# Modular F.R.L. Units



# Regulator

### Set pressure:

7.3 to 123 psi (0.05 to 0.85 MPa)

Double layer design

2.9 to 29 psi (0.02 to 0.2 Mpa)

in hand!

### Better visibility & environmental resistance

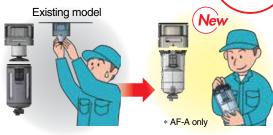
# The bowl is covered with a transparent bowl quard!

- The inside is visible from 360°.
- The bowl is completely protected from the environment. Safety improved



## Easy replacement of the element

The element and the bowl are in one piece. Replacement can be done in hand.



### Reduced required maintenance space



# Selection of pressure gauges







Square embedded type pressure gauge

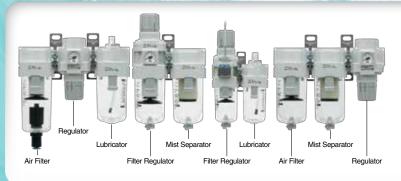
Digital pressure Round type pressure gauge switch

### Interchangeability

Interchangeable with the current AR series by panel mounting



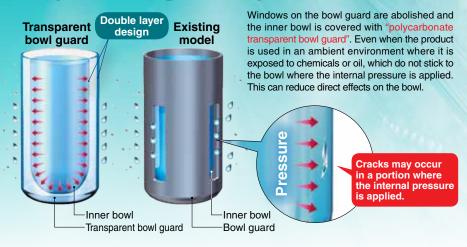
### Regulator with backflow function AR □0K is available.

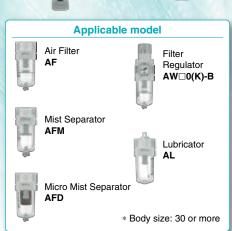




### Transparent bowl guard

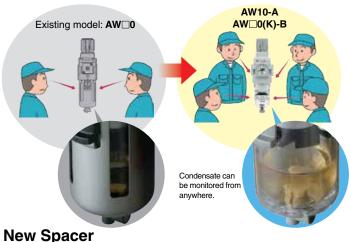
### Better environmental resistance: Transparent bowl guard can protect the inner bowl!





### Better visibility: 360°

Use of transparent bowl guard makes it possible to check the condensate inside the filter case and the remaining oil amount in the lubricator from the entire periphery.



### **Light weight:** Max. 90 q reduction

\* Except AW



### **Metal related corrosion** does not occur.

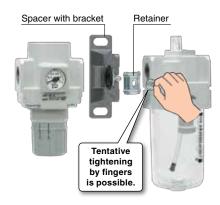


Resin body does not rust.

### **Modular connection**

### Step (1)

- Mount the product by lining up the mating surface of the new spacer with bracket.
- Insert the retainer into the spacer bolt and tighten the nut. (temporary assembling)



Tighten the nut with the hexagon wrench.

#### Interchangeable with existing model

- New spacer can be connected to existing AF, AR, AL, AW series.
- Existing spacer can be connected to the New AF□-A, AR□(K)-B, AL□-A, AW□(K)-B series.







**Modular F.R.L. Units** Series AC

# **Series Configuration**

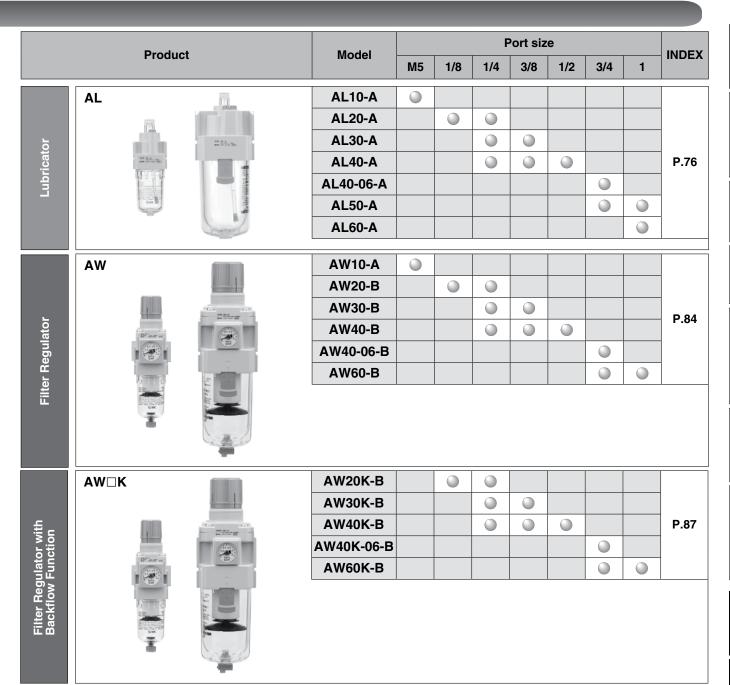
	Product	Model			P	ort si	ze			INDEX
	Floudet	iviodei	M5	1/8	1/4	3/8	1/2	3/4	1	INDEX
	Air Filter	AC10-A	0							
	AF AR AL	AC20-B		0	0					
		AC25-B			0	0				
		AC30-B			0					
	8 8 8 6 6 6	AC40-B			0		0			P.7
		AC40-06-B						0		
		AC50-B						0	0	
	*	AC55-B							0	
		AC60-B							0	
	Filter Regulator + Lubricator	AC10A-A	0							
	AW AL	AC20A-B		0	0					
		AC30A-B			0	0				
		AC40A-B			0	0	0			P.15
	200.	AC40A-06-B						0		
		AC50A-B						0	0	
		AC60A-B							0	
	•	4040D 4								
	Air Filter • Regulator	AC10B-A	0							
e e	AF AR	AC20B-B AC25B-B		0	0					
nati		AC23B-B AC30B-B			0	0				
n ii		AC30B-B			0	0	0			P.21
Air Combination		AC40B-06-B						0		
Air		AC50B-B						0	0	
		AC55B-B							0	
		AC60B-B							0	
	Air Filtor A Mict Comparer A Population	AC20C-B		0	0					
	Air Filter + Mist Separator + Regulator  AF AFM AR	AC25C-B			0	0				
	AI AIW AN	AC30C-B			0	0				P.27
	This of the Paris	AC40C-B			0	0	0			
		AC40C-06-B						0		
		AC20D-B		0	0					
	Filter Regulator    Mist Separator  AW  AFM	AC20D-B			0	0				
	AW	AC40D-B			0	0	0			P.31
		AC40D-06-B						0		
								•		

# Series AC

### **Series Configuration**

Serie	s Configuratio	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,									
	Produ	ct	Model				Port siz				INDEX
				M5	1/8	1/4	3/8	1/2	3/4	1	
	AF		AF10-A	0							
		particular and	AF20-A		0	0					
T.	To the second	4 100	AF30-A			0	0				
Air Filter			AF40-A			0	0	0			P.43
Air	Towns on the second of the sec		AF40-06-A						0		
			AF50-A						0	0	-
		- Opin	AF60-A								
	AFM		AFM20-A		0	0					
	AFIVI		AFM30-A			0	0				-
ţ	PARTICULAR DES	STATE SELECTION	AFM40-A			0	0	0			P.53
Mist Separator		* 1	AFM40-06-A						0		_
st Se	Grac C										
<u>Ris</u>											
	AFD		AFDOO A								
5	AFD		AFD20-A AFD30-A		0	0					
ıratc	200 d.d 100	ATTRACTOR TO THE STATE OF THE S	AFD30-A			0	0	0			P.53
Sepa		S IN COLUMN 1	AFD40-A			0		0	0		
list 6	The second secon		AI D40-00-A								
Micro Mist Separator	*										
Μ											
	AR		AR10-A	0							
			AR20-B		0	0					-
ō		Marie	AR25-B			0	0				-
Regulator		10.000 10.000 Mg 10.000 Mg 10.	AR30-B			0	0				P.62
Reg		11	AR40-B			0	0	0			-
			AR40-06-B						0		-
			AR50-B						0	0	-
			AR60-B							0	
	AR□K		AR20K-B		0	0					-
Regulator with Backflow Function	A100		AR25K-B			0	0				
with			AR30K-B			0	0	~			<u>.</u> .
ator			AR40K-B			0	0	0			P.65
gul			AR40K-06-B						0		-
Ba Ba			AR50K-B						0	0	-
			AR60K-B								

AC



# **Simple Specials System**

A system designed to respond quickly and easily to your special ordering needs



### Short lead times

This system enables us to respond to your special needs, such as additional machining, accessory assembly, or modular unit, and deliver such special products as quickly as standard products.

### Repeat orders

Once we receive a Simple Special part number from your previous order, we will process the order, manufacture the product, and deliver it to you.



The simple specials specification sheets can be downloaded from SMC website. For details, refer to the SMC website. (http://www.smcworld.com)

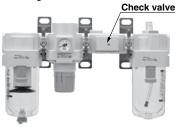


### **Attachment List**

### **Check valve**

Page 34

■ A check valve with intermediate branch port can be easily installed to prevent a backflow of lubricant when branching the air flow and releasing the air on the outlet side of the regulator.



- · Air Filter + Regulator + Lubricator (AC20 to AC40-B)
- · Filter Regulator + Lubricator (AC20A to AC40A-B)
- \* Port size: Except 06

### **Pressure switch**

Page 35

A compact integrated pressure switch can be easily installed and facilitates the pressure detection of the line.



- · Air Filter + Regulator + Lubricator (AC20-B to AC60-B)
- · Filter Regulator + Lubricator (AC20A-B to AC60A-B)
- · Air Filter + Regulator (AC20B-B to AC60B-B)
- · Air Filter + Mist Separator + Regulator (AC20C-B to AC60C-B)
- · Filter Regulator + Mist Separator (AC20D-B to AC60D-B)

### T-spacer

Page 35

■ Using a T-shaped spacer facilitates the branching of air flow.



- · Air Filter + Regulator + Lubricator (AC10-A to AC60-B)
- · Air Filter + Regulator (AC10B-A to AC60B-B)
- · Air Filter + Mist Separator + Regulator (AC20C-B to AC40C-B)

### Pressure relief 3 port valve

Page 36

■ With the use of a pressure relief 3 port valve, pressure left in the line can be easily exhausted.



- · Air Filter + Regulator + Lubricator (AC20-B to AC50-B)
- Filter Regulator + Lubricator (AC20A-B to AC50A-B)
- · Air Filter + Regulator (AC20B-B to AC50B-B)
- · Air Filter + Mist Separator + Regulator (AC20C-B to AC40C-B)
- · Filter Regulator + Mist Separator (AC20D-B to AC40D-B)

### Cross spacer

Page 36

■ Pipings are possible in all 4 directions.

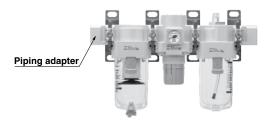


\* Needs to be ordered separately.

### Piping adapter

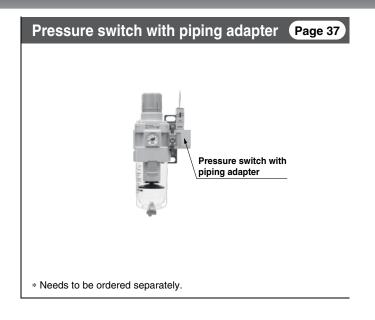
Page 37

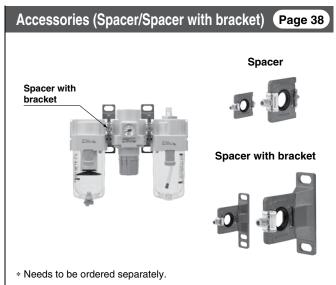
■ A piping adapter allows installation/removal of the component without removing the piping and thus makes maintenance easier.



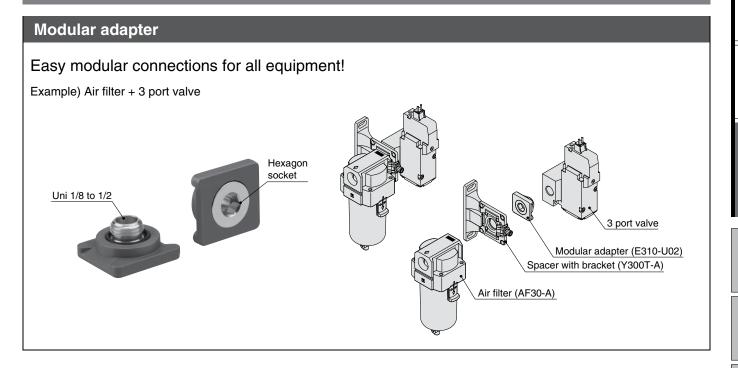
\* Needs to be ordered separately.







### **Related Product**



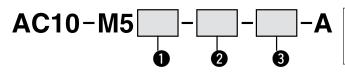
# Air Filter + Regulator + Lubricator

# AC10-A



### **How to Order**

Refer to page 9 for size 20 to 60.



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

Example) AC10-M5CG-T-12NR-A

				Symbol	Description
		а	Float type auto drain	Nil	Without auto drain
	_	a	r loat type auto drain	C Note 1)	N.C. (Normally closed) Drain port is closed when pressure is not applied.
0	Option			+	
		b	Pressure gauge	Nil	Without pressure gauge
		b	Fressure gauge	G Note 2)	Round type pressure gauge (without limit indicator)
				+	
2		۸++،	achment (T-spacer) Note 3)	Nil	Without attachment
G		Allo	acriment (1-spacer)	Т	Mounting position: AF+ <b>T</b> +AR+AL
				+	
		С	Set pressure Note 4)	Nil	0.05 to 0.7 MPa (7.3 to 102 psi) setting
			Set pressure	1	0.02 to 0.2 MPa (2.9 to 29 psi )setting
				+	
				Nil	Polycarbonate bowl
		d	Bowl Note 5)	2	Metal bowl
				6	Nylon bowl
				+	
	ard	е	Lubricator lubricant	Nil	Without drain cock
3	tano		exhaust port	3	Lubricator with drain cock
•	Semi-standard			+	
	Sel	f	Exhaust mechanism	Nil	Relieving type
		•	Exhaust mechanism	N	Non-relieving type
				+	
		g		Nil	Flow direction: Left to right
		9		R	Flow direction: Right to left
				+	
		h Pressure unit			Name plate, caution plate for bowl, and pressure gauge in imperial units: MPa
		"	Flessule utilit	Z Note 6)	Name plate, caution plate for bowl, and pressure gauge in imperial units: psi, °F

Note 1) 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.

Note 2) A 1.0 MPa (145 psi) pressure gauge will be fitted. It is not assembled and supplied loose at the time of shipment.

Note 3) The bracket position varies depending on the T-spacer mounting.

Note 4) Pressure can be set higher than the specification pressure in some cases, but use pressure within the specification range.

Note 5) Refer to Chemical data on page 46 for chemical resistance of the bowl.

Note 6) This product is for overseas use only according to the new Measurement Law. (The SI unit type is provided for use in Japan.)





### **Standard Specifications**

	Air Filter [AF]	AF10-A				
Component	Regulator [AR]	AR10-A				
	Lubricator [AL]	AL10-A				
Port size	-	M5 x 0.8				
Pressure gauge	port size [AR]	1/16				
Fluid		Air				
Ambient and flui	d temperature	23 to 140°F (-5 to 60°C) (with no freezing)				
Proof pressure		218 psi (1.5 MPa)				
Maximum operat	ing pressure	145 psi (1.0 MPa)				
Set pressure ran	ge [AR]	7.3 to 102 psi (0.05 to 0.7 MPa)				
Nominal filtration	n rating [AF]	5 μm				
Recommended I	ubricant [AL]	Class 1 turbine oil (ISO VG32)				
Bowl material [A	F/AL]	Polycarbonate				
Construction [A	R]	Relieving type				
Weight (kg)		0.27				

# **⚠** Specific Product Precautions

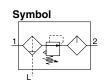
Be sure to read this before handling. Refer to the back cover for Safety Instructions, "Handling Precautions for SMC Products" and the Operation Manual for F.R.L. Precautions, http://www.smcworld.com

#### Selection

## **⚠** Caution

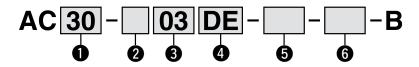
- 1. When releasing air at the intermediate position using a T-spacer on the inlet side of the lubricator, lubricant may back flow. Therefore, releasing air that does not contain traces of lubricant is not possible.
- 2. An F.R.L. unit shipped from the plant has its model number labeled. However, components that are combined together during the distribution process do not have a label on them.

# Air Filter + Regulator + Lubricator *AC20-B to AC60-B*



### **How to Order**

Refer to page 7 for size 10.



- Option/Semi-standard: Select one each for **a** to **m**.
- Option/Attachment/Semi-standard symbol: When more than one specification is required, indicate in alphanumeric order. Example) AC30-F03DE1-KSTV-136NR-B

	_	_							6			
				Symbol	Description				Body siz	e		
						20	25	30	40	50	55	60
				Nil	Rc	•	•	•	•	•	•	
O		Pipe	e thread type	N Note 1)	NPT		•	•	•	•	•	•
				F Note 2)	G		•	•	•	•	•	•
				+								
				01	1/8	•	_	_	_	_	_	
				02	1/4		•	•	•	_	_	_
2			Port size	03	3/8	_	•	•	•	_	_	_
9			FUIT SIZE	04	1/2	_	_	_	•	_	_	_
				06	3/4		_	_	•	•	_	_
				10	1		_	_	_		•	
				+						1		
			Float type	Nil	Without auto drain		•	•	•	•	•	
		а	auto drain	C Note 4)	N.C. (Normally closed) Drain port is closed when pressure is not applied.		•	•	•	•	•	
				D Note 5)	N.O. (Normally open) Drain port is open when pressure is not applied.				•			
				+	MCII.							
	Option Note 3)		Duran	Nil	Without pressure gauge					•		
3	uc		Pressure gauge Note 6)	E	Square embedded type pressure gauge (with limit indicator)	•	•	•	•	•	•	•
	ptic		gauge ***	G M	Round type pressure gauge (with limit indicator)		•	•	•		•	•
		b		E1	Round type pressure gauge (with color zone)				•		•	
			Digital	E2	Output: NPN output/Electrical entry: Wiring bottom entry Output: NPN output/Electrical entry: Wiring top entry				•			
			pressure	E3	Output: PNP output/Electrical entry: Wiring top entry  Output: PNP output/Electrical entry: Wiring bottom entry							
			switch	E4	Output: PNP output/Electrical entry: Wiring bottom entry  Output: PNP output/Electrical entry: Wiring top entry							
				+	Output: 1 Wi Output Electrical Critis. Writing top Critis							
				Nil	Without attachment							
		С	Check valve	K	Mounting position: AF+AR+ <b>K</b> +AL				Note 7)	_	_	
				+	modified positions in the tree in the control of th							
			Pressure	Nil	Without attachment							
	ent	d	switch	S Note 8)	Mounting position: AF+AR+S+AL		•		•	•	•	•
4	Attachment			+								
	ttac		_	Nil	Without attachment		•	•	•	•	•	
	⋖	е	T-spacer	T Note 8)	Mounting position: AF+T+AR+AL		•	•	•	•	•	•
				+								
			Pressure relief	Nil	Without attachment		•	•	•	•	•	
		_	3 port valve	V	Mounting position: AF+AR+AL+V		•	•	•	•		
				+								
		g	Set	Nil	7.3 to 123 psi (0.05 to 0.85 MPa setting)	•	•	•	•	•	•	
		9	pressure Note 9)	1	2.9 to 29 psi (0.02 to 0.2 MPa setting)							
	ard			+			1			1		
	Semi-standard			Nil	Polycarbonate bowl		•	•	•	•	•	
<b>5</b>	-ste			2	Metal bowl		•	•	•	•	•	
	emi	h	Bowl Note 10)	6	Nylon bowl		•	•	•	•	•	•
	Š			8	Metal bowl with level gauge	_	Note 441	Note 44	Note 11\	Note 11	Note 11	Note 11
				С	With bowl guard		Note 11)	Note 11)	Note 11)	Note 11) Note 12)	Note 11)	Note 11)
				6C	Nylon bowl with bowl guard		Note 12)	Note 12)	Note 12)		Note 12)	Note 12)



# ¥

# Air Combination AC20-B to AC60-B



	_								0			
				Symbol	Description			В	ody siz	:e		
						20	25	30	40	50	55	60
				Nil	With drain cock	•	•	•	•	•	•	•
			Air filter	J Note 14)	Drain guide 1/8		_	_	_		_	_
			drain port Note 13)	J	Drain guide 1/4	_	•	•	•	•	•	•
				<b>W</b> Note 15)	Drain cock with barb fitting (for ø6 x ø4 nylon tube)	_	•	•	•	•	•	
				+								
			Lubricator lubricant	Nil	Without drain cock		•	•	•	•		
	ard	J	exhaust port	3 Note 16)	Lubricator with drain cock		•	•	•	•		
_	nde			+								
6	-standard	k	Exhaust	Nil	Relieving type		•	•	•		•	
	emi		mechanism	N	Non-relieving type		•	•	•	•		
	Se			+								
			Flow direction	Nil	Flow direction: Left to right		•			•		
		•	1 low direction	R	Flow direction: Right to left		•	•	•		•	
				+								
				Nil	Name plate, caution plate for bowl, and pressure gauge in imperial units: MPa		•	•	•	•		
		m	Pressure unit	<b>Z</b> Note 17)	Name plate, caution plate for bowl, and pressure gauge in imperial units: psi,°F	O <sup>Note 19)</sup>		1 🔾		$\circ$		Note 19)
				ZA Note 18)	Digital pressure switch: With unit conversion function	△ Note 20)	△ Note 20)	△ Note 20)	△ Note 20)	△ Note 20)	△ Note 20)	△ Note 20)

- Note 1) Drain guide is NPT1/8 (applicable to the AC20-B) and NPT1/4 (applicable to the AC25-B to AC60-B). The auto drain port comes with ø3/8" One-touch fitting (applicable to the AC25-B to AC60-B).
- Note 2) Drain guide is G1/8 (applicable to the AC20-B) and G1/4 (applicable to the AC25-B to AC60-B).
- Note 3) Option G, M are not assembled and supplied loose at the time of shipment.
- Note 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.
- Note 5) If the compressor is small (0.75 kW, discharge flow is less than 3.5 scfm (100 L/min) [ANR]), air leakage from the drain cock may occur during start of operations. N.C. type is recommended.
- Note 6) When the pressure gauge is attached, a 145 psi (1.0 MPa) pressure gauge will be fitted for standard (123 psi [0.85 MPa]) type. 58 psi (0.4 MPa) pressure gauge for 29 psi (0.2 MPa) type.
- Note 7) Not available with piping port size: 06
- Note 8) The bracket position varies depending on the T-spacer or pressure switch mounting.
- Note 9) Pressure can be set higher than the specification pressure in some cases, but use pressure within the specification range.
- Note 10) Refer to Chemical data on page 46 for chemical resistance of the bowl.
- Note 11) A bowl guard is provided as standard equipment (polycarbonate).
- Note 12) A bowl guard is provided as standard equipment (nylon).
- (nylon).

  Note 13) The combination of float type auto drain: C and D is not available.

- Note 14) Without a valve function
- Note 15) The combination of metal bowl: 2 and 8 is not available.
- Note 16) When choosing with W: Filter drain port, the drain cock of a lubricator will be with barb fittings.
- Note 17) For pipe thread type: NPT.

  This product is for overseas use only according to the new Measurement Law. (The SI unit type is provided for use in Japan.)

  Cannot be used with M: Round pressure gauge (with color zone). Available by request for special.

Cannot be used with M: Hound pressure gauge (with color zone). Available by request for special. The digital pressure switch will be equipped with the unit conversion function, setting to psi initially.

- Note 18) For options: E1, E2, E3, E4. This product is for overseas use only according to the new Measurement Law. (The SI unit is provided for use in Japan.)
- Note 19) ○: For pipe thread type: NPT only Note 20) △: Select with options: E1, E2, E3, E4.

### **Standard Specifications**

N	Model	AC20-B	AC25-B	AC30-B	AC40-B	AC40-06-B	AC50-B	AC55-B	AC60-B					
	Air Filter [AF]	AF20-A	AF30-A	AF30-A	AF40-A	AF40-06-A	AF50-A	AF60-A	AF60-A					
Component	Regulator [AR]	AR20-B	AR25-B	AR30-B	AR40-B	AR40-06-B	AR50-B	AR50-B	AR60-B					
	Lubricator [AL]	AL20-A	AL30-A	AL30-A	AL40-A	AL40-06-A	AL50-A	AL60-A	AL60-A					
Port size		1/8, 1/4	1/8, 1/4   1/4, 3/8   1/4, 3/8   1/4, 3/8, 1/2   3/4   3/4, 1   1   1											
Pressure gaug	e port size [AR] Note 1)	1/8												
Fluid		Air												
Ambient and fl	uid temperature Note 2)	23 to 140°F (-5 to 60°C) (with no freezing)												
Proof pressu	re	218 psi (1.5 MPa)												
Maximum op	erating pressure	145 psi (1.0 MPa)												
Set pressure	range [AR]	7.3 to 123 psi (0.05 to 0.85 MPa)												
Nominal filtra	ation rating [AF]				5	μm								
Recommende	ed lubricant [AL]			C	Class 1 turbine	oil (ISO VG32	2)							
Bowl materia	I [AF/AL]	Polycarbonate												
Bowl guard [	AF/AL]	Semi-standard (Steel)			Stand	lard (Polycarbo	onate)							
Construction	[AR]				Relievi	ng type								
Weight (kg)		0.39 0.70 0.78 1.39 1.53 3.43 3.71 3.76												

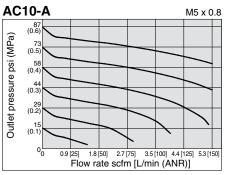
Note 1) Pressure gauge connection threads are not available for F.R.L. unit with a square embedded type pressure gauge or with a digital pressure switch. Note 2) 23 to 122°F (–5 to 50°C) for the products with the digital pressure switch

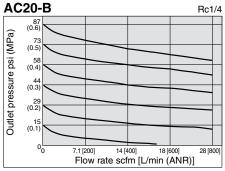


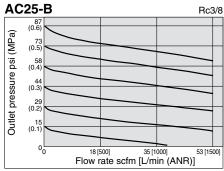
### AC10-A/AC20-B to AC60-B

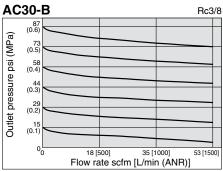
### Flow-rate Characteristics (Representative values)

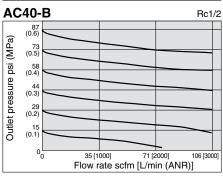
Condition: Inlet pressure 102 psi (0.7 MPa)

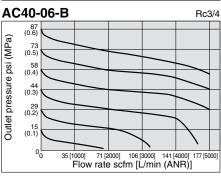


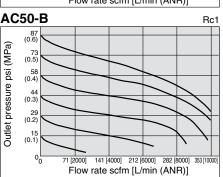


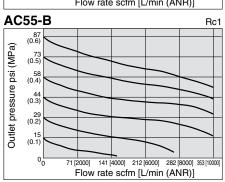


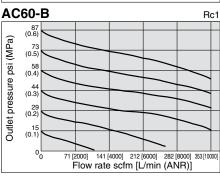






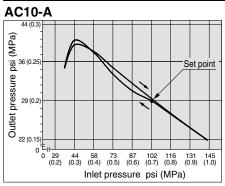


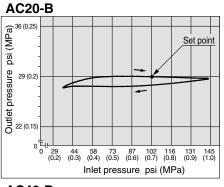


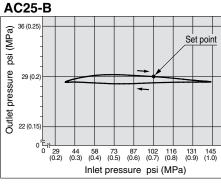


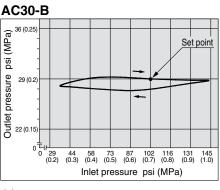
### Pressure Characteristics (Representative values)

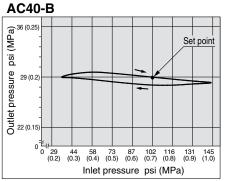
Conditions: Inlet pressure 102 psi (0.7 MPa), Outlet pressure 29 psi (0.2 MPa), Flow rate 0.7 scfm [20 L/min (ANR)]

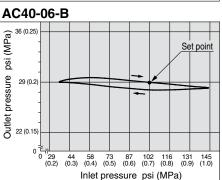




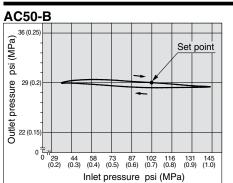


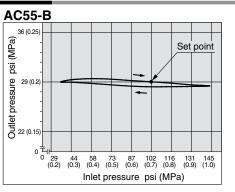


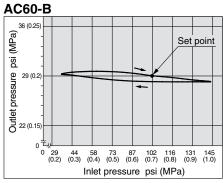




ΑF







# $oldsymbol{\Delta}$ Specific Product Precautions

Be sure to read this before handling. Refer to the back cover for Safety Instructions, "Handling Precautions for I SMC Products" and the Operation Manual for F.R.L. Precautions, http://www.smcworld.com

### Mounting/Adjustment

### **∕** Caution

1. A knob cover is available to prevent careless operation of the knob. Refer to page 97 for details.

### **Piping**

# 

1. When mounting a check valve, make sure the arrow (IN side) points in the correct direction of air flow.

### Air Supply

# **⚠** Caution

1. Use an air filter with 5  $\mu m$  or less filtration rating on the inlet side of the valve to avoid any damage to the seat caused by dust when mounting a pressure relief 3 port valve on the inlet side.

### **Mounting/Adjustment**

### **⚠** Caution

1. When the bowl is installed on the air filter, filter regulator, lubricator, mist separator, or micro mist separator (AC25-B to AC60-B), install them so that the lock button lines up to the groove of the front (or the back) of the body to avoid drop or damage of the bowl.



#### Selection

# **∕** Warning

1. Float type auto drain

Operate under the following conditions to avoid malfunction.

<N.O. type>

· Operating compressor: 0.75 kW (3.5 scfm [100 L/min (ANR))] or more.

When using 2 or more auto drains, multiply the value above by the number of auto drains to find the capacity of the compressors you will need.

For example, when using 2 auto drains, 1.5 kW (7.1 scfm [200 L/min (ANR))] of the compressor capacity is required.

- · Operating pressure: 15 psi (0.1 MPa) or more
- <N.C. type>
- Operating pressure for AD27-A: 0.1 MPa or more Operating pressure for AD37-A/AD47-A: 22 psi (0.15 MPa) or
- 2. Use a regulator or filter regulator with backflow function when mounting a pressure release 3 port valve on the inlet side to ensure the release of the residual pressure. Otherwise, residual pressure will not be fully released.

# **∕** Caution

1. When releasing air at the intermediate position using a T-spacer on the inlet side of the lubricator, lubricant may back flow. Therefore, releasing air that does not contain traces of lubricant is not possible.

To release air that does not contain traces of lubricant, use a check valve (Series AKM) on the inlet side of the lubricator to prevent a backflow of the lubricant.

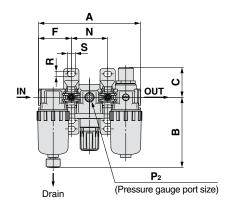
- 2. If a pressure relief 3 port valve is mounted on the inlet side of the lubricator, causing a backflow of air, it can result in a backflow of oil or damage to internal parts. Do not use it in this fashion.
- 3. An F.R.L. unit shipped from the plant has its model number labeled. However, components that are combined together during the distribution process do not have a label on them.

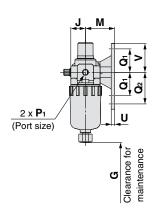


# Series AC10-A/Series AC20-B to AC60-B

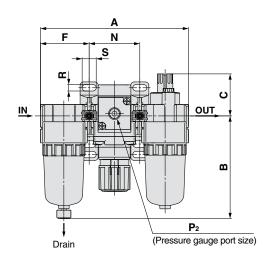
### **Dimensions**

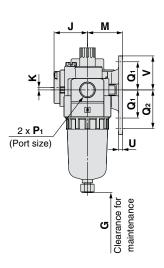
### AC10-A



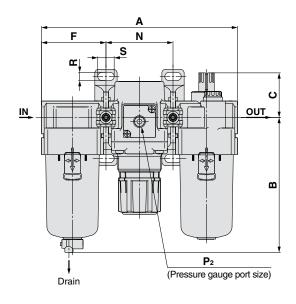


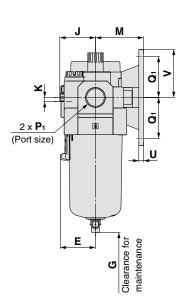
### AC20-B





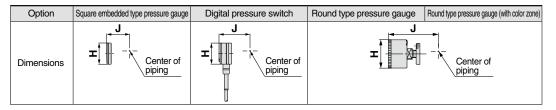
### AC25-B to AC60-B





A

# Air Combination Series AC10-A/Series AC20-B to AC60-B



Applicable model	AC10	)-A			AC25-B to AC60-B		
Optional/ Semi-standard specifications	With auto drain	Metal bowl	With auto drain	Metal bowl	With drain guide	Metal bowl with drain guide	With auto drain (N.O./N.C.)
Dimensions	B	<b></b>	M5 x 0.8	<b>a</b>	Width across flats 14 1/8	Width across flats 14	N.O.: Black N.C.: Gray  Thread type/Rc, G: ø10 One-touch fitting Thread type/NPT: ø3/8" One-touch fitting

Applicable model			AC	25-B to AC60 -B		
Optional/ Semi-standard specifications	Metal bowl	Metal bowl with drain guide	Metal bowl with level gauge	Metal bowl with level gauge, with drain guide	With drain guide	Drain cock with barb fitting
Dimensions	<b>a</b>	Width across flats 17	a v	Width across flats 17	Width across flats 17	Barb fitting applicable tubing: T0604

						Standard specifications														
Model	P <sub>1</sub>	P <sub>2</sub>	_	В	С	Е	F	G		к				Bracket	t mount					
	P1	P2	A	•		_	Г	G	J	,	M	N	Q <sub>1</sub>	Q <sub>2</sub>	R	S	U	٧		
AC10-A	M5 x 0.8	1/16	87	59.9	25.5	_	28	35	12.5	_	25	31	20	27	4.5	6.8	3	24.5		
AC20-B	1/8, 1/4	1/8	126.4	87.6	35.9	_	41.6	60	28.5	2 Note)	30	43.2	24	33	5.5	12	3.5	29		
AC25-B	1/4, 3/8	1/8	167.4	115.1	38.1	30	55.1	80	27.5	0	41	57.2	35	_	7	14	4	41		
AC30-B	1/4, 3/8	1/8	167.4	115.1	38.1	30	55.1	80	29.4	3.5	41	57.2	35	_	7	14	4	41		
AC40-B	1/4, 3/8, 1/2	1/8	220.4	147.1	39.8	38.4	72.6	110	33.8	3.5	50	75.2	40	_	9	18	5	48		
AC40-06-B	3/4	1/8	235.4	149.1	37.8	38.4	77.6	110	33.8	3	50	80.2	40	_	9	18	5	48		
AC50-B	3/4, 1	1/8	282.4	220.1	41.2	_	93.1	110	43.3	3.2	70	96.2	50	_	11	20	6	60		
AC55-B	1	1/8	292.4	234.1	44.7	_	98.1	110	43.3	3.2	70	96.2	50	_	11	20	6	60		
AC60-B	1	1/8	297.4	234.1	44.7	_	98.1	110	43.3	3.2	70	101.2	50	_	11	20	6	60		

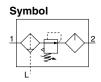
				Option	al specific	ations				Semi-standard specifications								
Model	Squar		Digital pressure switch		Round type pressure gauge		Round pressure (with cold	gauge	With auto drain	With barb fitting	With drain guide	Metal bowl	Metal bowl with drain guide	Metal bowl with level gauge	Metal bowl with level gauge, with drain guide			
	Н	J	Н	J	Н	J	Н	J	В	В	В	В	В	В	В			
AC10-A	_	_	_	_	ø26	26	l —	_	77.9	_	_	59.3	_	_	_			
AC20-B	□28	29.5	□27.8	40	ø37.5	65	ø37.5	66	104.9	_	91.4	87.4	93.9	_	_			
AC25-B	□28	28.5	□27.8	39	ø37.5	64	ø37.5	65	156.8	123.6	121.9	117.6	122.1	137.6	142.1			
AC30-B	□28	30.4	□27.8	40.9	ø37.5	65.9	ø37.5	66.9	156.8	123.6	121.9	117.6	122.1	137.6	142.1			
AC40-B	□28	34.8	□27.8	45.3	ø42.5	71.3	ø42.5	71.3	186.9	155.6	153.9	149.6	154.1	169.6	174.1			
AC40-06-B	□28	34.8	□27.8	45.3	ø42.5	71.3	ø42.5	71.3	188.9	157.6	155.9	151.6	156.1	171.6	176.1			
AC50-B	□28	44.3	□27.8	54.8	ø42.5	80.8	ø42.5	80.8	259.9	228.6	226.9	222.6	227.1	242.6	247.1			
AC55-B	□28	44.3	□27.8	54.8	ø42.5	80.8	ø42.5	80.8	273.9	242.6	240.9	236.6	241.1	256.6	261.1			
AC60-B	□28	44.3	□27.8	54.8	ø42.5	80.8	ø42.5	80.8	273.9	242.6	240.9	236.6	241.1	256.6	261.1			

Note) For the AC20-B only, the position of the pressure gauge is above the center of the piping.



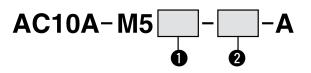
# Filter Regulator + Lubricator

# AC10A-A



### **How to Order**

Refer to page 17 for size 20 to 60.



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

Example) AC10-M5CG-T-12NR-A

				Symbol	Description
		а	Float type auto drain	Nil	Without auto drain
	_	а	rioat type auto drain	C Note 1)	N.C. (Normally closed) Drain port is closed when pressure is not applied.
0	Option			+	
		b	Pressure gauge	Nil	Without pressure gauge
			r ressure gauge	G Note 2)	Round type pressure gauge (without limit indicator)
				+	
2		ΔH	achment (T-spacer) Note 3)	Nil	Without attachment
G		A110	acriment (1-spacer)	Т	Mounting position: AW+T+AL
				+	
		С	Set pressure Note 4)	Nil	7.3 to 102 psi (0.05 to 0.7 MPa) setting
			Oct pressure	1	2.9 to 29 psi (0.02 to 0.2 MPa) setting
				+	
				Nil	Polycarbonate bowl
		d	Bowl Note 5)	2	Metal bowl
				6	Nylon bowl
				+	
	lard	е	Lubricator lubricant	Nil	Without drain cock
3	tanc		exhaust port	3	Lubricator with drain cock
v	Semi-standard			+	
	Sel	f	Exhaust mechanism	Nil	Relieving type
		•	Exhaust moonanism	N	Non-relieving type
				+	
		g	Flow direction	Nil	Flow direction: Left to right
		9	1 10W direction	R	Flow direction: Right to left
				+	
		h	Pressure unit	Nil	Name plate, caution plate for bowl, and pressure gauge in imperial units: MPa
		"	Flessule utilit	Z Note 6)	Name plate, caution plate for bowl, and pressure gauge in imperial units: psi, °F

Note 1) 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.

Note 2) A 1.0 MPa (145 psi ) pressure gauge will be fitted. It is not assembled and supplied loose at the time of shipment.

Note 3) The bracket position varies depending on the T-spacer mounting.

Note 4) Pressure can be set higher than the specification pressure in some cases, but use pressure within the specification range.

Note 4) Pressure can be set nigher than the specification pressure in some cas Note 5) Refer to Chemical data on page 46 for chemical resistance of the bowl.

Note 6) This product is for overseas use only according to the new Measurement Law. (The SI unit type is provided for use in Japan.)





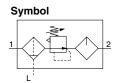
AC10A-A

### **Standard Specifications**

Component	Filter Regulator [AW]	AW10-A
Component	Lubricator [AL]	AL10-A
Port size		M5 x 0.8
Pressure gauge po	rt size [AW]	1/16
Fluid		Air
Ambient and fluid temperature		23 to 140°F (-5 to 60°C) (with no freezing)
Proof pressure		218 spi (1.5 MPa)
Maximum operating	g pressure	145 psi (1.0 MPa)
Set pressure range	[AW]	7.3 to 102 psi (0.05 to 0.7 MPa)
Nominal filtration r	ating [AW]	5 μm
Recommended lub	ricant [AL]	Class 1 turbine oil (ISO VG32)
Bowl material [AW/	AL]	Polycarbonate
Construction [AW]		Relieving type
Weight (kg)		0.2

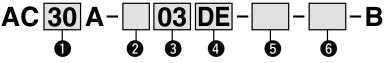
# Filter Regulator + Lubricator

# AC20A-B to AC60A-B



### **How to Order**

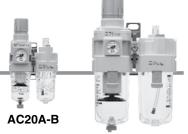
Refer to page 15 for size 10.



