

EPF

Digital Flow Switch for Water



Display One-piece Type



Display Separate Type

Product Features

- Excellent repeatability, high precision; Low pressure loss, pollution resistance; Vortex street measurement principle.
- Suitable for fluids: water and glycol;
- Detection method: Karman vortex street type;
- Use pressure range: 0–1.0MPa;
- Pressure loss (without flow adjusting valve): the maximum flow rate is less than 45kPa;
- The display can be rotated: clockwise 90°, counterclockwise 225° ;
- The flow rate can be adjusted.

How to order

Series.No	Type	Rated Flow Range	Flow Adjustment Valve	Piping Diameter	Output Specifications Temperature Sensor	Wire	Bracket	Thread Type																																																																												
EPF	5: Display separation type 7: Display monotype	04: 0.5~4 L/min 20: 2~16 L/min 40: 5~40 L/min 11: 10~100 L/min 21: 50~250 L/min	<table border="1"> <tr> <td colspan="2">The presence or absence of a flow control valve</td> <td>04</td> <td>20</td> <td>40</td> <td>11</td> <td>21</td> </tr> <tr> <td>NO</td> <td>Without Flow Control Valve</td> <td>●</td> <td>●</td> <td>●</td> <td>●</td> <td>●</td> </tr> <tr> <td>S</td> <td>With Flow Control Valve</td> <td>●</td> <td>●</td> <td>●</td> <td>/</td> <td>/</td> </tr> </table>	The presence or absence of a flow control valve		04	20	40	11	21	NO	Without Flow Control Valve	●	●	●	●	●	S	With Flow Control Valve	●	●	●	/	/	<table border="1"> <tr> <td colspan="2"></td> <td colspan="5">Rated Flow Range</td> </tr> <tr> <td></td> <td>size</td> <td>04</td> <td>20</td> <td>40</td> <td>11</td> <td>21</td> </tr> <tr> <td>03</td> <td>3/8"</td> <td>●</td> <td>/</td> <td>/</td> <td>/</td> <td>/</td> </tr> <tr> <td>04</td> <td>1/2"</td> <td>/</td> <td>●</td> <td>/</td> <td>/</td> <td>/</td> </tr> <tr> <td>06</td> <td>3/4"</td> <td>/</td> <td>/</td> <td>●</td> <td>/</td> <td>/</td> </tr> <tr> <td>10</td> <td>1 1/4"</td> <td>/</td> <td>/</td> <td>/</td> <td>●</td> <td>/</td> </tr> <tr> <td>12</td> <td>1 1/4"</td> <td>/</td> <td>/</td> <td>/</td> <td>/</td> <td>●</td> </tr> <tr> <td>14</td> <td>1 1/2"</td> <td>/</td> <td>/</td> <td>/</td> <td>/</td> <td>●</td> </tr> </table>			Rated Flow Range						size	04	20	40	11	21	03	3/8"	●	/	/	/	/	04	1/2"	/	●	/	/	/	06	3/4"	/	/	●	/	/	10	1 1/4"	/	/	/	●	/	12	1 1/4"	/	/	/	/	●	14	1 1/2"	/	/	/	/	●	None: M8 plug has no cable L: Lead with M8 plug (3m)	None: Thread P: PT Thread T: NPT Thread	None: No horizontal mounting bracket by default B: With horizontal mounting bracket
The presence or absence of a flow control valve		04	20	40	11	21																																																																														
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	Type	OUT1	OUT2	Temperature Sensor																																																																																
1	F/Display Separate	Flow Rate	Temperature	Temperature Sensor																																																																																
2	Separate	Analog 1-5V	/	NO																																																																																
1W	Type	Analog 4-20mA	/	YES																																																																																
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C	T/Display One-piece Type	PNP	Analog 4-20mA / -	NO																																																																																
D		NPN	NPN / -	NO																																																																																
E		PNP	PNP / -	NO																																																																																
F		NPN	Analog 4-20mA / -	NO																																																																																
CW		PNP	Analog 1-5V / Analog 1-5V	NO																																																																																
DW	NPN	NPN / NPN	YES																																																																																	
EW	PNP	PNP / PNP	YES																																																																																	
FW	NPN	Analog 1-5V / Analog 1-5V	NO																																																																																	
GW	NPN	Analog 4-20mA / Analog 4-20mA	NO																																																																																	

Order Example: EPF water digital flow switch, separate sensor part, rated flow range: 2~16L/min, with flow adjustment valve, caliber :1/2", output specification With temperature sensor, NPT thread. The ERP code is EPF520-S041W-T

Specifications (Separation type)

Type	EPF504	EPF520	EPF540	EPF511	EPF521
Suitable fluid	Water and glycol solution				
Detection mode	Karman Vortex Street style				
Rated flow range	0.5~4 L/min	2~16 L/min	2~16 L/min	10~100 L/min	50~250 L/min
Operating fluid temperature	0~90°C (unfrozen/uncondensation)				0~70°C (unfrozen/uncondensation)
Precision	± 3% F.S.				
Repeatability	± 2% F.S.				
Temperature characteristic	± 5% F.S. (25°C basis)				
Service pressure range	0~1 MPa				
Withstand pressure test pressure	1.5 MPa				
Pressure loss (without flow regulating valve)	The maximum flow rate is below 45kPa				The maximum flow rate is below 60kPa
Simulate	Response time	1 S			
	Voltage	Output voltage: 1~5 V Output impedance: 1 KΩ			
	Output Current	Output current: 4~20 mA Maximum load impedance: DC12 V时300Ω、DC24 V时600Ω			
Output action indicator Power	Power supply confirmation, flow indication (corresponding flow, the speed of the lamp flashing changes), other error display				
Supply voltage	DC 12~24 V ± 10%				
Current consumption	Below 30 mA				
Post-abuse	Protection structure	IP40			
	Operating temperature range	0~50°C(not frozen, not dew)			
	Operating humidity range	During operation and storage : 35~85%R.H.(no condensation)			
	Withstand voltage	AC1000V 1 min charging part together with housing			
	Insulation resistance	More than 50MΩ (DC500V megohm meter) charging part together with the bright body			
Certification, standards, etc	CE marking (EMC Directive)				
Contact liquid material	PPS、SUS304				
	No grease specifications				

