

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

# 10-AS 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"
10-AS1002F	●	●	●				●	●	●			
10-AS2002F		●	●					●	●			
10-AS2052F			●	●					●	●		
10-AS3002F			●	●	●	●			●	●	●	
10-AS4002F					●	●					●	●

## 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
Grease	Fluorine grease
Cleanliness class (ISO class)	Class 5

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

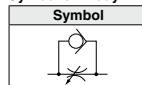
## Flow Rate and Sonic Conductance

Model	10-AS1002F-□A	10-AS2002F-□A	10-AS2052F-□A	10-AS3002F-□A	10-AS4002F-□A									
Tubing O.D.	Metric size Inch size	ø3.2 ø1/8"	ø4 ø5/32"	ø6 ø1/4"	ø4 ø5/32"	ø6 ø1/4"	ø6 ø1/4"	ø8 ø5/16"	ø6 ø1/4"	ø8 ø5/16"	ø10 ø3/8"	ø12 —	ø10 ø3/8"	ø12 ø1/2"
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			0.3	0.2	
	Controlled flow	0.2	0.3	0.4	0.2		0.2	0.3	0.1		0.2	0.1	0.2	

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

\* The same specifications also apply to the 10-AS-FG series (stainless steel type).

Flow Direction Symbol on Body



## How to Order

10-AS 200 2 F - 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

Push-lock type

Applicable tubing O.D.\*1

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

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

\*2 Use ø1/8" tubing.

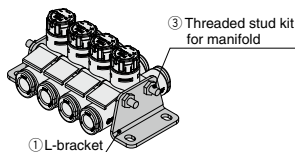
## Caution

Be sure to read this before handling the products.  
Refer to the back cover for safety instructions.  
For flow control equipment precautions, refer to the "Handling Precautions for SMC Products" and the "Operation Manual" on the SMC website:  
<http://www.smcworld.com>

## Options

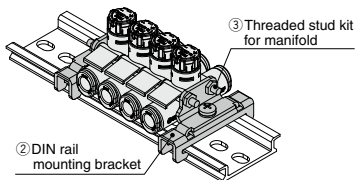
### ① L-Bracket

Part no.	Applicable model
<b>AS-10L</b>	10-AS1002F□
<b>AS-20L</b>	10-AS2002F□
<b>AS-25L</b>	10-AS2052F□
<b>AS-30L</b>	10-AS3002F□
<b>AS-40L</b>	10-AS4002F□



### ② DIN Rail Mounting Bracket

Part no.	Applicable model
<b>AS-10D</b>	10-AS1002F□
<b>AS-20D</b>	10-AS2002F□
<b>AS-25D</b>	10-AS2052F□
<b>AS-30D</b>	10-AS3002F□
<b>AS-40D</b>	10-AS4002F□



\* 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>	10-AS1002F□-23A	
			<b>AS-37B</b>	10-AS1002F□-04A	
	<b>AS-34B</b>	<b>AS-36B</b>	<b>AS-38B</b>	10-AS1002F□-06A	
			—	—	
<b>AS-32B</b>	<b>AS-34B</b>	<b>AS-36B</b>	<b>AS-37B</b>	10-AS2002F□-04A	
			<b>AS-38B</b>	10-AS2002F□-06A	
	<b>AS-41B</b>	<b>AS-42B</b>	<b>AS-44B</b>	<b>AS-45B</b>	10-AS2052F□-06A
				—	—
<b>AS-42B</b>	<b>AS-44B</b>	<b>AS-45B</b>	<b>AS-47B</b>	10-AS2052F□-08A	
				10-AS3002F□-06A	
		—			
		10-AS3002F□-08A			
	<b>AS-45B</b>	<b>AS-46B</b>	<b>AS-47B</b>	10-AS3002F□-10A	
				—	
		—			
		10-AS3002F□-12A			
<b>AS-43B</b>	<b>AS-45B</b>	<b>AS-47B</b>	<b>AS-48B</b>	10-AS4002F□-10A	
				—	
	<b>AS-45B</b>	<b>AS-47B</b>		<b>AS-48B</b>	10-AS4002F□-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>	10-AS1002F□-01A	
			<b>AS-37B</b>	10-AS1002F□-03A	
	<b>AS-34B</b>	<b>AS-36B</b>	<b>AS-38B</b>	10-AS1002F□-07A	
			—	—	
<b>AS-32B</b>	<b>AS-34B</b>	<b>AS-36B</b>	<b>AS-37B</b>	10-AS2002F□-03A	
			<b>AS-38B</b>	10-AS2002F□-07A	
	<b>AS-41B</b>	<b>AS-42B</b>	<b>AS-44B</b>	<b>AS-45B</b>	10-AS2052F□-07A
				—	10-AS2052F□-09A
<b>AS-42B</b>		<b>AS-44B</b>	<b>AS-45B</b>	<b>AS-47B</b>	10-AS3002F□-07A
					10-AS3002F□-09A
	<b>AS-45B</b>	<b>AS-46B</b>	<b>AS-47B</b>		10-AS3002F□-11A
					—
<b>AS-43B</b>	<b>AS-45B</b>	<b>AS-47B</b>	<b>AS-48B</b>	10-AS4002F□-11A	
				—	
	<b>AS-45B</b>	<b>AS-47B</b>		<b>AS-48B</b>	10-AS4002F□-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			

