

Series 10-AS-F

Speed Controller with One-touch Fitting
(Elbow type/Universal type)

RoHS

How to Order

Clean series

Body size
 1 — M3, M5 standard
 2 — 1/8, 1/4 standard
 3 — 3/8 standard
 4 — 1/2 standard

Type
 2 — Elbow
 3 — Universal

Control type
 0 — Meter-out
 1 — Meter-in

With One-touch fittings

10 - AS 2 2 1 1 F - 01 - 06 (N) -

Port size
 M3 — M3 x 0.5
 M5 — M5 x 0.8
 01 — R1/8
 02 — R1/4
 03 — R3/8
 04 — R1/2


Applicable tubing O.D. (Note)
Metric size
 02 — ø2
 23 — ø3.2 *
 04 — ø4
 06 — ø6
 08 — ø8
 10 — ø10
 12 — ø12

Note) Refer to the following Model list for selection of applicable tubing O.D.
 * Use ø1/8" tubing.

Lock nut option
 Nil — Hexagon lock nut
 J — Round lock nut

Nickel plated specification
 Add "N" only for piping port size of R1/2.
 "N" is not necessary for M3, M5, R1/8, R1/4, and R3/8.

Option
 Nil — None
 S — With seal



Model

Elbow type	Universal type	Bore size	Applicable tubing O.D.							
			Metric size							
			2	3.2	4	6	8	10	12	
10-AS12□1F-M3	10-AS13□1F-M3	M3 x 0.5	● ^{Note 1)}	●	●					
10-AS12□1F-M5	10-AS13□1F-M5	M5 x 0.8	● ^{Note 1)}	●	●	●				
10-AS22□1F-01	10-AS23□1F-01	R1/8		●	●	●	●	● ^{Note 1)}		
10-AS22□1F-02	10-AS23□1F-02	R1/4			●	●	●	●		
10-AS32□1F-02	10-AS33□1F-02	R1/4				●	●	●	●	
10-AS32□1F-03	10-AS33□1F-03	R3/8				●	●	●	●	●
10-AS42□1F-04	10-AS42□1F-04	R1/2						●	●	●

Note 1) Elbow type only

Note 2) Applicable tubing I.D. of 10-AS12□1F-M5-02 is 2.5, 4 and 6.

Note 3) Visual distinction between meter-out and meter-in types.

Meter-out and meter-in types can be visually differentiated by the lock nut.

The hexagon lock nut on the meter-out type is zinc chromated, while the meter-in type is black zinc chromated.

The round lock nut (J) on the meter-out type is electroless nickel plated, while the meter-in type is black zinc chromated.

Specifications

Proof pressure	1.5 MPa (1.05 MPa ^{Note 1)})
Max. operating pressure	1 MPa (0.7 MPa ^{Note 1)})
Min. operating pressure	0.1 MPa
Ambient and fluid temperature	-5 to 60 °C (No freezing)
Applicable tubing material	Polyurethane ^{Note 2)}
Option^{Note 3)}	With seal, round lock nut
Grease	Fluorine grease
Cleanliness class (ISO class)	Class 5

Note 1) 10-AS12□1F-M3-02 and 10-AS12□1F-M5-02 types

Note 2) The maximum operating pressure for polyurethane is 0.8 MPa (at 20°C). (Refer to the **WEB catalog** for details.)

Note 3) M3 and M5 type ports are not available with seal.

