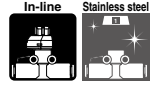


Stainless Steel Type Speed Controller with Indicator (In-line Type)

AS-FSG 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"
AS1002FSG	●						●					
AS2002FSG		●	●					●	●			
AS2052FSG			●	●					●	●		
AS3002FSG			●	●	●	●			●	●	●	
AS4002FSG					●	●					●	●

Specifications

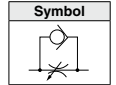
Fluid	Air
Proof pressure	1.5 MPa
Max. operating pressure	1 MPa
Min. operating pressure	0.1 MPa
Ambient and fluid temperatures	-5 to 60°C (No freezing)
Applicable tubing material	Nylon, Soft nylon, Polyurethane ^{*1} , FEP, PFA

*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	Tubing O.D.	Applicable tubing O.D.																
		AS1002FSG						AS2002FSG			AS2052FSG			AS3002FSG			AS4002FSG	
		3.2	4	6	8	10	12	4	6	8	4	6	8	6	8	10	12	10
C values: Sonic conductance dm ³ (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			0.3	0.2			
	Controlled flow	0.2	0.3	0.4	0.2			0.2	0.3	0.1			0.2	0.1	0.2			

Flow Direction Symbol on Body



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

How to Order

AS **200** **2** FSG **1** - **06** -

Body size

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

With indicator

Made to Order

Applicable tubing O.D.^{*1}

Metric size		Inch size	
23	ø3.2 ^{*2}	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.

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.

Indicator direction

Nil	0°		2	90°	
1	180°		3	270°	

Made to Order



Lubricant: Vaseline

-X12

Example) AS2002FSG-04-X12

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

-X21

Example) AS2002FSG-04-X21

* Not particle-free

Restrictor (Without check valve)

-X214

Example) AS2002FSG-04-X214

Clean Series

10-

Example) 10-AS2002FSG-04

*1 Fluorine grease is used.

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

Options

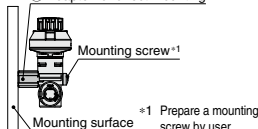
① Adapter for Direct Mounting

* For use when the mounting surface interferes with the bonnet.

Part no.	Applicable model
AS-10A1	AS1002FSG□
AS-20A1	AS2002FSG□
AS-25A1	AS2052FSG□
AS-30A1	AS3002FSG□

* The AS4002FSG□ can be mounted without the adapter.

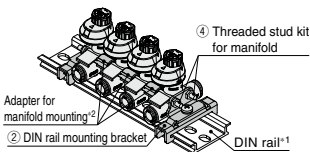
① Adapter for direct mounting



*1 Prepare a mounting screw by user.

② DIN Rail Mounting Bracket

Part no.	Applicable model
AS-10D	AS1002FSG□
AS-20D	AS2002FSG□
AS-25D	AS2052FSG□
AS-30D	AS3002FSG□
AS-40D	AS4002FSG□



Adapter for manifold mounting²

② DIN rail mounting bracket

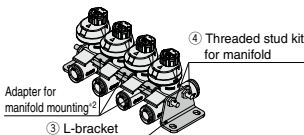
④ Threaded stud kit for manifold

*1 Prepare DIN rail by user.

*2 It is included in the threaded stud kit for manifold (excluding the AS4002FSG□). Refer to the following details of the kit.

③ L-Bracket

Part no.	Applicable model
AS-10L	AS1002FSG□
AS-20L	AS2002FSG□
AS-25L	AS2052FSG□
AS-30L	AS3002FSG□
AS-40L	AS4002FSG□



