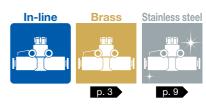
Speed Controller with One-touch Fittings



In-line Type

Reduces flow setting time!



AS1002F-□A

Push-lock type Easy to lock Unlock Lock Push-lock type **Existing type**

Knob O.D.: Almost doubled!

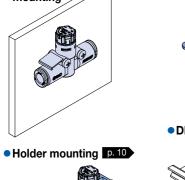
AS1002F-□

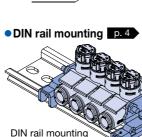


Much easier to lock than the

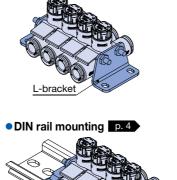


existing type which requires a wrench





bracket





AS Series

speed controller

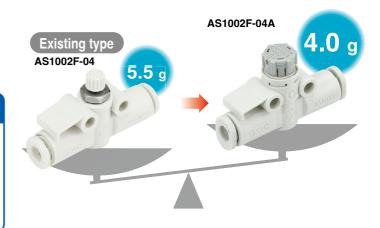


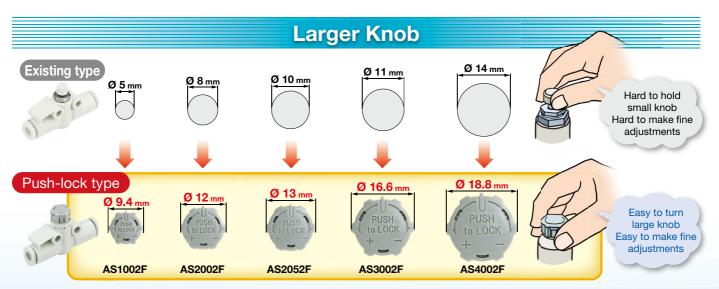
Flow Rate Reproducibility

Lightweight

Weight: Approx. 27 % lighter







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.

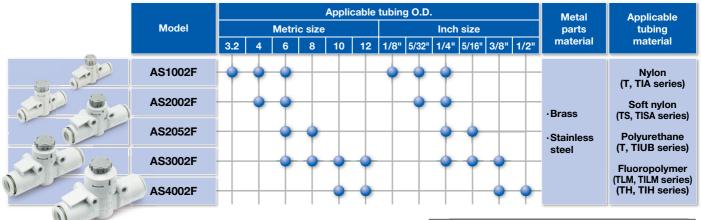


By colour

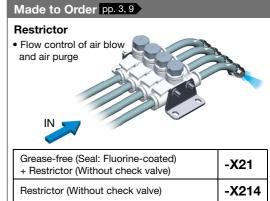
M . 1.1	Release bu	itton colour
Model	Metric	Inch
p. 3	Light grey	Orange
AS□2F	O STATE	Design 12/2
p. 9	White	White
AS□2FG	O STATE OF S	OSNC F

Series Variations

○ Electroless nickel plating type □3 ○ Stainless steel type □3 ○



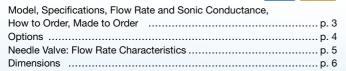




CONTENTS

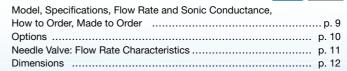
Speed Controller with One-touch Fittings In-line Type

AS Series



Speed Controller with One-touch Fittings Stainless Steel Series In-line Type

AS-FG Series



[Related Equipment] Holder for Speed Controller TMH Series p. 14

Push-Lock Series Variations

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



Speed Controller with Indicator **AS-FS** Series



Speed Controller with One-touch Fittings In-line Type AS Series



In-line Brass

Model

Model	Applicable tubing O.D.													
			Metri	c 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 the Web catalogue on www.smc.eu for

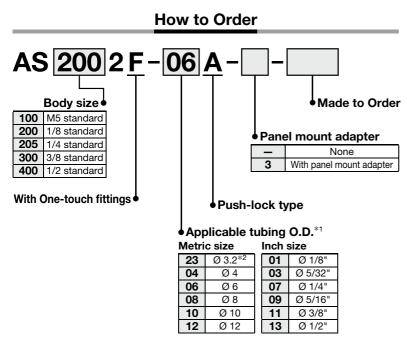
Flow Rate and Sonic Conductance

Model		AS1002F-□A			AS2002F-□A AS2052F-□A					AS3002	AS4002F-□A			
Tubing	Metric size	Ø 3.2	Ø 4	Ø6	Ø 4	Ø6	Ø6	Ø 8	Ø6	Ø 8	Ø 10	Ø 12	Ø 10	Ø 12
O.D.	Inch size	Ø 1/8"	Ø 5/32"	Ø 1/4"	Ø 5/32"	Ø 1/4"	Ø 1/4"	Ø 5/16"	Ø 1/4"	Ø 5/16"	Ø 3/8"		Ø 3/8"	Ø 1/2"
C values: Sonic	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
conductance dm ³ /(s·bar)	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	Free flow	0.3	0.2		0.3	0.3 0.1 0.2				0.	0.3	0.2		
pressure ratio	Controlled flow	0.2	0.3	0.4	0.	2	0.2	0.3	().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).



- *1 For selecting applicable tubing O.D., refer to the "Model" shown above.
- *2 Use Ø 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.
- *3 The panel mount adapter is packaged in a general environment.

