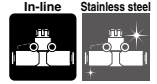


# Stainless Steel Type Speed Controller with One-touch Fittings (In-line Type)

# AS-FG Series



RoHS



## Model

Model	Applicable tubing O.D.											
	Metric size						Inch size					
	3.2	4	6	8	10	12	1/8"	5/32"	1/4"	5/16"	3/8"	1/2"
AS1002FG	●						●					
AS2002FG		●	●					●	●			
AS2052FG			●	●					●	●		
AS3002FG				●	●	●			●	●	●	
AS4002FG					●	●					●	●

## Specifications

Fluid	Air
Proof pressure	1.5 MPa
Max. operating pressure	1 MPa
Min. operating pressure	0.1 MPa
Ambient and fluid temperatures	-5 to 60°C (No freezing)
Applicable tubing material	Nylon, Soft nylon, Polyurethane*1, FEP, PFA

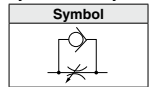
\*1 Use caution at the max. operating pressure when using soft nylon or polyurethane tubing. (Refer to pages 678 and 682 for details.)

## Flow Rate and Sonic Conductance

Model	AS1002FG-□A		AS2002FG-□A		AS2052FG-□A		AS3002FG-□A			AS4002FG-□A				
	Metric size	□	□	□	□	□	□	□	□	□	□			
Tubing O.D.	Inch size	□	□	□	□	□	□	□	□	□	□			
C values: Sonic conductance (dm <sup>3</sup> /(s·bar))	Free flow	0.3	0.4	0.6	0.4	0.6	1.0	1.2	1.1	1.6	2.2	2.6	2.4	3.5
	Controlled flow	0.3		0.4	0.6	1.0	1.2	1.3	1.9	2.7	3.3	2.8	4.1	
b values: Critical pressure ratio	Free flow	0.3	0.2	0.3	0.1	0.2	0.2	0.2	0.1	0.2	0.3	0.2	0.1	0.2
	Controlled flow	0.2	0.3	0.4	0.2	0.2	0.3	0.1	0.2	0.1	0.2			

\* C and b values are for controlled flow with the needle fully open and free flow with the needle fully closed.

Flow Direction Symbol on Body



## How to Order

AS 200 2 FG - 06 A - □

Body size ●

100	M5 standard
200	1/8 standard
205	1/4 standard
300	3/8 standard
400	1/2 standard

With One-touch fittings ●

Stainless steel type  
(Stainless steel 303) ●

\* The material can be visually identified by color of the release button.

Stainless steel type: White

\* White is also used for inch size.

Made to Order

● Push-lock type

● Applicable tubing O.D.\*1

Metric size		Inch size	
23	ø3.2 <sup>*2</sup>	01	ø1/8"
04	ø4	03	ø5/32"
06	ø6	07	ø1/4"
08	ø8	09	ø5/16"
10	ø10	11	ø3/8"
12	ø12	13	ø1/2"

\*1 For selecting applicable tubing O.D., refer to the "Model" shown above.

\*2 Use ø1/8" tubing.

## Made to Order

Made to Order

Lubricant: Vaseline **-X12**

Example AS2002FG-06A-X12

Grease-free (Seal: Fluorine-coated) + Restrictor (Without check valve) **-X21**

Example AS2002FG-06A-X21

\* Not particle-free

Restrictor (Without check valve) **-X214**

Example AS2002FG-06A-X214

Clean Series **10-**

Example 10-AS2002FG-06A

\*1 Fluorine grease is used.

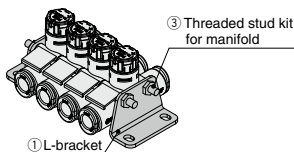
\*2 The cleanliness class (ISO class) is 5.

# AS-FG Series

## Options

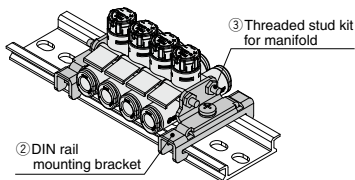
### ① L-Bracket

Part no.	Applicable model
<b>AS-10L</b>	AS1002FG
<b>AS-20L</b>	AS2002FG
<b>AS-25L</b>	AS2052FG
<b>AS-30L</b>	AS3002FG
<b>AS-40L</b>	AS4002FG



### ② DIN Rail Mounting Bracket

Part no.	Applicable model
<b>AS-10D</b>	AS1002FG
<b>AS-20D</b>	AS2002FG
<b>AS-25D</b>	AS2052FG
<b>AS-30D</b>	AS3002FG
<b>AS-40D</b>	AS4002FG



\* Prepare DIN rail by user.

