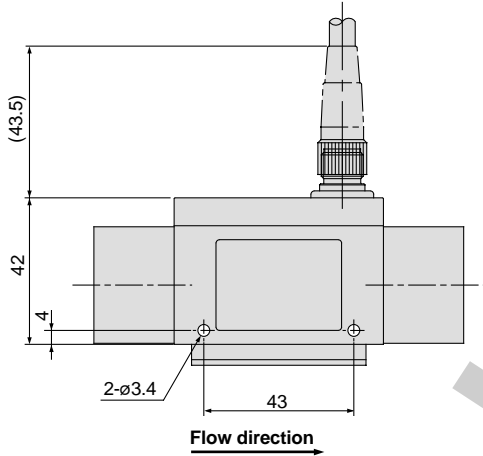
PFW504/520



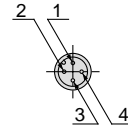
Wiring



* Use this sensor by connecting it with the P/A remote type display unit series PFW3□□. (1), (3), and (4) are connector pin numbers. □, □, and □ are the series PFW3□□ terminal numbers.



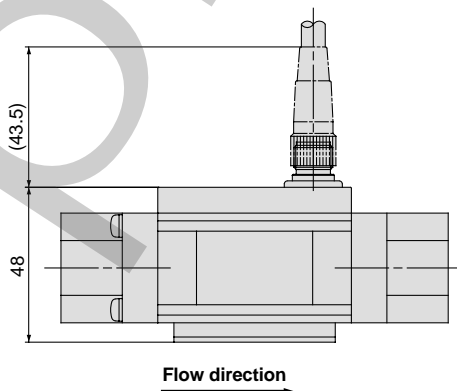
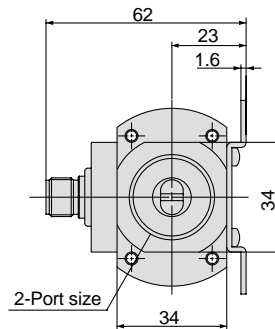
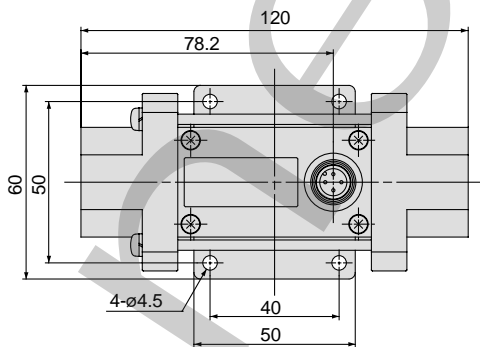
Connector pin numbers



Pin no.	Pin description
1	DC (+)
2	N C
3	DC (-)
4	OUT

Model	Dimension L
PFW504	100
PFW520	106

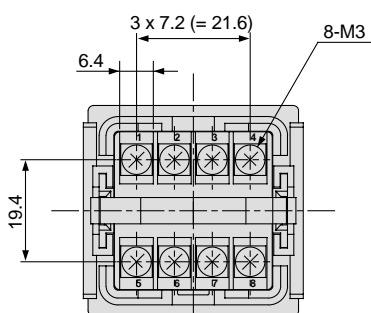
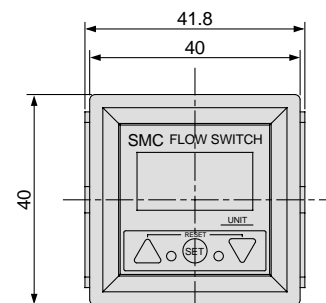
PFW540



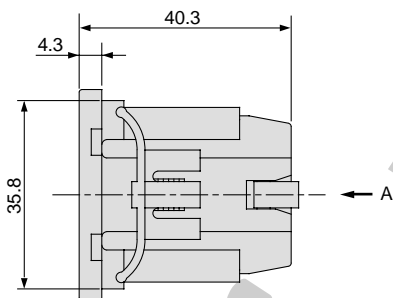
Series PFA

Dimensions/Remote Type Display Unit for Water

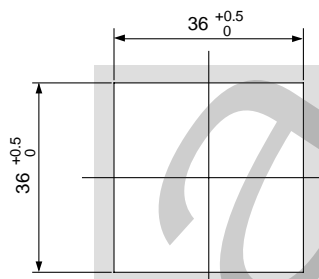
PFW3□□-A Panel mount type



View A

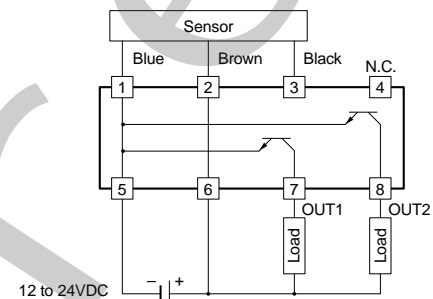


Panel fitting dimensions

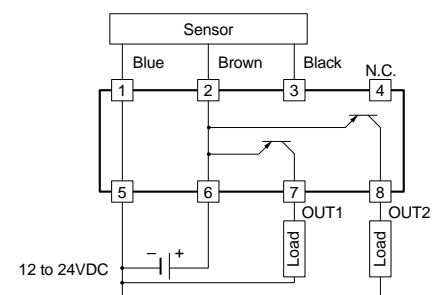


* The applicable panel thickness is 1 to 3.2mm.

Internal circuits and wiring



PFW3□0-□ (-M)



PFW3□1-□ (-M)

PFW3□□-B DIN rail type

