

Speed Controller with One-touch Fitting Elbow Type/Universal Type

Series AS

Minimizes installation time and cost

Reduces the mounting height and enables compact machinery design. Effective area is larger than the former model.

Tube swivels 360°

Universal type permits 360° piping swivel.

ø2 size added to applicable tubing sizes

- **Metric size** (Release button: White color)
ø2, ø3.2, ø4, ø6, ø8, ø10, ø12
- **Inch size** (Release button: Orange color)
ø1/8", ø5/32", ø3/16", ø1/4", ø5/16", ø3/8", ø1/2"

Maximum operating pressure 1 MPa max.

Applicable tubing materials

Nylon, soft nylon, and polyurethane tubing are applicable.

Retainer prevents accidental loss of needle.

Option

Hexagonal lock nut, Nickel plated option

Number of needle rotations has been increased (8 to 10 turns)

The increased number of needle rotations (8 to 10 turns) permits easy control at low speeds.

Model

Elbow type	Universal type	Port size	Applicable tubing O.D.														Applicable cylinder bore size (mm)			
			Metric size							Inch size										
			2	3.2	4	6	8	10	12	1/8"	5/32"	3/16"	1/4"	5/16"	3/8"	1/2"				
AS12□1F-M3	AS13□1F-M3	M3 x 0.5	● ⁽²⁾	●	●							●	●							2.5, 4, 6
AS12□1F-M5	AS13□1F-M5	M5 x 0.8	● ⁽²⁾	●	●	●						●	●	●	●					6, 10, 16, 20 ⁽¹⁾
AS12□1F-U10/32	AS13□1F-U10/32	10-32 UNF		●	●	●						●	●	●	●					6, 10, 16, 20
AS22□1F-01	AS23□1F-01	R 1/8		●	●	●	●	● ⁽²⁾				●	●	●	●	●				20, 25, 32
AS22□1F-02	AS23□1F-02	R 1/4			●	●	●	●				●	●	●	●	●				20, 25, 32, 40
AS32□1F-02	AS33□1F-02	R 1/4				●	●	●	●				●	●	●	●				40, 50, 63
AS32□1F-03	AS33□1F-03	R 3/8					●	●	●	●				●	●	●				40, 50, 63
AS42□1F-04	AS43□1F-04	R 1/2							●	●							●	●		63, 80, 100

Note 1) AS12□1F-M5-02 applicable cylinder bore sizes are 2.5, 4, 6.

Note 2) Elbow type only

Note 3) Meter-out and meter-in types can be visually differentiated by the lock nut. The lock nut on the meter-out type is electroless nickel plated, while the meter-in type is black zinc chromate plated.

Note 4) ● Marking is electroless nickel plated, provided as standard. (N specifications)

Specifications

Fluid	Air
Proof pressure	1.5 MPa (1.05 MPa ⁽¹⁾)
Max. operating pressure	1 MPa (0.7 MPa ⁽¹⁾)
Mini. operating pressure	0.1 MPa
Ambient and fluid temperature	-5 to 60°C (No freezing)
Number of needle rotations	10 turns (8 turns ⁽²⁾)
Applicable tubing material ⁽³⁾	Nylon, Soft nylon, Polyurethane ⁽⁴⁾
Option	With seal, Hexagon lock nut ⁽⁵⁾ , Electroless nickel plated ⁽⁶⁾

Note 1) In case of AS12□1F-M3-02, AS12□1F-M5-02

Note 2) In case of AS12□1F-M5 and AS12□1F-U10/32 types.

In case of AS13□1F-M5 and AS13□1F-U10/32

AS12□1F-M5-02: 10 turns.

Note 3) Use caution regarding the max. operating pressure when soft nylon or polyurethane tubing is used. (Refer to pages 371 and 372 for details.)

Note 4) In case of AS12□1F-M3-02 and AS12□1F-M5-02, polyurethane only.

Note 5) M3, M5, 10-32UNF type ports are not available with seals.

Note 6) Brass parts are all electroless nickel plated.

