Equipment for the Food Manufacturing Industry

HF1- Series

Fluid contact parts
- No grease or NSF H1 grade grease

HF2- Series

Fluid contact parts
- No grease or NSF H1 grade grease
- FDA compliant materials

HF1/HF2 Compatible Products

Available without prefix

Applicable for a diverse range of food manufacturing processes / Possible to blow directly onto food / Designed for hygiene management in accordance with HACCP and other standards

Packaging Transfer Cleaning Box making Stirring/Mixing Filling Drying Cooling

HF☐ Series

SMC

HF1- Series/HF1 Compatible Products

Air Preparation Equipment/Pressure Control Equipment/Others

Compressed Air Purity Class: ISO 8573 Line Filter HF1B-AFF20/30/40-D			p. 5
Compressed Air Purity Class: ISO 8573 Mist Separator HF1B-AM20/30/40-D			p. 5
Compressed Air Purity Class: ISO 8573 Micro Mist Separator HF1B-AMD20/30/40-D			p. 5
Activated Carbon Filter HF1B-AMK20/30/40-D	HF1		p. 6
Air Filter HF1B-AF20/30/40/50/60-D			p. 7
Mist Separator HF1B-AFM20/30/40-D			p. 8
Micro Mist Separator HF1B-AFD20/30/40-D			p. 8
Membrane Air Dryer IDG	HF1 compatible		p. 9
Regulator HF1B-AR20/30/40/50/60(K)-D			p. 11
Filter Regulator HF1B-AW20/30/40/60(K)-D	HF1		p. 13
Precision Regulator HF1-IR1000/2000/3000-A			p. 15
Clean Regulator SRH3000/4000	HF1 compatible		p. 16
OSHA Standard Compliant/ Pressure Relief 3-Port Valve with Locking Holes HF1B-VHS20/30/40/50-D	HF1		p. 17

Fittings and Tubing

Insert Fittings KF			p. 18
Miniature Fittings M, MS	HF1 compatible		p. 18 / p. 19
Self-align Fittings H/DL/L/LL			p. 18
Stainless Steel 316 One-touch Fittings KQG2			p. 18

Fittings and Tubing

Stainless Steel 316 Insert Fittings KFG2			p. 19
Clean One-touch Fittings KPG			p. 19
Clean One-touch Fittings KPQ			p. 19
Nylon Tubing T/TIA			p. 20
Soft Nylon Tubing TS/TISA			p. 20
Polyurethane Tubing TU/TIUB	HF1 compatible		p. 21 / p. 24
Soft Polyurethane Tubing TUS			p. 27 / p. 28
Hard Polyurethane Tubing TUH			p. 29
Wear Resistant Tubing TUZ/TIUZB			p. 30
Polyurethane Coil Tubing TCU			p. 31
Polyurethane Flat Tubing TFU			p. 32

Flow Control Equipment

Speed Controller with One-touch Fitting HF1B-AS-F	HF1		p. 39
Stainless Steel Speed Controller ASG	HF1 compatible		p. 42

Pressure Gauges

Pressure Gauge for General Purposes G36/G46			p. 43 / p. 44
Pressure Gauge for General Purposes G36-X4/GA36-X4			p. 45
Oil-free/External Parts Copper-free Pressure Gauge G46E	HF1 compatible		p. 46
Pressure Gauge for Clean Regulator G46-SRA, B			p. 47

SMC

HF1- Series/HF1 Compatible Products

Switches/Sensors

3-Screen Display High-Precision Digital Pressure Switch ZSE20□(F)/ISE20□-X2			p. 48
3-Screen Display High-Precision Digital Pressure Switch ZSE20C(F)/ISE20C(H)		HF1 compatible	p. 50
3-Screen Display High-Precision Digital Pressure Switch ISE70/71-X2			p. 51
Digital Pressure Switch ISE35-X528			p. 52
Pressure Switch/ Reed Switch Type HF1B-IS10		HF1	p. 53
2-Colour Display Digital Flow Switch PF2M7			p. 54
2-Colour Display Digital Flow Switch PFMB7		HF1 compatible	p. 55
Flow Sensor PFMV5			p. 56

Process Valves

2-Port Solenoid Valve HF1B-JSX/JSXD		HF1	p. 57 p. 59
Pulse Valve (Valve for Dust Collector) HF1B-JSXFAE/F			p. 60
High Speed 2-Port Valve SX10		HF1 compatible	p. 61

Directional Control Valves

3-Port Solenoid Valve HF1-VP300/500/700		HF1	p. 62
Mechanical Valve HF1B-VM			p. 65

HF2- Series/HF2 Compatible Products

Air Preparation Equipment

Bacteria Removal Filter/ Hollow Fibre Element SFDA		HF2 compatible	p. 4

Fittings and Tubing

EHEDG Compliant Fittings KFG2H□-E			p. 19
Clean Design Fittings KFG2H□-C			p. 19
FDA Compliant Fittings KQG2-F/KQB2-F/KFG2-F		HF2 compatible	p. 19
FDA (U.S. Food and Drug Administration) and (EU) No 10/2011 Compliant Polyurethane Tubing TU-X214			p. 23
Fluoropolymer Tubing TL/TIL			p. 33

Fittings and Tubing

Fluoropolymer Tubing (PFA) TLM/TILM			p. 34
FEP Tubing (Fluoropolymer) TH/TIH			p. 36
Soft Fluoropolymer Tubing (Modified PTFE) TD/TID		HF2 compatible	p. 37
Polyolefin Tubing TPH			p. 38
Soft Polyolefin Tubing TPS			p. 38

Application Examples

● Removal of particles on the container
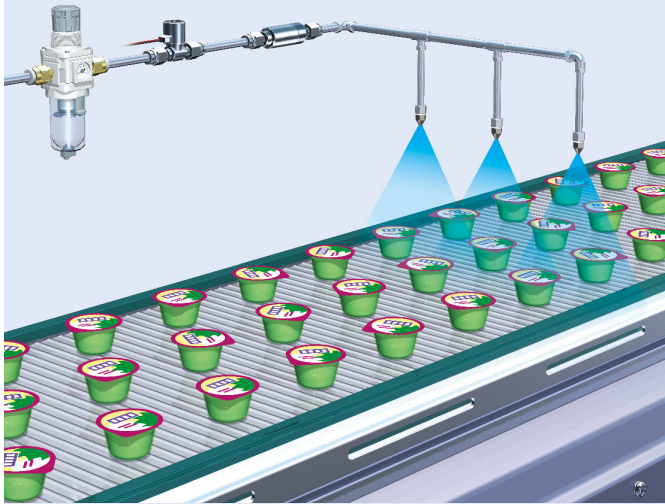
Air Preparation Equipment HF1B-AFF/AM□ Series
p. 5

Direct Operated 2-Port Solenoid Valve HF1B-JSX Series
p. 57

Bacteria Removal Filter SFDA Series
p. 4

● Blowing air onto breads
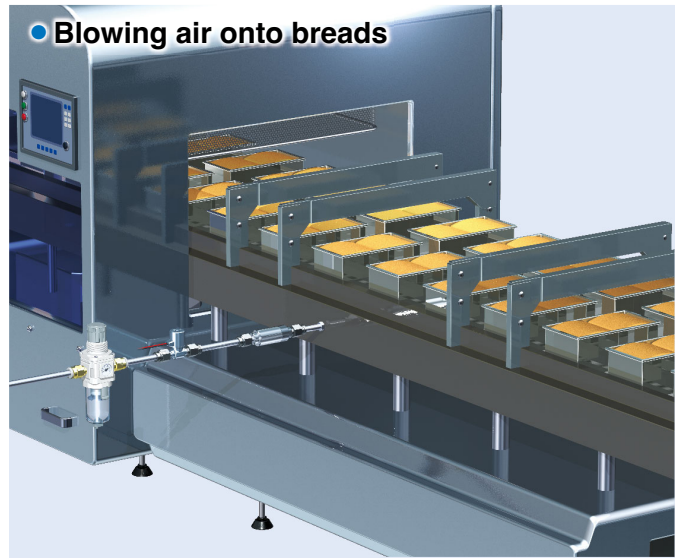
Air Preparation Equipment HF1B-AFF/AM□ Series
p. 5

Direct Operated 2-Port Solenoid Valve HF1B-JSX Series
p. 57

Bacteria Removal Filter SFDA Series
p. 4

● Nitrogen filling of packing machine
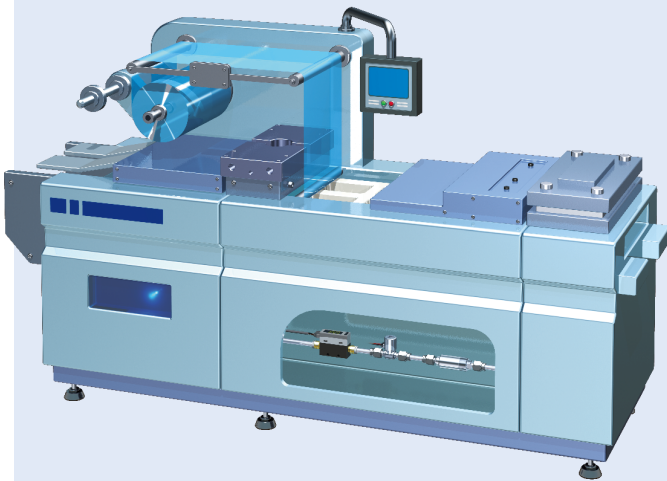
2-Colour Display Digital Flow Switch PF2M7 Series
p. 54

Direct Operated 2-Port Solenoid Valve HF1B-JSX Series
p. 57

Bacteria Removal Filter SFDA Series
p. 4

● Stirring

Restrictor In-line Type HF1B-AS-X214
p. 40

Direct Operated 2-Port Solenoid Valve HF1B-JSX Series
p. 57

Bacteria Removal Filter SFDA Series
p. 4

Pneumatic equipment circuit of air blower for food application (example)

ISO 8573-1 Purity class [7:9:4]

ISO 8573-1 Purity class [5:4:4]

ISO 8573-1 Purity class [1:4:1]

Pressure switch

Main line filter

Air filter Nominal filtration rating: 5 μm
Line filter Nominal filtration rating: 1 μm

Regulator

Mist separator Nominal filtration rating: 0.1 μm

Micro Mist Separator Nominal filtration rating: 0.01 μm

Activated carbon filter Oil concentration 0.003 mg/m³

Flow switch

2-port valve (3-port valve)

Restrictor

In-line filter Nominal filtration rating: 0.01 μm

Blow nozzle

Refrigerated air dryer

∗ Please use HF□ Series or HF□ compatible products on the downstream side refrigerated air dryer.

SMC

Bacteria Removal Filter Hollow Fibre Element

SFDA Series

RoHS

How to Order

SFDA 2 0 3 – F 02

Bacteria Removal Filter
(Bacteria removal performance LRV ≥ 9)

Size

Symbol	Max. flow rate
2	500 l/min

Case material

Symbol	Case material
3	Stainless steel

Port size

Symbol	Size
02	1/4
03	3/8

∗ The bracket is equipped as
standard.
(Single unit: SFD-BR200)

Thread type

Symbol	Type
—	Rc
F	G
N	NPT

Line Filter/Mist Separator/ Micro Mist Separator

HF1B-AFF/AM/AMD Series RoHS

HF1B-AFF   HF1B-AM   HF1B-AMD
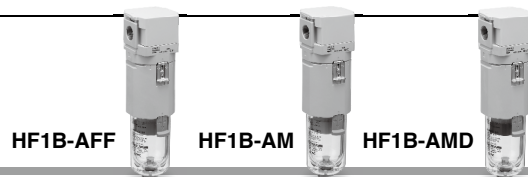
How to Order

HF1B – **AFF** **30** – ☐ **03** **BD** – ☐ – D

❶ ❷ ❸ ❹ ❺ ❻

· Option/Semi-standard: Select one each for **a** to **f**.
· Option/Semi-standard symbol: When more than one specification is required, indicate in alphanumeric order.
Example) HF1B-AM30-N03BD-6RZ-D

		Symbol	Description	❷ Body size		
				20	30	40
❶	Filter type	AFF	Nominal filtration rating: 1 μm	●	●	●
			Water droplet removal ratio: 99 %			
		AM	Nominal filtration rating: 0.1 μm	●	●	●
			Oil mist concentration on the outlet side: 1 mg/m³			
		AMD	Nominal filtration rating: 0.01 μm	●	●	●
			Oil mist concentration on the outlet side: 0.1 mg/m³			
		+				
❸	Thread type	—	Rc	●	●	●
		N[*1]	NPT	●	●	●
		F[*2]	G	●	●	●
		+				
❹	Port size	01	1/8	●	—	—
		02	1/4	●	●	●
		03	3/8	—	●	●
		04	1/2	—	—	●
		+				
❺ Option	a Mounting	—	Without mounting option	●	●	●
		B[*3]	With bracket	●	●	●
		+				
	b Float type auto drain	—	Without auto drain	●	●	●
		C[*4]	N.C. (Normally closed) Drain port is closed when pressure is not applied.	●	●	●
		D[*5]	N.O. (Normally open) Drain port is open when pressure is not applied.	—	●	●
		+				
❻ Semi-standard	c Bowl[*6]	—	Polycarbonate bowl	●	●	●
		2	Metal bowl	●	●	●
		6	Nylon bowl	●	●	●
		8	Metal bowl with level gauge	—	●	●
		C	With bowl guard	●	—[*7]	—[*7]
		6C	With bowl guard/Nylon bowl	●	—[*8]	—[*8]
		+				
	d Drain port[*9]	—	With drain cock	●	●	●
		J[*10]	Drain guide 1/8	●	—	—
			Drain guide 1/4	—	●	●
		W[*11]	Drain cock, Barb fitting (Ø 6)	—	●	●
		+				
	e Flow direction	—	Flow direction: Left to right	●	●	●
		R	Flow direction: Right to left	●	●	●
		+				
	f Unit	—	Name plate and caution plate for bowl in SI units: MPa, °C	●	●	●
		Z[*12]	Name plate and caution plate for bowl in imperial units: psi, °F	○[*13]	○[*13]	○[*13]

*1 Drain guide is NPT1/8 (applicable to the HF1B-AFF20, HF1B-AM20, and HF1B-AMD20) and NPT1/4 (applicable to the HF1B-AFF30, HF1B-AFF40, HF1B-AM30, HF1B-AM40, HF1B-AMD30, and HF1B-AMD40). The auto drain port comes with a Ø 3/8" One-touch fitting (applicable to the HF1B-AFF30, HF1B-AFF40, HF1B-AM30, HF1B-AM40, HF1B-AMD30, and HF1B-AMD40).
*2 Drain guide is G1/8 (applicable to the HF1B-AFF20, HF1B-AM20, and HF1B-AMD20) and G1/4 (applicable to the HF1B-AFF30, HF1B-AFF40, HF1B-AM30, HF1B-AM40, HF1B-AMD30, and HF1B-AMD40).
*3 A bracket is not assembled and supplied loose at the time of shipment. Including 2 mounting screws
*4 When pressure is not applied, condensate which does not start the auto drain mechanism will be left in the bowl. Releasing the residual condensate before ending operations for the day is recommended.

*5 If the compressor is small (0.75 kW, discharge flow is less than 100 l/min (ANR)), air leakage from the drain cock may occur during the start of operations. N.C. type is recommended.
*6 Refer to the chemical data in the **Web Catalogue** for chemical resistance of the bowl.
*7 A bowl guard is provided as standard equipment (polycarbonate).
*8 A bowl guard is provided as standard equipment (nylon).
*9 The combination of float type auto drain C and D is not available.
*10 Without a valve function
      The mounting screws are the same as the thread of ❸.
*11 The combination of metal bowl 2 and 8 is not available.
*12 For pipe thread type: NPT
*13 ○: For pipe thread type: NPT only

SMC

Activated Carbon Filter

HF1B-AMK Series

RoHS

HF1B-AMK

How to Order

HF1B – **AMK** **30** – **F** **03** **B** – ☐ – D

❶ ❷ ❸ ❹ ❺ ❻

· Option/Semi-standard: Select one each for **a** to **d**.
· Option/Semi-standard symbol: When more than one specification is required, indicate in alphanumeric order.
Example) HF1B-AMK30-N03B-6RZ-D

		Symbol	Description	❷ Body size		
				20	30	40
❶	Filter type	AMK	Activated carbon filter	●	●	●
+						
❸	Thread type	—	Rc	●	●	●
		N	NPT	●	●	●
		F	G	●	●	●
+						
❹	Port size	01	1/8	●	—	—
		02	1/4	●	●	●
		03	3/8	—	●	●
		04	1/2	—	—	●
+						
❺ Option	**a** Mounting	—	Without mounting option	●	●	●
		B*1	With bracket	●	●	●
+						
❻ Semi-standard	**b** Bowl*2	—	Polycarbonate bowl	●	●	●
		2	Metal bowl	●	●	●
		6	Nylon bowl	●	●	●
		C	With bowl guard	●	— *3	— *3
		6C	With bowl guard/Nylon bowl	●	— *4	— *4
+						
	c Flow direction	—	Flow direction: Left to right	●	●	●
		R	Flow direction: Right to left	●	●	●
+						
	d Pressure unit	—	Name plate and caution plate in SI units: MPa/°C	●	●	●
		Z*5	Name plate and caution plate in imperial units: psi/°F	○*6	○*6	○*6

*1 A bracket is not assembled and supplied loose at the time of shipment.
Including 2 mounting screws
*2 Refer to the chemical data in the **Web Catalogue** for chemical resistance of the bowl.
*3 A bowl guard is provided as standard equipment (polycarbonate).
*4 A bowl guard is provided as standard equipment (nylon).
*5 For pipe thread type: NPT
*6 ○: For pipe thread type: NPT only

SMC

Air Filter

HF1B-AF20-D to HF1B-AF60-D   (RoHS)

HF1B-AF30-D

How to Order

HF1B−AF **30**−□**03**BD−□−D
① ② ③ ④ ⑤

· Option/Semi-standard: Select one each for **a** to **f**.
· Option/Semi-standard symbol:
  When more than one specification is required, indicate in alphanumeric order.
Example) HF1B-AF30-03BD-R-D

		Symbol	Description	① Body size				
				20	30	40	50	60
②	Pipe thread type	—	Rc	●	●	●	●	●
		N	NPT	●	●	●	●	●
		F	G	●	●	●	●	●
		+						
③	Port size	01	1/8	●	—	—	—	—
		02	1/4	●	●	●	—	—
		03	3/8	—	●	●	—	—
		04	1/2	—	—	●	—	—
		06	3/4	—	—	●	●	—
		10	1	—	—	—	●	●
		+						
④ Option	a Mounting	—	Without mounting option	●	●	●	●	●
		B*1	With bracket	●	●	●	●	●
		+						
	b Float type auto drain*2	—	Without auto drain	●	●	●	●	●
		C*3	N.C. (Normally closed) Drain port is closed when pressure is not applied.	●	●	●	●	●
		D*4	N.O. (Normally open) Drain port is open when pressure is not applied.	—	●	●	●	●
		+						
⑤ Semi-standard	c Bowl*5	—	Polycarbonate bowl	●	●	●	●	●
		2	Metal bowl	●	●	●	●	●
		6	Nylon bowl	●	●	●	●	●
		8	Metal bowl with level gauge	—	●	●	●	●
		C	With bowl guard	●	—*6	—*6	—*6	—*6
		6C	With bowl guard (Nylon bowl)	●	—*7	—*7	—*7	—*7
		+						
	d Drain port*8	—	With drain cock	●	●	●	●	●
		J*9	Drain guide 1/8	●	—	—	—	—
			Drain guide 1/4	—	●	●	●	●
		W*10	Drain cock with barb fitting	—	●	●	●	●
		+						
	e Flow direction	—	Flow direction: Left to right	●	●	●	●	●
		R	Flow direction: Right to left	●	●	●	●	●
		+						
	f Unit	—	Unit on product label: MPa, °C	●	●	●	●	●
		Z*11	Unit on product label: psi, °F	○*12	○*12	○*12	○*12	○*12

∗1 Option B is included in the package with the product but does not come assembled. The assembly consists of 2 types of the bracket and 2 mounting screws.
∗2 The auto drain port is Ø 10 One-touch fitting (❷ Pipe thread type: Rc, G) or Ø 3/8" One-touch fitting (❷ Pipe thread type: NPT)
∗3 When pressure is not applied, condensate which does not start the auto drain mechanism will be left in the bowl. Releasing the residual condensate before ending operations for the day is recommended.
∗4 If the compressor is small (0.75 kW, discharge flow is less than 100 l/min (ANR)), air leakage from the drain cock may occur during the start of operations. N.C. type is recommended.
∗5 Refer to chemical data in the **Web Catalogue** for chemical resistance of the bowl.
∗6 A bowl guard is provided as standard equipment (polycarbonate).
∗7 A bowl guard is provided as standard equipment (nylon).
∗8 The combination of float type auto drain C and D is not available.
∗9 Without a valve function. The mounting screws are the same as the thread of ❷.
∗10 The combination of metal bowl 2 and 8 is not available.
∗11 For the pipe thread type: NPT.
∗12 ○: For the pipe thread type: NPT only

SMC

Mist Separator
HF1B-AFM20-D to HF1B-AFM40-D (RoHS)

Micro Mist Separator
HF1B-AFD20-D to HF1B-AFD40-D (RoHS)

How to Order   HF1B-AFM30-D   HF1B-AFD30-D

HF1B – AFM **30** – ☐ **03 BD** – ☐ – D

HF1B – AFD **30** – ☐ **03 BD** – ☐ – D

❶ ❷ ❸ ❹ ❺

· Option/Semi-standard: Select one each for **a** to **f**.
· Option/Semi-standard symbol:
  When more than one specification is required, indicate in alphanumeric order.
Example) HF1B-AFM30-03BD-R-D

		Symbol	Description	❶ Body size		
				20	30	40
❷	Pipe thread type	—	Rc	●	●	●
		N	NPT	●	●	●
		F	G	●	●	●
		+				
❸	Port size	01	1/8	●	—	—
		02	1/4	●	●	●
		03	3/8	—	●	●
		04	1/2	—	—	●
		06	3/4	—	—	●
		+				
❹ Option	a Mounting	—	Without mounting option	●	●	●
		B*1	With bracket	●	●	●
		+				
	b Float type auto drain*2	—	Without auto drain	●	●	●
		C*3	N.C. (Normally closed) Drain port is closed when pressure is not applied.	●	●	●
		D*4	N.O. (Normally open) Drain port is open when pressure is not applied.	—	●	●
		+				
❺ Semi-standard	c Bowl*5	—	Polycarbonate bowl	●	●	●
		2	Metal bowl	●	●	●
		6	Nylon bowl	●	●	●
		8	Metal bowl with level gauge	—	●	●
		C	With bowl guard	●	—*6	—*6
		6C	With bowl guard (Nylon bowl)	●	—*7	—*7
		+				
	d Drain port*8	—	With drain cock	●	●	●
		J*9	Drain guide 1/8	●	—	—
			Drain guide 1/4	—	●	●
		W*10	Drain cock with barb fitting	—	●	●
		+				
	e Flow direction	—	Flow direction: Left to right	●	●	●
		R	Flow direction: Right to left	●	●	●
		+				
	f Unit	—	Unit on product label: MPa, °C	●	●	●
		Z*11	Unit on product label: psi, °F	◯*12	◯*12	◯*12

∗1 Option B is included in the package with the product but does not come assembled. The assembly consists of 2 types of the bracket and 2 mounting screws.
∗2 The auto drain port is Ø 10 One-touch fitting (❷ Pipe thread type: Rc, G) or Ø 3/8" One-touch fitting (❷ Pipe thread type: NPT)
∗3 When pressure is not applied, condensate which does not start the auto drain mechanism will be left in the bowl. Releasing the residual condensate before ending operations for the day is recommended.
∗4 If the compressor is small (0.75 kW, discharge flow is less than 100 l/min (ANR)), air leakage from the drain cock may occur during the start of operations. N.C. type

is recommended.
∗5 Refer to chemical data in the **Web Catalogue** for chemical resistance of the bowl.
∗6 A bowl guard is provided as standard equipment (polycarbonate).
∗7 A bowl guard is provided as standard equipment (nylon).
∗8 The combination of float type auto drain C and D is not available.
∗9 Without a valve function. The mounting screws are the same as the thread of ❷.
∗10 The combination of metal bowl 2 and 8 is not available.
∗11 For the pipe thread type: NPT.
∗12 ◯: For the pipe thread type: NPT only

SMC

Membrane Air Dryer/Single Unit Type
Reduced purge IDG□A **Series**

IDG□A Series

Standard dew point –20 °C, –15 °C, –40 °C, –60 °C   **RoHS**

How to Order

Reduced purge
IDG□A Series

IDG 30 □ A – □ 03 □ – □

Size

30	
50	
60	
75	
100	

Standard dew point temperature/Outlet air flow rate

Symbol	Standard dew point [°C]	Flow rate by size, Outlet air flow rate [l/min (ANR)]				
		30	50	60	75	100
—	–20	300	500	Select from IDG Series (Web Catalogue)		
H	–15	300	500			
L	–40	75	110	170	240	300
S	–60	—	—	50	100	150

Thread type

Symbol	Type
—	Rc
N	NPT
F	G

Semi-standard

Symbol	Specifications
—	None (Standard)
R	Flow direction (Right → Left)

Accessory

Symbol	Specifications
—	None (Standard)
B	With bracket

∗ When symbol: B is indicated, a bracket assembly with a part number shown to the left below is included as an accessory.