- • Option/Semi-standard: Select one each for  ${\bf a}$  to  ${\bf l}.$
- Option/Attachment/Semi-standard symbol: When more than one specification is required, indicate in alphanumeric order.
   Example) AC30A-F03DE1-KSV-136NR-B

		D 6		4 5 6 Example) AC.	50A-1 03DL	1-130-130	<u></u>		
	_						0		
			Symbol	Description			Body size		
					20	30	40	50	60
			Nil	Rc				•	•
2	Pine	thread type	N Note 1)	NPT					<u> </u>
9	pc	o unoda typo	Note 2)	G					<u> </u>
			+						
			01	1/8		_	_		_
			02	1/4		•	•		
			03	3/8			•		
8		Port size	04	1/2			•	_	_
			06	3/4	_	<u> </u>	•	•	_
			10	1	_	_	_	•	•
			+						
			Nil	Without auto drain	•	•	•	•	•
	а	Float type	C Note 4)	N.C. (Normally closed) Drain port is closed when pressure is not applied.	•	•	•	•	•
		auto drain	D Note 5)	N.O. (Normally open) Drain port is open when pressure is not applied.	_	•	•	•	•
			+						
93)			Nil	Without pressure gauge	•	•	•	•	•
عَّامً		Pressure	Е	Square embedded type pressure gauge (with limit indicator)	•	•	•	•	•
<b>A</b> i <sup>§</sup>		gauge Note 6)	G	Round type pressure gauge (with limit indicator)	•	•	•	•	•
Option Note 3)			M	Round type pressure gauge (with color zone)	•	•	•	•	•
	b	5	E1	Output: NPN output/Electrical entry: Wiring bottom entry	•	•	•	•	•
		Digital pressure	E2	Output: NPN output/Electrical entry: Wiring top entry				•	•
		switch	E3	Output: PNP output/Electrical entry: Wiring bottom entry	•			•	•
			E4	Output: PNP output/Electrical entry: Wiring top entry				•	•
			+				, ,		
	C	Check valve	Nil	Without attachment	•	•	•	•	<u> </u>
l			K	Mounting position: AW+ <b>K</b> +AL			Note 7)	_	
ent		I	+					_	
<b>6</b> 5	d	Pressure	Nil	Without attachment		•	•	•	•
<b>Q</b> Attachment		switch	S Note 8)	Mounting position: AW+S+AL				•	•
⋖			+	With and all a characters					
	е	Pressure relief	Nil	Without attachment					
		3 port valve	<b>V</b>	Mounting position: AW+AL+V			•	•	
		Set	Nil	7.3 to 102 psi (0.05 to 0.85 MPa setting)					
	f	Set pressure Note 9)	1	2.9 to 29 (0.02 to 0.2 MPa setting)					_
		procedio	+	2.0 to 20 (0.02 to 0.2 ivii a setting)				•	
			Nil	Polycarbonate bowl					
			2	Metal bowl					
ard			6	Nylon bowl					<u> </u>
Semi-standard	g	Bowl Note 10)	8	Metal bowl with level gauge					<u> </u>
<b>6</b> sta			C	With bowl guard		Note 11)	Note 11)	Note 11)	Note 11)
emi			6C	Nylon bowl with bowl guard	•	Note 12)	Note 12)	Note 12)	Note 12)
ű			+	, ,					
			Nil	With drain cock	•	•	•	•	•
		Filter regulator		Drain guide 1/8	•	<u> </u>	_	_	_
	h	drain port Note 13)	J Note 14)	Drain guide 1/4	_	•	•	•	•
			<b>W</b> Note 15)	Drain cock with barb fitting: For ø6 x ø4 nylon tube	_	•	•	•	•

### Air Combination Series AC20A-B to AC60A-B



AC40A-B

							0			
				Symbol	Description			Body size		
						20	30	40	50	60
		i	Lubricator lubricant	Nil	Without drain cock	•	•	•	•	•
		'	exhaust port	3 Note 16)	Lubricator with drain cock	•	•	•	•	•
				+						
	٦	j	Exhaust	Nil	Relieving type	•	•	•	•	•
	dare	,	mechanism	N	Non-relieving type	•	•	•	•	•
6	Semi-standard			+						
U	i-s-i	k	Flow direction	Nil	Flow direction: Left to right					
	Serr	_	riow direction	R	Flow direction: Right to left	•	•	•	•	•
	0)			+						
				Nil	Name plate, caution plate for bowl, and pressure gauge in imperial units: MPa		•	•	•	•
		I	Pressure unit	<b>Z</b> Note 17)	Name plate, caution plate for bowl, and pressure gauge in imperial units: psi, °F	ONote 19)	O <sup>Note 19)</sup>	O <sup>Note 19)</sup>	ONote 19)	ONote 19)
				ZA Note 18)	Digital pressure switch: With unit conversion function	△ Note 20)	△ Note 20)	△ Note 20)	△ Note 20)	△ Note 20)

Note 1) Drain guide is NPT1/8 (applicable to the AC20A-B) and NPT1/4 (applicable to the AC30A-B to AC60A-B).

The auto drain port comes with ø3/8" One-touch fitting (applicable to the AC30A-B to AC60A-B).

- Note 2) Drain guide is G1/8 (applicable to the AC20A-B) and G1/4 (applicable to the AC30A-B to AC60A-B).
- Note 3) Option G, M are not assembled and supplied loose at the time of shipment.
- Note 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.
- Note 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 start of operations. N.C. type is recommended.
- Note 6) When the pressure gauge is attached, a 145 psi

(1.0 MPa) pressure gauge will be fitted for standard (123 psi (0.85 MPa)) type. 58 psi (0.4 MPa) pressure gauge for 29 psi (0.2 MPa) type.

- Note 7) Not available with piping port size: 06
- Note 8) The bracket position varies depending on the pressure switch mounting.
- Note 9) Pressure can be set higher than the specification pressure in some cases, but use pressure within the specification range.
- Note 10) Refer to Chemical data on page 46 for chemical resistance of the bowl.
- Note 11) A bowl guard is provided as standard equipment (polycarbonate).
- Note 12) A bowl guard is provided as standard equipment (nylon).
- Note 13) The combination of float type auto drain: C and D is not available.
- Note 14) Without a valve function
- Note 15) The combination of metal bowl: 2 and 8 is not available.

Note 16) When choosing with W: Filter drain port, the drain cock of a lubricator will be with barb fittings.

Note 17) For pipe thread type: NPT.

This product is for overseas use only according to the new Measurement Law. (The SI unit type is provided for use in Japan.)

Cannot be used with M: Round pressure gauge (with color zone). Available by request for special. The digital pressure switch will be equipped with the unit conversion function, setting to psi initially.

Note 18) For options: E1, E2, E3, E4. This product is for overseas use only according to the new Measurement Law. (The SI unit is provided for use in Japan.)

Note 19) ○: For pipe thread type: NPT only Note 20) △: Select with options: E1, E2, E3, E4.

1	Model	AC20A-B	AC30A-B	AC40A-B	AC40A-06-B	AC50A-B	AC60A-B					
Commonant	Filter Regulator [AW]	AW20-B	AW30-B	AW40-B	AW40-06-B	AW60-B	AW60-B					
Component	Lubricator [AL]	AL20-A	AL30-A	AL40-A	AL40-06-A	AL50-A	AL60-A					
Port size		1/8, 1/4	1/4, 3/8	1/4, 3/8, 1/2	3/4	3/4, 1	1					
Pressure gaug	e port size [AW] Note 1)	1/8										
Fluid		Air										
Ambient and fl	uid temperature Note 2)	23 to 140°F (-5 to 60°C) (with no freezing)										
Proof pressu	re	218 psi (1.5 MPa)										
Maximum op	erating pressure	145 psi (1.0 MPa)										
Set pressure	range [AW]	7.3 to 123 psi (0.05 to 0.85 MPa)										
Nominal filtra	ation rating [AW]			5	μm							
Recommend	ed lubricant [AL]			Class 1 turbine	oil (ISO VG32)							
Bowl materia	I [AW/AL]			Polyca	ırbonate							
Bowl guard [	AW/AL]	Semi-standard (Steel)		Sta	andard (Polycarbona	ate)						
Construction	[AW]			Reliev	ing type							
Weight (kg)		0.33	0.63	1.15	1.25	3.21	3.36					

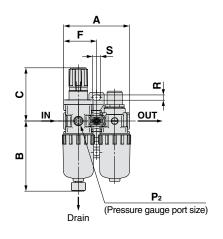
Note 1) Pressure gauge connection threads are not available for F.R.L. unit with a square embedded type pressure gauge or with a digital pressure switch. Note 2) 23 to 122°F (–5 to 50°C) for the products with the digital pressure switch

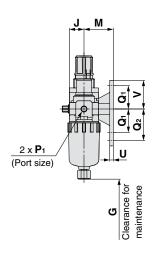


# Series AC10A-A/Series AC20A-B to AC60A-B

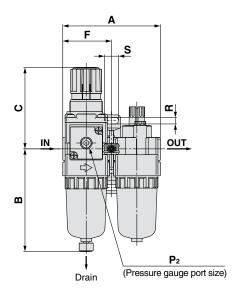
### **Dimensions**

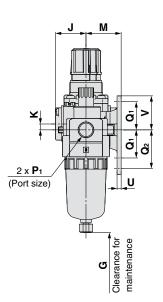
### AC10A-A



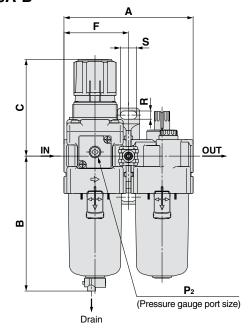


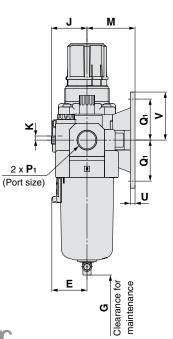
### AC20A-B



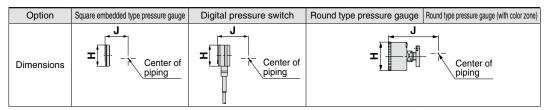


### AC30A-B to AC60A-B





# Air Combination Series AC10-A-A/Series AC20A-B to AC60A-B



Applicable model					AC30A-B to AC60A-B		
Optional/Semi-standard specifications	With auto drain	Metal bowl	With auto drain	Metal bowl	With drain guide	Metal bowl with drain guide	With auto drain (N.O./N.C.)
Dimensions		<b>—</b>	M5 x 0.8	8	Width across flats 14	Width across flats 14	N.O.: Black N.C.: Gray  Thread type/Rc, G: ø10 One-touch fitting  Thread type/NPT: ø3/8" One-touch fitting

Applicable model			AC3	0A-B to AC60A-B		
Optional/Semi-standard specifications	Metal bowl	Metal bowl with drain guide	Metal bowl with level gauge	Metal bowl with level gauge, with drain guide	With drain guide	Drain cock with barb fitting
Dimensions	<b>a</b>	Width across flats 17		Width across flats 17	Width across flats 17	Barb fitting applicable tubing: T0604

							S	tandard	specifica	tions							
Model	P1	P <sub>2</sub>	Α	В	C Note)	Е	F	G		К			Bra	acket mo	unt		
	F1	F2	Α		0	_		G	J		M	Q1	Q2	R	S	U	V
AC10A-A	M5 x 0.8	1/16	56	59.9	47.4	_	28	25	12.5	_	25	20	27	4.5	6.8	3	24.5
AC20A-B	1/8, 1/4	1/8	83.2	87.6	72.4	_	41.6	60	28.5	5	30	24	33	5.5	12	3.5	29
AC30A-B	1/4, 3/8	1/8	110.2	115.1	85.6	30	55.1	80	29.4	3.5	41	35	_	7	14	4	41
AC40A-B	1/4, 3/8, 1/2	1/8	145.2	147.1	91.7	38.4	72.6	110	33.8	1.5	50	40	_	9	18	5	48
AC40A-06-B	3/4	1/8	155.2	149.1	93.2	38.4	77.6	110	33.8	1.2	50	40	_	9	18	5	48
AC50A-B	3/4, 1	1/8	191.2	220.1	175.5	_	93.1	110	43.3	3.2	70	50	_	11	20	6	60
AC60A-B	1	1/8	196.2	234.1	175.5	_	98.1	110	43.3	3.2	70	50	_	11	20	6	60

									•									
				Option	al specific	cations				Semi-standard specifications								
Model	Square type pressure gauge		Digital pressure switch		Round type pressure gauge		Round type pressure gauge (with color zone)		With auto drain	With With barb drain fitting guide		Metal bowl	Metal bowl with drain guide	Metal bowl with level gauge	Metal bowl with level gauge, with drain guide			
	Н	J	Н	J	Н	J	Н	J	В	В	В	В	В	В	В			
AC10A-A	_	_	_	_	ø26	26	_	_	77.9	_	_	59.3	_	_				
AC20A-B	□28	27	□27.8	37.5	ø37.5	62.5	ø37.5	63.5	104.9	_	91.4	87.4	93.9	_	_			
AC30A-B	□28	30	□27.8	40.9	ø37.5	66.9	ø37.5	67.9	156.8	123.6	121.9	117.6	122.1	137.6	142.1			
AC40A-B	□28	38.4	□27.8	48.8	ø42.5	75.7	ø42.5	75.7	186.9	155.6	153.9	149.6	154.1	169.6	174.1			
AC40A-06-B	□28	38.4	□27.8	48.8	ø42.5	75.7	ø42.5	75.7	188.9	157.6	155.9	151.6	156.1	171.6	176.1			
AC50A-B	□28	44.3	□27.8	61.3	ø42.5	80.8	ø42.5	80.8	259.9	228.6	226.9	222.6	227.1	242.6	247.1			
AC60A-B	□28	44.3	□27.8	61.3	ø42.5	80.8	ø42.5	80.8	273.9	242.6	240.9	236.6	241.1	256.6	261.1			

Note) The dimension of C is the length when the filter regulator knob is unlocked.



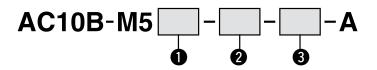
# Air Filter + Regulator

# AC10B-A

# Symbol 2

**How to Order** 

Refer to page 23 for size 20 to 60.



- 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) AC10B-M5CG-T-12NR-A

				Symbol	Description					
		а	Float type auto drain	Nil	Without auto drain					
	<u></u>	а	i loat type auto diain	C Note 1)	N.C. (Normally closed) Drain port is closed when pressure is not applied.					
0	Option			+						
		b	Pressure gauge	Nil	Without pressure gauge					
				G Note 2)	Round type pressure gauge (without limit indicator)					
				+						
0		Δtts	achment (T-spacer) Note 3)	Nil	Without attachment					
G		71111	zoriment (1 opaser)	Т	Mounting position: AF+ <b>T</b> +AR					
				+						
		С	Set pressure Note 4)	Nil	7.3 to 102 psi (0.05 to 0.7 MPa) setting					
				1	2.9 to 29 psi (0.02 to 0.2 MPa) setting					
				+						
				Nil	Polycarbonate bowl					
		d	Bowl Note 5)	2	Metal bowl					
	9			6	Nylon bowl					
	ndaı			+						
3	-sta	е	Exhaust mechanism	Nil	Relieving type					
	Semi-standard		Exhaust mechanism	N	Non-relieving type					
	0)			+						
		f	Flow direction	Nil	Flow direction: Left to right					
			1 low direction	R	Flow direction: Right to left					
				+						
		a	Pressure unit	Nil	Name plate, caution plate for bowl, and pressure gauge in imperial units: MPa					
		g	i iessuie uiii	Z Note 6)	Name plate, caution plate for bowl, and pressure gauge in imperial units: psi, °F					

Note 1) 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.

Note 2) A 1.0 MPa (145 psi) pressure gauge will be fitted. It is not assembled and supplied loose at the time of shipment.

Note 3) The bracket position varies depending on the T-spacer mounting.

Note 4) Pressure can be set higher than the specification pressure in some cases, but use pressure within the specification range.

Note 5) Refer to Chemical data on page 46 for chemical resistance of the bowl.

Note 6) This product is for overseas use only according to the new Measurement Law. (The SI unit type is provided for use in Japan.)



ΑF



### **Standard Specifications**

Component	Air Filter [AF]	AF10-A				
Component	Regulator [AR]	AR10-A				
Port size		M5 x 0.8				
Pressure gauge po	ort size [AR]	1/16				
Fluid		Air				
Ambient and fluid temperature		23 to 140°F (-5 to 60°C) (with no freezing)				
Proof pressure		218 psi (1.5 MPa)				
Maximum operating	ig pressure	145 psi (1.0 MPa)				
Set pressure range	e [AR]	7.3 to 102 psi (0.05 to 0.7 MPa)				
Nominal filtration	rating [AF]	5 μm				
Bowl material [AF]		Polycarbonate				
Construction [AR]		Relieving type				
Weight (kg)		0.16				



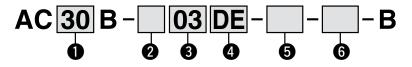
# Air Filter + Regulator

# AC20B-B to AC60B-B



### **How to Order**

Refer to page 21 for size 10.

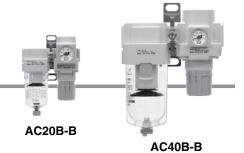


- Option/Semi-standard: Select one each for a to j.
- Option/Attachment/Semi-standard symbol: When more than one specification is required, indicate in alphanumeric order.
   Example) AC30B-F03DE1-SV-16NR-B

									0			
				Symbol	Description				ody siz	ze		
						20	25	30	40	50	55	60
				Nil	Rc		•	•	•	•	•	
2		Pipe	e thread type	N Note 1)	NPT		•	•	•	•	•	•
				F Note 2)	G	•	•	•	•	•	•	•
	•			+					•			
				01	1/8		_	_	_	-	_	_
				02	1/4		•	•	•	_	_	_
8			Port size	03	3/8	_				_	_	_
J			i oit size	04	1/2		_			_	_	_
				06	3/4		_	_	•	•	_	_
				10	1	_	_	_	_			
				+								
			Float type	Nil	Without auto drain		•	•	•	•	•	•
		а	auto drain	C Note 4)	N.C. (Normally closed) Drain port is closed when pressure is not applied.		•	•	•	•	•	
				D Note 5)	N.O. (Normally open) Drain port is open when pressure is not applied.							
				+	Maril							
	ote 3		_	Nil	Without pressure gauge		•	•	•	•	•	
4	z S		Pressure gauge Note 6)	E	Square embedded type pressure gauge (with limit indicator)				•			
	Option Note 3)		gauge **** */	G	Round type pressure gauge (with limit indicator)				•			
		b		M E1	Round type pressure gauge (with color zone)  Output: NPN output/Electrical entry: Wiring bottom entry				•			•
			Digital	E2								
			pressure	E3	Output: NPN output/Electrical entry: Wiring top entry Output: PNP output/Electrical entry: Wiring bottom entry				•			
			switch	E4	Output: PNP output/Electrical entry: Wiring bottom entry  Output: PNP output/Electrical entry: Wiring top entry							
				+	Output: 1 Wi Output/Electrical entry. Willing top entry							
			Pressure	Nil	Without attachment							
		С	switch	S Note 7)	Mounting position: AF+S+AR							
	ent		T-spacer	T Note 7)	Mounting position: AF+ <b>T</b> +AR					•	•	
6	틸		.,	+								
	Attachment			Nil	Without attachment		•		•	•	•	
	<	d	Pressure relief	V	Mounting position: AF+AR+V		•	•	•	•	_	_
			3 port valve	V1 Note 8)	Mounting position: <b>V</b> +AF+AR□K		•	•	•	•	_	
				+				-				
		е	Set	Nil	7.3 to 123 psi (0.05 to 0.85 MPa) setting		•	•	•	•	•	•
			pressure Note 9)	1	2.9 to 29 psi (0.02 to 0.2 MPa) setting			•			•	
				+								
				Nil	Polycarbonate bowl		•	•	•	•	•	•
	اوا			2	Metal bowl		•	•	•	•	•	
	gal	f	Bowl Note 10)	6	Nylon bowl		•	•	•	•	•	
6	Semi-standard		20	8	Metal bowl with level gauge		Note 11	New 22	Note 44)	Nata 11)	Mate 44	Note (1)
	i=			С	With bowl guard		Note 11)					
	Ser			6C	Nylon bowl with bowl guard		Note 12)					
				+	AAPII, dasta and							
				Nil	With drain cock							
		g	Air filter drain port Note 13)	<b>J</b> Note 14)	Drain guide 1/8		_	_	_		_	
				<b>W</b> Note 15)	Drain guide 1/4	_			•	•		•
				VV	Drain cock with barb fitting: For ø6 x ø4 nylon tube	_			•	•		

AB

## Air Combination Series AC20B-B to AC60B-B



	Syml				Body size								
			Symbol	Description									
					20	25	30	40	50	55	60		
		h	Exhaust	Nil	Relieving type		•		•	•	•		
		••	mechanism	N	Non-relieving type			•	•		•		
	힏			+									
	standard		Flow direction	Nil	Flow direction: Left to right		•	•	•	•	•		
6	sta	'	Flow direction	R	Flow direction: Right to left		•	•	•	•	•	•	
	Semi-			+									
	Se			Nil	Name plate, caution plate for bowl, and pressure gauge in imperial units: MPa	•	•	•	•	•	•	•	
		j	Pressure unit	<b>Z</b> Note 16)	Name plate, caution plate for bowl, and pressure gauge in imperial units: psi, °F	Note 18)	Note 18)	Note 18)		Note 18)	ONote 18)	Note 18)	
				ZA Note 17)	Digital pressure switch: With unit conversion function	△ Note 19)							

Note 1) Drain guide is NPT1/8 (applicable to the AC20B-B) and NPT1/4 (applicable to the AC25B-B to AC60B-B).

The auto drain port comes with ø3/8" One-touch fitting (applicable to the AC25B-B to AC60B-B).

- Note 2) Drain guide is G1/8 (applicable to the AC20B-B) and G1/4 (applicable to the AC25B-B to AC60B-B).

  Note 3) Option G, M are not assembled and supplied loose
- at the time of shipment.
- Note 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.
- Note 5) If the compressor is small (0.75 kW, discharge flow is less than 3.5 scfm (100 L/min[ANR])), air leakage from the drain cock may occur during start of operations. N.C. type is recommended.
- Note 6) When the pressure gauge is attached, a 1.0 MPa (145psi ) pressure gauge will be fitted for standard (123 psi (0.85 MPa)) type. 58 psi (0.4 MPa) pressure gauge for 29 psi (0.2 MPa) type.
- Note 7) The bracket position varies depending on the T-spacer or pressure switch mounting.
- Note 8) Make sure that the outlet pressure is released to atmospheric pressure using a pressure gauge.
- Note 9) Pressure can be set higher than the specification pressure in some cases, but use pressure within the specification range.
- Note 10) Refer to Chemical data on page 46 for chemical resistance of the bowl.
- Note 11) A bowl guard is provided as standard equipment (polycarbonate).
- Note 12) A bowl guard is provided as standard equipment (nylon).
- Note 13) The combination of float type auto drain: C and D is not available.

- Note 14) Without a valve function
- Note 15) The combination of metal bowl: 2 and 8 is not available
- Note 16) For pipe thread type: NPT.

This product is for overseas use only according to the new Measurement Law. (The SI unit type is provided for use in Japan.)

Cannot be used with M: Round pressure gauge (with color zone). Available by request for special. The digital pressure switch will be equipped with the unit conversion function, setting to psi initially. Note 17) For options: E1, E2, E3, E4. This product is for

overseas use only according to the new Measurement Law. (The SI unit is provided for use in Japan.)

Note 18) O: For pipe thread type: NPT only

Note 19) A: Select with options: E1, E2, E3, E4.

### Ctandard Chasifications

ı	Model	AC20B-B	AC25B-B	AC30B-B	AC40B-B	AC40B-06-B	AC50B-B	AC55B-B	AC60B-B				
Commonant	Air Filter [AF]	AF20-A	AF30-A	AF30-A	AF40-A	AF40-06-A	AF50-A	AF60-A	AF60-A				
Component	Regulator [AR]	AR20-B	AR25-B	AR30-B	AR40-B	AR40-06-B	AR50-B	AR50-B	AR60-B				
Port size		1/8, 1/4											
Pressure gaug	e port size [AR] Note 1)		1/8										
Fluid		Air											
Ambient and fl	uid temperature Note 2)	23 to 140°F (-5 to 60°C) (with no freezing)											
Proof pressu	re	218 psi (1.5 MPa)											
Maximum op	erating pressure	145 psi (1.0 MPa)											
Set pressure	range [AR]	7.3 to 123 psi (0.05 to 0.85 MPa)											
Nominal filtra	ation rating [AF]				5 <u>j</u>	ım							
Bowl materia	I [AF]				Polyca	rbonate							
Bowl guard [	AF]	Semi-standard (Steel)											
Construction	[AR]				Relievi	ng type							
Weight (kg)		0.27	0.45	0.53	0.91	0.99	2.27	2.40	2.45				

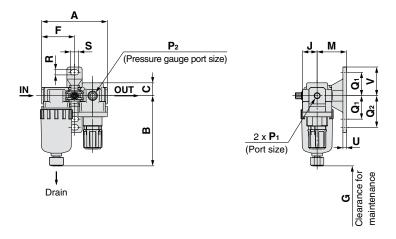
Note 1) Pressure gauge connection threads are not available for F.R.L. unit with a square embedded type pressure gauge or with a digital pressure switch. Note 2) 23 to 122°F (-5 to 50°C) for the products with the digital pressure switch



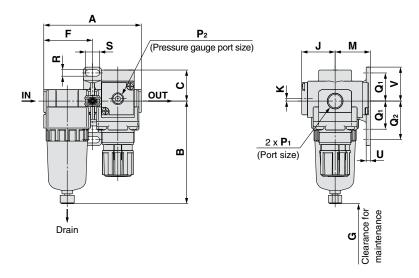
# Series AC10B0A/Series AC20B-B to AC60B-B

### **Dimensions**

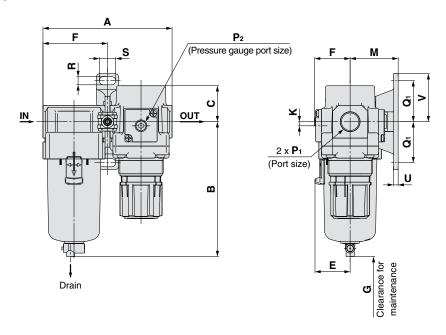
### AC10B-A



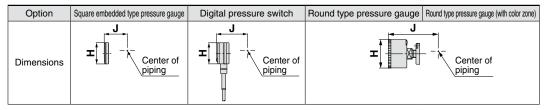
### AC20B-B



### AC25B-B to AC60B-B



# Air Combination Series AC10B-A/Series AC20B-B to AC60B-B



Applicable model					AC20B-B		AC25B-B to AC60B-B
Optional/Semi-standard specifications	With auto drain	Metal bowl	With auto drain	Metal bowl	With drain guide	Metal bowl with drain guide	With auto drain (N.O./N.C.)
Dimensions	B	<b>m</b>	M5 × 0.8	B	Width across flats 14	Width across	N.O.: Black N.C.: Gray  Thread type/Rc, G: ø10 One-touch fitting Thread type/NPT: ø3/8" One-touch fitting

Applicable mod	del		AC2	5B-B to AC60B-B		
Optional/Semi-stand specifications	Metal bowl	Metal bowl with drain guide	Metal bowl with level gauge	Metal bowl with level gauge, with drain guide	With drain guide	Drain cock with barb fitting
Dimensions	<b>a</b>	Width across flats 17	<b>a</b>	Width across flats 17	Width across flats 17	Barb fitting applicable tubing: T0604

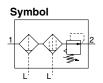
		Standard specifications															
Model	P <sub>1</sub>	P <sub>2</sub>	_	В	C E		F	G		К			Bra	acket mo	unt		
	Pı	P2	A	В	C		F	G	J	Γ.	M	Q1	Q2	R	S	U	V
AC10B-A	M5 x 0.8	1/16	56	59.9	11	_	28	25	12.5	_	25	20	27	4.5	6.8	3	24.5
AC20B-B	1/8, 1/4	1/8	83.2	87.6	26.5	_	41.6	25	28.5	2 Note)	30	24	33	5.5	12	3.5	29
AC25B-B	1/4, 3/8	1/8	110.2	115.1	28	30	55.1	35	27.5	0	41	35	_	7	14	4	41
AC30B-B	1/4, 3/8	1/8	110.2	115.1	30.7	30	55.1	35	29.4	3.5	41	35	_	7	14	4	41
AC40B-B	1/4, 3/8, 1/2	1/8	145.2	147.1	35.8	38.4	72.6	40	33.8	3.5	50	40	_	9	18	5	48
AC40B-06-B	3/4	1/8	155.2	149.1	35.8	38.4	77.6	40	33.8	3	50	40	_	9	18	5	48
AC50B-B	3/4, 1	1/8	186.2	220.1	43	_	93.1	30	43.3	3.2	70	50	_	11	20	6	60
AC55B-B	1	1/8	191.2	234.1	43	_	98.1	30	43.3	3.2	70	50	_	11	20	6	60
AC60B-B	1	1/8	196.2	234.1	46	_	98.1	30	43.3	3.2	70	50	_	11	20	6	60

				Option	al specific	cations						Semi-star	dard specific	ations	
Model	Squar		Digital p		Round type pressure gauge		Round pressure (with col	e gauge	With auto drain	With barb fitting	With drain guide	Metal bowl	Metal bowl with drain guide	Metal bowl with level gauge	Metal bowl with level gauge, with drain guide
	Н	J	Н	J	Н	H J		J	В	В	В	В	В	В	В
AC10B-A	_	_	_	_	ø26	26	_	_	77.9	_	_	59.3	_	_	_
AC20B-B	□28	29.5	□27.8	40	ø37.5	65	ø37.5	66	104.9	_	91.4	87.4	93.9	_	_
AC25B-B	□28	28.5	□27.8	39	ø37.5	64	ø37.5	65	156.8	123.6	121.9	117.6	122.1	137.6	142.1
AC30B-B	□28	30.4	□27.8	40.9	ø37.5	65.9	ø37.5	66.9	156.8	123.6	121.9	117.6	122.1	137.6	142.1
AC40B-B	□28	34.8	□27.8	45.3	ø42.5	71.3	ø42.5	71.3	186.9	155.6	153.9	149.6	154.1	169.6	174.1
AC40B-06-B	□28	34.8	□27.8	45.3	ø42.5	71.3	ø42.5	71.3	188.9	157.6	155.9	151.6	156.1	171.6	176.1
AC50B-B	□28	44.3	□27.8	54.8	ø42.5	80.8	ø42.5	80.8	259.9	228.6	226.9	222.6	227.1	242.6	247.1
AC55B-B	□28	44.3	□27.8	54.8	ø42.5	80.8	ø42.5	80.8	273.9	242.6	240.9	236.6	241.1	256.6	261.1
AC60B-B	□28	44.3	□27.8	54.8	ø42.5	80.8	ø42.5	80.8	273.9	242.6	240.9	236.6	241.1	256.6	261.1

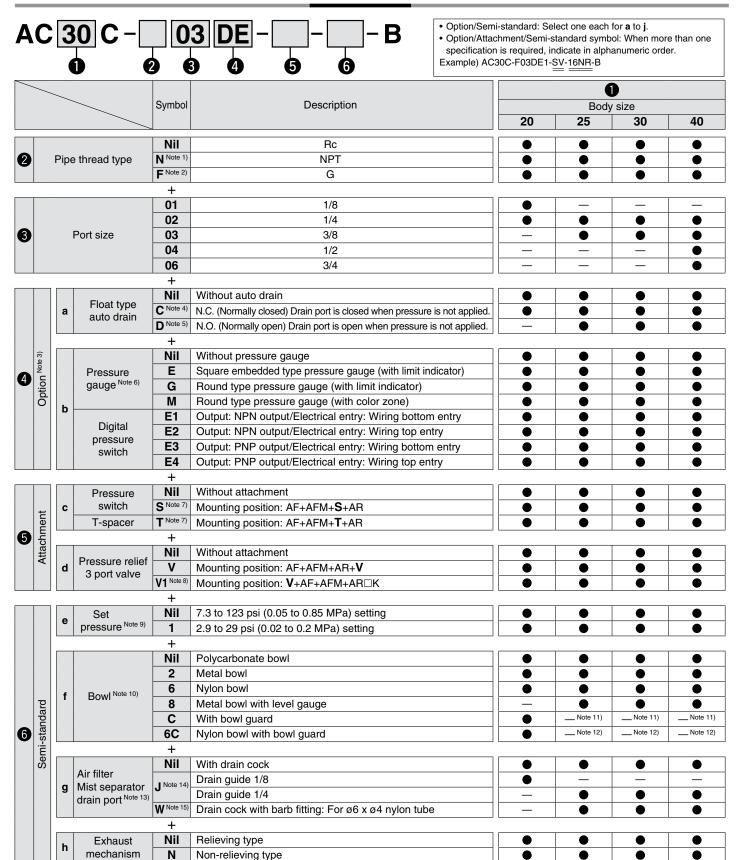
Note) For the AC20B-B only, the position of the pressure gauge is above the center of the piping.



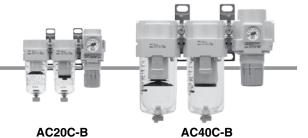
# Air Filter + Mist Separator + Regulator AC20C-B to AC40C-B



**How to Order** 



# Air Combination Series AC20C-B to AC40C-B



		_		Symbol	Description
	٥		Flow direction	Nil	Flow direction: Left to right
	dar	•	1 low direction	R	Flow direction: Right to left
6	au			+	
v	Semi-standard			Nil	Name plate, caution plate for bowl, and pressure gauge in imperial units: MPa
	el	j	Pressure unit	<b>Z</b> Note 16)	Name plate, caution plate for bowl, and pressure gauge in imperial units: psi, °F
	0)			7 ∧ Note 17)	Digital pressure switch: With unit conversion function

		U													
		Body	/ size												
	20	20 25 30 40													
$\equiv$															
		•	•												
Pa	•	•	•	•											
°F	Note 18)	Note 18)	Note 18)	Note 18)											

- Note 1) Drain guide is NPT1/8 (applicable to the AC20C-B) and NPT1/4 (applicable to the AC25C-B to AC60C-B).
  - The auto drain port comes with ø3/8" One-touch fitting (applicable to the AC25C-B to AC60C-B).
- Note 2) Drain guide is G1/8 (applicable to the AC20C-B) and G1/4 (applicable to the AC25C-B to AC60C-B).
- Note 3) Option G, M are not assembled and supplied loose at the time of shipment.
- Note 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.
- Note 5) If the compressor is small (0.75 kW, discharge flow is less than 3.5 scfm (100 L/min [ANR])), air leakage from the drain cock may occur during start of operations. N.C. type is recommended.
- Note 6) When the pressure gauge is attached, a 145 psi (1.0 MPa) pressure gauge will be fitted for standard (123 psi (0.85 MPa)) type. 58 psi (0.4 MPa) pressure gauge for 29 psi (0.2 MPa) type.
- Note 7) The bracket position varies depending on the T-spacer or pressure switch mounting.
- Note 8) Make sure that the outlet pressure is released to atmospheric pressure using a pressure gauge.
- Note 9) Pressure can be set higher than the specification pressure in some cases, but use pressure within the specification range.
- Note 10) Refer to Chemical data on page 46 for chemical resistance of the bowl.
- Note 11) A bowl guard is provided as standard equipment (polycarbonate).
- Note 12) A bowl guard is provided as standard equipment (nylon).

  Note 13) The combination of float type auto drain: C and D is

not available.

Note 14) Without a valve function

\_\_\_\_ Note 19)

- Note 15) The combination of metal bowl: 2 and 8 is not available.
- Note 16) For pipe thread type: NPT.

Note 19)

This product is for overseas use only according to the new Measurement Law. (The SI unit type is provided for use in Japan.)

Note 19)

Note 19)

- Cannot be used with M: Round pressure gauge (with color zone). Available by request for special. The digital pressure switch will be equipped with the unit conversion function, setting to psi initially.
- Note 17) For options: E1, E2, E3, E4. This product is for overseas use only according to the new Measurement Law. (The SI unit is provided for use in Janan)
- Note 18) ○: For pipe thread type: NPT only Note 19) △: Select with options: E1, E2, E3, E4.

### **Standard Specifications**

	Model	AC20C-B	AC25C-B	AC30C-B	AC40C-B	AC40C-06-B							
	Air Filter [AF]	AF20-A	AF30-A	AF30-A	AF40-A	AF40-06-A							
Component	Mist Separator [AFM]	AFM20-A	AFM30-A	AFM30-A	AFM40-A	AFM40-06-A							
	Regulator [AR]	AR20-B	AR25-B	AR30-B	AR40-B	AR40-06-B							
Port size		1/8, 1/4	1/4, 3/8	1/4, 3/8	1/4, 3/8, 1/2	3/4							
Pressure gau	uge port size [AR] Note 1)	1/8											
Fluid			Air										
Ambient and	I fluid temperature Note 2)	23 to 140°F (-5 to 60°C) (with no freezing)											
Proof pressu	ire	218 psi (1.5 MPa)											
Maximum op	erating pressure	145 psi (1.0 MPa)											
Set pressure	range [AR]	7.3 to 123 (0.05 to 0.85 MPa)											
Nominal filtra	ation rating [AF/AFM]		AF: 5 μm, AFM	: 0.3 µm (99.9% filter	ed particle size)								
Rated flow (L	/min(ANR)) [AFM] Note 3)	200	450	450	1100	1100							
Outlet side oil mis	st concentration [AFM] Note 4) Note 5)		Max.1	.0 mg/m³ (ANR) (≈0.8	ppm)								
Bowl materia	al [AF/AFM]		Polycarbonate										
Bowl guard [	AF/AFM]	Semi-standard (Steel) Standard (Polycarbonate)											
Construction	n [AR]	Relieving type											
Weight (kg)		0.38	0.69	0.77	1.39	1.53							

Note 1) Pressure gauge connection threads are not available for F.R.L. unit with a square embedded type pressure gauge or with a digital pressure switch.

Note 2) 23 to 122°F (–5 to 50°C) for the products with the digital pressure switch

Note 3) Conditions: Mist separator inlet pressure: 102 psi (0.7 MPa); The rated flow varies depending on the inlet pressure. Keep the air flow within the rated flow to prevent an outflow of lubricant to the outlet side.

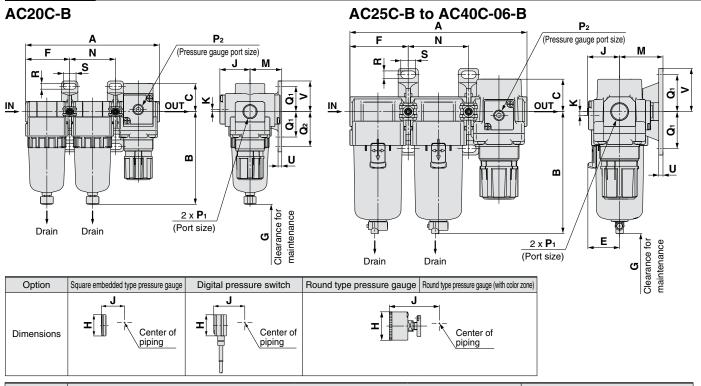
Note 4) When the compressor oil mist discharge concentration is 30 mg/m³ (ANR).

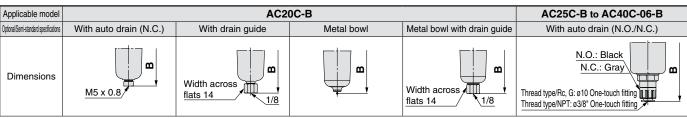
Note 5) Bowl seal and other O-rings are slightly lubricated.



