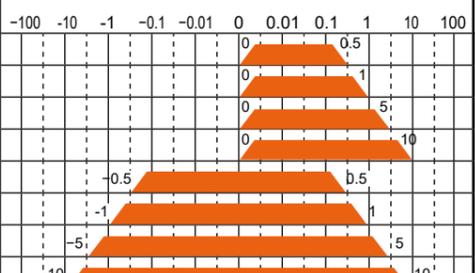
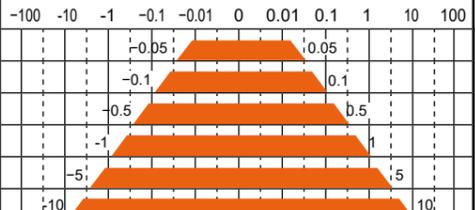


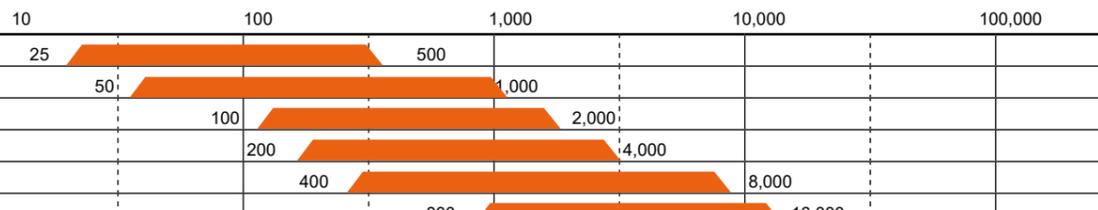
[(Air/nitrogen gas) Miniature flow rate switch RAPIFLOW® FSM-X/V Series]

RAPIFLOW FSM-X/model No. series variation		Body material	Port size	Flow rate range L/min	Working pressure MPa (gauge pressure)	Listed on Page
Analog output 1 point Discrete sensor head	Analog output 1 point flow path block					
		Resin body	No fitting (Discrete sensor head) ø4 M5	Capable of detecting bi-directional flow 	-0.1 n 1.0	369
FSM-X-AF005	FSM-X-AF005-□	●	● ● ●			
FSM-X-AF010	FSM-X-AF010-□	●	● ● ●			
FSM-X-AF050	FSM-X-AF050-□	●	● ● ●			
FSM-X-AF100	FSM-X-AF100-□	●	● ● ●			
FSM-X-AR005	FSM-X-AR005-□	●	● ● ●			
FSM-X-AR010	FSM-X-AR010-□	●	● ● ●			
FSM-X-AR050	FSM-X-AR050-□	●	● ● ●			
FSM-X-AR100	FSM-X-AR100-□	●	● ● ●			

Note: Refer to "Model No. Notation Method" for details on body material and port size combinations.

RAPIFLOW FSM-V/model No. series variation			Body material	Port size	Flow rate range L/min	Working pressure MPa (gauge pressure)	Listed on Page
Analog output	Switch output						
Analog output 1 point Capable of mounting display (optional) FSM-V-A□3-□Series	NPN output 2 points FSM-V-N□3-□Series	PNP output 2 points FSM-V-P□3-□Series	Resin body	ø1.8 ø4 ø4 (L-type) M5	Capable of detecting bi-directional flow 	-0.1 n 1.0	369
FSM-V-A□3-R0005	FSM-V-N□3-R0005	FSM-V-P□3-R0005	●	● ● ● ●			
FSM-V-A□3-R0010	FSM-V-N□3-R0010	FSM-V-P□3-R0010	●	● ● ● ●			
FSM-V-A□3-R0050	FSM-V-N□3-R0050	FSM-V-P□3-R0050	●	● ● ● ●			
FSM-V-A□3-R0100	FSM-V-N□3-R0100	FSM-V-P□3-R0100	●	● ● ● ●			
FSM-V-A□3-R0500	FSM-V-N□3-R0500	FSM-V-P□3-R0500	●	● ● ● ●			
FSM-V-A□3-R1000	FSM-V-N□3-R1000	FSM-V-P□3-R1000	●	● ● ● ●			

[FLUEREX® pneumatic flow rate sensor PFD Series]

FLUEREX flow sensor PFD/model No. series variation		Flow rate range L/min (normal)
Separated display		
		