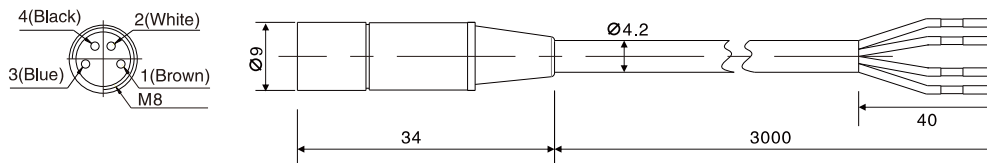
Digital Flow Switch for Water



Product specifications (Show a body type)

Model number	EPF704	EPF720	EPF740	EPF711	EPF721
Suitable fluid	Water and glycol solution				
Detection mode	Karman Vortex Street style				
Rated flow range	0.5~4 L/min	2~16 L/min	5~40 L/min	10~100 L/min	50~250 L/min
Display flow range	0.35~5.50 L/min (Displays 0 if below 0.35 L/min)	1.7~22.0 L/min (Displays 0 if below 1.7 L/min)	3.5~55.0 L/min (Displays 0 if below 3.5 L/min)	7~140 L/min (Displays 0 if below 7 L/min)	20~350 L/min (Displays 0 if below 20 L/min)
Set flow range	0.35~5.50 L/min	1.7~22.0 L/min	3.5~55.0 L/min	7~140 L/min	20~350 L/min
Set minimum unit	0.01 L/min	0.1 L/min	0.1 L/min	1 L/min	2 L/min
Cumulative pulse conversion value (pulse width =50 ms)	0.05 L/pulse	0.1 L/pulse	0.5 L/pulse	1 L/pulse	2 L/pulse
Operating fluid temperature	0~90 °C (unfrozen/uncondensation)				0~70°C (unfrozen/uncongealed)
Display unit	Instantaneous flow L/min, cumulative flow L				
precision	Display value ± 3%F.S. Analog output ± 3%F.S.				
repeatability	± 2%F.S.				
Temperature characteristic	± 5%F.S.(25°C basis)				
Service pressure range	0~1 MPa				
Withstand pressure test pressure	1.5 MPa				
Pressure loss (without flow control valve)	The maximum flow rate is below 45kPa				The maximum flow rate is below 60kPa
Cumulative flow range	99999999.9 L Every 0.1L		999999999 L Every 1 L		
Switching output	NPN or PNP collector open output				
	Maximum load current switch 80 mA				
	Maximum applied voltage output DC28 V				
	Internal voltage drop NNPN: less than 1V (load current 80mA) PNP: less than 1.5V (load current 80mA)				
	Response time 0.5 S/1 S/2 S				
simulate exportation	Output protection Short circuit protection				
	Output mode	Select hysteresis mode, upper and lower limit comparison mode, cumulative output mode, and cumulative pulse output mode			
	Temperature	Select the hysteresis mode and lower limit comparison mode			
Retardation	Response time 0.5 S/1 S/2 S(Linkage with switch output)				
	Voltage output Output voltage: 1~5V Output impedance :1KΩ				
	Current output Output current: 4~20 mA ; Maximum load impedance: 300 Ω at DC 12 V, 600 Ω at DC 24 V				
Display mode	changeable				
Supply voltage	2 Screen display (top 4 bits, 7 paragraphs :2 color display, red and green; Next 6 digits and 11 paragraphs: white) The update period is displayed 5 times per second				
Current consumption	DC12~24 V ± 10%				
Environmental proof	< 50 mA				
	Protective structure Ip40				
	Service temperature range 0~50°C(not frozen and not dew)				
	Service humidity range During operation and storage: 35~85%R.H.(no condensation)				
Certification, standards, etc	AC1000V 1 min charging part together with housing				
	Insulation resistance 50 MΩ or more (DC500 V megohmmeter) charging part together with housing				
Contact liquid material	CE marking (EMC Directive)				
	PPS、SUS304				
	No grease specifications				

Attachments



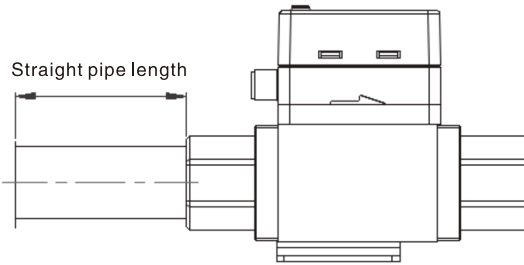
Pin Number	Pin Name	Line Color
1	DC(+)	BROWN
2	OUT 2	WHITE
3	DC(-)	BLUE
4	OUT 1	BLACK

Conductor	Nominal cross-sectional area	0.25 mm ² X4C
	Outside diameter	0.65mm
Insulator	Material	Heat-resisting PVC
	About	1.2 mm
	Colour	Brown;White;Black;Blue
Sheath	Material	Heat and oil resistant PVC
Finished Outside Diameter		Ø4.5

5
Flow Switch

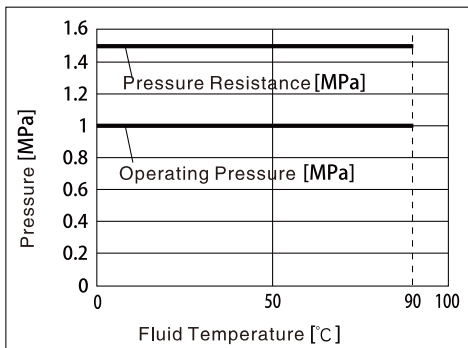
◎ Straight pipe length and accuracy (reference value)

- The smaller the pipe diameter, the more susceptible it is to the influence of straight pipe length.
- It is almost unaffected by pressure.
- At low flow rates, the impact of straight pipe length is less significant.
- To maintain the specification within $\pm 3\%$ of the full scale (F.S.), the straight pipe length should be set to at least 11 cm.