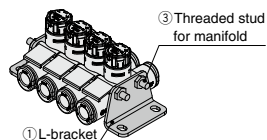
### Ordering Example

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.) 10-AS2002F-04A

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

- Speed controller  
**10-AS2002F-04A** ..... 4 pcs.
- L-bracket  
**AS-20L** ..... 2 pcs.
- Threaded stud kit for manifold  
**AS-32B** ..... 1 set

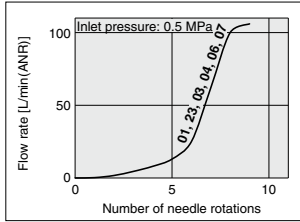


# 10-AS Series

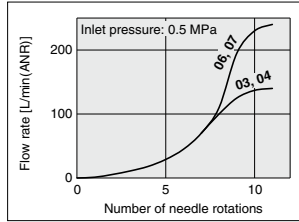
## Needle Valve: Flow Rate Characteristics

\* The flow rate characteristics are representative values.

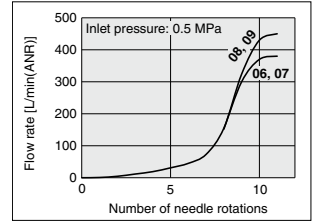
10-AS1002F-□A



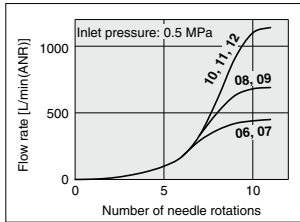
10-AS2002F-□A



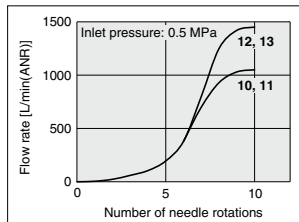
10-AS2052F-□A



10-AS3002F-□A

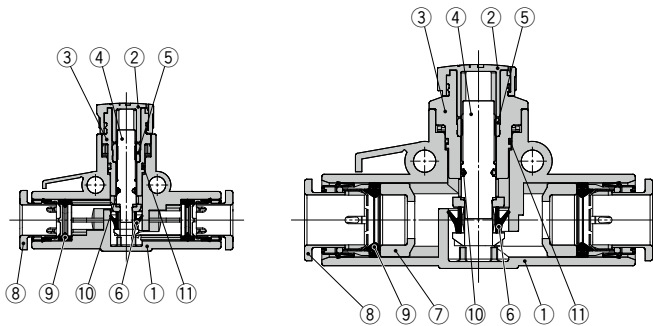


10-AS4002F-□A

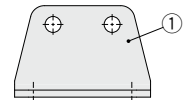


\* The numbers above the flow rate characteristic curves in the charts show the applicable tubing outside diameter as defined by the product number.

## Construction



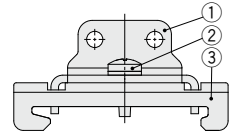
### L-Bracket



### Component Parts

No.	Description	Material
1	Bracket	Steel strip

### DIN Rail Mounting Bracket



### Component Parts

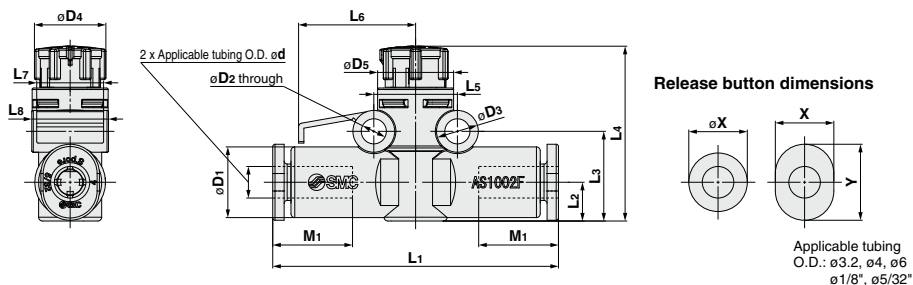
No.	Description	Material
1	Bracket	Steel strip
2	Cross recessed round head screw	Steel wire
3	Clasp	Steel strip