### ③ Threaded Stud Kit for Manifold: Metric Size

Part number				Applicable model	
4 stations	6 stations	8 stations	10 stations		
<b>AS-32B</b>	<b>AS-33B</b>	<b>AS-35B</b>	<b>AS-36B</b>	AS1002FG-23A	
			<b>AS-37B</b>	AS1002FG-04A	
	<b>AS-34B</b>	<b>AS-36B</b>	<b>AS-38B</b>	AS1002FG-06A	
			—	—	
<b>AS-32B</b>	<b>AS-34B</b>	<b>AS-36B</b>	<b>AS-37B</b>	AS2002FG-04A	
			<b>AS-38B</b>	AS2002FG-06A	
	<b>AS-41B</b>	<b>AS-42B</b>	<b>AS-44B</b>	<b>AS-45B</b>	AS2052FG-06A
				—	—
<b>AS-42B</b>	<b>AS-44B</b>	<b>AS-45B</b>	<b>AS-47B</b>	AS2052FG-08A	
				AS3002FG-06A	
				—	
	<b>AS-43B</b>	<b>AS-45B</b>	<b>AS-47B</b>	<b>AS-48B</b>	AS3002FG-08A
					AS3002FG-10A
					—
<b>AS-42B</b>	<b>AS-44B</b>	<b>AS-45B</b>	<b>AS-47B</b>	AS3002FG-12A	
				AS4002FG-10A	
	<b>AS-43B</b>	<b>AS-45B</b>	<b>AS-47B</b>	<b>AS-48B</b>	—
					AS4002FG-12A
—	—	—	—	—	

### ③ Threaded Stud Kit for Manifold: Inch Size

Part number				Applicable model	
4 stations	6 stations	8 stations	10 stations		
<b>AS-32B</b>	<b>AS-33B</b>	<b>AS-35B</b>	<b>AS-36B</b>	AS1002FG-01A	
			<b>AS-37B</b>	AS1002FG-03A	
	<b>AS-34B</b>	<b>AS-36B</b>	<b>AS-38B</b>	AS1002FG-07A	
			—	—	
<b>AS-32B</b>	<b>AS-34B</b>	<b>AS-36B</b>	<b>AS-37B</b>	AS2002FG-03A	
			<b>AS-38B</b>	AS2002FG-07A	
	<b>AS-41B</b>	<b>AS-42B</b>	<b>AS-44B</b>	<b>AS-45B</b>	AS2052FG-07A
				—	AS2052FG-09A
<b>AS-42B</b>	<b>AS-44B</b>	<b>AS-45B</b>	<b>AS-47B</b>	AS3002FG-07A	
				AS3002FG-09A	
				—	
	<b>AS-43B</b>	<b>AS-45B</b>	<b>AS-47B</b>	<b>AS-48B</b>	AS3002FG-11A
					—
					—
<b>AS-42B</b>	<b>AS-44B</b>	<b>AS-45B</b>	<b>AS-47B</b>	AS4002FG-11A	
				AS4002FG-13A	
—	—	—	—	—	

### Details of Threaded Stud Kit for Manifold

Threaded stud			Accessories		
Part no.	Length	Quantity	Hexagon nut	Flat washer	Quantity
<b>AS-32B</b>	62	2	M3	4	M3
<b>AS-33B</b>	72	2			
<b>AS-34B</b>	90	2			
<b>AS-35B</b>	104	2			
<b>AS-36B</b>	114	2			
<b>AS-37B</b>	135	2			
<b>AS-38B</b>	140	2			
<b>AS-41B</b>	78	2			
<b>AS-42B</b>	111	2	M4	4	M4
<b>AS-43B</b>	119	2			
<b>AS-44B</b>	147	2			
<b>AS-45B</b>	179	2			
<b>AS-46B</b>	191	2			
<b>AS-47B</b>	236	2			
<b>AS-48B</b>	277	2			

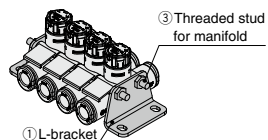
### Ordering Example

Threaded studs for manifold are not included when L-bracket and DIN rail mounting bracket are ordered. Please order them according to the number of stations.

