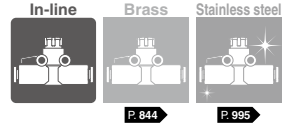


Speed Controller with One-touch Fittings

AS Series

RoHS

In-line Type

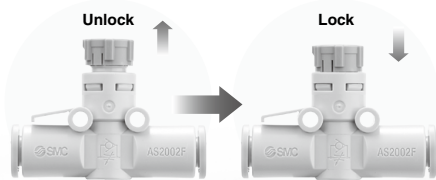


Reduces flow setting time!

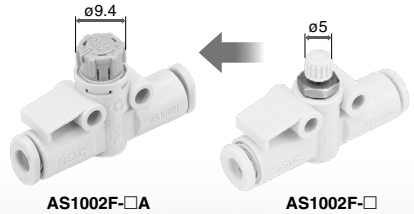
Easy to use

Push-lock type

• Easy to lock



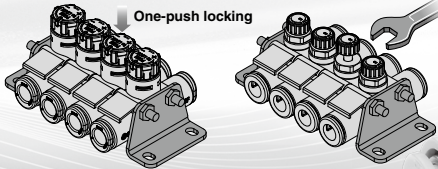
Knob O.D.: Almost doubled!



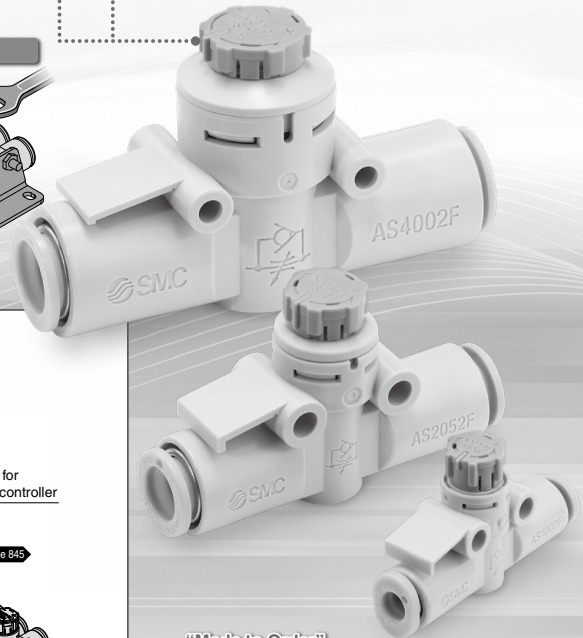
Push-lock type

Current type

One-push locking

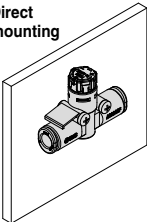


Much easier to lock than the current type which requires a wrench

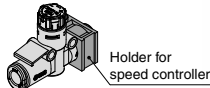


Mounting Variations

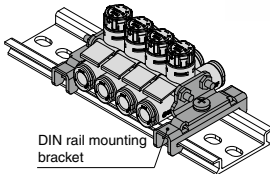
• Direct mounting



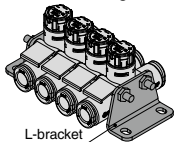
• Holder mounting [Page 846](#)



• DIN rail mounting [Page 845](#)



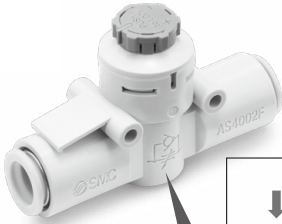
• L-bracket mounting [Page 845](#)



“Made to Order” section has been added! [Pages 844, 995](#)

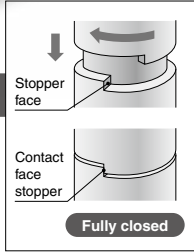
- Lubricant: Vaseline -X12
- Grease-free + Restrictor -X21
- Restrictor -X214
- Clean Series 10-

Flow Rate Reproducibility



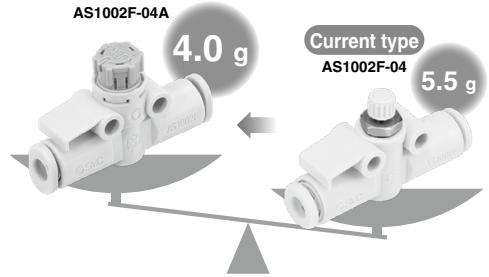
Improved reproducibility of flow rate

Stable knob position when fully closed (no flow rate) onto the contact face stopper (rotating stopper).
Minimal flow rate variations between knob rotations