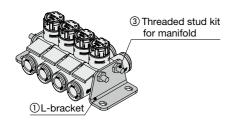
I Be sure to read this before handling the products. I Refer to the back cover for safety instructions. I For flow control equipment precautions, refer to the "Handling Precautions for SMC Products" and the "Operation Manual" on the SMC website: https://www.smc.eu



Options

① L-Bracket

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



(3) Threaded Stud Kit for Manifold: Metric Size

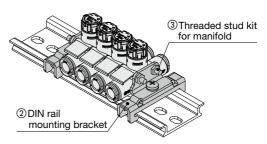
3 IIII cac	ieu Stuu	IXIL IOI IVI	ariiioid. iv	ieti ic Size
	Part n	umber		Applicable model
4 stations	6 stations	8 stations	10 stations	Applicable model
	AS-33B	AS-35B	AS-36B	AS1002F-23A
AS-32B	A3-33B	A3-35B	A3-30B	AS1002F-04A
A3-32D	AS-34B	AS-36B	AS-37B	AS1002F-06A
	A3-34B	A3-30B	AS-38B	_
			AS-37B	AS2002F-04A
AS-32B	AS-34B	AS-36B	A3-3/D	AS2002F-06A
			AS-38B	_
				AS2052F-06A
AS-41B	AS-42B	AS-44B	AS-45B	_
				AS2052F-08A
				AS3002F-06A
		AS-45B		_
AS-42B	AS-44B	A3-43B	AS-47B	AS3002F-08A
A3-42D	A3-44D		A3-4/D	AS3002F-10A
		AS-46B		_
		A3-40D		AS3002F-12A
	AS-43B AS-45B AS-47B		AS4002F-10A	
AC 42P		AS-48B		
AS-43B	AS-45B	A3-4/B	A3-48B	AS4002F-12A
			_	

3 Threaded Stud Kit for Manifold: Inch Size

	Part n	umber		
4 stations	6 stations	8 stations	10 stations	Applicable model
4 Stations	0 Stations	0 Stations	10 Stations	AS1002F-01A
	AS-33B	AS-35B	AS-36B	
AS-32B				AS1002F-03A
	AS-34B	AS-36B	AS-37B	
	710 012	710 002	AS-38B	AS1002F-07A
			AS-37B	AS2002F-03A
AS-32B	AS-34B	AS-36B	A3-37B	_
			AS-38B	AS2002F-07A
				_
AS-41B	AS-42B	AS-44B	AS-45B	AS2052F-07A
				AS2052F-09A
				_
		AS-45B		AS3002F-07A
AS-42B	AS-44B	A3-43B	AC 47D	AS3002F-09A
A5-42B	A5-44B		AS-47B	_
		AC 46D		AS3002F-11A
		AS-46B		_
				_
AC 40B	AC 40D AC 45D AC 47D	AC 40D	AS4002F-11A	
AS-43B	AS-45B	AS-47B	AS-48B	_
				AS4002F-13A

② DIN Rail Mounting Bracket

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



* The DIN rail needs to be prepared by the customer.

Details of Threaded Stud Kit for Manifold

Thr	eaded stud	k		Acces	sories		
Part no.	Length	Quantity	Hexagon nut	Quantity	Flat washer	Quantity	
AS-32B	62	2					
AS-33B	72	2					
AS-34B	90	2					
AS-35B	104	2	М3	4	M3	4	
AS-36B	114	2					
AS-37B	135	2					
AS-38B	140	2					
AS-41B	78	2					
AS-42B	111	2					
AS-43B	119	2					
AS-44B	147	2	M4	4	M4	4	
AS-45B	179	2	1014	4	1014	4	
AS-46B	191	2					
AS-47B	236	2					
AS-48B	277	2					

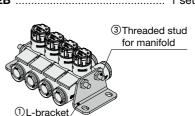
Ordering Example

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



AS Series

Options

(4) Panel Mount Adapter

Panel mount adapter model: Refer to the tables below. Metric Size Table

	Applicable tubing O.D.											
Applicable series	23	04	06	08	10	12						
	Ø 3.2	Ø 4	Ø6	Ø 8	Ø 10	Ø 12						
AS1002F-□A	PMA-1	1002-A	PMA-1002-B	_	_	_						
AS2002F-□A	_	Р	MA-2002	_	_	_						
AS2052F-□A	_	_	PMA-205	52	_	_						
AS3002F-□A	_	_	PMA-3002									
AS4002F-□A	_	_	_	_	PMA-	-4002						

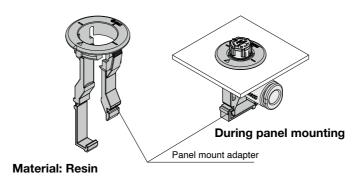
^{*} For the AS1002F, the part number varies depending on the applicable tubing O.D.

4 Panel Mount Adapter

Panel mount adapter model: Refer to the tables below. Inch Size Table

	Applicable tubing O.D.											
Applicable series	01	03	07	09	11	13						
	Ø 1/8"	Ø 5/32"	Ø 1/4"	Ø 5/16"	Ø 3/8"	Ø 1/2"						
AS1002F-□A	PMA-1	1002-A	PMA-1002-B	_	_	_						
AS2002F-□A	_	Р	MA-2002	1A-2002 —								
AS2052F-□A	_	_	PMA-205	52	_	_						
AS3002F-□A	_	_	PMA-	-3002		_						
AS4002F-□A	_	_	_	_	PMA-	-4002						

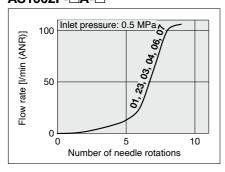
 $[\]ast\,$ For the AS1002F, the part number varies depending on the applicable tubing O.D.



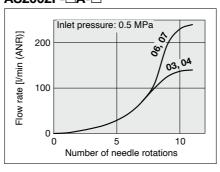
Needle Valve: Flow Rate Characteristics

* The flow rate characteristics are representative values.

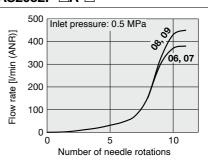
AS1002F-□A-□



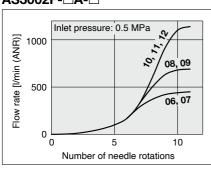
AS2002F-□A-□



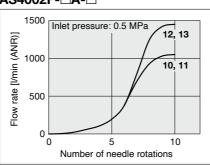
AS2052F-□**A-**□



AS3002F-□A-□



AS4002F-□A-□

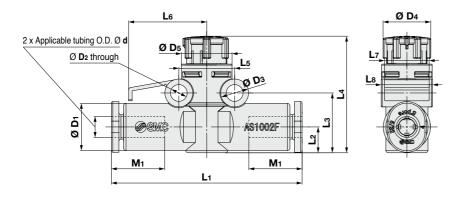


* The numbers above the flow rate characteristic curves in the charts show the applicable tubing outside diameter as defined by the product number.