Flow Rate and Effective Area

Model	AS12□1F-M3 AS13□1F-M3 AS12□1F-M5-02	AS12□1F-M5 AS13□1F-M5	AS22□1F-01 AS23□1F-01		AS22□1F-02 AS23□1F-02		AS32□1F AS33□1F			AS42□1F AS43□1F			
			ø3.2, ø4	ø6, ø8, ø10	ø4	ø6	ø8, ø10	ø6	ø8	ø10, ø12	ø10	ø12	
Tubing O.D.	Metric size	ø2, ø3.2, ø4	ø3.2, ø4, ø6	ø3.2, ø4	ø6, ø8, ø10	ø4	ø6	ø8, ø10	ø6	ø8	ø10, ø12	ø10	ø12
	Inch size	ø1/8", ø5/32"	ø1/8", ø3/16", ø1/4", ø5/32"	ø1/8", ø5/32"	ø3/16", ø1/4", ø5/16"	ø5/32"	ø3/16"	ø1/4", ø5/16", ø3/8"	ø1/4"	ø5/16"	ø3/8"	ø3/8"	ø1/2"
Controlled flow (Free flow)	Flow rate L/min (ANR)	20	100	180	230	260	390	460	660	790	920	1580	1710
	Effective area (mm ²)	0.3	1.5	2.7	3.5	4	6	7	10	12	14	24	26

Note 1) Flow rate values are measured at 0.5 MPa and 20°C.

Note 2) U10/32 has the same specification as M5.

Elbow type

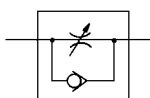
Applicable tubing O.D. ø2



Universal type



JIS Symbol



Flow Direction Symbols on Body

	Meter-out type	Meter-in type
Symbol		
JIS Symbol		

Caution

Be sure to read before handling.
Refer to front matters 58 and 59 for Safety Instructions and pages 412 to 414 for Flow Control Equipment Precautions.



Made to Order
(Refer to page 422 for details.)

Series AS

Series

Series	Applicable tube O.D.											Applicable cylinder bore size			
	Metric size						Inch size					(inch)		(mm)	
	2	3.2	4	6	8	10	12	1/8"	5/32"	1/4"	5/16"	3/8"	1/2"		
AS1002F	●		●	●				●	●	●				1/4"	2.5, 4, 6
AS2002F			●	●				●	●					1/4", 3/8", 5/8", 3/4"	6, 10, 16, 20
AS2052F			●	●				●	●					3/4", 1", 1 1/4", 1 1/2"	20, 25, 32, 40
AS3002F			●	●	●	●		●	●	●				1 1/2", 2", 2 1/2"	40, 50, 63
AS4002F				●	●					●	●			2 1/2", 3 1/4", 4"	63, 80, 100

Specifications

Fluid	Air
Proof pressure	218 psi (1.5 MPa) 152 psi <small>Note 1)</small> (1.05 MPa <small>Note 1)</small>)
Max. operating pressure	145 psi (1 MPa) 102 psi <small>Note 1)</small> (0.7 MPa <small>Note 1)</small>)
Min. operating pressure	15 psi (0.1 MPa)
Ambient and fluid temperature	23 to 140°F (-5 to 60°C) (No freezing)
Applicable tube material <small>Note 2)</small>	Nylon, Soft nylon, Polyurethane

Note 1) In case of AS1002F-02

Note 2) Use caution at the max. operating pressure when using soft nylon or polyurethane tubing.

(Refer to pages 371 and 372 of Best Pneumatics Vol. 6)

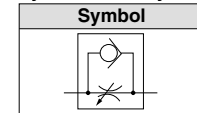
Note 3) Brass parts are all electroless nickel plated.

Flow Rate and Flow Coefficient

Series	AS1002F		AS2002F		AS2052F		AS3002F		AS4002F			
	Metric size	ø2	ø3.2, ø4, ø6	ø4	ø6	ø6	ø8	ø6	ø8	ø10, ø12	ø10	ø12
Tube O.D.	Inch size	—	ø1/8", ø5/32" ø1/4"	ø5/32"	ø1/4"	—	ø1/4" ø5/16"	ø1/4"	ø5/16"	ø3/8"	ø3/8"	ø1/2"
Controlled flow (Free flow)	Flow rate (scfm)	0.7	3.5	4.6	8.1	10.2	16.3	13.8	23.3	32.5	32.5	55.8
	Cv	0.02	0.08	0.11	0.19	0.25	0.39	0.33	0.56	0.78	0.78	1.33

Note) Flow rate values are measured at 73 psi and 70°F.