# Series AC20C-B to AC40C-B

### **Dimensions**





Applicable model			AC250	C-B to AC40C-06-B		
Optional/Semi-standard specifications	Metal bowl	Metal bowl with drain guide	Metal bowl with level gauge	Metal bowl with level gauge, with drain guide	With drain guide	Drain cock with barb fitting
Dimensions	8	Width across flats 17	<b>a</b>	Width across	Width across III	Barb fitting applicable tubing: T0604

		Standard specifications																
Model	P <sub>1</sub>	P <sub>2</sub>	_	В	_	Е	_	G		к				Bracke	t mount			
	P1	F2	Α		C	_	F	G	J	<b>"</b>	М	N	Q <sub>1</sub>	Q2	R	S	U	V
AC20C-B	1/8, 1/4	1/8	126.4	87.6	26.5	_	41.6	40	28.5	2 Note)	30	43.2	24	33	5.5	12	3.5	29
AC25C-B	1/4, 3/8	1/8	167.4	115.1	28	30	55.1	50	27.5	0	41	57.2	35	_	7	14	4	41
AC30C-B	1/4, 3/8	1/8	167.4	115.1	30.7	30	55.1	50	29.4	3.5	41	57.2	35	_	7	14	4	41
AC40C-B	1/4, 3/8, 1/2	1/8	220.4	147.1	35.8	38.4	72.6	75	33.8	3.5	50	75.2	40	_	9	18	5	48
AC40C-06-B	3/4	1/8	235.4	149.1	35.8	38.4	77.6	75	33.8	3	50	80.2	40	_	9	18	5	48

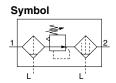
				Option	al specific	cations				Semi-standard specifications							
Model	Square type pressure gauge		Digital pressure switch		Round type pressure gauge		Round type pressure gauge (with color zone)		With auto drain	With barb fitting	With drain guide	Metal bowl	Metal bowl with drain guide	Metal bowl with level gauge	Metal bowl with level gauge, with drain guide		
	Н	J	Н			J	Н	J	В	В	В	В	В	В	В		
AC20C-B	□28	29.5	□27.8	40	ø37.5	65	ø37.5	66	104.9	_	91.4	87.4	93.9	_	_		
AC25C-B	□28	28.5	□27.8	39	ø37.5	64	ø37.5	65	156.8	123.6	121.9	117.6	122.1	137.6	142.1		
AC30C-B	□28	30.4	□27.8	40.9	ø37.5	65.9	ø37.5	66.9	156.8	123.6	121.9	117.6	122.1	137.6	142.1		
AC40C-B	□28	34.8	□27.8	45.3	ø42.5	71.3	ø42.5	71.3	186.9	155.6	153.9	149.6	154.1	169.6	174.1		
AC40C-06-B	□28	34.8	□27.8	45.3	ø42.5	71.3	ø42.5	71.3	188.9	157.6	155.9	151.6	156.1	171.6	176.1		

Note) For the AC20C-B only, the position of the pressure gauge is above the center of the piping.

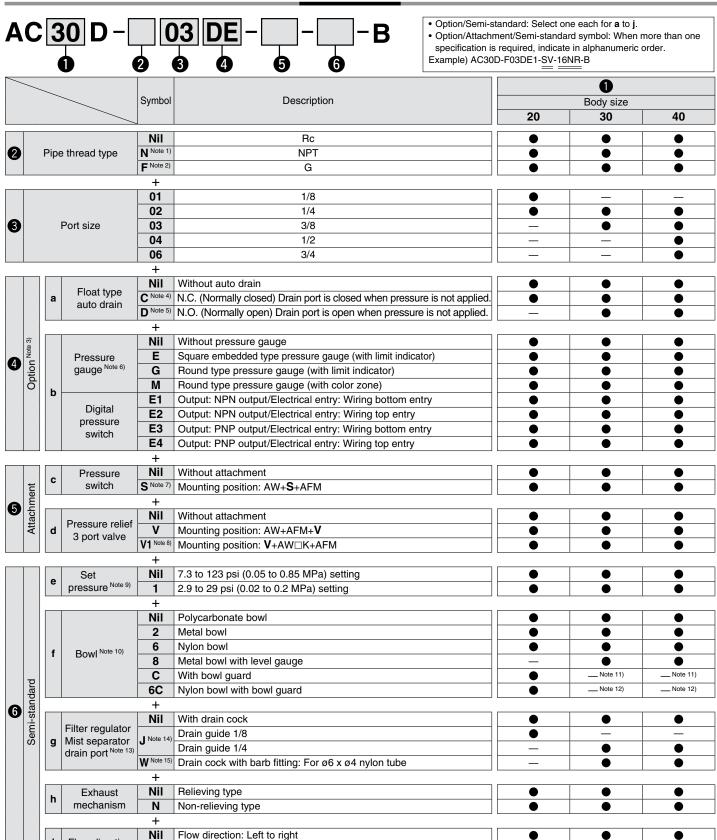


# Filter Regulator + Mist Separator

# AC20D-B to AC40D-B



**How to Order** 



Flow direction

Flow direction: Right to left

# Air Combination Series AC20D-B to AC40D-B



#### AC20D-B

#### AC40D-B

	_		Symbol	Description		Body size	
					20	30	40
ard			Nil	Name plate, caution plate for bowl, and pressure gauge in imperial units: MPa	•	•	•
	j	Pressure unit	<b>Z</b> Note 16)	Name plate, caution plate for bowl, and pressure gauge in imperial units: psi, °F	Note 18)	Note 18)	Note 18)
Sestar			ZA Note 17)	Digital pressure switch: With unit conversion function	Note 19)	Note 19)	△ Note 19)

- Note 1) Drain guide is NPT1/8 (applicable to the AC20D-B) and NPT1/4 (applicable to the AC30D-B/AC40D-B). The auto drain port comes with ø3/8" One-touch fitting (applicable to the AC30D-B/AC40D-B).
- Note 2) Drain guide is G1/8 (applicable to the AC20D-B) and G1/4 (applicable to the AC30D-B/AC40D-B).

  Note 3) Option G, M are not assembled and supplied loose
- at the time of shipment.
- Note 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 recommend-
- Note 5) If the compressor is small (0.75 kW, discharge flow is less than 3.5 scfm (100 L/min [ANR])), air leakage from the drain cock may occur during start of operations. N.C. type is recommended.
- Note 6) When the pressure gauge is attached, a 145 psi (1.0  $\,$ MPa pressure gauge will be fitted for standard (123 psi (0.85 MPa)) type. 58 psi (0.4 MPa) pressure gauge for 29 psi (0.2 MPa) type.
- Note 7) The bracket position varies depending on the pressure switch mounting.
- Note 8) Make sure that the outlet pressure is released to atmospheric pressure using a pressure gauge.
- Note 9) Pressure can be set higher than the specification pressure in some cases, but use pressure within the specification range.
- Note 10) Refer to Chemical data on page 46 for chemical resistance of the bowl.
- Note 11) A bowl guard is provided as standard equipment (polycarbonate).
- Note 12) A bowl guard is provided as standard equipment
- Note 13) The combination of float type auto drain: C and D is not available.

Note 14) Without a valve function

Note 15) The combination of metal bowl: 2 and 8 is not available.

Note 16) For pipe thread type: NPT.

This product is for overseas use only according to the new Measurement Law. (The SI unit type is provided for use in Japan.)

Cannot be used with M: Round pressure gauge (with color zone). Available by request for special. The digital pressure switch will be equipped with the unit conversion function, setting to psi initially.

Note 17) For options: E1, E2, E3, E4. This product is for overseas use only according to the new Measurement Law. (The SI unit is provided for use in Japan.)

Note 18) O: For pipe thread type: NPT only Note 19) △: Select with options: E1, E2, E3, E4.

### **Standard Specifications**

	Model	AC20D-B	AC30D-B	AC40D-B	AC40D-06-B				
Component	Filter Regulator [AW]	AW20-B	AW30-B	AW40-B	AW40-06-B				
Component	Mist Separator [AFM]	AFM20-A	AFM30-A	AFM40-A	AFM40-06-A				
Port size		1/8, 1/4	1/4, 3/8	1/4, 3/8, 1/2	3/4				
Pressure gau	uge port size [AW] Note 1)		1/	/8					
Fluid			A	ir					
Ambient and	I fluid temperature Note 2)		23 to 140°F (-5 to 60°	°C) (with no freezing)					
Proof pressu	ire	218 psi (1.5 MPa)							
Maximum op	erating pressure	145 psi (1.0 MPa)							
Set pressure	range [AW]	7.3 to 123 psi (0.05 to 0.85 MPa)							
Nominal filtra	ation rating [AW/AFM]	AW: 5 μm, AFM: 0.3 μm (99.9% filtered particle size)							
Rated flow (L	/min(ANR)) [AFM] Note 3)	150	330	800	800				
Outlet side oil mis	st concentration [AFM] Note 4) Note 5)	Max.1.0 mg/m³ (ANR) (≈0.8 ppm)							
Bowl materia	al [AW/AFM]		Polycai	rbonate					
Bowl guard [	[AW/AFM]	Semi-standard (Steel) Standard (Polycarbonate)							
Construction	ı [AW]	Relieving type							
Weight (kg)		0.32	0.62	1.15	1.25				

Note 1) Pressure gauge connection threads are not available for F.R.L. unit with a square embedded type pressure gauge or with a digital pressure switch.

Note 2) 23 to 122°F (-5 to 50°C) for the products with the digital pressure switch

Note 3) Conditions: Mist separator inlet pressure: 73 psi (0.5 MPa); The rated flow varies depending on the inlet pressure. Keep the air flow within the rated flow to prevent an outflow of lubricant to the outlet side.

Note 4) When the compressor oil mist discharge concentration is 30 mg/m3 (ANR).

Note 5) Bowl seal and other O-rings are slightly lubricated.



### Series AC20D-B to AC40D-B

### **Dimensions**

#### AC20D-B AC30D-B to AC40D-06-B P2 М (Pressure gauge port size) S M S O O ō IN OUT IN OUT ō ō 2 x **P**1 (Port size) (Port size) m U $P_2$ m (Pressure gauge port size) naintenance Drain Drain 供 섺 G Ε Clearance for G Drain Drain Option Square embedded type pressure gauge Digital pressure switch Round type pressure gauge Round type pressure gauge (with color zone) Center of Center of Center of Dimensions piping piping AC20D-B AC30D-B to AC40D-06-B Applicable model Optional/Semi-standard With auto drain (N.C.) With drain guide Metal bowl Metal bowl with drain guide With auto drain (N.O./N.C.) specification N.O.: Black m N.C.: Gray m œ m Dimensions Width across Width across Thread type/Rc, G: ø10 One-touch fitting M5 x 0.8 flats 14 flats 14 1/8 Thread type/NPT: ø3/8" One-touch fitting Applicable model AC30D-B to AC40D-06-B Metal bowl with level gauge, Optional/Semi-standard Metal bowl With drain guide Drain cock with barb fitting Metal bowl Metal bowl with drain guide with level gauge with drain guide specification B œ B m Ш **Dimensions** Barb fitting Width across Width across Width across applicable flats 17 1/4 flats 17 1/4 flats 17 1/4 tubing: T0604 Standard specifications Bracket mount Model В C Note) Ε F G Α Κ M Q<sub>1</sub> $Q_2$ AC20D-B 1/8. 1/4 1/8 83.2 87.6 72.4 41.6 40 28.5 5 30 24 33 5.5 12 3.5 29 AC30D-B 1/4, 3/8 1/8 110.2 115.1 85.6 50 29.4 35 41 30 55.1 3.5 41 14 4 AC40D-B 1/4, 3/8, 1/2 1/8 145.2 147.1 91.7 38.4 72.6 75 33.8 1.5 50 40 18 48 AC40D-06-B 3/4 1/8 155.2 149.1 93.2 38.4 77.6 75 33.8 1.2 50 40 9 18 5 48 Optional specifications Semi-standard specifications Round type With With With Metal bowl Metal bowl Metal bowl with Metal Digital pressure Square type Round type Model pressure gauge auto barb drain with drain with level level gauge, pressure gauge switch pressure gauge bowl (with color zone) drain fitting guide with drain guide quide gauge В В В В В В В Н Н AC20D-B □28 27 □27.8 37.5 ø37.5 62.5 ø37.5 63.5 104.9 91.4 87.4 93.9 AC30D-B □28 30 □27.8 40.9 ø37.5 66.9 ø37.5 67.9 156.8 123.6 121.9 117.6 122.1 137.6 142.1 AC40D-B □28 38 4 □27.8 48 8 ø42 5 75.7 ø42 5 75.7 186.9 155 6 153 9 149 6 154 1 169 6 174 1 156.1 171.6 176.1 AC40D-06-B □28 38.4 □27.8 48.8 ø42.5 75.7 ø42.5 75.7 188.9 157.6 155.9 151.6



₹

# Air Combination Series AC Options/Attachments

Options/Attachments/Part No. \* 2.9 to 29 psi (0.02 to 0.2 MPa) setting

	$\overline{}$	=						Part no.						
_				For AC10-A	For AC20-B	For AC25-B	For AC30-B	For AC40-B	For AC40-06-B	For AC50-B	For AC55-B	For AC60-B		
     		`	Model	For AC10A-A	For AC20A-B	_	For AC30A-B	For AC40A-B	For AC40A-06-B	For AC50A-B	_	For AC60A-B		
Section	Туре		For AC10B-A	For AC20B-B	For AC25B-B	For AC30B-B	For AC40B-B	For AC40B-06-B	For AC50B-B	For AC55B-B	For AC60B-B			
0			_	For AC20C-B	For AC25C-B	For AC30C-B	For AC40C-B	For AC40C-06-B	_	_	_			
				_	For AC20D-B	_	For AC30D-B	For AC40D-B	For AC40D-06-B	_	_	_		
	e e	Round	Standard	G27-10-R1		G36-10-□01		G46-10-□01						
	gauge	type	*0.02 to 0.2 MPa setting	G27-10-R1		G36-4-□01		G46-4-□01						
		Round type (with color	Standard	_	G36-10-□01-L G46-10-□01-L									
	Pressure	(With color zone)	*0.02 to 0.2 MPa setting	_		G36-4-□01-L				G46-4-□01-L				
_	SS	Square	Standard	_			GC3-10AS	GC3P-010AS (F	Pressure gauge	cover only)]				
<u> </u> 5	F.	embedded type Note 2)	*0.02 to 0.2 MPa setting	_			GC3-4AS [	GC3P-010AS (F	ressure gauge of	cover only)]				
Option			NPN output/Wiring bottom entry				ISE35-N-25-N	/ILA [ISE35-N-2	5-M (Switch bod	y only)] Note 3)				
ا		gital	NPN output/Wiring top entry				ISE35-R-25-N	/ILA [ISE35-R-2	5-M (Switch bod	y only)] Note 3)				
		essure ritch	PNP output/Wiring bottom entry	_		ISE35-N-65-MLA [ISE35-N-65-M (Switch body only)] Note 3)								
	SW	ittii	PNP output/Wiring top entry				ISE35-R-65-N	/ILA [ISE35-R-6	5-M (Switch bod	y only)] Note 3)				
	Flo	at type	N.O.	_	_	AD3	88-A	AD48-A						
	aut	o drain Note 4)	N.C.	AD17-A	AD27-A	ADS	37-A	AD47-A						
	Sp	oacer		Y100-A	Y200-A	Y30	0-A	Y400-A Y500-A Y600-A						
	Sp	oacer with	n bracket	Y100T-A	Y200T-A	Y30	OT-A	Y400T-A Y500T-A Y600T-A						
	<u>ر</u>	heck valve Note 5) Note 6)			AKM2000-□01-A	AKM3000	)-(□01)-A	AKM4000-(□02)-A						
	ا <sup>ت</sup>	IECK VAIV	g 11010 0) 11010 0)	_	(□02)-A		□02-A	□03-A	_	_				
	Pr	essure sv	witch Note 6)	_	IS10M-20-A	IS10M	1-30-A	IS10M-40-A	IS10M-50-A		IS10M-60-A			
	Γ.	spacer No	te 5) Note 6)	Y110-M5-A	Y210-□01-A Y310-(□01)-A Y410-(□02)		Y410-(□02)-A	Y510-(□02)-A	Y610-□03-A Y610-(□03)-A					
	Ľ	spacei ···		1 1 10-1013-A	(□02)-A		□02-A	□03-A □03-A (□04)-A		□04-A				
1_	Dr	essure re	liof		VHS20-□01A	VHS30	L□02Δ	□02A		VHS50-□06A				
e		port valve		_		VHS20-□01A VHS30-□02A , □02A □03A		VHS40-□03A	VHS40-□06A	□10A	_	_		
Attachment	ا ا	poit vaive			LUZA			□04A						
ac					□01-A		□02-A	□02-A						
₽	Pi	ping adar	nter Note 6)	E100-M5-A	E200-□02-A	E300-		E400-□03-A	E500-□06-A		E600-□06			
	Pressure switch with piping adapter Note 6)		,	2100 MO 71	□03-A		⊒04-A	□04-A	2000 200 71		□10			
								□06-A						
					□01-A		□02-A	□02-A						
					IS10E-20□02-A	IS10F-3		IS10E-40□03-A	_	_	_   _   _			
				□03-A	IS10E-30□03-A □04-A	□04-A								
								□06-A						
	Cr	oss spac	er Note 6)	Y14-M5-A	Y24-□01-A	Y34-	-	Y44-□02-A	Y54-□03-A	_	_			
	Cioss spacer role of			□02-A		□02-A	□03-A	□04-A						

Note 1)  $\square$  in part numbers for a round pressure gauge indicates a pipe thread type. No indication is necessary for R; however, indicate N for NPT. Please contact SMC regarding the connection thread NPT and pressure gauge supply for psi unit specifications.

Note 2) Including one O-ring and 2 mounting screws

Note 3) Lead wire with connector (2 m), adapter, lock pin, O-ring (1 pc.), mounting screw

(2 pcs.) are attached. []: Switch body only.

Regarding how to order the digital pressure switch, refer to the WEB catalog or the Best Pneumatics No.6.

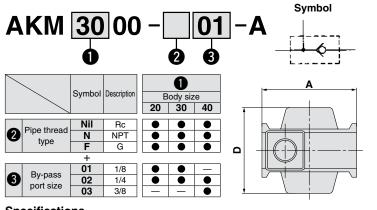
Note 4) Minimum operating pressure: N.O. type–15 psi (0.1 MPa); N.C. type–15 psi (0.1 MPa) (AD27-A) and 22 psi (0.15 MPa) (AD37-A/AD47-A). Please consult with SMC separately for psi and °F unit display specifications.

Note 5) For F.R.L. units, port sizes without ( ) are standard specifications.

Note 6) Separate spacers are required for modular unit.

### Check Valve: (K) 1/8, 1/4, 3/8

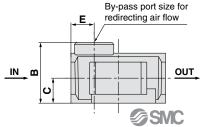
A check valve with intermediate air release port can be easily installed to prevent a backflow of lubricant when redirecting the air flow and releasing the air on the outlet side of the regulator.



### **Specifications**

Model	Effective area (mm²)
AKM2000-A	28
AKM3000-A	55
AKM4000-A	111

Be sure to use above check valves when redirecting the air flow on the inlet side of the lubricator. Threads for IN and OUT ports are not machined.





	Model	By-pass port size	A	В	С	D	Е	Applicable model
7	AKM2000-A	1/8, 1/4	40	28	11	40	11	AC20-B, AC20A-B
ı	AKM3000-A	1/8, 1/4	53	34	14	48	13	AC25-B AC30-B, AC30A-B
7	AKM4000-A	1/4, 3/8	70	42	18	54	15	AC40-B, AC40A-B <sup>Note)</sup>

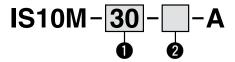
Note) Cannot be mounted on the AC40□-06-B.

\* Refer to the attachment table above for standard by-pass port sizes applicable to the AC.

### Series AC

### **Pressure Switch: (S)**

A compact integrated pressure switch can be easily installed and facilitates the pressure detection of the line.



- Semi-standard: Select one each for a to c.
- Semi-standard symbol: When more than one specification is required, indicate in alphanumeric order. Example) IS10M-30-6LP

	Symbol			Symbol	Description	Body size 20   30   40   50   60					
	٥	а	Set pressure range	Nil 6 Note 1)	15 to 58 psi (0.1 to 0.4 MPa) 15 to 87 psi (0.1 to 0.6 MPa)	•	•	•	•	•	
	standard			+ Nil	0.5 m						
2	stal	b	Lead wire length	L	3 m	Ŏ	Ŏ	Ŏ	Ŏ	Ŏ	
	Semi-		lerigui	Z	5 m						
	ē			+							
	0)	С	Pressure unit of	Nil	MPa						
		-	the scale plate	P Note 2)	MPa/psi dual scale		•				

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

Note 2) This product is for overseas use only according to the new Measurement Law. (The SI unit type is provided for use in Japan.)

#### **Specifications**

Fluid	Air
Ambient and fluid temperature	23 to 140°F (-5 to 60°C) (with no freezing)
Proof pressure	145 psi (1.0 MPa)
Maximum operating pressure	102 psi (0.7 MPa)
Set pressure range (when OFF)	15 to 58 (0.1 to 0.4 MPa)
Hysteresis	12 psi (0.08 MPa) or less

#### **Switch Characteristics**

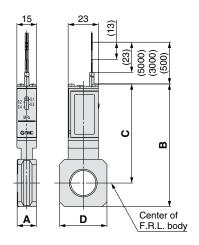
Contact point configuration	1a
Maximum contact point capacity	2 VA (AC), 2 W (DC)
Operating voltage: AC, DC	100 V or less
Maximum operating current	12 V to 24 VAC, DC: 50 mA 48 VAC, DC: 40 mA 100 VAC, DC: 20 mA

Note) For detailed specifications on the IS10 series, refer to the section of our website IS10 series, http://www.smcworld.com

# Symbol





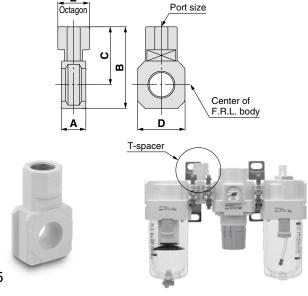


Model	Α	В	С	D	Applicable model
IS10M-20-A	10.6	74.2	64.4	28	AC20□-B
IS10M-30-A	12.6	84.5	70.5	30	AC25□-B, AC30□-B
IS10M-40-A	14.6	93.3	75.3	36	AC40□-B
IS10M-50-A	16.6	97.3	77.3	44	AC40□-06-B
IS10M-60-A	22	92.5	68.5	53	AC50□-B, AC55□-B, AC60□-B
		•			

<sup>\*</sup> Separate spacers are required for modular unit.

### T-Spacer: (T) M5 x 0.8, 1/8, 1/4, 3/8, 1/2

Using a T-spacer facilitates the branching of air flow.



Model Note)	Port size	Α	В	С	D	Е	Applicable model
Y110-M5-A	M5 x 0.8	11.2	19	12	14	8	AC10-A, AC10B-A
Y210-□01-A	1/8	14.6	41.8	32	28	19	AC20-B, AC20B-B
Y210-□02-A	1/4	14.0	41.0	32	20	13	AC20C-B
Y310-□01-A	1/8	14.6	52.7	38.7	30	19	AC25-B, AC25B-B
Y310-□02-A	1/4	14.0		30.7	30		AC25C-B, AC30C-B
Y410-□02-A	1/4	18.6	62	44	36	24	AC40-B, AC40B-B
Y410-□03-A	3/8	10.0			30	24	AC40C-B
Y510-□02-A	1/4	18.6	66	46	44	24	AC40-06-B, AC40B-06-B
Y510-□03-A	3/8	10.0	00	40		24	AC40C-06-B
Y610-□03-A	3/8	22	81	57	53		AC50-B, AC55-B, AC60-B,
Y610-□04-A	1/2		01	37	55	30	AC50B-B, AC55B-B, AC60B-B

Note)  $\square$  in model numbers indicates a pipe thread type. No indication is necessary for Rc; however, indicate N for NPT, and F for G.

- \* Separate interfaces are required for modular unit.
- \* Refer to the attachment table on page 34 for standard port sizes when using with the AC.

#### **Caution on Mounting**

If a T-spacer is used on the inlet side of the lubricator, lubricant may be mixed. Use the AKM series check valve to avoid such possibility.

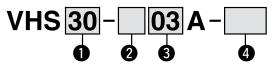


A

# Attachement Series AC

### **Pressure Relief 3 Port Valve: (V)**

With the use of a pressure relief 3 port valve, pressure left in the line can be easily exhausted.



- Semi-standard: Select one each for a to b.
- Semi-standard symbol: When more than one specification is required, indicate in alphanumeric order.
   Example) VHS30-03A-RZ

				Symbol Description				D	
				Symbol	Description		Body	size	
						20	30	40	50
				Nil	Rc	•	•	•	•
2	Pipe thread type	Pipe thread type N Note)		N Note)	NPT		•	•	
				F Note)	G		•	•	
+									
				01	1/8		_	_	_
				02	1/4		•	•	-
9		Dort	size	03	3/8	_	•	•	_
8		Port	Size	04	1/2	_	_	•	_
				06	3/4	<u> </u>	_	•	
				10	1	_	_	_	•
				+					
	ırd		Flow	Nil	Flow direction: Left to right		•	•	
			direction	R	Flow direction: Right to left		•	•	

Note) For pipe thread tye: NPT only. This product is for overseas use only according to the new Measurement Law. (The SI unit type is provided for use in Japan.)

Name plate in imperial units: MPa

#### **Specifications**

Pressure

	Port size		Specifications							
Model	IN. OUT	EXH	IN -	→ OUT		$OUT \rightarrow EXH$				
	114, 001	EVU	C(dm <sup>3</sup> /s·bar)	b	Cv	C(dm <sup>3</sup> /s·bar)	b	Cv		
VHS20	1/8	1/8	2.4	0.43	0.65	2.5	0.39	0.69		
V11320	1/4	1/6	3.3	0.40	0.88	3.1	0.51	0.84		
VHS30	1/4	1/4	6.4	0.45	1.7	6.2	0.38	1.7		
V11330	3/8	1/4	8.3	0.41	2.3	7.0	0.41	1.9		
	1/4		7.3	0.49	2.0	8.5	0.35	2.3		
VHS40	3/8	3/8	10.9	0.45	3.0	11.6	0.40	3.1		
	1/2		14.2	0.39	3.8	13.3	0.43	3.6		
VHS40-06	3/4	1/2	18.3	0.31	5.0	17.7	0.37	4.8		
VHS50	3/4	1/2	23.8	0.41	6.4	21.8	0.41	5.9		
V11330	1	1/2	31.9	0.33	8.6	23.5	0.44	6.4		

Symbol 2	
3 1	Pressure relief 3 port valve
E Key can I pressure	be mounted when residual is released.
IN OUT EXH	2 x P1 (Port size)  P2 (Port size)

Model	Standard specifications										
iviodei	P <sub>1</sub>	P <sub>2</sub>	Α	В	С	D	Е	F	G	Н	ı
VHS20	1/8, 1/4	1/8	66.4	22.3	40	37.5	14	46.6	33.6	28	37.5
VHS30	1/4, 3/8	1/4	80.3	29.4	53	49	19	52	38	30	49
VHS40	1/4, 3/8, 1/2	3/8	104.9	38.5	70	63	22	58	44	36	63
VHS40-06	3/4	1/2	110.4	42	75	63	22	58	44	44	63
VHS50	3/4, 1	1/2	134.3	53	90	76	26	76	61	53	81

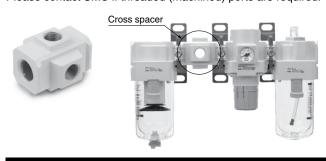
Note) Use an air filter on the inlet side for operating protection.

### Cross Spacer: M5 x 0.8, 1/8, 1/4, 3/8, 1/2

Pipings are possible in all 4 directions.

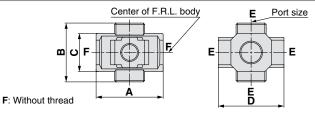
IN/OUT ports are not machined for threads.

Please contact SMC if threaded (machined) ports are required.



### **Caution on Mounting**

- 1. When mounting a cross spacer directly on the IN side of the lubricator, be sure to use the AKM series check valve between the lubricator and cross spacer.
- Factory mounting of a cross spacer on the AC model is available as a special order.



Model Note)	E (Port size)	Α	В	С	D	Applicable model		
Y14-M5-A	M5	23	16	14	25	AC10□-A		
Y24-□01-A	1/8	40	40	22	40	AC20□-B		
Y24-□02-A	1/4	40				ACZUL-B		
Y34-□01-A	1/8	49	43	28	48	AC25□-B, AC30□-B		
Y34-□02-A	1/4	49	43	20	40	AC25L-B, AC30L-B		
Y44-□02-A	1/4	60	48	36	54	AC40□-B		
Y44-□03-A	3/8	60	40	30	34	AC40U-B		
Y54-□03-A	3/8	72	62	40	62	AC40□-06-B		
Y54-□04-A	1/2	12	02	40	02	AC40 10-D		

Note)  $\Box$  in model numbers indicates a pipe thread type. No indication is necessary for Rc; however, indicate N for NPT, and F for G.

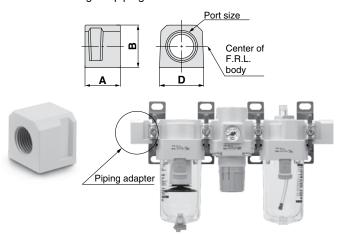
\* If threaded IN/OUT ports are required, they are available as a special order. Please contact SMC. \*Two hexagon socket head plugs are included in the package.



# Series AC

#### Piping Adapter: M5 x 0.8, 1/8, 1/4, 3/8, 1/2, 3/4, 1

A piping adapter allows installation/removal of the component without removing the piping and thus makes maintenance easier.



Model Note)	Port size	Α	В	D	Applicable model
E100-M5-A	M5 x 0.8	10	14	14	AC10□-A
E200-□01-A	1/8				
E200-□02-A	1/4	29.8	23.5	28	AC20□-B
E200-□03-A	3/8				
E300-□02-A	1/4				
E300-□03-A	3/8	31.8	30	30	AC25□-B, AC30□-B
E300-□04-A	1/2				
E400-□02-A	1/4				
E400-□03-A	3/8	31.8	36	36	AC40□-B
E400-□04-A	1/2	31.6	30	30	AC40□-B
E400-□06-A	3/4				
E500-□06-A	3/4	31.8	40	44	AC40□-06-B
E600-□06-A	3/4	35	48	53	AC50-B, AC55-B, AC60-B, AC50A-B, AC60A-B, AC50B-B.
E600-□10-A	1		0	55	AC55B-B, AC60B-B

Note)  $\Box$  in model numbers indicates a pipe thread type. No indication is necessary for Rc; however, indicate N for NPT, and F for G.

- \* Separate interfaces are required for modular unit.
- \* Factory mounting of a piping adapter on the AC models is available as a special order.

IS10E-	30		03	_	-A
	0	2	6	4	

- Semi-standard: Select one each for a to d.
- Semi-standard symbol: When more than one specification is required, indicate in alphanumeric order. Example) IS10E-30N03-6PRZ

	απρι	c) 10	102 001100 011	<u>'</u>						
		_		Symbol	Description	Body size 20   30   40				
				Nil	Rc		•			
2		Pipe	thread type	N Note)	NPT					
9			**	F Note)	G			•		
				+						
				01	1/8	•	<u> </u>	_		
				02	1/4	•	•	•		
8		F	Port size	03	3/8	•	•	•		
				04	1/2	_	•	•		
				06	3/4	_	<u> </u>			
				+ Nil	15 to 58 psi (0.1 to 0.4 MPa)					
		а	Set pressure							
		a	range	6 Note 1)	15 to 87 psi (0.1 to 0.6 MPa)					
				+						
	ا ج		Lead wire	Nil	0.5 m					
	gal	b	length	L	3 m					
4	l al		iongar	Z	5 m					
U	<u>-</u>			+						
	Semi-standard	С	Pressure unit of	Nil	MPa					
	0)	Ŭ	the scale plate	P Note 2)	MPa/psi dual scale					
		d	Mounting	Nil	Right					
		u	position	R	Left					

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

Note 2) For pipe thread type: NPT only. This product is for overseas use only according to the new Measurement Law. (The SI unit type is provided for use in Japan.)

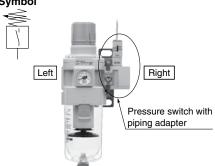
#### **Specifications**

Fluid	Air
Ambient and fluid temperature	23 to 140°F (-5 to 60°C) (with no freezing)
Proof pressure	145 psi (1.0 MPa)
Maximum operating pressure	102 psi (0.7 MPa)
Set pressure range (when OFF)	29 to 58 psi (0.1 to 0.4 MPa)
Hysteresis	11.6 psi (0.08 MPa) or less

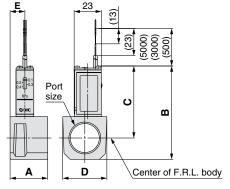
#### **Switch Characteristics**

OWITON ONALGOTOTION									
Contact point configuration	1a								
Maximum contact point capacity	2 VA (AC), 2 W (DC)								
Operating voltage: AC, DC	100 V or less								
	12 V to 24 V AC, DC: 50 mA								
Maximum operating current	48 V AC, DC: 40 mA								
	100 V AC, DC: 20 mA								









Model Note 1)	Port size	Α	В	С	D	Е	Applicable model
IS10E-20□01-A	1/8						
IS10E-20□02-A	1/4	29.8	66.3	55.3	28	16	AC20□-B
IS10E-20□03-A	3/8						
IS10E-30□02-A	1/4						ACOF D
IS10E-30□03-A	3/8	31.8	72.8	58.8	30	13	AC25□-B, AC30□-B
IS10E-30□04-A	1/2						A000-B
IS10E-40□02-A	1/4						
IS10E-40□03-A	3/8	31.8	78.8	60.8	37	12.5	Note 2)
IS10E-40□04-A	1/2	31.0	/ 0.0	00.6	37	12.5	AC40□-B
IS10E-40□06-A	3/4						

Note 1)  $\square$  in the model numbers indicates a pipe thread type. No indication is necessary for Rc; however, indicate N for NPT, and F for G.

Note 2) Cannot be mounted on the AC40I-06-B. \* Separate interfaces are required for modular unit.

- \* The pressure switch on the AC40□-06-B can be mounted by screwing IS10-01S into the piping adapter E500-□06-A-X501 (with top-face thread Rc1/8). Products with a premounted switch are available as a special order. Please contact SMC regarding their availability.

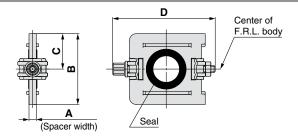


AΕ

# Series AC

# Accessories (Spacers/Brackets)

## **Spacer**



Model	Α	В	С	D	Applicable model
Y100-A	6	17.9	9	35.4	AC10□-A
Y200-A	3.2	31.2	15.6	44.9	AC20□-B
Y300-A	4.2	43.4	21.7	57.9	AC25□-B, AC30□-B
Y400-A	5.2	53	26.5	68.5	AC40□-B
Y500-A	5.2	57	28.5	75.6	AC40□-06-B
Y600-A	6.2	67.6	33.8	92.5	AC50□-B, AC55□-B, AC60□-B



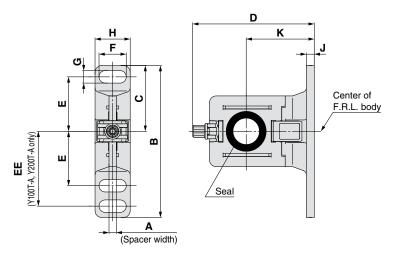
Y200-A Y400-A

#### **Replacement Parts**

Description	Material	Part no.											
Description	ivialeriai	Y100-A	Y200-A	Y300-A	Y400-A	Y500-A	Y600-A						
Seal	HNBR (NBR) Note 1)	Y120P-050AS Note 2)	Y220P-050S	Y320P-050S	Y420P-050S	Y520P-050S	Y620P-050S						

Note 1) ( ): Size 10 Note 2) Assembly of 2 O-rings

#### **Spacer with Bracket**



Model	Α	В	С	D	Е	EE	F	G	Н	J	K	Applicable model
Y100T-A	6	56	24.5	43.6	20	27	6.8	4.5	13	3	25	AC10□-A
Y200T-A	3.2	67	29	53.4	24	33	12	5.5	15.5	3.5	30	AC20□-B
Y300T-A	4.2	82	41	71.5	35	—	14	7	19	4	41	AC25□-B, AC30□-B
Y400T-A	5.2	96	48	86.1	40	_	18	9	26	5	50	AC40□-B
Y500T-A	5.2	96	48	89.6	40	_	18	9	26	5	50	AC40□-06-B
Y600T-A	6.0	120	60	118	50		20	11	31.2	6	70	AC50□-B, AC55□-B,
10001-A	0.2	120	00	110	50		20	' '	31.2	0	/0	AC60□-B



Y200T-A

Y400T-A

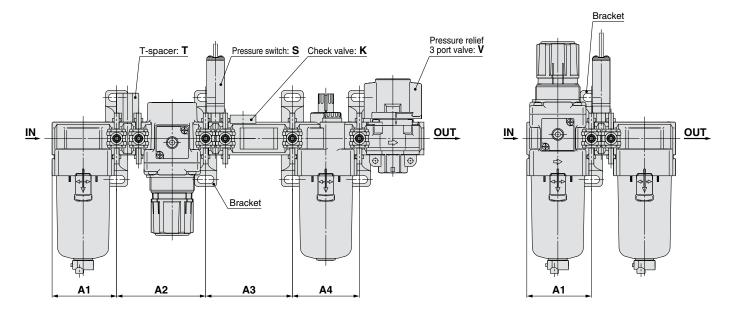
#### **Replacement Parts**

Description	Material	Part no.											
Description	Material	Y100T-A	Y200T-A	Y300T-A	Y400T-A	Y500T-A	Y600T-A						
Seal	HNBR (NBR) Note 1)	Y120P-050AS Note 2)	Y220P-050S	Y320P-050S	Y420P-050S	Y520P-050S	Y620P-050S						



# Series AC

# **Mounting Position for Spacer with Bracket**



Attachment	K		S		Т		V		KS		KT		KV				KST						
Model	A1	A2	А3	A1	A2	A1	A2	A1	A2	А3	A1	A2	А3	A1	A2	А3	A1	A2	А3	A4	A1	A2	A3
AC10-A	_	_	_	_	_	28	48.2	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_
AC20-B	41.6	43.2	43.2	41.6	43.2	41.6	61	41.6	43.2	43.2	41.6	43.2	57	41.6	61	43.2	41.6	43.2	43.2	43.2	41.6	61	57
AC25-B	55.1	57.2	57.2	55.1	57.2	55.1	76	55.1	57.2	57.2	55.1	57.2	74	55.1	76	57.2	55.1	57.2	57.2	57.2	55.1	76	74
AC30-B	55.1	57.2	57.2	55.1	57.2	55.1	76	55.1	57.2	57.2	55.1	57.2	74	55.1	76	57.2	55.1	57.2	57.2	57.2	55.1	76	74
AC40-B	72.6	75.2	75.2	72.6	75.2	72.6	99	72.6	75.2	75.2	72.6	75.2	95	72.6	99	75.2	72.6	75.2	75.2	75.2	72.6	99	95
AC40-06-B		_	_	77.6	80.2	77.6	104	77.6	80.2	80.2	_	_	_		_	_	_	_	_	_	_	_	_
AC50-B	_	_	_	93.1	96.2	93.1	124	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	
AC55-B		_	_	98.1	96.2	98.1	124		_	_	_	_	_	_	_	_	_	_	_	_			_
AC60-B	_	_	_	98.1	101.2	98.1	129	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_

Attachment		KS	SV			K.	TV			KS	TV		S	Т		sv			STV			TV	
Model	A1	A2	А3	A4	A1	A2	A3	A4	A1	A2	A3	A4	A1	A2	A1	A2	А3	A1	A2	A3	A1	A2	A3
AC10-A		_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_
AC20-B	41.6	43.2	57	43.2	41.6	61	43.2	43.2	41.6	61	57	43.2	41.6	61	41.6	43.2	57	41.6	61	57	41.6	61	43.2
AC25-B	55.1	57.2	74	57.2	55.1	76	57.2	57.2	55.1	76	74	57.2	55.1	76	55.1	57.2	74	55.1	76	74	55.1	76	57.2
AC30-B	55.1	57.2	74	57.2	55.1	76	57.2	57.2	55.1	76	74	57.2	55.1	76	55.1	57.2	74	55.1	76	74	55.1	76	57.2
AC40-B	72.6	75.2	95	75.2	72.6	99	75.2	75.2	72.6	99	95	75.2	72.6	99	72.6	75.2	95	72.6	99	95	72.6	99	75.2
AC40-06-B	_	_	_	_	_	_	_	_	_	_	_	_	77.6	104	77.6	80.2	102	77.6	104	102	77.6	104	80.2
AC50-B	_	_	_	_	_	_	_	_	_	_	_	_	93.1	124	93.1	189.3	124	93.1	124	124	93.1	124	96.2
AC55-B		_	_	_	_	_	_	_	_	_	_	_	98.1	124	_	_	_	_	_	_	_	_	_
AC60-B	_	_	_	_	_	_	_	_	_		_	_	98.1	129	_	_	_	_	_	_	_	_	_

Attachment	ŀ	(	S	١ ١	/	K	S		K۷			KSV		S	V
Model	A1	A2	A1	A1	A2	A1	A2	A1	A2	А3	A1	A2	A3	A1	A2
AC20A-B	41.6	43.2	41.6	41.6	43.2	41.6	57	41.6	43.2	43.2	41.6	57	43.2	41.6	57
AC30A-B	55.1	57.2	55.1	55.1	57.2	55.1	74	55.1	57.2	57.2	55.1	74	57.2	55.1	74
AC40A-B	72.6	75.2	72.6	72.6	75.2	72.6	95	72.6	75.2	75.2	72.6	95	75.2	72.6	95
AC40A-06-B	_	_	77.6	77.6	80.2	_	_	_	_	_	_	_	_	77.6	102
AC50A-B	_	_	93.1	93.1	96.2	_	_	_	_	_	_	_	_	93.1	124
AC60A-B	_	_	98.1	_	_	_	<u> </u>	_	<u> </u>	<u> </u>	<u> </u>	_	_	_	_

Attachment	S	Т	'	7	V	1	S	٧	S	<b>V</b> 1	Т	V	T	<del>/</del> 1
Model	A1	A1	A1	A2	A1	A2	A1	A2	A1	A2	A1	A2	A1	A2
AC10B-A	_	28	_	_	_	_	_	_	_	_	_	_	_	
AC20B-B	41.6	41.6	41.6	43.2	41.6	43.2	41.6	57	41.6	43.2	41.6	61	41.6	43.2
AC25B-B	55.1	55.1	55.1	57.2	55.1	57.2	55.1	74	55.1	57.2	55.1	76	55.1	57.2
AC30B-B	55.1	55.1	55.1	57.2	55.1	57.2	55.1	74	55.1	57.2	55.1	76	55.1	57.2
AC40B-B	72.6	72.6	72.6	75.2	72.6	75.2	72.6	95	72.6	75.2	72.6	99	72.6	75.2
AC40B-06-B	77.6	77.6	77.6	80.2	77.6	80.2	77.6	102	77.6	80.2	77.6	104	77.6	80.2
AC50B-B	93.1	93.1	93.1	189.3	93.1	96.2	93.1	124	93.1	96.2	93.1	124	93.1	96.2
AC55B-B	98.1	98.1	_	_	_	_	_	_	_	_	_	_	_	_
AC60B-B	98.1	98.1	_	_			_	_	_		_	_		_

Attachment		3	7	Γ		٧			V1			SV			SV1			TV			TV1	
Model	A1	A2	A1	A2	A1	A2	А3	A1	A2	А3	A1	A2	А3	A1	A2	А3	A1	A2	А3	A1	A2	A3
AC20C-B	41.6	43.2	41.6	43.2	41.6	43.2	43.2	41.6	43.2	43.2	41.6	43.2	57	41.6	43.2	43.2	41.6	43.2	61	41.6	43.2	43.2
AC25C-B	55.1	57.2	55.1	57.2	55.1	57.2	57.2	55.1	57.2	57.2	55.1	57.2	74	55.1	57.2	57.2	55.1	57.2	76	55.1	57.2	57.2
AC30C-B	55.1	57.2	55.1	57.2	55.1	57.2	57.2	55.1	57.2	57.2	55.1	57.2	74	55.1	57.2	57.2	55.1	57.2	76	55.1	57.2	57.2
AC40C-B	72.6	75.2	72.6	75.2	72.6	75.2	75.2	72.6	75.2	75.2	72.6	75.2	95	72.6	75.2	75.2	72.6	75.2	99	72.6	75.2	75.2
AC40C-06-B	77.6	80.2	77.6	80.2	77.6	80.2	80.2	77.6	80.2	80.2	77.6	80.2	102	77.6	80.2	80.2	77.6	80.2	104	77.6	80.2	80.2

Attachment	S	\	7	٧	1	S	V	S	<b>V</b> 1
Model	A1	A1	A2	A1	A2	A1	A2	A1	A2
AC20D-B	41.6	41.6	43.2	41.6	43.2	41.6	57	41.6	43.2
AC30D-B	55.1	55.1	57.2	55.1	57.2	55.1	74	55.1	57.2
AC40D-B	72.6	72.6	75.2	72.6	75.2	72.6	95	72.6	75.2
AC40D-06-B	77.6	77.6	80.2	77.6	80.2	77.6	102	77.6	80.2

- A1: Dimension from the end of the IN side to the center of the mounting hole for the first bracket.
- A2: Mounting hole pitch between the first and the second brackets.
  A3: Mounting hole pitch between the second and the third brackets.
  A4: Mounting hole pitch between the third and the fourth brackets.