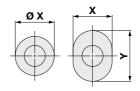
Refer to the operation manual for the construction.



Dimensions



Release button dimensions



Applicable tubing O.D.: Ø 3.2, Ø 4, Ø 6 Ø 1/8", Ø 5/32"

Metric Size

Metric Size																			[mm]
Model	Applicable tubing	Ø D1	Release	button	α Do	α Da	α D ₄	Ø D 5	L ₁	L2	Lз	L4	l* ¹	L ₅	L ₆	L ₇	L8	M ₁	Weight
iviodei	0.D.Ø d	וששן	Ø X(X)	Υ	Ø D 2	W D 3	Ø D 4	שם שו	L1	L2	L3	Max.	Min.	Lo	Lb	"	Lo	IVIT	[g]
AS1002F-23A	3.2	8.4	6.7	9.5					36.6	5.1	11.8	24.1	23				10.1	13.5	3.7
AS1002F-04A	4	9.3	7.7	10	3.3	5.5	9.4	·	37.6	3.1	11.6	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	1 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	5.5	5.5	12	12	43.1	0.5	13.4	31.4	30	12.0	17	10.5	12.5	10	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	_	4.5	7.0	7.6 13	13 10	57.2	8.5	18.1	37.1	35.5	''	22.5	12	10.1	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	_	4.5	0	10.0	20	70.4					21.0	25	12		21	24.8
AS3002F-12A	12	20.9	18.5	_					76	10.9	22.8	44	42.4	1 1			22.1	22	29.1
AS4002F-10A	10	18.5	16.5	_	4.3	8	18.8	26	76.9	11.3	22.7	51.3	49.7	28	33	14	26.2	21	36.3
AS4002F-12A	12	21.7	18.5	_	4.0	0	10.0	20	81.3	11.3	23.7	51.3	49.7	20	33	14	26.2	22	42

^{*1} Reference dimensions

Inch Size

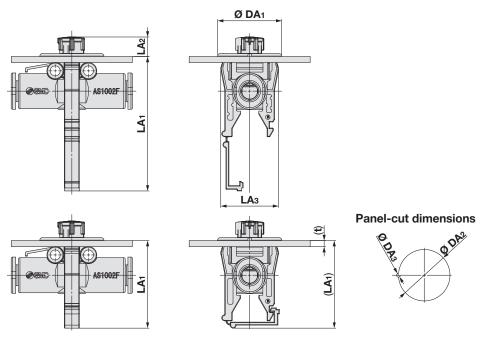
inch Size																			[mm]
Model	Applicable tubing	Ø D 1	Release	button	Ø D 2	α Da	Ø D 4	Ø D 5	L ₁	L2	Lз	L4	ı* ¹	L ₅	L ₆	L7	L8	M ₁	Weight
Model	0.D.Ø d	וטש	Ø X(X)	Υ	Ø D 2	Ø D 3	Ø D 4	Ø D 5	Li	L2	L3	Max.	Min.	Lo	Lo	L/	L8	IVI	[g]
AS1002F-01A	1/8"	8.4	6.7	9.5					36.6	5.1	11.8	24.1	23				10.1	13.5	3.7
AS1002F-03A	5/32"	9.3	7.7	10	3.3	5.5	9.4	10	37.6	5.1	11.0	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	_	3.3	5.5	12	12	43.2	6.5	13.6	31.6	30.2	12.0	17	10.5	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	_	4.3	7.0	13	16	57.2	8.5	18.1	37.1	35.5	' '	22.5	12	16.1	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	26.2	21	36.7
AS4002F-13A	1/2"	21.7	20	_	4.3	0	10.8	20	81.3	11.3	23.7	51.3	49.7	20	33	14	20.2	22	40.4

^{*1} Reference dimensions



Dimensions: With Panel Mount Adapter

Refer to the operation manual for panel mounting instructions.



Metric Size [mm]

MOUTO GIEG											[111111]
	Ammliandala kulaina	LA	\1* ¹	LA	2*1			Panel-cut	dimensions	Applicable panel	\
Model	Applicable tubing O.D. Ø d	Max.	Min.	Max.	Min.	LA3*2	Ø DA1	Ø DA2 *3 (+0.1/0)	Ø DA3 *3 (+0.1/0)	thickness t	Weight [g]
AS1002F(G)-23A-3	3.2	44.5	29.0	7.6	6.5	19.1	Ø 21.2	Ø 17.5	Ø2		5.1
AS1002F(G)-04A-3	4	44.5	29.0	7.6	6.5	19.1	Ø 21.2	Ø 17.5	Ø2	1 to 2	5.4
AS1002F(G)-06A-3	6	44.5	29.0	7.6	6.5	19.1	Ø 21.2	Ø 17.5	Ø2		6.3
AS2002F(G)-04A-3	4	53.3	35.2	8.7	7.3	22.1	Ø 24.2	Ø 20.5	Ø2		7.9
AS2002F(G)-06A-3	6	53.3	35.2	8.7	7.3	22.1	Ø 24.2	Ø 20.5	Ø2		8.7
AS2052F(G)-06A-3	6	59.2	39.6	10.1	8.5	24.1	Ø 26.7	Ø 22.5	Ø 2.5		14.5
AS2052F(G)-08A-3	8	59.2	39.6	10.1	8.5	24.1	Ø 26.7	Ø 22.5	Ø 2.5		16.5
AS3002F(G)-06A-3	6	67.0	44.2	11.3	9.7	28.1	Ø 31.2	Ø 26	Ø3	1 to 3.5	22.2
AS3002F(G)-08A-3	8	67.0	44.2	11.3	9.7	28.1	Ø 31.2	Ø 26	Ø3	1 10 3.5	24.1
AS3002F(G)-10A-3	10	67.0	44.2	11.3	9.7	28.1	Ø 31.2	Ø 26	Ø3		28.9
AS3002F(G)-12A-3	12	67.0	44.2	11.3	9.7	28.1	Ø 31.2	Ø 26	Ø3		33.2
AS4002F(G)-10A-3	10	74.1	48.5	13.0	11.4	34.1	Ø 39.2	Ø 32.5	Ø 5]	42.5
AS4002F(G)-12A-3	12	74.1	48.5	13.0	11.4	34.1	Ø 39.2	Ø 32.5	Ø5		48.2

^{*1} Reference dimensions

^{*} Refer to the speed controller dimensions on page 6 for the dimensions of speed controllers not listed in this table.