Adapter for manifold mounting²

③ L-bracket

④ Threaded stud kit for manifold

④ Threaded Stud Kit for Manifold

Part number				Applicable model	
4 stations	6 stations	8 stations	10 stations	Metric size	Inch size
AS-1AB	AS-3AB	AS-5AB	AS-7AB	AS1002FSG□-23	AS1002FSG□-01
				AS1002FSG□-04	AS1002FSG□-03
AS-2AB	AS-4AB	AS-6AB	AS-8AB AS-23AB	AS1002FSG□-06	AS1002FSG□-07
				AS2002FSG□-04	AS2002FSG□-03
AS-9AB	AS-10AB	AS-11AB	AS-12AB	AS2002FSG□-06	AS2002FSG□-07
				AS2002FSG□-06	AS2002FSG□-07
AS-13AB	AS-14AB	AS-15AB	AS-16AB	AS2052FSG□-06	AS2052FSG□-07
				AS2052FSG□-08	AS2052FSG□-09
AS-17AB	AS-19AB	AS-20AB	AS-22AB	AS3002FSG□-06	AS3002FSG□-07
				AS3002FSG□-08	AS3002FSG□-09
AS-24AB	AS-25AB	AS-25AB	AS-25AB	AS3002FSG□-10	AS3002FSG□-11
				AS3002FSG□-12	AS3002FSG□-11
AS-43B	AS-45B	AS-47B	AS-48B	AS4002FSG□-10	AS4002FSG□-11
				AS4002FSG□-12	AS4002FSG□-11
				AS4002FSG□-13	AS4002FSG□-13

Details of Threaded Stud Kit for Manifold

Part no.	Adapter for manifold mounting		Threaded stud		Accessories			
	Part no.	Quantity	Length	Quantity	Hexagon nut	Flat washer	Quantity	
AS-1AB	AS-10A	3	72	2	M3	4	M3	4
AS-2AB			90					
AS-3AB		5	104	2				
AS-4AB			114					
AS-5AB		7	135	2				
AS-6AB			143					
AS-7AB		9	167	2				
AS-8AB			170					
AS-23AB			180	2				
AS-9AB		AS-20A	3	90		2		
AS-10AB	5		135	2				
AS-11AB	7		180	2				
AS-12AB	9		220	2				
AS-13AB	AS-25A	3	111	2				
AS-14AB		5	147	2				
AS-15AB		7	191	2				
AS-16AB		9	236	2				
AS-17AB	AS-30A	3	111	2				
AS-24AB		3	119	2				
AS-19AB		5	179	2				
AS-20AB		7	236	2				
AS-21AB		9	258	2				
AS-22AB		9	277	2				
AS-25AB	9	293	2					
AS-43B	—		119	2				
AS-45B			179	2				
AS-47B			236	2				
AS-48B			277	2				

* AS4002FSG□ type can be mounted with the threaded stud kit only (Adapter for manifold mounting is not required).

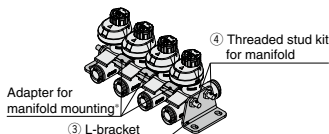
Ordering Example

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.) AS2002FSG-06

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

- Speed controller **AS2002FSG-06** 4 pcs.
- L-bracket **AS-20L** 2 pcs.
- Threaded stud kit for manifold **AS-9AB** 1 set (Adapter for manifold mounting is included.)



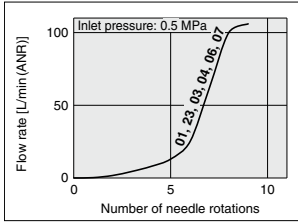
* It is included in the threaded stud kit for manifold (excluding the AS4002FSG□). Refer to the details of the kit shown on the left.

AS-FSG Series

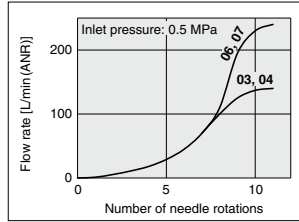
Needle Valve: Flow Rate Characteristics

* The flow rate characteristics are representative values.