Flow Rate and Sonic Conductance

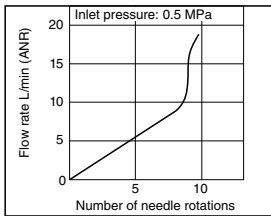
Model		10-AS12□1F-M3 10-AS13□1F-M3 10-AS12□1F-M5-02	10-AS12□1F-M5 10-AS13□1F-M5	10-AS22□1F-01 10-AS23□1F-01	10-AS22□1F-02 10-AS23□1F-02	10-AS32□1F 10-AS33□1F	10-AS42□1F 10-AS43□1F
Tubing O.D.	Metric size	ø2, ø3.2, ø4	ø3.2, ø4, ø6	ø3.2, ø4, ø6, ø8, ø10	ø4, ø6, ø8, ø10	ø6, ø8, ø10, ø12	ø10, ø12
Controlled flow	Flow rate L/min (ANR)	20	100	180 230	260 390 460	660 790 920	1580 1710
Free flow	Sonic conductance dm ³ /(s·bar)	0.06	0.28	0.5 0.64	0.72 1.1 1.3	1.8 2.2 2.6	4.4 4.8
Critical pressure ratio	Controlled flow	0.2	0.2	0.25	0.3	0.25	0.25
	Free flow	0.4	0.4	0.2	0.3	0.2	0.3

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

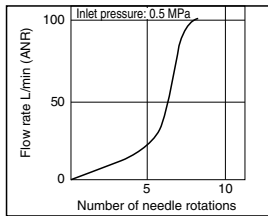
Note 2) U10/32 has the same specification as M5.

Needle Valve / Flow Rate Characteristics

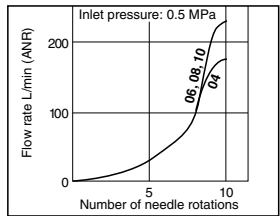
10-AS1201F-M3, 10-AS1211F-M3
10-AS1201F-M5-02, 10-AS1211F-M5-02
10-AS1301F-M3, 10-AS1311F-M3



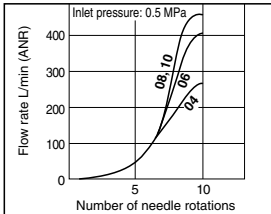
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10-AS1301F-M5, 10-AS1311F-M5



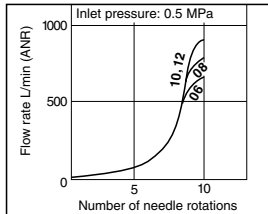
10-AS2201F-01, 10-AS2211F-01
10-AS2301F-01, 10-AS2311F-01



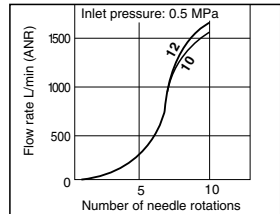
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10-AS2301F-02, 10-AS2311F-02



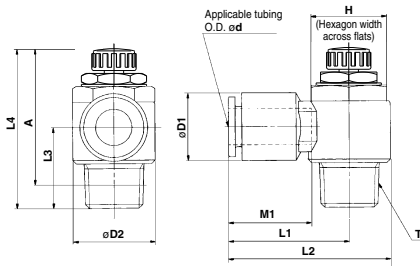
10-AS3201F, 10-AS3211F
10-AS3301F, 10-AS3311F



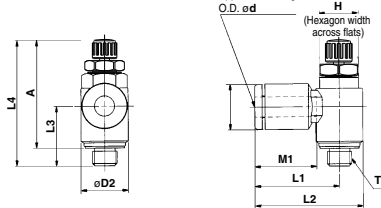
10-AS4201F, 10-AS4211F
10-AS4301F, 10-AS4311F