# **Modular Type Air Filters**

# Series AF/AFM/AFD

Air Filter Series AF	Model	Port size	Filtration µm	Options
	AF10-A	M5 x 0.8		
	AF20-A	1/8, 1/4		
COAss	AF30-A	1/4, 3/8		Bracket (Except AF10-A)
	AF40-A	1/4, 3/8, 1/2	5	
	AF40-06-A	3/4		Float type auto drain
	AF50-A	3/4, 1		
P.43 to 51	AF60-A	1		
Mist Separator Series AFM	AFM20-A	1/8, 1/4		
met.	AFM30-A	1/4, 3/8	0.3	Bracket
	AFM40-A	1/4, 3/8, 1/2	0.0	Float type auto drain
P.53 to 60	AFM40-06-A	3/4		
Micro Mist Separator Series AFD	AFD20-A	1/8, 1/4		
man,	AFD30-A	1/4, 3/8	0.01	Bracket
	AFD40-A	1/4, 3/8, 1/2	0.01	Float type auto drain
P.53 to 60	AFD40-06-A	3/4		

# **Air Filter**

# AF10-A to AF60-A

Symbol

Air Filter

Air Filter with Auto Drain









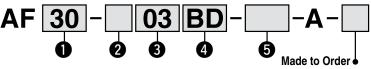


AF10-A

AF20-A

AF40-A

#### **How to Order**



(Refer to pages 50 and 51 for details.)

- 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)	AF30-03BD-R-A
----------	---------------

Symbol   Description   Box   10   20   30     Nil   Metric thread (M5)   •	ody size 40	50	60
10 20 30		50	60
Metric thread (M5)	- <u> </u>		
		_	<b>—</b>
Pine thread type	_		
NFT — V	_		
F Note 2) G — ● ●			
+			
M5 M5 x 0.8	- —	—	<b>-</b>
01 1/8 — • —	-   —	_	_
02 1/4 —		-	_
<b>3</b> Port size <b>03</b> 3/8 — — ●		—	_
04 1/2 — — —			—
06 3/4 — — —	- •	•	—
10 1	-   —		
+	·		
Nil Without mounting option			
B Note 3) With bracket — •			
+ With Site of the state of the			
Nil Without auto drain			
Note 4) N. (* (Normally closed ) I) rain port is closed when pressure is not applied	•	•	
auto drain    D   N.O. (Normally closed ) Drain port is closed when pressure is not applied.		•	
+			
Nil   Polycarbonate bowl   ●   ●			
2 Metal bowl    Metal bowl			
6 Nylon bowl			
Bowl Note 6)  8 Metal bowl with level gauge  — —			
	ote 7) Note	7) Note 7	) Note 7)
6C With bowl guard (Nylon bowl) — ● -N	ote 8) Note	8) Note 8	) Note 8)
+ Nil With drain cock Drain port Note 9)  J Note 10) Drain guide 1/4 W Note 11) Drain cock with barb fitting			
ਇ Nil With drain cock ● ● ●			
(5) $\frac{\overline{g}}{6}$ d Drain port Note 9) J Note 10) Drain guide 1/8			
J Note 10) Drain port Note 9 J Note 10) Drain guide 1/8 — — — — — — — — — — — — — — — — — — —			
<b>W</b> Note 11) Drain cock with barb fitting — — —			Ŏ
+			
Nil Flow direction: Left to right			
e Flow direction R Flow direction: Left to right  R Flow direction: Right to left			
+			
Nil Name plate and caution plate for bowl in imperial units: MPa			
f Pressure unit Z Note 12) Name plate and caution plate for bowl in imperial units: psi, °F	e 13) Note 13	3) Note 13)	Note 13)

Note 1) Drain guide is NPT1/8 (applicable to the AF20-A) and NPT1/4 (applicable to the AF30-A to AF60-A).

The auto drain port comes with ø3/8" One-touch fitting (applicable to the AF30-A to AF60-A). Note 2) Drain guide is G1/8 (applicable to the AF20-A) and G1/4 (applicable to the AF30-A to AF60-A). The auto drain port comes with ø10 One-touch fitting (applicable to the AF30-A to AF60-A).

Note 3) Option B is not assembled and supplied loose at the time of shipment. Assembly of a bracket and 2 mounting screws.

Note 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.

Note 5) If the compressor is small (0.75 kW, discharge flow is less than 3.5 scfm (100 L/min [ANR])), air leakage from the drain cock may occur during start of operations. N.C. type is recommended.

Note 6) Refer to Chemical data on page 46 for chemical resistance of the bowl.

Note 7) A bowl guard is provided as standard equipment (polycarbonate).

Note 8) A bowl guard is provided as standard equipment (nylon).

Note 9) The combination of float type auto drain: C and D is not available.

Note 10) Without a valve function

Note 11) The combination of metal bowl: 2 and 8 is not available.

Note 12) For pipe thread type: M5, NPT. This product is for overseas use only according to the new Measurement Law. (The SI unit type is provided for use in Japan.)

Note 13) O: For pipe thread type: M5, NPT only



# Air Filters Series AF10-A to AF60A

#### **Standard Specifications**

Model	AF10-A	AF20-A	AF30-A	AF40-A	AF40-06-A	AF50-A	AF60-A		
Port size	M5 x 0.8	1/8, 1/4	1/4, 3/8	1/4, 3/8, 1/2	3/4	3/4, 1	1		
Fluid				Air					
Ambient and fluid temperature			23 to 140 psi	(-5 to 60°C) (wit	h no freezing)				
Proof pressure			2	218 psi (1.5 MPa	.)				
Maximum operating pressure			-	145 psi (1.0 MPa	.)				
Nominal filtration rating				5 μm					
Drain capacity (cm³)	2.5	8	25		4	5			
Bowl material				Polycarbonate					
Bowl guard	_	Semi-standard (Steel)		Standard (Polycarbonate)					
Weight (kg)	0.06	0.08	0.18	0.36	0.41	0.87	1.00		

#### Options/Part No.

Optional specifications				Model			
Optional specifications	AF10-A	AF20-A	AF30-A	AF40-A	AF40-06-A	AF50-A	AF60-A
Bracket assembly Note)	_	AF22P-050AS	AF32P-050AS	AF42P-050AS	AF42P-070AS	AF52P	-050AS

Note) Assembly of a bracket and 2 mounting screws

#### **Bowl Assembly/Part No.**

David	Drain					Mode	el			
Bowl material	discharge mechanism	Drain port	Other	AF10-A	AF20-A	AF30-A	AF40-A	AF40-06-A	AF50-A	AF60-A
		With drain cock	_	C1SF-A	C2SF-A	_		_	_	
	Manual	Willi dialii cock	With bowl guard	_	C2SF-C-A	C3SF-A		C45	F-A	
	Manual discharge	Drain cock with barb fitting	With bowl guard	_	_	C3SF-W-A		C4SF	-W-A	
Polycarbonate	discriarge	With drain guide	_	_	C2SF□-J-A	_		_	_	
bowl		(without valve function)	With bowl guard	_	C2SF□-CJ-A	C3SF□-J-A		C4SF	□-J-A	
	Automatic	Normally closed (N.C.)	_	AD17-A	AD27-A	_		_	_	
	discharge Note)	Normally closed (N.C.)	With bowl guard	_	AD27-C-A	AD37□-A		AD4	7□-A	
	(Auto drain)	Normally open (N.O.)	With bowl guard	_	_	AD38□-A		AD4	B□-A	
		With drain cock	_	C1SF-6-A	C2SF-6-A	_		_	_	
		With drain cock	With bowl guard	_	C2SF-6C-A	C3SF-6-A		C4SI	-6-A	
	Manual discharge	Drain cock with barb fitting	With bowl guard	_	_	C3SF-6W-A		C4SF	-6W-A	
Nylon bowl	discriarge	With drain guide	_	_	C2SF□-6J-A	_		_	_	
INVIOLI DOWI		(without valve function)	With bowl guard	_	C2SF□-6CJ-A	C3SF□-6J-A		C4SF	⊒-6J-A	
	Automatic	Normally closed (N.C.)	_	AD17-6-A	AD27-6-A	_		_	_	
	discharge Note)	Normally closed (N.C.)	With bowl guard	_	AD27-6C-A	AD37□-6-A		AD47	□-6-A	
	(Auto drain)	Normally open (N.O.)	With bowl guard	_	_	AD38□-6-A		AD48	□-6-A	
		With drain cock	_	C1SF-2-A	C2SF-2-A	C3SF-2-A		C4SI	2-A	
	Manual	With drain cock	With level gauge	_	_	C3LF-8-A		C4LI	F-8-A	
	discharge	With drain guide	_	_	C2SF□-2J-A	C3SF□-2J-A		C4SF	⊒-2J-A	
Metal bowl		(without valve function)	With level gauge	_	_	C3LF□-8J-A		C4LF	⊒-8J-A	
IVICIAI DOWI	At = = 1! -	Normally closed (N.C.)	_	AD17-2-A	AD27-2-A	AD37□-2-A		AD47	□-2-A	
	Automatic discharge Note)	Normally Glosed (N.C.)	With level gauge	_	_	AD37□-8-A		AD47	□-8-A	
		Normally open (N.O.)	_	_	_	AD38□-2-A		AD48	□-2-A	
	(- 1010 0.011)	rtormany open (it.O.)	With level gauge	_	_	AD38□-8-A		AD48	□-8-A	

Note) Minimum operating pressure: N.O. type-0.1 MPa (AD38-A, AD48-A); N.C. type-15 PSI (0.1 MPa) (AD17-A, AD27-A) and 22 psi (0.15 MPa) (AD37-A, AD47-A). Bowl assembly for the AF20-A to AF60-A models comes with a bowl seal.

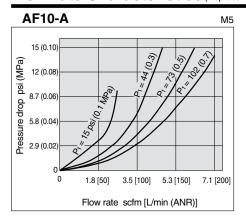
in bowl assembly part numbers indicates a pipe thread type (applicable tubing for auto drain).

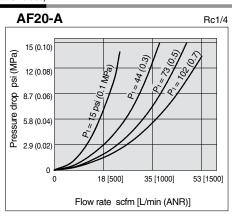
No indication is necessary for Rc thread; however, indicate N for NPT thread, and F for G thread. (For auto drain, Nil: ø10, N: ø3/8")

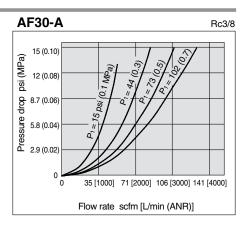
Please consult with SMC separately for psi and °F unit display specifications.

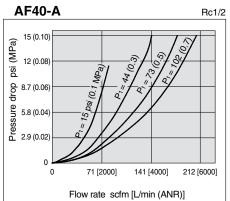
# Series AF10-A to AF60-A

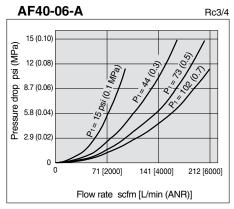
#### Flow-rate Characteristics (Representative values)

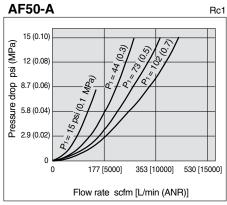


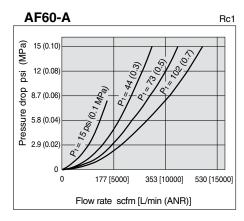












# **⚠** Specific Product Precautions

Be sure to read this before handling. Refer to the back cover for Safety Instructions, "Handling Precautions for I SMC Products" and the Operation Manual for F.R.L. Precautions, http://www.smcworld.com

#### **Design/Selection**

# **Marning**

 The standard bowl for the air filter, filter regulator, and lubricator, as well as the sight dome for the lubricator are made of polycarbonate. Do not use in an environment where they are exposed to or come in contact with organic solvents, chemicals, cutting oil, synthetic oil, alkali, and thread lock solutions.

Effects of atmosphere of organic solvents and chemicals, and where these elements are likely to adhere to the equipment.

Chemical data for substances causing degradation (Reference)

			Mat	erial
Type	Chemical name	Application examples	Polycar- bonate	Nylon
Acid	Hydrochloric acid Sulfuric acid, Phosphoric acid Chromic acid	Acid washing liquid for metals	Δ	×
Alkaline	Sodium hydroxide (Caustic soda) Potash Calcium hydroxide (Slack lime) Ammonia water Carbonate of soda	Degreasing of metals Industrial salts Water-soluble cutting oil	×	0
Inorganic salts	Sodium sulfide Sulfate of potash Sulfate of soda	_	×	Δ
Chlorine solvents	Carbon tetrachloride Chloroform Ethylene chloride Methylene chloride	Cleansing liquid for metals Printing ink Dilution	×	Δ
Aromatic series	Benzene Toluene Paint thinner	Coatings Dry cleaning	×	Δ
Ketone	Acetone Methyl ethyl ketone Cyclohexane	Photographic film Dry cleaning Textile industries	×	×
Alcohol	Ethyl alcohol IPA Methyl alcohol	Antifreeze Adhesives	Δ	×
Oil	Gasoline Kerosene	_	×	0
Ester	Phthalic acid dimethyl Phthalic acid diethyl Acetic acid	Synthetic oil Anti-rust additives	×	0
Ether	Methyl ether Ethyl ether	Brake oil additives	×	0
Amino	Methyl amino	Cutting oil Brake oil additives Rubber accelerator	×	×
Others	Thread-lock fluid Seawater Leak tester	_	×	Δ
O: Essentia	Ily safe $\triangle$ : Some effective	ets may occur. ×: Effe	ects will o	ccur.

When the above factors are present, or there is some doubt, use a metal bowl for safety.

#### **Maintenance**

# **⚠** Warning

 Replace the element every 2 years or when the pressure drop becomes 15 psi (0.1 MPa), whichever comes first, to prevent damage to the element.

#### Mounting/Adjustment

#### **⚠** Caution

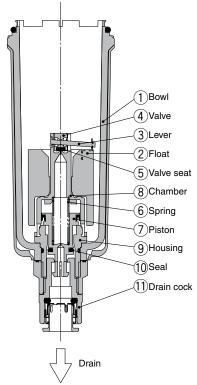
 When the bowl is installed on the air filter (AF30-A to AF60-A), install them so that the lock button lines up to the groove of the front (or the back) of the body to avoid drop or damage of the bowl.



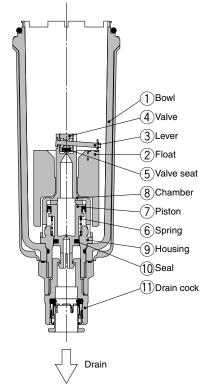
### Series AF10-A to AF60-A

#### **Working Principle: Float Type Auto Drain**

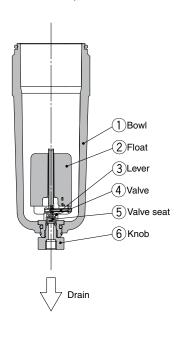
#### N.O. type: AD38-A, AD48-A



#### N.C. type: AD37-A, AD47-A



# Compact auto drain N.C. type: AD17-A, AD27-A



#### When pressure inside the bowl is released:

When pressure is released from the bowl 1, the piston 7 is lowered by the spring 6.

The sealing action of the seal 10 is interrupted, and the outside air flows inside the bowl 11 through the housing hole 9 and the drain cock 11.

Therefore, if there is an accumulation of condensate in the bowl  $\bigcirc$ , it will drain out through the drain cock.

#### When pressure is applied inside the howl:

When pressure is 0.1 MPa or more, the force of the piston ⑦ surpasses the force of the spring ⑥, and the piston goes up.

This pushes seal 10 up so that it creates a seal, and the inside of the bowl 1, is shut off from the outside air.

If there is no accumulation of condensate in the bowl ① at this time, the float ② will be pulled down by its own weight, causing the valve ④, which is connected to the lever ③, to seal the valve seat ⑤

#### When there is an accumulation of condensate in the bowl:

The float ② rises due to its own buoyancy and the seal at the valve seat ⑤ is interrupted.

This allows the pressure inside the bowl 1 to enter the chamber 8. The result is that the combined pressure inside the chamber 8 and the force of the spring 6 lowers the piston 7.

This causes the sealing action of the seal 10 to be interrupted, and the accumulated condensate in the bowl 1 drains out through the drain cock 11.

Turning the drain cock  $\widehat{\mbox{\it 11}}$  manually counter-clockwise lowers the piston  $\widehat{\mbox{\it 7}}$ , and causes the seal created by the seal  $\widehat{\mbox{\it 10}}$  to be interrupted, thus allowing the condensate to drain out.

#### When pressure inside the bowl is released:

Even when pressure inside the bowl 1 is released, spring 6 keeps the piston 7 in its upward position.

This keeps the seal created by the seal 1 in place; thus, the inside of the bowl 1 is shut off from the outside air.

Therefore, even if there is an accumulation of condensate in the bowl ①, it will not drain out.

# When pressure is applied inside the bowl:

Even when pressure is applied inside the bowl 1, the combined force of the spring 6 and the pressure inside the bowl 1 keeps the piston 2 in its upward position.

This maintains the seal created by the seal 1 in place; thus, the inside of the bowl 1 is shut off from the outside air.

If there is no accumulation of condensate in the bowl ① at this time, the float ② will be pulled down by its own weight, causing the valve ④, which is connected to the lever ③, to seal the valve seat ⑤

#### When there is an accumulation of condensate in the bowl:

The float ② rises due to its own buoyancy and the seal at the valve seat ⑤ is interrupted. This allows the pressure inside the bowl ① to enter the chamber ⑥.

The result is that the pressure inside the chamber 8 surpasses the force of the spring 6 and pushes the piston 7 downward.

This causes the sealing action of the seal 0 to be interrupted and the accumulated condensate in the bowl 1 drains out through the drain cock 1. Turning the drain cock 1 manually counterclockwise lowers the piston 2, and causes the seal created by the seal 1 to be interrupted, thus allowing the condensate to drain out.

#### When pressure inside the bowl is released:

Even when pressure inside the bowl 1 is released, the weight of the float 2 causes the valve 4, which is connected to the lever 3, to seal the valve seat 5. As a result, the inside of the bowl 1 is shut off from the outside air.

Therefore, even if there is an accumulation of condensate in the bowl ①, it will not drain out.

# When pressure is applied inside the bowl:

Even when pressure is applied inside the bowl ①, the weight of the float ② and the differential pressure that is applied to the valve ④ cause the valve ④ to seal the valve seat ⑤, and the outside air is shut off from the inside of the bowl ①

#### When there is an accumulation of condensate in the bowl:

The float ② rises due to its own buoyancy and the seal at the valve seat ⑤ is interrupted.

The condensate inside the bowl  $\bigcirc$  drains out through the knob  $\bigcirc$ .

Turning the knob ® manually counterclockwise lowers it and causes the sealing action of the valve seat ⑤ to be interrupted, which allows the condensate to drain out.

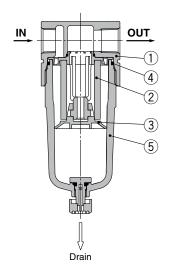


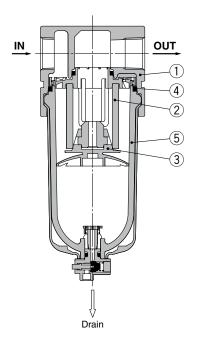
#### Construction

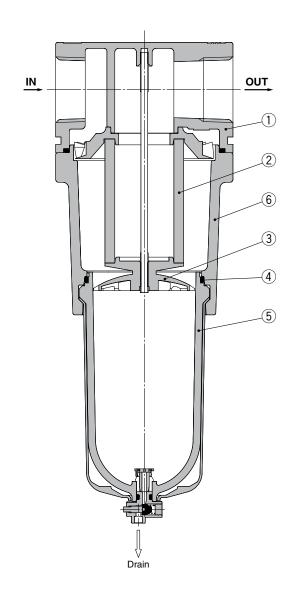
#### AF10-A/AF20-A

#### AF30-A to AF40-06-A

#### AF50-A/AF60-A







#### **Component Parts**

No.	Description	Material	Model	Color	
1	Body	Zinc die-cast	AF10-A	White	
•	Body	Aluminum die-cast	AF20-A to AF60-A	Wille	
6	Housing	Aluminum die-cast	AF50-A/AF60-A	White	

#### **Replacement Parts**

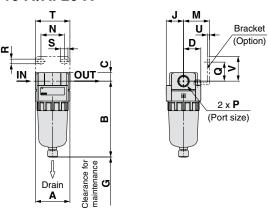
No.	Description	Material	Part no.								
INO.	Description	Waterial	AF10-A	AF20-A	AF30-A	AF40-A	AF40-06-A	AF50-A	AF60-A		
2	Filter element	Non-woven fabric	AF10P-060S	AF20P-060S	AF30P-060S	AF40F	AF40P-060S		AF60P-060S		
3	Baffle	PBT	AF10P-040S Note 2)	AF22P-040S	AF32P-040S	AF42F	P-040S	AF50P-040S	AF60P-040S		
4	Bowl seal	NBR	C1SFP-260S	C2SFP-260S	C32FP-260S	C42FP-260S		P-260S			
5	Bowl assembly Note 1)	Polycarbonate	C1SF-A	C2SF-A	C3SF-A	A C4SF-A		SF-A	-		

Note 1) Bowl seal is included for the AF20-A to AF60-A. Please contact SMC regarding the supply of bowl assembly with psi and °F unit specifications. Note 2) The baffle material for the AF10-A (AF10P-040S) only is polyacetal.

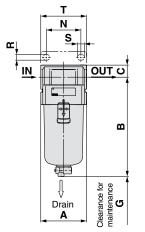
# Series AF10-A to AF60-A

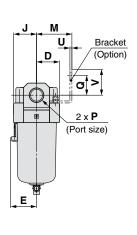
#### **Dimensions**

#### AF10-A/AF20-A

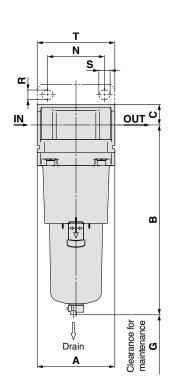


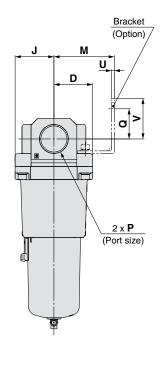
#### AF30-A to AF40-06-A





#### AF50-A/AF60-A





Applicable model	AF10-A	/AF20-A	AF2	20-A	AF30-A to AF60-A		
Optional/Semi-standard specifications	With auto drain (N.C.)	Metal bowl	With drain guide	Metal bowl with drain guide	With auto drain (N.O./N.C.)		
Dimensions	M5 x 0.8	n	Width across flats 14	Width across flats 14	N.O.: Black N.C.: Gray  Thread type/Rc, G: ø10 One-touch fitting Thread type/NPT: ø3/8° One-touch fitting		

Applicable model			AF	30-A to AF60-A		
Optional/Semi-standard specifications	Metal bowl	Metal bowl with drain guide	Metal bowl with level gauge	Metal bowl with level gauge, with drain guide	With drain guide	Drain cock with barb fitting
Dimensions		Width across flats 17	B	Width across flats 17	Width across flats 17	Barb fitting applicable tubing: T0604

												Option	al spe	cifica	tions			Semi-standard specifications					
Model	Standard specifications						Bracket mount				With auto drain	With barb fitting	With drain guide	Metal bowl	Metal bowl with drain guide	Metal bowl with level gauge	Metal bowl with level gauge,with drain guide						
	P A B C D E G J					М	N	Q	R	S	T	U	٧	В	В	В	В	В	В	В			
AF10-A	M5 x 0.8	25	59.9	7	12.5	_	25	12.5	_	_	_	_	_	_	_	_	77.9	_	_	59.3	_	_	_
AF20-A	1/8, 1/4	40	87.6	9.8	20	_	25	20	30	27	22	5.4	8.4	40	2.3	28	104.9	_	91.4	87.4	93.9	_	_
AF30-A	1/4, 3/8	53	115.1	14	26.7	30	35	26.7	41	40	23	6.5	8	53	2.3	30	156.8	123.6	121.9	117.6	122.1	137.6	142.1
AF40-A	1/4, 3/8, 1/2	70	147.1	18	35.5	38.4	40	35.5	50	54	26	8.5	10.5	70	2.3	35	186.9	155.6	153.9	149.6	154.1	169.6	174.1
AF40-06-A	3/4	75	149.1	20	35.5	38.4	40	35.5	50	54	25	8.5	10.5	70	2.3	34	188.9	157.6	155.9	151.6	156.1	171.6	176.1
AF50-A	3/4, 1	90	220.1	24	45	_	30	45	70	66	35	11	13	90	3.2	47	259.9	228.6	226.9	222.6	227.1	242.6	247.1
AF60-A	1	95	234.1	24	47.5	_	30	47.5	70	66	35	11	13	90	3.2	47	273.9	242.6	240.9	236.6	241.1	256.6	261.1

# Air Filter/AF20-A to AF40-06-A Made to Order

Please contact SMC for detailed dimensions, specifications and lead times.

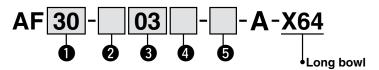
#### 1 Long Bowl

Drain capacity is greater than that of standard models.

#### **Applicable Model/Drain Capacity**

Model	AF20-A	AF30-A	AF40-A	AF40-06-A
Port size	1/8, 1/4	1/4, 3/8	1/4, 3/8, 1/2	3/4
Drain capacity (cm³)	19	43	8	8

Note) Please consult with SMC for dimensions.



- 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) AF30-03B-2R-A-X64

	_					0			
	_		Symbol	Description		Body size			
					20	30	40		
			Nil	Rc	•	•	•		
2	Pipe	e thread type	N Note 1)	NPT	•	•	•		
			F Note 2)	G	•	•	•		
			+						
			01	1/8	•	_			
			02	1/4	•	•	•		
8		Port size	03	3/8	_	•	•		
			04	1/2	_	_	•		
			06	3/4		_	•		
			+						
4	Onti	on (Mounting)	Nil	Without mounting option	•	•	•		
9	Opti	on (wounting)	B Note 3)	With bracket	•	•	•		
			+						
			Nil	Polycarbonate bowl	•	•	•		
		Bowl Note 4)	Bowl Note 4)		2	Metal bowl	•	•	•
	а			6	Nylon bowl	•	•	•	
					С	With bowl guard	•	Note 5)	Note 5)
			6C	With bowl guard (Nylon bowl)	•	Note 6)	Note 6)		
- ا			+						
dar			Nil	With drain cock	•	•	•		
Semi-standard	Ь	Drain port	Note 7)	Drain guide 1/8	•	_			
9:5	~	Brain port		Drain guide 1/4		•	•		
Sen			W Note 8)	Drain cock with barb fitting (for ø6 x ø4 nylon tube)		•	•		
"			+						
	C	Flow direction	Nil	Flow direction: Left to right	•	•	•		
		5.17 G.17001011	R	Flow direction: Right to left	•				
			+	7					
	d	Pressure unit	Nil	Name plate and caution plate for bowl in imperial units: MPa	•	•	•		
	"	1 1000die dille	Z Note 9)	Name plate and caution plate for bowl in imperial units: psi, °F	Note 10)	Note 10)	Note 10)		

Note 1) Drain guide is NPT1/8 (applicable to the AF20-A) and NPT1/4 (applicable to the AF30-A to AF40-06-A).

The auto drain port comes with  $\varnothing 3/8$ " One-touch fitting (applicable to the AF30-A to AF40-06-A). Note 2) Drain guide is G1/8 (applicable to the AF20-A) and G1/4 (applicable to the AF30-A to AF40-06-A).

Note 3) Option B is not assembled and supplied loose at the time of shipment. Assembly of a bracket and 2 mounting screws.

Note 4) Refer to Chemical data on page 46 for chemical resistance of the bowl.

Note 5) A bowl guard is provided as standard equipment (polycarbonate).

Note 6) A bowl guard is provided as standard equipment (nylon).

Note 7) Without a valve function

Note 8) The combination of metal bowl: 2 and 8 is not available.

Note 9) For pipe thread type: NPT. This product is for overseas use only according to the new Measurement Law. (The SI unit type is provided for use in Japan.)

Note 10) O: For pipe thread type: NPT only



# Air Filter/AF20-A to AF40-06-A Made to Order



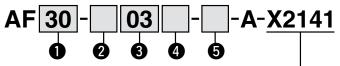
Please contact SMC for detailed dimensions, specifications and lead times.

#### 2 With Element Service Indicator

Clogging status of elements can be checked visually.

#### **Applicable Model**

Model	AF20-A	AF30-A	AF40-A	AF40-06-A	
Port size	1/8, 1/4	1/4, 3/8	1/4, 3/8, 1/2	3/4	



- 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) AF30-03BD-2R-A-X2141

Example) AF30-036D-2R-A-X214

**♦ With element service indicator**A special body type is required to mount the element service indicator. It cannot be mounted on a standard body.

	_					0	
			Symbol	Description		Body size	
					20	30	40
			Nil	Rc	•	•	•
2	Pipe	thread type	N Note 1)	NPT	•	•	•
			F Note 2)	G	•	•	•
			+				
			01	1/8	•	_	_
			02	1/4	•	•	•
<b>8</b> ⊟		Port size	03	3/8		•	•
			04	1/2		_	•
			06	3/4	_	_	•
			+				
	а	Mounting	Nil	Without mounting option	•	•	•
_		Widanting	B Note 3)	With bracket	•	•	•
Option			+				
٥	-	Float type	Nil	Without auto drain	•	•	•
	b	auto drain	C Note 4)	N.C. (Normally closed) Drain port is closed when pressure is not applied.	•	•	•
		auto uram	D Note 5)	N.O. (Normally open) Drainport is open when pressure is not applied.	_	•	•
			+				
			Nil	Polycarbonate bowl	•	•	•
			2	Metal bowl	•	•	•
	C	Bowl Note 6)	6	Nylon bowl	•	•	•
		20111	8	Metal bowl with level gauge		•	•
			С	With bowl guard	•	Note 7)	Note 7)
ō			6C	With bowl guard (Nylon bowl)	•	Note 8)	Note 8)
Semi-standard	I		+				
stan		N	J Note 10)	Drain guide 1/8	•	_	_
انڌ ا	d	Drain port Note 9)		Drain guide 1/4	_	•	•
Sen			<b>W</b> Note 11)	Drain cock with barb fitting (for ø6 x ø4 nylon tube)		•	•
0)			+				
	ll e	Flow direction	Nil	Flow direction: Left to right	•	•	•
			R	Flow direction: Right to left	•	•	•
			+				
	f	Pressure unit	Nil	Name plate and caution plate for bowl in imperial units: MPa	O No. 40	O No. 10	O Nov. 45
			<b>Z</b> Note 12)	Name plate and caution plate for bowl in imperial units: psi, °F	Note 13)	Note 13)	Note 13)

Note 1) Drain guide is NPT1/8 (applicable to the AF20-A) and NPT1/4 (applicable to the AF30-A to AF40-06-A).

The auto drain port comes with ø3/8" One-touch fitting (applicable to the AF30-A to AF40-06-A).

Note 2) Drain guide is G1/8 (applicable to the AF20-A) and G1/4 (applicable to the AF30-A to AF40-06-A).

Note 3) Option B is not assembled and supplied loose at the time of shipment. Assembly of a bracket and 2 mounting screws.

Note 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.

Note 5) If the compressor is small (0.75 kW, discharge flow is less than 3.5 scfm (100 L/min [ANR])), air leakage from the drain cock may occur during start of operations. N.C. type is recommended.

Note 6) Refer to Chemical data on page 46 for chemical resistance of the bowl.

Note 7) A bowl guard is provided as standard equipment (polycarbonate).

Note 8) A bowl guard is provided as standard equipment (nylon).

Note 9) The combination of float type auto drain: C and D is not available.

Note 10) Without a valve function

Note 11) The combination of metal bowl: 2 and 8 is not available.

Note 12) For pipe thread type: NPT. This product is for overseas use only according to the new Measurement Law. (The SI unit type is provided for use in Japan.)

Note 13)  $\bigcirc$ : For pipe thread type: NPT only



## **Mist Separator**

# AFM20-A to AFM40-A **Micro Mist Separator**

# AFD20-A to AFD40-A

- Series AFM Nominal filtration rating: 0.3 μm
- Series AFD Nominal filtration rating: 0.01 μm

**How to Order** 



Micro Mist Separator





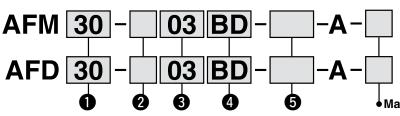
AFM20-A

AFM40-A





AFD20-A AFD40-A



Made to Order (Refer to pages 59 and 60 for details.)

Example) AFM30-03BD-R-A

• 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.

			<i>y</i> •	• Made to Order (He	lei to pages 33 a		
	_					0	
			Symbol	Description		Body size	
					20	30	40
			Nil	Rc	•	•	•
2	Pipe	thread type	N Note 1)	NPT	•	•	•
			F Note 2)	G	•	•	•
			+				
			01	1/8	•	_	_
			02	1/4	•	•	•
3		Port size	03	3/8	_	•	•
			04	1/2	_	_	•
			06	3/4	_	_	•
			+				
		Mounting	Nil	Without mounting option	•	•	•
	a	Mounting	B Note 3)	With bracket	•	•	•
<u>.</u> j. j.			+				'
Option	-	[] a a b b a	Nil	Without auto drain	•	•	•
	b	Float type auto drain	C Note 4)	N.C. (Normally closed) Drain port is closed when pressure is not applied.	•	•	•
		auto diairi	D Note 5)	N.O. (Normally open) Drain port is open when pressure is not applied.	_	•	•
			+				
			Nil	Polycarbonate bowl	•	•	•
			2	Metal bowl	•	•	•
	C	Bowl Note 6)	6	Nylon bowl	•	•	•
	[	DOWI 7	8	Metal bowl with level gauge	_	•	•
			С	With bowl guard	•	Note 7)	Note 7)
			6C	With bowl guard (Nylon bowl)	•	Note 8)	Note 8)
교			+				
_   ğ			Nil	With drain cock	•	•	•
∌  iş		Drain port Note 12)	Note 9)	Drain guide 1/8	•	_	_
Semi-standard	"	Diam port	J,	Drain guide 1/4		•	•
ြတ္တ			<b>W</b> Note 13)	Drain cock with barb fitting (for ø6 x ø4 nylon tube)	_	•	•
			+				
	ll e	Flow direction	Nil	Flow direction: Left to right	•	•	•
		1 low direction	R	Flow direction: Right to left	•	•	•
			+				
	l f	Pressure unit	Nil	Name plate and caution plate for bowl in imperial units: MPa	•	•	•
		1 1000aro ariit	<b>Z</b> Note 10)	Name plate and caution plate for bowl in imperial units: psi, °F	Note 11)	Note 11)	Note 11)

Note 1) Drain guide is NPT1/8 (applicable to the AFM20-A, AFD20-A) and NPT1/4 (applicable to the AFM30-A/40-A, AFD30-A/40-A).

The auto drain port comes with ø3/8" One-touch fitting (applicable to the AFM30-A/40-A, AFD30-A/40-A).

Note 2) Drain guide is G1/8 (applicable to the AFM20-A, AFD20-A) and G1/4 (applicable to the AFM30-A/40-A, AFD30-A/40-A).

Note 3) A bracket is not assembled and supplied loose at the time of shipment. Including 2 mounting screws

Note 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.

Note 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 start of operations. N.C. type is recommended.

Note 6) Refer to Chemical data on page 56 for chemical resistance of the bowl.

Note 7) A bowl guard is provided as standard equipment (polycarbonate). Note 8) A bowl guard is provided as standard equipment (nylon).

Note 9) Without a valve function

Note 10) For pipe thread type: NPT. This product is for overseas use only according to the new Measurement Law. (The SI unit type is provided for use in Japan.) Note 11) v: For pipe thread type: NPT only

Note 12) The combination of float type auto drain: C and D is not available.

Note 13) The combination of metal bowl: 2 and 8 is not available.



# Mist Separator Series AFM20-A to AFM40-A Micro Mist Separator Series AFD20-A to AFD40-A

#### **Standard Specifications**

Model		AFM20-A AFD20-A	AFM30-A AFD30-A	AFM40-A AFD40-A	AFM40-06-A AFD40-06-A		
Port size		1/8, 1/4	1/4, 3/8	1/4, 3/8, 1/2	3/4		
Fluid			A	ir			
Ambient and fluid temperature	)		23 to 140°F (- 5 to 60	°C) (with no freezing)			
Proof pressure			218 psi (1	1.5 MPa)			
Maximum operating pressure			145 psi (1	1.0 MPa)			
Minimum operating pressure			7.3 psi (0				
Nominal filtration rating	AFM20-A to AFM40-06-A		0.3 μm (99.9% filt	ered particle size)			
Nominal initiation rating	AFD20-A to AFD40-06-A						
Outlet side oil mist	AFM20-A to AFM40-06-A						
concentration	AFD20-A to AFD40-06-A	MAX 0.1 mg/m³ (ANR) (Before saturated with oil 0.01 mg/m³ (ANR) or less ≈ 0.008 ppm) Note 2) Note 3)					
Rated flow scfm (L/min (ANR))	AFM20-A to AFM40-06-A	7.1 (200)	16 (450)	39 (1	100)		
nated now scill (Elilli (ANT))	AFD20-A to AFD40-06-A	4.2 (120)	8.5 (240)	21 (600)			
Drain capacity (cm³)		8 25 45					
Bowl material		Polycarbonate					
Bowl guard		Semi-standard (Steel) Standard (Polycarbonate)					
Weight (kg)		0.09	0.19	0.38	0.43		

Note 1) Conditions: Inlet pressure: 102 psi (0.7MPa; The rated flow varies depending on the inlet pressure.