Port size

Symbol	Port size	Size				
		30	50	60	75	100
02	1/4	●	●	—	—	—
03	3/8	●	●	●	●	●
04	1/2	—	—	●	●	●

Bracket Assembly (Accessory)/Part No.

Part no.	Applicable model
BM64	IDG30□A, IDG50□A
BM65	IDG60□A, IDG75□A, IDG100□A

∗ With hexagon socket head cap screws (2 pcs.) and spring washers (2 pcs.)

SMC

Membrane Air Dryer/Single Unit Type
IDG Series

Standard dew point –20 °C, –15 °C

RoHS

How to Order

IDG [10] [ ] – [ ] **02** [ ] – [ ]

Size

| 3 |
| 5 |
| 10 |
| 20 |
| 60 |
| 75 |
| 100 |

Standard dew point temperature/Outlet air flow rate

Symbol	Standard dew point [°C]	Flow rate by size, Outlet air flow rate [l/min (ANR)]						
		3	5	10	20	60	75	100
—	–20	25	50	100	200	600	750	1000
H	–15	25	50	100	200	600	750	1000
L	–40	—	—	—	—	Select from **IDG□A Series** (**Web Catalogue**)		
S	–60	—	—	—	—			

Thread type/One-touch fitting

Symbol	Type
—	Rc
N	NPT
F	G

Accessory

Symbol	Specifications
—	None (Standard)
B	With bracket (Excludes the IDG1)

∗ When symbol: B is indicated, a bracket assembly with a part number shown to the left below is included as an accessory.

Port size/Applicable tubing O.D.

Symbol	Port size	Piping type	Size						
			3	5	10	20	60	75	100
01	1/8	Thread	●	●	—	—	—	—	—
02	1/4		●	●	●	●	—	—	—
03	3/8		—	—	●	●	●	—	—
04	1/2		—	—	—	—	●	●	●

Semi-standard

Symbol	Specifications	Size						
		3	5	10	20	60	75	100
—	None (Standard)	●	●	●	●	●	●	●
R	Flow direction (Right → Left)	●	●	●	●	●	●	●
S	With dew point indicator	●	●	Standard equipment				

∗ In the case of more than one symbol, indicate them alphabetically.

Bracket Assembly (Accessory)/Part No.

Part no.	Applicable model
BM59	IDG3, 5
BM61	IDG10
BM63	IDG20
BM65	IDG60, 75, 100

∗ With hexagon socket head cap screws (2 pcs.) and spring washers (2 pcs.)

Regulator
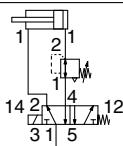## *HF1B-AR20-D to HF1B-AR60-D* ⟨RoHS⟩

Regulator with Backflow Function
## *HF1B-AR20K-D to HF1B-AR60K-D* ⟨RoHS⟩

· Models with the backflow function include a mechanism which allows for the air pressure in the outlet side to be released to the inlet side.

Example 1) When the pressure in the rear and the front of the cylinder differs:		Example 2) When the air supply is cut off and releasing the inlet pressure to the atmosphere, the residual pressure release of the outlet side can be ensured for a safety purpose.	
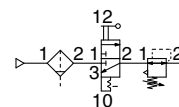
How to Order

HF1B – AR 30 ☐ – ☐ 03 BE – ☐ – D
①   ②   ③ ④ ⑤   ⑥

· Option/Semi-standard: Select one each for **a** to **g**.
· Option/Semi-standard symbol:
  When more than one specification is required, indicate in alphanumeric order.
Example) HF1B-AR30K-03BE-1NR-D

		Symbol	Description	① Body size				
				20	30	40	50	60
②	With backflow function	—	Without backflow function	●	●	●	●	●
		K*1	With backflow function	●	●	●	●	●
		+						
③	Pipe thread type	—	Rc	●	●	●	●	●
		N	NPT	●	●	●	●	●
		F	G	●	●	●	●	●
		+						
④	Port size	01	1/8	●	—	—	—	—
		02	1/4	●	●	●	—	—
		03	3/8	—	●	●	—	—
		04	1/2	—	—	●	—	—
		06	3/4	—	—	●	●	—
		10	1	—	—	—	●	●
		+						
⑤ Option*2	a Mounting	—	Without mounting option	●	●	●	●	●
		B*3	With bracket	●	●	●	●	●
		H	With set nut (for panel mount)	●	●	●	—	—
		+						
	b Pressure gauge*4	—	Without pressure gauge	●	●	●	●	●
		E	Square embedded type pressure gauge (with limit indicator)	●	●	●	●	●
		G	Round type pressure gauge (with limit indicator)	●	●	●	●	●
		M	Round type pressure gauge (with colour zone)	●	●	●	●	●
	Digital pressure switch*5	E1	Output: NPN output, Electrical entry: Wiring bottom entry	●	●	●	●	●
		E2	Output: NPN output, Electrical entry: Wiring top entry	●	●	●	●	●
		E3	Output: PNP output, Electrical entry: Wiring bottom entry	●	●	●	●	●
		E4	Output: PNP output, Electrical entry: Wiring top entry	●	●	●	●	●

SMC

⚠ Caution

Round type pressure gauge and square embedded type pressure gauge are standard. Refer to pages 43 and 44.
Please refer to pages 45 to 47 for non-grease type.
ISE35-X528 is used as the digital pressure switch. Refer to page 52.

HF1B-AR30-D

			Symbol	Description	❶ Body size				
					20	30	40	50	60
❻ Semi-standard	c	Set pressure*6	—	0.05 to 0.85 MPa setting	●	●	●	●	●
			1	0.02 to 0.2 MPa setting	●	●	●	●	●
			+						
	d	Exhaust mechanism	—	Relieving type	●	●	●	●	●
			N	Non-relieving type	●	●	●	●	●
			+						
	e	Flow direction	—	Flow direction: Left to right	●	●	●	●	●
			R	Flow direction: Right to left	●	●	●	●	●
			+						
	f	Knob	—	Downward	●	●	●	●	●
			Y	Upward	●	●	●	●	●
			+						
	g	Unit	—	Unit on product label: MPa, Pressure gauge in SI units: MPa	●	●	●	●	●
			Z*7	Unit on product label: psi, Pressure gauge: MPa/psi dual scale	○*9	○*9	○*9	○*9	○*9
			ZA*8	Digital pressure switch: With unit selection function	△*10	△*10	△*10	△*10	△*10

*1 Set the inlet pressure to at least 0.05 MPa higher than the set pressure.
*2 Options B, G, H, and M are not assembled and supplied loose at the time of shipment.
*3 The assembly consists of a bracket and set nuts (applicable to the HF1B-AR20(K)-D to HF1B-AR40(K)-D).
  For the HF1B-AR50(K)-D and HF1B-AR60(K)-D, the assembly consists of 2 types of the bracket and 2 mounting screws.
*4 When the pressure gauge is attached, a 1.0 MPa pressure gauge will be fitted for standard (0.85 MPa) type. 0.4 MPa pressure gauge for 0.2 MPa type.
*5 When choosing with H (panel mount), the installation space for lead wires will not be secured. In this case, select "wiring top entry" for the electrical entry. (Select "wiring bottom entry" when the semi-standard Y is chosen simultaneously.)
*6 Pressure can be set higher than the specification pressure in some cases, but use pressure within the specification range.
*7 For the pipe thread type: NPT
  Cannot be used with M: Round type pressure gauge (with colour zone). Available by request for special. The digital pressure switch will be equipped with the unit selection function, setting to psi initially.
*8 For options: E1, E2, E3, E4
*9 ○: For the pipe thread type: NPT only
*10 △: Select with options: E1, E2, E3, E4.

Filter Regulator
HF1B-AW20-D to HF1B-AW60-D (RoHS)

Filter Regulator with Backflow Function
HF1B-AW20K-D to HF1B-AW60K-D (RoHS)

· **Integrated filter and regulator units save space and require less piping.**
· **Models with the backflow function include a mechanism which allows for the air pressure in the outlet side to be released to the inlet side.**

Example)
When the air supply is cut off and releasing the inlet pressure to the atmosphere, the residual pressure release of the outlet side can be ensured for a safety purpose.
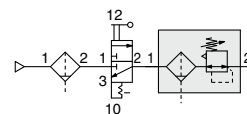
How to Order

HF1B – AW **30** ☐ – ☐ **03** **BE** – ☐ – D
     ❶ ❷   ❸ ❹ ❺   ❻

· Option/Semi-standard: Select one each for **a** to **i**.
· Option/Semi-standard symbol: When more than one specification is required, indicate in alphanumeric order.
Example) HF1B-AW30K-03BE-1NR-D

		Symbol	Description	❶ Body size			
				20	**30**	**40**	**60**
❷	With backflow function	—	Without backflow function	●	●	●	●
		K*1	With backflow function	●	●	●	●
		+					
❸	Pipe thread type	—	Rc	●	●	●	●
		N	NPT	●	●	●	●
		F	G	●	●	●	●
		+					
❹	Port size	01	1/8	●	—	—	—
		02	1/4	●	●	●	—
		03	3/8	—	●	●	—
		04	1/2	—	—	●	—
		06	3/4	—	—	●	●
		10	1	—	—	—	●
		+					
❺ Option*2	**a** Mounting	—	Without mounting option	●	●	●	●
		B*3	With bracket	●	●	●	●
		H	With set nut (for panel mount)	●	●	●	—
		+					
	b Float type auto drain*4	—	Without auto drain	●	●	●	●
		C*5	N.C. (Normally closed) Drain port is closed when pressure is not applied.	●	●	●	●
		D*6	N.O. (Normally open) Drain port is open when pressure is not applied.	—	●	●	●
		+					
	c Pressure gauge*7	—	Without pressure gauge	●	●	●	●
		E	Square embedded type pressure gauge (with limit indicator)	●	●	●	●
		G	Round type pressure gauge (with limit indicator)	●	●	●	●
		M	Round type pressure gauge (with colour zone)	●	●	●	●
	Digital pressure switch*8	E1	Output: NPN output, Electrical entry: Wiring bottom entry	●	●	●	●
		E2	Output: NPN output, Electrical entry: Wiring top entry	●	●	●	●
		E3	Output: PNP output, Electrical entry: Wiring bottom entry	●	●	●	●
		E4	Output: PNP output, Electrical entry: Wiring top entry	●	●	●	●
		+					
❻ Semi-standard	**d** Set pressure*9	—	0.05 to 0.85 MPa setting	●	●	●	●
		1	0.02 to 0.2 MPa setting	●	●	●	●
		+					
	e Bowl*10	—	Polycarbonate bowl	●	●	●	●
		2	Metal bowl	●	●	●	●
		6	Nylon bowl	●	●	●	●
		8	Metal bowl with level gauge	—	●	●	●
		C	With bowl guard	●	—*11	—*11	—*11
		6C	With bowl guard (Nylon bowl)	●	—*12	—*12	—*12
		+					
	f Drain port*13	—	With drain cock	●	●	●	●
		J*14	Drain guide 1/8	●	—	—	—
			Drain guide 1/4	—	●	●	●
		W*15	Drain cock with barb fitting	—	●	●	●

SMC

⚠ **Caution**

Round type pressure gauge and square embedded type pressure gauge are standard. Refer to pages 43 and 44.
Please refer to pages 45 to 47 for non-grease type.
ISE35-X528 is used as the digital pressure switch. Refer to page 52.

HF1B-AW30-D

		Symbol	Description	❶ Body size			
				20	**30**	**40**	**60**
g	Exhaust mechanism	—	Relieving type	●	●	●	●
		N	Non-relieving type	●	●	●	●
		+					
h	Flow direction	—	Flow direction: Left to right	●	●	●	●
		R	Flow direction: Right to left	●	●	●	●
		+					
i	Unit	—	Unit on product label: MPa, °C, Pressure gauge in SI units: MPa	●	●	●	●
		Z[16]	Unit on product label: psi, °F, Pressure gauge: MPa/psi dual scale	○[18]	○[18]	○[18]	○[18]
		ZA[17]	Digital pressure switch: With unit selection function	△[19]	△[19]	△[19]	△[19]

(Left side labels: ❻ Semi-standard)

∗1 Set the inlet pressure to at least 0.05 MPa higher than the set pressure.
∗2 Options B, G, H, and M are not assembled and supplied loose at the time of shipment.
∗3 The assembly consists of a bracket and set nuts (applicable to the HF1B-AW20(K)-D to HF1B-AW40(K)-D).
     For the HF1B-AW60(K)-D, the assembly consists of 2 types of the bracket and 2 mounting screws.
∗4 The auto drain port is Ø 10 One-touch fitting (❷ Pipe thread type: Rc, G) or Ø 3/8" One-touch fitting (❷ Pipe thread type: NPT)
∗5 When pressure is not applied, condensate which does not start the auto drain mechanism will be left in the bowl. Releasing the residual condensate before ending operations for the day is recommended.
∗6 If the compressor is small (0.75 kW, discharge flow is less than 100 l/min (ANR)), air leakage from the drain cock may occur during the start of operations. N.C. type is recommended.
∗7 When the pressure gauge is attached, a 1.0 MPa pressure gauge will be fitted for standard (0.85 MPa) type. 0.4 MPa pressure gauge for 0.2 MPa type.
∗8 When choosing with H (panel mount), the installation space for lead wires will not be secured. In this case, select "wiring bottom entry" for the electrical entry.

∗9 Pressure can be set higher than the specification pressure in some cases, but use pressure within the specification range.
∗10 Refer to chemical data in the **Web Catalogue** for chemical resistance of the bowl.
∗11 A bowl guard is provided as standard equipment (polycarbonate).
∗12 A bowl guard is provided as standard equipment (nylon).
∗13 The combination of float type auto drain C and D is not available.
∗14 Without a valve function. The mounting screws are the same as the thread of ❷.
∗15 The combination of metal bowl 2 and 8 is not available.
∗16 For the pipe thread type: NPT.
     Cannot be used with M: Round type pressure gauge (with colour zone). Available by request for special. The digital pressure switch will be equipped with the unit selection function, setting to psi initially.
∗17 For options: E1, E2, E3, E4
∗18 ○: For the pipe thread type: NPT only
∗19 △: Select with options: E1, E2, E3, E4.

Precision Regulator
HF1-IR1000-A/2000-A/3000-A (RoHS)

How to Order

HF1-IR **1** 0 **0** **0** - ☐ **01** **B** - ☐ - A
    ❶   ❷ ❸   ❹ ❺ ❻ ❼

- Option/Semi-standard: Select one each for **a** to **d**.
- Option/Semi-standard symbol: When more than one specification is required, indicate in alphanumeric order.

		Symbol	Description	❶ Body size		
				1	2	3
❷	Set pressure range	0	0.005 to 0.2 MPa	●	●	–
			0.01 to 0.2 MPa	–	–	●
		1	0.01 to 0.4 MPa	●	●	●
		2	0.01 to 0.8 MPa	●	●	●
		+				
❸	Exhaust direction	0	Bottom exhaust	●	●	●
		1	Front exhaust	–	–	●
		2	Rear exhaust	–	–	●
		+				
❹	Pipe thread type	—	Rc	●	●	●
		N	NPT	●	●	●
		F	G	●	●	●
		+				
❺	Port size	01	1/8	●	–	–
		02	1/4	–	●	●
		03	3/8	–	–	●
		04	1/2	–	–	●
		+				
❻ Option*1	**a** Mounting	—	Without mounting option	●	●	●
		B*2	With bracket	●	●	●
		H	With hexagon panel nut (for panel mount)	●	●	●
		+				
	Pressure gauge	—	Without pressure gauge	●	●	●
		G	Round type pressure gauge	●	●	●
	b With digital pressure switch	EA	NPN open collector 1 output	●	●	●
		EB	PNP open collector 1 output	●	●	●
		EC	NPN open collector 2 outputs + Analogue voltage output	●	●	●
		ED	NPN open collector 2 outputs + Analogue current output	●	●	●
		+				
❼ Semi-standard	**c** Flow direction	—	Flow direction: Left to right	●	●	●
		R	Flow direction: Right to left	●	●	●
		+				
	d Knob	—	Upward	●	●	●
		V	Downward	●	●	●

*1 Options are not assembled and supplied loose at the time of shipment. B and H cannot be selected at the same time. The previous bracket cannot be used for this product.
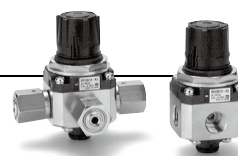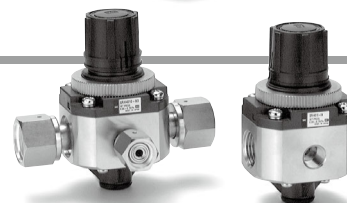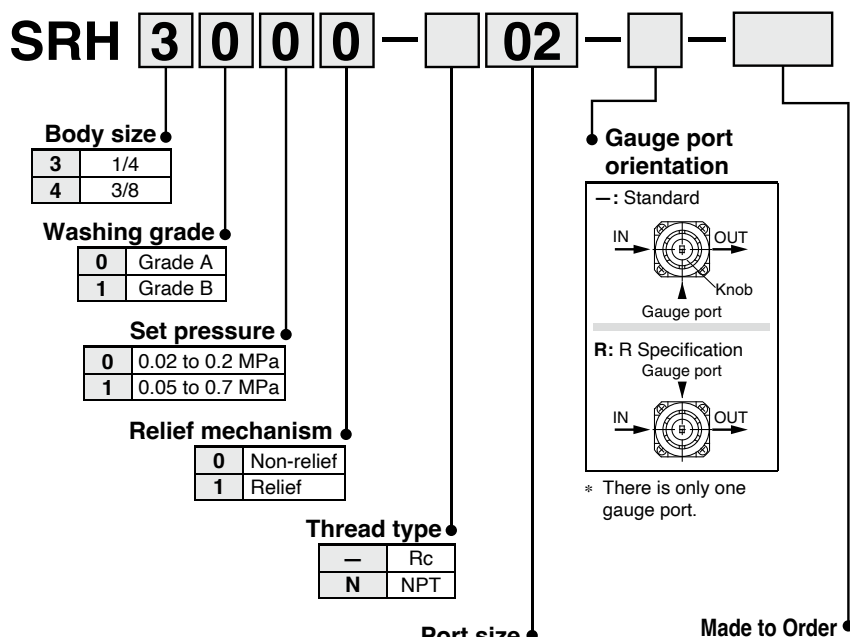*2 The assembly consists of a bracket and set nuts.

SMC

Clean Regulator

SRH Series

RoHS

How to Order

SRH [3] [0] [0] [0] — [ ] [02] — [ ] — [ ]

Body size

3	1/4
4	3/8

Washing grade

0	Grade A
1	Grade B

Set pressure

0	0.02 to 0.2 MPa
1	0.05 to 0.7 MPa

Relief mechanism

0	Non-relief
1	Relief

Thread type

—	Rc
N	NPT

Port size

Symbol	Piping port size	SRH3000	SRH4000
01	1/8	●	—
02	1/4	●	●
03	3/8	—	●
04	1/2	—	●
A2	With metal gasket seal fitting	URJF 1/4	—
A3	With metal gasket seal fitting	—	URJF 3/8

Gauge port orientation

—: Standard

IN → [ ] → OUT
Knob
Gauge port

R: R Specification
Gauge port

IN → [ ] → OUT

∗ There is only one gauge port.

Made to Order
Refer to the **Web Catalogue** for details.

X210	EPDM seals
X211	With relief port fittings (Applicable tube O.D.: Ø 4)
X216	Machined relief port M5 thread
X233	Knob operation product with reduced torque
X234	Aluminium body

∗ The pressure gauge is optional. Refer to the option specifications below.
Note that the products used for the port size A2 or A3 are not available at SMC.

Options

Pressure Gauge

Specifications

Item \ Model	G46-□-02-SRA	G46-□-02-SRB
Port size	R1/4	
Operating temperature range	0 to 60 °C (No freezing)	
Accuracy	± 3 %F.S.	
Scale range	270°	
Parts washing (fluid-contact parts)	Precision wash	General degrease
Assembly and adjustment environment	Clean room	General production line
Oil free/Water free	Non-lube / Non-wet	
Materials Fluid-contact parts	Stainless steel 316	
Case	Stainless steel 304 (Black melamine coating)	
Clear cover	Polycarbonate (Hard coated) Part No. G46-00-00-2	
Internal parts	Brass	
Weight	80 g	

Single Action
HF1B-VHS20/30/40/50-D Series
Double Action
HF1B-VHS20W/30W/40W/50W-D Series

HF1B-VHS30-D

How to Order

HF1B – VHS 30 ☐ – ☐ 03 – ☐ – ☐ – D
① ② ③ ④ ⑤ ⑥

· Option/Semi-standard: Select one each for **a** to **f**.
· Option/Semi-standard symbol:
  When more than one specification is required, indicate in alphanumeric order.
Example) HF1B-VHS30-N03-BS-RZ-D

		Symbol	Description	① Body size			
				20	**30**	**40**	**50**
②	Handle operation	—	Single action	●	●	●	●
		W	Double action	●	●	●	●
		+					
③	Pipe thread type	—	Rc*1	●	●	●	●
		N	NPT	●	●	●	●
		F	G	●	●	●	●
		+					
④	Port size	01	1/8	●	—	—	—
		02	1/4	●	●	●	—
		03	3/8	—	●	●	—
		04	1/2	—	—	●	—
		06	3/4	—	—	●	●
		10	1	—	—	—	●
		+					
⑤ Option	**a** Mounting	—	Without mounting option	●	●	●	●
		B	With bracket	●	●	●	●
		+					
	b Silencer	—	Without silencer	●	●	●	●
		S	With built-in silencer (for EXH port)	●	●	●	●
		+					
⑥ Semi-standard	**c** Handle colour	—	Red	●	●	●	●
		K	Black	●	●	●	●
		+					
	d Handle material	—	Resin	●	●	●	●
		M	Metal	●	●	●	●
		+					
	e Flow direction	—	Flow direction: Left to right	●	●	●	●
		R	Flow direction: Right to left	●	●	●	●
		+					
	f Pressure unit	—	Product label in SI units: MPa	●	●	●	●
		Z*2	Product label in imperial units: psi	○*3	○*3	○*3	○*3

*1 The pipe thread type for the EXH port is G.
*2 For the pipe thread type: NPT only. This product is for overseas use only according to the New Measurement Act. (The SI unit type is provided for use in Japan.)
*3 ○: For the pipe thread type: NPT only

SMC

HF1 compatible | HF2 compatible *1

Fittings
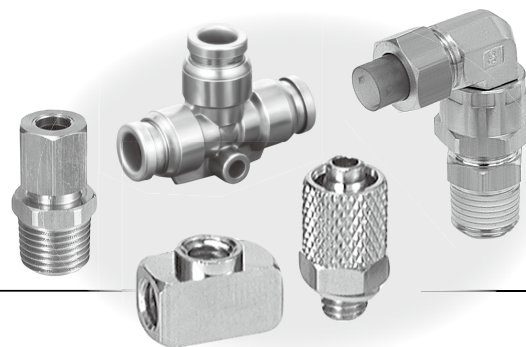
*1 Only EHEDG compliant/Clean design/FDA compliant fittings

Insert Fittings KF

RoHS

- –101.3 kPa applicable
- Piping can be done without removing the nut.
- Fluid temperature: –5 to 150 °C (Brass sleeve)
  –5 to 60 °C (Resin sleeve)
- Steam can be used.
- Grease-free

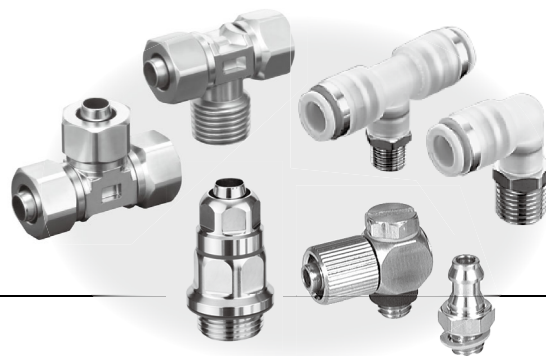| Series	Applicable tubing O.D.	Connection thread
KF	Ø 4, Ø 6, Ø 8, Ø 10, Ø 12	1/8, 1/4, 3/8, 1/2

