

# 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**



**Elbow**



**Universal**

**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	● <sup>Note 1)</sup>	●	●					
10-AS12□1F-M5	10-AS13□1F-M5	M5 x 0.8	● <sup>Note 1)</sup>	●	●	●				
10-AS22□1F-01	10-AS23□1F-01	R1/8		●	●	●	●	● <sup>Note 1)</sup>		
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

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

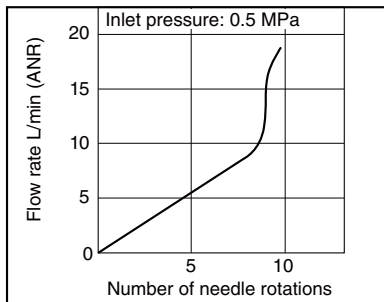
Model		10-AS12□1F-M3 10-AS13□1F-M3 10-AS12□1F-M5-02	10-AS12□1F-M5 10-AS13□1F-M5	10-AS22□1F-01 10-AS23□1F-01	10-AS22□1F-02 10-AS23□1F-02	10-AS32□1F 10-AS33□1F	10-AS42□1F 10-AS43□1F
Tubing O.D.	Metric size	ø2, ø3.2, ø4	ø3.2, ø4, ø6	ø3.2, ø4 ø6, ø8, ø10	ø4 ø6 ø8, ø10	ø6 ø8 ø10, ø12	ø10 ø12
<b>Controlled flow</b>	Flow rate L/min (ANR)	20	100	180 230	260 390 460	660 790 920	1580 1710
<b>Free flow</b>	Sonic conductance dm <sup>3</sup> /(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
<b>Critical pressure ratio</b>	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.

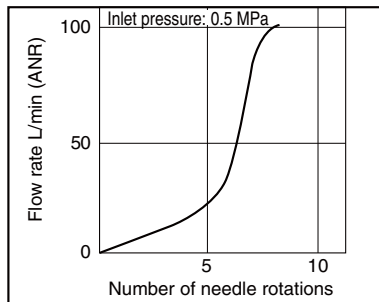
Note 2) U10/32 has the same specification as M5.

## Needle Valve / Flow Rate Characteristics

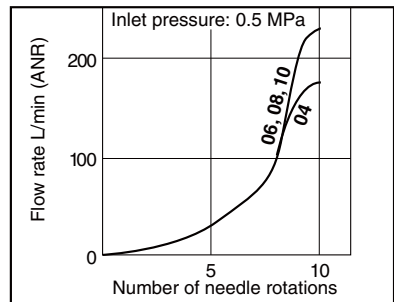
10-AS1201F-M3, 10-AS1211F-M3  
10-AS1201F-M5-02, 10-AS1211F-M5-02  
10-AS1301F-M3, 10-AS1311F-M3



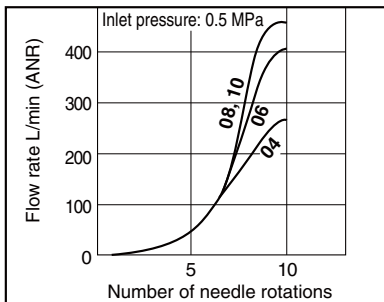
10-AS1201F-M5, 10-AS1211F-M5  
10-AS1301F-M5, 10-AS1311F-M5



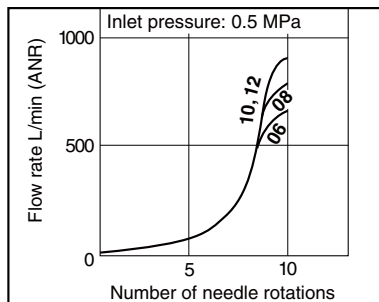
10-AS2201F-01, 10-AS2211F-01  
10-AS2301F-01, 10-AS2311F-01



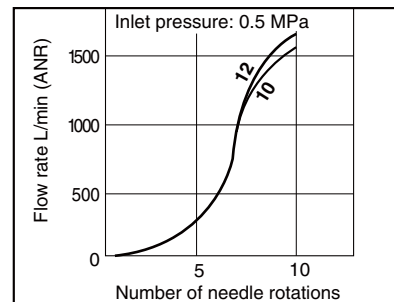
10-AS2201F-02, 10-AS2211F-02  
10-AS2301F-02, 10-AS2311F-02