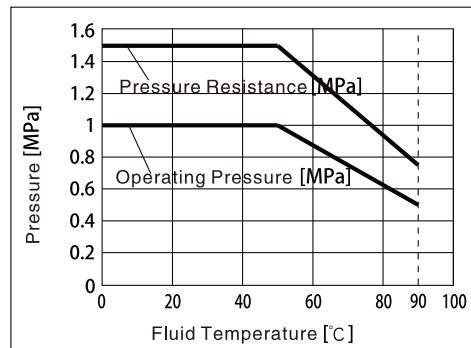


◎ Operating Pressure and Pressure Resistance

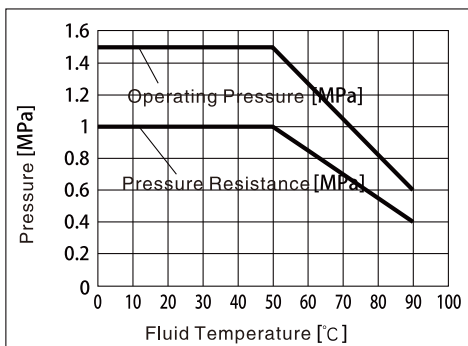
EPF704/720/740/504/520/540



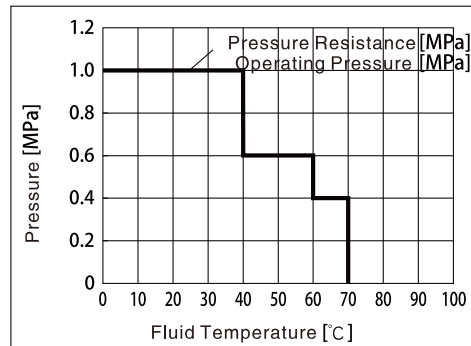
EPF704-S/720-S/740-S/504-S/520-S/540-S



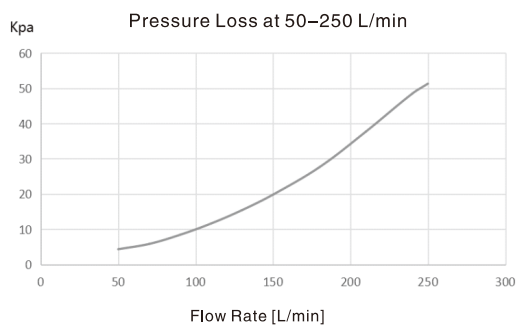
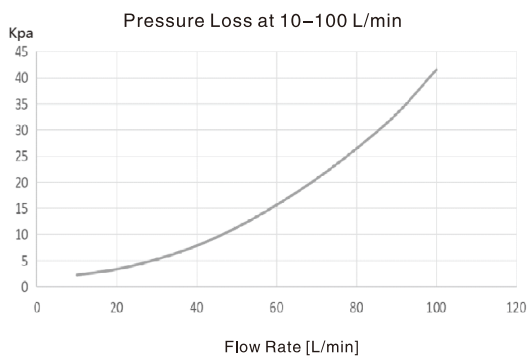
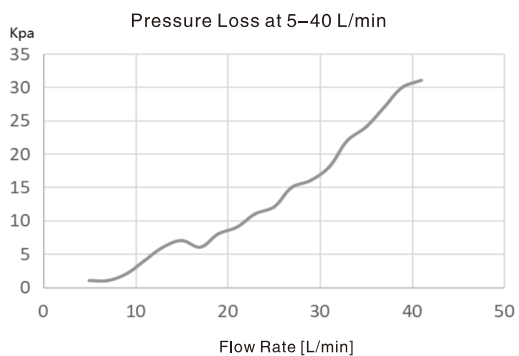
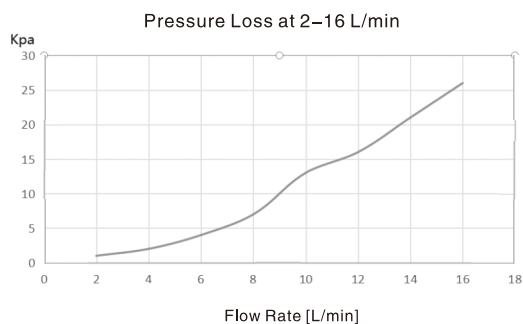
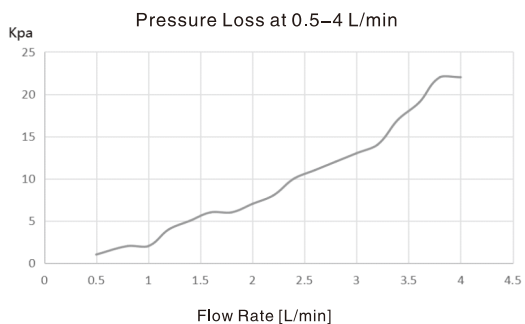
EPF711/511



EPF721/521

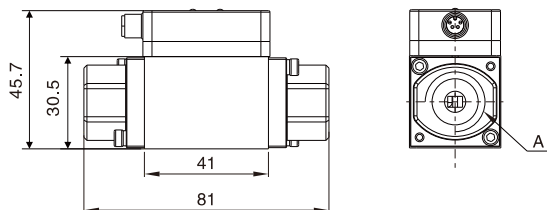


○ Flow characteristics (pressure drop: without flow control valve)