Miniature Fittings M

RoHS

- Compact and doesn't require tools for connection
- Compact piping space
- Hose nipple, Hose elbow, Barb

Series	Applicable tubing O.D.	Connection thread
M-☐☐-2	Ø 2	M3, M5
M	Ø 3.2, Ø 4, Ø 6	M3, M5, 1/8

Self-align Fittings H/DL/L/LL

RoHS

- Applicable for use on soft copper steel pipes
- Flared ridge metal ferrule

Series	Applicable tubing O.D.	Connection thread
H	Ø 4, Ø 6, Ø 8, Ø 10, Ø 12	1/8, 1/4, 3/8, 1/2
DL	Ø 4, Ø 6, Ø 8, Ø 10, Ø 12	1/8, 1/4, 3/8, 1/2
L	Ø 4, Ø 6, Ø 8, Ø 10, Ø 12	1/8, 1/4, 3/8, 1/2
LL	Ø 4, Ø 6, Ø 8, Ø 10, Ø 12	1/8, 1/4, 3/8, 1/2

Stainless Steel 316 One-touch Fittings KQG2

RoHS

- Compact and lightweight
- Fluid temperature: –5 to 150 °C
- Materials: Metal parts stainless steel 316, seal parts special FKM
- Grease-free/Can be used with steam
  Certified to meet current Food Sanitation Law standards

Series	Size	Applicable tubing O.D.	Connection thread
KQG2	Metric	Ø 3.2, Ø 4, Ø 6, Ø 8, Ø 10, Ø 12, Ø 16	M5 R, Rc 1/8, 1/4, 3/8, 1/2
KQG2	Inch	Ø 1/8", Ø 5/32", Ø 1/4", Ø 5/16", Ø 3/8", Ø 1/2"	UNF10-32 NPT1/8, 1/4, 3/8, 1/2

Fittings

*1 Only EHEDG compliant/Clean design/FDA compliant fittings

Stainless Steel 316 Insert Fittings KFG2

RoHS

- Compact and lightweight
- Fluid temperature: –65 to 260 °C (Swivel elbow: –5 to 150 °C)
- Material: Stainless steel 316   Rubber materials are not used. (Excluding the swivel elbow)
- Grease-free/Can be used with steam
  Certified to meet current Food Sanitation Law standards

Series	Size	Tubing O.D. x I.D.	Connection thread
KFG2	Metric	Ø 4 x Ø 2.5, Ø 4 x Ø 3, Ø 6 x Ø 4, Ø 8 x Ø 6, Ø 10 x Ø 7.5, Ø 10 x Ø 8, Ø 12 x Ø 9, Ø 12 x Ø 10, Ø 16 x Ø 13	R, Rc 1/8, 1/4, 3/8, 1/2
KFG2	Inch	Ø 1/8" x Ø 0.086", Ø 5/32" x 0.098", Ø 1/4" x Ø 5/32", Ø 5/16" x 0.236", Ø 3/8" x Ø 1/4", Ø 1/2" x Ø 3/8"	NPT1/8, 1/4, 3/8, 1/2

Miniature Fittings Stainless Steel 316 MS

RoHS

- Can be used in corrosive conditions
- Compact piping space
- Hose nipple, Hose elbow

Series	Applicable tubing O.D.	Connection thread
MS	Ø 3.2, Ø 4, Ø 6	M5

Clean One-touch Fittings for Driving Air Piping KPQ/KPG

RoHS

- One-touch fittings suitable for driveline air systems in clean room environments
- Resin parts: Polypropylene
- All metal portions: Brass (Electroless nickel-plated) KPQ
  Stainless steel (Stainless steel 304) KPG

KPQ

KPG

Series	Applicable tubing O.D.	Connection thread
KPQ	Ø 4, Ø 6, Ø 8, Ø 10, Ø 12	M5, 1/8, 1/4, 3/8, 1/2
KPG	Ø 4, Ø 6, Ø 8, Ø 10, Ø 12	M5, 1/8, 1/4, 3/8, 1/2

EHEDG Compliant/Clean Design/FDA Compliant Fittings KFG2H□-E/KFG2H□-C/KQ□2-F KFG2-F

RoHS

EHEDG compliant fittings   Clean design fittings

FDA compliant fittings

- Hygienic design prevents liquid from accumulating after cleaning (EHEDG compliant, Clean design fittings)
- FDA compliant materials

Type	Series	Description	Thread type
EHEDG compliant	KFG2H□-E	Stainless steel 316 insert fittings	M, G thread
Clean design	KFG2H□-C	Stainless steel 316 insert fittings	M, G thread
FDA compliant	KQG2-F	Stainless steel 316 One-touch fittings	M, R, Rc, UNF, NPT, G
FDA compliant	KQB2-F	Metal One-touch fittings	M, R, Rc, UNF, NPT, G
FDA compliant	KFG2-F	Stainless steel 316 insert fittings	R, Rc, NPT, G

SMC

Nylon Tubing

T/TIA Series
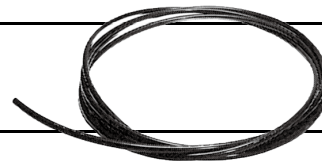
RoHS

Model

● — 20 m roll   □ — 100 m roll (T1613 is reel.)

	Tubing size												
	Metric size (T series)								Inch size (TIA series)				
Model	T0425	T0403	T0604	T0645	T0806	T1075	T1209	T1613	TIA01	TIA05	TIA07	TIA11	TIA13
Tubing O.D. [mm]	4	4	6	6	8	10	12	16	3.18	4.76	6.35	9.53	12.7
Tubing I.D. [mm]	2.5	3	4	4.5	6	7.5	9	13	2.18	3.48	4.57	6.99	9.56
Black (B)	●□	●	●□	●□	●□	●□	●□	●□	●	●	●	●	●
White (W)	●□	●	●□	●□	●□	●□	●□	●□	●	●	●	●	●
Red (R)	●		●	●	●	●	●						
Blue (BU)	●		●	●	●	●	●						
Yellow (Y)	●		●	●	●	●	●						
Green (G)			●										

5⁄32" — corresponds to T0425
5⁄16" — corresponds to T0806
Nominal size (mm) 3.2

Nominal size (inch): 1⁄8" 3⁄16" 1⁄4" 3⁄8" 1⁄2"

How to Order

T0425 **B** – **20**

Tubing model ●

Colour ●

Symbol	Colour
B	Black (Opaque)
W	White (Material colour)
R	Red (Opaque)
BU	Blue (Opaque)
Y	Yellow (Opaque)
G	Green (Opaque)

Length per roll ●

Symbol	Length
20	20 m roll
100	100 m roll (Black and white only)

Soft Nylon Tubing

TS/TISA Series

RoHS

Model

● — 20 m roll   □ — 100 m roll (TS1612 is reel.)

	Tubing size											
	Metric size (TS series)						Inch size (TISA series)					
Model	TS0425	TS0604	TS0806	TS1075	TS1209	TS1612	TISA01	TISA05	TISA07	TISA11	TISA13
Tubing O.D. [mm]	4	6	8	10	12	16	3.18	4.76	6.35	9.53	12.7
Tubing I.D. [mm]	2.5	4	6	7.5	9	12	2.18	3.48	4.57	6.99	9.56
Black (B)	●□	●□	●□	●□	●□	●□	●	●	●	●	●
White (W)	●□	●□	●□	●□	●□	●□	●	●	●	●	●
Red (R)	●	●	●	●	●						
Blue (BU)	●	●	●	●	●						
Yellow (Y)	●	●	●	●	●						
Green (G)		●	●	●							

5⁄32" — corresponds to TS0425
5⁄16" — corresponds to TS0806
Nominal size (mm) 3.2

Nominal size (inch): 1⁄8" 3⁄16" 1⁄4" 3⁄8" 1⁄2"

How to Order

TS0604 **W** – **20**

Tubing model ●

Colour ●

Symbol	Colour
B	Black (Opaque)
W	White (Material colour)
R	Red (Opaque)
BU	Blue (Opaque)
Y	Yellow (Opaque)
G	Green (Opaque)

Length per roll ●

Symbol	Length
20	20 m roll
100	100 m roll (Black and white only)

SMC

Polyurethane Tubing
TU/TIUB Series

RoHS

Model/Specifications

● — 20 m roll   □ — 100 m roll (TU1610 is reel.)   ◇ — 100 m roll, 200 m roll
△ — Option   ■ — Manufactured upon receipt of order (Please consult with SMC.)

Model	Metric size (TU series)							Inch size (TIUB series)				
	TU0212	TU0425	TU0604	TU0805	TU1065	TU1208	TU1610	TIUB01	TIUB05	TIUB07	TIUB11	TIUB13
Tubing O.D. [mm]	2	4	6	8	10	12	16	3.18	4.76	6.35	9.53	12.7
Tubing I.D. [mm]	1.2	2.5	4	5	6.5	8	10	2	3.18	4.23	6.35	8.46
Black (B)	●	◇	◇	□	□	□	□	●	●	●	●	●
White (W)	●	◇	◇	□	□	□	□	●	△	△	△	△
Red (R)	●	◇	◇	□	□	□	■	●	△	△	△	△
Blue (BU)	●	◇	◇	□	□	□	□	●	●	●	●	●
Yellow (Y)	●	◇	◇	□	□	□	■	●	△	△	△	△
Green (G)	●	◇	◇	□	□	□	■	●	△	△	△	△
Clear (C)	●	●	◇	□	□	□	□	●	△	△	△	△
Orange (YR)	●	◇	◇	□	□	□	■	●	△	△	△	△
Solid blue (BU1)	■	●	●	●	●	●	■	●	■	■	■	■
Clear blue (BU2)	■	●	●	●	●	●	■	●	■	■	■	■
Medium blue (BU3)	■	●	●	●	●	●	■	●	■	■	■	■
Brown (BR1)	■	●	●	●	●	●	■	●	■	■	■	■
Solid green (G1)	■	●	●	●	●	●	■	●	■	■	■	■
Clear green (G2)	■	●	●	●	●	●	■	●	■	■	■	■
Neon green (G3)	■	●	●	●	●	●	■	●	■	■	■	■
Dark green (G4)	■	●	●	●	●	●	■	●	■	■	■	■
Grey (GR1)	■	●	●	●	●	●	■	●	■	■	■	■
Light grey (GR2)	■	●	●	●	●	●	■	●	■	■	■	■
Neon pink (P1)	■	●	●	●	●	●	■	●	■	■	■	■
Solid purple (PU1)	■	●	●	●	●	●	■	●	■	■	■	■
Clear purple (PU2)	■	●	●	●	●	●	■	●	■	■	■	■
Solid red (R1)	■	●	●	●	●	●	■	●	■	■	■	■
Clear red (R2)	■	●	●	●	●	●	■	●	■	■	■	■
Silver (S1)	■	●	●	●	●	●	■	●	■	■	■	■
Solid yellow (Y1)	■	●	●	●	●	●	■	●	■	■	■	■
Clear yellow (Y2)	■	●	●	●	●	●	■	●	■	■	■	■
Neon yellow (Y3)	■	●	●	●	●	●	■	●	■	■	■	■
Clear orange (YR1)	■	●	●	●	●	●	■	●	■	■	■	■
Neon orange (YR2)	■	●	●	●	●	●	■	●	■	■	■	■

Nominal size (inch): 5/32" (TU0805), 5/16" (TU1065), 1/8" (TIUB01), 3/16" (TIUB05), 1/4" (TIUB07), 3/8" (TIUB11), 1/2" (TIUB13)

Nominal size (mm): 3.2

SMC
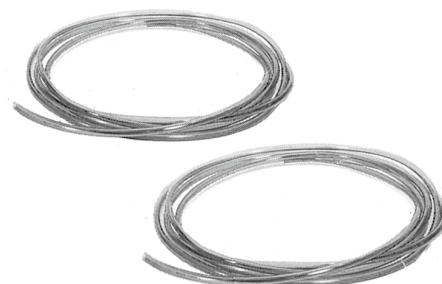
How to Order

TU0425 | **BU** – **20**

Tubing model •

Length per roll

Symbol	Length
20	20 m roll
100	100 m roll
200	200 m roll

• **Colour**

Symbol	Colour
B	Black (Opaque)
W	White (Opaque)
R	Red (Translucent)
BU	Blue (Translucent)
Y	Yellow (Opaque)
G	Green (Opaque)
C	Clear (Material colour)
YR	Orange (Opaque)
BU1	Solid blue (Opaque)
BU2	Clear blue (Translucent)
BU3	Medium blue (Opaque)
BR1	Brown (Opaque)
G1	Solid green (Opaque)
G2	Clear green (Translucent)
G3	Neon green (Opaque)
G4	Dark green (Opaque)

Symbol	Colour
GR1	Grey (Opaque)
GR2	Light grey (Opaque)
P1	Neon pink (Opaque)
PU1	Solid purple (Opaque)
PU2	Clear purple (Translucent)
R1	Solid red (Opaque)
R2	Clear red (Translucent)
S1	Silver (Opaque)
Y1	Solid yellow (Opaque)
Y2	Clear yellow (Translucent)
Y3	Neon yellow (Opaque)
YR1	Clear orange (Translucent)
YR2	Neon orange (Opaque)

Made to Order

(Please contact SMC for detailed specifications, dimensions, delivery times, and specifications other than those mentioned above.)

Compatible with the Food Sanitation Law	Metric size: Suffix "-X217" to the end of part number. Ex.) TU0425BU-20-X217
FDA (U.S. Food and Drug Administration) In compliance with the EU No10/2011 dissolution test	Metric size: Suffix "-X214" to the end of part number. Ex.) TU0425BU-20-X214

Made to Order Availability

Part no.	Length	Model TU0425☐	TU0604☐	TU0805☐	TU1065☐	TU1208☐	TIUB01☐	TIUB05☐	TIUB07☐	TIUB11☐	TIUB13☐	Colour
X217∗1	20 m roll	○	○	○	○	○						Black, White, Blue, Clear
X214∗1	20 m roll	○	○	○	○	○						Black, White, Red, Blue, Yellow, Green, Clear, Orange

∗1 Note that the model number is not printed on the tube body.

FDA (U.S. Food and Drug Administration) and (EU) No 10/2011 Compliant Polyurethane Tubing

RoHS

In compliance with the FDA's (U.S. Food and Drug Administration) § 177.2600 dissolution test and the (EU) No 10/2011 dissolution test

Model

● – 20 m roll

Model	Tubing size (Metric size)				
	TU0425	TU0604	TU0805	TU1065	TU1208
O.D. [mm]	4	6	8	10	12
I.D. [mm]	2.5	4	5	6.5	8
Black (B)	●	●	●	●	●
White (W)	●	●	●	●	●
Red (R)	●	●	●	●	●
Blue (BU)	●	●	●	●	●
Yellow (Y)	●	●	●	●	●
Green (G)	●	●	●	●	●
Clear (C)	●	●	●	●	●
Orange (YR)	●	●	●	●	●

How to Order

TU0425 BU – 20 – X214

Tubing model

Model	O.D. x I.D. [mm]
TU0425	4 x 2.5
TU0604	6 x 4
TU0805	8 x 5
TU1065	10 x 6.5
TU1208	12 x 8

FDA (U.S. Food and Drug Administration) and (EU) No 10/2011 compliant

20 m roll

Colour

Symbol	Colour	Symbol	Colour
B	Black (Opaque)	Y	Yellow (Opaque)
W	White (Opaque)	G	Green (Opaque)
R	Red (Translucent)	C	Clear (Material colour)
BU	Blue (Translucent)	YR	Orange (Opaque)

∗ Note that the model number is not printed on the tube body.

SMC

Polyurethane Flat Tubing
Multi-core, Multi-colour Specification
TU Series

RoHS

Specifications

Model	TU0212	TU0425	TU0604	TU0805	TU1065	TU1208
Tubing O.D. [mm]	2	4	6	8	10	12
Tubing I.D. [mm]	1.2	2.5	4	5	6.5	8
Black (B)	●	●	●	●	●	●
White (W)	●	●	●	●	●	●
Red (R)	●	●	●	●	●	●
Blue (BU)	●	●	●	●	●	●
Yellow (Y)	●	●	●	●	●	●
Green (G)	●	●	●	●	●	●
Clear (C)	●	●	●	●	●	●
Orange (YR)		●	●	●	●	●

Number of cores	2 cores	X169 (Roll)/X200 (Reel)
	3 cores	X170 (Roll)/X201 (Reel)
	4 cores	X171 (Roll)/X202 (Reel)
	5 cores	X172 (Roll)/X203 (Reel)
	6 cores	X204 (Roll)/X207 (Reel)

SMC

TU Series

How to Order

Roll

Tube length per roll: **1, 2, 3, 4, 5, 10, 20** m

TU **0425** – **12345** A – **X172**

Tubing model

Tubing size

Symbol	O.D. x I.D.
0212	Ø 2 x Ø 1.2
0425	Ø 4 x Ø 2.5
0604	Ø 6 x Ø 4
0805	Ø 8 x Ø 5
1065	Ø 10 x Ø 6.5
1208	Ø 12 x Ø 8

Inside of the roll

Yellow
Blue
Red
White
Black

Colour *1

Symbol	Colour	Symbol	Colour
1	Black	**5**	Yellow
2	White	**6**	Green
3	Red	**7**	Clear
4	Blue	**8**	Orange*2

*1 Colours of the example (12345)
*2 Excludes the TU0212

Tube length per roll [m]

Symbol	Length	Symbol	Length
A	1	**E**	5
B	2	**F**	10
C	3	**G**	20
D	4		

Multi-core, multi-colour specification

Symbol	Number of cores
X169	2 cores
X170	3 cores
X171	4 cores
X172	5 cores
X204	6 cores

Tube length per roll: **50** m

TU **0425** – **12345** H – **X172**

Tubing model

Tubing size

Symbol	O.D. x I.D.
0425	Ø 4 x Ø 2.5
0604	Ø 6 x Ø 4
0805	Ø 8 x Ø 5
1065	Ø 10 x Ø 6.5
1208	Ø 12 x Ø 8

Inside of the roll

Yellow
Blue
Red
White
Black
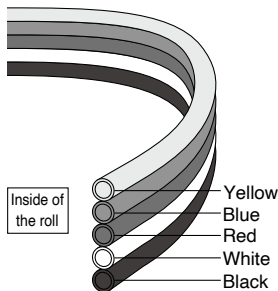
Colour *1

Symbol	Colour	Symbol	Colour
1	Black	**5**	Yellow
2	White	**6**	Green
3	Red	**7**	Clear
4	Blue	**8**	Orange

*1 Colours of the example (12345)

Multi-core, multi-colour specification

Symbol	Number of cores	Applicable tubing O.D.				
		Ø 4	Ø 6	Ø 8	Ø 10	Ø 12
X169	2 cores	●	●	●	●	●
X170	3 cores	●	●	●	●	
X171	4 cores	●	●	●		
X172	5 cores	●	●			
X204	6 cores	●	●			

Tube length per roll [m]

Symbol	Length
H	50

Tube length per roll: **100** m

TU **0425** – **12345** J – **X172**

Tubing model
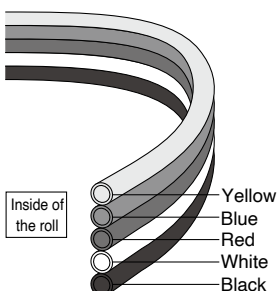
Tubing size

Symbol	O.D. x I.D.
0425	Ø 4 x Ø 2.5
0604	Ø 6 x Ø 4
0805	Ø 8 x Ø 5

Inside of the roll

Yellow
Blue
Red
White
Black

Colour *1

Symbol	Colour	Symbol	Colour
1	Black	**5**	Yellow
2	White	**6**	Green
3	Red	**7**	Clear
4	Blue	**8**	Orange

*1 Colours of the example (12345)

Multi-core, multi-colour specification

Symbol	Number of cores	Applicable tubing O.D.		
		Ø 4	Ø 6	Ø 8
X169	2 cores	●	●	●
X170	3 cores	●	●	●
X171	4 cores	●	●	●
X172	5 cores	●	●	
X204	6 cores	●		

Tube length per roll [m]

Symbol	Length
J	100

SMC

How to Order

Reel

Tube length per roll: 10, 20 m

TU 0212 – 12345 F – X203

Tubing model

Tubing size

Symbol	O.D. x I.D.
0212	Ø 2 x Ø 1.2
0425	Ø 4 x Ø 2.5
0604	Ø 6 x Ø 4
0805	Ø 8 x Ø 5
1065	Ø 10 x Ø 6.5
1208	Ø 12 x Ø 8

Inside of the roll
— Yellow
— Blue
— Red
— White
— Black

Colour[*1]

Symbol	Colour	Symbol	Colour
1	Black	5	Yellow
2	White	6	Green
3	Red	7	Clear
4	Blue	8	Orange[*2]

[*1] Colours of the example (12345)
[*2] Excludes the TU0212

Multi-core, multi-colour specification

Symbol	Number of cores	Applicable tubing O.D.					
		Ø 2	Ø 4	Ø 6	Ø 8	Ø 10	Ø 12
X200	2 cores	●	●	●	●	●	●
X201	3 cores	●	●	●	●	●	
X202	4 cores	●	●	●	●		
X203	5 cores	●	●	●			
X207	6 cores	●	●	●			

Tube length per roll [m]

Symbol	Length
F	10
G	20

Tube length per roll: 50 m

TU 0425 – 12345 H – X203

Tubing model

Tubing size

Symbol	O.D. x I.D.
0425	Ø 4 x Ø 2.5
0604	Ø 6 x Ø 4
0805	Ø 8 x Ø 5
1065	Ø 10 x Ø 6.5

Inside of the roll
— Yellow
— Blue
— Red
— White
— Black

Colour[*1]

Symbol	Colour	Symbol	Colour
1	Black	5	Yellow
2	White	6	Green
3	Red	7	Clear
4	Blue	8	Orange

[*1] Colours of the example (12345)

Multi-core, multi-colour specification

Symbol	Number of cores	Applicable tubing O.D.			
		Ø 4	Ø 6	Ø 8	Ø 10
X200	2 cores	●	●	●	●
X201	3 cores	●	●	●	
X202	4 cores	●	●	●	
X203	5 cores	●	●		
X207	6 cores	●	●		

Tube length per roll [m]

Symbol	Length
H	50

Tube length per roll: 100 m

TU 0425 – 12345 J – X203

Tubing model

Tubing size

Symbol	O.D. x I.D.
0425	Ø 4 x Ø 2.5
0604	Ø 6 x Ø 4
0805	Ø 8 x Ø 5

Inside of the roll
— Yellow
— Blue
— Red
— White
— Black

Colour[*1]

Symbol	Colour	Symbol	Colour
1	Black	5	Yellow
2	White	6	Green
3	Red	7	Clear
4	Blue	8	Orange

[*1] Colours of the example (12345)

Multi-core, multi-colour specification

Symbol	Number of cores	Applicable tubing O.D.		
		Ø 4	Ø 6	Ø 8
X200	2 cores	●	●	●
X201	3 cores	●	●	●
X202	4 cores	●	●	●
X203	5 cores	●	●	
X207	6 cores	●	●	

Tube length per roll [m]

Symbol	Length
J	100

Soft Polyurethane Tubing

TUS Series

RoHS

Model/Specifications

● — 20 m roll   □ — 100 m reel

Model	TUS0425	TUS0604	TUS0805	TUS1065	TUS1208
Tubing O.D. [mm]	4	6	8	10	12
Tubing I.D. [mm]	2.5	4	5	6.5	8
Black (B)	⊡●	⊡●	⊡●	⊡●	⊡●
White (W)	●	●	●	●	●
Red (R)	●	●	●	●	●
Blue (BU)	⊡●	⊡●	⊡●	⊡●	⊡●
Yellow (Y)	●	●	●	●	●
Green (G)	●	●	●	●	●
Translucent (N)	●	●	●	●	●
Yellow brown (YB)	●	●	●	●	●

How to Order

TUS1065 **B** – **100**

Tubing model

Length per roll

Symbol	Length
20	20 m roll
100	100 m reel

Colour

Symbol	Colour	Symbol	Colour
B	Black (Opaque)	**Y**	Yellow (Opaque)
W	White (Opaque)	**G**	Green (Opaque)
R	Red (Opaque)	**N**	Translucent (Material colour)
BU	Blue (Opaque)	**YB**	Yellow brown (Opaque)

Made to Order

Multi-core, Multi-colour Specification Flat Tubing

Refer to the **Web Catalogue** for details.