#### Ex.) AS2002FG-04A

When connecting 4 pcs. and mounting L-brackets on both sides

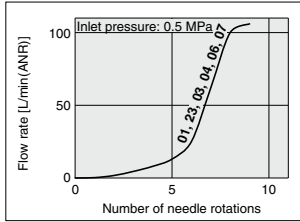
- Speed controller  
**AS2002FG-04A** ..... 4 pcs.
- L-bracket  
**AS-20L** ..... 2 pcs.
- Threaded stud kit for manifold  
**AS-32B** ..... 1 set



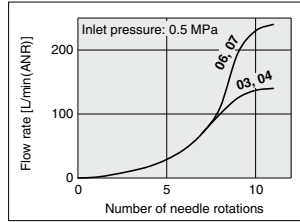
## Needle Valve: Flow Rate Characteristics

\* The flow rate characteristics are representative values.

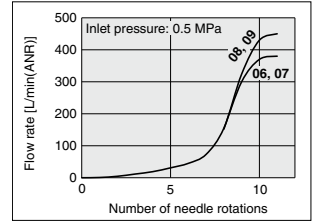
AS1002FG-□A



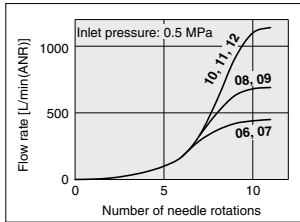
AS2002FG-□A



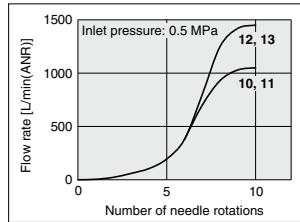
AS2052FG-□A



AS3002FG-□A

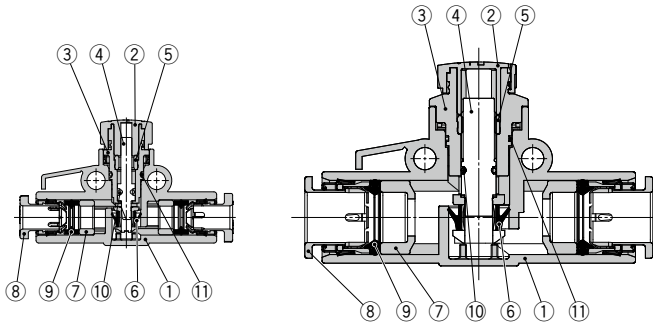


AS4002FG-□A

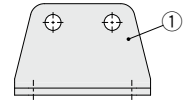


\* The numbers above the flow rate characteristic curves in the charts show the applicable tubing outside diameter as defined by the product number.

## Construction



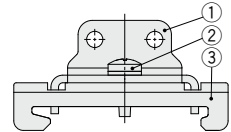
### L-Bracket



### Component Parts

No.	Description	Material
1	Bracket	Steel strip

### DIN Rail Mounting Bracket



### Component Parts

No.	Description	Material
1	Bracket	Steel strip
2	Cross recessed round head screw	Steel wire
3	Clasp	Steel strip

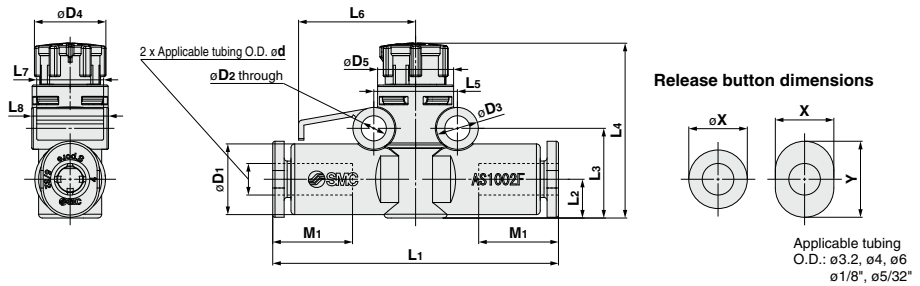
### Component Parts

No.	Description	Material	Note
1	Body A	PBT	
2	Knob	POM	
3	Body B	PBT	
4	Needle	PBT	
5	Needle guide	Stainless steel 303	
6	U-seal	HNBR	
7	Spacer	PBT*1	
8	Cassette	—	
9	Seal	NBR	
10	O-ring	NBR	
11	O-ring	NBR	

\*1 The AS3002F-11A, AS4002F-11A, AS4002F-13A are made of stainless steel 303.