### Component Parts

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

\*1 The 10-AS3002F-11A, 10-AS4002F-11A, 10-AS4002F-13A are made of electroless nickel plated brass.

**Dimensions**



**Metric Size**

Model	Applicable tubing O.D.ød	øD1	Release button øX(X) Y		øD2	øD3	øD4	øD5	L1	L2	L3	L4*1		L5	L6	L7	L8	M1	Weight [g]
			Max.	Min.															
10-AS1002F□-23A	3.2	8.4	6.7	9.5	—	—	—	—	36.6	—	—	24.1	23	—	—	—	—	—	3.7
10-AS1002F□-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	13.5	4
10-AS1002F□-06A	6	11.6	9.7	12	—	—	—	—	40.1	6.1	12.8	25.1	24	—	—	—	12.3	—	5
10-AS2002F□-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	13.5	6.1
10-AS2002F□-06A	6	11.6	9.7	12	—	—	—	—	43.1	—	—	—	—	—	—	—	—	—	6.9
10-AS2052F□-06A	6	12.8	11.5	—	4.3	7.8	13	16	52	7.6	17.2	36.2	34.6	17	22.5	12	16.1	17	11.8
10-AS2052F□-08A	8	15.2	13.5	—	—	—	—	—	56	8.5	18.1	37.1	35.5	—	—	—	19	19	13.8
10-AS3002F□-06A	6	13.2	11.5	—	—	—	—	—	57.8	—	—	—	—	—	—	—	17	17	18.1
10-AS3002F□-08A	8	15.2	13.5	—	4.5	8	16.6	20	63.8	9.8	21.7	42.9	41.3	21.8	25	12	20.5	19	20
10-AS3002F□-10A	10	18.5	16.5	—	—	—	—	—	68.6	—	—	—	—	—	—	—	21	21	24.8
10-AS3002F□-12A	12	20.9	18.5	—	—	—	—	—	73.8	10.9	22.8	44	42.4	—	—	—	22.1	22	29.1
10-AS4002F□-10A	10	18.5	16.5	—	4.3	8	18.8	26	74.7	11.3	23.7	51.3	49.7	28	33	14	26.2	21	36.3
10-AS4002F□-12A	12	21.7	18.5	—	—	—	—	—	79.1	—	—	—	—	—	—	—	22	22	42

\*1 Reference dimensions

**Inch Size**

Model	Applicable tubing O.D.ød	øD1	Release button øX(X) Y		øD2	øD3	øD4	øD5	L1	L2	L3	L4*1		L5	L6	L7	L8	M1	Weight [g]
			Max.	Min.															
10-AS1002F□-01A	1/8"	8.4	6.7	9.5	—	—	—	—	36.6	—	—	24.1	23	—	—	—	—	—	3.7
10-AS1002F□-03A	5/32"	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	13.5	4
10-AS1002F□-07A	1/4"	12	10.9	—	—	—	—	—	40.1	6.2	12.9	25.2	24.1	—	—	—	12.8	—	5.2
10-AS2002F□-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	13.5	6.1
10-AS2002F□-07A	1/4"	12	10.9	—	—	—	—	—	43.2	6.5	13.6	31.6	30.2	—	—	—	12.8	—	7.1
10-AS2052F□-07A	1/4"	13.2	12	—	4.3	7.8	13	16	52.2	7.6	17.2	36.2	34.6	17	22.5	12	16.1	17	12.1
10-AS2052F□-09A	5/16"	15.2	13.5	—	—	—	—	—	56	8.5	18.1	37.1	35.5	—	—	—	19	19	13.8
10-AS3002F□-07A	1/4"	13.2	12	—	—	—	—	—	57.8	—	—	—	—	—	—	—	17	17	17.9
10-AS3002F□-09A	5/16"	15.2	13.5	—	4.5	8	16.6	20	63.8	9.8	21.7	42.9	41.3	21.8	25	12	20.5	19	20
10-AS3002F□-11A	3/8"	18.5	16	—	—	—	—	—	67.6	—	—	—	—	—	—	—	21	21	25
10-AS4002F□-11A	3/8"	18.5	16	—	4.3	8	18.8	26	74.7	11.3	23.7	51.3	49.7	28	33	14	26.2	21	36.7
10-AS4002F□-13A	1/2"	21.7	20	—	—	—	—	—	79.1	—	—	—	—	—	—	—	22	22	40.4