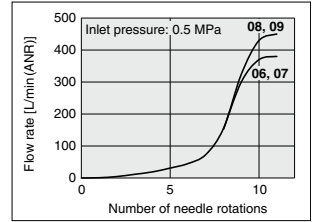
AS1002FSG □



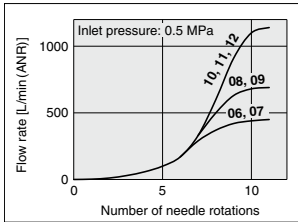
AS2002FSG □



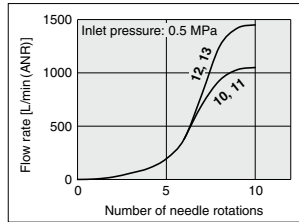
AS2052FSG □



AS3002FSG □

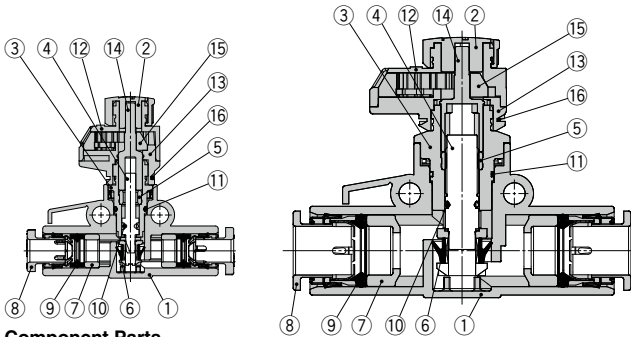


AS4002FSG □



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

Construction

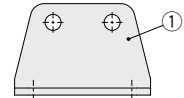


Component Parts

No.	Description	Material	Note
1	Body A	PBT	
2	Knob	POM	
3	Body B	PBT	
4	Needle	PBT	
5	Needle guide	Stainless steel	
6	U-seal	HNBR	
7	Spacer	PBT ^{*1}	
8	Cassette	—	
9	Seal	NBR	
10	O-ring	NBR	
11	O-ring	NBR	
12	Bonnet A	POM	
13	Bonnet B	POM	
14	Gear	PPS	
15	Indicator gear	POM	
16	Clip	Stainless steel	

*1 The AS3002FSG □-11, AS4002FSG □-11, AS4002FSG □-13 are made of stainless steel.

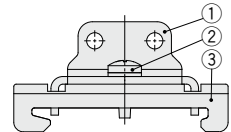
L-Bracket



Component Parts

No.	Description	Material
1	Bracket	Steel strip

DIN Rail Mounting Bracket



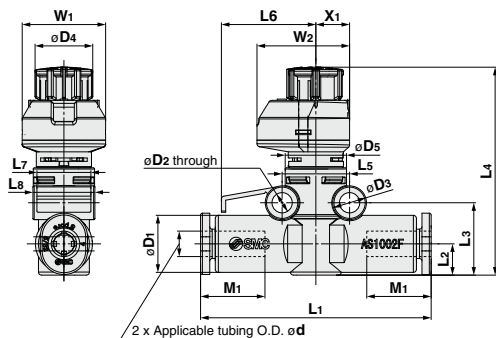
Component Parts

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

Speed Controller with Indicator Stainless Steel Series/In-line Type **AS-FSG Series**

Dimensions

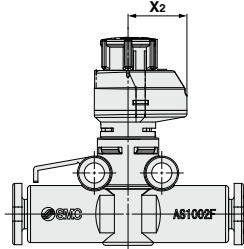
Indicator window direction: 0°



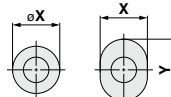
Front view

Right side view

Indicator window direction: 180°



Release button dimensions



Applicable tubing
O.D.: ø3.2, ø4, ø6
ø1/8", ø5/32"

Metric Size

Model	Applicable tubing O.D. ød	Release button		D2	D3	D4	D5	L1	L2	L3	L4*1		L5	L6	L7	L8	M1	W1	W2	X1	X2	Weight [g]			
		øX(X)	Y								Max.	Min.													
AS1002FSG□-23	3.2	8.4	6.7	9.5				36.6	5.1	11.8	36.4	33.9		11	15.4	8.8	10.1	13.5					5.2		
AS1002FSG□-04	4	9.3	7.7	10	3.3	5.5	9.4	10	37.6		40.1	6.1	12.8	37.4	34.9		13	13.6	15.1	5.5	9.6		5.5		
AS1002FSG□-06	6	11.6	9.7	12					40.1	6.1	12.8	37.4	34.9			12.3								6.6	
AS2002FSG□-04	4	9.3	7.7	10	3.3	5.5	12	12	41.3	6.3	13.4	44.5	43	12.6	17	10.5	12.3	13	20	21.5	6.5	15		9.5	
AS2002FSG□-06	6	11.6	9.7	12					43.1															10.4	
AS2052FSG□-06	6	12.8	11.5	—	4.3	7.8	13	16	54.2	7.6	17.2	49	47.6	17	22.5	12	16.1	17	19	21.5	24	7.8	16.2		16
AS2052FSG□-08	8	15.2	13.5	—					57.2	8.5	18.1	49.9	48.5												18.4
AS3002FSG□-06	6	13.2	11.5	—					60																23.8
AS3002FSG□-08	8	15.2	13.5	—					65	9.8	21.7	55.7	54.3												26
AS3002FSG□-10	10	18.5	16.5	—	4.5	8	16.6	20	70.4																30.6
AS3002FSG□-12	12	20.9	18.5	—					76	10.9	22.8	56.8	55.4												34.2
AS4002FSG□-10	10	18.5	16.5	—					76.9																42.5
AS4002FSG□-12	12	21.7	18.5	—	4.3	8	18.8	26	81.3	11.3	23.7	64.3	62.7	28	33	14	26.2	21	22	26	29	10	19		47.9