#### Options/Part No.

			Model						
Optional specifications		AFM20-A AFD20-A	AFM30-A AFD30-A	AFM40-A AFD40-A	AFM40-06-A AFD40-06-A				
Bracket assembly Note 1)		AF22P-050AS	AF32P-050AS	AF42P-050AS	AF42P-070AS				
Float type auto drain Note 2) Note 3)	N.C.	AD27-A	AD37-A	AD4	17-A				
rioat type auto urain	N.O.	_	AD38-A	AD4	18-A				

Note 1) Assembly of a bracket and 2 mounting screws

#### **Bowl Assembly/Part No.**

Bowl	Drain				Mod	del		
material	discharge mechanism	Drain port	Other	AFM20-A AFD20-A	AFM30-A AFD30-A	AFM40-A AFD40-A	AFM40-06-A AFD40-06-A	
		With drain cock	_	C2SF-A	_	-	_	
	Manual	With drain cock	With bowl guard	C2SF-C-A	C3SF-A	C4SF-A		
	discharge	Drain cock with barb fitting	With bowl guard	_	C3SF-W-A	C4SI	-W-A	
Polycarbonate	discriarge	With drain guide	_	C2SF□-J-A	_	-	_	
bowl		(without valve function)	With bowl guard	C2SF□-CJ-A	C3SF□-J-A	C4SF□-J-A		
ı	Automatic Note)	Normally closed (N.C.)	_	AD27-A	_	-	_	
	discharge	Normally closed (N.C.)	With bowl guard	AD27-C-A	AD37□-A	AD4	7□-A	
	(Auto drain)	Normally open (N.O.)	With bowl guard	_	AD38□-A	AD48□-A		
		With drain cock	_	C2SF-6-A	_	-	_	
	Manual	Willi dialii cock	With bowl guard	C2SF-6C-A	C3SF-6-A	C4S	F-6-A	
	discharge	Drain cock with barb fitting	With bowl guard	_	C3SF-6W-A	C4SF	-6W-A	
Nylon bowl	discriarge	With drain guide	_	C2SF□-6J-A	_			
Nylon bowi		(without valve function)	With bowl guard	C2SF□-6CJ-A	C3SF□-6J-A	C4SF□-6J-A		
	Automatic Note)	Normally aloned (N.C.)	_	AD27-6-A	_	-	_	
	discharge	Normally closed (N.C.)	With bowl guard	AD27-6C-A	AD37□-6-A	AD47	'□-6-A	
	(Auto drain)	Normally open (N.O.)	With bowl guard	_	AD38□-6-A	AD48	□-6-A	
		With drain cock	_	C2SF-2-A	C3SF-2-A	C4S	F-2-A	
	Manual	Willi dialii cock	With level gauge	_	C3LF-8-A	C4L	F-8-A	
	discharge	With drain guide	_	C2SF□-2J-A	C3SF□-2J-A	C4SF	□-2J-A	
Metal bowl		(without valve function)	With level gauge	_	C3LF□-8J-A	C4LF	□-8J-A	
IVICIAI DOWI	Automotic Note)	Normally closed (N.C.)	_	AD27-2-A	AD37□-2-A	AD47	<sup>-</sup> □-2-A	
	discharge	Normany Gosed (N.C.)	With level gauge	_	AD37□-8-A	AD47	'□-8-A	
	(Auto drain)	Normally open (N.O.)		_	AD38□-2-A	AD48	□-2-A	
	(Auto diaili)		With level gauge		AD38□-8-A	AD48	□-8-A	

Note) Minimum operating pressure: N.O. type–15 psi (0.1 MPa) (AD38-A, AD48-A); N.C. type–15 psi (0.1 MPa) (AD17-A, AD27-A) and 22 psi (0.15 MPa) (AD37-A, AD47-A). Bowl assembly for the AFM20-A to AFM40-06-A, AFD20-A to AFD40-06-A models comes with a bowl seal.

Please consult with SMC separately for psi and °F unit display specifications.



Keep the air flow within the rated flow to prevent an outflow of lubricant to the outlet side. Note 2) When the compressor oil mist discharge concentration is 30 mg/m $^3$  (ANR).

Note 3) Bowl seal and other O-rings are slightly lubricated.

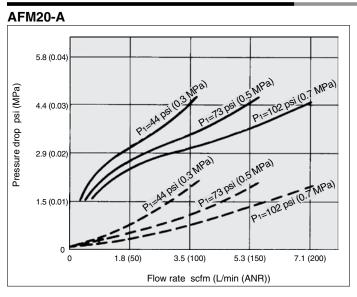
Note 2) Minimum operating pressure: N.O. type–15 psi (0.1 MPa); N.C. type–15 psi (0.1 MPa) (AD27-A) and 22 psi (0.15 MPa) (AD37-A/AD47-A). Please consult with SMC separately for psi and °F unit display specifications.

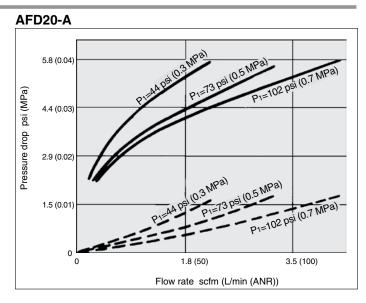
Note 3) Please consult with SMC for details on drain piping to fit NPT or  ${\sf G}$  port sizes.

<sup>□</sup> in bowl assembly part numbers indicates a pipe thread type (applicable tubing for auto drain). No indication is necessary for Rc thread; however, indicate N for NPT thread, and F for G thread. (For auto drain, Nil: ø10, N: ø3/8")

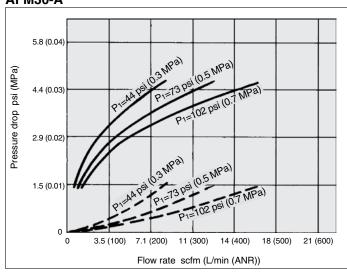
#### Flow-rate Characteristics (Representative values)

When saturated with oil Initial state

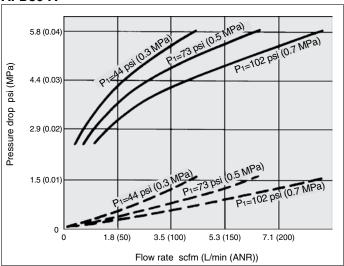




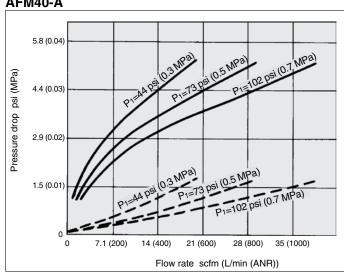
#### AFM30-A



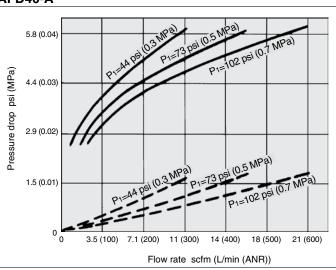




#### AFM40-A



#### AFD40-A





# ¥

# **⚠** Specific Product Precautions

Be sure to read this before handling. Refer to the back cover for Safety Instructions, "Handling Precautions for I SMC Products" and the Operation Manual for F.R.L. Precautions, http://www.smcworld.com

#### Design/Selection

# **⚠** Warning

 The standard bowl for the air filter, filter regulator, and lubricator, as well as the sight dome for the lubricator are made of polycarbonate. Do not use in an environment where they are exposed to or come in contact with organic solvents, chemicals, cutting oil, synthetic oil, alkali, and thread lock solutions.

Effects of atmosphere of organic solvents and chemicals, and where these elements are likely to adhere to the equipment.

Chemical data for substances causing degradation (Reference)

emical name  ochloric acid acid, Phosphoric acid mic acid nydroxide (Caustic soda) sh hydroxide (Slack lime) onia water onate of soda Im sulfide te of potash te of soda	Application examples  Acid washing liquid for metals  Degreasing of metals Industrial salts Water-soluble cutting oil	Polycarbonate  A	Nylon ×
acid, Phosphoric acid mic acid hydroxide (Caustic soda) h hydroxide (Slack lime) onia water onate of soda um sulfide te of potash te of soda	for metals  Degreasing of metals Industrial salts Water-soluble		
hydroxide (Slack lime) onia water onate of soda im sulfide te of potash te of soda	Industrial salts Water-soluble	×	0
te of potash te of soda			
and Address and Design 1	_	×	Δ
on tetrachloride oform ene chloride ylene chloride	Cleansing liquid for metals Printing ink Dilution	×	Δ
ene ne thinner	Coatings Dry cleaning	×	Δ
ne yl ethyl ketone hexane	Photographic film Dry cleaning Textile industries	×	×
alcohol yl alcohol	Antifreeze Adhesives	Δ	×
line sene	_	×	0
lic acid dimethyl lic acid diethyl c acid	Synthetic oil Anti-rust additives	×	0
yl ether ether	Brake oil additives	×	0
yl amino	Cutting oil Brake oil additives Rubber accelerator	×	×
ad-lock fluid ater	_	×	Δ
	ne // ethyl ketone hexane alcohol // alcohol line eene lic acid dimethyl ic acid diethyl c acid // ether ether // amino	thinner ine	thinner  the thinner  The property of the prop

When the above factors are present, or there is some doubt, use a metal bowl for safety.

#### **Air Supply**

#### **<b>** Caution

- Install an air filter (Series AF) as a pre-filter on the inlet side of the mist separator to prevent premature clogging.
- **2.** Install a mist separator (Series AFM) as a pre-filter on the inlet side of the micro mist separator to prevent premature clogging.
- **3.** Do not install on the inlet side of the dryer as this can cause premature clogging of the element.

#### **Maintenance**

# **Marning**

 Replace the element every 2 years or when the pressure drop becomes 0.1 MPa, whichever comes first, to prevent damage to the element.

#### Mounting/Adjustment

## **⚠** Caution

 When the bowl is installed on the mist separator (AFM30-A/AFM40-A), or micro mist separator (AFD30-A/ AFD40-A), install them so that the lock button lines up to the groove of the front (or the back) of the body to avoid drop or damage of the bowl.



#### Design

## **⚠** Caution

 Design the system so that the mist separator is installed in a pulsation-free location. The difference between internal and external pressure inside the element should be kept within 0.1 MPa, as exceeding this value could cause damage.

#### Selection

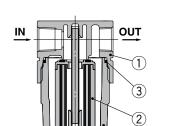
## **⚠** Caution

- 1. Do not allow air flow that exceeds the rated flow. If the air flow is allowed outside the range of the rated flow even momentarily, drainage and lubricant may splash at the outlet side or cause damage to the component.
- 2. Do not use in a low pressure application (such as a blower). An F.R.L. unit has its own minimum operating pressure depending on the equipment and is designed specifically to function with compressed air. If used below the minimum operating pressure, a loss of performance and malfunction can occur. Please contact SMC if an application under such conditions cannot be avoided.



#### Construction

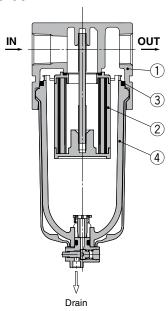
#### AFM20-A AFD20-A



Drain

(4)

#### AFM30-A to AFM40-06-A AFD30-A to AFD40-06-A



#### **Component Parts**

No.	Description	Material	Model	Color
1	Body	Aluminum die-cast	AFM20-A to AFM40-06-A AFD20-A to AFD40-06-A	White

#### **Replacement Parts**

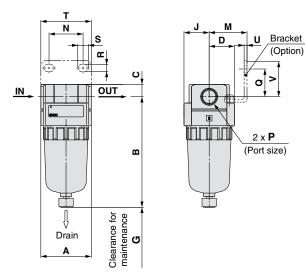
				Part no.					
No.	No. Description		Material	AFM20-A AFD20-A	AFM30-A AFD30-A	AFM40-A AFD40-A	AFM40-06-A AFD40-06-A		
-	2 Element assembly	AFM20 to 40	_	AFM20P-060AS	AFM30P-060AS	AFM40F	P-060AS		
2	Element assembly	AFD20 to 40	_	AFD20P-060AS	AFD30P-060AS	AFD40P-060AS			
3	Bowl seal		NBR	C2SFP-260S	C32FP-260S	C42FP-260S			
4	Bowl assembly Note) Polycarbona		Polycarbonate	C2SF-A	C3SF-A	C45	F-A		

Note) Bowl seal is included. Please contact SMC regarding the supply of bowl assembly with psi and °F unit display specifications.

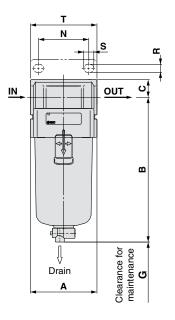


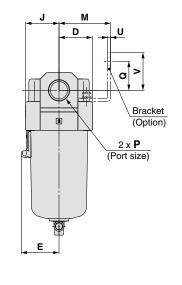
# ΔΕΜ20-Δ

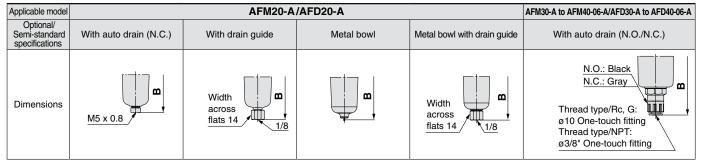
#### AFM20-A AFD20-A



#### AFM30-A to AFM40-06-A AFD30-A to AFD40-06-A









		Standard specifications						Optional specifications									
Model	Standard Specifications						Bracket mount						With auto drain				
	Р	Α	В	С	D	E	G	J	M	N	Q	R	S	Т	U	V	В
AFM20-A/AFD20-A	1/8, 1/4	40	87.6	9.8	20	_	40	20	30	27	22	5.4	8.4	40	2.3	28	104.9
AFM30-A/AFD30-A	1/4, 3/8	53	115.1	14	26.7	30	50	26.7	41	40	23	6.5	8	53	2.3	30	156.8
AFM40-A/AFD40-A	1/4, 3/8, 1/2	70	147.1	18	35.5	38.4	75	35.5	50	54	26	8.5	10.5	70	2.3	35	186.9
AFM40-06-A/AFD40-06-A	3/4	75	149.1	20	35.5	38.4	75	35.5	50	54	25	8.5	10.5	70	2.3	34	188.9

				Semi-standard specific	ations	
Model	With barb fitting	With drain guide	Metal bowl	Metal bowl with drain guide	Metal bowl with level gauge	Metal bowl with level gauge, with drain guide
	В	В	В	В	В	В
AFM20-A/AFD20-A	_	91.4	87.4	93.9	_	_
AFM30-A/AFD30-A	123.6	121.9	117.6	122.1	137.6	142.1
AFM40-A/AFD40-A	155.6	153.9	149.6	154.1	169.6	174.1
AFM40-06-A/AFD40-06-A	157.6	155.9	151.6	156.1	171.6	176.1

# Mist Separator/*AFM20-A to AFM40-06-A*Micro Mist Separator/*AFD20-A to AFD40-06-A*Made to Order



Please contact SMC for detailed dimensions, specifications and lead times.

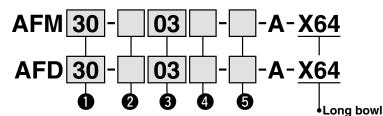
#### 1 Long Bowl

Drain capacity is greater than that of standard models.

#### **Applicable Model/Drain Capacity**

Model	AFM20-A, AFD20-A	AFM30-A, AFD30-A	AFM40-A, AFD40-A	AFM40-06-A, AFD40-06-A
Port size	1/8, 1/4	1/4, 3/8	1/4, 3/8, 1/2	3/4
Drain capacity (cm <sup>3</sup> )	19	43		88

Note) Please consult with SMC for dimensions.



- 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) AFM30-03B-2R-A-X64

	_	_		Cumbal	Decariation		0		
				Symbol	Description	20	Body size	40	
						20	00	70	
				Nil N Note 1)	Rc	•	•	•	
2		Pipe	thread type		NPT	•	•	•	
				F Note 2)	G		•		
				+			1	T	
				01	1/8	•		_	
	Port size		02	1/4	•	•	•		
8			03	3/8	_	•	•		
			04	1/2	_	_	•		
				06	3/4	_		•	
				+				1	
4	B Note 3)			Without mounting option	•	•	•		
				With bracket	•	•			
				+					
				Nil	Polycarbonate bowl	•	•	•	
				2	Metal bowl	•	•	•	
		а	Bowl Note 4)	6	Nylon bowl	•	•	•	
				С	With bowl guard	•	Note 5)	Note 5)	
				6C	With bowl guard (Nylon bowl)	•	Note 6)	Note 6)	
	0			+					
	dar			Nil	With drain cock	•	•	•	
6	lan	b	Drain port	J Note 7)	Drain guide 1/8	•	_	_	
U	i-S-		·		Drain guide 1/4	_	•	•	
	Semi-standard			W Note 8)	Drain cock with barb fitting (for ø6 x ø4 nylon tube)	_	•	•	
	0)			+					
			Flow direction	Nil	Flow direction: Left to right	•	•	•	
		С	I low direction	R	Flow direction: Right to left	•	•	•	
				+					
		d	Pressure unit	Nil	Name plate and caution plate for bowl in imperial units: MPa	•	•	•	
		u	Fiessure unit	Z Note 9)	Name plate and caution plate for bowl in imperial units: psi,°F	Note 10)	Note 10)	Note 10)	
					-				

Note 1) Drain guide is NPT1/8 (applicable to the AFM20-A, AFD20-A) and NPT1/4 (applicable to the AFM30-A/40-A, AFD30-A/40-A).

Note 2) Drain guide is G1/8 (applicable to the AFM20-A, AFD20-A) and G1/4 (applicable to the AFM30-A/40-A, AFD30-A/40-A).

Note 3) A bracket is not assembled and supplied loose at the time of shipment. Including 2 mounting screws. Note 4) Refer to Chemical data on page 56 for chemical resistance of the bowl.

Note 5) A bowl guard is provided as standard equipment (polycarbonate).

Note 6) A bowl guard is provided as standard equipment (nylon).

Note 7) Without a valve function

Note 8) The combination of metal bowl: 2 is not available.

Note 9) For pipe thread type: NPT. This product is for overseas use only according to the new Measurement Law. (The SI unit type is provided for use in Japan.)



# Mist Separator/AFM20-A to AFM40-06-A Micro Mist Separator/AFD20-A to AFD40-06-A



Please contact SMC for detailed dimensions, specifications and lead times.

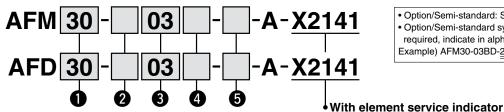


#### 2 With Element Service Indicator

Clogging status of elements can be checked visually.

#### **Applicable Model**

Model	AFM20-A, AFD20-A	AFM30-A, AFD30-A	AFM40-A, AFD40-A	AFM40-06-A, AFD40-06-A	
Port size	1/8, 1/4	1/4, 3/8	1/4, 3/8, 1/2	3/4	



• 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) AFM30-03BD-2R-A-X2141

A special body type is required to mount the element service indicator. It cannot be mounted on a standard body

						0	
			Symbol	Description		Body size	
					20	30	40
			Nil	Rc	•	•	•
2	Pipe	e thread type	N Note 1)	NPT	•	•	•
	•	7,	F Note 2)	G	•	•	•
			+				•
			01	1/8	•	_	_
			02	1/4	•	•	•
<b>3</b> ∣		Port size	03	3/8	_	•	•
			04	1/2	_	_	•
			06	3/4	_	_	•
			+			*	
		Manustine	Nil	Without mounting option	•	•	•
	a	Mounting	B Note 3)	With bracket	•	•	•
Option			+				
<b>4</b> ) ह	-   [	<b>-</b>	Nil	Without auto drain	•	•	•
0	b	Float type	C Note 4)	N.C. (Normally closed) Drain port is closed when pressure is not applied.	•	•	•
		auto drain	D Note 5)	N.O. (Normally open) Drain port is open when pressure is not applied.			
			+	. ( ,			
			Nil	Polycarbonate bowl	•	•	•
			2	Metal bowl	•		•
		Bowl Note 6)	6	Nylon bowl	•	•	•
	C	Bowl Note of	8	Metal bowl with level gauge	_	•	•
			С	With bowl guard	•	Note 7)	Note 7
			6C	With bowl guard (Nylon bowl)	•	Note 8)	Note 8
P			+				
Semi-standard			Nil	With drain cock	•	•	•
8 g	d	Drain port Note 12)	Note 9)	Drain guide 1/8	•	_	_
	d	Dialii port 150		Drain guide 1/4	_	•	•
Ser			<b>W</b> Note 13)	Drain cock with barb fitting (for ø6 x ø4 nylon tube)	_	•	•
37			+				
		Flow direction	Nil	Flow direction: Left to right	•		•
	е	I low direction	R	Flow direction: Right to left	•		•
			+				
	f	Pressure unit	Nil	Name plate and caution plate for bowl in imperial units: MPa	•		•
	T	Fiessure utill	Z Note 10)	Name plate and caution plate for bowl in imperial units: psi, °F	O Note 11)	Note 11)	Note 11

Note 1) Drain guide is NPT1/8 (applicable to the AFM20-A, AFD20-A) and NPT1/4 (applicable to the AFM30-A/40-A, AFD30-A/40-A).

The auto drain port comes with ø3/8" One-touch fitting (applicable to the AFM30-A/40-A, AFD30-A/40-A).

Note 2) Drain guide is G1/8 (applicable to the AFM20-A, AFD20-A) and G1/4 (applicable to the AFM30-A/40-A, AFD30-A/40-A).

Note 3) A bracket is not assembled and supplied loose at the time of shipment. Including 2 mounting screws

Note 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.

Note 5) If the compressor is small (0.75 kW, discharge flow is less than 3.5 scfm (100 L/min [ANR])), air leakage from the drain cock may occur during start of operations. N.C. type is recommended.

Note 6) Refer to Chemical data on page 56 for chemical resistance of the bowl. Note 7) A bowl guard is provided as standard equipment (polycarbonate).

Note 8) A bowl guard is provided as standard equipment (nylon).

Note 9) Without a valve function

Note 10) For pipe thread type: NPT. This product is for overseas use only according to the new Measurement Law. (The SI unit type is provided for use in Japan.)

Note 11) O: For pipe thread type: NPT only

Note 12) The combination of float type auto drain: C and D is not available. Note 13) The combination of metal bowl: 2 and 8 is not available.



# **Modular Type** Regulator

# Series AR

Regulator Series AR	Model	Port size	Set pressure	Options
	AR10-A	M5 x 0.8	7.3 to 102 (0.05 to 0.7 MPa) 2.9 to 29 (0.02 to 0.2 MPa)	Bracket  Round type pressure gauge  Set nut (for panel mount)*
Totales	AR20(K)-B	1/8, 1/4		
	AR25(K)-B	1/4, 3/8		Bracket
AND THE STATE OF T	AR30(K)-B	·		Set nut (for panel mount)
	AR40(K)-B	1/4, 3/8, 1/2	7.3 to 123 (0.05 to 0.85 MPa) 2.9 to 29	Square embedded type pressure gauge
	AR40(K)-06-B	3/4	(0.02 to 0.2 MPa)	Digital pressure switch
	AR50(K)-B	3/4, 1		Round type pressure gauge
P.63 to 74	AR60(K)-B	1		

\* Interchangeable with existing AR series

# Regulator **AR10-A**

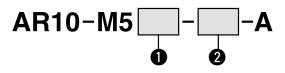
#### **Symbol** Regulator





#### **How to Order**

Refer to page 65 for size 20 to 60.



- 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) AR10-M5BG-1NR-A

		_		Symbol	Description
				Nil	Without mounting option
	9 1	а	Mounting	B Note 2)	With bracket
a	n Note			Н	With set nut (for panel mount)
U	Option Note 1)			+	
	0	b	Pressure gauge	Nil	Without pressure gauge
			r ressure gauge	G Note 3)	Round type pressure gauge (without limit indicator)
				+	
		С	Set pressure Note 4)	Nil	7.3 to 102 (0.05 to 0.7 MPa) setting
			Oct pressure	1	2.9 to 29 (0.02 to 0.2 MPa) setting
				+	
		d	Exhaust mechanism	Nil	Relieving type
		u	Extraust medianism	N	Non-relieving type
	ard			+	
0	Semi-standard	е	Flow direction	Nil	Flow direction: Left to right
9	ni-s		1 low direction	R	Flow direction: Right to left
	Ser			+	
		f	Knob	Nil	Downward
		KIIUU		Y	Upward
				+	
			Pressure unit	Nil	Name plate and pressure gauge in imperial units: MPa
		g	i iessuie uiiit	Z Note 5)	Name plate and pressure gauge in imperial units: psi

Note 1) Options are not assembled and supplied loose at the time of shipment.

Note 2) Assembly of a bracket and set nuts

Note 3) A 145 psi (1.0 MPa) pressure gauge will be fitted. It is not assembled and supplied loose at the time of shipment.

Note 4) Pressure can be set higher than the specification pressure in some cases, but use pressure within the specification range.

Note 5) This product is for overseas use only according to the new Measurement Law. (The SI unit type is provided for use in Japan.)



#### **Standard Specifications**

Port size	M5 x 0.8
Pressure gauge port size Note)	1/16
Fluid	Air
Ambient and fluid temperature	23 to 140°F (-5 to 60°C) (with no freezing)
Proof pressure	218 psi (1.5 MPa)
Maximum operating pressure	145 psi (1.0 MPa)
Set pressure range	7.3 to 102 psi (0.05 to 0.7 MPa)
Construction	Relieving type
Weight (kg)	0.06

Note) Use a bushing (part no.: 131368) when connecting the R1/8 pressure gauge to the Rc1/16.

#### Options/Part No.

Bracket assembly Note 1)	AR12P-270AS
Set nut	AR12P-260S
Round type pressure gauge Note 2)	G27-10-R1

Note 1) Assembly of a bracket and set nuts Note 2) 145psi (1.0 MPa) pressure gauge

# **↑** Specific Product Precautions

Be sure to read this before handling. Refer to the back cover for Safety Instructions, "Handling Precautions for I SMC Products" and the Operation Manual for F.R.L. Precautions, http://www.smcworld.com

#### Selection

# **∕** Warning

1. Although exhaust of the residual pressure to the inlet side is possible when eliminating the inlet pressure, exhaust is not possible when the set pressure is 22 psi (0.15 MPa) or less.

#### Maintenance

# ∕∿ Warning

1. When using the regulator between a solenoid valve and an actuator, check the pressure gauge periodically. Sudden pressure fluctuations may shorten the durability of the pressure gauge. A digital pressure gauge is recommended for such situation or as deemed necessary.

#### **Mounting/Adjustment**

# **∕** Warning

- 1. Set the regulator while verifying the displayed values of the inlet and outlet pressure gauges. Turning the regulator knob excessively can cause damage to the internal parts.
- 2. Do not use tools on the pressure regulator knob as this may cause damage. It must be operated manually.

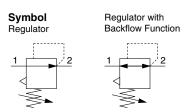
# Caution

- 1. Be sure to unlock the knob before adjusting the pressure and lock it after setting the pressure. Failure to follow this procedure can cause damage to the knob and the outlet pressure may fluctuate.
  - Pull the pressure regulator knob to unlock. (You can visually verify this with the "orange mark" that appears in the gap.)
  - Push the pressure regulator knob to lock. When the knob is not easily locked, turn it left and right a little and then push it (when the knob is locked, the "orange mark", i.e., the gap will disappear).
- 2. Pulsation will be generated when the difference between the inlet and the outlet pressure is large. In this case, reduce the pressure difference between the inlet and the outlet. Please consult with SMC if the pulsation problem is not resolved.



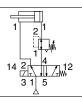
#### Regulator

# AR20-B to AR60-B Regulator with Backflow Function AR20K-B to AR60K-B



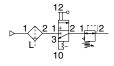
• With the backflow function it incorporates a mechanism to exhaust the air pressure in the outlet side reliably and quickly.

Example 1)
When the pressure in the rear and the front of the cylinder differs:



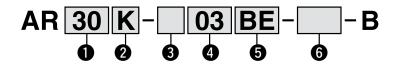
Example 2)

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**

Refer to page 63 for size 10.



- 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) AR30K-03BE-1NR-B

	\	_							<b>D</b>		
				Symbol	Description			Body	size		
						20	25	30	40	50	60
<b>A</b>		With	backflow	Nil	Without backflow function	•	•	•	•		•
0		fu	ınction	K Note 1)	With backflow function	•	•	•	•	•	•
				+							
				Nil	Rc		•	•	•	•	•
8		Pipe t	hread type	N	NPT		•	•	•	•	•
				F	G	•	•	•	•	•	•
				+			•	•			
				01	1/8		_	-	_	_	_
				02	1/4		•	•	•	_	_
		D	ort size	03	3/8		•	•	•	_	_
4		г	ort size	04	1/2	_	_	_	•	_	_
				06	3/4		_	_	•	•	_
				10	1		_	_	_	•	•
				+							
				Nil	Without mounting option		•	•	•	•	
		a	Mounting	B Note 3)	With bracket		•	•	•		
				Н	With set nut (for panel mount)		•	•	•	_	
				+							
	te 2)			Nil	Without pressure gauge		•	•	•		•
6	<sup>2</sup> □		Pressure	E	Square embedded type pressure gauge (with limit indicator)		•	•	•		•
U	Option Note 2)		gauge Note 4)	G	Round type pressure gauge (with limit indicator)		•	•	•		•
	ŏ	b -		M	Round type pressure gauge (with color zone)		•	•	•		•
			Digital	E1	Output: NPN output/Electrical entry: Wiring bottom entry		•	•	•		•
			Digital pressure	E2	Output: NPN output/Electrical entry: Wiring top entry		•	•	•		•
	pressure switch Note 5)  E2 Output: NPN output  E3 Output: PNP output				Output: PNP output/Electrical entry: Wiring bottom entry		•	•	•	•	•
			OWILOIT	E4	Output: PNP output/Electrical entry: Wiring top entry			•	•		



# Regulator AR20-B to AR60-B Regulator with Backflow Function AR20K-B to AR60K-B





AR20-B, AR20K-B

AR40-B, AR40K-B

	_	_							D				
	Symbo			Symbol	Description	Body size							
						20	25	30	40	50	60		
			Set	Nil	7.3 to 123 psi (0.05 to 0.85 MPa setting)	•	•	•	•	•	•		
		C	pressure Note 6)	1	2.9 to 29 psi (0.02 to 0.2 MPa setting)			•	•	•	•		
				+									
		d	Exhaust	Nil	Relieving type	•	•	•	•	•	•		
		u	mechanism	N	Non-relieving type	•		•	•	•	•		
	prd			+									
	Semi-standard	е	Flow direction	Nil	Flow direction: Left to right		•	•	•	•	•		
6	sta	-	riow direction	R	Flow direction: Right to left		•	•	•	•	•		
	Ë			+									
	Se	f	Knob	Nil	Downward	•	•	•	•	•	•		
		•	KIIOD	Υ	Upward		•	•	•	•	•		
				+									
				Nil	Name plate and pressure gauge in imperial units: MPa	•	•	•	•	•	•		
		g	Pressure unit	Z Note 7)	Name plate and pressure gauge in imperial units: psi	ONote 9)				$\sim$	10		
				ZA Note 8)	Digital pressure switch: With unit conversion function	△ Note 10)	△ Note 10)	Note 10)	△ Note 10)	△ Note 10)	△ Note 10)		

Note 1) Set the inlet pressure to at least 7.3 psi (0.05 MPa) higher than the set pressure.

Note 2) Option B, G, H, M are not assembled and supplied loose at the time of shipment.

Note 3) Assembly of a bracket and set nuts (applicable to the AR20(K)-B to AR40(K)-B). Including 2 mounting screws for the AR50(K)-B and AR60(K)-B

Note 4) When the pressure gauge is attached, a 145 psi (1.0 MPa) pressure gauge will be fitted for standard (123 psi [0.85 MPa]) type. 58 psi (0.4 MPa) pressure gauge for 29 psi (0.2 MPa) type.

Note 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.)

Note 6) Pressure can be set higher than the specification pressure in some cases, but use pressure within the specification range.

Note 7) For pipe thread type: NPT.

This product is for overseas use only according to the new Measurement Law. (The SI unit type is provided for use in Japan.)

Cannot be used with M: Round pressure gauge (with color zone). Available by request for special.

The digital pressure switch will be equipped with the unit conversion function, setting to psi initially.

Note 8) For options: E1, E2, E3, E4. This product is for overseas use only according to the new Measurement Law. (The SI unit is provided for use in Japan.)

Note 9) O: For pipe thread type: NPT only

Note 10)  $\triangle$ : Select with options: E1, E2, E3, E4.

#### **Standard Specifications**

otandard opecinications											
Model	AR20-B	AR25-B	AR30-B	AR40-B	AR40-06-B	AR50-B	AR60-B				
Port size	1/8, 1/4	1/8, 1/4									
Pressure gauge port size Note 1)		1/8									
Fluid		Air									
Ambient and fluid temperature Note 2)	23 to 140°F (-5 to 60°C) (with no freezing)										
Proof pressure			2	218 psi (1.5 MPa	a)						
Maximum operating pressure			1	145 psi (1.0 MPa	a)						
Set pressure range			7.3 to 1	23 psi (0.05 to (	0.85 MPa)						
Construction	Relieving type										
Weight (kg)	0.16	0.21	0.29	0.44	0.47	1.17	1.22				

Note 1) Pressure gauge connection threads are not available for F.R.L. unit with a square embedded type pressure gauge or with a digital pressure switch. Note 2) 23 to 122°F (–5 to 50°C) for the products with the digital pressure switch.



## Series AR20-B to AR60-B/Series AR20K-B to AR60K-B

#### Options/Part No.

Ор	tion	Model	AR20(K)-B	AR25(K)-B	AR30(K)-B	AR40(K)-B	AR40(K)-06-B	AR50(K)-B	AR60(K)-B		
Bra	acket assem	bly Note 1)	<b>y</b> Note 1) AR23P-270AS AR28P-270AS AR33P-270AS AR43P-270AS AR52P-270								
Se	t nut		AR23P-260S	AR28P-260S	AR33P-260S	AR43F	P-260S	N	ote 2)		
ge	Round	Standard		G36-10-□01			G46-1	0-□01			
gauge	type Note 3)	2.9 to 29 psi (0.02 to 0.2 MPa) setting		G36-4-□01			G46-4	4-□01			
6	Note 3) Round type	Standard		G36-10-□01-L			G46-10	)-□01-L			
l ng	(with color zone)	2.9 to 29 psi (0.02 to 0.2 MPa) setting		G36-4-□01-L			G46-4	-□01-L			
res	Square Note 4)	Standard		GC	3-10AS [GC3P-0	10AS (Pressure	e gauge cover o	nly)]			
		2.9 to 29 psi (0.02 to 0.2 MPa) setting		GC	3-4AS [GC3P-0	10AS (Pressure	gauge cover or	nly)]			
Die	ital	NPN output: Wiring bottom entry	mentry ISE35-N-25-MLA [ISE35-N-25-M (Switch body only)]								
1	essure	NPN output: Wiring top entry	Wiring top entry ISE35-R-25-MLA [ISE35-R-25-M (Switch body only)]								
1.	itch <sup>Note 5)</sup>	PNP output: Wiring bottom entry		ISI	E35-N-65-MLA [	ISE35-N-65-M (	Switch body on	ly)]			
5W	illoii "'	PNP output: Wiring top entry ISE35-R-65-MLA [ISE35-R-65-M (Switch body only)]									

Note 1) Assembly of a bracket and set nuts. Including 2 mounting screws for the AR50(K)-B and AR60(K)-B

Note 2) Please consult with SMC regarding the set nuts for the AR50(K)-B and AR60(K)-B.

Note 3)  $\square$  in part numbers for a round pressure gauge indicates a pipe thread type. No indication is necessary for R; however, indicate N for NPT. Please contact SMC regarding the pressure gauge supply for psi unit specifications.

Note 4) Including one O-ring and 2 mounting screws. []: Pressure gauge cover only

Note 5) In addition to the pressure switch body, lead wire with connector (2 m), adapter, lock pin, O-ring (1 pc.), mounting screw (2 pcs.) are attached.

[]: Switch body only. (Regarding how to order the digital pressure switch, refer to the WEB catalog or the Best Pneumatics No.6.)

# **⚠** Specific Product Precautions

Be sure to read this before handling. Refer to the back cover for Safety Instructions, "Handling Precautions for SMC Products" and the Operation Manual for F.R.L. Precautions, http://www.smcworld.com

#### Selection

## 

 Residual pressure disposal (outlet pressure removal) is not possible for the AR 2 0 -B to AR 6 0 -B even though the inlet pressure is exhausted. When the residual pressure disposal is performed, use the regulator with a backflow function (AR20K-B to AR60K-B).

#### Maintenance

# 

1. When using the regulator with backflow function between a solenoid valve and an actuator, check the pressure gauge periodically. Sudden pressure fluctuations may shorten the durability of the pressure gauge. A digital pressure gauge is recommended for such situation or as deemed necessary.

#### **Mounting/Adjustment**

## **Marning**

- **1.** Set the regulator while verifying the displayed values of the inlet and outlet pressure gauges. Turning the regulator knob excessively can cause damage to the internal parts.
- **2.** Do not use tools on the pressure regulator knob as this may cause damage. It must be operated manually.

## **↑** Caution

- Be sure to unlock the knob before adjusting the pressure and lock it after setting the pressure. Failure to follow this procedure can cause damage to the knob and the outlet pressure may fluctuate.
  - Pull the pressure regulator knob to unlock. (You can visually verify this with the "orange mark" that appears in the gap.)
  - Push the pressure regulator knob to lock. When the knob is not easily locked, turn it left and right a little and then push it (when the knob is locked, the "orange mark", i.e., the gap will disappear).



A knob cover is available to prevent careless operation of the knob. Refer to page 97 for details.