Inch Size											[mm]
	Applicable tubing	LA	1*1	LA	2*1			Panel-cut	dimensions	Applicable panel	\\/a:a:la±
Model	O.D. Ø d	Max.	Min.	Max.	Min.	LA3*2	Ø DA1	Ø DA2 *3 (+0.1/0)	Ø DA3 *3 (+0.1/0)	thickness t	Weight [g]
AS1002F(G)-01A-3	1/8"	44.5	29.0	7.6	6.5	19.1	Ø 21.2	Ø 17.5	Ø2		5.1
AS1002F(G)-03A-3	5/32"	44.5	29.0	7.6	6.5	19.1	Ø 21.2	Ø 17.5	Ø2	1 to 2	5.4
AS1002F(G)-07A-3	1/4"	44.5	29.0	7.6	6.5	19.1	Ø 21.2	Ø 17.5	Ø2		6.5
AS2002F(G)-03A-3	5/32"	53.3	35.2	8.7	7.3	22.1	Ø 24.2	Ø 20.5	Ø2		7.9
AS2002F(G)-07A-3	1/4"	53.3	35.2	8.7	7.3	22.1	Ø 24.2	Ø 20.5	Ø2		8.9
AS2052F(G)-07A-3	1/4"	59.2	39.6	10.1	8.5	24.1	Ø 26.7	Ø 22.5	Ø 2.5		14.8
AS2052F(G)-09A-3	5/16"	59.2	39.6	10.1	8.5	24.1	Ø 26.7	Ø 22.5	Ø 2.5		16.5
AS3002F(G)-07A-3	1/4"	67.0	44.2	11.3	9.7	28.1	Ø 31.2	Ø 26	Ø3	1 to 3.5	22.0
AS3002F(G)-09A-3	5/16"	67.0	44.2	11.3	9.7	28.1	Ø 31.2	Ø 26	Ø3		24.1
AS3002F(G)-11A-3	3/8"	67.0	44.2	11.3	9.7	28.1	Ø 31.2	Ø 26	Ø3		29.1
AS4002F(G)-11A-3	3/8"	74.1	48.5	13.0	11.4	34.1	Ø 39.2	Ø 32.5	Ø5		42.9
AS4002F(G)-13A-3	1/2"	74.1	48.5	13.0	11.4	34.1	Ø 39.2	Ø 32.5	Ø5		46.6

^{*1} Reference dimensions

^{*2} Max. dimension before panel mounting

^{*3} Be sure to check the following dimensional tolerances or the "Specific Product Precautions" page before cutting the panel. Ø DA2 [+0.1/0] Ø DA3 [+0.1/0] In addition, the centre position of Ø DA3 is on the circumference of Ø DA2.

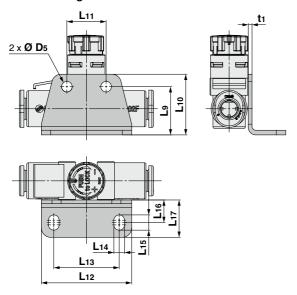
^{*2} Max. dimension before panel mounting

^{*3} Be sure to check the following dimensional tolerances or the "Specific Product Precautions" page before cutting the panel. Ø DA2 [+0.1/0] Ø DA3 [+0.1/0] In addition, the centre position of Ø DA3 is on the circumference of Ø DA2.

^{*} Refer to the speed controller dimensions on page 6 for the dimensions of speed controllers not listed in this table.

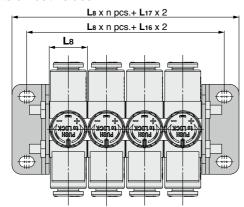
Dimensions

L-Bracket Bracket on a single side



	Applicable model											t ₁
AS-10L	AS1002F AS2002F	2 1	14.8	18.3	11	27.5	19.5	3.4	40	7 2	10	1
			15.6	19.6	12.6	29	21		4.9	1.3	12	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 1
AS-40L	AS4002F		25.7	30.7	28	49	39		İ			1.4

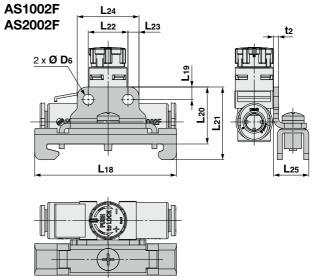
Brackets on both sides

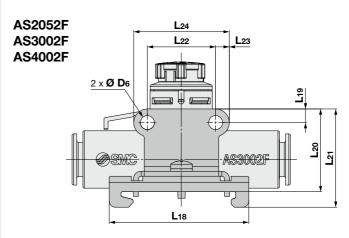


- Refer to page 6 for L8.
 The figure above shows the manifold with speed controllers connected using two L-brackets and a threaded stud kit for manifold. Refer to page 4 for threaded stud kits for manifold.

DIN Rail Mounting Bracket

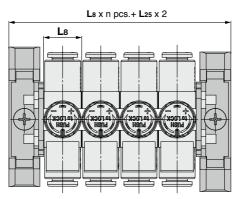
Bracket on a single side





Part no.	Applicable model	D ₆	L18	L19	L20	L21	L22	L23	L24	L25	t2
	AS1002F			3.5	18.2			3.5	18		
AS-20D	AS2002F	3.4		3.5	18.6	23.6	12.6	3.5	19.6		
AS-25D	AS2052F		45		22	27	17		25.8	11.3	1.6
	AS3002F			4.4	27.2	32.2	22	4.4	30.8		
AS-40D	AS4002F				28.1	33.1	28		36.8		

Brackets on both sides



- Refer to page 6 for Ls.
 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.