Lightweight

Weight: Approx. **27% lighter**



Larger Knob

Current type



ø5 mm



Hard to hold small knob
Hard to make fine adjustments

Push-lock type



ø9.4 mm



Easy to turn large knob
Easy to make fine adjustments

AS1002F

AS2002F

AS2052F

AS3002F

AS4002F

Easy Identification of Product Type

By index plate

It is possible to identify the product when multiple controllers are mounted and identify the flow direction by attaching an identification label.



Index plate






(Example with identification label attached)

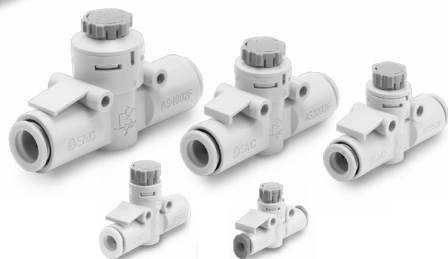
By color

Model	Release button color	
	Metric	Inch
Page 844 AS□2F	Light gray 	Orange
Page 995 AS□2FG	White 	White

Series Variations

⊙ The electroless nickel plating type is standardized. ⊙ The stainless steel type is standardized.

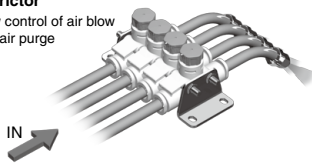
Model	Applicable tubing O.D.										Metal parts material	Applicable tubing material		
	Metric size					Inch size								
	3.2	4	6	8	10	12	1/8"	5/32"	1/4"	5/16"			3/8"	1/2"
 AS1002F	●	●	●				●	●	●				-Brass -Stainless steel	Nylon (T, TIA series) Soft nylon (TS, TISA series) Polyurethane (T, TIUB series) Fluoropolymer (TLM, TILM series) (TH, TIH series)
 AS2002F		●	●					●	●					
 AS2052F			●	●					●	●				
 AS3002F				●	●	●			●	●	●			
 AS4002F					●	●					●	●		



Made to Order (Page 844)

Restrictor

- Flow control of air blow and air purge



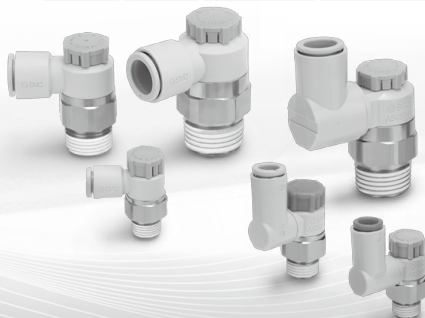
Grease-free (Seal: Fluorine-coated) + Restrictor (Without check valve)	-X21
Restrictor (Without check valve)	-X214

Push-Lock Series Variations

Speed Controller with One-touch Fitting AS Series

Push locking allows the needle to lock easily.

Body size	Port size	Applicable tubing O.D.	
		Metric size	Inch size
1 to 4	M5 to 1/2"	ø2 to ø16	ø1/8" to ø1/2"

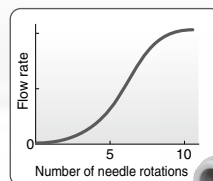


Refer to the Web Catalog for details.

Speed Controller with Indicator AS-FS Series

The numerical indication of flow rate knob rotations reduces flow setting time and setting errors!

Body size	Port size	Applicable tubing O.D.	
		Metric size	Inch size
1 to 4	M5 to 1/2"	ø2 to ø16	ø1/8" to ø1/2"



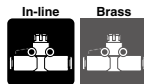
Refer to the Web Catalog for details.

