

Small Proportional Solenoid Valve

MODEL 3000 SERIES

The Model 3000 Series maintains flow control characteristics with hysteresis of 15% or less (full-scale current). This ultra-compact proportional solenoid valve is perfect for automatic gas flow control of gas chromatographs and various other analyzers. With its high resolution, the Model 3000 is also suitable for precision pressure control.

- Ultra-compact, lightweight and high-performance proportional valve for a single power source
- Low power consumption (max. 2 W)
- The annealed magnetic materials and specially designed flat spring completely prevent current fluctuations caused by vibrations due to plunger runout or friction.
- The magnetic yoke is shaped by cutting, not bending, and annealed to eliminate interference in the magnetic flux passage and increase magnetic force.
- Hysteresis not exceeding 15%, the lowest in the industry
- Compliance with RoHS

Standard type



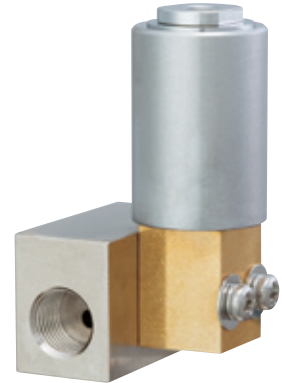
Connection end: $\phi 3.0$

Hose nipple type



Connection end: $\phi 3.0$ with hose nipple

Joint type



Connection end: With Rc 1/8

* The appearance is subject to change.

Standard Specifications

Model		3000 Series				
		3010	3020	3030	3040	3050
Orifice diameter (ϕ in mm)		0.08	0.28	0.5	0.75	1.3
Maximum CV		0.00022	0.0021	0.0086	0.02	0.042
Pressure	Proof pressure	980kPa *1				
	Operating differential pressure	~0.98MPa		~0.6MPa		~0.4MPa
Control	Maximum control voltage	12/24V				
	Power consumption	Max.1W/2W				
	Hysteresis	15% or less/full scale current				
Filter		20 μ (IN/OUT)			Without filter	
Internal leak		0.1 ml/min or less within the proof pressure range of the gas			0.2 ml/min or less	
Operating temperature		0~50°C *2				
Storage temperature		-5~70°C				
Materials of parts in contact with gas	BS	C3604, SUS430F, FKM, SUS316, SUS304				
	SUS	SUS430F, FKM, SUS316, SUS304				
Dimensions (mm)		<input type="checkbox"/> 13 x 17.5 + ϕ 19 x 31				
Lead wire		UL3266 XLPE #28				
Insulation		Class A				
Connection end		$\phi 3.0$ (standard), $\phi 3.0$ Hose nipple, Rc1/8				
Weight		Approx. 60 g (The type with Rc 1/8: 140 g)				

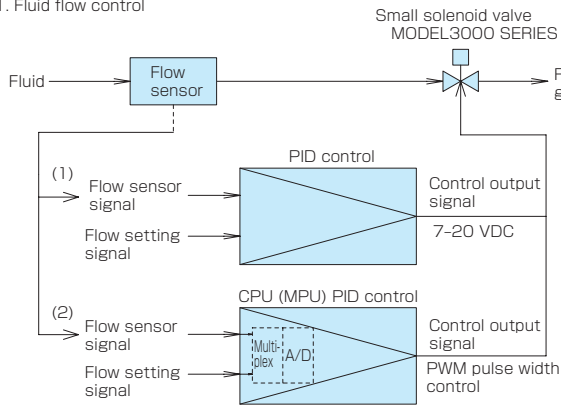
Notes

*1: The specifications show the proof pressure of the valve main unit. In the case of the hose nipple type, refer to the proof pressure of the hose.

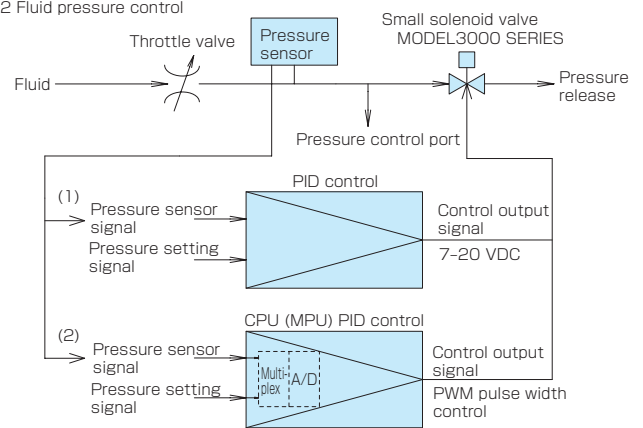
*2: The temperature coefficient of the coil copper wire resistance is 0.004. The resistance is obtained by: $R_t = R_0^{\circ}\text{C} (1 + 0.004 \times t^{\circ}\text{C})$. When using voltage control, make sure that the ambient temperature does not vary widely. When the ambient temperature is likely to vary widely, we recommend current control.