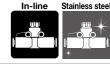
Speed Controller with One-touch Fittings Stainless Steel Series

In-line Type

AS-FG Series



Specifications



					- 11			_					
	Applicable tubing O.D.												
Model	Metric size							Inch size					
	3.2	4	6	8	10	12	1/8"	5/32"	1/4"	5/16"	3/8"	1/2"	
AS1002FG	•	•	•				•	•	•				
AS2002FG		•	•					•	•				
AS2052FG			•	•					•	•			
AS3002FG			•	•	•	•			•	•	•		
AS4002FG					•	•					•	•	

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

Flow Rate and Sonic Conductance

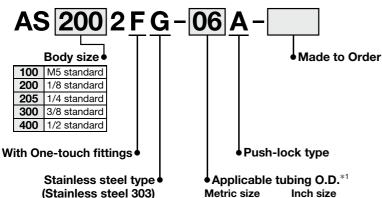
Model

Mo	odel	AS1	1002FG-	-□ A	AS2002	FG-□A	AS205	2FG-□A		AS3002	FG-□A	1	AS4002	2FG-□A
Tubing	Metric size	Ø 3.2	Ø 4	Ø6	Ø 4	Ø6	Ø 6	Ø 8	Ø6	Ø 8	Ø 10	Ø 12	Ø 10	Ø 12
O.D.	Inch size	Ø 1/8"	Ø 5/32"	Ø 1/4"	Ø 5/32"	Ø 1/4"	Ø 1/4"	Ø 5/16"	Ø 1/4"	Ø 5/16"	Ø 3/8"	-	Ø 3/8"	Ø 1/2"
C values: Sonic	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
conductance dm ³ /(s·bar)	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	Free flow	0.3	0.	2	0.3	0.1	C).2		0.	2		0.3	0.2
pressure ratio	Controlled flow	0.2	0.3	0.4	0.	2	0.2	0.3	().1	0.	.2	0.1	0.2

Flow Direction Symbol on Body



How to Order



- * The material can be visually identified by colour of the
- release button. Stainless steel type: White
- * White is also used for inch size.

Metric size Inch size

23	Ø 3.2* ²	01	Ø 1/8"
04	Ø 4	03	Ø 5/32"
06	Ø6	07	Ø 1/4"
08	Ø8	09	Ø 5/16"
10	Ø 10	11	Ø 3/8"
12	Ø 12	13	Ø 1/2"

- *1 For selecting applicable tubing O.D., refer to the "Model" shown above
- *2 Use Ø 1/8" tubing

Made to Order



Lubricant: Vaseline

Example) AS2002FG-06A-X12

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

-X21

Example) AS2002FG-06A-X21

Not particle-free

Restrictor (Without check valve) -X214

Example) AS2002FG-06A-X214

Example) 10-AS2002FG-06A

*1 Fluorine grease is used.

Clean Series

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



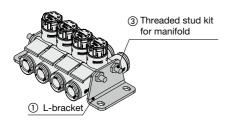
Use caution at the max. operating pressure when using soft nylon or polyurethane tubing. (Refer to the **Web catalogue on www.smc.eu** for

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

Options

1) L-Bracket

Part no.	Applicable model
AS-10L	AS1002FG
AS-20L	AS2002FG
AS-25L	AS2052FG
AS-30L	AS3002FG
AS-40L	AS4002FG



(3) Threaded Stud Kit for Manifold: Metric Size

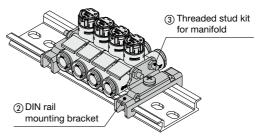
	Part n	umber		Applicable model		
4 stations	6 stations	8 stations	10 stations	Applicable model		
	AS-33B	AS-35B	AS-36B	AS1002FG-23A		
AS-32B	A3-33D	A3-33B	A3-30D	AS1002FG-04A		
A3-32B	AS-34B	AS-36B	AS-37B	AS1002FG-06A		
	A3-34D	A3-30B	AS-38B	_		
			AS-37B	AS2002FG-04A		
AS-32B	AS-34B	AS-36B	A3-3/B	AS2002FG-06A		
			AS-38B	-		
				AS2052FG-06A		
AS-41B	AS-42B	AS-44B	AS-45B	1		
				AS2052FG-08A		
				AS3002FG-06A		
		AS-45B		_		
AS-42B	AS-44B	A3-43B	AS-47B	AS3002FG-08A		
A3-42B	A3-44D		A3-4/B	AS3002FG-10A		
		AS-46B		_		
		A3-40B		AS3002FG-12A		
				AS4002FG-10A		
AC 42P	AS-45B	AS-47B	AS-48B			
AS-43B	A3-43B	A3-4/B	A3-40B	AS4002FG-12A		
			_			

(3) Threaded Stud Kit for Manifold: Inch Size

	Part n	umber		Annlinghla madal	
4 stations	6 stations	8 stations	10 stations	Applicable model	
	AS-33B	AS-35B	AS-36B	AS1002FG-01A	
AS-32B	A3-33D	A3-33B	A3-30B	AS1002FG-03A	
A3-32B	AS-34B	AS-36B	AS-37B	I	
	A3-34D	A3-30B	AS-38B	AS1002FG-07A	
			AS-37B	AS2002FG-03A	
AS-32B	AS-34B	AS-36B	A3-37B	-	
			AS-38B	AS2002FG-07A	
				_	
AS-41B	AS-42B	AS-44B	AS-45B	AS2052FG-07A	
				AS2052FG-09A	
				1	
		AS-45B		AS3002FG-07A	
AS-42B	AS-44B	A3-43B	AS-47B	AS3002FG-09A	
A3-42D	A3-44D		A3-47B	1	
		AS-46B		AS3002FG-11A	
		A3-40B		1	
				_	
AS-43B	AS-45B	-45B AS-47B	AS-48B	AS4002FG-11A	
A3-40B	A3-43B	A3-41 D	A3-40D	_	
				AS4002FG-13A	

2 DIN Rail Mounting Bracket

Part no.	Applicable model
AS-10D	AS1002FG
AS-20D	AS2002FG
AS-25D	AS2052FG
AS-30D	AS3002FG
AS-40D	AS4002FG



* The DIN rail needs to be prepared by the customer.