SMC

Soft Polyurethane Flat Tubing
Multi-core, Multi-colour Specification
TUS Series

RoHS

Specifications

Model	TUS0425	TUS0604	TUS0805	TUS1065	TUS1208
Tubing O.D. [mm]	4	6	8	10	12
Tubing I.D. [mm]	2.5	4	5	6.5	8
Black (B)	●	●	●	●	●
White (W)	●	●	●	●	●
Red (R)	●	●	●	●	●
Blue (BU)	●	●	●	●	●
Yellow (Y)	●	●	●	●	●
Green (G)	●	●	●	●	●
Translucent (N)	●	●	●	●	●
Yellow brown (YB)	●	●	●	●	●

How to Order

Please contact SMC for delivery times.

TUS 0425 – 12345 A – X172

Tubing model

Tubing size

Symbol	O.D. x I.D.
0425	Ø 4 x Ø 2.5
0604	Ø 6 x Ø 4
0805	Ø 8 x Ø 5
1065	Ø 10 x Ø 6.5
1208	Ø 12 x Ø 8

Multi-core, multi-colour specification

Symbol	Number of cores
X169	2 cores
X170	3 cores
X171	4 cores
X172	5 cores

Colour[1]

Symbol	Colour	Symbol	Colour
1	Black	5	Yellow
2	White	6	Green
3	Red	7	Translucent[2]
4	Blue	8	Yellow brown

[1] Colours of the example (12345)
[2] Not clear, but translucent due to material.

Tube length per roll [m]

Symbol	Length
A	1
B	2
C	3
D	4
E	5
F	10
G	20

Inside of the roll

Yellow
Blue
Red
White
Black

SMC
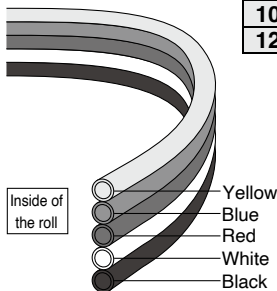
Hard Polyurethane Tubing/ Standard Type

TUH Series

HF1 | HF2
HF1 compatible | HF2 compatible
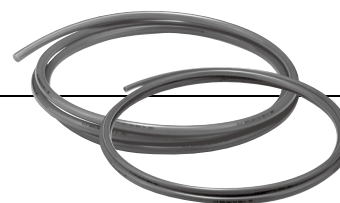
RoHS

Model/Specifications

● — 20 m roll   □ — 100 m roll

Model	TUH0428	TUH0644	TUH0858	TUH1073	TUH1288
O.D. [mm]	4	6	8	10	12
I.D. [mm]	2.8	4.4	5.8	7.3	8.8
Black (B)	●	●	●	●	●
White (W)	●	●	●	●	●
Blue (BU)	●	●	●	●	●
Translucent (N)	●	●	●	●	●

How to Order

TUH0644 | B | – | 20

Tubing model

Colour

Symbol	Colour
B	Black (Opaque)
W	White (Opaque)
BU	Blue (Translucent)
N	Translucent (Material colour)

Length per roll

Symbol	Length
20	20 m roll
100	100 m roll

Hard Polyurethane Tubing/ High Pressure Type

TUH Series

HF1 | HF2
HF1 compatible | HF2 compatible
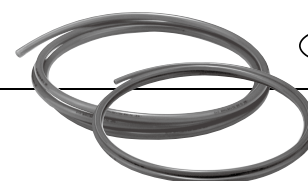
RoHS

Model/Specifications

● — 20 m roll   □ — 100 m roll

Model	TUH0425	TUH0604	TUH0805	TUH1065	TUH1208
O.D. [mm]	4	6	8	10	12
I.D. [mm]	2.5	4	5	6.5	8
Black (B)	●	●	●	●	●
White (W)	●	●	●	●	●
Blue (BU)	●	●	●	●	●
Translucent (N)	●	●	●	●	●

How to Order

TUH0604 | B | – | 20

Tubing model

Colour

Symbol	Colour
B	Black (Opaque)
W	White (Opaque)
BU	Blue (Translucent)
N	Translucent (Material colour)

Length per roll

Symbol	Length
20	20 m roll
100	100 m roll

SMC

HF1

HF2

HF1
compatible

HF2
compatible

Wear Resistant Tubing

TUZ/TIUZB Series

RoHS

Model

● — 20 m roll   □ — 100 m roll

| Model | Tubing size | | | | | | | | | | |
| | Metric size (TUZ series) | | | | | | | | Inch size (TIUZB series) | | |
	TUZ0212	**TUZ3220**	**TUZ0425**	**TUZ0604**	**TUZ0805**	**TUZ1065**	**TUZ1208**	**TUZ1610**	**TIUZB07**	**TIUZB11**	**TIUZB13**
Tubing O.D. [mm]	2	3.2	4	6	8	10	12	16	6.35	9.53	12.7
Tubing I.D. [mm]	1.2	2	2.5	4	5	6.5	8	10	4.23	6.35	8.46
Black (B)	□	●	●	●	●	●	●	□	●	●	●
White (W)		●	●	●	●	●	●		●	●	●
Red (R)			●	●	●	●	●		●	●	●
Blue (BU)		●	●	●	●	●	●		●	●	●
Yellow (Y)			●	●	●	●	●		●	●	●
Green (G)			●	●	●	●	●		●	●	●

How to Order

TUZ0425 | **BU** – **20**

Tubing model

Colour

Symbol	Colour
B	Black
W	White
R	Red
BU	Blue
Y	Yellow
G	Green

Length per roll

Symbol	Length
20	20 m roll
100	100 m roll

∗ Not clear, but opaque due to material.

Made to Order

**Multi-core, same colour specification
TFU-X73**
Flat type of the TUZ series
Number of cores: 2 to 12 cores
Specification: **Same colour**

**Multi-core, multi-colour specification
TUZ-X169 to X172, -X204**
Number of cores: 2 to 6 cores
Specification: **Multi-colour**
Refer to the **Web Catalogue** for details.

The identification line is not shown.
Please contact SMC for detailed specifications,
dimensions, and delivery times.

How to Order

TFU0425 | **BU** – **2** – **20** – **X73**

Colour

Symbol	Colour
B	Black
W	White
R	Red
BU	Blue
Y	Yellow
G	Green

∗ Not clear, but opaque
due to material.

**Special
polyurethane
(Multi-core, same
colour specification)**

Length per roll

—	10 m
n	n m[1]

∗1 It is also available in lengths other than 10 m.
Enter the length you need (1, 2, 3, 4, 5, 20).
Example) **TFU0425BU-2-20-X73**

20 m

**Number of cores
2 to 12**

Tubing model

Model	O.D. x I.D. [mm]
TFU0425	4 x 2.5
TFU0604	6 x 4
TFU0805	8 x 5
TFU1065	10 x 6.5
TFU1208	12 x 8

SMC

Polyurethane Coil Tubing
TCU Series

RoHS

Model/Specifications

Model	TCU 0425B-1	TCU 0425B-2	TCU 0425B-3	TCU 0604B-1	TCU 0604B-2	TCU 0604B-3	TCU 0805B-1
Number of cores	1 core	2 cores	3 cores	1 core	2 cores	3 cores	1 core
Tubing O.D. [mm]			4			6	8
Tubing I.D. [mm]			2.5			4	5
Colour				Black (Opaque)			

Dimensions

(Maximum operating length)
100   L   100

øD

Tube fastener (Multi-tube only)
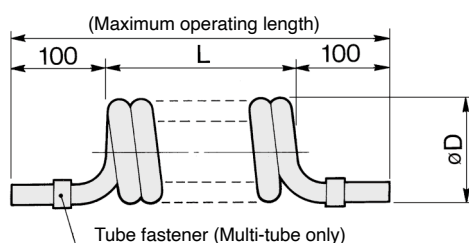
Model	Tubing size [mm] O.D.	Tubing size [mm] I.D.	Coil [mm] L	Coil [mm] Ø D	No. of cores	No. of coil windings per tube length	Max. operating length [m]	Standard unit of packing
TCU0425B-1			210	18	1	52 ± 2	1.5	
TCU0425B-2	4	2.5	280	28	2	35 ± 1	1.5	
TCU0425B-3			265	28	3	22 ± 1	1	
TCU0604B-1			325	24	1	54 ± 2	2	5 tubes/case
TCU0604B-2	6	4	325	37	2	27 ± 1	1.5	
TCU0604B-3			305	37	3	17 ± 1	1	
TCU0805B-1	8	5	330	31	1	41 ± 2	2	

∗ The number of coil windings per tube length and dimensions are changeable due to material.

Made to Order

Change of coil turns, Change of colour

(Please contact SMC for detailed specifications, dimensions, and delivery times.)

(Maximum operating length)
100   L   100

øD

Tube fastener (Multi-tube only)

Model	Tubing size [mm] O.D.	Tubing size [mm] I.D.	Coil [mm] L	Coil [mm] Ø D	No. of cores	No. of coil windings per tube length (N)	Max. operating length [mm]
TCU0425□-1-N-X6			N x 4	18	1	3 to 90	L x 5.9 + 200
TCU0425□-2-N-X6	4	2.5	N x 8	28	2	3 to 90	L x 4.4 + 200
TCU0425□-3-N-X6			N x 12	28	3	3 to 63	L x 2.9 + 200
TCU0604□-1-N-X6			N x 6	24	1	3 to 90	L x 5.3 + 200
TCU0604□-2-N-X6	6	4	N x 12	37	2	3 to 66	L x 3.8 + 200
TCU0604□-3-N-X6			N x 18	37	3	3 to 44	L x 2.5 + 200

Model	Tubing size [mm] O.D.	Tubing size [mm] I.D.	Coil [mm] L	Coil [mm] Ø D	No. of cores	No. of coil windings per tube length (N)	Max. operating length [mm]
TCU0805□-1-N-X6			N x 8	31	1	3 to 90	L x 5.2 + 200
TCU0805□-2-N-X6	8	5	N x 16	42	2	3 to 40	L x 3 + 200
TCU1065□-1-N-X6			N x 10	52	1	3 to 45	L x 5 + 200
TCU1065□-2-N-X6	10	6.5	N x 20	52	2	3 to 35	L x 3 + 200
TCU1208□-1-N-X6			N x 12	67	1	3 to 35	L x 5 + 200
TCU1208□-2-N-X6	12	8	N x 24	67	2	3 to 30	L x 3 + 200

∗ □: B (Black), W (White), R (Red), BU (Blue), Y (Yellow), G (Green), C (Clear), YR (Orange)

SMC

Polyurethane Flat Tubing

TFU *Series*

RoHS

Specifications

Model	TFU 0425B-2	TFU 0425B-3	TFU 0604B-2	TFU 0604B-3	TFU 0805B-2	TFU 0805B-3
No. of cores	2 cores	3 cores	2 cores	3 cores	2 cores	3 cores
Tubing O.D. [mm]	4		6		8	
Tubing I.D. [mm]	2.5		4		5	
Colour	Black					

How to Order

TFU0425 **B** – **2**

Tubing model

Colour

Symbol	Colour
B	Black (Opaque)

No. of tubes

Symbol	No. of cores
2	2 cores
3	3 cores

SMC
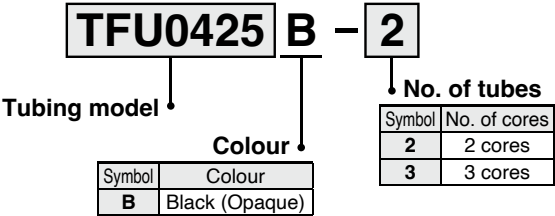
High Purity Fluoropolymer Tubing

TL/TIL Series

RoHS

Material: Super PFA
Compatible with the Food Sanitation Law
• Compatible with the test conforming to the Food Sanitation Law based on the 370th notice given by the Ministry of Health and Welfare in 1959.
FDA (U.S. Food and Drug Administration) Compliant
• Complies with FDA (U.S. Food and Drug Administration) §177.1550 dissolution test.

Series and Specifications

		Metric sizes (TL series)						Inch sizes (TIL series)							
Tubing model		TL0403	TL0604	TL0806	TL1008	TL1210	TL1916	TIL01	TILB01	TIL05	TIL07	TIL11	TIL13	TIL19	TIL25
Nominal diameter		—	—	—	—	—	—	1/8"	1/8"	3/16"	1/4"	3/8"	1/2"	3/4"	1"
Tubing size		Ø 4 x Ø 3	Ø 6 x Ø 4	Ø 8 x Ø 6	Ø 10 x Ø 8	Ø 12 x Ø 10	Ø 19 x Ø 16	1/8" x 0.086"	1/8" x 1/16"	3/16" x 1/8"	1/4" x 5/32"	3/8" x 1/4"	1/2" x 3/8"	3/4" x 5/8"	1" x 7/8"
O.D. [mm]	Basic diameter	4	6	8	10	12	19	3.18	3.18	4.75	6.35	9.53	12.7	19.05	25.4
	Tolerance	±0.1				+0.2 −0.1		±0.1						+0.2 −0.1	
Thickness [mm]	Basic diameter	0.5	1				1.5	0.5	0.8	0.8	1.2	1.6			
	Tolerance	±0.05	±0.1				±0.15	±0.05	±0.08	±0.08	±0.12	±0.15			
Bundle	10 m	—	—	—	●	●	●	—	—	—	—	●	●	—	—
	20 m	●	●	●	●	●	●	●	—	●	●	●	●	●	●
	50 m	●	●	●	●	●	●	●	—	●	●	●	●	●	●
	100 m	●	●	●	●	●	●	●	—	●	●	●	●	●	—
	16 m (50 ft)	—	—	—	—	—	—	●	●	●	●	●	●	●	●
	33 m (100 ft)	—	—	—	—	—	—	●	●	●	●	●	●	●	●
Straight pipe	2 m	●	●	●	●	●	●	●	—	●	●	●	●	●	●
Colour		Translucent (colour of material)													

How to Order

Metric sizes TL0604 – 20

Inch sizes TIL01 – 20

Tubing model

Length **Applicable to both metric and inch size**

Symbol	Type	Length
10	Roll	10 m
20		20 m
50		50 m
100		100 m
2S	Straight	2 m

Length **Applicable to inch size only**

Symbol	Type	Length
16	Roll	16 m (50 ft)
33		33 m (100 ft)

Please refer to the "Series and Specifications" above, as the tubing length differs depending on each size.

SMC

Fluoropolymer Tubing (PFA)
Metric Size

TLM Series

RoHS

Compatible with the Food Sanitation Law
· Compatible with the test conforming to the Food Sanitation Law based
  on the 370th notice given by the Ministry of Health and Welfare in 1959.

FDA (U.S. Food and Drug Administration) Compliant
· Complies with FDA (U.S. Food and Drug Administration) §177.1550 dissolution test.
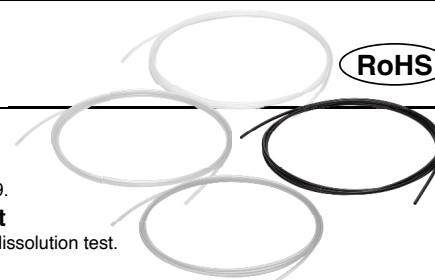
Series

Size			Metric size												
Model			TLM0201	TLM0302	TLM0425	TLM0403	TLM0604	TLM0806	TLM1075	TLM1008	TLM1209	TLM1210	TLM1613	TLM1916	TLM2522
Tubing size			Ø 2 x Ø 1	Ø 3 x Ø 2	Ø 4 x Ø 2.5	Ø 4 x Ø 3	Ø 6 x Ø 4	Ø 8 x Ø 6	Ø 10 x Ø 7.5	Ø 10 x Ø 8	Ø 12 x Ø 9	Ø 12 x Ø 10	Ø 16 x Ø 13	Ø 19 x Ø 16	Ø 25 x Ø 22
O.D. [mm]			2	3	4	4	6	8	10	10	12	12	16	19	25
I.D. [mm]			1	2	2.5	3	4	6	7.5	8	9	10	13	16	22

Length per roll		Colour	Symbol														
Roll	10 m	Translucent	N							●	●	●	●	●	●	
	20 m	Translucent	N	●	●	●	●	●	●	●	●	●	●	●	●	●
		Red	R	●	●	●	●	●	●	●	●	●	●	●	●	●
		Blue	BU	●	●	●	●	●	●	●	●	●	●	●	●	●
		Black	B	●	●	●	●	●	●	●	●	●	●	●	●	●
	50 m	Translucent	N	●	●	●	●	●	●	●	●	●	●	●	●	●
	100 m	Translucent	N	●	●	●	●	●	●	●	●	●	●	●	●	
Straight	2 m	Translucent	N	●	●	●	●	●	●	●	●	●	●	●	●	●

Inch O.D. size
5/32"

Inch O.D. size
5/16"

O.D. 3.2 mm is available in Ø 1/8 inch (3.18 mm) tubing. For
details, refer to the table "Series" in the **Web Catalogue**.

How to Order

Metric size

TLM0425 | N – 20

Tubing
designation

Colour indication

Symbol	Colour
N	Translucent (Material colour)
R	Red (Translucent)
BU	Blue (Translucent)
B	Black (Opaque)

Length per roll

Symbol	Type	Length
10	Roll	10 m
20		20 m
50		50 m
100		100 m
2S	Straight	2 m

∗ Refer to the table "Series" above,
  as the tubing length differs
  depending on each size.

Fluoropolymer Tubing (PFA)
Inch Size

TILM Series

RoHS

Compatible with the Food Sanitation Law
· Compatible with the test conforming to the Food Sanitation Law based on the 370th notice given by the Ministry of Health and Welfare in 1959.
FDA (U.S. Food and Drug Administration) Compliant
· Complies with FDA (U.S. Food and Drug Administration) §177.1550 dissolution test.
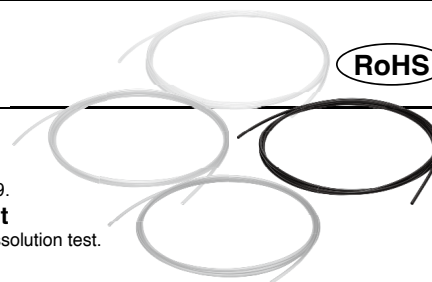
Series

Size			Inch size								
Model			TILM01	TILMB01	TILM05	TILM07	TILM11	TILM13	TILM19	TILM25	TILM32
Tubing size			1/8" x 0.086"	1/8" x 1/16"	3/16" x 1/8"	1/4" x 5/32"	3/8" x 1/4"	1/2" x 3/8"	3/4" x 5/8"	1" x 7/8"	1 1/4" x 1 1/10"
O.D.	inch		1/8"	1/8"	3/16"	1/4"	3/8"	1/2"	3/4"	1"	1 1/4"
	mm		3.18		4.75	6.35	9.53	12.7	19.05	25.4	31.75
I.D.	inch		0.086"	1/16"	1/8"	5/32"	1/4"	3/8"	5/8"	7/8"	1 1/10"
	mm		2.18	1.58	3.15	3.95	6.33	9.5	15.85	22.2	27.95

Length per roll		Colour	Symbol									
Roll	10 m	Translucent	N					●	●			
	20 m	Translucent	N	●	●	●	●	●	●	●	●	●
		Red	R	●	●	●	●	●	●	●	●	●
		Blue	BU	●	●	●	●	●	●	●	●	●
		Black	B	●	●	●	●	●	●	●	●	●
	50 m	Translucent	N	●		●	●	●	●	●	●	●
	100 m	Translucent	N	●		●	●	●	●	●		
	16 m (50 ft)	Translucent	N	●	●	●	●	●	●	●	●	●
	33 m (100 ft)	Translucent	N	●	●	●	●	●	●	●	●	●
Straight	2 m	Translucent	N	●		●	●	●	●	●	●	●

Metric O.D. size
3.2

O.D. 5/32" is available in Ø 4 metric tubing, and O.D. 5/16" is available in Ø 8 metric tubing. For details, refer to the table "Series" in the **Web Catalogue**.

How to Order

Inch size

TILM01 **N** – **20**

Tubing designation •

Colour indication •

Symbol	Colour
N	Translucent (Material colour)
R	Red (Translucent)
BU	Blue (Translucent)
B	Black (Opaque)

• **Length per roll**

Symbol	Type	Length
10	Roll	10 m
20		20 m
50		50 m
100		100 m
16		16 m (50 ft)
33		33 m (100 ft)
2S	Straight	2 m

∗ Refer to the table "Series" above, as the tubing length differs depending on each size.

SMC

FEP Tubing (Fluoropolymer) Metric Size

TH Series
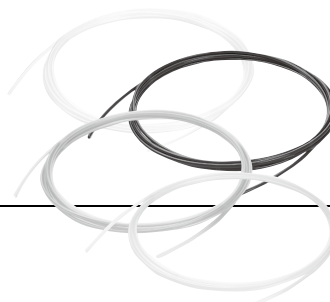
RoHS

Compatible with the Food Sanitation Law
· Compatible with the test conforming to the Food Sanitation Law based on the 370th notice given by the Ministry of Health and Welfare in 1959.

FDA (U.S. Food and Drug Administration) Compliant
· Complies with FDA (U.S. Food and Drug Administration) §177.1550 dissolution test.

Series

●-20 m roll   □-100 m roll

Model	Metric size							
	TH0402	TH0425	TH0604	TH0806	TH1075	TH1008	TH1209	TH1210
Tubing O.D. [mm]	4	4	6	8	10	10	12	12
Tubing I.D. [mm]	2	2.5	4	6	7.5	8	9	10

Colour	Symbol								
Translucent	N	■●	■●	■●	■●	■●	■●	■●	■●
Red	R	●	●	●	●	●	●	●	●
Blue	BU	●	●	●	●	●	●	●	●
Black	B	●	●	●	●	●	●	●	●

Inch nominal size 5/32" (TH0425)
Inch nominal size 5/16" (TH0806)

How to Order

Metric size

TH0604 | N | – | 20

Indication of tubing model

Colour indication

Symbol	Colour
N	Translucent (Material colour)
R	Red (Translucent)
BU	Blue (Translucent)
B	Black (Opaque)

Length per roll

Symbol	Roll size
20	20 m roll
100*1	100 m roll

*1 100 m roll is available with translucent (colour indication: N) only.

FEP Tubing (Fluoropolymer) Inch Size

TIH Series
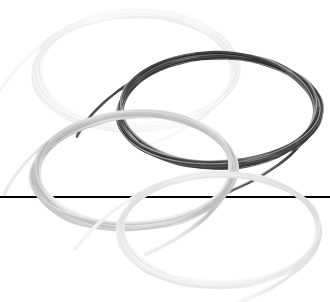
RoHS

Compatible with the Food Sanitation Law
· Compatible with the test conforming to the Food Sanitation Law based on the 370th notice given by the Ministry of Health and Welfare in 1959.

FDA (U.S. Food and Drug Administration) Compliant
· Complies with FDA (U.S. Food and Drug Administration) §177.1550 dissolution test.

Series

●-16 m (50 ft) roll   □-33 m (100 ft) roll

Model		Inch size										
		TIHA01	TIHB01	TIHC01	TIHA05	TIHB05	TIHA07	TIHB07	TIHA11	TIHB11	TIH13	TIH19
Tubing O.D.	inch	1/8"			3/16"		1/4"		3/8"		1/2"	3/4"
	mm	3.18			4.75		6.35		9.53		12.7	19.05
Tubing I.D.	inch	0.093"	0.086"	0.065"	0.137"	0.124" (1/8")	0.18"	0.156" (5/32")	0.275"	0.25" (1/4")	0.374" (3/8")	0.624" (5/8")
	mm	2.36	2.18	1.65	3.48	3.15	4.57	3.95	6.99	6.33	9.5	15.85

Colour	Symbol											
Translucent	N	●	●	●	●	●	●	●	●	●	●	●
Red	R	●	●	●	●	●	●	●	●	●	●	●
Blue	BU	●	●	●	●	●	●	●	●	●	●	●
Black	B	●	●	●	●	●	●	●	●	●	●	●

How to Order

Inch size

TIHA01 | N | – | 16

Indication of tubing model

Colour indication

Symbol	Colour
N	Translucent (Material colour)
R	Red (Translucent)
BU	Blue (Translucent)
B	Black (Opaque)

Length per roll

Symbol	Roll size
16	16 m (50 ft) roll
33*1	33 m (100 ft) roll

*1 33 m (100 ft) roll is available with translucent (colour indication: N) only.

SMC

# Soft Fluoropolymer Tubing
Metric Size

TD Series
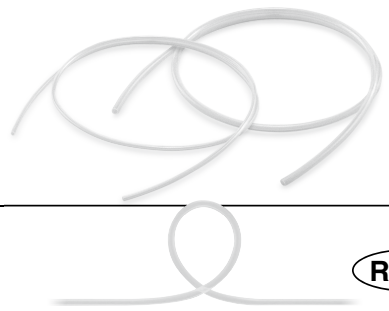
RoHS

Compatible with the Food Sanitation Law
· Compatible with the test conforming to the Food Sanitation Law based on the 370th notice given by the Ministry of Health and Welfare in 1959.

FDA (U.S. Food and Drug Administration) Compliant
· Complies with FDA (U.S. Food and Drug Administration) §177.1550 dissolution test.