*1 Reference dimensions

Inch Size

Model	Applicable tubing O.D. ød	Release button		D2	D3	D4	D5	L1	L2	L3	L4*1		L5	L6	L7	L8	M1	W1	W2	X1	X2	Weight [g]			
		øX(X)	Y								Max.	Min.													
AS1002FSG□-01	1/8"	8.4	6.7	9.5				36.6	5.1	11.8	36.4	33.9		11	15.4	8.8	10.1	13.5						5.2	
AS1002FSG□-03	5/32"	9.3	7.7	10	3.3	5.5	9.4	10	37.6		40.1	6.2	12.9	37.5	35		13	13.6	15.1	5.5	9.6				5.5
AS1002FSG□-07	1/4"	12	10.9	—					40.1	6.2	12.9	37.5	35			12.8	13.5								6.7
AS2002FSG□-03	5/32"	9.3	7.7	10	3.3	5.5	12	12	41.3	6.3	13.4	44.5	43	12.6	17	10.5	12.3	13	20	21.5	6.5	15			9.5
AS2002FSG□-07	1/4"	12	10.9	—					43.2	6.5	13.6	44.7	43.2												10.6
AS2052FSG□-07	1/4"	13.2	12	—	4.3	7.8	13	16	53.4	7.6	17.2	49	47.6	17	22.5	12	16.1	17	19	21.5	24	7.8	16.2		16.4
AS2052FSG□-09	5/16"	15.2	13.5	—					57.2	8.5	18.1	49.9	48.5												18.4
AS3002FSG□-07	1/4"	13.2	12	—					59																23.6
AS3002FSG□-09	5/16"	15.2	13.5	—	4.5	8	16.6	20	65	9.8	21.7	55.7	54.3	21.8	25	12	20.5	19	24.5	28.5	9.3	19.2			26
AS3002FSG□-11	3/8"	18.5	16	—					69.8																38.1
AS4002FSG□-11	3/8"	18.5	16	—					76.9																50.2
AS4002FSG□-13	1/2"	21.7	20	—	4.3	8	18.8	26	81.3	11.3	23.7	64.3	62.7	28	33	14	26.2	21	22	26	29	10	19		57.4