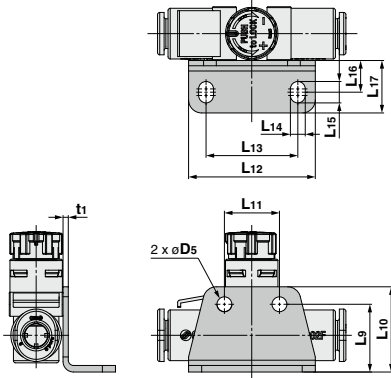
\*1 Reference dimensions

# 10-AS Series

## Dimensions

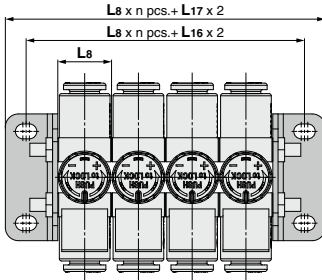
### L-Bracket

Bracket on a single side



Part no.	Applicable model	D5	L9	L10	L11	L12	L13	L14	L15	L16	L17	t1
AS-10L	10-AS1002F	3.4	14.8	18.3	11	27.5	19.5	3.4	4.9	7.3	12	1
AS-20L	10-AS2002F		15.6	19.6	12.6	29	21					1.2
AS-25L	10-AS2052F		19.6	24.6	17	38	28					
AS-30L	10-AS3002F	4.5	24.8	29.8	22	43	33	4.5	6.5	9.5	15.5	1.4
AS-40L	10-AS4002F		25.7	30.7	28	49	39					

### Brackets on both sides



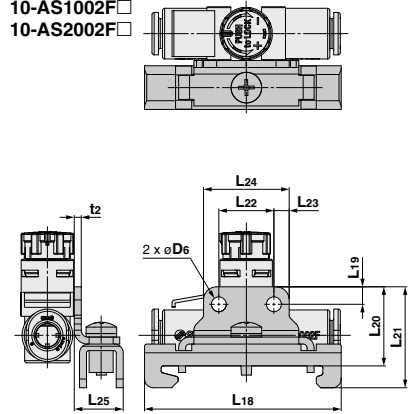
- \* Refer to page 6 for L<sub>8</sub>.
- \* The figure above shows the manifold with speed controllers connected using two L-brackets and a threaded stud kit for manifold. Refer to page 4 for threaded stud kits for manifold.

### DIN Rail Mounting Bracket

Bracket on a single side

10-AS1002F

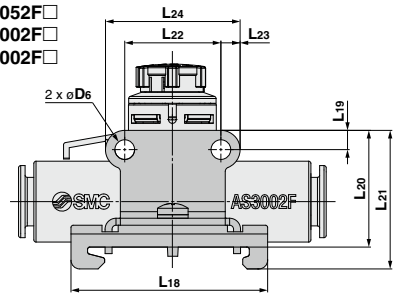
10-AS2002F



10-AS2052F

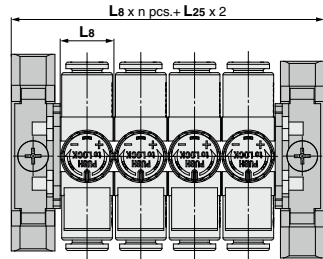
10-AS3002F

10-AS4002F



Part no.	Applicable model	D6	L18	L19	L20	L21	L22	L23	L24	L25	t2
AS-10D	10-AS1002F	3.4		3.5	18.2	23.2	11		3.5	18	
AS-20D	10-AS2002F			45	18.6	23.6	12.6			19.6	
AS-25D	10-AS2052F				22	27	17			25.8	11.3
AS-30D	10-AS3002F	4.5	4.4	27.2	32.2	22		4.4		30.8	
AS-40D	10-AS4002F				28.1	33.1	28			36.8	

### Brackets on both sides



- \* Refer to page 6 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 4 for threaded stud kits for manifold.