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

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"
AS1002F	●	●	●				●	●	●			
AS2002F		●	●					●	●			
AS2052F			●	●					●	●		
AS3002F			●	●	●	●			●	●	●	
AS4002F					●	●					●	●

Specifications

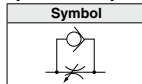
Fluid	Air
Proof pressure	1.5 MPa
Max. operating pressure	1 MPa
Min. operating pressure	0.1 MPa
Ambient and fluid temperatures	-5 to 60°C (No freezing)
Applicable tubing material	Nylon, Soft nylon, Polyurethane*1, FEP, PFA

*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	AS1002F-□A	AS2002F-□A	AS2052F-□A	AS3002F-□A	AS4002F-□A									
Tubing O.D.	Metric size Inch size	○3.2 ○1/8"	○4 ○5/32"	○6 ○1/4"	○4 ○5/32"	○6 ○1/4"	○6 ○1/4"	○8 ○5/16"	○6 ○1/4"	○8 ○5/16"	○10 ○3/8"	○12 ○1/2"	○10 ○3/8"	○12 ○1/2"
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.

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

How to Order

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

Made to Order

Push-lock type

Applicable tubing O.D.*1

Metric size	Inch size
23	○3.2 ^{*2}
04	○4
06	○6
08	○8
10	○10
12	○12
01	○1/8"
03	○5/32"
07	○1/4"
09	○5/16"
11	○3/8"
13	○1/2"

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

*2 Use 1/8" tubing.

Made to Order



Lubricant: Vaseline **-X12**

Example AS2002F-04A-X12

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

Example AS2002F-04A-X21

* Not particle-free

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

Example AS2002F-04A-X214

Clean Series **10-**

Example 10-AS2002F-04A

*1 Fluorine grease is used.

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

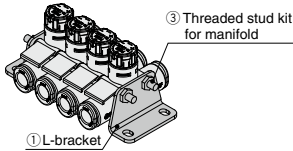
⚠ Caution

Be sure to read this before handling the products.
Refer to page 11 for safety instructions and pages 19 to 22 for flow control equipment precautions.

Options

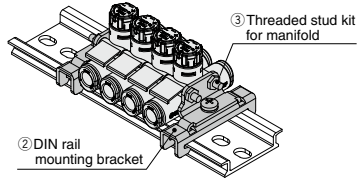
① L-Bracket

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



② DIN Rail Mounting Bracket

Part no.	Applicable model
AS-10D	AS1002F□
AS-20D	AS2002F□
AS-25D	AS2052F□
AS-30D	AS3002F□
AS-40D	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		
AS-32B	AS-33B	AS-35B	AS-36B	AS1002F□-23A	
			AS-37B	AS1002F□-04A	
	AS-34B	AS-36B	AS-38B	AS1002F□-06A	
			—	—	
AS-32B	AS-34B	AS-36B	AS-37B	AS2002F□-04A	
			AS-38B	AS2002F□-06A	
	AS-41B	AS-42B	AS-44B	AS-45B	AS2052F□-06A
				—	—
AS-42B	AS-44B	AS-45B	AS-47B	AS2052F□-08A	
				AS3002F□-06A	
				—	
	AS-43B	AS-45B	AS-47B	AS-48B	AS3002F□-08A
					AS3002F□-10A
					—
AS-42B	AS-44B	AS-45B	AS-47B	AS3002F□-12A	
				AS4002F□-10A	
	AS-43B	AS-45B	AS-47B	AS-48B	—
					AS4002F□-12A
—	—	—	—	—	

③ Threaded Stud Kit for Manifold: Inch Size

Part number				Applicable model	
4 stations	6 stations	8 stations	10 stations		
AS-32B	AS-33B	AS-35B	AS-36B	AS1002F□-01A	
			AS-37B	AS1002F□-03A	
	AS-34B	AS-36B	AS-38B	AS1002F□-07A	
			—	AS2002F□-03A	
AS-32B	AS-34B	AS-36B	AS-37B	—	
			AS-38B	AS2002F□-07A	
	AS-41B	AS-42B	AS-44B	AS-45B	AS2052F□-07A
				—	AS2052F□-09A
AS-42B	AS-44B	AS-45B	AS-47B	—	
				AS3002F□-07A	
				AS3002F□-09A	
	AS-43B	AS-45B	AS-47B	AS-48B	AS3002F□-11A
					—
					—
AS-42B	AS-44B	AS-45B	AS-47B	AS4002F□-11A	
				AS4002F□-13A	
—	—	—	—	—	