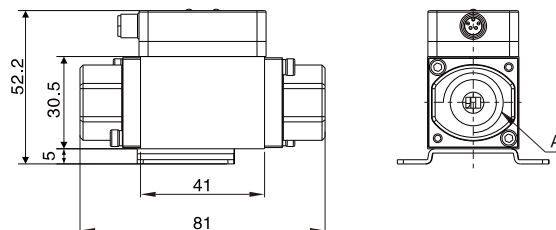
Main dimensions (mm)

EPF504-1WL-



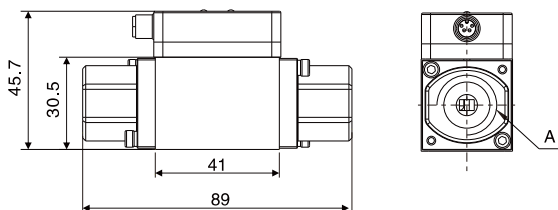
Diameter (A)
NPT3/8
G3/8
PT3/8

EPF504-1WLB-



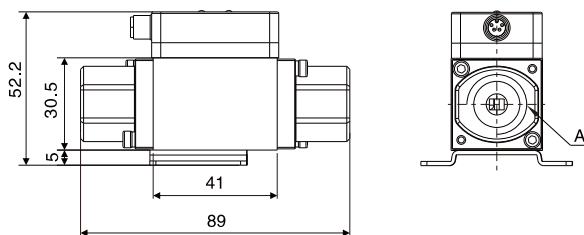
Diameter (A)
NPT3/8
G3/8
PT3/8

EPF520-1WL-



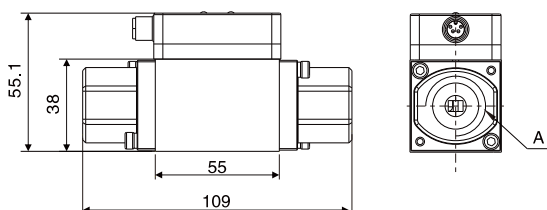
Diameter (A)
NPT3/8
G3/8
PT3/8
NPT1/2
G1/2
PT1/2

EPF520-1WLB-



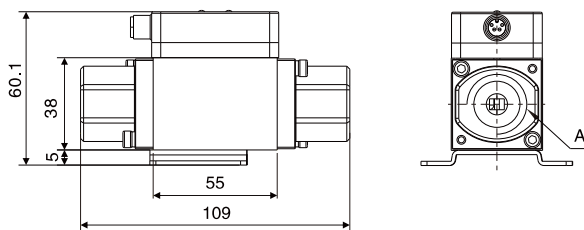
Diameter (A)
NPT3/8
G3/8
PT3/8
NPT1/2
G1/2
PT1/2

EPF540-1WL-



Diameter (A)
NPT3/4
G3/4
PT3/4
NPT1/2
G1/2
PT1/2

EPF540-1WLB-



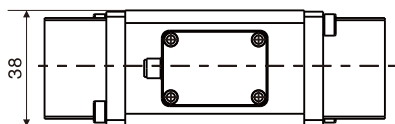
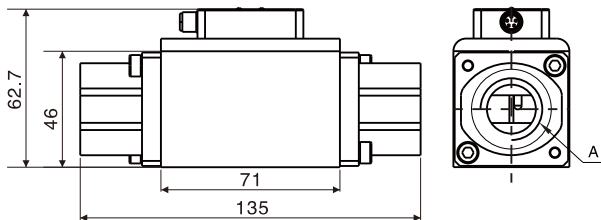
Diameter (A)
NPT3/4
G3/4
PT3/4
NPT1/2
G1/2
PT1/2

Digital Flow Switch for Water



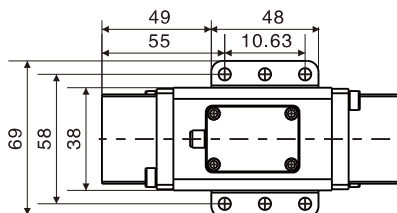
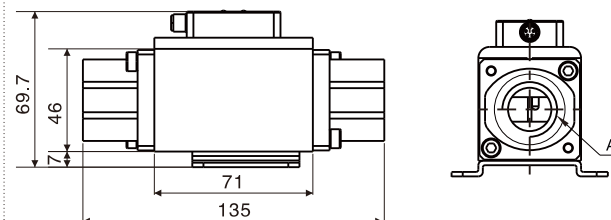
Main dimensions (mm)

EPF511-1WL-



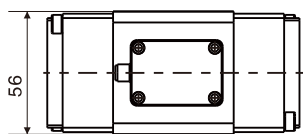
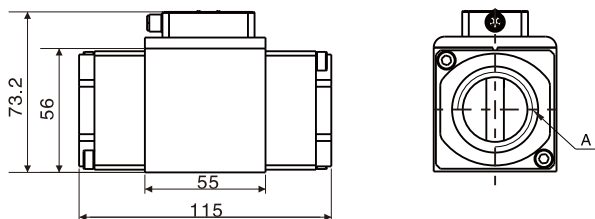
Diameter (A)
NPT3/4
G3/4
PT3/4
NPT1
G1
PT1

EPF511-1WLB-



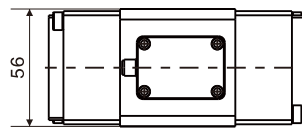
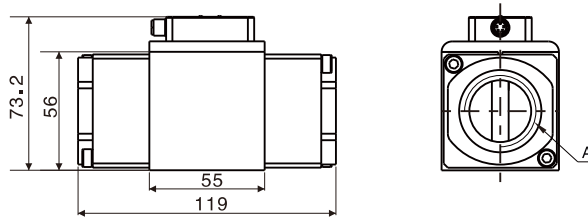
Diameter (A)
NPT3/4
G3/4
PT3/4
NPT1
G1
PT1