Details of Threaded Stud Kit for Manifold

Thr	eaded stud	k		Acces	sories	
Part no.	Length	Quantity	Hexagon nut	Quantity	Flat washer	Quantity
AS-32B	62	2				
AS-33B	72	2				
AS-34B	90	2				
AS-35B	104	2	М3	4	M3	4
AS-36B	114	2				
AS-37B	135	2				
AS-38B	140	2				
AS-41B	78	2				
AS-42B	111	2				
AS-43B	119	2				
AS-44B	147	2	M4	4	M4	4
AS-45B	179	2	1014	4	1014	4
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.) AS2002FG-04A

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

- Speed controller
 - **AS2002FG-04A** 4 pcs.
- **AS-20L** 2 pcs.
- Threaded stud kit for manifold





AS-FG Series

Options

4 Panel Mount Adapter

Panel mount adapter model: Refer to the tables below. Metric Size Table

			Applicable tubir	ng O.D.		
Applicable series	23	04	06	08	10	12
	Ø 3.2	Ø 4	Ø6	Ø8	Ø 10	Ø 12
AS1002FG-□A	PMA-1	1002-A	PMA-1002-B	_	_	_
AS2002FG-□A	_	Р	MA-2002	_	_	-
AS2052FG-□A	_	_	PMA-205	52	_	_
AS3002FG-□A	_	_	P)2		
AS4002FG-□A	_	_	_	_	PMA-	-4002

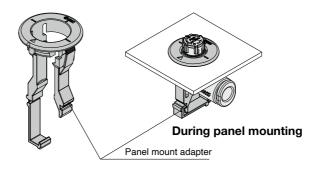
 $[\]ast~$ For the AS1002FG, the part number varies depending on the applicable tubing O.D.

4 Panel Mount Adapter

Panel mount adapter model: Refer to the tables below. Inch Size Table

			Applicable tubii	ng O.D.		
Applicable series	01	03	07	09	11	13
	Ø 1/8"	Ø 5/32"	Ø 1/4"	Ø 5/16"	Ø 3/8"	Ø 1/2"
AS1002FG-□A	PMA-1	1002-A	PMA-1002-B	_	_	_
AS2002FG-□A	_	Р	MA-2002	_	_	_
AS2052FG-□A	_	_	PMA-205	52	_	_
AS3002FG-□A	_	_	PMA-	-3002		_
AS4002FG-□A	_	_	_	_	PMA-	-4002

st For the AS1002FG, the part number varies depending on the applicable tubing O.D.

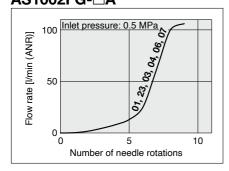


The dimensions when the panel mount adapter is mounted to the speed controller are the same as those of the standard AS \u22000 \u220022F-\u2200A-3 (brass type).

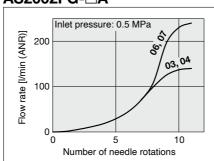
Needle Valve: Flow Rate Characteristics

* The flow rate characteristics are representative values.

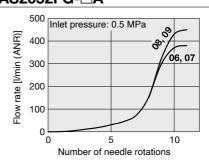
AS1002FG-□A



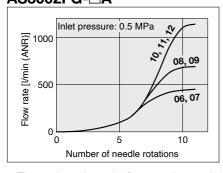
AS2002FG-□A



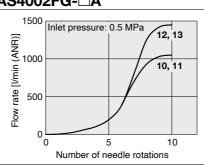
AS2052FG-□A



AS3002FG-□A



AS4002FG-□A

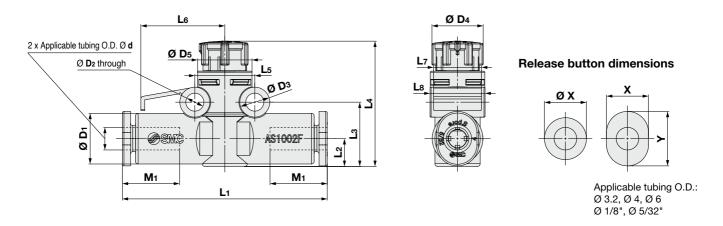


* The numbers above the flow rate characteristic curves in the charts show the applicable tubing outside diameter as defined by the product number.

Refer to the operation manual for the construction.



Dimensions



Metric Size	Metric Size [mm]																		
Model	Applicable tubing	1 (2) 1 1 1	Release		Ø D2	Ø Da	Ø D4	Ø D 5	L ₁	L2	Lз	L ₄		L ₅	L ₆	L ₇	L8	M ₁	Weight
	0.D.Ø d	~ - .	Ø X(X)	Υ	~ ==	~ = 0	~	~ = 0				Max.	Min.						[g]
AS1002FG-23A	3.2	8.4	6.7	9.5					36.6	5.1	11.8	24.1	23				10.1	13.5	3.7
AS1002FG-04A	4	9.3	7.7	10	3.3	5.5	9.4	10	37.6	3.1	11.0	24.1	23	11	15.4	8.8	10.1	13	4
AS1002FG-06A	6	11.6	9.7	12					40.1	6.1	12.8	25.1	24]			12.3	13	5
AS2002FG-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
AS2002FG-06A	6	11.6	9.7	12	ა.ა	5.5	12	12	43.1	0.3	13.4	31.4	30	12.6	' /	10.5	12.3	13	6.9
AS2052FG-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
AS2052FG-08A	8	15.2	13.5	_	4.3	7.0	13	16	57.2	8.5	18.1	37.1	35.5] ''	22.5	12	16.1	19	13.8
AS3002FG-06A	6	13.2	11.5	_					60									17	18.1
AS3002FG-08A	8	15.2	13.5	_	4.5		10.0	20	65	9.8	21.7	42.9	41.3	21.8	25	12	20.5	19	20
AS3002FG-10A	10	18.5	16.5	_	4.5	8	16.6	20	70.4]				21.0	25	12		21	24.8
AS3002FG-12A	12	20.9	18.5	_					76	10.9	22.8	44	42.4				22.1	22	29.1
AS4002FG-10A	10	18.5	16.5	_	4.9	8	100	26	76.9	11.0	22.7	51.3	40.7	28	33	14	26.2	21	36.3
AS4002FG-12A	12	21.7	18.5	_	4.3	°	18.8	26	81.3	11.3	23.7	51.3	49.7	20	33	14	26.2	22	42