Details of Threaded Stud Kit for Manifold

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

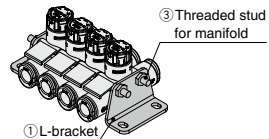
Ordering Example

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.) AS2002F-04A

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

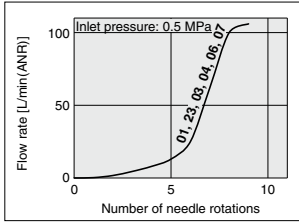
- Speed controller
AS2002F-04A 4 pcs.
- L-bracket
AS-20L 2 pcs.
- Threaded stud kit for manifold
AS-32B 1 set



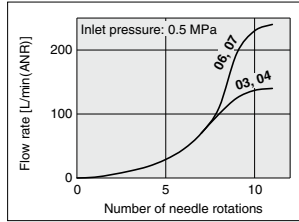
Needle Valve: Flow Rate Characteristics

* The flow rate characteristics are representative values.

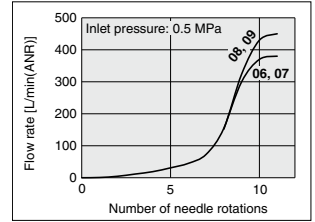
AS1002F-□A



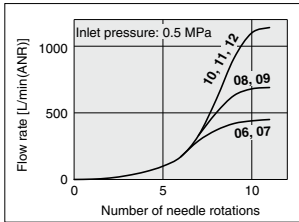
AS2002F-□A



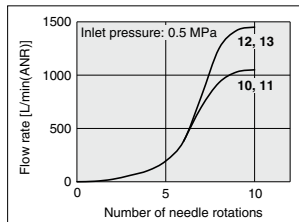
AS2052F-□A



AS3002F-□A

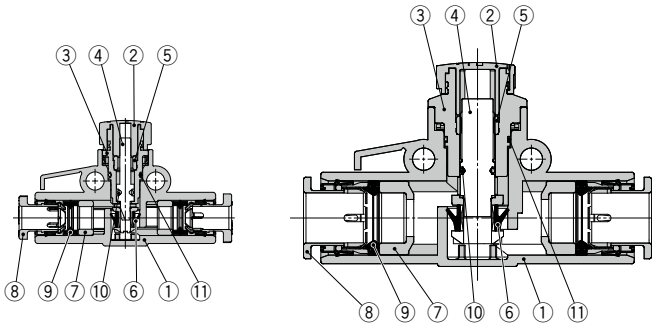


AS4002F-□A

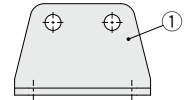


* The numbers above the flow rate characteristic curves in the charts show the applicable tubing outside diameter as defined by the product number.

Construction



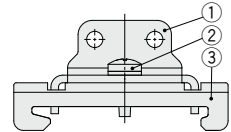
L-Bracket



Component Parts

No.	Description	Material
1	Bracket	Steel strip

DIN Rail Mounting Bracket



Component Parts

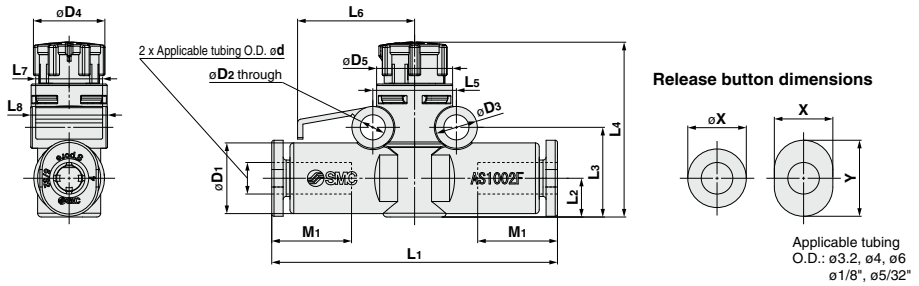
No.	Description	Material
1	Bracket	Steel strip
2	Cross recessed round head screw	Steel wire
3	Clasp	Steel strip