EPF521-1WL-



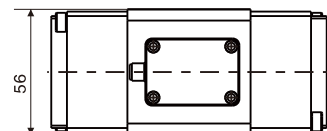
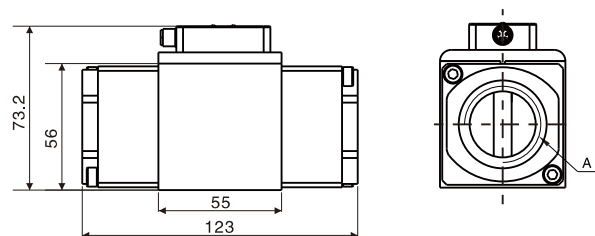
Diameter (A)
NPT1 1/4
PT1 1/4
NPT1 1/2
PT1 1/2

EPF521-121WL



Diameter (A)
G1 1/2

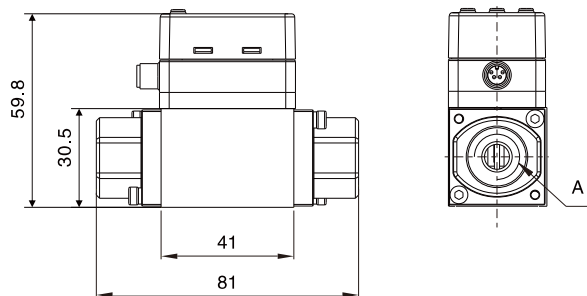
EPF521-141WL



Diameter (A)
G1 1/4

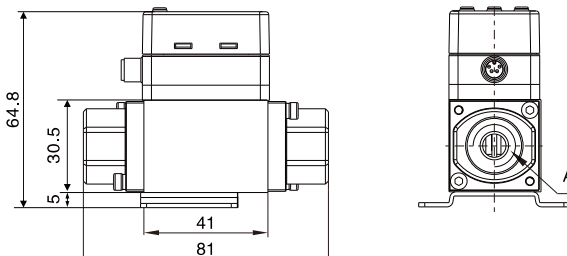
Main dimensions (mm)