Model/Specifications

Size	Metric size				
Model	TD0425	TD0604	TD0806	TD1075	TD1209
Tubing O.D. [mm]	4	6	8	10	12
Tubing I.D. [mm]	2.5	4	6	7.5	9
Roll　10 m	●	●	●	●	●
20 m	●	●	●	●	●
Colour	Translucent (material colour)				

How to Order

Metric size

TD0425 – 10

Tubing model

Length per roll

Symbol	Length
10	10 m roll
20	20 m roll

# Soft Fluoropolymer Tubing
Inch Size

TID Series
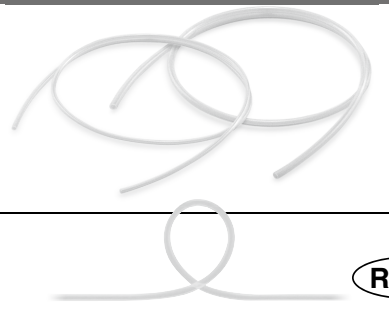
RoHS

Compatible with the Food Sanitation Law
· Compatible with the test conforming to the Food Sanitation Law based on the 370th notice given by the Ministry of Health and Welfare in 1959.

FDA (U.S. Food and Drug Administration) Compliant
· Complies with FDA (U.S. Food and Drug Administration) §177.1550 dissolution test.

Model/Specifications

Size		Inch size				
Model		TID01	TID05	TID07	TID11	TID13
Tubing O.D.	inch	1/8"	3/16"	1/4"	3/8"	1/2"
	mm	3.18	4.75	6.35	9.53	12.7
Tubing I.D.	inch	0.086"	0.124" (1/8")	0.156" (5/32")	0.25" (1/4")	0.374" (3/8")
	mm	2.18	3.15	3.95	6.33	9.5
Roll	8 m (25 ft)	●	●	●	●	●
	16 m (50 ft)	●	●	●	●	●
Colour		Translucent (material colour)				

How to Order

Inch size

TID01 – 8

Tubing model

Length per roll

Symbol	Length
8	8 m (25 ft) roll
16	16 m (50 ft) roll

SMC

Clean Tubing:
Polyolefin Tubing

TPH Series

RoHS

**Complies with FDA
(U.S. Food and Drug Administration)
§175.300 dissolution test**

Model/Specifications

● — 20 m roll   □ — 100 m roll

Model	TPH0425	TPH0604	TPH0806	TPH1075	TPH1209
O.D. [mm]	4	6	8	10	12
I.D. [mm]	2.5	4	6	7.5	9

	TPH0425	TPH0604	TPH0806	TPH1075	TPH1209
White (W)	●	●	●	●	●
Blue (BU)	●	●	●	●	●
Yellow (Y)	●	●	●	●	●

How to Order

TPH0604 W – 20

Tubing model

Colour

Symbol	Colour
W	White (Material colour)
BU	Blue (Opaque)
Y	Yellow (Opaque)

Length per roll

Symbol	Length
20	20 m roll
100	100 m roll

Clean Tubing:
Soft Polyolefin Tubing

TPS Series

RoHS

**Complies with FDA
(U.S. Food and Drug Administration)
§175.300 dissolution test**

Model/Specifications

● — 20 m roll   □ — 100 m roll

Model	TPS0425	TPS0604	TPS0805	TPS1065	TPS1208
O.D. [mm]	4	6	8	10	12
I.D. [mm]	2.5	4	5	6.5	8

	TPS0425	TPS0604	TPS0805	TPS1065	TPS1208
White (W)	●	●	●	●	●
Blue (BU)	●	●	●	●	●
Yellow (Y)	●	●	●	●	●

How to Order

TPS0604 W – 20

Tubing model

Colour

Symbol	Colour
W	White (Material colour)
BU	Blue (Opaque)
Y	Yellow (Opaque)

Length per roll

Symbol	Length
20	20 m roll
100	100 m roll

Speed Controller with One-touch Fitting

Push-lock Type **Lock Nut Type (Metal Knob)**

Elbow Type/Universal Type
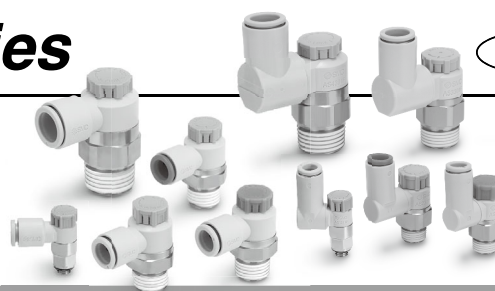
HF1B-AS Series

RoHS

Model

Model		Port size		Seal method	Applicable tubing O.D.													
Elbow type	Universal type				Metric size								Inch size					
					2*2	3.2	4	6	8	10	12	16	1/8"	5/32"	1/4"	5/16"	3/8"	1/2"
HF1B-AS12□1F-M5□	HF1B-AS13□1F-M5□	M5 x 0.8		Gasket seal	●*3	●	●	●					●	●	●			
HF1B-AS12□1F-U10/32□	HF1B-AS13□1F-U10/32□	10-32UNF			●*3	●	●	●					●	●	●			
HF1B-AS22□1F-□01	HF1B-AS23□1F-□01	R NPT	1/8	Sealant*1		●	●	●	●	●*3			●	●	●	●		
HF1B-AS22□1F-□02	HF1B-AS23□1F-□02		1/4			●*3	●	●	●	●			●*3	●	●	●	●	
HF1B-AS32□1F-□02	HF1B-AS33□1F-□02		1/4				●	●	●	●					●	●	●	
HF1B-AS32□1F-□03	HF1B-AS33□1F-□03		3/8					●	●	●	●				●	●	●	
HF1B-AS42□1F-□04	HF1B-AS43□1F-□04		1/2							●	●	●*3					●	●

*1 "Without sealant" type can be selected as a standard option.　*2 Only polyurethane tubing is applicable for Ø 2.　*3 Universal type is not available.

Flow Direction Symbols on Body

Symbol	Meter-out	Meter-in
	⌀ symbol	⌀ symbol

⚠ Caution

- **Be sure to read this before handling the products.**
- **For safety instructions, flow control equipment precautions, and specific product precautions, refer to the** Web Catalogue**.**

How to Order

Applicable tubing O.D.*3

Metric size		Inch size	
02	Ø 2	**01**	Ø 1/8"
23	Ø 3.2*4	**03**	Ø 5/32"
04	Ø 4	**07**	Ø 1/4"
06	Ø 6		

*3 For selecting applicable tubing O.D., refer to the "Model" shown above.
Metric size and inch size types can be visually identified by colour of the release button.
Metric size: Light grey
Inch size: Orange
*4 Use Ø 1/8" tube.

Width across flats (H)

E*2	8 mm
—	9 mm

*2 Push-lock type only

Body size

1	M5 x 0.8 10-32UNF

Port size

M5	M5 x 0.8
U10/32	10-32UNF

HF1B-AS 1 2 0 1F- M5 E - 06 A - □

HF1B-AS 2 2 0 1F- □ 01 - 06 S A - □

Body size

2	1/8, 1/4
3	3/8
4	1/2

Thread type

—	R
N	NPT

Port size

01	1/8
02	1/4
03	3/8
04	1/2

Type

2	Elbow
3	Universal

Control type*1

0	Meter-out
1	Meter-in

*1 Meter-out and meter-in types can be visually identified by colour of the knob.
Meter-out: Grey
Meter-in: Light blue

Applicable tubing O.D.*5

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

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

Suffix

—	Speed controller
X214	Restrictor (Without check valve)

· Use the restrictor for air blow.
· Meter-out speed controller is applicable as a restrictor.

Knob locking method

A	Push-lock
—	Lock nut (Metal knob)

Seal method

—	Without sealant
S	With sealant

SMC

Speed Controller with One-touch Fitting

Push-lock Type Lock Nut Type (Metal Knob)

In-line Type

HF1B-AS Series

RoHS
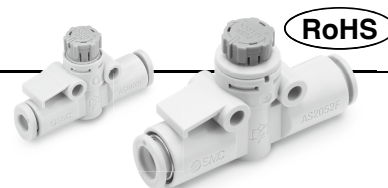
Model

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"
HF1B-AS1002F	●	●	●				●	●	●			
HF1B-AS2002F		●	●					●	●			
HF1B-AS2052F			●	●					●	●		
HF1B-AS3002F			●	●	●	●			●	●	●	
HF1B-AS4002F					●	●					●	●

Flow Direction Symbol on Body
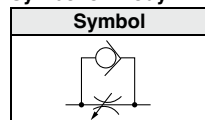
Symbol

⚠ Caution

┆ **Be sure to read this before handling the products.** ┆
┆ **For safety instructions, flow control equipment** ┆
┆ **precautions, and specific product precautions,** ┆
┆ **refer to the** Web Catalogue**.** ┆

How to Order

HF1B − 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

Suffix

—	Speed controller
X214	Restrictor (Without check valve)

Use the restrictor for air blow.

Knob locking method

A	Push-lock
—	Lock nut (Metal knob)

Applicable tubing O.D.[*1]

Metric size		Inch size	
23	Ø 3.2[*2]	01	Ø 1/8"
04	Ø 4	03	Ø 5/32"
06	Ø 6	07	Ø 1/4"
08	Ø 8	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.

SMC

Speed Controller with One-touch Fitting

Push-lock Type **Face Seal**

Elbow Type/Universal Type

HF1B-AS Series

RoHS

Model

Model		Port size	Seal method	Applicable tubing O.D.												
Elbow type	Universal type			Metric size							Inch size					
				3.2	4	6	8	10	12	16	1/8"	5/32"	1/4"	5/16"	3/8"	1/2"
HF1B-AS22□1F-G01	HF1B-AS23□1F-G01	G	1/8	Face seal	●	●	●	●	●*1								
HF1B-AS22□1F-G02	HF1B-AS23□1F-G02		1/4		●*1	●	●	●	●								
HF1B-AS32□1F-G02	HF1B-AS33□1F-G02		1/4				●	●	●	●							
HF1B-AS32□1F-G03	HF1B-AS33□1F-G03		3/8				●	●	●	●							
HF1B-AS42□1F-G04	HF1B-AS43□1F-G04		1/2						●	●	●*1						
HF1B-AS22□1F-01-□PA	—	R NPT	1/8	Face seal	●	●	●	●	●			●	●	●	●		
HF1B-AS22□1F-02-□PA	—		1/4		●	●	●	●	●			●	●	●	●	●	
HF1B-AS32□1F-03-□PA	—		3/8				●	●	●	●				●	●	●	
HF1B-AS42□1F-04-□PA	—		1/2						●	●						●	●

∗1 Universal type is not available.

Flow Direction Symbols on Body

Symbol	Meter-out	Meter-in
	⌀	⌀

⚠ Caution

▌ **Be sure to read this before handling the products.**
▌ **For safety instructions, flow control equipment precautions, and specific product**
▌ **precautions, refer to the** Web Catalogue**.**

How to Order

Type
| 2 | Elbow |
| 3 | Universal |

Thread type
| G | G |

HF1B−AS **2 2 0** 1F−G **01** − **06** A − ☐

HF1B−AS **2 2 0** 1F−☐ **01** − **06** P A − ☐

Body size
2	1/8, 1/4
3	3/8
4	1/2

Type
| 2 | Elbow |

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

Thread type
| — | R |
| N | NPT |

Port size
01	1/8
02	1/4
03	3/8
04	1/2

Applicable tubing O.D.∗1

Metric size
23	⌀ 3.2∗2
04	⌀ 4
06	⌀ 6
08	⌀ 8
10	⌀ 10
12	⌀ 12
16	⌀ 16∗4

Inch size∗3
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.
∗3 Only the metric size is available for the G thread type.
∗4 Only G thread

Seal method
| P | Face seal |

Push-lock type

Suffix
| — | Speed controller |
| X214 | Restrictor (Without check valve) |

· Use the restrictor for air blow.
· Meter-out speed controller is applicable as a restrictor.

⚠ Caution

▌ **Cylinders with a level bearing surface are**
▌ **suitable for the R thread or NPT thread**
▌ **face seal type.**
▌ **The R-shaped bearing surface of CG1**
▌ **cylinders is not suitable.**

SMC

Stainless Steel Speed Controller (Elbow Type)

ASG Series

<Food Sanitation Law compliant (Component materials have met apparatus and container-package standards)>

Model

Elbow type	Port size	Applicable tubing O.D. [mm]				
		4	6	8	10	12
ASG22☐F-M5	M5 x 0.8	●	●			
ASG32☐F-01	R1/8	●	●	●		
ASG42☐F-02	R1/4		●	●	●	
ASG52☐F-03	R3/8			●	●	●
ASG62☐F-04	R1/2					●

Symbol
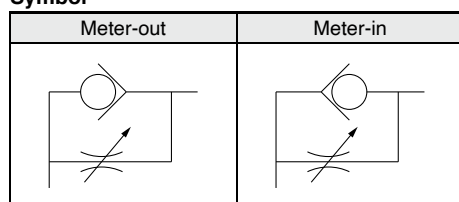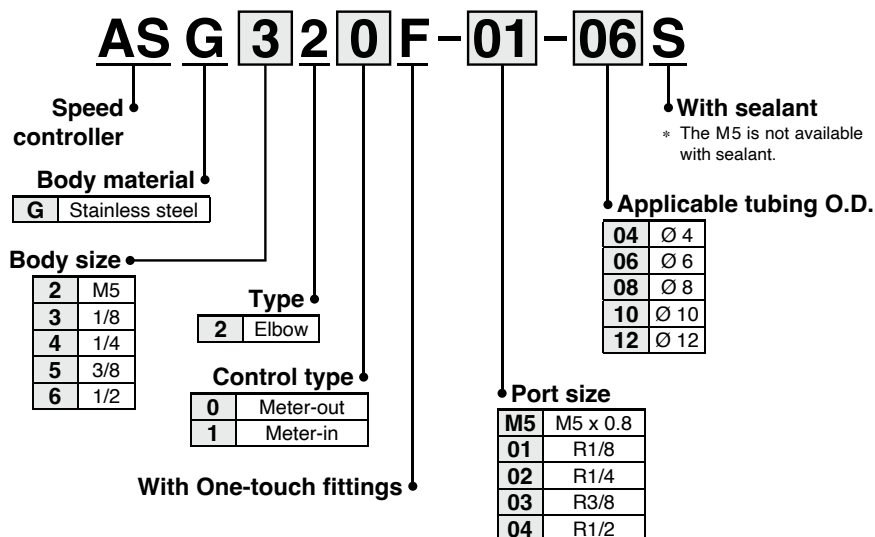
Meter-out	Meter-in

How to Order

AS G 3 2 0 F – 01 – 06 S

Speed controller

Body material

G	Stainless steel

Body size

2	M5
3	1/8
4	1/4
5	3/8
6	1/2

Type

2	Elbow

Control type

0	Meter-out
1	Meter-in

With One-touch fittings

Port size

M5	M5 x 0.8
01	R1/8
02	R1/4
03	R3/8
04	R1/2

Applicable tubing O.D.

04	Ø 4
06	Ø 6
08	Ø 8
10	Ø 10
12	Ø 12

With sealant

∗ The M5 is not available with sealant.

Pressure Gauge for General Purpose/ With Limit Indicator

G36

RoHS

How to Order

G 36 – **10** – 01 ☐ – ☐

Pressure gauge ●   **❶**   **❷**   **❸**   **❹**

G36-10-01

· Please read the Caution of HF- Series (p. 69) before use.

	Symbol	Description	Type
			G36
			Back side thread
+			
❶ Max. display pressure	**2**	0.2 MPa	●
	4	0.4 MPa	●
	7	0.7 MPa	●
	10	1.0 MPa	●
	15	1.5 MPa	●
	P2[*1]	0.2 MPa, 30 psi	○[*2]
	P4[*1]	0.4 MPa, 60 psi	○[*2]
	P7[*1]	0.7 MPa, 100 psi	○[*2]
	P10[*1]	1.0 MPa, 150 psi	○[*2]
	P15[*1]	1.5 MPa, 220 psi	○[*2]
+			
❷ Connection thread	**01**	R1/8	●
+			
❸ Option	**—**	—	●
	M[*3]	With M5 (Female thread)	●
+			
❹ Special specification[*4]	**—**	—	●
	X2	Stud parts nickel plated	—[*5]
	X30	Both MPa and psi	○[*2]

*1 This symbol must be used with Special specification "X30."
*2 Under the New Measurement Act, products for overseas use only (SI unit type for use in Japan)
*3 To use the pressure gauge with M 5 (female thread), attach the joint when piping the tube. For combinations with the special specification products, please consult SMC separately.
*4 Wetted parts stainless steel specifications are not available.
*5 When necessary, please contact SMC.

SMC

Pressure Gauge for General Purpose/With Limit Indicator

G46

RoHS

How to Order

G 46 – 10 – 01 □ – □ – □

Pressure gauge ● ❶ ❷ ❸ ❹ ❺
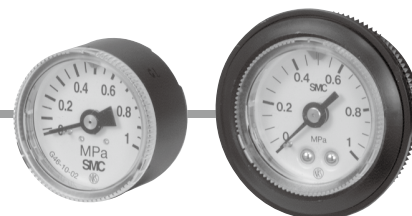
G46-10-02M-C

· Please read the Caution of HF- Series (p. 69) before use.

		Symbol	Description	Type G46 Back side thread
				+
❶	Max. display pressure	**2**	0.2 MPa	●
		4	0.4 MPa	●
		7	0.7 MPa	●
		10	1.0 MPa	●
		15	1.5 MPa	●
		P2∗1	0.2 MPa, 30 psi	○∗2
		P4∗1	0.4 MPa, 60 psi	○∗2
		P7∗1	0.7 MPa, 100 psi	○∗2
		P10∗1	1.0 MPa, 150 psi	○∗2
		P15∗1	1.5 MPa, 220 psi	○∗2
				+
❷	Connection thread	**01**	R1/8	●
		02	R1/4	●
				+
❸	Option	**—**	—	●
		M∗3	With M5 (Female thread)	●
				+
❹	Attachment	**—**	Without cover ring assembly	●
		C	Clear cover has no protrusion. (Clear cover is irremovable.)	●
		C2	Clear cover has protrusion. (Clear cover is removable.) The wrench flats protrude.	●
				+
❺	Special specification	**—**	—	●
		X2	Stud parts Nickel plated	—∗4
		X30	Both MPa and psi	○∗2

∗1 This symbol must be used with Special specification "X30."
∗2 ○: Under the New Measurement Act, products for overseas use only (SI unit type for use in Japan).
∗3 To use the pressure gauge with M5 (female thread), attach the joint when piping the tube. For combinations with the special specification products, please consult SMC separately.
∗4 When necessary, please contact SMC.
∗ When wetted parts with the stainless steel specifications are needed, use the G46-□-□-SRB.

Pressure Gauge for General Purpose/With Limit Indicator

G36-X4/GA36-X4

RoHS

How to Order

G ☐ 36 – 10 – 01 ☐ – X4

Pressure gauge ● ❶ ❷ ❸ ❹ ❺

G36-10-01-X4

· Please read the Caution of HF- Series (p. 69) before use.

	Symbol	Description	❶	
			Type	
			G36	**GA36**
			Back side thread	Vertical side thread
+				
❷ Max. display pressure	**2**	0.2 MPa	●	●
	4	0.4 MPa	●	●
	7	0.7 MPa	●	●
	10	1.0 MPa	●	●
	15	1.5 MPa	●	●
+				
❸ Connection thread	**01**	R1/8	●	●
+				
❹ Option	**—**	—	●	●
	M∗1	With M5 (Female thread)	●	—
+				
❺ Special specification∗2	**X4**	Oil-free (Wetted parts degrease washing)	●	●

∗1 To use the pressure gauge with M 5 (female thread), attach the joint when piping the tube. For combinations with the special specification products, please consult SMC separately.

∗2 Wetted parts stainless steel specifications are not available.

SMC

Oil-free/External Parts Copper-free Pressure Gauge/ With Limit Indicator

G46E

RoHS

How to Order

G 46 E − [10] − [01] [ ] − [ ] − [ ]
❶ ❷ ❸ ❹ ❺

Pressure gauge ●

Oil-free, external parts copper-free
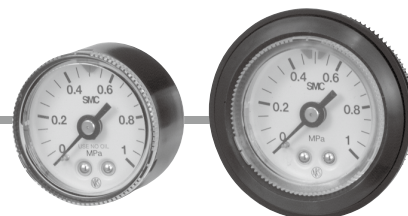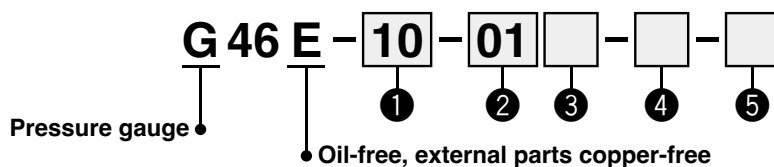
G46E-10-02M

G46E-10-02M-C

· Please read the Caution of HF- Series (p. 69) before use.

		Symbol	Description	G46E
			+	
❶	Max. display pressure	2	0.2 MPa	●
		4	0.4 MPa	●
		7	0.7 MPa	●
		10	1.0 MPa	●
		15	1.5 MPa	●
		P2*1	0.2 MPa, 30 psi	○*2
		P7*1	0.7 MPa, 100 psi	○*2
		P10*1	1.0 MPa, 150 psi	○*2
			+	
❷	Connection thread	01	R1/8	●
		02	R1/4	●
			+	
❸	Option	—	—	●
		M*3	With M5 (Female thread)	●
			+	
❹	Attachment	—	Without cover ring assembly	●
		C	Clear cover has no protrusion. (Clear cover is irremovable.)	●
		C2	Clear cover has protrusion. (Clear cover is removable.) The wrench flats protrude.	●
			+	
❺	Special specification	—	—	●
		X30	Both MPa and psi	○*2

*1 This symbol must be used with Special specification "X30."
*2 Under the New Measurement Act, products for overseas use only (SI unit type for use in Japan)
*3 To use the pressure gauge with M5 (female thread), attach the joint when piping the tube.

SMC

Pressure Gauge for Clean Regulator/ With Limit Indicator

G46-SRA/B

RoHS

How to Order

G 46 – 10 – 01 ☐ – SRA – ☐ – ☐

Pressure gauge

❶ ❷ ❸ ❹ ❺ ❻

G46-10-02-SRA,B

· Please read the Caution of HF- Series (p. 69) before use.

		Symbol	Description	G46
			+	
❶	Max. display pressure	2	0.2 MPa	●
		4	0.4 MPa	●
		7	0.7 MPa	●
		10	1.0 MPa	●
		P2*1	0.2 MPa, 30 psi	○*2
		P10*1	1.0 MPa, 150 psi	○*2
			+	
❷	Connection thread	01	R1/8	●
		02	R1/4	●
			+	
❸	Option	—	—	●
		M*3	With M5 (Female thread)	●
			+	
❹	Grade	SRA	Component parts: Precision cleaning Assembly: Clean room M5.5 (Class 10000)	●
		SRB	Component parts: General degreasing Assembly: General production line	●
			+	
❺	Attachment	—	Without cover ring assembly	●
		C	Clear cover has no protrusion. (Clear cover is irremovable.)	●
		C2	Clear cover has protrusion. (Clear cover is removable.) The wrench flats protrude.	●
			+	
❻	Special specification	—	—	●
		X30	Both MPa and psi	○*2

∗1 This symbol must be used with Special specification "X30."
∗2 Under the New Measurement Act, products for overseas use only (SI unit type for use in Japan)
∗3 To use the pressure gauge with M5 (female thread), attach the joint when piping the tube. For combinations with the special specification products, please consult SMC separately.