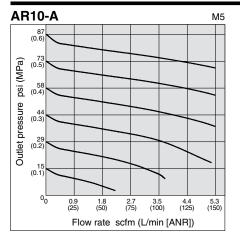


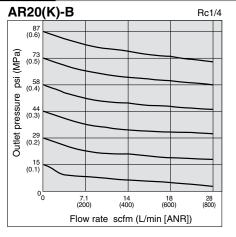
A

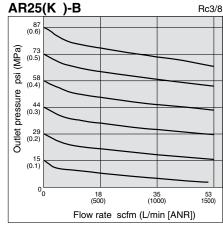
# Regulator Series AR10-A Regulator Series AR20-B to AR60-B Regulator with Backflow Function Series AR20K-B to AR60K-B

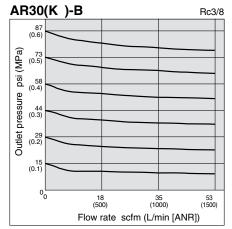
#### Flow-rate Characteristics (Representative values)

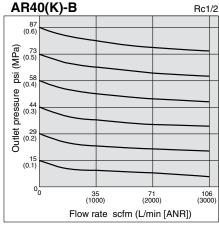


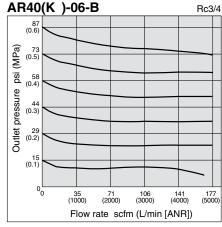


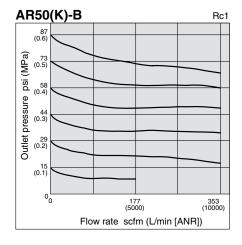


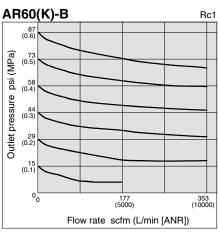








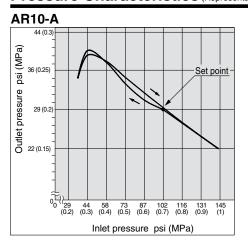


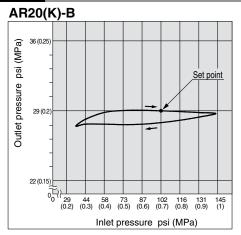


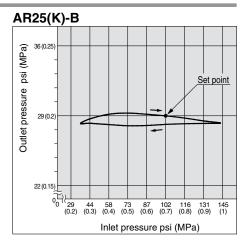
# Series AR10-A Series AR20-B to AR60-B Series AR20K-B to AR60K-B

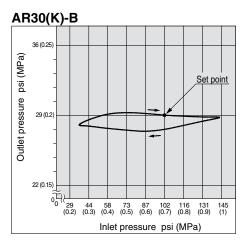
#### Pressure Characteristics (Representative values)

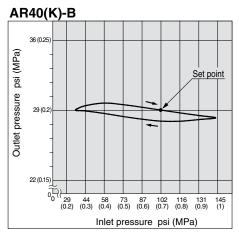
Conditions: Inlet pressure 102 psi (0.7 MPa), Outlet pressure 29 psi (0.2 MPa), Flow rate 0.7 scfm (20 L/min (ANR))

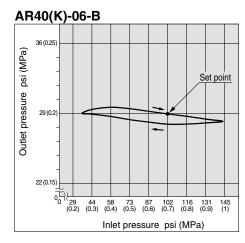


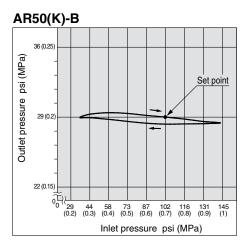


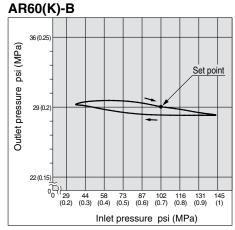








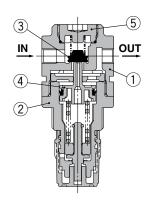




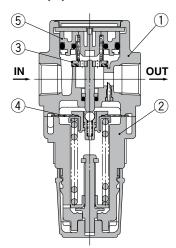
₹

#### Construction

#### AR10-A



#### AR30(K)-B/AR40(K)-B



#### Component Parts

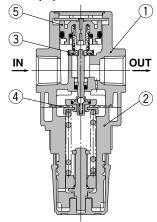
0011	iponent i arts			
No.	Description	Material	Model	Color
		Zinc die-cast	AR10-A	
1	Body	Aluminum die-cast	AR20(K)-B to AR60(K)-B	White
			AR10-A	
2	Bonnet	Polyacetal	AR20(K)-B to AR40(K)-B	White
		Aluminum die-cast	AR50(K)-B/ AR60(K)-B	

# **Replacement Parts**

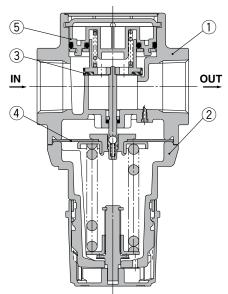
#### [AR10-A]

L2 11 1			
No.	Description	Material	Part no.
3	Valve	HNBR	AR10P-090S
4	Piston assembly	Polyacetal	AR10P-150AS
5	Valve guide assembly	Polyacetal	131329

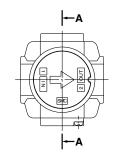
#### AR20(K)-B/AR25(K)-B

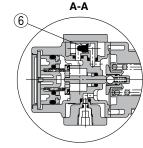


## AR50(K)-B/AR60(K)-B



#### AR20K-B to AR60K-B (Regulator with Backflow Function)





#### [AR20(K)-B to AR60(K)-B]

No.	Description	Motorial	Part no.										
INO.	Description	Ivialeriai	AR20(K)-B	AR25(K)-B	AR30(K)-B	AR40(K)-B	AR40(K)-06-B	AR50(K)-B	AR60(K)-B				
3	Valve	Brass, HNBR	AR20P-410S	AR25P-410S	AR30P-410S	AR40P-410S		AR50P-410S	AR60P-410S				
4	Diaphragm assembly	Weatherable NBR	AR20P-150AS	AR20P-150AS	AR30P-150AS		AR40P	-150AS					
5	Valve guide assembly	Polyacetal	AR20P-050AS	AR20P-050AS	AR30P-050AS	AR40P-050AS		AR50P-050AS	AR60P-050AS				
6	Check valve assembly Note)	_			AR23KP	23KP-020AS							

Note) Check valve assembly is applicable for a regulator with backflow function (AR20K-B to AR60K-B) only. Assembly of a check valve cover, check valve body assembly and 2 mounting screws



## Series AR10-A Series AR20K-B to AR60K-B

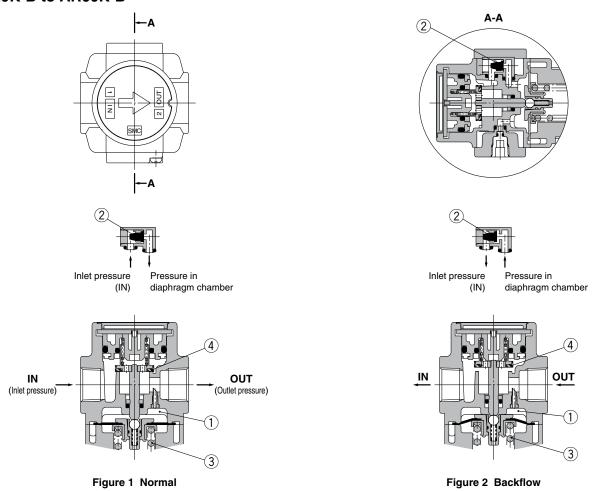
#### Working Principle (Regulator with Backflow Function)

#### **AR10-A**



When the inlet pressure is higher than the regulating pressure, the check valve operates as a normal regulator (Figure 1). When the inlet pressure is shut off and exhausted, any inlet pressure applied to the valve ① will be lost. The force for seating the valve ① is the valve spring force ② only. When the valve ① is opened using the outlet force, the outlet pressure will be exhausted at the inlet side (Figure 2). When the set pressure is 22 psi (0.15 MPa) or less, the valve ① may not open due to the valve spring ② force.

#### AR20K-B to AR60K-B

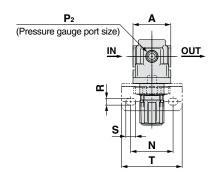


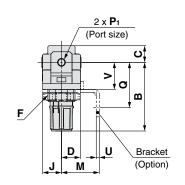
When the inlet pressure is higher than the regulating pressure, the check valve ② closes and operates as a normal regulator (Figure 1). When the inlet pressure is shut off and released, the check valve ② opens and the pressure in the diaphragm chamber ① is released into the inlet side (Figure 2). This lowers the pressure in the diaphragm chamber ① and the force generated by the pressure regulator spring ③ lifts the diaphragm. The valve ④ opens through the stem, and the outlet pressure is released to the inlet side (Figure 2).

## Series AR10-A Series AR20-B to AR60-B Series AR20K-B to AR60K-B

#### **Dimensions**

#### **AR10-A**



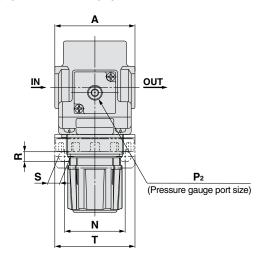


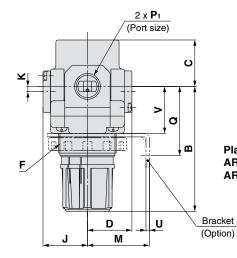
#### Panel fitting dimensions



Plate thickness AR10-A: Max. 3.5

#### AR20(K)-B to AR40(K)-06-B





Panel fitting dimensions

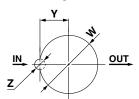
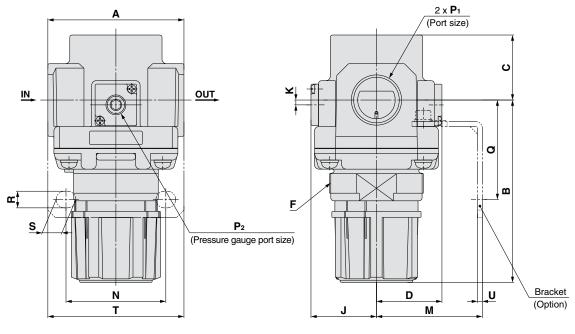


Plate thickness AR20(K)-B to AR30(K)-B: Max. 3.5 AR40(K)-B : Max. 5

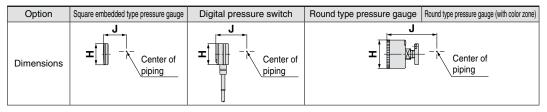
#### AR50(K)-B/AR60(K)-B



F

AB

# Regulator Series AR10-A Regulator Series AR20-B to AR60-B Regulator with Backflow Function Series AR20K-B to AR60K-B



												Op	tional sp	ecification	ns		
Model				Standar	d specif	ications					Square type pressure gauge Digital pres			Round	d type e gauge	Round type pressure gauge (with color zone)	
	P1	P2	Α	B Note 1)	С	D	F	J	K	H J		Н	J	Н	J	Н	J
AR10-A	M5 x 0.8	1/16	25	47.4	11	12.5	M18 x 1	12.5	_	_	_	_	_	ø26	26	_	
AR20(K)-B	1/8, 1/4	1/8	40	67.4	26.5	28.5	M28 x 1	28.5	2 Note 2)	□28	29.5	□27.8	40	ø37.5	65	ø37.5	66
AR25(K)-B	1/4, 3/8	1/8	53	71.9	28	27.5	M32 x 1.5	27.5	0	□28	28.5	□27.8	39	ø37.5	64	ø37.5	65
AR30(K)-B	1/4, 3/8	1/8	53	85.6	30.7	29.4	M38 x 1.5	29.4	3.5	□28	30.4	□27.8	40.9	ø37.5	65.9	ø37.5	66.9
AR40(K)-B	1/4, 3/8, 1/2	1/8	70	91.7	35.8	33.8	M42 x 1.5	33.8	3.5	□28	34.8	□27.8	45.3	ø42.5	71.3	ø42.5	71.3
AR40(K)-06-B	3/4	1/8	75	93.2	35.8	33.8	M42 x 1.5	33.8	3	□28	34.8	□27.8	45.3	ø42.5	71.3	ø42.5	71.3
AR50(K)-B	3/4, 1	1/8	90	125.2	43	43.3	M62 x 1.5	43.3	3.2	□28	44.3	□27.8	54.8	ø42.5	80.8	ø42.5	80.8
AR60(K)-B	1	1/8	95	129.6	46	43.3	M62 x 1.5	43.3	3.2	□28	44.3	□27.8	54.8	ø42.5	80.8	ø42.5	80.8

					Option	al specifi	cations				
Model			Bra	Panel mount							
	М	N	Q	R	S	Т	U	V	W	Υ	Z
AR10-A	25	28	30	4.5	6.5	40	2	18	18.5	_	_
AR20(K)-B	30	34	43.9	5.4	15.4	55	2.3	24.7	28.5	14	6
AR25(K)-B	30	34	43.9	5.4	15.4	55	2.3	25.7	32.5	16	6
AR30(K)-B	41	40	45.8	6.5	8	53	2.3	31.1	38.5	19	7
AR40(K)-B	50	54	54	8.5	10.5	70	2.3	35.5	42.5	21	7
AR40(K)-06-B	50	54	55.5	8.5	10.5	70	2.3	37	42.5	21	7
AR50(K)-B	70	66	65.8	11	13	90	3.2	_	_	_	_
AR60(K)-B	70	66	65.8	11	13	90	3.2	_	_	_	_

Note 1) The dimension of B is the length when the filter regulator knob is unlocked.

Note 2) For the AR20 (K) -B only, the position of the pressure gauge is above the center of the piping.

ΑF

# **Modular Type** Lubricator

# Series AL

Lubricator Series AL	Model	Port size	Option
	AL10-A	M5 x 0.8	
	AL20-A	1/8, 1/4	
	AL30-A	1/4, 3/8	
	AL40-A	1/4, 3/8, 1/2	Bracket (Except AL10-A)
Out in	AL40-06-A	3/4	
	AL50-A	3/4, 1	
P.77 to 82	AL60-A	1	

# Lubricator

# AL10-A to AL60-A

Symbol



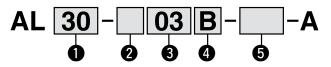






AL40-A

#### **How to Order**



- 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) AL30-03B-3RW-A

					5	0					
				Symbol	Description	10	20	Body 30	size 40	50	60
				J		10		_ 00	70	00	00
				Nil	Metric thread (M5)		_	_		_	_
2	Pipe thread type			Rc	_	•	•	•	•	•	
			7,7	N	NPT		•	•	•	•	•
				F	G	_	•				
				+			1				
				M5	M5 x 0.8		_			_	
				01	1/8		•	_		_	_
	Port size			02	1/4	_	•	•	•	_	_
8				03	3/8	_	_	•	•	_	_
				04	1/2		_		•	_	
				06	3/4	_	_	_	•	•	_
				10	1		_				
				+							
4	Option (Mounting)			Nil	Without mounting option		•	•	•	•	•
U	, , , , , , ,		B Note 1)	With bracket				•			
				+							
	q		Bowl <sup>Note 2)</sup>	Nil	Polycarbonate bowl		•	•	•	•	•
		а		2	Metal bowl		•	•	•	•	•
				6	Nylon bowl		•	•	•	•	•
				8	Metal bowl with level gauge	_	—	•	•	•	•
				С	With bowl guard	_	•	Note 3)	Note 3)	Note 3)	Note 3)
				6C	With bowl guard (Nylon bowl)	_		Note 4)	Note 4)	Note 4)	Note 4)
	dar	+									
6	Semi-standard		Lubricant exhaust port	Nil	Without drain cock	•	•	•	•	•	
9		b		3	With drain cock	•	•			_	_
				<b>3W</b> Note 5)	Drain cock with barb fitting		_		•		•
	0)			+							
		С	Flow direction	Nil	Flow direction: Left to right	•	•	•	•	•	•
				R	Flow direction: Right to left	•	•	•	•	•	•
				+							
		d	Pressure unit	Nil	Name plate and caution plate: MPa		•	•	•		•
				Z Note 6)	Name plate and caution plate: psi, °F	Note 7)	Note 7)	Note 7)	Note 7)	Note 7)	Note 7)

Note 1) Option is not assembled and supplied loose at the time of shipment.

Note 2) Refer to Chemical data on page 80 for chemical resistance of the bowl.

Note 3) A bowl guard is provided as standard equipment (polycarbonate).

Note 4) A bowl guard is provided as standard equipment (nylon).

Note 5) The combination of metal bowl: 2 and 8 is not available.

Note 6) For pipe thread type: M5, NPT. This product is for overseas use only according to the new Measurement Law. (The SI unit type is provided for use in Japan.)

Note 7) O: For pipe thread type: M5, NPT only



## Lubricator Series AL 10-A to AL60-A

#### **Standard Specifications**

Model	AL10-A	AL20-A	AL30-A	AL40-A	AL40-06-A	AL50-A	AL60-A						
Port size	M5 x 0.8	1/8, 1/4	1/4, 3/8	1/4, 3/8, 1/2	3/4	3/4, 1	1						
Fluid			•										
Ambient and fluid temperature		23 to 140°F (-5 to 60°C) (with no freezing)											
Proof pressure		218 psi (1.5 MPa)											
Maximum operating pressure		145 psi (1.0 MPa)											
Minimum dripping flow rate (L/min (ANR)) Note)	4	15	1/4:30 3/8:40	1/4:30 3/8:40 1/2:50	50	190	220						
Oil capacity (cm³)	7	25	55		13	35	•						
Recommended lubricant			Class	1 turbine oil (ISO	VG32)								
Bowl material				Polycarbonate									
Bowl guard	_	Semi-standard (Steel)		Stan	dard (Polycarbor	nate)							
Weight (kg)	<b>/eight (kg)</b> 0.07 0.10 0.20		0.20	0.38	0.43	0.94	1.09						

Note) • The flow rate is 5 drops or greater/min under the following conditions: Inlet pressure of 73 psi (0.5 MPa); Class 1 turbine oil (ISO VG32); Temperature at 68°F (20°C); Oil adjustment valve fully open.

#### Options/Part No.

Optional specifications	Model										
Optional specifications	AL10-A	AL20-A	AL50-A	AL60-A							
Bracket assembly Note)	_	AF22P-050AS	AF32P-050AS	AF42P-050AS	AF42P-070AS	AF52P	-050AS				

Note) Assembly of a bracket and 2 mounting screws

#### Bowl Assembly/Part No.

David	Lubricant					Model						
Bowl material			AL10-A	AL20-A	AL30-A	AL40-A	AL40-06-A	AL50-A	AL60-A			
	Without drain cock	_	C1SL-A	C2SL-A	_		_	_				
Dahmanhanata	Williout dialii cock	With bowl guard	_	C2SL-C-A	C3SL-A		C4SL-A					
Polycarbonate bowl	With drain cock	_	C1SL-3-A	C2SL-3-A	_		_	_				
DOWI	With drain cock	With bowl guard	_	C2SL-3C-A	C3SL-3-A	C4SL-3-A						
	Drain cock with barb fitting	With bowl guard	_	_	C3SL-3W-A	C4SL-3W-A						
	Without drain cock	_	C1SL-6-A	C2SL-6-A	_	_						
	Without drain cock	With bowl guard	_	C2SL-6C-A	C3SL-6-A	C4SL-6-A						
Nylon bowl	With drain cock	_	C1SL-36-A	C2SL-36-A	_	_						
	With drain cock	With bowl guard	_	C2SL-36C-A	C3SL-36-A	C4SL-36-A						
	Drain cock with barb fitting	With bowl guard	_	_	C3SL-36W-A		C4SL-	36W-A				
	Without drain analy	_	C1SL-2-A	C2SL-2-A	C3SL-2-A	C4SL-2-A						
Metal bowl	Without drain cock	With level gauge	_	_	C3LL-8-A		C4LL	8-A				
IVICIAI DOWI	With drain cock	_	C1SL-23-A	C2SL-23-A	C3SL-23-A	C4SL-23-A						
	Willi Gialli COCK	With level gauge	_	_	C3LL-38-A		C4LL	-38-A				

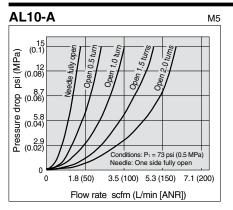
Note)  $\,\cdot$  Bowl seal is included for the AL20-A to AL60-A.

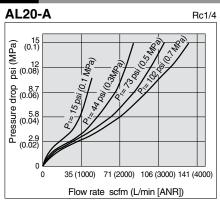
<sup>·</sup> For a circuit that repeatedly turns ON and OFF on the outlet side, make the adjustment so that the average air consumption per minute becomes the minimum dripping flow rate or more.

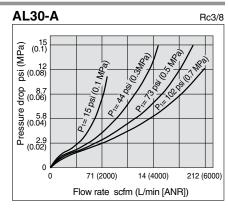
<sup>·</sup> Please consult with SMC separately for psi and °F unit display specifications.

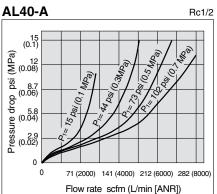
## Series AL10-A to AL60-A

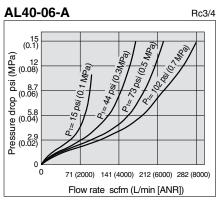
#### Flow-rate Characteristics (Representative values)

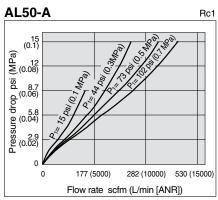


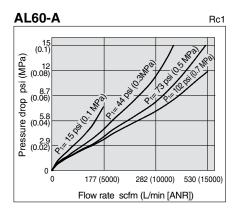




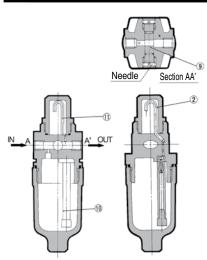








### Working Principle: AL10 Type



A portion of the air introduced from the IN side pressurizes the lubricant inside the bowl. The remainder of the air passes through the needle 9, and flows to the OUT side. The differential pressure between the inside of the bowl and the inside of the sight dome 2, causes the lubricant inside the bowl into the oil passage 9. The lubricant drips from the dripping tube 1, and lubricates the OUT side. The amount of lubricant is adjusted by the needle 9 on the front face. Turning the needle clockwise increases the amount of the lubricant, and turning it counterclockwise until fully open shuts off the lubricant. The needle on the side that is not used should be left fully open.



Be sure to read this before handling. Refer to the back cover for Safety Instructions, "Handling Precautions for SMC Products" and the Operation Manual for F.R.L. Precautions, http://www.smcworld.com

#### Selection

## **\_**Marning

- Do not introduce air from the outlet side as this can damage the bumper.
- The standard bowl for the air filter, filter regulator, and lubricator, as well as the sight dome for the lubricator are made of polycarbonate. Do not use in an environment where they are exposed to or come in contact with organic solvents, chemicals, cutting oil, synthetic oil, alkali, and thread lock solutions.

Effects of atmosphere of organic solvents and chemicals, and where these elements are likely to adhere to the equipment.

Chemical data for substances causing degradation (Reference)

Type	Chemical name	Application examples	Material			
Туре	Offerfilear flame	Application examples	Polycarbonate	Nylon		
Acid	Hydrochloric acid Sulfuric acid, Phosphoric acid Chromic acid	Acid washing liquid for metals	Δ	×		
Alkaline	Sodium hydroxide (Caustic soda) Potash Calcium hydroxide (Slack lime) Ammonia water Carbonate of soda	Degreasing of metals Industrial salts Water-soluble cutting oil	×	0		
Inorganic salts	Sodium sulfide Sulfate of potash Sulfate of soda	_	×	Δ		
Chlorine solvents	Carbon tetrachloride Chloroform Ethylene chloride Methylene chloride	Cleansing liquid for metals Printing ink Dilution	×	Δ		
Aromatic series	Benzene Toluene Paint thinner	Coatings Dry cleaning	×	Δ		
Ketone	Acetone Methyl ethyl ketone Cyclohexane	Photographic film Dry cleaning Textile industries	×	×		
Alcohol	Ethyl alcohol IPA Methyl alcohol	Antifreeze Adhesives	Δ	×		
Oil	Gasoline Kerosene	_	×	0		
Ester	Phthalic acid dimethyl Phthalic acid diethyl Acetic acid	Synthetic oil Anti-rust additives	×	0		
Ether	Methyl ether Ethyl ether	Brake oil additives	×	0		
Amino	Methyl amino	Cutting oil Brake oil additives Rubber accelerator	×	×		
Others	Thread-lock fluid Seawater Leak tester		×	Δ		

When the above factors are present, or there is some doubt, use a metal bowl for safety.

#### Selection

## **∕**•Caution

**1.** Use a check valve (Series AKM) to prevent back flow of the lubricant when redirecting the air flow before the lubricator.

#### Maintenance

## **△**Warning

- For the AL10-A/AL20-A type, replenish the lubricant after releasing the inlet pressure. Lubrication cannot take place under a pressurized condition.
- 2. Adjustment of the oil regulating valve for models from the AL20-A to AL60-A should be carried out manually. Turning it counterclockwise increases the dripping amount, and turning it clockwise reduces the dripping amount. The use of tools etc. can result in damage to the unit. From the fully closed position, three rotations will bring it to the fully open position. Do not rotate it any further than this. Note that the numbered scale markings are guidelines for adjusting the position, and not indicators of the dripping amount.

### **⚠**Caution

 Check the dripping amount once a day. Drip failure can cause damage to the components that need lubrication.

#### Mounting/Adjustment

### **∧**Caution

1. When the bowl is installed on the AL30-A to AL60-A, install them so that the lock button lines up to the groove of the front (or the back) of the body to avoid drop or damage of the bowl.

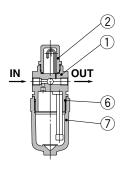




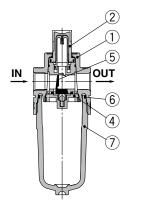
## Series AL10-A to AL60-A

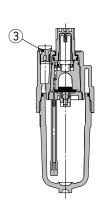
### Construction

AL10-A

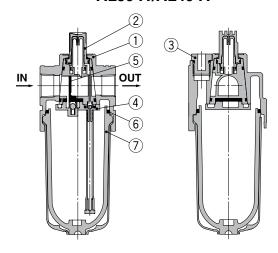




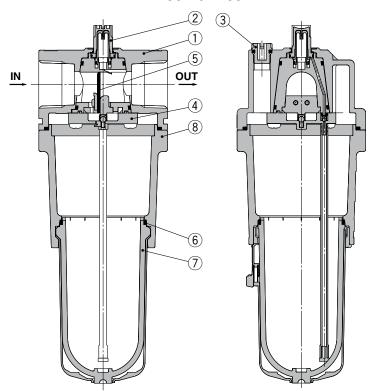




#### AL30-A/AL40-A



#### AL50-A/AL60-A



#### **Component Parts**

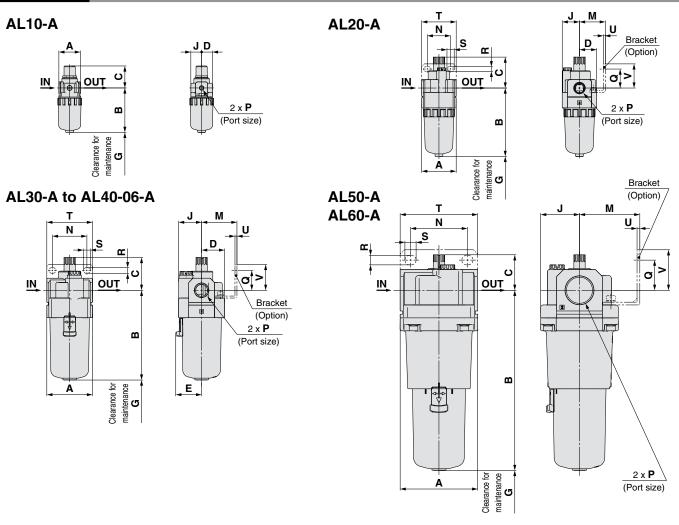
No.	Description	Material	Model	Color
4	Body	Zinc die-cast	AL10-A	White
'	і Бойу	Aluminum die-cast	AL20-A to AL60-A	vvriite
8	Housing	Aluminum die-cast	AL50-A/AL60-A	White

#### **Replacement Parts**

No.	Description	Material		Part no.										
INO.	J. Description	Waterial	AL10-A	AL20-A	AL30-A	AL40-A	AL40-06-A	AL50-A	AL60-A					
2	Sight dome assembly	Polycarbonate	AL10P-080AS			AL20P	-080AS							
3	Lubrication plug assembly	_	_	AL22P-060AS	AL32P-060AS	AS AL42P-060AS								
4	Bumper retainer assembly	_	_	AL20P-030AS	AL30P-030AS	AL40P	-030AS	AL50P-030AS	AL60P-030AS					
5	Bumper (assembly)	Synthetic resin	_	AL20P-040S	AL30P-040S	AL40F	P-040S	AL50P-040AS	AL60P-040AS					
6	Bowl seal	NBR	C1SFP-260S	C2SFP-260S	C32FP-260S	OS C42FP-260S								
7	Bowl assembly Note)	Polycarbonate	C1SL-A	C2SL-A	C3SL-A	C4SL-A								

Note) · Bowl seal is included for the AL20-A to AL60-A. Please consult with SMC separately for psi and °F unit display specifications. · Bowl assembly for the AL30-A to AL60-A models comes with a bowl guard (Material: Polycarbonate).





Applicable model		AL10-A/AL20-A		AL30-A to AL60-A
Optional/Semi-standard specifications	With drain cock	Metal bowl	Metal bowl with drain cock	Metal bowl
Dimensions	<b>B</b>	B	B B	8

Applicable model			AL30-A to AL60-	·A	
Optional/Semi-standard specifications	With drain cock	Metal bowl with level gauge	Metal bowl with drain cock	Metal bowl with level gauge, with drain cock	Drain cock with barb fitting
Dimensions	<b>B</b>	В	8	B	Barb fitting applicable tubing: T0604

											Optio	onal sp	ecifica	tions	s			Semi	i-standar	d specific	ations	
Model	Model Standard specifications							Bracket mount								With drain cock	With barb fitting	Metal bowl	Metal bowl with drain cock	Metal bowl with level gauge	Metal bowl with level gauge, with drain cock	
	Р	Α	В	С	D	Е	G	J	M	N	Q	R	S	Т	U	٧	В	В	В	В	В	В
AL10-A	M5 x 0.8	25	51.5	25.5	12.5	_	35	12.5	_	_	—	_	_	_	_	_	59.9	_	56.3	59.3	_	
AL20-A	1/8, 1/4	40	79.3	35.9	20	_	60	20	30	27	22	5.4	8.4	40	2.3	28	87.7	_	84.5	87.5	_	_
AL30-A	1/4, 3/8	53	104.1	38.1	26.7	30	80	26.7	41	40	23	6.5	8	53	2.3	30	115.1	123.6	104.1	117.6	124.1	137.6
AL40-A	1/4, 3/8, 1/2	70	136.1	39.8	35.5	38.4	110	35.5	50	54	26	8.5	10.5	70	2.3	35	147.1	155.6	136.1	149.6	156.1	169.6
AL40-06-A	3/4	75	138.1	37.8	35.5	38.4	110	35.5	50	54	25	8.5	10.5	70	2.3	34	149.1	157.6	138.1	151.6	158.1	171.6
AL50-A	3/4, 1	90	209.1	41.2	45	_	110	45	70	66	35	11	13	90	3.2	47	220.1	228.6	209.1	222.6	229.1	246.2
AL60-A	1	95	223.1	44.7	47.5	_	110	47.5	70	66	35	11	13	90	3.2	47	234.1	242.6	223.1	236.6	243.1	256.6

## **Modular Type** Filter Regulator

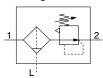
## Series AW

Filter Regulator Series AW		Model	Port size	Options
	m	AW10-A	M5 x 0.8	Bracket
		AW20-B	1/8, 1/4	Set nut (for panel mount)
101		AW30-B	1/4, 3/8	Float type auto drain
		AW40-B	1/4, 3/8, 1/2	Square embedded type pressure gauge
		AW40-06-B	3/4	Digital pressure switch
P.85 to 96		AW60-B	3/4, 1	Round type pressure gauge

\* Interchangeable with existing AW series

## Filter Regulator AW10-A

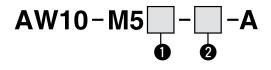
#### Symbol Filter Regulator



• Integrated filter and regulator units save space and require less piping.

#### **How to Order**

Refer to page 87 for size 20 to 60.



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

Example) AW10-M5CG-12NR-A

				Symbol	Description
				Nil	Without mounting option
		а	Mounting	В	With bracket
	£			Н	With set nut (for panel mount)
_	Note			+	
O	l o	b	Float type auto drain	Nil	Without auto drain
	Option Note 1)		Trout type date drain	C Note 2)	N.C. (Normally closed) Drain port is closed when pressure is not applied.
				+	[
		С	Pressure gauge	Nil	Without pressure gauge
				G Note 3)	Round type pressure gauge (without limit indicator)
				+	
		d	Set pressure Note 4)	Nil	7.3 to 102 psi (0.05 to 0.7 MPa) setting
			<u>'</u>	1 1	2.9 to 29 psi (0.02 to 0.2 MPa) setting
				+	Deliver the most a ferrod
			D Note 5)	Nil	Polycarbonate bowl
		е	Bowl Note 5)	2	Metal bowl
	Semi-standard			6	Nylon bowl
	and			+	
<b>Q</b>	-ste	f	Exhaust mechanism	Nil	Relieving type
	E			N	Non-relieving type
	Š			+	
		g	Flow direction	Nil	Flow direction: Left to right
		9	riew direction	R	Flow direction: Right to left
				+	
		h	Pressure unit	Nil	Name plate, caution plate, and pressure gauge in imperial units: MPa
			i ressure unit	Z Note 6)	Name plate, caution plate, and pressure gauge in imperial units: psi, °F

Note 1) Option B, G, H are not assembled and supplied loose at the time of shipment.

Note 2) 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.

Note 3) A 145psi (1.0 MPa) pressure gauge will be fitted. It is not assembled and supplied loose at the time of shipment.

Note 4) Pressure can be set higher than the specification pressure in some cases, but use pressure within the specification range.

Note 5) Refer to Chemical data on page 90 for chemical resistance of the bowl.

Note 6) This product is for overseas use only according to the new Measurement Law. (The SI unit type is provided for use in Japan.)



A



#### **Standard Specifications**

<u> </u>	
Port size	M5 x 0.8
Pressure gauge port size	1/16
Fluid	Air
Ambient and fluid temperature	23 to 140°F (-5 to 60°C) (with no freezing)
Proof pressure	218 psi (1.5 MPa)
Maximum operating pressure	145 psi (1.0 MPa)
Set pressure range	7.3 to 102 psi (0.05 to 0.7 MPa)
Nominal filtration rating	5 μm
Bowl material	Polycarbonate
Construction	Relieving type
Weight (kg)	0.09

#### Options/Part No.

Bracket assembly Note 1)	AR12P-270AS
Set nut	AR12P-260S
Round type pressure gauge Note 2)	G27-10-R1

Note 1) Assembly of a bracket and set nuts Note 2) 1.0 MPa pressure gauge

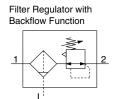
#### **Bowl Assembly/Part No.**

Bowl material	Drain discharge mechanism	Drain port	Bowl part no.
Polycarbonate bowl	Manual discharge	With drain cock	C1SF-A
Polycarbonate bowl	Automatic discharge (Auto drain) Note 2)	Normally closed (N.C.)	AD17-A
Nylon bowl	Manual discharge	With drain cock	C1SF-6-A
Nylon bowi	Automatic discharge (Auto drain) Note 2)	Normally closed (N.C.)	AD27-6-A
Metal bowl	Manual discharge	With drain cock	C1SF-2-A
ivietai dowi	Automatic discharge (Auto drain) Note 2)	Normally closed (N.C.)	AD17-2-A

Note 1) Please consult with SMC separately for psi and °F unit display specifications. Note 2) Minimum operating pressure: 15 psi (0.1 MPa)

# Filter Regulator AW20-B to AW60-B Filter Regulator with Backflow Function AW20K-B to AW60K-B

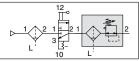
Symbol Filter Regulator



- Integrated filter and regulator units save space and require less piping.
- With the backflow function it incorporates a mechanism to exhaust the air pressure in the outlet side reliably and quickly.

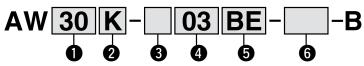
Example)

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**

#### Refer to page 85 for size 10.



- 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) AW30K-03BE-1N-B

	_	_						D	
				Symbol	Description		Body	/ size	
						20	30	40	60
<b>A</b>	With backflow			Nil	Without backflow function		•	•	•
2			function	K Note 1)	With backflow function	•	•	•	•
				+					
				Nil	Rc	•	•	•	•
8		Pipe	thread type	Note 2)	NPT		•	•	•
				F Note 3)	G		•	•	
				+ 01	1/8				
				02	1/8		_	_	_
				03	3/8				_
4		I	Port size	04	1/2				_
	4 Port size			06	3/4				_
				10	1				
				+	ı				
				Nil	Without mounting option				
		а	Mounting	B Note 5)	With bracket				
		~	Mounting	Н	With set nut (for panel mount)				_
				+	That cot hat (ior parior mount)				
				Nil	Without auto drain			•	•
		b	Float type	C Note 6)	N.C. (Normally closed) Drain port is closed when pressure is not applied.		•	•	•
:	<del>4</del>		auto drain	D Note 7)	N.O. (Normally open) Drain port is open when pressure is not applied.	_	•	•	•
	Option Note 4)			+	( ) 1 / 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1				
6	tion		Pressure	Nil	Without pressure gauge	•	•	•	•
	g			Е	Square embedded type pressure gauge (with limit indicator)	•	•	•	•
			gauge Note 8)	G	Round type pressure gauge (with limit indicator)	•	•	•	•
				М	Round type pressure gauge (with color zone)	•	•	•	•
		C	District	E1	Output: NPN output / Electrical entry: Wiring bottom entry	•	•	•	•
			Digital	E2	Output: NPN output / Electrical entry: Wiring top entry	•	•	•	•
			pressure switch Note 9)	E3	Output: PNP output / Electrical entry: Wiring bottom entry	•	•	•	•
			SWITCH	E4	Output: PNP output / Electrical entry: Wiring top entry		•		•
				+					
		d	Set pressure Note 10)	Nil	7.3 to 123 psi (0.05 to 0.85 MPa) setting				•
			pressure Note 10)	1	2.9 to 29 psi (0.02 to 0.2 MPa) setting		•	•	
				+					
				Nil	Polycarbonate bowl		+ -		
	D			2	Metal bowl				
	tandard	е	Bowl Note 11)	6	Nylon bowl Metal bowl with level gauge			•	
6	stal			8	Metal bowl with level gauge	_	Note 12)	Note 12)	Note 12)
	Semi-st			C 6C	With bowl guard  Nylon bowl with bowl guard		Note 12)	Note 12)	Note 13)
	Se			+	nylon bowl with bowl guard				
				Nil	With drain cock		•		
					Drain guide 1/8			_	_
		f	Drain port Note 14)	<b>J</b> Note 15)	Drain guide 1/4		•	•	_
				W Note 16)	Drain guide 1/4  Drain cock with barb fitting				
					Fram cock with barb fitting				_

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## Filter Regulator Series AW20-B to AW60-B Filter Regulator with Backflow Function Series AW20K-B to AW60K-B



AW20-B, AW20K-B AW40-B, AW40K-B

								D	
				Symbol	Description		Body	size	
						20	30	40	60
			Exhaust	Nil	Relieving type	•	•	•	
		g	mechanism	N	Non-relieving type	•	•	•	•
	밀			+				,	
	standard	h	Flow direction Nil		Flow direction: Left to right	•	•	•	•
6	sta	h	riow direction	R	Flow direction: Right to left	•	•	•	•
	╘			+					
	Semi-			Nil	Name plate, caution plate for bowl, and pressure gauge in imperial units: MPa	•	•	•	•
			Pressure unit	<b>Z</b> Note 17)	Name plate, caution plate for bowl, and pressure gauge in imperial units: psi, °F	Note 19)	Note 19)	Note 19)	Note 19)
				ZA Note 18)	Digital pressure switch: With unit conversion function	△ Note 20)	Note 20)	△ Note 20)	△ Note 20)

- Note 1) Set the inlet pressure to at least 7.3 psi (0.05 MPa) higher than the set pressure.
- Note 2) Drain guide is NPT1/8 (applicable to the AW20(K)-B) and NPT1/4 (applicable to the AW30(K)-B to AW60(K)-B). The auto drain port comes with ø3/8" One-touch fitting (applicable to the AW30(K)-B to AW60(K)-B).
- Note 3) Drain guide is G1/8 (applicable to the AW20(K)-B) and G1/4 (applicable to the AW30(K)-B to AW60(K)-B).
- Note 4) Option B, G, H, M are not assembled and supplied loose at the time of shipment.
- Note 5) Assembly of a bracket and set nuts (applicable to the AW20(K)-B to AW40(K)-B). Including 2 mounting screws for the AW60(K)-B
- Note 6) 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.

- Note 7) If the compressor is small (0.75 kW, discharge flow is less than 3.5 scfm (100 L/min[ANR])), air leakage from the drain cock may occur during start of operations. N.C. type is recommended.
- Note 8) When the pressure gauge is attached, a 145 psi (1.0 MPa) pressure gauge will be fitted for standard (123 psi [0.85 MPa]) type. 58 psi (0.4 MPa) pressure gauge for 2.9 psi (0.2 MPa) type.
- Note 9) 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.)
- Note 10) Pressure can be set higher than the specification pressure in some cases, but use pressure within the specification range.
- Note 11) Refer to Chemical data on page 90 for chemical resistance of the bowl.
- Note 12) A bowl guard is provided as standard equipment (polycarbonate).
- Note 13) A bowl guard is provided as standard equipment (nylon).

- Note 14) The combination of float type auto drain: C and D is not available.
- Note 15) Without a valve function
- Note 16) The combination of metal bowl: 2 and 8 is not available.
- Note 17) For pipe thread type: NPT. This product is for overseas use only according to the new Measurement Law. (The SI unit type is provided for use in Japan.) Cannot be used with M: Round pressure gauge (with color zone). Available by request for special. The digital pressure switch will be equipped with the unit conversion function, setting to psi initially.
- Note 18) For options: E1, E2, E3, E4. This product is for overseas use only according to the new Measurement Law. (The SI unit is provided for use in Japan)
- Note 19) O: For pipe thread type: NPT only Note 20)  $\triangle$ : Select with options: E1, E2, E3, E4.