EPF704-CWL-

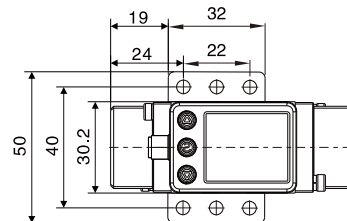


Diameter (A)
NPT3/8
G3/8
PT3/8

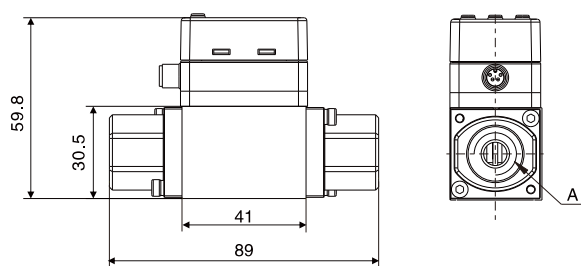
EPF704-CWLB-



Diameter (A)
NPT3/8
G3/8
PT3/8

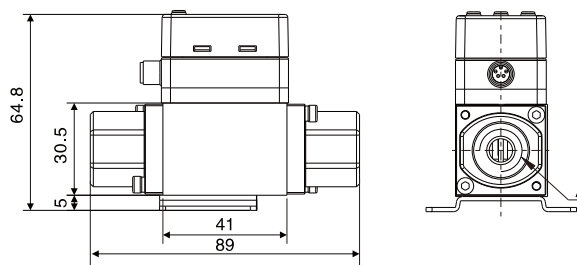


EPF720-CWL-

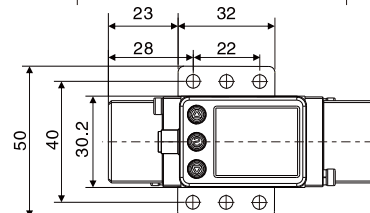


Diameter (A)
NPT3/8
G3/8
PT3/8
NPT1/2
G1/2
PT1/2

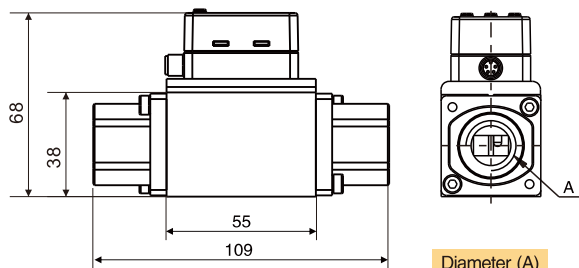
EPF520-CWB



Diameter (A)
NPT3/8
G3/8
PT3/8
NPT1/2
G1/2
PT1/2

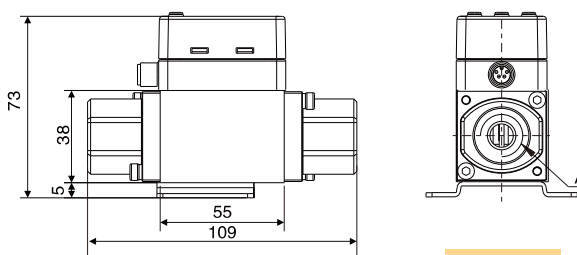


EPF740-CWL-

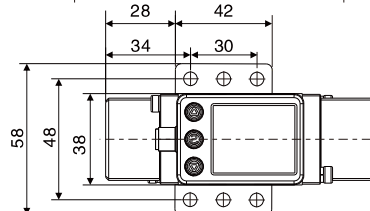


Diameter (A)
NPT3/4
G3/4
PT3/4
NPT1/2
G1/2
PT1/2

EPF740-CWLB-



Diameter (A)
NPT3/4
G3/4
PT3/4
NPT1/2
G1/2
PT1/2

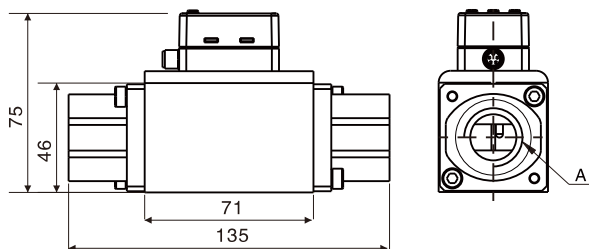


Digital Flow Switch for Water



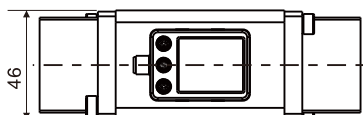
Main dimensions (mm)

EPF711- _CWL- _

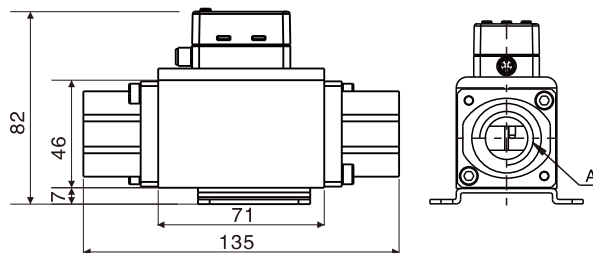


Diameter (A)

NPT3/4
G3/4
PT3/4
NPT1
G1
PT1

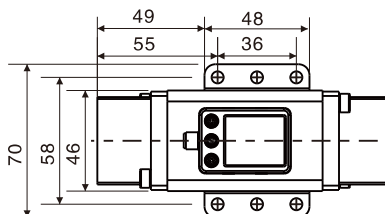


EPF711- _CWLb- _

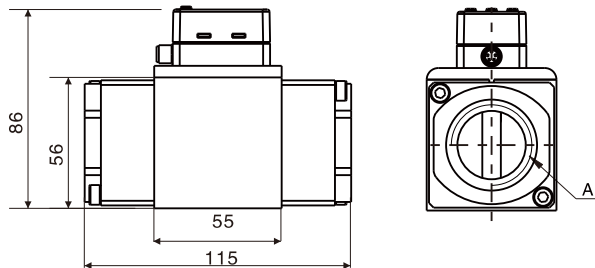


Diameter (A)

NPT3/4
G3/4
PT3/4
NPT1/2
G1/2
PT1/2

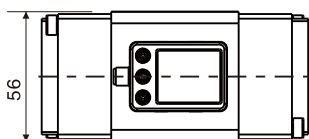


EPF721- _CWL- _

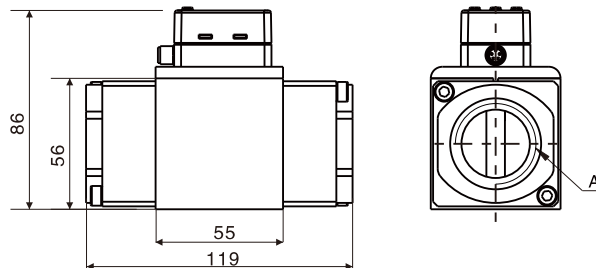


Diameter (A)

NPT1 1/4
PT1 1/4
NPT1 1/2
PT1 1/2

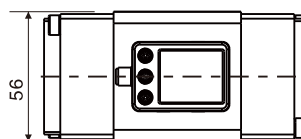


EPF721-12CWL

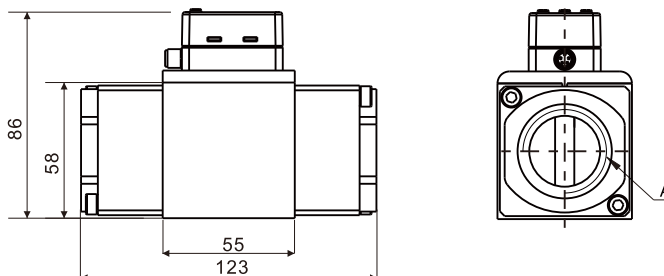


Diameter (A)

G1 1/2

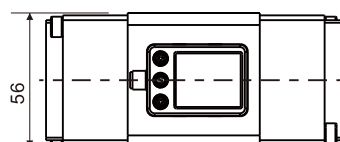


EPF721-14CWL



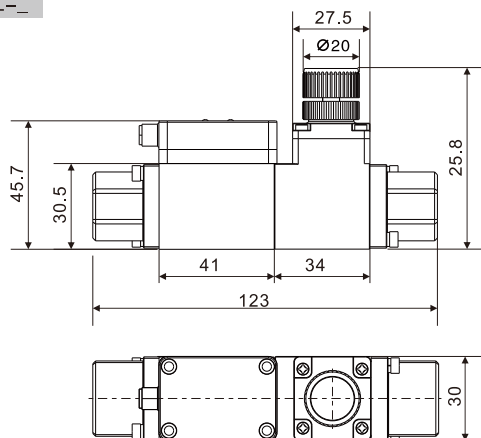
Diameter (A)

G1 1/4



○ Main dimensions (mm)