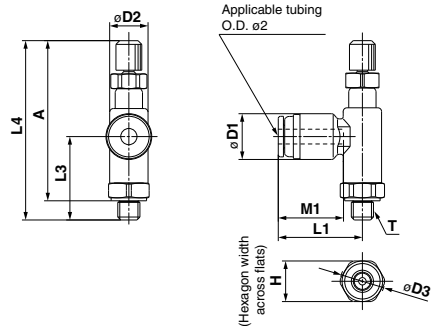
Elbow type



M3 port / M5 port



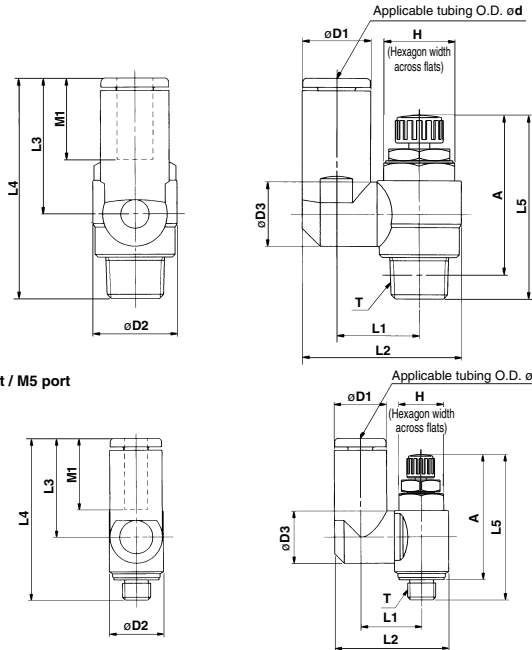
$\phi 2$ tubing type
10-AS12□1F-M3-02
10-AS12□1F-M5-02



Model	Applicable tubing O.D. ϕd	T	H	D1	D2	D3	L1	L2	L3	L4		A*		M1	Weight (g)	
										MAX.	MIN.	MAX.	MIN.			
10-AS12□1F-M3-02	2	M3 x 0.5	5.5	6	5.2	6	11.4	—	11	MAX. 26.8	MIN. 24.3	MAX. 24.3	MIN. 21.8	8.8	2.4	
10-AS12□1F-M3-23	3.2			8.4	7.2	—	16.1	19.7	10.5	26.6	24.1	24	21.5	12.7	4	
10-AS12□1F-M3-04	4			9.3	—	—	—	—	10	—	—	—	—	—	—	—
10-AS12□1F-M5-02	2	M5 x 0.8	8	7	6	5.2	7.5	11.4	—	11.5	27.3	24.8	24.3	21.8	8.8	3
10-AS12□1F-M5-23	3.2			8.4	—	—	17.3	22.1	12.3	28.6	25.8	25	22.2	12.7	7	
10-AS12□1F-M5-04	4			9.3	9.6	—	—	—	18.1	22.9	11.7	—	—	—	13.5	—
10-AS12□1F-M5-06	6	R1/8	12	11.6	—	—	—	—	—	—	—	—	—	—	—	
10-AS22□1F-01-23	3.2			9.3	—	—	20.4	27.5	14.3	36.1	31.1	32.1	27.1	12.7	16	
10-AS22□1F-01-04	4			11.6	14.2	—	—	—	—	—	—	—	—	13.5	17	
10-AS22□1F-01-06	6	R1/4	17	15.2	—	—	25.3	32.4	—	—	—	—	—	18.5	19	
10-AS22□1F-01-10	8			18.5	—	—	33.1	40.2	15	—	—	—	—	21	21	
10-AS22□1F-02-04	4			10.4	—	—	25.2	34.4	—	18.2	40.4	35.4	34.4	29.4	16	32
10-AS22□1F-02-06	6	R1/4	19	12.8	18.5	—	27.2	36.4	—	—	—	—	—	17	—	
10-AS22□1F-02-08	8			15.2	—	—	31.8	43.3	21.8	48.8	43.8	42.8	37.8	18.5	34	
10-AS22□1F-02-10	10			18.5	—	—	32.8	44.3	20	—	—	—	—	21	36	
10-AS32□1F-02-06	6	R3/8	19	12.8	23	—	27.8	39.3	—	—	—	—	—	17	60	
10-AS32□1F-02-08	8			15.2	—	—	29.5	41	20.9	46.5	41.5	40.2	35.2	18.5	63	
10-AS32□1F-02-10	10			18.5	—	—	31.8	43.3	20.9	46.5	41.5	40.2	35.2	21	67	
10-AS32□1F-02-12	12	R3/8	24	20.9	—	—	32.8	44.3	—	—	—	—	—	22	69	
10-AS32□1F-03-06	6			12.8	—	—	27.8	39.3	—	—	—	—	—	17	55	
10-AS32□1F-03-08	8			15.2	—	—	29.5	41	20.9	46.5	41.5	40.2	35.2	18.5	57	
10-AS32□1F-03-10	10	R1/2	24	18.5	—	—	31.8	43.3	—	—	—	—	—	21	59	
10-AS32□1F-03-12	12			20.9	—	—	32.8	44.3	—	—	—	—	—	22	61	
10-AS42□1F-04-10	10			18.5	28.6	—	33.6	47.9	25.4	57.6	50.1	49.6	42.1	21	100	
10-AS42□1F-04-12	12	R1/2	24	21.7	—	—	34.6	48.9	—	—	—	—	—	22	101	