Example of Use

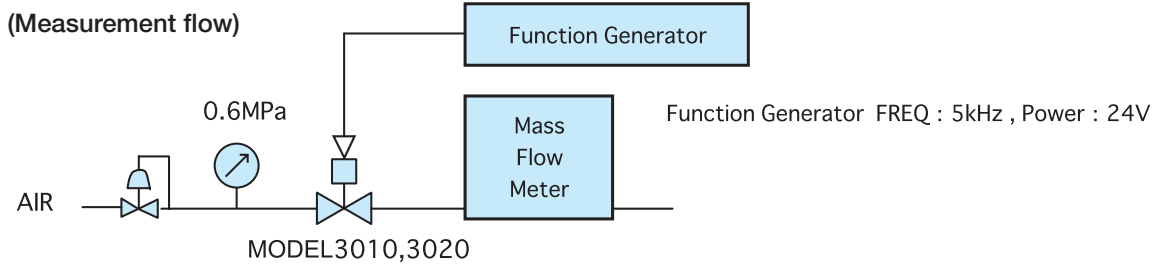
1. Fluid flow control



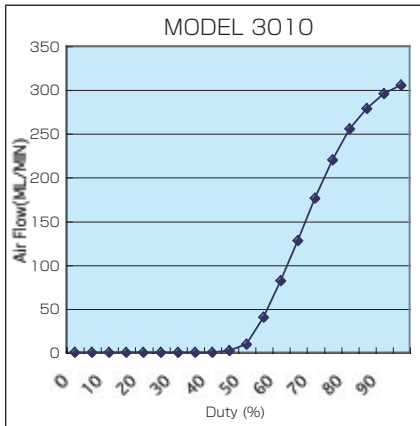
2. Fluid pressure control



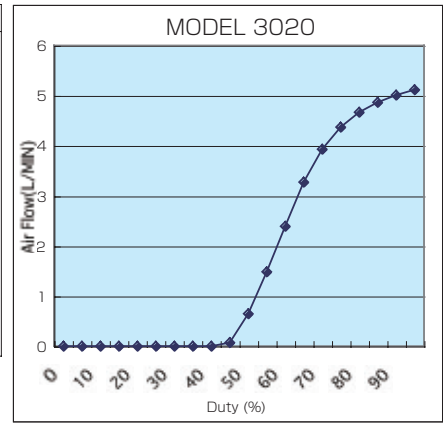
PWM-Controlled Flow Characteristics Example of Model 3000 Series



Duty(%)	Flow(ML/MIN)
0	0
45	2
50	9.1
55	40.4
60	82
65	127.8
70	176.2
75	220
80	255.4
85	278.7
90	295.5
95	305.4



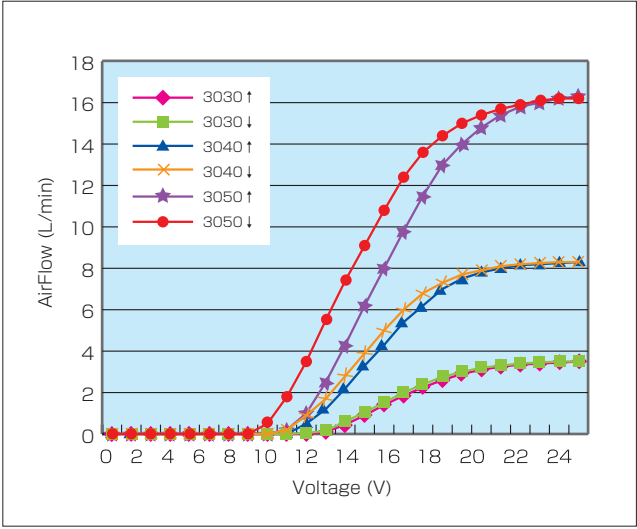
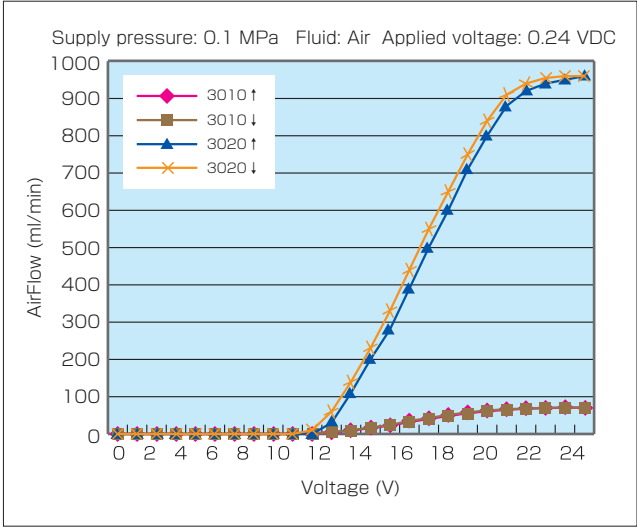
Duty(%)	Flow(L/MIN)
0	0
45	0.072
50	0.652
55	1.484
60	2.391
65	3.272
70	3.931
75	4.37
80	4.67
85	4.864
90	5.007
95	5.116