EPF504-S_1WL-



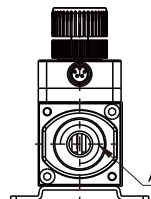
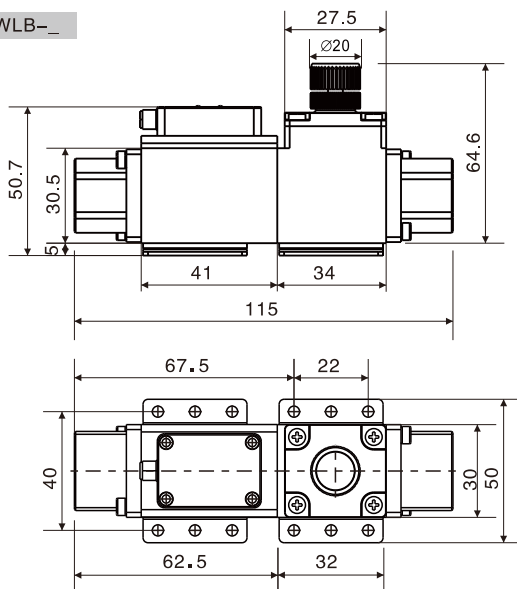
Diameter (A)

NPT3/8

G3/8

PT3/8

EPF504-S_1WLB-



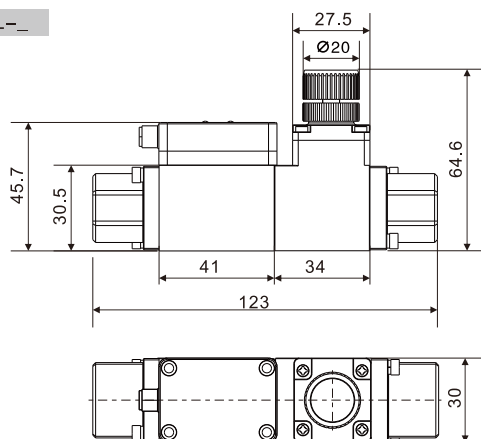
Diameter (A)

NPT3/8

G3/8

PT3/8

EPF520-S_1WL-



Diameter (A)

NPT3/8

G3/8

PT3/8

NPT1/2

G1/2

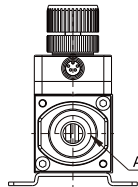
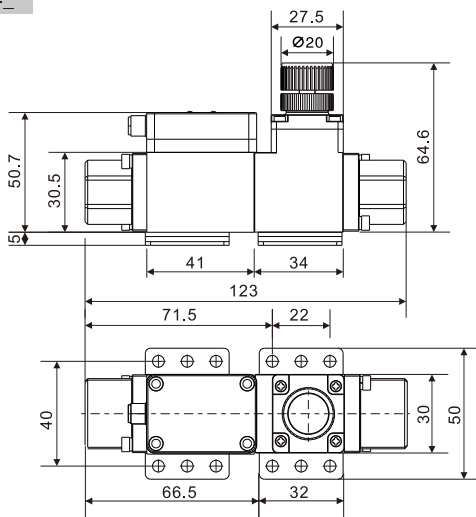
PT1/2

Digital Flow Switch for Water



Main dimensions (mm)

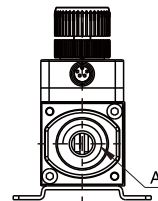
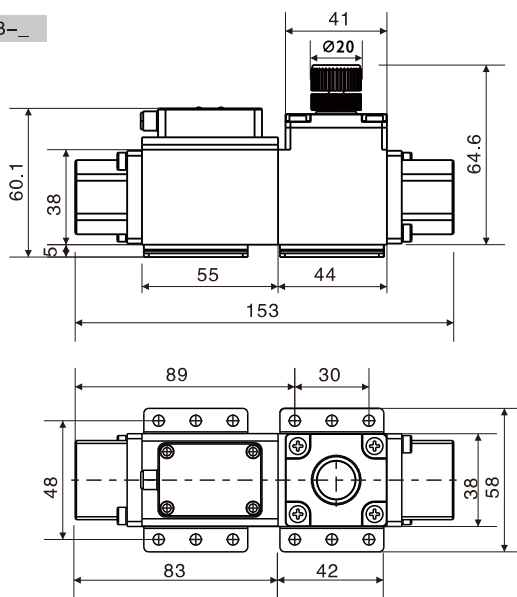
EPF520-S_1WLB-_-



Diameter (A)

- NPT3/8
- G3/8
- PT3/8
- NPT1/2
- G1/2
- PT1/2

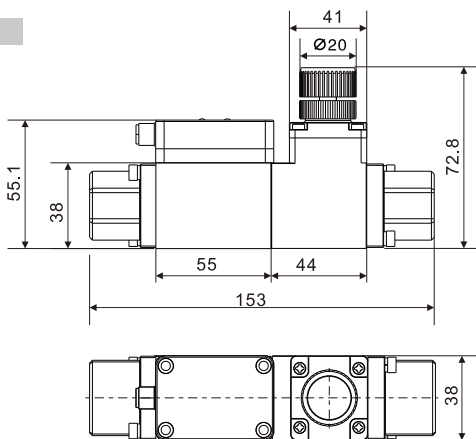
EPF540-S_1WLB-_-



Diameter (A)

- NPT3/4
- G3/4
- PT3/4
- NPT1/2
- G1/2
- PT1/2

EPF540-S_1WL-_-

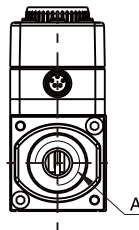
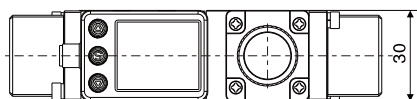
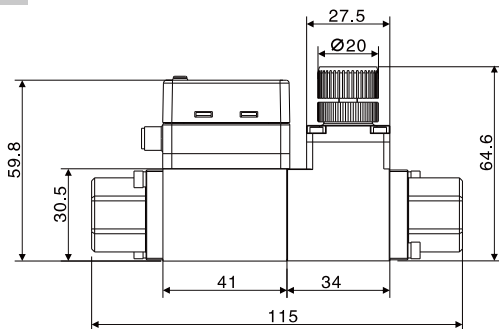