* Reference thread dimensions after installation.

Universal type



M3 port / M5 port

Model	Applicable tubing O.D. ød	T	H	D1	D2	D3	L1	L2	L3	L4	L5		A*		M1	Weight (g)
											MAX.	MIN.	MAX.	MIN.		
10-AS13□1F-M3-23	3.2	M3 x 0.5	5.5	8.4	7.2	7.2	10.1	17.9	17.6	28.3	26.6	24.1	24	21.5	12.7	4
10-AS13□1F-M3-04	4			9.3				18.3	17.9	28.6						5
10-AS13□1F-M5-23	3.2			8.4				19.8	17.5	28.7						7
10-AS13□1F-M5-04	4	M5 x 0.8	8	9.3	9.6	9.3	10.8	20.3	20.6	28.7	28.6	25.8	25	22.2	13.5	6
10-AS23□1F-01-23	3.2			11.6				21.4	20.6	28.7						17
10-AS23□1F-01-04	4			8.4				24.4	17.5	31.8						18.5
10-AS23□1F-01-06	6	R1/8	12	9.3	14.2	10.9	14	26.9	22.9	37.2	36.1	31.1	32.1	27.1	13.5	21
10-AS23□1F-01-08	8			15.2				30.9	28.2	41.7						17
10-AS23□1F-02-04	4			10.4				24.9	17.5	31.8						18
10-AS23□1F-02-06	6	R1/4	17	12.8	18.5	10.9	16.2	30.6	21.9	40.1	40.4	35.4	34.4	29.4	16	32
10-AS23□1F-02-08	8			15.2				34	25.2	42.6						17
10-AS23□1F-02-10	10			18.5				35.2	28.2	45.6						33
10-AS33□1F-02-06	6	R1/4	17	12.8	18.5	12.9	20.6	38.5	25.2	47	48.8	43.8	42.8	37.8	17.5	36
10-AS33□1F-02-08	8			15.2				39.7	28.2	50						21
10-AS33□1F-02-10	10			18.5				43.7	32.6	53.5						40
10-AS33□1F-02-12	12	R1/4	19	20.9	23	16.2	23	44.9	34.4	56.2	46.5	41.5	40.2	35.2	21	60
10-AS33□1F-03-06	6			12.8				38.5	25.2	46.1						63
10-AS33□1F-03-08	8			15.2				39.7	28.2	49.1						67
10-AS33□1F-03-10	10	R3/8	19	18.5	23	12.9	20.6	43.7	32.6	53.5	46.5	41.5	40.2	35.2	18.5	59
10-AS33□1F-03-12	12			20.9				44.9	34.4	55.3						63
10-AS43□1F-04-10	10			18.5				25.8	49.4	32.6						58
10-AS43□1F-04-12	12	R1/2	24	21.7	28.6	19.4	26.8	52	36.3	61.7	57.6	50.1	49.6	42.1	22	104
				21.7				26.8	52	36.3						61.7

* Reference thread dimensions after installation.

Directional Control Valves
Air Cylinders
Rotary Actuators
Air Grippers
Air Preparation Equipment
Modular F. R.
Pressure Control Equipment
Fittings & Tubing
Flow Control Equipment
Pressure Switches/ Pressure Sensors