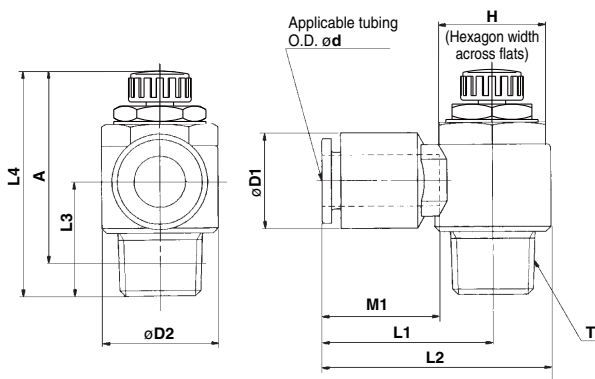
10-AS3201F, 10-AS3211F  
10-AS3301F, 10-AS3311F



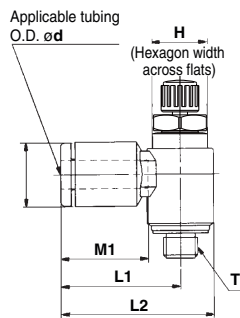
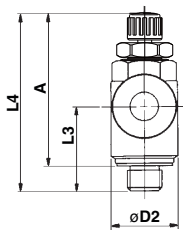
10-AS4201F, 10-AS4211F  
10-AS4301F, 10-AS4311F



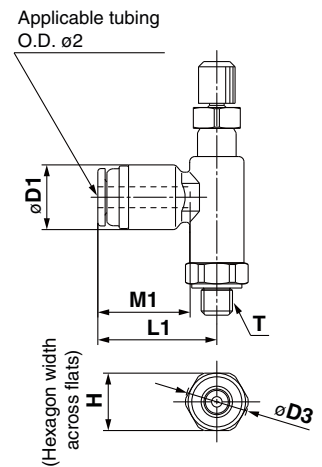
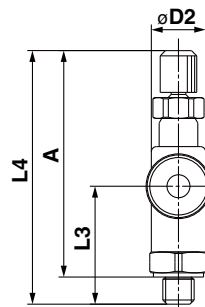
**Elbow type**



**M3 port / M5 port**



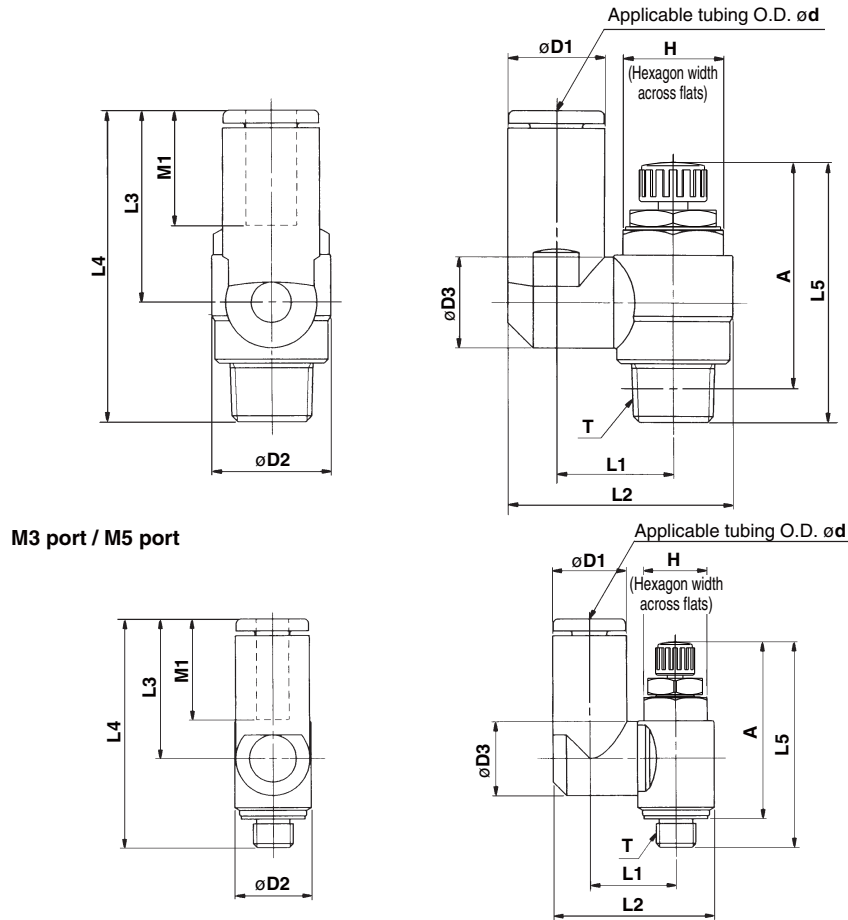
**$\phi 2$  tubing type**  
**10-AS12□1F-M3-02**  
**10-AS12□1F-M5-02**