Diameter (A)

- NPT3/4
- G3/4
- PT3/4
- NPT1/2
- G1/2
- PT1/2

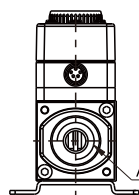
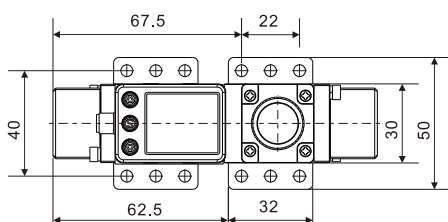
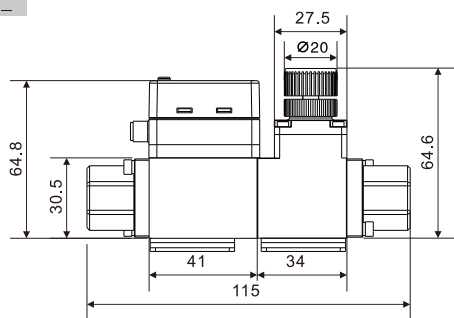
Main dimensions (mm)

EPF720-S_CWL-_-



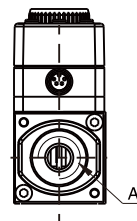
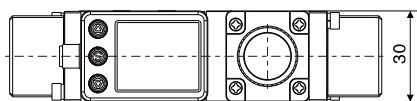
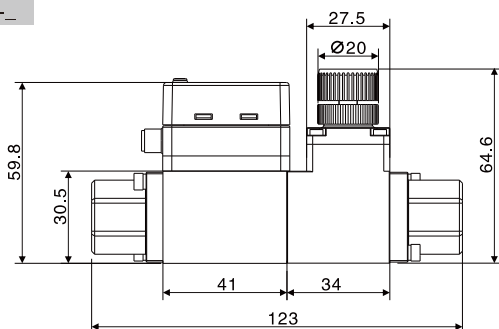
Diameter (A)
NPT3/8
G3/8
PT3/8

EPF720-S_CWLb-_-



Diameter (A)
NPT3/8
G3/8
PT3/8

EPF720-S_CWL-_-



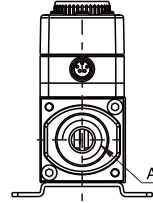
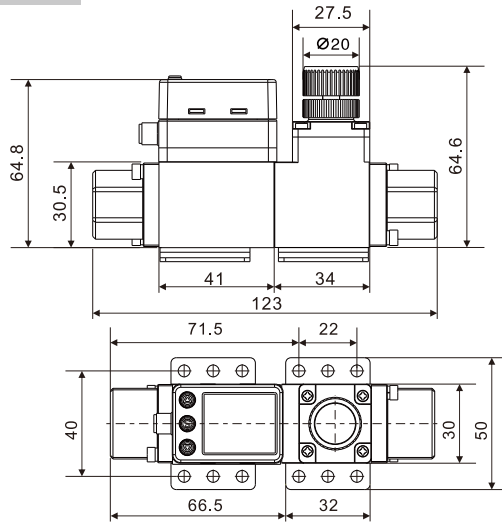
Diameter (A)
NPT3/8
G3/8
PT3/8
NPT1/2
G1/2
PT1/2

Digital Flow Switch for Water



○ Main dimensions (mm)

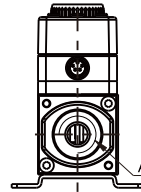
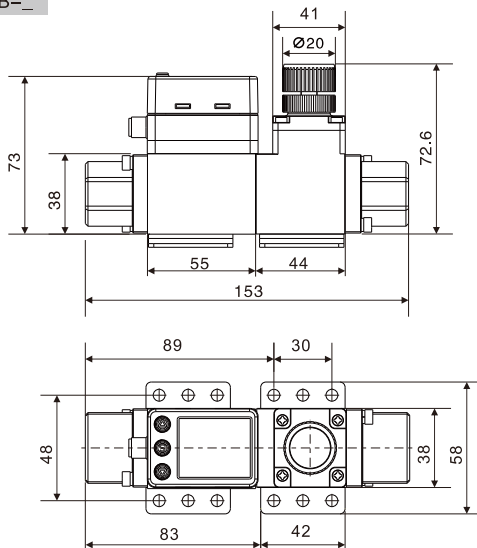
EPF720-S_CWLB-_-



Diameter (A)

NPT3/8
G3/8
PT3/8
NPT1/2
G1/2
PT1/2

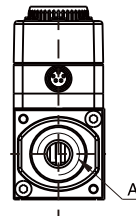
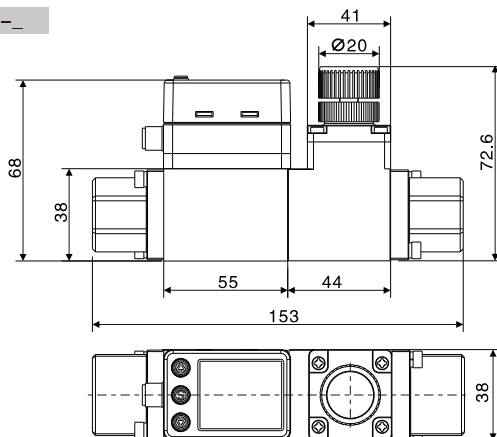
EPF740-S_CWLB-_-



Diameter (A)

NPT3/4
G3/4
PT3/4
NPT1/2
G1/2
PT1/2

EPF740-S_CWL-_-



Diameter (A)

NPT3/4
G3/4
PT3/4
NPT1/2
G1/2
PT1/2