#### **Standard Specifications**

Model	AW20-B	AW30-B	AW40-B	AW40-06-B	AW60-B	
Port size	1/8, 1/4	1/4, 3/8	1/4, 3/8, 1/2	3/4	3/4, 1	
Pressure gauge port size Note 1)		·	1/8			
Fluid			Air			
Ambient and fluid temperature Note 2)		23 to 140°F	(-5 to 60°C) (with n	o freezing)		
Proof pressure			218 psi (1.5 MPa)			
Maximum operating pressure			145 psi (1.0 MPa)			
Set pressure range		7.3 to	123 psi (0.05 to 0.85	5 MPa)		
Nominal filtration rating			5 μm			
Drain capacity (cm³)	8	25		45		
Bowl material			Polycarbonate			
Bowl guard	Semi-standard (Steel)	Semi-standard (Steel) Standard (Polycarbonate)				
Construction	Relieving type					
Weight (kg)	0.20	0.36	0.66	0.72	2.05	

Note 1) Pressure gauge connection threads are not available for F.R.L. unit with a square embedded type pressure gauge or with a digital pressure switch. Note 2) 23 to 122°F (–5 to 50°C) for the products with the digital pressure switch



## Series AW20-B to AW60-B Series AW20K-B to AW60K-B

#### Options/Part No.

	Ontions	al aposifications			Model		
	Ориона	al specifications	AW20(K)-B	AW30(K)-B	AW40(K)-B	AW40(K)-06-B	AW60(K)-B
Bracket assembly Note 1)			AW23P-270AS	AR33P-270AS	AR43P	-270AS	AW62P-270AS
Se	t nut		AR23P-260S	AR33P-260S	AR43I	P-260S	Note 2)
Ð	Round type Note 3)	Standard	G36-1	0-□01		G46-10-□01	
gauge	nound type	2.9 to 29 psi (0.02 to 0.2 MPa) setting	G36-4	G36-4-□01 G46-4-□0			
	Round type Note 3)	Standard	G36-10	-□01-L	G46-10-□01-L		
ä	(with color zone)	2.9 to 29 psi (0.02 to 0.2 MPa) setting	G36-4-	G36-4-□01-L G46-4-□01-L			
Pressure	Square embedded	Standard	GC3-10AS [GC3P-010AS (Pressure gauge cover only)]				
4	type Note 4)	2.9 to 29 psi (0.02 to 0.2 MPa) setting		GC3-4AS [GC3P-	010AS (Pressure	gauge cover only)]	
		NPN output: Wiring bottom entry		ISE35-N-25-MLA	(SE35-N-25-M	Switch body only)]	
Dig	gital pressure	NPN output: Wiring top entry		ISE35-R-25-MLA	(SE35-R-25-M)	Switch body only)]	
sw	itch Note 5)	PNP output: Wiring bottom entry		ISE35-N-65-MLA	(SE35-N-65-M	Switch body only)]	
		PNP output: Wiring top entry	ISE35-R-65-MLA [ISE35-R-65-M (Switch body only)]				

Note 1) Assembly of a bracket and set nuts. Including 2 mounting screws for the AW60(K)-B

No indication is necessary for R; however, indicate N for NPT.

Please contact SMC regarding the pressure gauge supply for psi unit specifications.

Note 4) Including one O-ring and 2 mounting screws.

[]: Pressure gauge cover only

Note 5) In addition to the pressure switch body, lead wire with connector (2 m), adapter, lock pin, O-ring (1 pc.), mounting screw (2 pcs.) are attached.

[]: Switch body only. (Regarding how to order the digital pressure switch, refer to the WEB catalog or the Best Pneumatics No.6.)

A pressure switch can be mounted on the AW60 (K)-B, with a special mounting adapter (Pressure switch adapter assembly: AW63P-310AS) and mounting screws (M3 x 0.5 x 14) which are delivered with the mounting adapter.

#### Bowl Assembly/Part No.

David	Drain					Model		
Bowl material	discharge mechanism	Drain port	Other	AW20-B	AW30-B	AW40-B	AW40-06-B	AW60-B
		With drain cock	_	C2SF-A	_			
	Managar	With drain cock	With bowl guard	C2SF-C-A	C3SF-A		C4SF-A	
	Manual discharge	Drain cock with barb fitting	With bowl guard	_	C3SF-W-A		C4SF-W-A	
Polycarbonate	discriarge	With drain guide	_	C2SF□-J-A	_		_	
bowl		(without valve function)	With bowl guard	C2SF□-CJ-A	C3SF□-J-A		C4SF□-J-A	
	Automatic	Normally closed (N.C.)	_	AD27-A	_		_	
	discharge Note)	arge Note) Normally closed (N.C.)	With bowl guard	AD27-C-A	AD37□-A		AD47□-A	
	(Auto drain)	Normally open (N.O.)	With bowl guard	_	AD38□-A		AD48□-A	
	Manual discharge	With drain cock	_	C2SF-6-A	_		_	
			With bowl guard	C2SF-6C-A	C3SF-6-A		C4SF-6-A	
		Drain cock with barb fitting	With bowl guard	_	C3SF-6W-A		C4SF-6W-A	
Nylon bowl		With drain guide	_	C2SF□-6J-A	_		_	
INVIOLI DOWL		(without valve function)	With bowl guard	C2SF□-6CJ-A	C3SF□-6J-A		C4SF□-6J-A	
	Automatic	Normally closed (N.C.)	_	AD27-6-A	_		_	
	discharge Note)	Normally closed (N.O.)	With bowl guard	AD27-6C-A	AD37□-6-A		AD47□-6-A	
	(Auto drain)	Normally open (N.O.)	With bowl guard	_	AD38□-6-A		AD48□-6-A	
		With drain cock	_	C2SF-2-A	C3SF-2-A		C4SF-2-A	
	Manual	Willi dialii cock	With level gauge	_	C3LF-8-A		C4LF-8-A	
	discharge	With drain guide	_	C2SF□-2J-A	C3SF□-2J-A		C4SF□-2J-A	
Metal bowl		(without valve function)	With level gauge	_	C3LF□-8J-A		C4LF□-8J-A	
IVICIAI DOWI	A	Normally closed (N.C.)	_	AD27-2-A	AD37□-2-A		AD47□-2-A	
	Automatic discharge Note)	Normally closed (N.C.)	With level gauge	_	AD37□-8-A	·	AD47□-8-A	
	(Auto drain)	Normally open (N.O.)	_	_	AD38□-2-A		AD48□-2-A	
	,,	recinially open (re.o.)	With level gauge	_	AD38□-8-A		AD48□-8-A	

Note) Minimum operating pressure: N.O. type-15 psi (0.1 MPa) (AD38-A, AD48-A); N.C. type-15 psi (0.1 MPa) (AD27-A) and 22 psi (0.15 MPa) (AD37-A, AD47-A). Bowl assembly comes with a bowl seal.

Please consult with SMC separately for psi and °F unit display specifications.



Note 2) Please consult with SMC regarding the set nuts for the AW60(K)-B.

Note 3)  $\square$  in part numbers for a round pressure gauge indicates a pipe thread type.

 $<sup>\</sup>square$  in bowl assembly part numbers indicates a pipe thread type (applicable tubing for auto drain).

No indication is necessary for Rc thread; however, indicate N for NPT thread, and F for G thread. (For auto drain, Nil: ø10, N: ø3/8")

I Be sure to read this before handling. Refer to the back cover for Safety Instructions, "Handling Precautions for I SMC Products" and the Operation Manual for F.R.L. Precautions, http://www.smcworld.com

#### **Design/Selection**

## **∕**∿ Warning

- 1. Residual pressure disposal (outlet pressure removal) is not possible for the AW20-B to AW60-B even though the inlet pressure is exhausted. When the residual pressure disposal is performed, use the filter regulator with backflow function (AW20K-B to AW60K-B).
- 2. The standard bowl for the air filter, filter regulator, and lubricator, as well as the sight dome for the lubricator are made of polycarbonate. Do not use in an environment where they are exposed to or come in contact with organic solvents, chemicals, cutting oil, synthetic oil, alkali, and thread lock solutions.

Effects of atmosphere of organic solvents and chemicals, and where these elements are likely to adhere to the equipment. Chemical data for substances causing degradation (Reference)

			Mate	erial
Туре	Chemical name	Application examples	Polycarbonate	Nylon
Acid	Hydrochloric acid Sulfuric acid, Phosphoric acid Chromic acid	Acid washing liquid for metals	Δ	×
Alkaline	Sodium hydroxide (Caustic soda) Potash Calcium hydroxide (Slack lime) Ammonia water Carbonate of soda	Degreasing of metals Industrial salts Water-soluble cutting oil	×	0
Inorganic salts	Sodium sulfide Sulfate of potash Sulfate of soda	_	×	Δ
Chlorine solvents	Carbon tetrachloride Chloroform Ethylene chloride Methylene chloride	Cleansing liquid for metals Printing ink Dilution	×	Δ
Aromatic series	Benzene Toluene Paint thinner	Coatings Dry cleaning	×	Δ
Ketone	Acetone Methyl ethyl ketone Cyclohexane	Photographic film Dry cleaning Textile industries	×	×
Alcohol	Ethyl alcohol IPA Methyl alcohol	Antifreeze Adhesives	Δ	×
Oil	Gasoline Kerosene	_	×	0
Ester	Phthalic acid dimethyl Phthalic acid diethyl Acetic acid	Synthetic oil Anti-rust additives	×	0
Ether	Methyl ether Ethyl ether	Brake oil additives	×	0
Amino	Methyl amino	Cutting oil Brake oil additives Rubber accelerator	×	×
Others	Thread-lock fluid Seawater Leak tester	_	×	Δ

When the above factors are present, or there is some doubt, use a metal bowl

#### for safety.

#### **Maintenance**

## **∕**∿ Warning

1. Replace the element every 2 years or when the pressure drop becomes 0.1 MPa, whichever comes first, to prevent damage to the element.

#### Mounting/Adjustment

## ∕**∖ Warnin**g

- 1. Set the regulator while verifying the displayed values of the inlet and outlet pressure gauges. Turning the regulator knob excessively can cause damage to the internal parts.
- 2. Do not use tools on the pressure regulator knob as this may cause damage. It must be operated manually.

## **∕**∖∖ Caution

- 1. Be sure to unlock the knob before adjusting the pressure and lock it after setting the pressure. Failure to follow this procedure can cause damage to the knob and the outlet pressure may fluctuate.
  - Pull the pressure regulator knob to unlock. (You can visually verify this with the "orange mark" that appears in the gap.)
  - Push the pressure regulator knob to lock. When the knob is not easily locked, turn it left and right a little and then push it (when the knob is locked, the "orange mark", i.e., the gap will disappear).
- 2. A knob cover is available to prevent careless operation of the knob. Refer to page 97 for details.
- 3. When the bowl is installed on the AW30-B to AW60-B, install them so that the lock button lines up to the groove of the front (or the back) of the body to avoid drop or damage of the bowl.



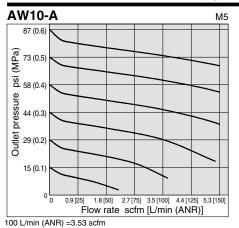


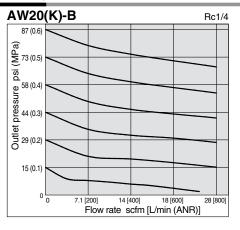


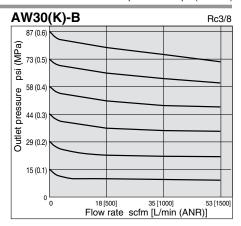
### Series AW210-A / Series AW20-B to AW60-B / Series AW20K-B to AW60K-B

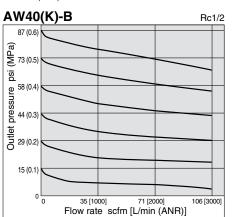
#### Flow-rate Characteristics (Representative values)

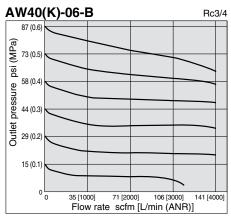
Condition: Inlet pressure 102 psi (0.7 MPa)

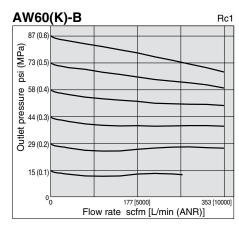






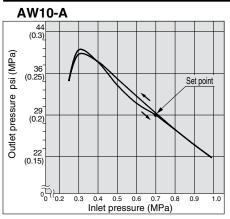


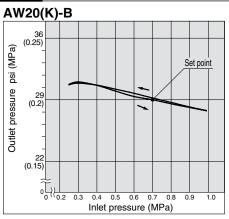


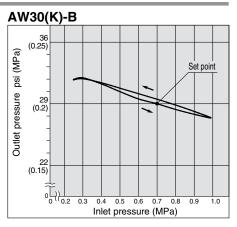


Pressure Characteristics (Representative values)

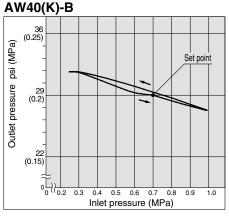
Conditions: Inlet pressure 102 psi (0.7 MPa), Outlet pressure 29 psi (0.2 MPa), Flow rate 0.7 scfm(20 L/min) (ANR)

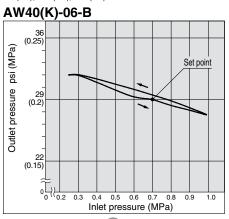


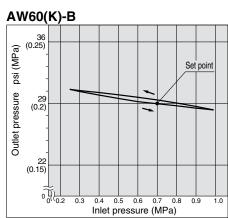




psi (MPa) -- 29 (0.2), 44 (0.3), 58 (0.4), 73 (0.5), 87 (0.6), 102 (0.7), 116 (0.8), 131 (0.9), 145 (1.0)



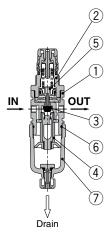




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#### Construction

#### **AW10-A**



#### **Component Parts**

No.	Description	Material	Color
1	Body	Zinc die-cast	White
2	Bonnet	Polyacetal	White

#### **Replacement Parts**

No.	Description	Material	Part no.
3	Valve	HNBR	AR10P-090S
4	Filter element	Non-woven fabric	AF10P-060S
5	Piston assembly	Polyacetal	AR10P-150AS
6	Bowl O-ring	NBR	C1SFP-260S
7	Bowl assembly	Polycarbonate	C1SF-A

## **Working Principle (Filter Regulator with Backflow Function)**

#### **AW10-A**



When the inlet pressure is higher than the regulating pressure, the check valve operates as a normal regulator (Figure 1). When the inlet pressure is shut off and exhausted, any inlet pressure applied to the valve ① will be lost. The force for seating the valve ① is the valve spring force ② only. When the valve ① is opened using the outlet force, the outlet pressure will be exhausted at the inlet side (Figure 2). When the set pressure is 0.15 MPa or less, the valve ① may not open due to the valve spring ② force.

## Series AW20-B to AW60-B Series AW20K-B to AW60K-B

### Construction

#### AW20(K)-B

#### AW30(K)-B/AW40(K)-B

AW60(K)-B

0 0 

Drain

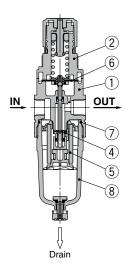
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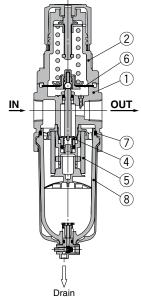
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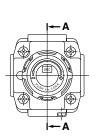
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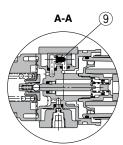
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AW20K-B to AW60K-B (Filter Regulator with Backflow Function)





#### **Component Parts**

No.	Description	Material	Model	Color
1	Body	Aluminum die-cast	AW20-B to AW60-B	White
2	Bonnet	Polyacetal	AW20-B to AW40-B	White
2	Boillet	Aluminum die-cast	AW60-B	White
3	Housing	Aluminum die-cast	AW60-B	White

#### **Replacement Parts**

No.	Description	Material	Part no.				
INO.	Description	ivialeriai	AW20(K)-B	AW30(K)-B	AW40(K)-B	AW40(K)-06-B	AW60(K)-B
4	Valve assembly	Brass, HNBR	AW20P-340AS	AW30P-340AS	AW40P-340AS		AW60P-090AS
5	Filter element	Non-woven fabric	AF20P-060S	AF30P-060S	AF40P-060S		AW60P-060S
6	Diaphragm assembly	Weatherable NBR	AR20P-150AS	AR30P-150AS	AR40P	-150AS	AR50P-150AS
7	Bowl seal	NBR	C2SFP-260S	C32FP-260S		C42FP-260S	
8	Bowl assembly Note 1)	Polycarbonate	C2SF-A	C3SF-A <sup>Note 2)</sup>	C4SF-A <sup>Note 2)</sup>		
9	Check valve assembly Note 3)	_	AR23KP-020AS				

Note 1) Bowl assembly includes the bowl O-ring.

Please consult with SMC separately for psi and °F unit display specifications.

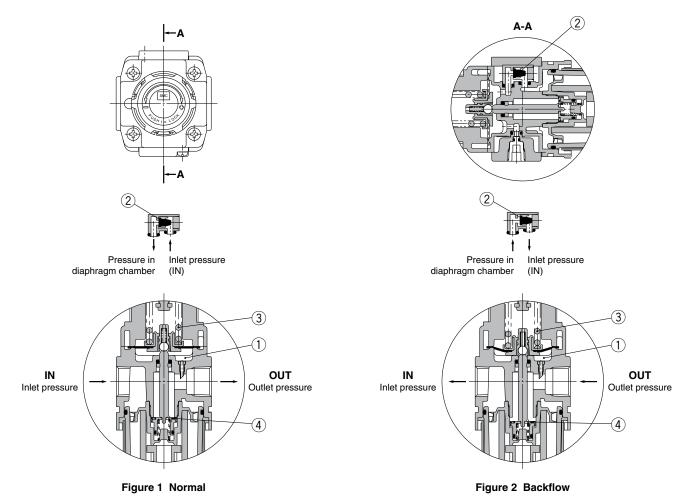
Note 2) Bowl assembly for the AW30(K)-B to AW60(K)-B models comes with a bowl guard (Material: Polycarbonate).

Note 3) Check valve assembly is applicable for a filter regulator with backflow function (AW20(K)-B to AW60(K)-B) only. Assembly of a check valve cover, check valve body assembly and 2 mounting screws



## **Working Principle (Filter Regulator with Backflow Function)**

#### AW20K-B to AW60K-B



When the inlet pressure is higher than the regulating pressure, the check valve ② closes and operates as a normal regulator (Figure 1). When the inlet pressure is shut off and released, the check valve ② opens and the pressure in the diaphragm chamber ① is released into the inlet side (Figure 2). This lowers the pressure in the diaphragm chamber ① and the force generated by the pressure regulator spring ③ lifts the diaphragm. The valve ④ opens through the stem, and the outlet pressure is released to the inlet side (Figure 2).

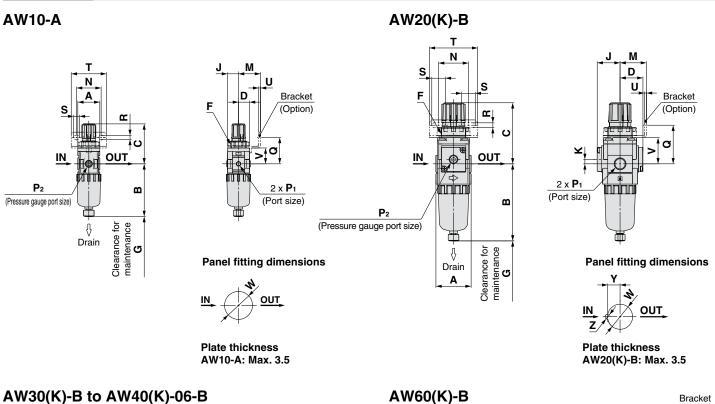


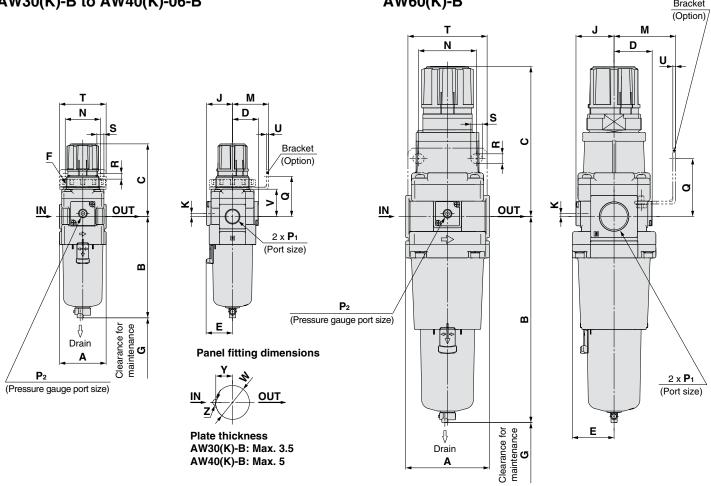
Series AW210-A

Series AW20-B to AW60-B

Series AW20K-B to AW60K-B

### **Dimensions**

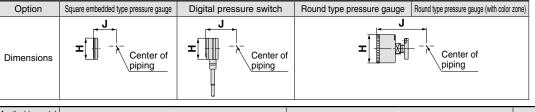




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## Filter Regulator Series AW210-A Filter Regulator Series AW20-B to AW60-B Filter Regulator with Backflow Function Series AW20K-B to AW60K-B



Applicable model					AW30(K)-B to AW60(K)-B
Optional/Semi-standard specifications	With auto drain (N.C.)	Metal bowl	With drain guide	Metal bowl with drain guide	With auto drain (N.O./N.C.)
Dimensions	M5 x 0.8	<b>B</b>	Width across 1/8 flats 14	Width across flats 14	N.O.: Black N.C.: Gray  Thread type/Rc, G: ø10 One-touch fitting Thread type/NPT: ø3/8* One-touch fitting

Applicable model			AW30	(K)-B to AW60(K)-B		
Optional/Semi-standard specifications	Metal bowl	Metal bowl with drain guide	Metal bowl with level gauge	Metal bowl with level gauge, with drain guide	With drain guide	Drain cock with barb fitting
Dimensions	<u> </u>	Width across flats 17		Width across flats 17	Width across flats 17	Barb fitting applicable tubing: T0604

														Ор	tional sp	ecificatio	ns		
Model				Sta	ndard s	pecific	ations					Squar pressur	• •	Digital p		Round	,,	Round type pressure gauge (with color zone)	
	<b>P</b> 1	P <sub>2</sub>	Α	В	C Note)	D	Е	F	G	J	K	Н	J	Н	J	Н	J	Н	J
AW10-A	M5 x 0.8	1/16	25	59.9	47.4	12.5	_	M18 x 1	25	12.5	_	_	_	_	_	ø26	26	_	
AW20(K)-B	1/8, 1/4	1/8	40	87.6	72.4	26	_	M28 x 1	40	26	5	□28	27	□27.8	37.5	ø37.5	62.5	ø37.5	63.5
AW30(K)-B	1/4, 3/8	1/8	53	115.1	85.6	29.4	30	M38 x 1.5	55	29.4	3.5	□28	30	□27.8	40.9	ø37.5	66.9	ø37.5	67.9
AW40(K)-B	1/4, 3/8, 1/2	1/8	70	147.1	91.7	37.3	38.4	M42 x 1.5	80	37.3	1.5	□28	38.4	□27.8	48.8	ø42.5	75.7	ø42.5	75.7
AW40(K)-06-B	3/4	1/8	75	149.1	93.2	37.3	38.4	M42 x 1.5	80	37.3	1.2	□28	38.4	□27.8	48.8	ø42.5	75.7	ø42.5	75.7
AW60(K)-B	1	1/8	95	234.1	175.5	47.5	_	_	20	47.5	3.2	□28	44.3	□27.8	61.3	ø42.5	80.8	ø42.5	80.8

					Opt	ional s	pecific	ations							Sem	i-standard sp	pecifications	
Model			Brad	cket m	ount				Panel	mount		With auto drain	With barb fitting	With drain guide	Metal bowl	Metal bowl with drain guide	Metal bowl with level gauge	Metal bowl with level gauge, with drain guide
	М	N	Q	R	S	Т	U	٧	W	Υ	Z	В	В	В	В	В	В	В
AW10-A	25	28	30	4.5	6.5	40	2	18	18.5	_	_	77.9	_	_	59.3	_	_	_
AW20(K)-B	30	34	43.9	5.4	15.4	55	2.3	24.7	28.5	14	6	104.9	_	91.4	87.4	93.9	_	_
AW30(K)-B	41	40	45.8	6.5	8	53	2.3	31.1	38.5	19	7	156.8	123.6	121.9	117.6	122.1	137.6	142.1
AW40(K)-B	50	54	54	8.5	10.5	70	2.3	35.5	42.5	21	7	186.9	155.6	153.9	149.6	154.1	169.6	174.1
AW40(K)-06-B	50	54	55.5	8.5	10.5	70	2.3	37	42.5	21	7	188.9	157.6	155.9	151.6	156.1	171.6	176.1
AW60(K)-B	70	66	65.8	11	13	90	3.2	_	_	_		273.9	240.9	242.6	236.6	241.1	256.6	261.1

Note) The dimension of  $\ensuremath{C}$  is the length when the filter regulator knob is unlocked.

## Option Knob Cover

Prevents careless knob operation.





Part no.	Applicable model
AR20P-580AS	AC20□-B, AR20(K)-B, AW20(K)-B
AR25P-580AS	AC25□-B, AR25(K)-B
AR30P-580AS	AC30□-B, AR30(K)-B, AW30(K)-B
AR40P-580AS	AC40□(-06)-B, AR40(K)(-06)-B, AW40(K)(-06)-B

## **⚠** 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 indicates a hazard with a low level of risk Caution: which, if not avoided, could result in minor or moderate injury

Warning indicates a hazard with a medium level of Warning: 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.

#### **⚠** 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 catalog information, with a view to giving due consideration to any possibility of equipment failure when configuring the

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

- 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 catalog.
  - 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.

- 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 assure that all local rules governing that export are known and followed.

#### ⚠ Safety Instructions

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

#### **⚠** 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 catalog 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
- 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,

#### **⚠** 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.

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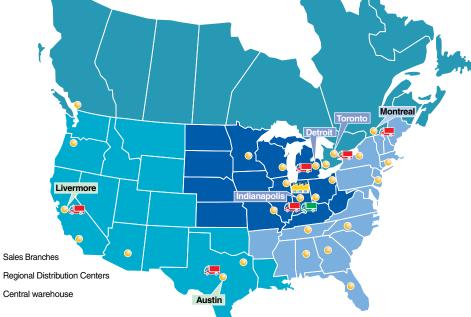
SMC Corporation of America 10100 SMC Blvd., Noblesville, IN 46060

www.smcusa.com SMC Pneumatics (Canada) Ltd.

(800) SMC SMC1 (762-7621) e-mail: sales@smcusa.com

www.smcpneumatics.ca

International inquiries: www.smcworld.com





## **Modular F.R.L. Units**







## The bowl is covered with a transparent bowl guard!

- The inside is visible from 360°.
- The bowl is completely protected from the environment. Safety improved



▶ Energy saving regulator

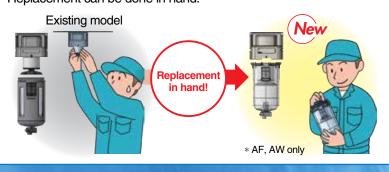
Pressure drop: Max. 50% improvement

Set pressure: 7.3 to 102 psi (0.05 to 0.7 MPa)

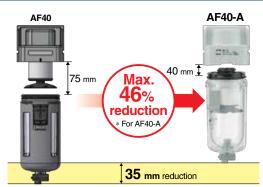
2.9 to 29 psi (0.02 to 0.2 MPa)

## Easy replacement of the element

The element and the bowl are in one piece. Replacement can be done in hand.

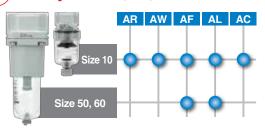


## ► Reduced required maintenance space





## New Body size 10, 50, 60 added!





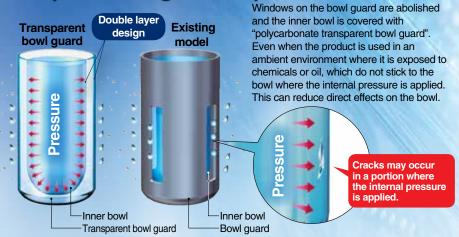


## Series AC

## Transparent bowl guard

Better environmental resistance:

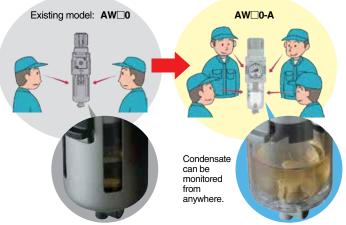
Transparent bowl guard can protect the inner bowl!





#### Better visibility: 360°

Use of transparent bowl guard makes it possible to check the condensate inside the filter case and the remaining oil amount in the lubricator from the entire periphery.



Light weight:
Max. 90g reduction

\* Except AW

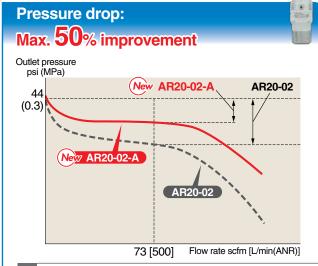
AF40-A
Weight
360 g
Weight
450 g

Metal related corrosion does not occur.



Resin body does not rust.

## Regulator/AR Filter Regulator/AW



♦ Inlet pressure: 73 psi (0.5 MPa ♦ Outlet pressure: 44 psi (0.3 MPa)

♦ Flow rate: 17.7 scfm [500 L/min(ANR)]

### **New Spacer**

AR

#### **Modular connection**

#### Step 1

- Mount the product by lining up the mating surface of the new spacer with bracket.
- Insert the retainer into the spacer bolt and tighten the nut. (temporary assembling)



#### Step ②

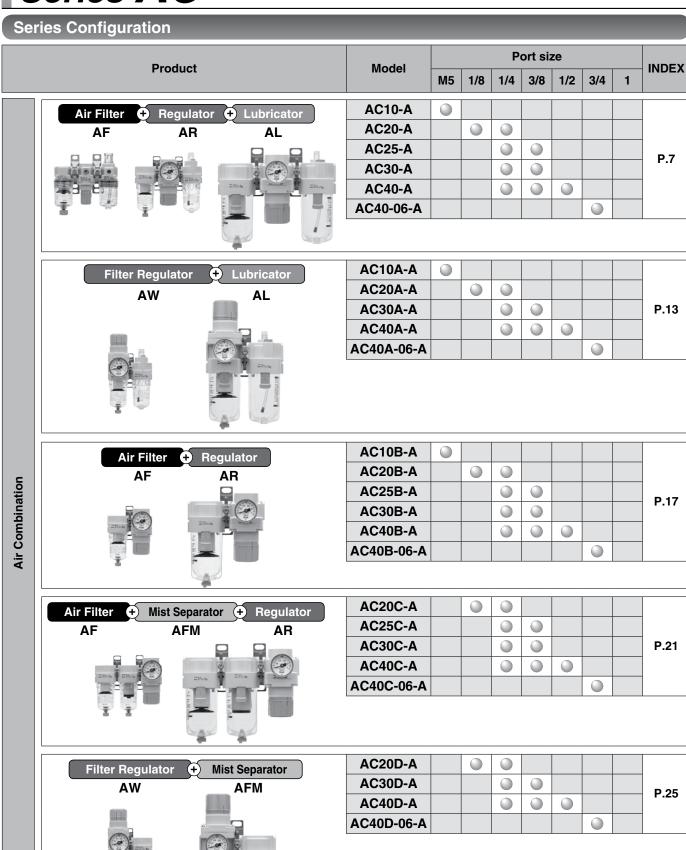
• Tighten the nut with the hexagon wrench.

#### Interchangeable with existing model

- New spacer can be connected to existing AF, AR, AL, AW series.
- Existing spacer cannot be used for new AR
   □-A, AW□-A series.



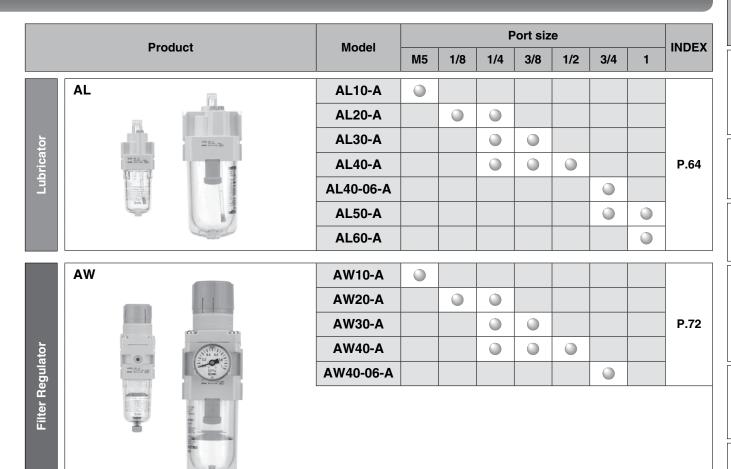




## Series **AC**

## Series Configuration

							F	ort siz	e			
		Produ	ct	Model	M5	1/8	1/4	3/8	1/2	3/4	1	INDEX
	AF			AF10-A	0							
				AF20-A		0	0					1
ē		*** *** ****	and the second	AF30-A			0	0				
Air Filter			£	AF40-A			0	0	0			P.34
Aii		Common La Common		AF40-06-A						0		
				AF50-A						0	0	
			-	AF60-A							0	
	AFM			AFM20-A		0						
				AFM30-A			0	0				1
rator		SHEET CO. J. SHEET CO. SHE	COMPANY OF THE STATE OF THE STA	AFM40-A			0	0	0			P.34
Mist Separator			1	AFM40-06-A						0		
	AFD		_	AFD20-A		•	•					
ator			Con .	AFD30-A				0				P.34
epar		I St. w.	F Male M	AFD40-A			0	0	0			1.01
list S				AFD40-06-A						0		
Micro Mist Separator		OX.										
	AR			AR10-A	0							
		2000		AR20-A		0	0					
o.		MAIN ST. A. ST. AND ST.	04 06 15 15 15 15 15 15 15 15 15 15 15 15 15	AR25-A			0	0				P.54
Regulator			02 50	AR30-A			0	0				1 .54
Reg				AR40-A			0	0	0			
				AR40-06-A						0		



## **Simple Specials System**

A system designed to respond quickly and easily to your special ordering needs



### Short lead times

This system enables us to respond to your special needs, such as additional machining, accessory assembly, or modular unit, and deliver such special products as quickly as standard products.

## Repeat orders

Once we receive a Simple Special part number from your previous order, we will process the order, manufacture the product, and deliver it to you.



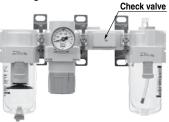
The simple specials specification sheets can be downloaded from SMC website. For details, refer to the SMC website. (http://www.smcworld.com)

#### **Attachment List**

#### **Check valve**

Page 28

■ A check valve with intermediate branch port can be easily installed to prevent a backflow of lubricant when branching the air flow and releasing the air on the outlet side of the regulator.



- · Air Filter + Regulator + Lubricator (AC20-A to AC40-A)
- · Filter Regulator + Lubricator (AC20A-A to AC40A-A)
  - \* Port size: Except 06

#### **Pressure switch**

Page 29

■ A compact integrated pressure switch can be easily installed and facilitates the pressure detection of the line.



- · Air Filter + Regulator + Lubricator (AC20-A to AC40-A)
- · Filter Regulator + Lubricator (AC20A-A to AC40A-A)
- · Air Filter + Regulator (AC20B-A to AC40B-A)
- · Air Filter + Mist Separator + Regulator (AC20C-A to AC40C-A)
- · Filter Regulator + Mist Separator (AC20D-A to AC40D-A)

#### T-spacer

Applicable

Page 29

■ Using a T-shaped spacer facilitates the branching of air flow.

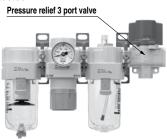


- · Air Filter + Regulator + Lubricator (AC10-A to AC40-A)
- · Air Filter + Regulator (AC10B-A to AC40B-A)
- · Air Filter + Mist Separator + Regulator (AC20C-A to AC40C-A)

#### Pressure relief 3 port valve

Page 30

■ With the use of a pressure relief 3 port valve, pressure left in the line can be easily exhausted.

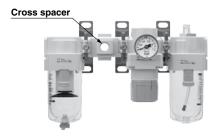


- · Air Filter + Regulator + Lubricator (AC20-A to AC40-A)
- · Filter Regulator + Lubricator (AC20A-A to AC40A-A)
- · Air Filter + Regulator (AC20B-A to AC40B-A)
- · Air Filter + Mist Separator + Regulator (AC20C-A to AC40C-A)
- · Filter Regulator + Mist Separator (AC20D-A to AC40D-A)

#### Cross spacer

Page 30

■ Pipings are possible in all 4 directions.



\* Needs to be ordered separately.

#### Piping adapter

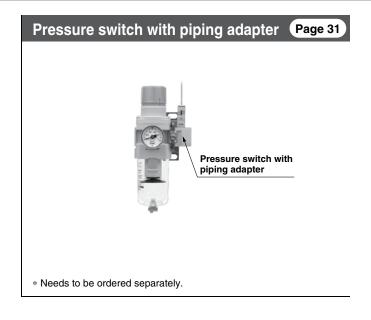
Page 31

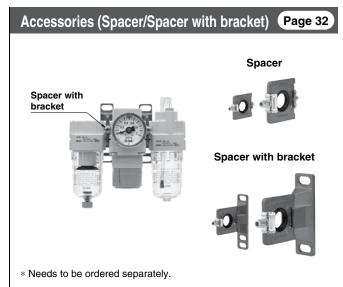
■ A piping adapter allows installation/removal of the component without removing the piping and thus makes maintenance easier.



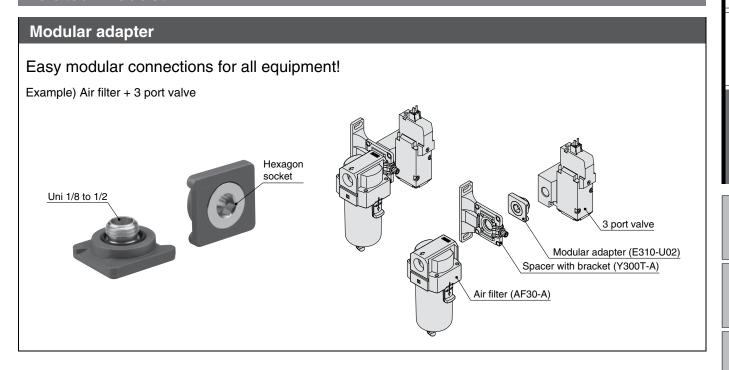
\* Needs to be ordered separately.