Model	Applicable tubing O.D. $\phi d$	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	26.8	24.3	24.3	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	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	—	—	—	—	—	—	—	—	—	—
10-AS12□1F-M5-06	6	—	—	11.6	—	—	18.1	22.9	11.7	—	—	—	—	13.5	—
10-AS22□1F-01-23	3.2	R1/8	12	9.3	14.2	—	20.4	27.5	14.3	36.1	31.1	32.1	27.1	12.7	16
10-AS22□1F-01-04	4			13.5										17	
10-AS22□1F-01-06	6			18.5										19	
10-AS22□1F-01-08	8			21										21	
10-AS22□1F-01-10	10			—										—	
10-AS22□1F-02-04	4	R1/4	17	10.4	18.5	—	25.2	34.4	18.2	40.4	35.4	34.4	29.4	16	32
10-AS22□1F-02-06	6			17										34	
10-AS22□1F-02-08	8			18.5										34	
10-AS22□1F-02-10	10			21										36	
10-AS32□1F-02-06	6			12.8										17	60
10-AS32□1F-02-08	8	15.2	19	23	—	29.5	41	21.8	48.8	43.8	42.8	37.8	18.5	63	
10-AS32□1F-02-10	10	18.5				31.8	43.3						21	67	
10-AS32□1F-02-12	12	20.9				32.8	44.3						22	69	
10-AS32□1F-03-06	6	12.8	R3/8	23	—	27.8	39.3	20.9	46.5	41.5	40.2	35.2	17	55	
10-AS32□1F-03-08	8	15.2				29.5	41						18.5	57	
10-AS32□1F-03-10	10	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	R1/2	24	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			21.7			34.6	48.9						22	101

\* Reference thread dimensions after installation.

Universal type



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												7.2	18.3	17.9	28.6	5
10-AS13□1F-M5-23	3.2	M5 x 0.8	8	8.4	9.6	9.3	10.8	19.8	17.5	28.7	28.6	25.8	25	22.2	13.5	7				
10-AS13□1F-M5-04	4			9.3												10.8	20.3	17.5	28.7	7
10-AS13□1F-M5-06	6	R1/8	12	11.6	14.2	9.3	13.1	24.4	17.5	31.8	36.1	31.1	32.1	27.1	12.7	17				
10-AS23□1F-01-23	3.2			8.4												13.1	24.4	17.5	31.8	17
10-AS23□1F-01-04	4			9.3												13.1	24.9	17.5	31.8	18
10-AS23□1F-01-06	6			11.6												10.9	26.9	22.9	37.2	13.5
10-AS23□1F-01-08	8			15.2												12.9	30.9	28.2	41.7	18.5
10-AS23□1F-02-04	4			10.4												10.9	30.6	21.9	40.1	16
10-AS23□1F-02-06	6			12.8												18.4	34	25.2	42.6	17
10-AS23□1F-02-08	8			15.2												18.3	35.2	28.2	45.6	18.5
10-AS23□1F-02-10	10	18.5	20.2	38.7	31	48.4	21													
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	60				
10-AS33□1F-02-08	8			15.2												20.6	39.7	28.2	50	18.5
10-AS33□1F-02-10	10			18.5												23	43.7	32.6	54.4	21
10-AS33□1F-02-12	12			20.9												16.2	44.9	34.4	56.2	22
10-AS33□1F-03-06	6			12.8												12.9	38.5	25.2	46.1	17
10-AS33□1F-03-08	8			15.2												20.6	39.7	28.2	49.1	18.5
10-AS33□1F-03-10	10			18.5												23	43.7	32.6	53.5	21
10-AS33□1F-03-12	12			20.9												16.2	44.9	34.4	55.3	22
10-AS43□1F-04-10	10	R1/2	24	18.5	28.6	19.4	25.8	49.4	32.6	58	57.6	50.1	49.6	42.1	21	104				
10-AS43□1F-04-12	12			21.7												19.4	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