^{*1} Reference dimensions

Inch Size																			[mm]
Model	Applicable tubing	Ø D1	Release		Ø D2	α Da	α D 4	Ø D 5	L ₁	L2	Lз	L4	I*1	L ₅	L ₆	L ₇	L8	M ₁	Weight
Wiodei	0.D.Ø d	001	Ø X(X)	Υ	Ø D Z	D D3	× 04	D D3		L Z		Max.	Min.					1411	[g]
AS1002FG-01A	1/8"	8.4	6.7	9.5					36.6	5.1	11.8	24.1	23				10.1	13.5	3.7
AS1002FG-03A	5/32"	9.3	7.7	10	3.3	5.5	9.4	10	37.6	3.1	11.0	24.1	23	11	15.4	8.8	10.1	13	4
AS1002FG-07A	1/4"	12	10.9	_					40.1	6.2	12.9	25.2	24.1				12.8	13.5	5.2
AS2002FG-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
AS2002FG-07A	1/4"	12	10.9	_	3.3	3.5	12	12	43.2	6.5	13.6	31.6	30.2	12.0	17	10.5	12.8	13.5	7.1
AS2052FG-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
AS2052FG-09A	5/16"	15.2	13.5	_	4.3	7.6	13	10	57.2	8.5	18.1	37.1	35.5	''	22.5	12	10.1	19	13.8
AS3002FG-07A	1/4"	13.2	12	_					59									17	17.9
AS3002FG-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
AS3002FG-11A	3/8"	18.5	16	_					69.8									21	25
AS4002FG-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	26.2	21	36.7
AS4002FG-13A	1/2"	21.7	20	_	4.3	"	10.0	20	81.3	11.3	23.1	31.3	43.1	20	55	'*	20.2	22	40.4

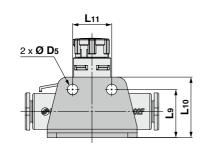
^{*1} Reference dimensions

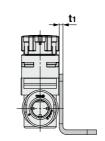


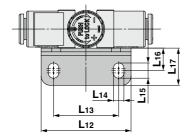
AS-FG Series

Dimensions

L-Bracket Bracket on a single side

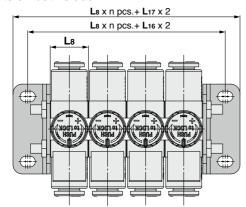






Part no.	Applicable model	D ₅	L9	L10	L11	L12	L13	L14	L15	L16	L17	t ₁
AS-10L	AS1002FG	2.4	14.8	18.3	11	27.5	19.5	2.4	4.0	7.0	10	1
AS-20L	AS2002FG	3.4	15.6	19.6	12.6	29	21	3.4	4.9	7.3	12	1.2
AS-25L	AS2052FG		19.6	24.6	17	38	28					
AS-30L	AS3002FG	4.5	24.8	29.8	22	43	33	4.5	6.5	9.5	15.5	1.4
AS-40L	AS4002FG		25.7	30.7	28	49	39					1.4

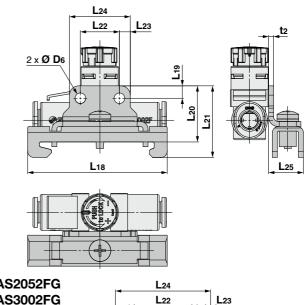
Brackets on both sides

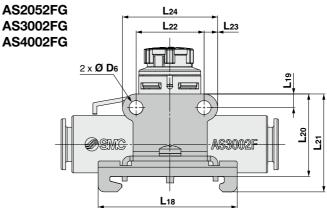


- Refer to page 12 for Ls.
 The figure above shows the manifold with speed controllers connected using two L-brackets and a threaded stud kit for manifold. Refer to page 10 for threaded stud kits for manifold.

DIN Rail Mounting Bracket Bracket on a single side

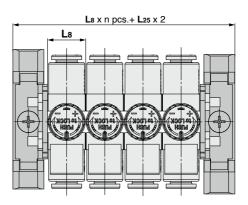
AS1002FG AS2002FG





	Applicable model		L18	L19	L20	L21	L22	L23	L24	L25	t2
AS-10D	AS1002FG	3.4		3.5	18.2	23.2	11	3.5	18		
	AS2002FG			3.5	18.6	23.6	12.6	3.5	19.6		
AS-25D	AS2052FG		45		22	27	17		25.8	11.3	1.6
	AS3002FG			4.4	27.2	32.2	22	4.4	30.8	1	
AS-40D	AS4002FG				28.1	33.1	28		36.8		

Brackets on both sides



- Refer to page 12 for Ls.
 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 10 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
Colour	White

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

Part	no.	Size	Quantity
Metric size	Inch size	(Nominal x Length)	Qualitity
TMH-23J	TMH-01J	M3 x 15	
TMH-04J	TMH-03J	IVIS X IS	
TMH-06J	TMH-07J	M3 x 20	
TMH-06	TMH-07	M4 x 25	1
TMH-08	TMH-09	IVI4 X 25	
TMH-10	_	M4 x 35	
TMH-12	TMH-13	IVI4 X 33	

Series

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

Metric Size

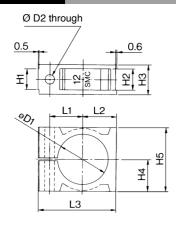
Tubing size			Applicab	le tubing		
	23	04	06	80	10	12
Applicable model	Ø 3.2	Ø 4	Ø 6	Ø 8	Ø 10	Ø 12
AS1002F(G)	TMH-23J	TMH-04J	TMH OG I			
AS2002F(G)		110111-043	1 WITI-003			
AS2052F(G)			TMH-06	TMH-08		
AS3002F(G)			TMH-07	I WITI-UO	TMH-10	TMH-12
AS4002F(G)					I IVITI- IU	TMH-13

 $[\]ast\,$ The applicable TMH for the AS1002F(G)-02 is not available.