1 Output

3-Screen Display High-Precision Digital Pressure Switch

IP40

ZSE20(F)/ISE20-X2

CE c**UL**us RoHS

How to Order

• **Rated pressure range**

| ISE20 | −0.1 to 1 MPa |

For Positive Pressure ISE20 – N – M – M5 – ☐ ☐ – X2

For Vacuum/Compound Pressure ZSE20 – N – M – M5 – ☐ ☐ – X2

❶ ❷ ❸ ❹ ❺ ❻ ❼

• **Fluid contact parts: Grease-free**
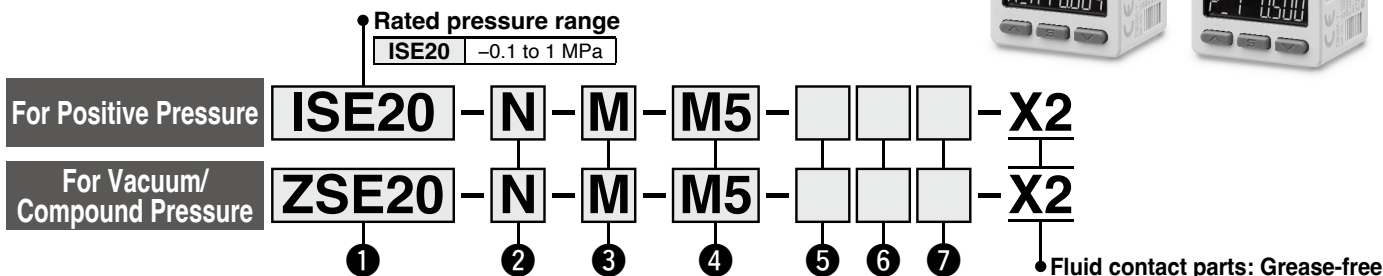
❶ Rated pressure range

| ZSE20 | 0 to −101 kPa |
| ZSE20F | −100 to 100 kPa |

❷ Output specification

Symbol	Description
N	NPN open collector 1 output
P	PNP open collector 1 output

❸ Unit specification

Symbol	Description
—	Unit selection function
M	SI units only*1
P	Unit selection function (Initial value psi)*1

*1 Fixed units: kPa, MPa

❹ Piping specification

Symbol	Description	Symbol	Description	
M5	M5 female thread Piping port	C4H	One-touch fitting Ø 4 mm	Straight type
		C6H	One-touch fitting Ø 6 mm	
		N7H	One-touch fitting Ø 1/4 inch	
01	R1/8 R1/8 Piping adapter ZS-46-N1	C4L	One-touch fitting Ø 4 mm	Elbow type
		C6L	One-touch fitting Ø 6 mm	
		N7L	One-touch fitting Ø 1/4 inch	
N01	NPT1/8 NPT1/8 Piping adapter ZS-46-N2	* One-touch fitting is shipped together with the product.		

❺ Option 1

Symbol	Description
—	Without lead wire
L	Lead wire with connector (3-core, 2 m lead wire) ZS-46-3L Without waterproof cover

* For the **lead wire with M12 connector**, refer to the **Web Catalogue**.

❼ Option 3

Symbol	Operation manual*2	Calibration certificate*2
—	○	—
Y	—	—
K	○	○
T	—	○

*2 All texts are in both English and Japanese.

❻ Option 2

Symbol	Description	
—	None	
A1	Bracket A (Vertical mounting)	ZS-46-A1
A2	Bracket B (Horizontal mounting)	ZS-46-A2
B	Panel mount adapter	ZS-46-B
D	Panel mount adapter + Front protection cover	ZS-46-D

Options/Part Nos.

When only optional parts are required, order with the part numbers listed below.

Description	Part no.	Note
Bracket A	**ZS-46-A1**	Tapping screw: Nominal size 3 x 8 L (2 pcs.)
Bracket B	**ZS-46-A2**	Tapping screw: Nominal size 3 x 8 L (2 pcs.)
Panel mount adapter	**ZS-46-B**	—
Panel mount adapter + Front protection cover	**ZS-46-D**	—
Lead wire with connector	**ZS-46-3L**	3-core, 2 m, Non-waterproof (Without waterproof cover)
Lead wire with M12 connector	**ZS-46-5LM12**	Made to order (Refer to the **Web Catalogue**.)
Front protection cover	**ZS-27-01**	—
R1/8 Piping adapter	**ZS-46-N1**	R1/8 NPT1/8
NPT1/8 Piping adapter	**ZS-46-N2**	

2 Outputs + Analogue Output (Voltage/Current)

3-Screen Display High-Precision Digital Pressure Switch

IP40

ZSE20A(F)/ISE20A-X2 $C \epsilon$ c$\mathbf{\Re}$us RoHS

How to Order

● **Rated pressure range**

| ISE20A | −0.1 to 1 MPa |

For Positive Pressure **ISE20A** – **X** – **M** – **M5** – ☐ ☐ ☐ – **X2**

For Vacuum/ Compound Pressure **ZSE20A** – **X** – **M** – **M5** – ☐ ☐ – **X2**

❶ ❷ ❸ ❹ ❺ ❻ ❼

● **Fluid contact parts: Grease-free**

❶ Rated pressure range

| ZSE20A | 0 to −101 kPa |
| ZSE20AF | −100 to 100 kPa |

❷ Output specification

Symbol	Description
R	NPN open collector 2 outputs + Analogue voltage output[1]
S	NPN open collector 2 outputs + Analogue current output[1]
T	PNP open collector 2 outputs + Analogue voltage output[1]
V	PNP open collector 2 outputs + Analogue current output[1]
X	NPN open collector 2 outputs + Copy function
Y	PNP open collector 2 outputs + Copy function

[1] Can be switched to auto-shift or copy function

❸ Unit specification

Symbol	Description
—	Unit selection function
M	SI units only[2]
P	Unit selection function (Initial value psi)[1]

[2] Fixed units: kPa, MPa

❹ Piping specification

Symbol	Description	Symbol	Description	
M5	M5 female thread Piping port	C4H	One-touch fitting Ø 4 mm	Straight type
		C6H	One-touch fitting Ø 6 mm	
		N7H	One-touch fitting Ø 1/4 inch	
01	R1/8 R1/8 Piping adapter ZS-46-N1	C4L	One-touch fitting Ø 4 mm	Elbow type
		C6L	One-touch fitting Ø 6 mm	
		N7L	One-touch fitting Ø 1/4 inch	
N01	NPT1/8 R1/8 Piping adapter ZS-46-N2			

∗ One-touch fitting is shipped together with the product.

❺ Option 1

Symbol	Description
—	Without lead wire
J	Lead wire with connector (5-core, 2 m lead wire)
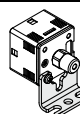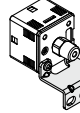
ZS-46-5L
Without waterproof cover

∗ For the **lead wire with M12 connector**, refer to the **Web Catalogue**.

❼ Option 3

Symbol	Operation manual[1]	Calibration certificate[1]
—	○	—
Y	—	—
K	○	○
T	—	○

[1] All texts are in both English and Japanese.

❻ Option 2

Symbol	Description	
—	None	
A1	Bracket A (Vertical mounting)	ZS-46-A1
A2	Bracket B (Horizontal mounting)	ZS-46-A2
B	Panel mount adapter	ZS-46-B
D	Panel mount adapter + Front protection cover	ZS-46-D

Options/Part Nos.

When only optional parts are required, order with the part numbers listed below.

Description	Part no.	Note
Bracket A	**ZS-46-A1**	Tapping screw: Nominal size 3 x 8 L (2 pcs.)
Bracket B	**ZS-46-A2**	Tapping screw: Nominal size 3 x 8 L (2 pcs.)
Panel mount adapter	**ZS-46-B**	—
Panel mount adapter + Front protection cover	**ZS-46-D**	—
Lead wire with connector	**ZS-46-5L**	5-core, 2 m, Non-waterproof (Without waterproof cover)
Lead wire with M12 connector	**ZS-46-5LM12**	Made to order (Refer to the **Web Catalogue**.)
Front protection cover	**ZS-27-01**	—
R1/8 Piping adapter	**ZS-46-N1**	R1/8 NPT1/8
NPT1/8 Piping adapter	**ZS-46-N2**	

SMC

2 Outputs + Analogue Output (Voltage/Current)

3-Screen Display High-Precision Digital Pressure Switch for General Fluids IP65

ZSE20C(F)/ISE20C(H) Series

CE c(UL)us RoHS

How to Order

● **Rated pressure range**

ISE20C	−0.1 to 1 MPa
ISE20CH	−0.1 to 2 MPa

For Positive Pressure

ISE20C – **X** – **M** – **02** ☐ – ☐ ☐ ☐

For Vacuum/ Compound Pressure

ZSE20C – **X** – **M** – **02** ☐ – ☐ ☐ ☐

❶ ❷ ❸ ❹ ❺ ❻ ❼ ❽
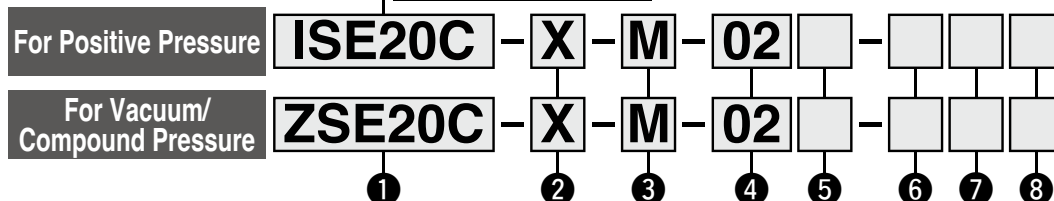
❶ Rated pressure range

ZSE20C	0 to −101 kPa
ZSE20CF	−100 to 100 kPa

❸ Unit specification

Symbol	Description
—	Unit selection function
M	SI units only*2
P	Unit selection function (Initial value psi)*2

∗2 Fixed units: kPa, MPa

❺ Piping direction

—	Rear ported
L	Bottom ported

❷ Output specification

Symbol	Description
R	NPN open collector 2 outputs + Analogue voltage output*1
S	NPN open collector 2 outputs + Analogue current output*1
T	PNP open collector 2 outputs + Analogue voltage output*1
V	PNP open collector 2 outputs + Analogue current output*1
X	NPN open collector 2 outputs + Copy function
Y	PNP open collector 2 outputs + Copy function

∗1 Can be switched to auto-shift or copy function

❹ Piping specification

Symbol	Description
02	R1/4 (M5 female threaded)
N02	NPT1/4 (M5 female threaded)
F02	G1/4 (M5 female threaded)
C01	Rc1/8
A2	URJ1/4 (Face seal fitting)
B2	TSJ1/4 (Compression fitting)

❻ Option 1

Symbol	Description
—	Without lead wire
W	Lead wire with connector, 5-core (2 m lead wire, With waterproof cover)

Without waterproof cover

ZS-46-5F

∗ For the **lead wire with M12 connector**, refer to the **Web Catalogue**.

Options/Part Nos.

When only optional parts are required, order with the part numbers listed below.

Description	Part no.	Note
Bracket A	**ZS-46-A1**	For rear ported/Tapping screw: Nominal size 3 x 8 L (2 pcs.)
Bracket C	**ZS-46-E**	For bottom ported/Tapping screw: Nominal size 3 x 10 L (2 pcs.)
Panel mount adapter	**ZS-46-B**	Rear ported
	ZS-35-B	Bottom ported
Panel mount adapter + Front protection cover	**ZS-46-D**	Rear ported
	ZS-35-E	Bottom ported
Panel mount adapter (Compatible with the panel holes of the Z/ISE80)	**ZS-46-F**	Rear ported, Made to order (Refer to the **Web Catalogue**.)
Panel mount adapter + Front protection cover (Compatible with the panel holes of the Z/ISE80)	**ZS-46-G**	Rear ported, Made to order (Refer to the **Web Catalogue**.)
Lead wire with connector	**ZS-46-5F**	5-core, 2 m, Waterproof (With waterproof cover)
Lead wire with M12 connector	**ZS-46-5FM12**	Made to order (Refer to the **Web Catalogue**.)
Front protection cover	**ZS-27-01**	Rear ported
	ZS-35-01	Bottom ported

❼ Option 2

∗ Note that the optional parts that can be used vary depending on the piping direction.

Symbol	Description
—	None

Rear ported (❺ Piping direction: —)

Symbol	Description	Symbol	Description
A1	Bracket A ZS-46-A1	**B**	Panel mount adapter ZS-46-B
D	Panel mount adapter + Front protection cover		ZS-46-D

Bottom ported (❺ Piping direction: L)

Symbol	Description
A3	Bracket C ZS-46-E
E	Panel mount adapter ZS-35-B
F	Panel mount adapter + Front protection cover ZS-35-E

❽ Option 3

Symbol	Operation manual*4	Calibration certificate*3
—	○	—
Y	—	—
K	○	○
T	—	○

∗3 All texts are in both English and Japanese.

SMC

3-Screen Display

High-Precision Digital Pressure Switch: For Air

ISE70/71-X2 ⊘ IO-Link CE c𝐔𝐋us RoHS

How to Order

ISE70 – 02 – L2 – M ☐ ☐ ☐ – X2

Pressure range

Symbol	Description
ISE70	0 to 1 MPa
ISE71	0 to 1.6 MPa

Piping specification

Symbol	Description
02	Rc1/4
N02	NPT1/4
F02	G1/4[1]

∗1 ISO 1179-1 compliant

Output specification[1]

Symbol	Description
L2	IO-Link: Switch output 1 + Switch output 2 (Switch output: NPN or PNP switching type)
AB	Switch output 1 + Switch output 2 (NPN or PNP switching type)

∗1 Refer to the **Web Catalogue** for details.

Unit specification

Symbol	Description
—	Unit selection function
M	SI unit only[2]

∗2 Fixed unit: MPa, kPa

● **Fluid contact parts: Grease-free**

● **Option 3**

Symbol	Description
—	Operation manual
Y	None
K	Operation manual + Calibration certificate
T	Calibration certificate

● **Option 2**
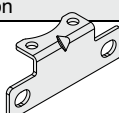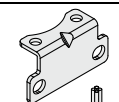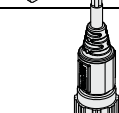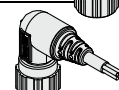
Symbol	Description
—	None
A	Bracket A (Interchangeable with ISE70)
B	Bracket B

● **Option 1**

Symbol	Description
—	None
S	Lead wire with M12 connector (Straight, 5 m)
L	Lead wire with M12 connector (Right-angled, 5 m)

Options/Part Nos.

When only optional parts are required, order with the part numbers listed below.

Description		Part no.	Note
Bracket A		**ZS-50-A**	Interchangeable with ISE70 With 2 mounting screws (M4 x 6L)
Bracket B		**ZS-50-B**	With 2 mounting screws (M4 x 6L)
Lead wire with M12 connector: Straight		**ZS-31-B**	Lead wire length: 5 m
Lead wire with M12 connector: Right-angled		**ZS-31-C**	Lead wire length: 5 m

SMC

Digital Pressure Switch
(Built-in Regulator Type)

ISE35-X528

CE c**UL**us RoHS

How to Order

ISE35–N–25–M L A–X528

Electrical entry

N	Wiring bottom entry
R	Wiring top entry

Output specifications

25	NPN output
65	PNP output

Unit specifications

—	With unit selection function
M	Fixed SI unit∗1
P	Pressure unit: psi (Initial value), with unit selection function

∗1 Fixed unit: MPa
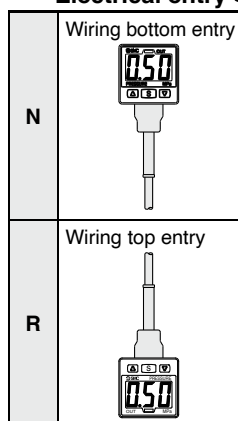
Fluid contact parts: Grease-free (For AR/AW-D series)

Option 2

A	AR/AW-D series mounting kit Lock pin Mounting screw Adapter Example) Regulato O-ring

Option 1

—	None
L	Lead wire with connector (Length: 2 m)

· Please read the Caution of HF- Series (p. 69) before use.

Option/Part No.

When optional parts are required separately, use the following part numbers to place an order.

Name	Part No.	Note
Lead wire with connector	ZS-32-A	Length: 2 m (With rubber cover)
Mounting kit	ZS-32-C-X527	For ISE35-□-A-X528 (AR/AW-D series) Mounting screw, adapter, lock pin, O-ring are attached

Applicable series

Product series that this product can be installed in.

Product series	Model
Regulator	AR20(K)-D/AR30(K)-D/AR40(K)-D/AR50(K)-D/AR60(K)-D
Filter regulator	AW20(K)-D/AW30(K)-D/AW40(K)-D/AW60(K)-D

Pressure Switch/Reed Switch Type

HF1B-IS10

C E   RoHS

How to Order

HF1B-IS10-☐01☐-☐

❶   ❷   ❸

> Semi-standard: Select one each for **a** to **c**.
> When more than one specification is required, indicate in alphanumeric order.
> Example) HF1B-IS10-N01-6PZ

		Symbol	Description
❶	Thread type	—	R
		N	NPT

+

		Symbol	Description
❷	Seal	—	None
		S	With seal

+

			Symbol	Description
❸	Semi-standard	**a** Set pressure range	—	0.1 to 0.4 MPa
			6[*1]	0.1 to 0.6 MPa

+

		Symbol	Description
b	Lead wire length	—	0.5 m
		L	3 m
		Z	5 m

+

		Symbol	Description
c	Scale plate pressure unit	—	MPa
		P	Both MPa and psi

*1 Set pressure range of 6P(L, Z) is 0.2 to 0.6 MPa (30 to 90 psi).

SMC

2-Colour Display

Digital Flow Switch

PF2M7 Series

$C \epsilon$ c **UL** us **RoHS**

How to Order

PF2M7 [**10**] [ ] − [**C6**] − [**A**] [ ] − [**M**] [ ] [ ]

Integrated display

❶ ❷ ❸ ❹ ❺ ❻ ❼ ❽

❶ Rated flow range

01	0.01 to 1 l/min	25	0.2 to 25 l/min
02	0.02 to 2 l/min	50	0.5 to 50 l/min
05	0.05 to 5 l/min	11	1 to 100 l/min
10	0.1 to 10 l/min	21	2 to 200 l/min

❷ Flow adjustment valve/Piping entry direction

Symbol	Flow adjustment valve	Piping entry direction	Rated flow range							
			1	2	5	10	25	50	100	200
—	None	Straight	●	●	●	●	●	●	●	●
S	Yes	Straight	—	—	●	●	●	●	●	●
L	None	Rear ported	●	●	●	●	●	●	●	●
W	Yes	Rear ported	—	—	●	●	●	●	●	●

∗ 1 and 2 l/min type products are not available with a flow adjustment valve.

❸ Port size

Symbol	Port size	Rated flow range							
		1	2	5	10	25	50	100	200
01	Rc1/8	●	●	●	●	●	●	—	—
N1	NPT1/8	●	●	●	●	●	●	—	—
F1	G1/8	●	●	●	●	●	●	—	—
02	Rc1/4	—	—	—	—	—	—	●	●
N2	NPT1/4	—	—	—	—	—	—	●	●
F2	G1/4	—	—	—	—	—	—	●	●
C4∗1	Ø 4	●	●	●	●	—	—	—	—
C6	Ø 6	●	●	●	●	●	●	—	—
C8	Ø 8	—	—	—	—	—	—	●	●
N7	Ø 1/4"	—	—	—	—	●	●	●	●

∗1 Made to order (Produced upon receipt of order)

Piping variations

With One-touch fitting C4∗2, C6, C8, N7	Female thread 01, 02, N1, N2, F1, F2
Straight	Straight
Rear ported	Rear ported
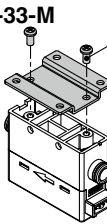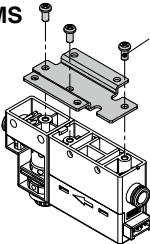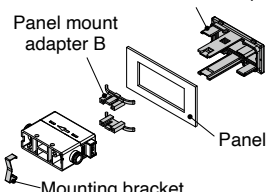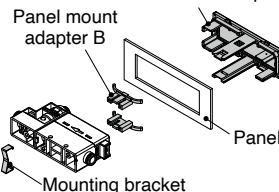
∗2 Made to order (Produced upon receipt of order)

❹ Output specification

Symbol	OUT1	OUT2
A	NPN	NPN
B	PNP	PNP
C	NPN	Analogue 1 to 5 V ↔ Analogue 0 to 10 V∗3
D	NPN	Analogue 4 to 20 mA
E	PNP	Analogue 1 to 5 V ↔ Analogue 0 to 10 V∗3
F	PNP	Analogue 4 to 20 mA

∗3 1 to 5 V or 0 to 10 V can be selected by pressing the button.
The default setting is 1 to 5 V.

❺ Option 1

—	W
Lead wire with connector (2 m) ZS-33-D	Lead wire with connector (2 m) + Connector cover (Silicone rubber) ZS-33-F ZS-33-D +
∗ Interchangeable with the existing PFM7 series	∗ Interchangeable with the existing PFM7 series
N	
Without lead wire with connector	

❻ Unit specification

M	SI unit only∗4
—	Unit selection function

∗4 Fixed unit: Instantaneous flow: l/min
Accumulated flow: L

❼ Option 2

—	R	S
Without bracket	Bracket (For the type without a flow adjustment valve) ZS-33-M With 2 tapping screws ∗ Interchangeable with the existing PFM series	Bracket (For the type with a flow adjustment valve) ZS-33-MS With 3 tapping screws ∗ Interchangeable with the existing PFM series
	T	**V**
	Panel mount adapter (For the type without a flow adjustment valve) ZS-33-2J Panel mount adapter Panel mount adapter B Panel Mounting bracket	Panel mount adapter (For the type with a flow adjustment valve) ZS-33-2JS Panel mount adapter S Panel mount adapter B Panel Mounting bracket

∗ Options are shipped together with the product but do not come assembled.

❽ Calibration certificate∗5

—	None
A	Yes

∗5 Made to order
The certificate is in both English and Japanese.

DIN Rail Mounting Bracket (To Be Ordered Separately)

ZS − 33 − R [**3**]

∗ Interchangeable with the existing PFM series

Stations

1	1 station
2	2 stations
3	3 stations
4	4 stations
5	5 stations

DIN rail part number: AXT100-DR-□
∗ Refer to the **Web Catalogue** for the DIN rail mounting dimensions.

SMC

Digital Flow Switch

PFMB7 Series

CE c(UL)US RoHS
(Only 200 L type)

How to Order

PFMB7 | 501 | – | □ | 04 | – | A | □ | – | M | □ | □

Rated flow range (Flow rate range)

501	5 to 500 l/min
102	10 to 1000 l/min
202	20 to 2000 l/min

Thread type

—	Rc
N	NPT
F	G *1

*1 ISO 228 compliant

Port size

	Port size	Rated flow range		
		501	102	202
04	1/2	●	●	—
06	3/4	—	—	●
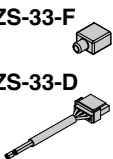
Output specification

	OUT1	OUT2	Applicable monitor unit model
A	NPN	NPN	—
B	PNP	PNP	—
C	NPN	Analogue 1 to 5 V	PFG300 series
D	NPN	Analogue 4 to 20 mA	PFG310 series
E*1	PNP	Analogue 1 to 5 V	PFG300 series
F*1	PNP	Analogue 4 to 20 mA	PFG310 series
G*1	NPN	External input *2	—
H*1	PNP	External input *2	—

*1 Made to order
*2 Accumulated flow value, peak/bottom flow value can be reset by external signal input.

Calibration certificate *1

—	None
A*2	With calibration certificate

*1 Certificate in both English and Japanese
*2 Made to order

Option 2

—	R
No bracket	With bracket — With 4 tapping screws

* Options are shipped together with the product, but not assembled.
  When only optional parts are required, refer to Option 2/Part Nos. below.

Unit specification

M	SI unit only *1
—	Unit selection function

*1 Fixed unit: Instantaneous flow: l/min
         Accumulated flow: L

Option 1

—	W
Lead wire with connector (2 m)	Lead wire with connector (2 m) + Rubber cover for connector (Silicone rubber)
ZS-33-D	ZS-33-F ZS-33-D
N	* When only optional parts are required,
Without lead wire with connector	refer to Option 1/Part Nos. below.

Option 1/Part Nos.

Option	Part no.	Qty.	Note
Lead wire with connector	ZS-33-D	1	Lead wire: 2 m
Rubber cover (Silicone rubber)	ZS-33-F	1	For connector

Option 2/Part Nos.

Option	Part no.	Qty.	Note
Bracket (for PFMB7201)	ZS-33-M	1	With 2 tapping screws (3 x 6)
Bracket (for PFMB7201S)	ZS-33-MS	1	With 3 tapping screws (3 x 6)
Panel mount adapter (for PFMB7201)	ZS-33-J	1	
Panel mount adapter (for PFMB7201S)	ZS-33-JS	1	
Bracket (for PFMB7501/7102)	ZS-42-C	1	With 4 tapping screws (3 x 6)
Bracket (for PFMB7202)	ZS-42-D	1	With 4 tapping screws (3 x 6)

SMC

Flow Sensor

PFMV5 Series

$C \in$ cULus RoHS

How to Order

PFMV5 [05] − **1** − ▢▢

Measurement flow range
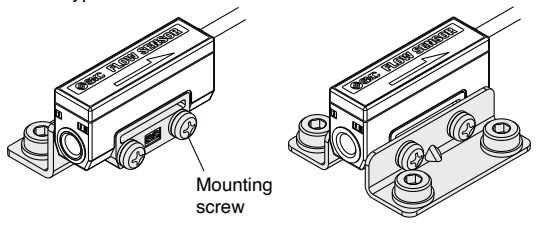
05	0.0 to 0.5 l/min
10	0.0 to 1.0 l/min
30	0.0 to 3.0 l/min
05F	−0.5 to 0.5 l/min
10F	−1.0 to 1.0 l/min
30F	−3.0 to 3.0 l/min

Output specifications

1	Analogue output (1 to 5 V)

Option (shipped together)

—	None
A	With L-type bracket Mounting screw

∗ 2 L-type brackets (with 2 mounting screws) are included.