Flow Direction Symbol on Body



How to Order



AS 400 2F - 12 - [] - []

Body size	
100	M3, M5 standard
200	1/8 standard
205	1/4 standard
300	3/8 standard
400	1/2 standard

Made to Order	
Metric size	Inch size
02	ø2
23	ø3.2*
04	ø4
06	ø6
08	ø8
10	ø10
12	ø12

* Use ø1/8" tube.



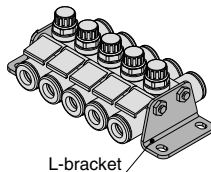
Lock nut option	
Nil	Hexagon lock nut
J	Round lock nut

With one-touch fittings

Options

L-bracket

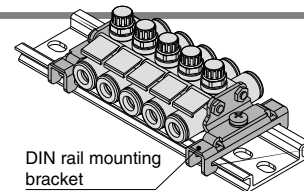
Part no.	Applicable series
AS-12L	AS1002F-02
AS-10L	AS1002F
AS-20L	AS2002F
AS-25L	AS2052F
AS-30L	AS3002F
AS-40L	AS4002F



L-bracket

DIN rail mounting bracket

Part no.	Applicable series
AS-10D	AS1002F
AS-20D	AS2002F
AS-25D	AS2052F
AS-30D	AS3002F
AS-40D	AS4002F



DIN rail mounting bracket

* Bracket for AS1002F-02 is not available.

* Prepare DIN rail by user.

Part no. list of threaded stud kit for manifold

Model		4 stations	6 stations	8 stations	10 stations
Metric size	Inch size				
AS1002F-02	—	AS-31B	AS-32B	AS-33B	AS-34B
AS1002F-23	AS1002F-01	AS-32B	AS-34B	AS-33B	AS-34B
AS1002F-04	AS1002F-03			AS-35B	AS-36B
AS1002F-06	—			AS-36B	AS-37B
—	AS1002F-07			AS-38B	AS-38B
AS2002F-04	AS2002F-03	AS-32B	AS-34B	AS-35B	AS-37B
AS2002F-06	—			AS-36B	AS-38B
—	AS2002F-07			AS-36B	AS-38B
AS2052F-06	—			AS-36B	AS-38B
AS2052F-08	AS2052F-09	AS-41B	AS-42B	AS-44B	AS-45B
AS3002F-06	—	AS-42B	AS-44B	AS-45B	AS-47B
—	AS3002F-07			AS-46B	AS-47B
AS3002F-08	AS3002F-09			AS-46B	AS-47B
AS3002F-10	—			AS-46B	AS-47B
—	AS3002F-11			AS-46B	AS-47B
AS3002F-12	—			AS-46B	AS-47B
AS4002F-10	—	AS-43B	AS-45B	AS-47B	AS-48B
—	AS4002F-11				
AS4002F-12	—				
—	AS4002F-13	AS-43B	AS-45B	AS-47B	AS-48B

Details of threaded stud kit for manifold

Part no.	Threaded stud		Accessories							
	Length (mm)	pcs.	Hexagon nut	pcs.	Flat washer	pcs.				
AS-31B	38	2	M3	4	M3	4				
AS-32B	62	2								
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					M4	4	M4	4
AS-42B	111	2								
AS-43B	119	2								
AS-44B	147	2								
AS-45B	179	2								
AS-46B	191	2								
AS-47B	236	2								
AS-48B	277	2								

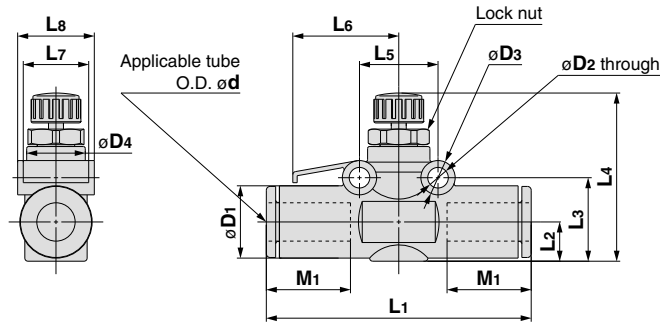
* Precautions when options are ordered

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-04	When connecting 4 pcs. and mounting L-brackets on both sides	AS2002F-044 pcs.
		AS-20L2 pcs.
		AS-32B1 pc.