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 AS3002F-11A, AS4002F-11A, 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.															
AS1002F-23A	3.2	8.4	6.7	9.5	—	—	—	—	36.6	—	—	24.1	23	—	—	—	—	13.5	3.7
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	4
AS1002F-06A	6	11.6	9.7	12	—	—	—	—	40.1	6.1	12.8	25.1	24	—	—	—	12.3	13	5
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	6.1
AS2002F-06A	6	11.6	9.7	12	—	—	—	—	43.1	—	—	—	—	—	—	—	—	—	6.9
AS2052F-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
AS2052F-08A	8	15.2	13.5	—	—	—	—	—	57.2	8.5	18.1	37.1	35.5	—	—	—	—	19	13.8
AS3002F-06A	6	13.2	11.5	—	—	—	—	—	60	—	—	—	—	—	—	—	—	17	18.1
AS3002F-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
AS3002F-10A	10	18.5	16.5	—	—	—	—	—	70.4	—	—	—	—	—	—	—	—	21	24.8
AS3002F-12A	12	20.9	18.5	—	—	—	—	—	76	10.9	22.8	44	42.4	—	—	—	22.1	22	29.1
AS4002F-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	21	21	36.3
AS4002F-12A	12	21.7	18.5	—	—	—	—	—	81.3	—	—	—	—	—	—	—	22	22	42

*1 Reference dimensions

Inch Size

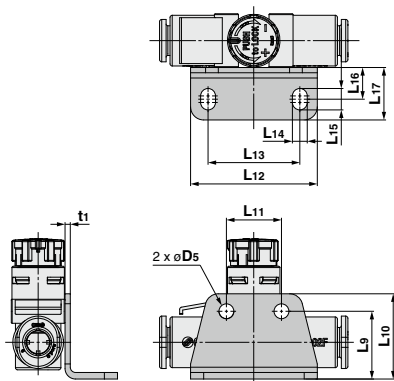
Model	Applicable tubing O.D.ød	øD1	Release button øX(X) Y		øD2	øD3	øD4	øD5	L1	L2	L3	L4*1		L5	L6	L7	L8	M1	Weight [g]
			Max.	Min.															
AS1002F-01A	1/8"	8.4	6.7	9.5	—	—	—	—	36.6	5.1	11.8	24.1	23	—	—	—	—	13.5	3.7
AS1002F-03A	5/32"	9.3	7.7	10	3.3	5.5	9.4	10	37.6	5.1	11.8	24.1	23	11	15.4	8.8	10.1	13	4
AS1002F-07A	1/4"	12	10.9	—	—	—	—	—	40.1	6.2	12.9	25.2	24.1	—	—	—	12.8	13.5	5.2
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	6.1
AS2002F-07A	1/4"	12	10.9	—	—	—	—	—	43.2	6.5	13.6	31.6	30.2	—	—	—	12.8	13.5	7.1
AS2052F-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
AS2052F-09A	5/16"	15.2	13.5	—	—	—	—	—	57.2	8.5	18.1	37.1	35.5	—	—	—	—	19	13.8
AS3002F-07A	1/4"	13.2	12	—	—	—	—	—	59	—	—	—	—	—	—	—	—	17	17.9
AS3002F-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
AS3002F-11A	3/8"	18.5	16	—	—	—	—	—	69.8	—	—	—	—	—	—	—	—	21	25
AS4002F-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	21	21	36.7
AS4002F-13A	1/2"	21.7	20	—	—	—	—	—	81.3	—	—	—	—	—	—	—	22	22	40.4

*1 Reference dimensions

Dimensions

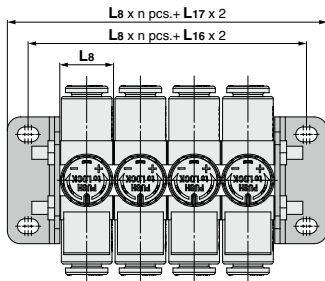
L-Bracket

Bracket on a single side



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

Brackets on both sides



* Refer to page 847 for L_a.

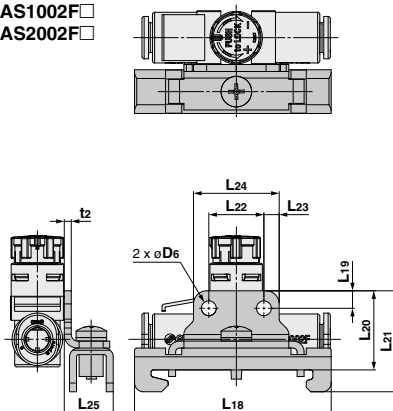
* The figure above shows the manifold with speed controllers connected using two L-brackets and a threaded stud kit for manifold. Refer to page 845 for threaded stud kits for manifold.