# AS-FG Series

## Dimensions



### Metric Size

Model	Applicable tubing O.D. $\phi d$	$\phi D1$	Release button $\phi X(X)$ Y		$\phi D2$	$\phi D3$	$\phi D4$	$\phi D5$	L1	L2	L3	L4*1		L5	L6	L7	L8	M1	Weight [g]
			Max.	Min.															
AS1002FG-23A	3.2	8.4	6.7	9.5	—	—	—	—	36.6	—	—	24.1	23	—	—	—	—	13.5	3.7
AS1002FG-04A	4	9.3	7.7	10	3.3	5.5	9.4	10	37.6	5.1	11.8	24.1	23	11	15.4	8.8	10.1	13	4
AS1002FG-06A	6	11.6	9.7	12	—	—	—	—	40.1	6.1	12.8	25.1	24	—	—	—	12.3	13	5
AS2002FG-04A	4	9.3	7.7	10	3.3	5.5	12	12	41.3	6.3	13.4	31.4	30	12.6	17	10.5	12.3	13	6.1
AS2002FG-06A	6	11.6	9.7	12	—	—	—	—	43.1	—	—	—	—	—	—	—	—	—	6.9
AS2052FG-06A	6	12.8	11.5	—	4.3	7.8	13	16	54.2	7.6	17.2	36.2	34.6	17	22.5	12	16.1	17	11.8
AS2052FG-08A	8	15.2	13.5	—	—	—	—	—	57.2	8.5	18.1	37.1	35.5	—	—	—	—	19	13.8
AS3002FG-06A	6	13.2	11.5	—	—	—	—	—	60	—	—	—	—	—	—	—	—	17	18.1
AS3002FG-08A	8	15.2	13.5	—	4.5	8	16.6	20	65	9.8	21.7	42.9	41.3	21.8	25	12	20.5	19	20
AS3002FG-10A	10	18.5	16.5	—	—	—	—	—	70.4	—	—	—	—	—	—	—	—	21	24.8
AS3002FG-12A	12	20.9	18.5	—	—	—	—	—	76	10.9	22.8	44	42.4	—	—	—	22.1	22	29.1
AS4002FG-10A	10	18.5	16.5	—	4.3	8	18.8	26	76.9	11.3	23.7	51.3	49.7	28	33	14	26.2	21	36.3
AS4002FG-12A	12	21.7	18.5	—	—	—	—	—	81.3	—	—	—	—	—	—	—	22	22	42

\*1 Reference dimensions

### Inch Size

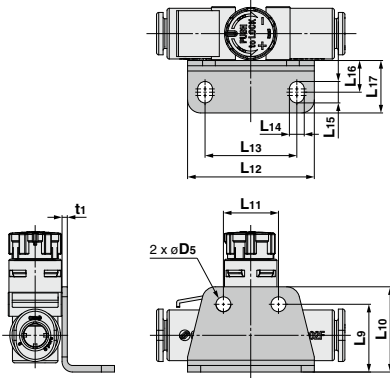
Model	Applicable tubing O.D. $\phi d$	$\phi D1$	Release button $\phi X(X)$ Y		$\phi D2$	$\phi D3$	$\phi D4$	$\phi D5$	L1	L2	L3	L4*1		L5	L6	L7	L8	M1	Weight [g]
			Max.	Min.															
AS1002FG-01A	1/8"	8.4	6.7	9.5	—	—	—	—	36.6	5.1	11.8	24.1	23	—	—	—	—	13.5	3.7
AS1002FG-03A	5/32"	9.3	7.7	10	3.3	5.5	9.4	10	37.6	6.2	12.9	25.2	24.1	11	15.4	8.8	10.1	13	4
AS1002FG-07A	1/4"	12	10.9	—	—	—	—	—	40.1	6.2	12.9	25.2	24.1	—	—	—	12.8	13.5	5.2
AS2002FG-03A	5/32"	9.3	7.7	10	3.3	5.5	12	12	41.3	6.3	13.4	31.4	30	12.6	17	10.5	12.3	13	6.1
AS2002FG-07A	1/4"	12	10.9	—	—	—	—	—	43.2	6.5	13.6	31.6	30.2	—	—	—	12.8	13.5	7.1
AS2052FG-07A	1/4"	13.2	12	—	4.3	7.8	13	16	53.4	7.6	17.2	36.2	34.6	17	22.5	12	16.1	17	12.1
AS2052FG-09A	5/16"	15.2	13.5	—	—	—	—	—	57.2	8.5	18.1	37.1	35.5	—	—	—	—	19	13.8
AS3002FG-07A	1/4"	13.2	12	—	—	—	—	—	59	—	—	—	—	—	—	—	—	17	17.9
AS3002FG-09A	5/16"	15.2	13.5	—	4.5	8	16.6	20	65	9.8	21.7	42.9	41.3	21.8	25	12	20.5	19	20
AS3002FG-11A	3/8"	18.5	16	—	—	—	—	—	69.8	—	—	—	—	—	—	—	—	21	25
AS4002FG-11A	3/8"	18.5	16	—	4.3	8	18.8	26	76.9	11.3	23.7	51.3	49.7	28	33	14	26.2	21	36.7
AS4002FG-13A	1/2"	21.7	20	—	—	—	—	—	81.3	—	—	—	—	—	—	—	—	22	40.4