Inch Size

Tubing size			Applicab	le tubing		
	01	03	07	09	11	13
Applicable model	Ø 1/8"	Ø 5/32"	Ø 1/4"	Ø 5/16"	Ø 3/8"	Ø 1/2"
AS1002F(G)	TMH-01J	TMH-03J	TMU 07 I			
AS2002F(G)		I IVIH-USS	I IVIH-U/J			
AS2052F(G)			TMH-07	TMH-09		
AS3002F(G)			I WITH-U/	1 WIT1-09	TMH-10	
AS4002F(G)					I WIH-10	TMH-13

Dimensions



Part	no.	α D 1	Ø D2	H1	H2	нз	Н4	Н5	L1	L2	L3	Symbol
Metric size	Inch size	וטטו	Ø DZ	-	12	113	İ	2	_	L	2	Syllibol
TMH-23J	TMH-01J	8.5	3.3	4.5	4.6	7.5	6	12	7.2	6.6	18	1/8J
TMH-04J	TMH-03J	9.4	3.3	4.5	4.0	7.5	0	12	1.2	0.0	10	4 5/32J
TMH-06J	_	11.7	3.3	6.3	6.4	9.3	7.7	15.4	8.5	8.3	21	6J
_	TMH-07J	12.1	3.3	0.0	0.4	9.3	1.1	15.4	6.5	0.0	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	ı	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



These safety instructions are intended to prevent hazardous situations and/or equipment damage. These instructions indicate the level of potential hazard with the labels of "Caution," "Warning" or "Danger." They are all important notes for safety and must be followed in addition to International Standards (ISO/IEC) 1), and other safety regulations.

♠ Danger:

Danger indicates a hazard with a high level of risk which, if not avoided, will result in death or serious

Marning:

Warning indicates a hazard with a medium level of risk which, if not avoided, could result in death or serious

Caution indicates a hazard with a low level of risk which, if not avoided, could result in minor or moderate 1) ISO 4414: Pneumatic fluid power - General rules and safety requirements for systems and their components.

ISO 4413: Hydraulic fluid power - General rules and safety requirements for systems and their components.

IEC 60204-1: Safety of machinery - Electrical equipment of machines. (Part 1: General requirements)

ISO 10218-1: Robots and robotic devices - Safety requirements for industrial robots - Part 1: Robots.

1. The compatibility of the product is the responsibility of the person who designs the equipment or decides its specifications.

Since the product specified here is used under various operating conditions, its compatibility with specific equipment must be decided by the person who designs the equipment or decides its specifications based on necessary analysis and test results. The expected performance and safety assurance of the equipment will be the responsibility of the person who has determined its compatibility with the product. This person should also continuously review all specifications of the product referring to its latest catalogue information, with a view to giving due consideration to any possibility of equipment failure when configuring the equipment.

2. Only personnel with appropriate training should operate machinery and equipment.

The product specified here may become unsafe if handled incorrectly. The assembly, operation and maintenance of machines or equipment including our products must be performed by an operator who is appropriately trained and experienced.

- 3. Do not service or attempt to remove product and machinery/ equipment until safety is confirmed.
 - 1. The inspection and maintenance of machinery/equipment should only be performed after measures to prevent falling or runaway of the driven objects have been confirmed.
 - 2. When the product is to be removed, confirm that the safety measures as mentioned above are implemented and the power from any appropriate source is cut, and read and understand the specific product precautions of all relevant products carefully.
 - 3. Before machinery/equipment is restarted, take measures to prevent unexpected operation and malfunction.
- 4. Our products cannot be used beyond their specifications. Our products are not developed, designed, and manufactured to be used under the following conditions or environments. Use under such conditions or environments is not covered.
 - 1. Conditions and environments outside of the given specifications, or use outdoors or in a place exposed to direct sunlight.
 - 2. Use for nuclear power, railways, aviation, space equipment, ships, vehicles, military application, equipment affecting human life, body, and property, fuel equipment, entertainment equipment, emergency shut-off circuits, press clutches, brake circuits, safety equipment, etc., and use for applications that do not conform to standard specifications such as catalogues and operation manuals.
 - 3. Use for interlock circuits, except for use with double interlock such as installing a mechanical protection function in case of failure. Please periodically inspect the product to confirm that the product is operating properly.

We develop, design, and manufacture our products to be used for automatic control equipment, and provide them for peaceful use in manufacturing industries.

Use in non-manufacturing industries is not covered. Products we manufacture and sell cannot be used for the

purpose of transactions or certification specified in the Measurement Act.

The new Measurement Act prohibits use of any unit other than SI units in Japan.

Limited warranty and **Disclaimer/Compliance** Requirements

The product used is subject to the following "Limited warranty and Disclaimer" and "Compliance Requirements". Read and accept them before using the product.

Limited warranty and Disclaimer

- 1. The warranty period of the product is 1 year in service or 1.5 years after the product is delivered, whichever is first. 2) Also, the product may have specified durability, running distance or replacement parts. Please consult your nearest sales
- 2. For any failure or damage reported within the warranty period which is clearly our responsibility, a replacement product or necessary parts will be provided. This limited warranty applies only to our product independently, and not to any other damage incurred due to the failure of the product.
- 3. Prior to using SMC products, please read and understand the warranty terms and disclaimers noted in the specified catalogue for the particular products.
- 2) Vacuum pads are excluded from this 1 year warranty. A vacuum pad is a consumable part, so it is warranted for a year after it is delivered. Also, even within the warranty period, the wear of a product due to the use of the vacuum pad or failure due to the deterioration of rubber material are not covered by the limited

Compliance Requirements

- 1. The use of SMC products with production equipment for the manufacture of weapons of mass destruction (WMD) or any other weapon is strictly prohibited.
- 2. The exports of SMC products or technology from one country to another are governed by the relevant security laws and regulations of the countries involved in the transaction. Prior to the shipment of a SMC product to another country, assure that all local rules governing that export are known and followed

Revision History

Edition C

CU

- A panel mount type has been added. - The number of pages has been increased from 12 to 16.

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