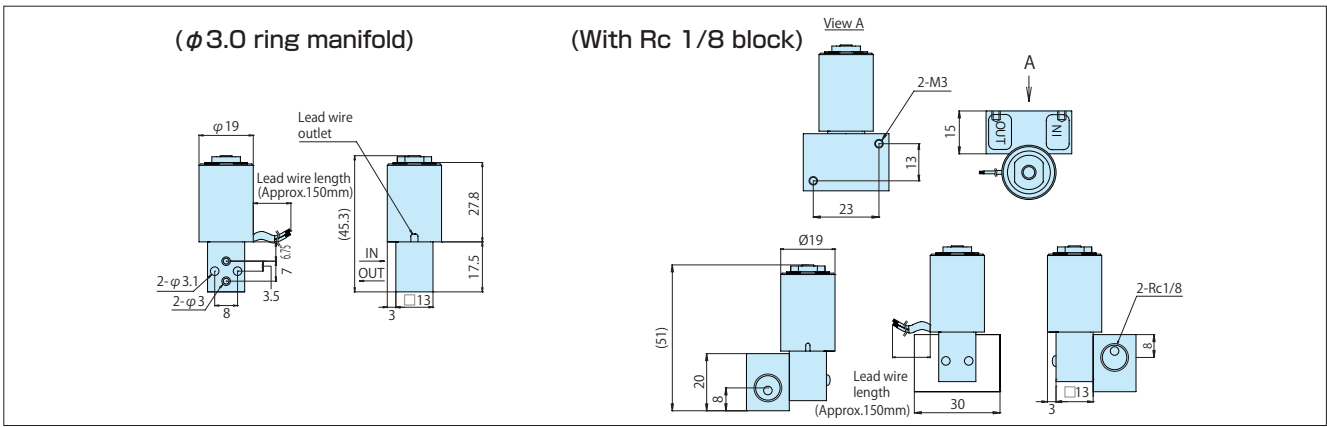
Flow Control Valve

MODEL 3000 SERIES

Flow Characteristics Example of Model 3000 Series

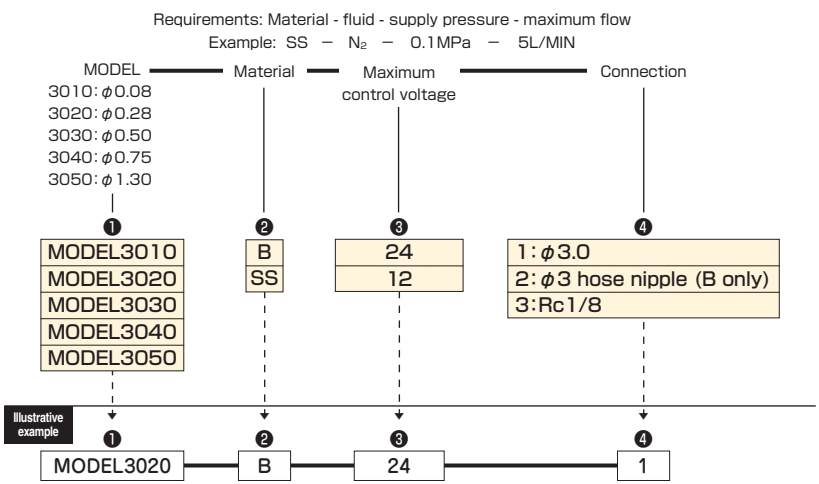


Dimensions



Ordering

* Instead of the procedure below, an order may be placed by specifying your requirements and we will select an appropriate orifice diameter and model.



- <Note>
- 1) These specifications and dimensions are subject to change.
 - 2) With some types of gases, conversion is required for calibration.
 - 3) If a load is applied at the outlet, please let us know when placing an order.