Operation manual

—	With operation manual (Japanese and English)
N	None

Option/Part No.

If a single option or manifold mounting are required, order sensors with the part numbers below separately.

Part no.	Stations	Note
ZS-36-A1	For 1 station (for single unit)	2 L-type brackets, 2 mounting screws M3 x 15L
ZS-36-A2	For 2 stations	2 L-type brackets, 2 mounting screws M3 x 25L
ZS-36-A3	For 3 stations	2 L-type brackets, 2 mounting screws M3 x 35L
ZS-36-A4	For 4 stations	2 L-type brackets, 2 mounting screws M3 x 45L
ZS-36-A5	For 5 stations	2 L-type brackets, 2 mounting screws M3 x 55L

SMC

Direct Operated 2-Port Solenoid Valve
HF1B-JSX Series

HF1	HF2
HF1 compatible	HF2 compatible

Body Material Stainless Steel, Brass

RoHS

CE Differs depending on the voltage and electrical entry. For details, refer to the **Web Catalogue**.

How to Order

HF1B－JSX **2 1**－**S N 302 R**－**5 G**－**B**
❶ ❷ ❸ ❹ ❺ ❻ ❼ ❽ ❾
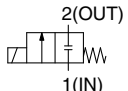
❶ Size

Symbol	Size
1	10
2	20
3	30

❷ Valve type

Symbol	Valve type
1	N.C. 2(OUT) 1(IN)

❸ Body material

Symbol	Body material
S	Stainless steel
C	Brass

❹ Seal material

Symbol	Seal material
N	NBR
F	FKM
E	EPDM

❺ Orifice diameter and port size

Symbol	Orifice diameter [mmØ]	Port size	Size 10	Size 20	Size 30
101	1.6	1/8	●	—	—
201	2.4	1/8	●	—	—
301	3.2	1/8	—	●	—
302	3.2	1/4	—	●	—
303	3.2	3/8	—	●	—
402	4	1/4	—	●	●
403	4	3/8	—	●	●
502	5.6	1/4	—	●	●
503	5.6	3/8	—	●	●
702	7.1	1/4	—	●	●
703	7.1	3/8	—	●	●

❻ Thread type

Symbol	Thread type
R	Rc
N	NPT
F	G

❼ Rated voltage

AC

Symbol	Rated voltage	Symbol	Rated voltage
1	100 VAC	7	240 VAC
2	200 VAC	8	48 VAC
3	120 (110) VAC	B	24 VAC
4	220 VAC	J	230 VAC

DC

Symbol	Rated voltage
5	24 VDC
6	12 VDC

❾ Option

Symbol	Option
—	None
B	With bracket[*1] (Stainless steel)

*1 Refer to the **Web Catalogue** for the bracket assembly part nos.

❽ Electrical entry

Symbol	Electrical entry		Size 10	Size 20	Size 30	CE-compliant
G	Grommet[*1]		●	●	●	24 VDC / 12 VDC
GS	Grommet with PCB (With surge voltage suppressor)		●	●	●	100 VAC / 24 VDC / 12 VDC / 48 VAC / 24 VAC
CS	Conduit (With surge voltage suppressor)		—	●	●	All voltages
DS	DIN terminal (With surge voltage suppressor)		●	●	●	All voltages
DZ	DIN terminal with light (With surge voltage suppressor)		●	●	●	All voltages
DN	DIN terminal without connector (With surge voltage suppressor)		●	●	●	All voltages
WN	M12 connector/Without connector cable (With surge voltage suppressor)[*2]		●	●	●	All voltages

*1 DC voltage only
*2 A cable for the M12 connector is not included with the product. Refer to "Option" in the **Web Catalogue** to order it separately.

SMC

Direct Operated 2-Port Solenoid Valve
HF1B-JSX Series

Body Material **Aluminium**

RoHS

CE Differs depending on the voltage and electrical entry. For details, refer to the **Web Catalogue**.

How to Order

HF1B–JSX **2 1** – **A N 302 R** – **5 G** – **B**
❶ ❷ ❸ ❹ ❺ ❻ ❼ ❽ ❾
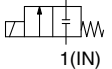
❶ Size

Symbol	Size
2	20
3	30

❷ Valve type

Symbol	Valve type
1	N.C. 2(OUT) 1(IN)

❸ Body material

Symbol	Body material
A	Aluminium

❹ Seal material

Symbol	Seal material
N	NBR
F	FKM

❻ Thread type

Symbol	Thread type
R	Rc
N	NPT
F	G

❺ Orifice diameter and port size

Symbol	Orifice diameter [mmØ]	Port size	Size 20 Aluminium body	Size 30 Aluminium body
301	3	1/8	●	—
302	3	1/4	●	—
402	4	1/4	—	●
403	4	3/8	—	●
501	5	1/8	●	—
502	5	1/4	●	—
702	7	1/4	—	●
703	7	3/8	—	●

❼ Rated voltage

AC

Symbol	Rated voltage	Symbol	Rated voltage
1	100 VAC	7	240 VAC
2	200 VAC	8	48 VAC
3	120 (110) VAC	B	24 VAC
4	220 VAC	J	230 VAC

DC

Symbol	Rated voltage
5	24 VDC
6	12 VDC

❾ Option

Symbol	Option
—	None
B	With bracket*1

*1 Refer to the **Web Catalogue** for the bracket assembly part nos.

❽ Electrical entry

Symbol	Electrical entry		Size 10	Size 20	Size 30	CE-compliant
G	Grommet*1		●	●	●	24 VDC / 12 VDC
GS	Grommet with PCB (With surge voltage suppressor)		●	●	●	100 VAC / 24 VDC / 12 VDC / 48 VAC / 24 VAC
CS	Conduit (With surge voltage suppressor)		—	●	●	All voltages
DS	DIN terminal (With surge voltage suppressor)		●	●	●	All voltages
DZ	DIN terminal with light (With surge voltage suppressor)		●	●	●	All voltages
DN	DIN terminal without connector (With surge voltage suppressor)		●	●	●	All voltages
WN	M12 connector/Without connector cable (With surge voltage suppressor)*2		●	●	●	All voltages

*1 DC voltage only
*2 A cable for the M12 connector is not included with the product. Refer to "Option" in the **Web Catalogue** to order it separately.

Pilot Operated
2-Port Solenoid Valve

HF1B-JSXD Series

RoHS

CE Differs depending on the voltage and electrical entry. For details, refer to the **Web Catalogue**.

How to Order

HF1B‑JSXD 3 1 ‑ C N 02 R ‑ 5 G ‑ B

❶ ❷　❸ ❹ ❺　❻　❼ ❽　❾
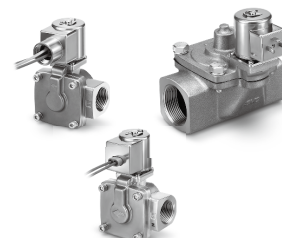
❶ Size

Symbol	Size
3	30
4	40
5	50
6	60
7	70
8	80
9	90

❷ Valve type

Symbol	Valve type
1	N.C.

❸ Body material

Symbol	Body material	Size		
		30	40, 50, 60	70, 80, 90
C	Brass	●	●	—
S	Stainless steel	●	●	—
B	Bronze	—	—	●
A	Aluminium	●	—	—

❹ Seal material

Symbol	Seal material
N	NBR
F	FKM
E*1	EPDM

*1 Cannot be used in combination with the aluminium body

❺ Port size

Symbol	Connection	Port size	Size						
			30	40	50	60	70	80	90
02	Thread	1/4	●	—	—	—	—	—	—
03		3/8	●	●	—	—	—	—	—
04		1/2	●	●	—	—	—	—	—
06		3/4	—	—	●	—	—	—	—
10		1	—	—	—	●	—	—	—
12		1 1/4	—	—	—	—	●	—	—
14		1 1/2	—	—	—	—	—	●	—
20		2	—	—	—	—	—	—	●

❻ Thread type*1

Symbol	Thread type
R	Rc
N	NPT
F	G

*1 Thread type cannot be selected for 70 to 90 size flange types.

❼ Rated voltage

AC

Symbol	Rated voltage	Symbol	Rated voltage
1	100 VAC	7	240 VAC
2	200 VAC	8	48 VAC
3	120 (110) VAC	B	24 VAC
4	220 VAC	J	230 VAC

DC

Symbol	Rated voltage
5	24 VDC
6	12 VDC

❾ Bracket

Symbol	Bracket	Size		
		30 Aluminium, Brass, Stainless Steel	40, 50, 60	70, 80, 90
—	None	●	●	●
B	With bracket	●	●	—*1

*1 Sizes 70 to 90 are not available with a bracket.

❽ Electrical entry

Symbol	Electrical entry		CE-compliant
G	Grommet*1		12 VDC
			24 VDC
GS	Grommet with PCB (With surge voltage suppressor)		100 VAC
			24 VDC
			12 VDC
			48 VAC
			24 VAC
CS	Conduit (With surge voltage suppressor)		All voltages
DS	DIN terminal (With surge voltage suppressor)		All voltages
DZ	DIN terminal with light (With surge voltage suppressor)		All voltages
DN	DIN terminal without connector (With surge voltage suppressor)		All voltages
WN	M12 connector without connector cable (With surge voltage suppressor)*2		All voltages

*1 DC voltage only
*2 A cable for the M12 connector is not included with the product. Refer to "Option" in the **Web Catalogue** to order it separately.

SMC

Pulse Valve Valve for Dust Collector
HF1B-JSXFAE/F *Series*

Compression Fitting Type/Direct Piping Type RoHS

Air Preparation Equipment
Pressure Control Equipment/Others

Fittings and Tubing

Flow Control Equipment

Pressure Gauges

Switches/Sensors

Process Valves

Directional Control Valves

How to Order

HF1B – JSXFA **E** – **06** **R** – **B** – ☐ **1**

❶ ❷ ❸ ❹ ❺ ❻

Compression fitting type
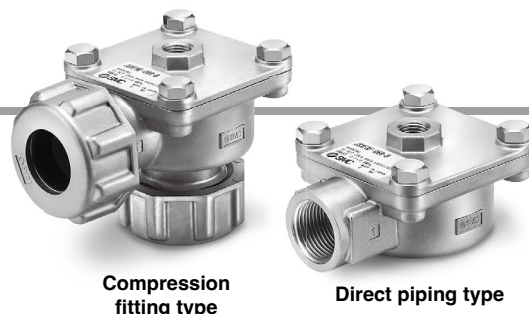
Direct piping type

❶ Piping

E	Compression fitting type*1
F	Direct piping type

*1 Seals and washers are included.

❷ IN/OUT port size

06	3/4 (20A)
10	1 (25A)
14	1 1/2 (40A)

❸ Thread type

R	Rc
N	NPT
F	G

❹ Fluid and ambient temperatures

B	–40 to 60 °C

❺ With/without silencer

		Port size		
		06	10	14
—	Without	●	●	●
S	With	—	—	●

∗ Port size: 14 only
  Select — for 06 and 10.

❻ Pilot port size

—	1/4
1	1/8

Symbol

```
      ⤬
   ┌─────┐
   │     │
1 ─┤     ├─ 2
(IN)│     │(OUT)
```
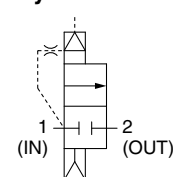
⚠ Caution

Selection of Pilot Valve

For the pilot valve orifice diameter, ⌀ 5 mm or larger is recommended.

When the pilot orifice diameter is ⌀ 3 mm or larger and less than ⌀ 5 mm, put "**A**" to the end of the product number for made-to-order. The product may not operate correctly if the pilot valve orifice diameter is inadequate. (port size: 3/4, 1) Depending on the pilot piping port size*1 or length, the valve may not operate correctly.

*1 The I.D. of the pilot piping must be larger than the pilot valve orifice diameter to use. The maximum pilot piping I.D. is 10 mm.

Pilot valve

Pilot piping

Exhaust
Orifice diameter:
⌀ 5 mm or larger

HF1B-JSXFA☐

Pilot port
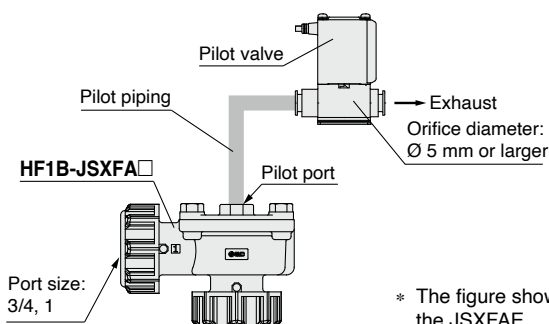
Port size:
3/4, 1

∗ The figure shows the JSXFAE.

Made to Order

Pilot valve orifice diameter: Special specification

A	For ⌀ 3 mm to ⌀ 5 mm	Port size: 06, 10

HF1B – JSXFA ☐ – ☐☐ – B – ☐☐ **A**

Enter the standard product number.

High Speed 2-Port Valve

SX10 Series

CE   RoHS

How to Order

SX1 **2** **F** – **A** **G**

Valve mounting

1	Screw mount type*1
2	Quick disconnect type

*1 Two mounting screws (M3 x
    0.5) and a gasket are included.
    (packaged together)

Filter (IN port)

—	Without filter
F	With filter*2

*2 Flow reduction rate
    50 l/min: 5 % or less
    100 l/min: 5 to 10 %
    150 l/min: 10 to 15 %

Flow rate/Operating frequency (at 24 VDC, 0.25 MPa)

Symbol	Flow rate [l/min]	Power consumption [W]	Max. operating frequency [Hz]
A	50	80	1200
B		40	1000
C		10	550
D		4	350
E	100	80	650
F		40	550
G		10	300
H		4	200
J	150	80	600
K		40	500
L		10	250
M		4	150

Lead wire (grommet) length

Symbol	Length
G	300 mm
H	500 mm
J	1000 mm

SMC

Rubber Seal
3-Port/Pilot Poppet Type
Body Ported/Single Unit

HF1-VP300/500/700 Series

RoHS

Air Preparation Equipment
Pressure Control Equipment/Others

Fittings and Tubing

Flow Control Equipment

Pressure Gauges

Switches/Sensors

Process Valves

Directional Control Valves

How to Order

CE

∗ Only DIN and conduit terminal types are available for AC mode.
Refer to the electrical entry for details.

Body ported HF1−VP **3** 42 ☐☐☐ − **5** G ☐☐ 1 − **01** ☐ A − ☐ − ☐

❶   ❷ ❸ ❹   ❺ ❻ ❼ ❽   ❾ ❿ ⓫ ⓬ ⓭

❶ Series

3	VP300
5	VP500
7	VP700

❷ Pilot type

—	Internal pilot
R	External pilot

∗ If the product is used for air blow, the use of external pilot valve is recommended to avoid operation failure due to pressure drop.

❸ Pressure specification

—	Standard (0.7 MPa)
K	High-pressure type (1.0 MPa)

❹ Coil specification

—	Standard
T	With power saving circuit (DC only)

∗ Be sure to select the power saving circuit type when it is continuously energised for a long time. (Refer to the **Web Catalogue** for details.)
∗ T type is only available for DC mode. When T is selected, only Z type of light/surge voltage suppressor is available. (Note that when the electrical entry of DIN terminal type without connector is selected, only DOS and YOS are available.)

❺ Rated voltage

DC

5	24 VDC
6	12 VDC

AC (50/60 Hz)∗1

1	100 VAC
2	200 VAC
3	110 VAC [115 VAC]
4	220 VAC [230 VAC]
7	240 VAC
B	24 VAC

∗1 For triac output, refer to the made-to-order specifications (X600).

❼ Light/surge voltage suppressor

		DC	AC
—	Without light/surge voltage suppressor	○	○
S	With surge voltage suppressor	○	—∗3
Z	With light/surge voltage suppressor	○	○
R	With surge voltage suppressor (Non-polar)	○	—
U	With light/surge voltage suppressor (Non-polar)	○	—

∗3 There is no S option for AC mode, since a rectifier prevents surge voltage generation.
∗ In the DIN terminal type, since a light is installed in the connector, DOZ, DOU, YOZ, YOU are not available.

❽ Manual override

—: Non-locking push type   **D**: Push-turn locking slotted type   **E**: Push-turn locking lever type

❻ Electrical entry

Grommet	L-type plug connector	M-type plug connector	DIN terminal	DIN (EN175301-803) terminal	Conduit terminal
			[IP65 compatible]	[IP65 compatible]	[IP65 compatible]
G: Lead wire length 300 mm **H**: Lead wire length 600 mm	**L**: With lead wire (length 300 mm)	**M**: With lead wire (length 300 mm)	**D**: With connector	**Y**: With connector	**T**: Conduit terminal
G: Lead wire length 300 mm **H**: Lead wire length 600 mm DC Without light/ surge voltage suppressor	**LN**: Without lead wire **LO**: Without connector	**MN**: Without lead wire **MO**: Without connector	**DO**: Without connector	**YO**: Without connector	
CE-compliant DC	CE	CE	CE	CE	CE	CE
AC∗2	—	—	—	CE	CE	CE

∗2 With the same specifications as the DC type, all lead wire entries for the 24 VAC type are CE marking compliant.
∗ LN and MN types are with 2 sockets.
∗ Refer to the **Web Catalogue** when different length of lead wire for L/M-type plug connector is required.
∗ Refer to the **Web Catalogue** for details on the DIN (EN175301-803) terminal.

❾ Port size

Symbol	Port size	VP300	VP500	VP700
01	1/8	○	—	—
02	1/4	○	○	—
03	3/8	—	○	○
04	1/2	—	—	○

❿ Thread type

—	Rc
F	G
N	NPT
T	NPTF

⓫ Type of actuation

A	N.C. (Normally closed)
B	N.O. (Normally open)

⓬ Bracket

—	Without bracket
F	With bracket

⓭ Made to Order

—	—
X500	Pilot exhaust port with piping thread (M3) specification (Refer to the **Web Catalogue**).
X505	Interchangeable specification with the previous valve mounting hole pitch type (Refer to the **Web Catalogue**).
X600	Triac output specification (Refer to the **Web Catalogue**).

⚠ Caution

When using the surge voltage suppressor type, residual voltage will remain. Refer to the Web Catalogue **for details.**

SMC

Rubber Seal
3-Port/Pilot Poppet Type
Base Mounted/Single Unit
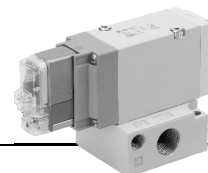
HF1-VP300/500/700 Series

RoHS

How to Order

CE

* Only DIN and conduit terminal types are available for AC mode.
Refer to the electrical entry for details.

Base mounted HF1–VP **3** 4 4 ☐☐☐ – **5 G** ☐☐ 1 – ☐☐ **A** – ☐

❶   ❷ ❸ ❹   ❺ ❻ ❼ ❽   ❾ ❿ ⓫   ⓬

❶ Series

3	VP300
5	VP500
7	VP700

❷ Pilot type

—	Internal pilot
R	External pilot

* If the product is used for air blow, the use of external pilot valve is recommended to avoid operation failure due to pressure drop.

❸ Pressure specification

—	Standard (0.7 MPa)
K	High-pressure type (1.0 MPa)

❹ Coil specification

—	Standard
T	With power saving circuit (DC only)

* Be sure to select the power saving circuit type when it is continuously energised for a long time.
(Refer to the **Web Catalogue** for details.)
* T type is only available for DC mode. When T is selected, only Z type of light/surge voltage suppressor is available.
(Note that when the electrical entry of DIN terminal type without connector is selected, only DOS and YOS are available.)

❺ Rated voltage

DC

5	24 VDC
6	12 VDC

AC (50/60 Hz)*1

1	100 VAC
2	200 VAC
3	110 VAC [115 VAC]
4	220 VAC [230 VAC]
7	240 VAC
B	24 VAC

*1 For triac output, refer to the made-to-order specifications (X600).

❼ Light/surge voltage suppressor

		DC	AC
—	Without light/surge voltage suppressor	○	○
S	With surge voltage suppressor	○	—*3
Z	With light/surge voltage suppressor	○	○
R	With surge voltage suppressor (Non-polar)	○	—
U	With light/surge voltage suppressor (Non-polar)	○	—

*3 There is no S option for AC mode, since a rectifier prevents surge voltage generation.
* In the DIN terminal type, since a light is installed in the connector, DOZ, DOU, YOZ, YOU are not available.

❽ Manual override

—: Non-locking push type	D: Push-turn locking slotted type	E: Push-turn locking lever type

❾ Port size (Sub-plate)

Symbol	Port size	VP300	VP500	VP700
—	Without sub-plate*4			
01	1/8	○	—	—
02	1/4	○	○	—
03	3/8	—	○	○
04	1/2	—	—	○

*4 With a gasket and two mounting bolts.

❿ Thread type

—	Rc
F	G
N	NPT
T	NPTF

⓫ Type of actuation

A	N.C. (Normally closed)
B	N.O. (Normally open)

⓬ Made to Order

—	—
X500	Pilot exhaust port with piping thread (M3) specification (Refer to the **Web Catalogue**).
X600	Triac output specification (Refer to the **Web Catalogue**).

❻ Electrical entry

	Grommet	L-type plug connector	M-type plug connector	DIN terminal	DIN (EN175301-803) terminal	Conduit terminal
				[IP65 compatible]	[IP65 compatible]	[IP65 compatible]
	G: Lead wire length 300 mm **H**: Lead wire length 600 mm	**L**: With lead wire (length 300 mm)	**M**: With lead wire (length 300 mm)	**D**: With connector	**Y**: With connector	**T**: Conduit terminal
	G: Lead wire length 300 mm **H**: Lead wire length 600 mm DC Without light/surge voltage suppressor	**LN**: Without lead wire **LO**: Without connector	**MN**: Without lead wire **MO**: Without connector	**DO**: Without connector	**YO**: Without connector	
CE-compliant DC	CE	CE	CE	CE	CE	CE
AC*2	—	—	—	CE	CE	CE

*2 With the same specifications as the DC type, all lead wire entries for the 24 VAC type are CE marking compliant.
* LN and MN types are with 2 sockets.
* Refer to the **Web Catalogue** when different length of lead wire for L/M-type plug connector is required.
* Refer to the **Web Catalogue** for details on the DIN (EN175301-803) terminal.
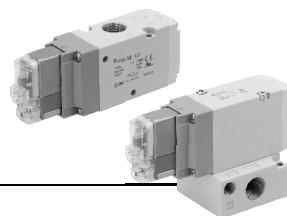
⚠ **Caution**

When using the surge voltage suppressor type, residual voltage will remain. Refer to the Web Catalogue **for details.**

SMC

Low Wattage Specification
HF1-VP300/500 Series

Body Ported   **Base Mounted**

RoHS

* AC-type models that are CE-compliant have DIN terminals only. Refer to the electrical entry for details.

CE

How to Order

HF1–**VP** **3** **4** **2** **R** **Y** – **5** **D** **Z** **E** **1** – **02** **T** **A** – **F**

❶   ❷ ❸   ❹ ❺ ❻ ❼   ❽ ❾ ❿ ⓫

Low wattage type ●

❶ Series

3	VP300
5	VP500

❷ Body type

		Mountable manifold	
		41	**42**
2	Body ported	—	—
4	Base mounted	●*1	●*1

*1 Refer to the **Web Catalogue.**
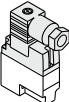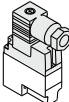
❸ Pilot type

—	Internal pilot
R	External pilot

* If the product is used for air blow, the use of external pilot valve is recommended to avoid operation failure due to pressure drop.

❹ Rated voltage

1	100 VAC
2	200 VAC
3	110 VAC
4	220 VAC
5	24 VDC
6	12 VDC

❺ Electrical entry

24 VDC, 12 VDC/100 VAC, 110 VAC, 200 VAC, 220 VAC				24 VDC, 12 VDC 100 VAC, 110 VAC, 200 VAC, 220 VAC	
Grommet	L-type plug connector	M-type plug connector		DIN terminal	
G: Lead wire length 300 mm	**L:** With lead wire (Length 300 mm)	**M:** With lead wire (Length 300 mm)	**MN:** Without lead wire	\<IP65 compatible\> **D:** With connector	\<IP65 compatible\> **Y:** With connector
H: Lead wire length 600 mm	**LN:** Without lead wire	**LO:** Without connector	**MO:** Without connector	**DO:** Without connector	**YO:** Without connector
CE-compliant DC	●	●	●	●	●
CE-compliant AC	—	—	—	●	●

* LN and MN types are with 2 sockets.
* Y type DIN terminal complies with EN-175301-803C (former DIN 43650C). Refer to the **Web Catalogue** for details.