DIN Rail Mounting Bracket

Bracket on a single side

AS1002F□

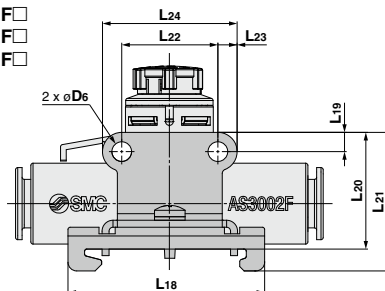
AS2002F□



AS2052F□

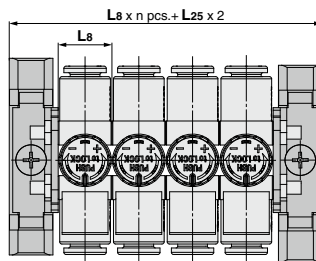
AS3002F□

AS4002F□



Part no.	Applicable model	D6	L18	L19	L20	L21	L22	L23	L24	L25	t2
AS-10D	AS1002F□	3.4		3.5	18.2	23.2	11		3.5	18	
AS-20D	AS2002F□			45	18.6	23.6	12.6				
AS-25D	AS2052F□				22	27	17		25.8	11.3	1.6
AS-30D	AS3002F□	4.5	4.4	27.2	32.2	22	22	4.4	30.8		
AS-40D	AS4002F□				28.1	33.1	28		36.8		

Brackets on both sides



* Refer to page 847 for L_a.

* 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 845 for threaded stud kits for manifold.

Related Equipment

Holder for Speed Controller

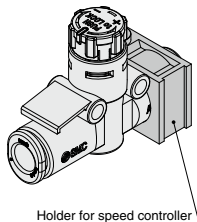
TMH Series

A holder for securing a speed controller with One-touch fittings (In-line type)

Possible to hold a single controller



Holder mounting



Specifications

Ambient temperature	-20 to 60°C
Material	Polypropylene
Color	White

Accessory: Cross Recessed Round Head Screw for Mounting (Zinc chromated)

Part no.		Size (Nominal x Length)	Quantity
Metric size	Inch size		
TMH-23J	TMH-01J	M3 x 15	1
TMH-04J	TMH-03J		
TMH-06J	TMH-07J	M3 x 20	
TMH-06	TMH-07	M4 x 25	
TMH-08	TMH-09		
TMH-10	—	M4 x 35	
TMH-12	TMH-13		

Series

Select the applicable holder/TMH for each speed controller from the table below.

Metric Size

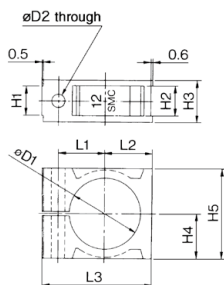
Tubing size	Applicable tubing					
	23	04	06	08	10	12
AS1002F□	ø3.2	ø4	ø6	ø8	ø10	ø12
AS2002F□	TMH-23J	TMH-04J	TMH-06J			
AS2052F□			TMH-06	TMH-08		
AS3002F□			TMH-07		TMH-10	TMH-12
AS4002F□						TMH-13

* The applicable TMH for the AS1002F□-02 is not available.

Inch Size

Tubing size	Applicable tubing					
	01	03	07	09	11	13
AS1002F□	ø1/8"	ø5/32"	ø1/4"	ø5/16"	ø3/8"	ø1/2"
AS2002F□	TMH-01J	TMH-03J	TMH-07J			
AS2052F□			TMH-07	TMH-09		
AS3002F□					TMH-10	TMH-13
AS4002F□						

Dimensions



Part no.		øD1	øD2	H1	H2	H3	H4	H5	L1	L2	L3	Symbol
Metric size	Inch size											
TMH-23J	TMH-01J	8.5										1/8J
TMH-04J	TMH-03J	9.4	3.3	4.5	4.6	7.5	6	12	7.2	6.6	18	4 5/32J
TMH-06J	—	11.7										6J
—	TMH-07J	12.1	3.3	6.3	6.4	9.3	7.7	15.4	8.5	8.3	21	1/4J
TMH-06	—	13.1										6
—	TMH-07	13.5	4.3	7.1	7.2	11.1	10	20	11	10.6	26.5	1/4
TMH-08	TMH-09	15.5										8 5/16
TMH-10	—	18.8										10
TMH-12	—	21.2	4.3	9.5	9.6	13.5	14	28	14.2	14.6	34	12
—	TMH-13	22										1/2