PFD-501		
PFD-102		
PFD-202		
PFD-402		
PFD-802		
PFD-163		

Separated display	Model No.	Port size						Page
		10 A	15 A	20 A	25 A	40 A	50 A	
	PFD-501	●						403
	PFD-102		●					
	PFD-202			●				
	PFD-402				●			
	PFD-802					●		
	PFD-163						●	

Flow rate sensor

Compact flow rate sensor for gas

Flow rate sensor for compressed air

Flow rate sensor for liquids

Water Accumulation Unit

Flow rate sensor

Compact flow sensor (gas)

Compact flow sensor (air)

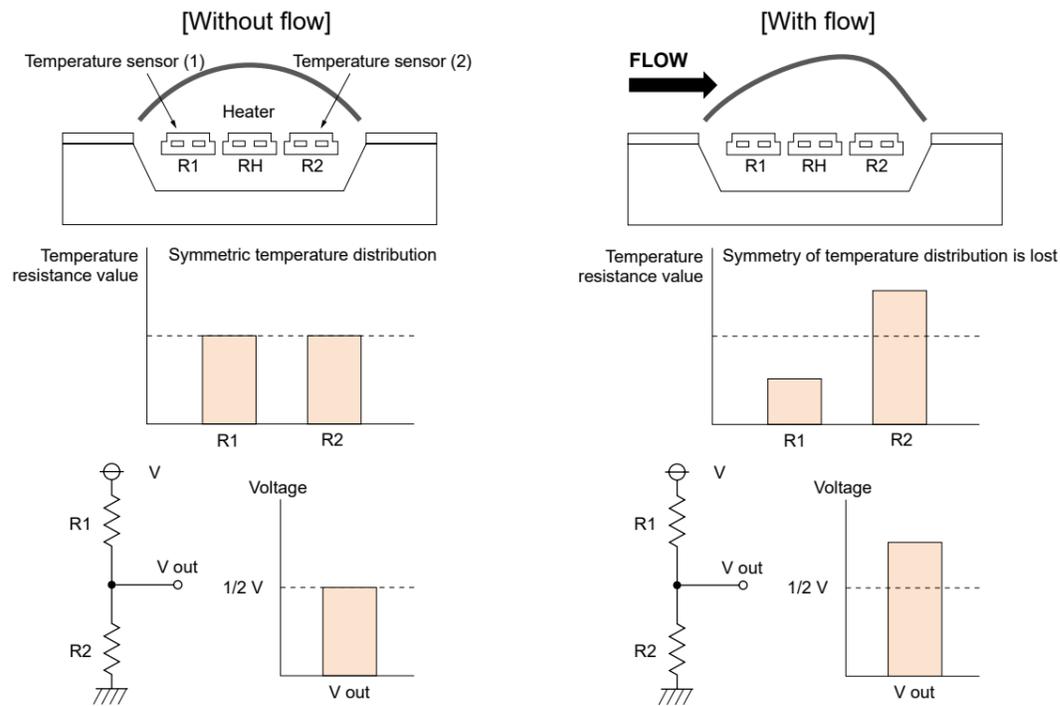
Compact flow sensor (liquid)

Water Manifold Unit

Compact flow rate sensor

Measurement principle of FSM Series

The FSM Series incorporates a platinum sensor chip machined with silicon micro-machining. The sensor is thermally insulated from the silicon substrate. The heating capacity is extremely low, enabling high sensitivity with a high-speed response. At the sensor, two temperature sensors are arranged with a heater in between. Platinum, which has a resistance that changes based on temperature, is used for the temperature sensor. When the heater is turned ON and heating occurs, the temperature distribution is symmetrical to the center of the heater if there is no flow. When flow is received, the symmetrical property of the temperature distribution is lost, temperature upstream from the heater drops, and temperature downstream rises. This temperature difference appears as the difference in temperature sensor resistance, and varies with the flow rate. When the flow is reversed, the temperature difference (difference in resistance) will be inverted. By using this method, the bi-directional flow rate can be detected. A bi-directional flow rate is thus detected. This is suitable for detecting relatively small flows.



MEMO

Flow rate sensor

Compact flow sensor (gas)

Compact flow sensor (air)

Compact flow sensor (liquid)

Water Manifold Unit

Ending

Flow rate sensor

Compact flow sensor (gas)

Compact flow sensor (air)

Compact flow sensor (liquid)

Water Manifold Unit

Ending