Series AS

Dimensions



Metric Size

Model	Applicable tube O.D. ød	D1	D2	D3	D4	L1	L2	L3	L4 (Note)		L5	L6	L7	L8	M1	Weight (g)
									MAX.	MIN.						
AS1002F-02	2	6	3.2	5	6	25.4	3.4	7.9	20.9	18.4	11	9.8	5	6.7	8.8	3
AS1002F-23	3.2	8.4	3.3	5.5	9.1	36	4.4	11.1	23.8	21	11	15.4	8.8	9.8	12.7	5
AS1002F-04	4	9.3				37	5.1	11.8	24.5	21.7				10.1		5.5
AS1002F-06	6	11.6				39.5	6.1	12.8	25.5	22.7				12.3		6.5
AS2002F-04	4	9.3	3.3	5.5	10	40.7	5.2	12.3	28.9	25.4	12.6	17	10.5	11.5	12.7	8.5
AS2002F-06	6	11.6				42.5	6.3	13.4	30	26.5				12.3	9.5	
AS2052F-06	6	12.8	4.3	7.8	14	53.2	6.7	16.3	33.2	28.2	17	22.8	12	15.7	17	19
AS2052F-08	8	15.2				57.2	8	17.6	34.5	29.5				16.1	22	
AS3002F-06	6	13.2	4.3	8	19.3	59	7.4	19.3	38.6	33.6	22	25	12	20.5	17	36
AS3002F-08	8	15.2				65	8.2	20.1	39.4	34.4					18	38
AS3002F-10	10	18.5				70.8	9.8	21.7	41	36					21	42
AS3002F-12	12	20.9				76	10.9	22.8	42.1	37.1					22.1	44
AS4002F-10	10	18.5	4.3	8	25	76.9	10.3	22.7	51.6	44.1	28	33	14	26.2	21	76
AS4002F-12	12	21.7				81.3	11.3	23.7	52.6	45.1					22	82

Note) Reference dimensions

Inch Size

Model	Applicable tube O.D. ød	D1	D2	D3	D4	L1	L2	L3	L4 (Note)		L5	L6	L7	L8	M1	Weight (g)
									MAX.	MIN.						
AS1002F-01	1/8"	8.4	3.3	5.5	9.1	36	4.5	11.2	23.8	21	11	15.4	8.8	9.8	12.7	5
AS1002F-03	5/32"	9.3				37	5.2	11.9	24.5	21.7				10.1		5.5
AS1002F-07	1/4"	12				39.5	6.1	12.8	25.5	22.7				12.8		6.5
AS2002F-03	5/32"	9.3	3.3	5.5	10	40.7	5.2	12.3	28.9	25.4	12.6	17	10.5	11.5	12.7	8.5
AS2002F-07	1/4"	12				42.6	6.5	13.6	30.2	26.7				12.8	9.5	
AS2052F-07	1/4"	13.2	4.3	7.8	14	53.4	6.9	16.5	33.4	28.4	17	22.8	12	15.7	17	19
AS2052F-09	5/16"	15.2				57.2	8	17.6	34.5	29.5				16.1	22	
AS3002F-07	1/4"	13.2	4.3	8	19.3	59	7.4	19.3	38.6	33.6	22	25	12	20.5	17	35
AS3002F-09	5/16"	15.2				65	8.2	20.1	39.4	34.4					18	38
AS3002F-11	3/8"	18.5				69.8	9.8	21.7	41	36					21	52
AS4002F-11	3/8"	18.5				76.9	10.3	22.7	51.6	44.1					21	86
AS4002F-13	1/2"	21.7	4.3	8	25	81.3	11.3	23.7	52.6	45.1	28	33	14	26.2	22	95

Note) Reference dimensions

It is possible to tighten the lock nut (hexagon) manually.
 If the nut needs to be fixed more firmly, retighten it with a tool. When using a tool, the nut needs to be tightened to the recommended tightening torque shown in the table.
 As a guide, it should be tightened by 15 to 30° with a tool after tightening it manually.
 Be careful not to damage the lock nut by applying too much torque.

Series	Proper tightening torque (ft.lb)
AS1002F-02	0.05
AS1002F	0.15
AS2002F	0.22
AS2052F	0.74
AS3002F	1.5
AS4002F	3