❻ Light/Surge voltage suppressor

Electrical entry for G, H, L, M

—	Without light/surge voltage suppressor
S	With surge voltage suppressor
Z	With light/surge voltage suppressor
R	With surge voltage suppressor (Non-polar type)
U	With light/surge voltage suppressor (Non-polar type)

Electrical entry for D, Y

—	Without light/surge voltage suppressor
S	With surge voltage suppressor (Non-polar type)
Z	With light/surge voltage suppressor (Non-polar type)

* For AC voltage valves, there is no "S" option. It is already built into the rectifier circuit.
* For "R" and "U", DC voltage is only available.

* DOZ and YOZ are not available.
* For AC voltage valves, there is no "S" option. It is already built into the rectifier circuit.

❼ Manual override

—	Non-locking push type
D	Push-turn locking slotted type
E	Push-turn locking lever type

❽ Port size

Body Ported

Symbol	Port size	VP300	VP500
01	1/8	○	—
02	1/4	○	○
03	3/8	—	○

Base Mounted

Symbol	Port size	VP300	VP500
—	Without sub-plate*2		
01	1/8	○	—
02	1/4	○	○
03	3/8	—	○

*2 With a gasket and two mounting bolts

❾ Thread type

—	Rc, M5
F	G
N	NPT
T	NPTF

❿ Type of actuation

A	N.C. (Normally closed)
B	N.O. (Normally open)

⓫ Bracket

—	Without bracket
F	With bracket*3

*3 Body ported only

SMC

Micro Mechanical Valve

HF1B-VM1000 Series

RoHS

Model

	Actuator	Piping	Number of ports	Applicable tubing		Note	Weight [g]
				T0425	TU0425/T0403		
Manual operation	Toggle lever	Side ported	3-port	HF1B-VM1000-4N-08	HF1B-VM1000-4NU-08	–	20
			2-port	HF1B-VM1100-4N-08	HF1B-VM1100-4NU-08	–	
		Bottom ported	3-port	HF1B-VM1010-4N-08	HF1B-VM1010-4NU-08	–	
			2-port	HF1B-VM1110-4N-08	HF1B-VM1110-4NU-08	–	
	Push button	Side ported	3-port	HF1B-VM1000-4N-32R	HF1B-VM1000-4NU-32R	Red	31
			2-port	HF1B-VM1100-4N-32R	HF1B-VM1100-4NU-32R	Red	
		Bottom ported	3-port	HF1B-VM1010-4N-32R	HF1B-VM1010-4NU-32R	Red	
			2-port	HF1B-VM1110-4N-32R	HF1B-VM1110-4NU-32R	Red	
		Side ported	3-port	HF1B-VM1000-4N-32B	HF1B-VM1000-4NU-32B	Black	
			2-port	HF1B-VM1100-4N-32B	HF1B-VM1100-4NU-32B	Black	
		Bottom ported	3-port	HF1B-VM1010-4N-32B	HF1B-VM1010-4NU-32B	Black	
			2-port	HF1B-VM1110-4N-32B	HF1B-VM1110-4NU-32B	Black	
		Side ported	3-port	HF1B-VM1000-4N-32G	HF1B-VM1000-4NU-32G	Green	
			2-port	HF1B-VM1100-4N-32G	HF1B-VM1100-4NU-32G	Green	
		Bottom ported	3-port	HF1B-VM1010-4N-32G	HF1B-VM1010-4NU-32G	Green	
			2-port	HF1B-VM1110-4N-32G	HF1B-VM1110-4NU-32G	Green	

∗ To replace the push button and push button cover alone, refer to the **Web Catalogue**.
Other parts and actuator cannot be replaced.

How to Order

HF1B−VM1 [0] [0] 0 − 4N − 08 [ ]

Number of ports

0	3-port
1	2-port

Piping

0	Side ported
1	Bottom ported

Total travel/Basic (T.T.)

0	4.8 mm

Colour of push button

R	Red
G	Green
B	Black

Actuator type

08	Toggle lever
32	Push button

Applicable tubing (Material/Size)

4N	Nylon Ø 4/2.5 (T0425)
4NU	Nylon Ø 4/3 (T0403)
	Soft nylon Ø 4/2.5 (TS0425)
	Polyurethane Ø 4/2.5 (TU0425)

2/3-Port Mechanical Valve
HF1B-VM100 Series

RoHS

Model

Piping direction			Side ported			Bottom ported		Actuator	
Body option		Standard		With bottom mounting thread		—		Actuator part number	Additional weight for actuator
Number of ports		**2-port**	**3-port**	**2-port**	**3-port**	**2-port**	**3-port**		
Toggle lever		HF1B-VM120-01-08A	HF1B-VM130-01-08A	HF1B-VM120U-01-08A	HF1B-VM130U-01-08A	HF1B-VM122-M5-08A	HF1B-VM132-M5-08A	VM-08B	41 g
Push button (Mushroom)	Red	HF1B-VM120-01-30RA	HF1B-VM130-01-30RA	HF1B-VM120U-01-30RA	HF1B-VM130U-01-30RA	HF1B-VM122-M5-30RA	HF1B-VM132-M5-30RA	VM-30AR	58 g
	Black	HF1B-VM120-01-30BA	HF1B-VM130-01-30BA	HF1B-VM120U-01-30BA	HF1B-VM130U-01-30BA	HF1B-VM122-M5-30BA	HF1B-VM132-M5-30BA	VM-30AB	
	Green	HF1B-VM120-01-30GA	HF1B-VM130-01-30GA	HF1B-VM120U-01-30GA	HF1B-VM130U-01-30GA	HF1B-VM122-M5-30GA	HF1B-VM132-M5-30GA	VM-30AG	
	Yellow	HF1B-VM120-01-30YA	HF1B-VM130-01-30YA	HF1B-VM120U-01-30YA	HF1B-VM130U-01-30YA	HF1B-VM122-M5-30YA	HF1B-VM132-M5-30YA	VM-30AY	
Push button (Extended)	Red	HF1B-VM120-01-32RA	HF1B-VM130-01-32RA	HF1B-VM120U-01-32RA	HF1B-VM130U-01-32RA	HF1B-VM122-M5-32RA	HF1B-VM132-M5-32RA	VM-32AR	52 g
	Black	HF1B-VM120-01-32BA	HF1B-VM130-01-32BA	HF1B-VM120U-01-32BA	HF1B-VM130U-01-32BA	HF1B-VM122-M5-32BA	HF1B-VM132-M5-32BA	VM-32AB	
	Green	HF1B-VM120-01-32GA	HF1B-VM130-01-32GA	HF1B-VM120U-01-32GA	HF1B-VM130U-01-32GA	HF1B-VM122-M5-32GA	HF1B-VM132-M5-32GA	VM-32AG	
	Yellow	HF1B-VM120-01-32YA	HF1B-VM130-01-32YA	HF1B-VM120U-01-32YA	HF1B-VM130U-01-32YA	HF1B-VM122-M5-32YA	HF1B-VM132-M5-32YA	VM-32AY	
Push button (Flush)	With a set of red, black, green, yellow	HF1B-VM120-01-33A	HF1B-VM130-01-33A	HF1B-VM120U-01-33A	HF1B-VM130U-01-33A	HF1B-VM122-M5-33A	HF1B-VM132-M5-33A	VM-33A	50 g
Twist selector (2-position)	Red	HF1B-VM120-01-34RA	HF1B-VM130-01-34RA	HF1B-VM120U-01-34RA	HF1B-VM130U-01-34RA	HF1B-VM122-M5-34RA	HF1B-VM132-M5-34RA	VM-34AR	56 g
	Black	HF1B-VM120-01-34BA	HF1B-VM130-01-34BA	HF1B-VM120U-01-34BA	HF1B-VM130U-01-34BA	HF1B-VM122-M5-34BA	HF1B-VM132-M5-34BA	VM-34AB	
	Green	HF1B-VM120-01-34GA	HF1B-VM130-01-34GA	HF1B-VM120U-01-34GA	HF1B-VM130U-01-34GA	HF1B-VM122-M5-34GA	HF1B-VM132-M5-34GA	VM-34AG	
	Yellow	HF1B-VM120-01-34YA	HF1B-VM130-01-34YA	HF1B-VM120U-01-34YA	HF1B-VM130U-01-34YA	HF1B-VM122-M5-34YA	HF1B-VM132-M5-34YA	VM-34AY	
Key selector (2-position)		HF1B-VM120-01-36A	HF1B-VM130-01-36A	HF1B-VM120U-01-36A	HF1B-VM130U-01-36A	HF1B-VM122-M5-36A	HF1B-VM132-M5-36A	VM-36A	78 g
Twist selector (3-position)		**3-port**	**5-port**	**3-port**	**5-port**	**3-port**	**5-port**	—	111 g (Add to 2 basic units.)
	Red	HF1B-VM131-01-35RA	HF1B-VM151-01-35RA	HF1B-VM131U-01-35RA	HF1B-VM151U-01-35RA	HF1B-VM133-M5-35RA	HF1B-VM153-M5-35RA		
	Black	HF1B-VM131-01-35BA	HF1B-VM151-01-35BA	HF1B-VM131U-01-35BA	HF1B-VM151U-01-35BA	HF1B-VM133-M5-35BA	HF1B-VM153-M5-35BA		
	Green	HF1B-VM131-01-35GA	HF1B-VM151-01-35GA	HF1B-VM131U-01-35GA	HF1B-VM151U-01-35GA	HF1B-VM133-M5-35GA	HF1B-VM153-M5-35GA		
	Yellow	HF1B-VM131-01-35YA	HF1B-VM151-01-35YA	HF1B-VM131U-01-35YA	HF1B-VM151U-01-35YA	HF1B-VM133-M5-35YA	HF1B-VM153-M5-35YA		

Note: "Manual operation" label appears vertically alongside the rows from Toggle lever to Key selector.

∗ It is possible to change the actuator assembly when an actuator part number is specified in the column.
∗ For push button (mushroom), push button (flush), push button (extended) and individual fastening ring, refer to the **Web Catalogue**.
∗ The handle of the selector (2-position and 3-position) cannot be removed or replaced alone.
∗ Colour of plunger: Grey (2-port), White (3-port)

How to Order

HF1B − VM1 **3** **1** ☐ − **01** − **08** **R** ☐ A − ☐

❶ ❷ ❸ ❹ ❺ ❻ ❼ ❽

❶ Number of ports

2	2-port
3	3-port
5	5-port (Twist selector 3-position only)

❷ Piping direction and the height of plunger

0	Side ported	Long
1		Short
2	Bottom ported	Long
3		Short

❸ Body option

—	Side mounting
U	With bottom mounting thread

∗ U: Applicable only to side ported type

❹ Port size

01	Rc1/8	Side ported only
N01	NPT1/8	
F01	G1/8	
M5	M5 x 0.8	Bottom ported only

❺ Actuator type

Height of plunger	Side ported		Bottom ported	
Actuator type	Long	Short	Long	Short
	0	1	2	3
08 Toggle lever	○	×	○	×
30 Push button (Mushroom)	○	×	○	×
32 Push button (Extended)	○	×	○	×
33 Push button (Flush)∗1	○	×	○	×
34 Twist selector (2-position)	○	×	○	×
36 Key selector (2-position)	○	×	○	×
35 Twist selector (3-position)	×	○	×	○

Combination possible: ○
Combination impossible: ×
∗1 When selecting the flush type, it is not necessary to select the suffix for the actuator.

❻ Suffix for actuator

R	Red	Colour of push button, selector
B	Black	
G	Green	
Y	Yellow	

❼ Suffix for indicator

—	None
Z	With miniature indicator

∗ Applicable only to bottom ported type

❽ Bracket option

—	None
B	With bracket

∗ Applicable only to side ported, side mounting type.
However, not applicable to twist selector (3-position).
Bracket is shipped together, but not assembled.

Air Preparation Equipment | Pressure Control Equipment/Others

Fittings and Tubing

Flow Control Equipment

Pressure Gauges

Switches/Sensors

Process Valves

Directional Control Valves

HF1 HF2

HF1 compatible   HF2 compatible

2/3-Port Mechanical Valve

HF1B-VM200 Series

RoHS

Model

Piping direction		Side ported				Actuator	
Body option		Standard		With bottom mounting thread		Actuator part number	Additional weight for actuator
Number of ports		**2-port**	**3-port**	**2-port**	**3-port**		
Toggle lever		HF1B-VM220-02-08A	HF1B-VM230-02-08A	HF1B-VM220U-02-08A	HF1B-VM230U-02-08A	VM-08A	110 g
Push button (Mushroom)	Red	HF1B-VM220-02-30RA	HF1B-VM230-02-30RA	HF1B-VM220U-02-30RA	HF1B-VM230U-02-30RA	VM-30AR	58 g
	Black	HF1B-VM220-02-30BA	HF1B-VM230-02-30BA	HF1B-VM220U-02-30BA	HF1B-VM230U-02-30BA	VM-30AB	
	Green	HF1B-VM220-02-30GA	HF1B-VM230-02-30GA	HF1B-VM220U-02-30GA	HF1B-VM230U-02-30GA	VM-30AG	
	Yellow	HF1B-VM220-02-30YA	HF1B-VM230-02-30YA	HF1B-VM220U-02-30YA	HF1B-VM230U-02-30YA	VM-30AY	
Push button (Extended)	Red	HF1B-VM220-02-32RA	HF1B-VM230-02-32RA	HF1B-VM220U-02-32RA	HF1B-VM230U-02-32RA	VM-32AR	52 g
	Black	HF1B-VM220-02-32BA	HF1B-VM230-02-32BA	HF1B-VM220U-02-32BA	HF1B-VM230U-02-32BA	VM-32AB	
	Green	HF1B-VM220-02-32GA	HF1B-VM230-02-32GA	HF1B-VM220U-02-32GA	HF1B-VM230U-02-32GA	VM-32AG	
	Yellow	HF1B-VM220-02-32YA	HF1B-VM230-02-32YA	HF1B-VM220U-02-32YA	HF1B-VM230U-02-32YA	VM-32AY	
Push button (Flush)	With a set of red, black, green, yellow	HF1B-VM220-02-33A	HF1B-VM230-02-33A	HF1B-VM220U-02-33A	HF1B-VM230U-02-33A	VM-33A	50 g
Twist selector (2-position)	Red	HF1B-VM220-02-34RA	HF1B-VM230-02-34RA	HF1B-VM220U-02-34RA	HF1B-VM230U-02-34RA	VM-34AR	56 g
	Black	HF1B-VM220-02-34BA	HF1B-VM230-02-34BA	HF1B-VM220U-02-34BA	HF1B-VM230U-02-34BA	VM-34AB	
	Green	HF1B-VM220-02-34GA	HF1B-VM230-02-34GA	HF1B-VM220U-02-34GA	HF1B-VM230U-02-34GA	VM-34AG	
	Yellow	HF1B-VM220-02-34YA	HF1B-VM230-02-34YA	HF1B-VM220U-02-34YA	HF1B-VM230U-02-34YA	VM-34AY	
Key selector (2-position)		HF1B-VM220-02-36A	HF1B-VM230-02-36A	HF1B-VM220U-02-36A	HF1B-VM230U-02-36A	VM-36A	78 g
Twist selector (3-position)		**3-port**	**5-port**	**3-port**	**5-port**		230 g (Add to 2 basic units.)
	Red	HF1B-VM230-02-35RA	HF1B-VM250-02-35RA	HF1B-VM230U-02-35RA	HF1B-VM250U-02-35RA	—	
	Black	HF1B-VM230-02-35BA	HF1B-VM250-02-35BA	HF1B-VM230U-02-35BA	HF1B-VM250U-02-35BA		
	Green	HF1B-VM230-02-35GA	HF1B-VM250-02-35GA	HF1B-VM230U-02-35GA	HF1B-VM250U-02-35GA		
	Yellow	HF1B-VM230-02-35YA	HF1B-VM250-02-35YA	HF1B-VM230U-02-35YA	HF1B-VM250U-02-35YA		
Foot pedal		**2-port**	**3-port**	—	—	—	340 g
		HF1B-VM220-02-40A	HF1B-VM230-02-40A	—	—		

Manual operation

∗ It is possible to change the actuator assembly when an actuator part number is specified in the column.
∗ For push button (mushroom), push button (flush), push button (extended) and individual fastening ring, refer to the **Web Catalogue**.
∗ The handle of the selector (2-position and 3-position) cannot be removed or replaced alone.
∗ Colour of plunger: Grey (2-port), White (3-port)

How to Order

HF1B– VM2 **3** **0** ☐ – **02** – **08** **R** A – **B**

Number of ports

2	2-port
3	3-port
5	5-port (Twist selector 3 position only)

Body option

—	Side mounting
U	With bottom mounting thread

Port size

02	R1/4
N02	NPT1/4
F02	G1/4

Actuator type

08	Toggle lever
30	Push button (Mushroom)
32	Push button (Extended)
33	Push button (Flush)∗1
34	Twist selector (2 position)
36	Key selector (2 position)
35	Twist selector (3 position)
40	Foot pedal

∗1 When selecting the flush type, it is not necessary to select the suffix for the actuator.

Suffix for actuator

R	Red	Colour of push button, selector
B	Black	
G	Green	
Y	Yellow	

Bracket option

—	None
B	With bracket

∗ Applicable only to side mounting type.
However, not applicable to twist selector (3 position) and foot pedal.
Bracket is shipped together, but not assembled.

SMC

3-Port Mechanical Valve

HF1B-VM400 Series

RoHS

Model

	Actuator	Model	Actuator part no.	Application	Weight [g]
Manual operation	Toggle lever	HF1B-VM430-01-08	VM-08A	—	200
	Push button (Mushroom)	HF1B-VM430-01-30R	VM-30AR	Red	168
		HF1B-VM430-01-30B	VM-30AB	Black	
		HF1B-VM430-01-30G	VM-30AG	Green	
		HF1B-VM430-01-30Y	VM-30AY	Yellow	
	Push button (Extended)	HF1B-VM430-01-32R	VM-32AR	Red	162
		HF1B-VM430-01-32B	VM-32AB	Black	
		HF1B-VM430-01-32G	VM-32AG	Green	
		HF1B-VM430-01-32Y	VM-32AY	Yellow	
	Push button (Flush)	HF1B-VM430-01-33	VM-33A	With a set of red, black, green, yellow	167
	Twist selector (2 position)	HF1B-VM430-01-34R	VM-34AR	Red	168
		HF1B-VM430-01-34B	VM-34AB	Black	
		HF1B-VM430-01-34G	VM-34AG	Green	
		HF1B-VM430-01-34Y	VM-34AY	Yellow	
	Key selector (2 position)	HF1B-VM430-01-36	VM-36A	—	188

∗ Actuator replacement is available for all types.
∗ For push button (mushroom), push button (extended), push button (flush) and a single unit of fastening ring, refer to the **Web Catalogue**. The other parts are not replaceable.
∗ The handle of the selector (2 position) cannot be removed or replaced alone.

How to Order
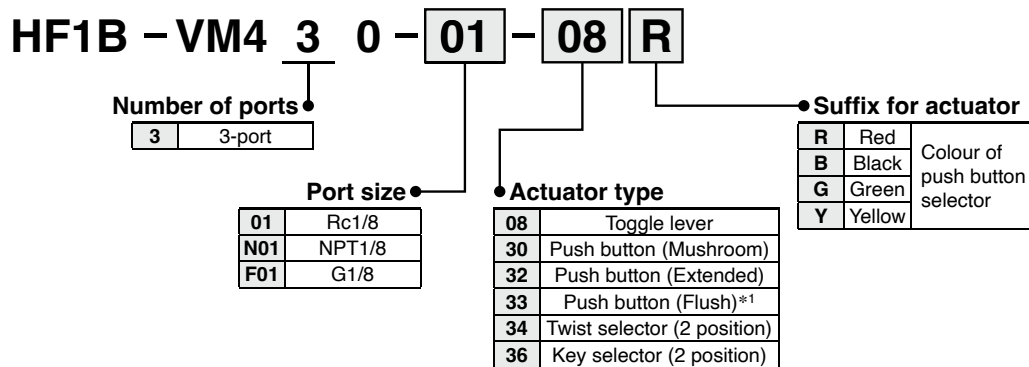
HF1B－VM4 3 0 －01 －08 R

Number of ports

3	3-port

Port size

01	Rc1/8
N01	NPT1/8
F01	G1/8

Actuator type

08	Toggle lever
30	Push button (Mushroom)
32	Push button (Extended)
33	Push button (Flush)∗1
34	Twist selector (2 position)
36	Key selector (2 position)

∗1 When selecting the flush type, it is not necessary to select the suffix for the actuator.

Suffix for actuator

R	Red	Colour of push button selector
B	Black	
G	Green	
Y	Yellow	

SMC

Precautions

Be sure to read this before handling the products.

| ⚠ Safety Instructions | Be sure to read the "Handling Precautions for SMC Products" (M-E03-3) and "Operation Manual" before use. |

⚠Caution

1. **When selecting equipment, carefully consider the application, required specifications, and operating conditions (fluid, pressure, flow rate, filtration, and environment), making sure not to exceed the specification range.**

2. **This product is provided for normally typical forms of use in the manufacturing industry. As such, to use the product for applications that may affect the human body directly or indirectly, such as caisson shield, breathing, food, and the medical treatment, be sure to consult SMC in advance.**
   It is not necessary to consult SMC when the product is used as an air blower for food.

3. **When the product is used as an air blower, install an appropriate filter to eliminate foreign matter in compressed air for air blowing. (Refer to the example of pneumatic circuit on page 3).**

4. **The solenoid valve generates particles from the wear of sliding parts inside. When the solenoid valve is used as an air blower, install an appropriate filter (filtration of 0.01 μm) on the outlet of the solenoid valve to prevent foreign matter from flowing to the downstream. Filters require regular inspection, replacement of the element, and maintenance referring to the operation manual for standard products.**

5. **Quality management relating to hygiene for food and medical treatment is not implemented for this product.**

6. **Compressed air hygiene should be managed in accordance with national and regional rules and regulations.**

7. **Grease**
   · Fluid contact parts: NSF H1 grade grease
   · Part other than fluid contact parts:
     NSF H1 grade grease or grease which is not NSF H1 grade

Pressure Gauge Specific Product Precautions

| Selection |

⚠Caution

1. **Make sure that no direct impact or vibrations are applied to the body.**

2. **If operating under pressure pulsations or in high frequency operations, please contact SMC.**

SMC

⚠ Safety Instructions

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.

⚠ **Caution:**	**Caution** indicates a hazard with a low level of risk which, if not avoided, could result in minor or moderate injury.	
⚠ **Warning:**	**Warning** indicates a hazard with a medium level of risk which, if not avoided, could result in death or serious injury.	
⚠ **Danger:**	**Danger** indicates a hazard with a high level of risk which, if not avoided, will result in death or serious injury.	

1) ISO 4414: Pneumatic fluid power – General rules relating to systems.
ISO 4413: Hydraulic fluid power – General rules relating to systems.
IEC 60204-1: Safety of machinery – Electrical equipment of machines.
(Part 1: General requirements)
ISO 10218-1: Manipulating industrial robots - Safety.
etc.

⚠ Warning

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 catalogueue 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. **Contact SMC beforehand and take special consideration of safety measures if the product is to be used in any of the following conditions.**
   1. Conditions and environments outside of the given specifications, or use outdoors or in a place exposed to direct sunlight.
   2. Installation on equipment in conjunction with atomic energy, railways, air navigation, space, shipping, vehicles, military, medical treatment, combustion and recreation, or equipment in contact with food and beverages, emergency stop circuits, clutch and brake circuits in press applications, safety equipment or other applications unsuitable for the standard specifications described in the product catalogueue.
   3. An application which could have negative effects on people, property, or animals requiring special safety analysis.
   4. Use in an interlock circuit, which requires the provision of double interlock for possible failure by using a mechanical protective function, and periodical checks to confirm proper operation.

⚠ Caution

1. **The product is provided for use in manufacturing industries.**
The product herein described is basically provided for peaceful use in manufacturing industries.
If considering using the product in other industries, consult SMC beforehand and exchange specifications or a contract if necessary.
If anything is unclear, contact your nearest sales branch.

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 branch.
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 catalogueue 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 warranty.

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.

⚠ Caution

SMC products are not intended for use as instruments for legal metrology.
Measurement instruments that SMC manufactures or sells have not been qualified by type approval tests relevant to the metrology (measurement) laws of each country.
Therefore, SMC products cannot be used for business or certification ordained by the metrology (measurement) laws of each country.

⚠ **Safety Instructions**	Be sure to read "Handling Precautions for SMC Products" (M-E03-3) before using.

Equipment for
the Food Manufacturing Industry

HF1- Series	HF2- Series	HF1/HF2 Compatible Products