

IO-Link 3-Color Display 3-Screen Display

Digital Flow Switch

PF2MC7-L Series



How to Order

PF2MC 7 501 - 04 - L Q - M

Type

7	Integrated display
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Rated flow range

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

Thread type

Nil	Rc
N	NPT
F	G*1

*1 ISO 228 compliant

Port size

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

Output specification

Symbol	OUT1	OUT2*2	Applicable monitor unit model
L	IO-Link/ Switch output (N/P)	—	—
L2	IO-Link/ Switch output (N/P)	Switch output (N/P) ⇔ External input*4	—
L3	IO-Link/ Switch output (N/P)	Analog voltage output*3	PFG300 series
L4	IO-Link/ Switch output (N/P)	Analog current output	PFG310 series

*2 Switch output (analog output) or external input can be selected by pressing the buttons.

Switch output (analog output) is set as default setting.

Output symbol "L" cannot be used as the OUT2 terminal is not connected.

*3 1 to 5 V or 0 to 10 V can be selected by pressing the button.

The default setting is 1 to 5 V.

*4 Can be selected from accumulated value external reset or peak/bottom value reset

Calibration certificate

Nil	None
A*9	Yes

*9 Made to order

The certificate is in both English and Japanese.

Option 2

Nil	No bracket
R	With bracket*8

*8 Options are shipped together with the product but do not come assembled.

Unit specification

Nil	Unit selection function*6
M	SI unit only*7

*6 This product is for overseas use only. (The SI unit type is provided for use in Japan in accordance with the New Measurement Act.)

*7 Fixed units: Instantaneous flow: L/min, Accumulated flow: L

Option 1

Nil	With lead wire with M8 connector (3 m)*5
N	None
Q	With M12-M8 conversion lead wire (0.1 m)*5

*5 Options are shipped together with the product but do not come assembled.

Options/Part Nos.

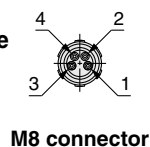
When only optional parts are required, order with the part numbers listed below.

Part no.	Description	Note
ZS-40-A	Lead wire with M8 connector	Length: 3 m
ZS-42-A	Bracket	Mounting screw for PF2MC7501/7102(-L) (M3 x 5, 2 pcs.)
ZS-42-B	Bracket	Mounting screw for PF2MC7202(-L) (M3 x 5, 2 pcs.)
ZS-40-M12M8-A	M12-M8 conversion lead wire	Length: 0.1 m

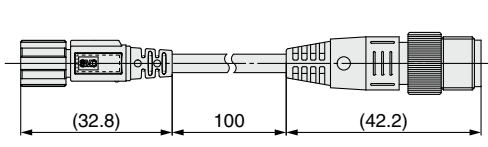
ZS-40-M12M8-A

M12-M8 conversion lead wire

* The lead wire with an M8 connector and the M12-M8 conversion lead wire are interchangeable with those for the existing PFMC series.



M8 connector



M12 connector

M8 (Female)	M12 (Male)
① Brown	① Brown
② White	② White
③ Blue	③ Blue
④ Black	④ Black

Wiring diagram

* For wiring, refer to the Operation Manual on the SMC website, <https://www.smcworld.com>



PF2MC7(-L) Series

For flow switch precautions and specific product precautions, refer to the "Operation Manual" on the SMC website.



Specifications

Model			PF2MC7501	PF2MC7102	PF2MC7202
Fluid	Applicable fluid		Dry air, N ₂ (Air quality grade is JIS 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 *1		Intervals of 2 or 5 minutes can be selected.		
Pressure	Rated pressure range		0 to 0.8 MPa		
	Proof pressure		1.2 MPa		
	Pressure loss		Refer to the “Pressure Loss” graph.		
	Pressure characteristics *2		±5% F.S. (25°C standard) F.S. (0 to 0.8 MPa, 0.6 MPa standard)		
Electrical	Power supply voltage	When used as a switch output device	12 to 24 VDC ±10%, Ripple (p-p) 10% or less		
		When used as an IO-Link device	18 to 30 VDC ±10%		
	Current consumption		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 the response time is set to 0.05 s)		
	Temperature characteristics		±5% F.S. (0 to 50°C, 25°C standard)		
Switch output	Output type		Select from NPN or PNP open collector output.		
	Output mode		Select from Hysteresis, Window comparator, Accumulated output, Accumulated pulse output, Error output, or Switch output OFF modes.		
	Switch operation		Select from Normal or Reversed output.		
	Max. load current		80 mA		
	Max. applied voltage		28 V (NPN output)		
	Internal voltage drop		1.5 V or less (at load current of 80 mA)		
	Digital filter *3		Select from 0.05 s, 0.1 s, 0.5 s, 1.0 s, 2.0 s, or 5.0 s.		
	Delay time *4		Variable from 0 to 60 s/0.01 s increments		
	Hysteresis *5		Variable from 0		
	Protection		Short circuit protection		
Analog output *6	Output type		Voltage output: 1 to 5 V (0 to 10 V can be selected, only when the power supply voltage is 24 VDC)*7, Current output: 4 to 20 mA		
	Impedance	Voltage output	Output impedance: Approx. 1 kΩ		
		Current output	Max. load impedance: 600 Ω at power supply voltage of 24 V, 300 Ω at power supply voltage of 12 V		
	Response time *8		Linked to the set value of the digital filter		
External input *9	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 *10		Select from Standard condition (STD) or Normal condition (NOR).		
	Unit *11	Instantaneous flow	L/min, cfm (ft³/min)		
		Accumulated flow	L, ft³		
	Display range	Instantaneous flow	–25 to 525 L/min (Displays [0] when value is within the –4 to 4 L/min range)	–50 to 1050 L/min (Displays [0] when value is within the –9 to 9 L/min range)	–100 to 2100 L/min (Displays [0] when value is within the –19 to 19 L/min range)
		Accumulated flow	0 to 999,999,999 L		
	Min. display unit	Instantaneous flow	1 L/min		
		Accumulated flow	10 L		
	Display type		LCD		
	Display		LCD, 3-screen display (Main screen/Sub screen) Main screen: Red/Green, Sub screen: White Main screen: 4 digits, 7 segments, Sub screen: 9 digits, 11 segments Display values updated 5 times per second		
	Indicator LED		LED ON when switch output is ON (OUT1/OUT2: Orange)		
Environmental resistance	Enclosure		IP65		
	Withstand voltage		250 VAC for 1 min between external terminals and housing		
	Insulation resistance		2 MΩ or more (50 VDC measured via megohmmeter) between external terminals and housing		
	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% R.H. (No condensation or freezing)			
Standards			CE/UKCA marking, UL (CSA)		
Piping specification			Rc1/2, NPT1/2, G1/2		Rc3/4, NPT3/4, G3/4
Main materials of parts in contact with fluid			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		+80 g		
	Bracket		+25 g		+30 g