\*1 Reference dimensions

**Dimensions**

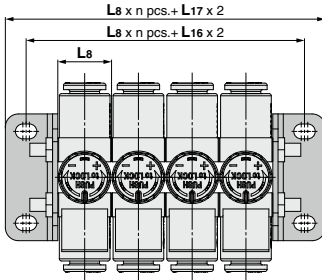
**L-Bracket**

Bracket on a single side



Part no.	Applicable model	D5	L9	L10	L11	L12	L13	L14	L15	L16	L17	t1
AS-10L	AS1002FG	3.4	14.8	18.3	11	27.5	19.5	3.4	4.9	7.3	12	1
AS-20L	AS2002FG		15.6	19.6	12.6	29	21					1.2
AS-25L	AS2052FG		19.6	24.6	17	38	28					
AS-30L	AS3002FG	4.5	24.8	29.8	22	43	33	4.5	6.5	9.5	15.5	1.4
AS-40L	AS4002FG		25.7	30.7	28	49	39					

**Brackets on both sides**

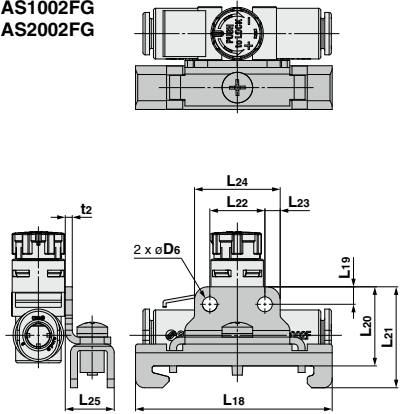


\* Refer to page 994 for L<sub>8</sub>.  
 \* The figure above shows the manifold with speed controllers connected using two L-brackets and a threaded stud kit for manifold. Refer to page 992 for threaded stud kits for manifold.

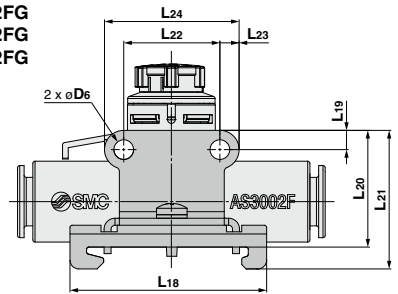
**DIN Rail Mounting Bracket**

Bracket on a single side

AS1002FG  
AS2002FG

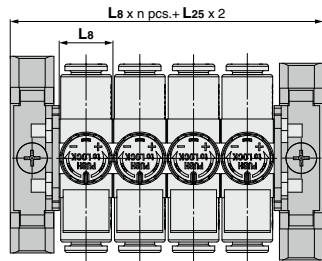


AS2052FG  
AS3002FG  
AS4002FG



Part no.	Applicable model	D6	L18	L19	L20	L21	L22	L23	L24	L25	t2
AS-10D	AS1002FG	3.4		3.5	18.2	23.2	11		3.5	18	
AS-20D	AS2002FG			45	18.6	23.6	12.6				
AS-25D	AS2052FG				22	27	17		25.8	11.3	1.6
AS-30D	AS3002FG	4.5	4.4		27.2	32.2	22	4.4	30.8		
AS-40D	AS4002FG				28.1	33.1	28		36.8		

**Brackets on both sides**



\* Refer to page 994 for L<sub>8</sub>.  
 \* The figure above shows the manifold with speed controllers connected using two DIN rail mounting brackets and a threaded stud kit for manifold. Refer to page 992 for threaded stud kits for manifold.