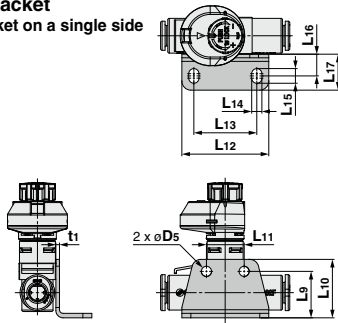
*1 Reference dimensions

AS-FSG Series

Dimensions

L-Bracket

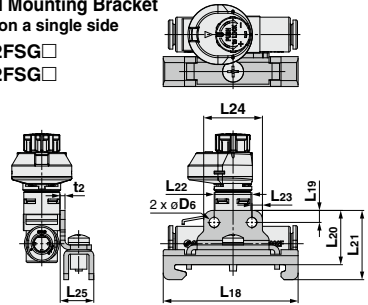
Bracket on a single side



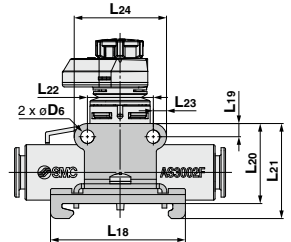
DIN Rail Mounting Bracket

Bracket on a single side

AS1002FSG□
AS2002FSG□



AS2052FSG□
AS3002FSG□
AS4002FSG□

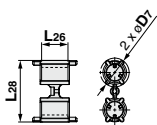


Part no.	Applicable model	D5	L9	L10	L11	L12	L13	L14	L15	L16	L17	t1
AS-10L	AS1002FSG□	3.4	14.8	18.3	11	27.5	19.5					
AS-20L	AS2002FSG□		15.6	19.6	12.6	29	21	3.4	4.9	7.3	12	1.2
AS-25L	AS2052FSG□		19.6	24.6	17	38	28					
AS-30L	AS3002FSG□	4.5	24.8	29.8	22	43	33	4.5	6.5	9.5	15.5	1.4
AS-40L	AS4002FSG□		25.7	30.7	28	49	39					

Part no.	Applicable model	D6	L18	L19	L20	L21	L22	L23	L24	L25	t2
AS-10D	AS1002FSG□		18.2	23.2	11				18		
AS-20D	AS2002FSG□	3.4	18.6	23.6	12.6			3.5	18.6		
AS-25D	AS2052FSG□		22	27	17				25.8	11.3	1.6
AS-30D	AS3002FSG□	4.5	27.2	32.2	22			4.4	30.8		
AS-40D	AS4002FSG□		28.1	33.1	28				36.8		

Adapter for Manifold Mounting

Part no.: AS-□□A

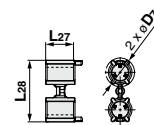


Part no.	Applicable model	D7	L26	L28
AS-10A	AS1002FSG□	9.2	4	18.7
AS-20A	AS2002FSG□	9.4	8.8	20.4
AS-25A	AS2052FSG□	11.4	6.3	27
AS-30A	AS3002FSG□	11.8	5.9	32.1

* The AS4002FSG□ can be mounted without the adapter.

Adapter for Direct Mounting

Part no.: AS-□□A1

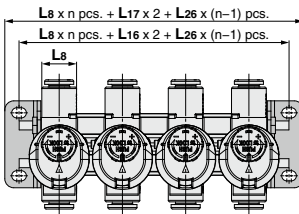


Part no.	Applicable model	D7	L27	L28
AS-10A1	AS1002FSG□	9.2	4.5	18.7
AS-20A1	AS2002FSG□	9.4	9.3	20.4
AS-25A1	AS2052FSG□	11.4	7.1	27
AS-30A1	AS3002FSG□	11.8	6.4	32.1

* The AS4002FSG□ can be mounted without the adapter.

L-Bracket

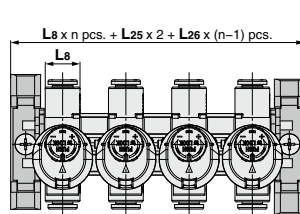
Brackets on both sides



- * Refer to page 999 for L8.
- * The figure above shows the manifold with speed controllers connected using two L-brackets, adapters and a threaded stud kit for manifold. Refer to page 997 for threaded stud kits for manifold.
- * Cannot connect the speed controller when the indicator window direction is 90° or 270°.

DIN Rail Mounting Bracket

Brackets on both sides

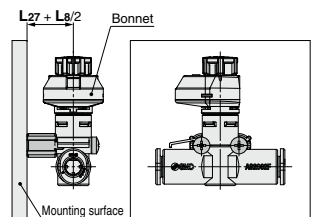


- * Refer to page 999 for L8.
- * The figure above shows the manifold with speed controllers connected using two DIN rail mounting brackets, adapters and a threaded stud kit for manifold. Refer to page 997 for threaded stud kits for manifold.
- * Cannot connect the speed controller when the indicator window direction is 90° or 270°.

Adapter

Direct mounting

* For use when the mounting surface interferes with the bonnet.



- * Refer to page 999 for L8.
- * The AS4002FSG□ can be mounted directly without the adapter.