### **Related Product**

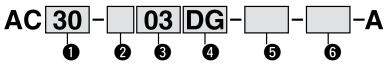


## Air Filter + Regulator + Lubricator *AC10-A to AC40-A*

#### Symbol



#### **How to Order**



- Option/Semi-standard: Select one each for a to m.
- Option/Attachment/Semi-standard symbol: When more than one specification is required, indicate in alphanumeric order.
   Example) AC30-F03DM-KSTV-13NR-A

	_	_						0		
				Symbol	Description			Body size		
						10	20	25	30	40
					Metric thread (M5)	•	l —	T		_
				Nil	Rc		•		•	
2		Pipe	thread type	N Note 1)	NPT		•		•	•
				F Note 2)	G	_	•	•	•	•
				+					ı	
				M5	M5	•	_	T —	_	_
				01	1/8	_	•	T —	_	_
•			Dout oizo	02	1/4	_	•	•	•	•
8			Port size	03	3/8	_	_	•	•	•
				04	1/2	_	_	T —	_	•
				06	3/4	_	T —	1 —	_	•
				+						
			Elect to a	Nil	Without auto drain	•	•	•	•	
		а	Float type	C Note 4)	N.C. (Normally closed) Drain port is closed when pressure is not applied.	•	•	•	•	•
	e 3)		auto drain	D Note 5)	N.O. (Normally open) Drain port is open when pressure is not applied.	_	_	•	•	•
	Option Note 3)			+				'		
4	tior			Nil	Without pressure gauge	•	•	•	•	•
	g		Pressure		Round type pressure gauge (without limit indicator)	•	_	T —	_	_
		b	gauge Note 6)	G	Round type pressure gauge (with limit indicator)		•	•	•	•
				М	Round type pressure gauge (with color zone)	_	•	•	•	•
				+					ı	
			Observation	Nil	Without attachment	•	•	•	•	•
		С	Check valve	K	Mounting position: AF+AR+K+AL	_	•	•	•	Note 7)
				+						
	_	_	Pressure	Nil	Without attachment	•	•	•	•	
	ler	d	switch	S Note 8)	Mounting position: AF+AR+S+AL	_	•	•	•	•
6	Attachment			+						
	tta		Tananar	Nil	Without attachment	•	•	•	•	•
	▼	е	T-spacer	T Note 8)	Mounting position: AF+T+AR+AL	•	•	•	•	•
				+						
			Pressure relief	Nil	Without attachment	•	•	•	•	
		f	3 port valve	V	Mounting position: AF+AR+AL+V	_	•	•	•	•
				+						
			Set	Nil	7.3 to 102 psi (0.05 to 0.7 MPa) setting	•	•	•	•	
		g	pressure Note 9)	1	2.9 to 29 psi (0.02 to 0.2 MPa) setting	•	•	•	•	•
	<u>p</u>			+						
	Semi-standard			Nil	Polycarbonate bowl	•	•	•	•	
6	star			2	Metal bowl	•	•	•	•	•
	Ë	Ja.	Bowl Note 10)	6	Nylon bowl	•	•	•	•	•
	Se	h	BOWI Note 10/	8	Metal bowl with level gauge	_	_	•	•	•
				С	With bowl guard	_	•	Note 11)	Note 11)	Note 11)
				6C	With bowl guard (Nylon bowl)	_	•	Note 12)	Note 12)	Note 12)
7					Ø SMC					

₹

## Air Combination Series AC10-A to AC40-A



	_							0		
				Symbol	Description			Body size	•	
						10	20	25	30	40
				Nil	With drain cock	•	•	•	•	•
			Air filter	J Note 14)	Drain guide 1/8	_	•	_	_	_
		•	drain port Note 13)	J 1.0.0 1.17	Drain guide 1/4	_	_	•	•	•
				W Note 15)	Drain cock with barb fitting (for ø6 x ø4 nylon tube)	_	_	•	•	•
				+						
	ا ح	-	Lubricator lubricant	Nil	Without drain cock				•	•
	Semi-standard	J	exhaust port	3 Note 16)	Lubricator with drain cock	•	•	•	•	
6	tan			+						
U	i-S-iC	k	Exhaust	Nil	Relieving type		•	•	•	
	Sen	,	mechanism	N	Non-relieving type		•	•	•	
	0			+						
			Flow direction	Nil	Flow direction: Left to right		•	•	•	•
		•	1 low direction	R	Flow direction: Right to left		•	•	•	
				+						
		m	Pressure unit	Nil	Name plate and pressure gauge in imperial units: MPa		•	•	•	•
		•••	i iossaie unit	<b>Z</b> Note 17)	Name plate, caution plate for bowl, and pressure gauge in imperial units: psi, °F	Note 18)	Note 18)	Note 18)	Note 18)	Note 18)

- Note 1) Drain guide is NPT1/8 (applicable to the AC20-A) and NPT1/4 (applicable to the AC25-A to AC40-A). The auto drain port comes with ø3/8" One-touch fitting (applicable to the AC25-A to AC40-A).
- Note 2) Drain guide is G1/8 (applicable to the AC20-A) and G1/4 (applicable to the AC25-A to AC40-A).
- Note 3) Option G, M are not assembled and supplied loose at the time of shipment.
- Note 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.
- Note 5) If the compressor is small (0.75 kW, discharge flow is less than 3.5 scfm (100 L/min[ANR]), air

- leakage from the drain cock may occur during start of operations. N.C. type is recommended.
- Note 6) When the pressure gauge is attached, a 145 psi (145 psi [1.0 MPa]) pressure gauge will be fitted for standard (102 psi [0.7 MPa]) type. 58 psi (0.4 MPa) pressure gauge for 29 psi (0.2 MPa) type (145 psi [1.0 MPa]) pressure gauge only for the AC10-A).
- Note 7) Not available with piping port size: 06 Note 8) The bracket position varies depending on the T-spacer or pressure switch mounting.
- Note 9) Pressure can be set higher than the specification pressure in some cases, but use pressure within the specification range.
- Note 10) Refer to Chemical data on page 38 for chemical resistance of the bowl.
- Note 11) A bowl guard is provided as standard equipment (polycarbonate).

- Note 12) A bowl guard is provided as standard equipment (nylon).
- Note 13) Float type auto drain: The combination of C and D is not possible.
- Note 14) Without a valve function
- Note 15) The combination of metal bowl: 2 and 8 is not available.
- Note 16) When choosing with W: Filter drain port, the drain cock of a lubricator will be with barb
- Note 17) For pipe thread type: M5, NPT. This product is for overseas use only according to the new Measurement Law. (The SI unit type is provided for use in Japan.) MPa and psi are shown together on the pressure unit. Cannot be used with M: Round pressure gauge (with color zone). Available by request for special.
- Note 18) O: For pipe thread type: M5, NPT only

#### Standard Specifications

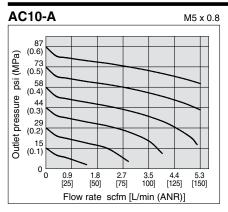
Juinaui	a opcomo	ations											
Component Regulator [Al Lubricator [Al Port size Pressure gauge port size [AR Fluid		AC10-A	AC20-A	AC25-A	AC30-A	AC40-A	AC40-06-A						
	Air Filter [AF]	AF10-A	AF20-A	AF30-A	AF30-A	AF40-A	AF40-06-A						
Component	Regulator [AR]	AR10-A	AR20-A	AR25-A	AR30-A	AR40-A	AR40-06-A						
	Lubricator [AL]	AL10-A	AL20-A	AL30-A	AL30-A	AL40-A	AL40-06-A						
Port size	•	M5 x 0.8	1/8, 1/4	1/4, 3/8	1/4, 3/8	1/4, 3/8, 1/2	3/4						
Pressure gau	uge port size [AR]	1/16			1/8								
Fluid				A	ir								
Ambient and fluid temperature Proof pressure			23	3 to 140°F (–5 to 60°	C) (with no freezing	)							
Ambient and fluid temperature Proof pressure				218 psi (	1.5 MPa)								
Proof pressure Max. operating pressure		145 psi (1.0 MPa)											
Max. operating pressure Set pressure range [AR]			7.3 to 102 psi (0.05 to 0.7 MPa)										
Nominal filtr	ation rating [AF]			5 μπ	n								
Recommend	ed lubricant [AL]			Class 1 turbine	oil (ISO VG32)								
Bowl mat	erial [AF/AL]			Polycar	rbonate								
Bowl gua	ard [AF/AL]	_	Semi-standard (Steel)		Standard (Po	olycarbonate)							
Construc	ction [AR]	Relieving type											
Weight (	kg)	0.27	0.40	0.68	0.83	1.53	1.66						

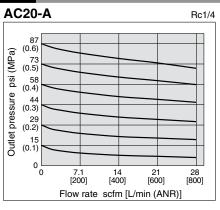


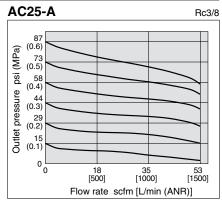
## Series AC10-A to AC40-A

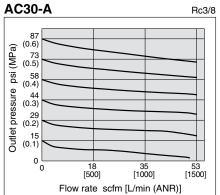
#### Flow-rate Characteristics (Representative values)

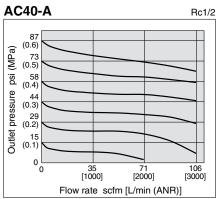
Condition: Inlet pressure 102 psi (0.7 MPa)

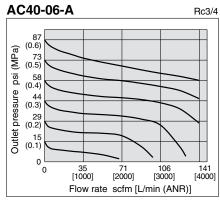




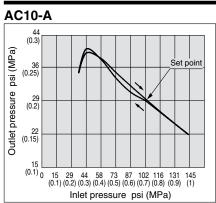


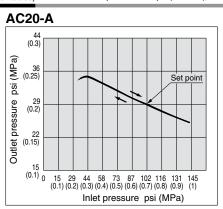


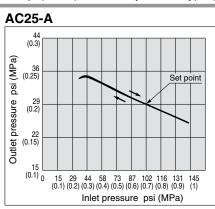




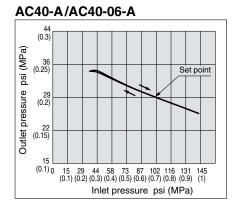
Pressure Characteristics (Representative values) Conditions: Inlet pressure 102 psi (0.7 MPa), Outlet pressure 29 psi (0.2 MPa), Flow rate 0.71 [scfm 20 L/min] (ANR)







AC30-A 44 (0.3) psi (MPa) Set point Outlet pressure 29 (0.2) 22 (0.15) 15 29 44 58 73 87 102 116 131 145 (0.1) (0.2) (0.3) (0.4) (0.5) (0.6) (0.7) (0.8) (0.9) (1) Inlet pressure psi (MPa)



## Specific Product Precautions

Be sure to read this before handling. Refer to the back cover for Safety Instructions, "Handling Precautions for I SMC Products" and the Operation Manual for F.R.L. Precautions, http://www.smcworld.com

#### **Piping**

## ∕!\ Warning

1. When mounting a check valve, make sure the arrow (IN side) points in the correct direction of air flow.

#### Air Supply

## **∕** Caution

1. Use an air filter with 5  $\mu m$  or less filtration rating on the inlet side of the valve to avoid any damage to the seat caused by dust when mounting a pressure relief 3 port valve on the inlet side.

#### **Mounting/Adjustment**

## **∕** Caution

1. When the bowl is installed on the air filter, filter regulator, lubricator, mist separator, or micro mist separator (AC25-A to AC40-A), install them so that the lock button lines up to the groove of the front (or the back) of the body to avoid drop or damage of the bowl.



#### Selection

## 🗥 Warning

1. Float type auto drain

Operate under the following conditions to avoid malfunction.

<N.O. type>

· Operating compressor: 0.75 kW (3.5 scfm [100 L/min] (ANR)) or more.

When using 2 or more auto drains, multiply the value above by the number of auto drains to find the capacity of the compressors you will need.

For example, when using 2 auto drains, 1.5 kW (7.1 scfm [200 L/min] (ANR)) of the compressor capacity is required.

- · Operating pressure: 15 psi (0.1 MPa) or more
- <N.C. type>
- · Operating pressure for AD27-A: 15 psi (0.1 MPa) or more Operating pressure for AD37-A/AD47-A: 22 psi (0.15 MPa) or
- 2. When a pressure release 3 port valve is mounted on the inlet side of the regulator or filter regulator, the residual pressure can be released to the inlet side. However, if the set pressure is 22 psi (0.15 MPa) or less, the residual pressure may not be released. When using the pressure release 3 port valve at a set pressure level of 22 psi (0.15 MPa) or less, it is recommended to use a

## ∕!\ Caution

regulator with backflow function.

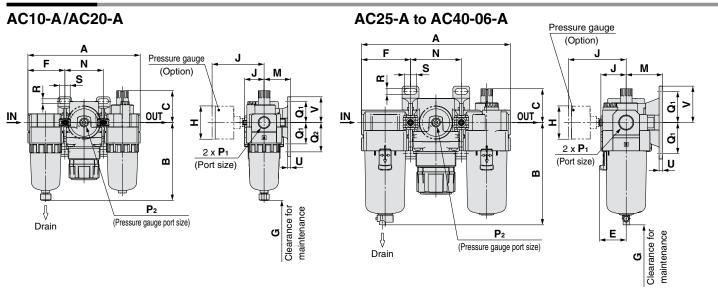
1. When releasing air at the intermediate position using a T-spacer on the inlet side of the lubricator, lubricant may back flow. Therefore, releasing air that does not contain traces of lubricant is not possible

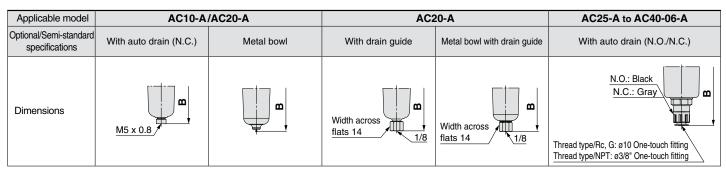
To release air that does not contain traces of lubricant, use a check valve (Series AKM) on the inlet side of the lubricator to prevent a backflow of the lubricant.

- 2. If a pressure relief 3 port valve is mounted on the inlet side of the lubricator, causing a backflow of air, it can result in a backflow of oil or damage to internal parts. Do not use it in this fashion.
- 3. An F.R.L. unit shipped from the plant has its model number labeled. However, components that are combined together during the distribution process do not have a label on them.

## Series AC10-A to AC40-A

#### **Dimensions**





Applicable model			AC2	5-A to AC40-06-A		
Optional/Semi-standard specifications	Metal bowl	Metal bowl with drain guide	Metal bowl with level gauge	Metal bowl with level gauge, with drain guide	With drain guide	Drain cock with barb fitting
Dimensions	<b>a</b>	Width across flats 17	a v	Width across flats 17	Width across flats 17	Barb fitting applicable tubing: T0604

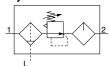
							S	tandard :	specifica	tions							
Model	P <sub>1</sub>	P <sub>2</sub>		В	С	Е	_	G					Bracke	t mount			
	Pi	P2	A	В	C	_	_ F	G	J	M	N	Q1	Q2	R	S	U	V
AC10-A	M5 x 0.8	1/16	87	59.9	25.5	_	28	35	12.5	25	31	20	27	4.5	6.8	3	24.5
AC20-A	1/8, 1/4	1/8	126.4	87.6	35.9	_	41.6	60	23.4	30	43.2	24	33	5.5	12	3.5	29
AC25-A	1/4, 3/8	1/8	167.4	115.1	38.1	30	55.1	80	30.5	41	57.2	35	_	7	14	4	41
AC30-A	1/4, 3/8	1/8	167.4	115.1	38.1	30	55.1	80	30.5	41	57.2	35	_	7	14	4	41
AC40-A	1/4, 3/8, 1/2	1/8	220.4	147.1	39.8	38.4	72.6	110	36.1	50	75.2	40	_	9	18	5	48
AC40-06-A	3/4	1/8	235.4	149.1	37.8	38.4	77.6	110	39.6	50	80.2	40	_	9	18	5	48

		Optio	nal specifica	ations					Semi-standard spe	ecifications	
Model	Round	d type e gauge	Round type pr (with color		With auto drain	With barb fitting	With drain guide	Metal bowl	Metal bowl with drain guide	Metal bowl with level gauge	Metal bowl with level gauge, with drain guide
	H J 926 26		Н	J	В	В	В	В	В	В	В
AC10-A	ø26	26	_	_	77.9	_	_	59.3	_	_	_
AC20-A	ø37.5	58.5	ø37.5	59.5	104.9	_	91.4	87.4	93.9	_	_
AC25-A	ø37.5	58.5	ø37.5	59.5	156.8	123.6	121.9	117.6	122.1	137.6	142.1
AC30-A	ø37.5	65	ø37.5	66	156.8	123.6	121.9	117.6	122.1	137.6	142.1
AC40-A	ø42.5	72	ø42.5	72	186.9	155.6	153.9	149.6	154.1	169.6	174.1
AC40-06-A	ø42.5	72	ø42.5	72	188.9	157.6	155.9	151.6	156.1	171.6	176.1

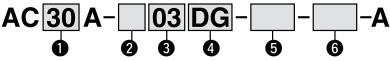
## Filter Regulator + Lubricator

## AC10A-A to AC40A-A

Symbol



#### **How to Order**

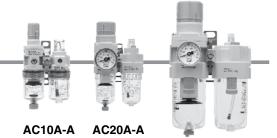


- Option/Semi-standard: Select one each for a to I.
- Option/Attachment/Semi-standard symbol: When more than one specification is required, indicate in alphanumeric order.
   Example) AC30A-F03DM-KSV-13NR-A

						= = = = = = = = = = = = = = = = = = = =				
	_	_						0		
				Symbol	Description		Body size			
						10	20	30	40	
					Metric thread (M5)		_	_	_	
				Nil	Rc	_	•	•	•	
0		Pipe	e thread type	Note 1)	NPT	_	•	•	•	
				F Note 2)	G	_	•	•	•	
				+						
				M5	M5	•	_	_	_	
				01	1/8	_	•	_	_	
			Dantain.	02	1/4	_	•	•	•	
8			Port size	03	3/8	_	_	•	•	
				04	1/2	_	_	_	•	
		06			3/4	_	_	_	•	
				+						
			Float type	Nil	Without auto drain	•	•	•	•	
		а	Float type auto drain	C Note 4)	N.C. (Normally closed) Drain port is closed when pressure is not applied.	•	•	•	•	
	Note 3)			<b>D</b> Note 5)	N.O. (Normally open) Drain port is open when pressure is not applied.	_	_	•		
4	Ñ L			+						
•	Option <sup>1</sup>			Nil	Without pressure gauge	•	•	•	•	
	ŏ	b	Pressure	G	Round type pressure gauge (without limit indicator)	•	_	_	_	
			gauge Note 6)		Round type pressure gauge (with limit indicator)		•	•	•	
				M	Round type pressure gauge (with color zone)		•		•	
				+				_		
		С	Check valve	Nil	Without attachment		•	•	•	
		_		K	Mounting position: AW+K+AL		•	•	Note 7)	
	ent		_	+	Name					
6	hr	d	Pressure	Nil	Without attachment		•	•	•	
	Attachment		switch	S Note 8)	Mounting position: AW+S+AL		•		•	
	⋖				Maria de la companya della companya della companya de la companya de la companya della companya					
		е	Pressure relief	Nil	Without attachment		•	•	•	
			3 port valve	<b>V</b>	Mounting position: AW+AL+V		•		•	
			Cot	Nil	7.2 to 102 poi (0.05 to 0.7 MPc) cotting					
		f	Set pressure Note 9)		7.3 to 102 psi (0.05 to 0.7 MPa) setting 2.9 to 29 psi (0.02 to 0.2 MPa) setting	•	•	•		
			pressure	<b>1</b> +	2.3 to 23 psi (0.02 to 0.2 ivira) setting		•		•	
				Nil	Polycarbonate bowl					
				2	Metal bowl					
	ard			6	Nylon bowl			•		
	ınd	g	Bowl Note 10)	8	Metal bowl with level gauge					
6	Semi-standard			C	With bowl guard		•	Note 11)	Note 11)	
	-jm			6C	With bowl guard (Nylon bowl)			Note 12)	Note 12)	
	S			+	som gadia (rijion som)					
				Nil	With drain cock	•	•	•	•	
			Filter Note 13)		Drain guide 1/8				_	
		h	regulator	J Note 14)	Drain guide 1/4	_	_	•		
			drain port	<b>W</b> Note 15)	Drain cock with barb fitting (for ø6 x ø4 nylon tube)		<u> </u>	•		
					GOLO		1			

₹

## Air Combination Series AC10A-A to AC40A-A



AC40A-A

	_	_					(				
		_		Symbol	Description	Body size					
						10	20	30	40		
		i	Lubricator lubricant	Nil	Without drain cock	•	•	•	•		
			exhaust port	3 Note 16)	Lubricator with drain cock	•	•	•	•		
				+							
	rd		Exhaust	Nil	Relieving type	•	•	•	•		
	nde	J	mechanism	N	Non-relieving type	•	•	•	•		
6	sta			+				•			
	Semi-standard	k	Flow direction	Nil	Flow direction: Left to right	•	•	•	•		
	Se	,	riow direction	R	Flow direction: Right to left	•	•	•	•		
				+							
			Proceure unit	Nil	Name plate and pressure gauge in imperial units: MPa	•	•	•	•		
		ı	Pressure unit	<b>Z</b> Note 17)	Name plate, caution plate for bowl, and pressure gauge in imperial units: psi, °F	Note 18)	Note 18)	Note 18)	Note 18)		

- Note 1) Drain guide is NPT1/8 (applicable to the AC20A-A) and NPT1/4 (applicable to the AC30A-A to AC40A-A). The auto drain port comes with ø3/8" One-touch fitting (applicable to the AC30A-A to AC40A-A).
- Note 2) Drain guide is G1/8 (applicable to the AC20A-A) and G1/4 (applicable to the AC30A-A to AC40A-A).
- Note 3) Option G, M are not assembled and supplied loose at the time of shipment.
- Note 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.
- Note 5) If the compressor is small (0.75 kW, discharge flow is less than 3.5 scfm100 L/min[ANR]), air leakage from the drain cock may occur during start of operations. N.C. type is recommended.
- Note 6) When the pressure gauge is attached, a 145 psi (1.0 MPa) pressure gauge will be fitted for standard (102psi [0.7 MPa]) type. 58 psi [0.4 MPa] pressure gauge for 29 psi (0.2 MPa) type (145 psi [1.0 MPa] pressure gauge only for the AC10A-A).
- Note 7) Not available with piping port size: 06
- Note 8) The bracket position varies depending on the pressure switch mounting.
- Note 9) Pressure can be set higher than the specification pressure in some cases, but use pressure within the specification range.
- Note 10) Refer to Chemical data on page 38 for chemical resistance of the bowl.
- Note 11) A bowl guard is provided as standard equipment (polycarbonate).
- Note 12) A bowl guard is provided as standard equipment (nylon).

- Note 13) Float type auto drain: The combination of C and D is not possible.
- Note 14) Without a valve function
- Note 15) The combination of metal bowl: 2 and 8 is not available.
- Note 16) When choosing with W: Filter regulator drain port, the drain cock of a lubricator will be with barb fitting.
- Note 17) For pipe thread type: M5, NPT. This product is for overseas use only according to the new Measurement Law. (The SI unit type is provided for use in Japan.) MPa and psi are shown together on the pressure unit. Cannot be used with M: Round pressure gauge (with color zone). Available by request for special.
- Note 18) O: For pipe thread type: M5, NPT only

#### Standard Specifications

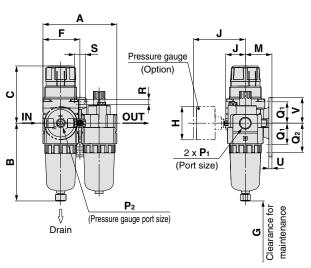
	Model	AC10A-A	AC20A-A	AC30A-A	AC40A-A	AC40A-06-A				
0	Filter Regulator [AW]	AW10-A	AW20-A	AW30-A	AW40-A	AW40-06-A				
Component	Lubricator [AL]	AL10-A	AL20-A	AL30-A	AL40-A	AL40-06-A				
Port size		M5 x 0.8	1/8, 1/4	1/4, 3/8, 1/2	3/4					
Pressure ga	uge port size [AW]	1/16		1,	/8					
Fluid				Air						
Ambient and	d fluid temperature	23 to 140°F (–5 to 60C°) (with no freezing)								
Proof press	ure	218 psi (1.5 MPa)								
Maximum o	perating pressure	145 psi (1.0 MPa)								
Set pressure	e range [AW]	7.3 to 102 psi (0.05 to 0.7 MPa)								
Nominal filt	ration rating [AW]	5μm								
Recommend	ded lubricant [AL]	Class 1 turbine oil (ISO VG32)								
Bowl materi	ial [AW/AL]	Polycarbonate								
Bowl guard	[AW/AL]	— Semi-standard (Steel) Standard (Polycarbonate)								
Constructio	n [AW]	Relieving type								
Weight (kg)		0.20	0.34	0.67	1.24	1.35				

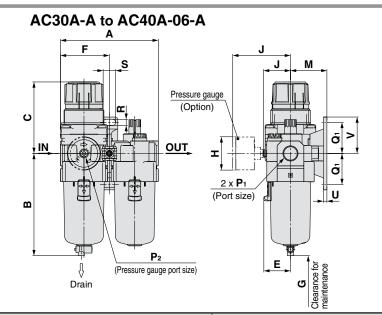


## Air Combination AC10A-A to AC40A-A

#### **Dimensions**

#### AC10A-A/AC20A-A





Applicable model	AC10A-A	/AC20A-A	AC2	0A-A	AC30A-A to AC40A-06-A		
Optional/Semi-standard specifications	With auto drain (N.C.)	Metal bowl	With drain guide	Metal bowl with drain guide	With auto drain (N.O./N.C.)		
Dimensions	M5 x 0.8	ВВ	Width across flats 14	Width across flats 14 1/8	N.O.: Black N.C.: Gray  Thread type/Rc, G: ø10 One-touch fitting Thread type/NPT: ø3/8" One-touch fitting		

Applicable model		AC30A-A to AC40A-06-A										
Optional/Semi-standard specifications	Metal bowl	Metal bowl with drain guide	Metal bowl with level gauge	Metal bowl with level gauge, with drain guide	With drain guide	Drain cock with barb fitting						
Dimensions	8	Width across flats 17	B	Width across flats 17	Width across flats 17	Barb fitting applicable tubing: T0604						

	Standard specifications															
Model	P1	P <sub>2</sub>	Α	В	C Note)	Е	F	G				Br	Bracket mount			
	P1	F2	Α	В	C Note)	J Note) E F	_	F   G	J	M	Q1	Q2	R	S	U	V
AC10A-A	M5 x 0.8	1/16	56	59.9	47.4	_	28	25	12.5	25	20	27	4.5	6.8	3	24.5
AC20A-A	1/8, 1/4	1/8	83.2	87.6	67.4	_	41.6	60	23.4	30	24	33	5.5	12	3.5	29
AC30A-A	1/4, 3/8	1/8	110.2	115.1	83.5	30	55.1	80	30.5	41	35	_	7	14	4	41
AC40A-A	1/4, 3/8, 1/2	1/8	145.2	147.1	100	38.4	72.6	110	36.1	50	40	_	9	18	5	48
AC40A-06-A	3/4	1/8	155.2	149.1	101.5	38.4	77.6	110	39.6	50	40		9	18	5	48

		Optio	nal specific	ations		Semi-standard specifications						
Model	Round pressure	d type e gauge		ressure gauge lor zone)	With auto drain	With barb fitting	Metal howl		Metal bowl with drain guide	Metal bowl with level gauge	Metal bowl with level gauge, with drain guide	
	Н	J	Н	J	В	В	В	В	В	В	В	
AC10A-A	ø26	26	_	_	77.9	_	_	59.3	_	_	_	
AC20A-A	ø37.5	58.5	ø37.5	59.5	104.9	_	91.4	87.4	93.9	_	_	
AC30A-A	ø37.5	65	ø37.5	66	156.8	123.6	121.9	117.6	122.1	137.6	142.1	
AC40A-A	ø42.5	72	ø42.5	72	186.9	155.6	153.9	149.6	154.1	169.6	174.1	
AC40A-06-A	ø42.5	72	ø42.5	72	188.9	157.6	155.9	151.6	156.1	171.6	176.1	

Note) The dimension of C is the length when the filter regulator knob is unlocked.



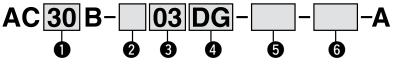
## Air Filter + Regulator

## AC10B-A to AC40B-A

Symbol



## **How to Order**

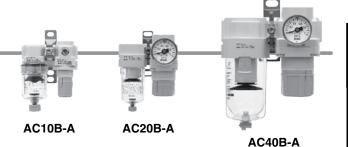


- $\bullet$  Option/Semi-standard: Select one each for  $\boldsymbol{a}$  to  $\boldsymbol{j}.$
- Option/Attachment/Semi-standard symbol: When more than one specification is required, indicate in alphanumeric order.
   Example) AC30B-F03DM-SV-1NR-A

	\	_						0		
				Symbol	Description			Body size		
						10	20	25	30	40
					Metric thread (M5)	•	_		_	_
				Nil	Rc		•		•	•
0		Pipe	e thread type	N Note 1)	NPT		•	•	•	•
				F Note 2)	G	_	•	•	•	•
				+			I.	1	l	
				M5	M5	•	_	_	_	_
				01	1/8	_	•	_	_	_
0			David ains	02	1/4	_	•	•	•	•
8			Port size	03	3/8	_	_	•	•	•
				04	1/2	_	_	_	_	•
				06	3/4	_	_	_	_	•
				+					,	
			Floot to a	Nil	Without auto drain	•	•		•	•
		а	Float type auto drain	C Note 4)	N.C. (Normally closed) Drain port is closed when pressure is not applied.	•	•	•	•	•
	te 3)		auto diairi	D Note 5)	N.O. (Normally open) Drain port is open when pressure is not applied.	_	_		•	•
	Option Note 3)			+						
4	ا <u>ق</u> ا			Nil	Without pressure gauge	•	•			
	g	h	b Pressure G		Round type pressure gauge (without limit indicator)	•	_	_	_	_
		D	gauge Note 6)	G	Round type pressure gauge (with limit indicator)	_				
				M	Round type pressure gauge (with color zone)	_	•			
_				+						
			Pressure	Nil	Without attachment	•	•		•	•
	=	С	switch	S Note 7)	Mounting position: AF+S+AR	_	•	•	•	•
	ner		T-spacer	T Note 7)	Mounting position: AF+ <b>T</b> +AR	•				
6	Attachment		1	+			1			
	Atte		Pressure relief	Nil	Without attachment		•		•	•
		d	3 port valve	V	Mounting position: AF+AR+V		•	•	•	•
			'	V1 Note 8)	Mounting position: V+AF+AR				•	
				+	7.					
		е	Set	Nil	7.3 to 102 psi (0.05 to 0.7 MPa) setting	•	•	•	•	
			pressure Note 9)	1	2.9 to 29 psi (0.02 to 0.2 MPa) setting	•				
				+	Debugging to head					
				Nil	Polycarbonate bowl	•	•		•	
	lard			2	Metal bowl	•			•	
	Jda	f	Bowl Note 10)	6	Nylon bowl	•	•		•	
6	Semi-stano			8	Metal bowl with level gauge		_	Note 11)	Note 11)	Note 11)
	Ë			C 6C	With bowl guard (Nylon bowl)			Note 11)	Note 11)	Note 11)
	Se			+	With bowl guard (Nylon bowl)		_			
				Nil	With drain cock	_				
			Note 13)			<u> </u>	•	•	•	•
		g	Air filter drain port	<b>J</b> Note 14)	Drain guide 1/8 Drain guide 1/4		_		_	
			drain port	<b>W</b> Note 15)	Drain guide 1/4  Drain cock with barb fitting (for Ø6 x Ø4 nylon tube)					
				** ::: :5/	Drain cock with barb litting (for 86 x 84 hyron tube)	<del></del>			•	
47										



## Air Combination Series AC10B-A to AC40B-A



	_	_		C: male al	Description				0		
				Symbol Description			10	20	Body size	30	40
			Exhaust	Nil	Relieving type		•	•	•	•	•
	5	h	mechanism	N	Non-relieving type		•	•	•	•	•
	standard			+							
6	au		Flow direction	Nil	Flow direction: Left to right		•	•	•	•	•
U	1 1	•	Flow direction	R	Flow direction: Right to left		•	•	•		•
	Semi			+							
	(0)		Proceuro unit	Nil	Name plate and pressure gauge in imperial units: MPa		•	•	•	•	•
			Pressure unit	<b>Z</b> Note 16)	Name plate, caution plate for bowl, and pressure gauge in imperial units: psi, °F	0	Note 17)	O Note 17)	O Note 17)	O Note 17)	O Note 17)

- Note 1) Drain guide is NPT1/8 (applicable to the AC20B-A) and NPT1/4 (applicable to the AC25B-A to AC40B-A). The auto drain port comes with ø3/8" One-touch fitting (applicable to the AC25B-A to AC40B-A).
- Note 2) Drain guide is G1/8 (applicable to the AC20B-A) and G1/4 (applicable to the AC25B-A to AC40B-A).
- Note 3) Option G, M are not assembled and supplied loose at the time of shipment.
- Note 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.
- Note 5) If the compressor is small (0.75 kW, discharge flow is less than 3.5 scfm (100 L/min [ANR]), air leakage from the drain cock may occur during start of operations. N.C. type is recommended.
- Note 6) When the pressure gauge is attached, a 145 psi (1.0 MPa) pressure gauge will be fitted for standard (102 psi [0.7 MPa]) type. 58 psi [0.4 MPa] pressure gauge for 29 psi (0.2 MPa) type (145 psi [1.0 MPa] pressure gauge only for the AC10B-A).
- Note 7) The bracket position varies depending on the T-spacer or pressure switch mounting.
- Note 8) Make sure that the outlet pressure is released to atmospheric pressure using a pressure gauge. For V1 specification, use the regulator with a set pressure of 22 psi (0.15 MPa) or more to ensure the pressure release.
- Note 9) Pressure can be set higher than the specification pressure in some cases, but use pressure within the specification range.

- Note 10) Refer to Chemical data on page 38 for chemical resistance of the bowl.
- Note 11) A bowl guard is provided as standard equipment (polycarbonate).
- Note 12) A bowl guard is provided as standard equipment (nylon).
- Note 13) Float type auto drain: The combination of C and D is not possible.
- Note 14) Without a valve function
- Note 15) The combination of metal bowl: 2 and 8 is not available.
- Note 16) For pipe thread type: M5, NPT. This product is for overseas use only according to the new Measurement Law. (The SI unit type is provided for use in Japan.) MPa and psi are shown together on the pressure unit. Cannot be used with M: Round pressure gauge (with color zone). Available by request for special.
- Note 17) O: For pipe thread type: M5, NPT only

### **Standard Specifications**

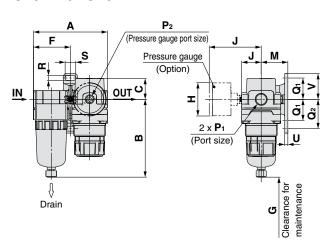
	Model	AC10B-A	AC20B-A	AC25B-A	AC30B-A	AC40B-A	AC40B-06-A				
0	Air Filter [AF]	AF10-A	AF20-A	AF30-A	AF30-A	AF40-A	AF40-06-A				
Component	Regulator [AR]	AR10-A	AR20-A	AR25-A	AR30-A	AR40-A	AR40-06-A				
Port size		M5 x 0.8	1/8, 1/4 1/4, 3/8 1/4, 3/8 1/4, 3/8, 1/2 3/4								
Pressure ga	uge port size [AR]	1/16 1/8									
Fluid			Air								
Ambient an	d fluid temperature	23 to 140°F (-5 to 60C°) (with no freezing)									
Proof press	ure	218 psi (1.5 MPa)									
Maximum o	perating pressure	145 psi (1.0 MPa)									
Set pressur	e range [AR]	7.3 to 102 psi (0.05 to 0.7 MPa)									
Nominal filt	ration rating [AF]	5 μm									
Bowl materi	ial [AF]	Polycarbonate									
Bowl guard	[AF]	Semi-standard (Steel)  Standard (Polycarbonate)									
Constructio	n [AR]	Relieving type									
Weight (kg)		0.16	0.28	0.43	0.58	1.05	1.12				



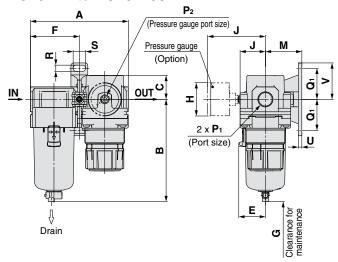
## Series AC10B-A to AC40B-A

## **Dimensions**

## AC10B-A/AC20B-A



### AC25B-A to AC40B-06-A



Applicable model	AC10B-A	/AC20B-A	AC2	0B-A	AC25B-A to AC40B-06-A		
Optional/Semi-standard specifications	With auto drain (N.C.)	Metal bowl	With drain guide	Metal bowl with drain guide	With auto drain (N.O./N.C.)		
Dimensions	M5 x 0.8	<b>B</b>	Width across flats 14 1/8	Width across flats 14	N.O.: Black N.C.: Gray  Thread type/Rc, G: ø10 One-touch fitting Thread type/NPT: ø3/8° One-touch fitting		

Applicable model			AC25	B-A to AC40B-06-A		
Optional/Semi-standard specifications	Metal bowl	Metal bowl with drain guide	Metal bowl with level gauge	Metal bowl with level gauge, with drain guide	With drain guide	Drain cock with barb fitting
Dimensions	<u> </u>	Width across flats 17	a v	Width across flats 17	Width across flats 17	Barb fitting applicable tubing: T0604

		Standard specifications														
Model	P1	P <sub>2</sub>		В	•	Е	E F G J Bracket mount						unt			
	Pı	P2	Α	В	C	_ =	F	G	J	M	Q <sub>1</sub>	Q2	R	S	U	V
AC10B-A	M5 x 0.8	1/16	56	59.9	11	_	28	25	12.5	25	20	27	4.5	6.8	3	24.5
AC20B-A	1/8, 1/4	1/8	83.2	87.6	23.5	_	41.6	25	23.4	30	24	33	5.5	12	3.5	29
AC25B-A	1/4, 3/8	1/8	110.2	115.1	23.5	30	55.1	35	30.5	41	35	_	7	14	4	41
AC30B-A	1/4, 3/8	1/8	110.2	115.1	27	30	55.1	35	30.5	41	35	_	7	14	4	41
AC40B-A	1/4, 3/8, 1/2	1/8	145.2	147.1	33.5	38.4	72.6	40	36.1	50	40	_	9	18	5	48
AC40B-06-A	3/4	1/8	155.2	149.1	33.5	38.4	77.6	40	39.6	50	40	_	9	18	5	48

		Optio	nal specific	ations		Semi-standard specifications						
Model		d type e gauge	Round type pressure gauge (with color zone)			With barb fitting	With drain guide	Metal bowl	Metal bowl with drain guide	Metal bowl with level gauge	Metal bowl with level gauge, with drain guide	
	Н	J	Н	J	В	В	В	В	В	В	В	
AC10B-A	ø26	26	_	_	77.9	_	_	59.3	_	_	_	
AC20B-A	ø37.5	58.5	ø37.5	59.5	104.9	_	91.4	87.4	93.9	_	_	
AC25B-A	ø37.5	58.5	ø37.5	59.5	156.8	123.6	121.9	117.6	122.1	137.6	142.1	
AC30B-A	ø37.5	65	ø37.5	66	156.8	123.6	121.9	117.6	122.1	137.6	142.1	
AC40B-A	ø42.5	72	ø42.5	72	186.9	155.6	153.9	149.6	154.1	169.6	174.1	
AC40B-06-A	ø42.5	72	ø42.5	72	188.9	157.6	155.9	151.6	156.1	171.6	176.1	

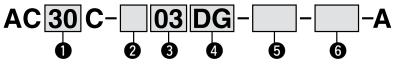
## Air Filter + Mist Separator + Regulator

## AC20C-A to AC40C-A

Symbol



## **How to Order**



- Option/Semi-standard: Select one each for a to j.
- Option/Attachment/Semi-standard symbol: When more than one specification is required, indicate in alphanumeric order.
   Example) AC30C-F03DM-SV-1NR-A

	_	_						D	
				Symbol	Description		Body	size	
						20	25	30	40
				Nil	Rc	•		•	
2		Pine	thread type	N	NPT	•		•	
9		, ibc	tinead type	F	G			•	
				+	<u> </u>				
				01	1/8	•	_	_	_
				02	1/4	•	•	•	•
8			Port size	03	3/8		•	•	•
				04	1/2	_	_	_	•
				06	3/4	_	_	_	•
				+					
				Nil	Without auto drain	•	•	•	•
	=	а	Float type auto drain	CNote 2)	N.C. (Normally closed) Drain port is closed when pressure isnot applied.	•	•	•	•
	Note 1)		auto uraifi	D <sup>Note 3)</sup>	N.O. (Normally open) Drain port is open when pressure is not applied.	_	•	•	•
4	- Uo			+					
	Option		Pressure	Nil	Without pressure gauge	•	•	•	•
	$ ^{\circ} $	b	gauge Note 4)	G	Round type pressure gauge (with limit indicator)	•	•	•	
			gauge	M	Round type pressure gauge (with color zone)	•	•	•	
				+					
			Pressure	Nil	Without attachment	•	•	•	•
	ŧ	С	switch	S Note 5)	Mounting position: AF+AFM+S+AR	•	•	•	•
	ner		T-spacer	T Note 5)	Mounting position: AF+AFM+ <b>T</b> +AR	•		•	
6	Attachment			+					
	Atta		Pressure relief	Nil	Without attachment	•	•	•	•
		d	3 nort valve	V	Mounting position: AF+AFM+AR+V	•	•	•	•
				V1 Note 6)	Mounting position: V+AF+AFM+AR	•		•	
			-	+					
		е	Set pressure Note 7)	Nil	7.3 to 102 psi (0.05 to 0.7 MPa) setting	•		•	•
			pressure ""	1	2.9 to 29 psi (0.02 to 0.2 MPa) setting	•		•	
				+	Dollygowhonoto hourd	•		_	
				Nil	Polycarbonate bowl  Metal bowl	•	•	•	
				6	Nylon bowl	•	•		
	5	f	Bowl	8	Metal bowl with level gauge		•		
	darc			C		_		•	
6	standard			6C	With bowl guard With bowl guard (Nylon bowl)				_
<b>U</b>	j-S-iC			+	with bown guard (region bown)				
	Semi-			Nil	With drain cock			•	
	0,		Filter		Drain guide 1/8	•		_	
		g	Mist separator	J Note 8)	Drain guide 1/4	_	•	•	•
			drain port	<b>W</b> Note 11)	Drain cock with barb fitting (for ø6 x ø4 nylon tube)	_		•	
				+					
			Exhaust	Nil	Relieving type	•		•	
		h	mechanism	N	Non-relieving type			•	

## Air Combination Series AC20C-A to AC40C-A



#### AC20C-A

#### AC40C-A

		Symbol Description		Body size						
						25	30	40		
	<u>5</u>		Flow direction	Nil	Flow direction: Left to right	•	•	•	•	
	g	'	Flow direction	R	Flow direction: Right to left	•	•	•	•	
6	i Flow direction			+						
	Semi-		Pressure unit	Nil	Name plate and pressure gauge in imperial units: MPa	•	•	•	•	
	Se   J	J	Fressure unit	Z Note 9)	Name plate, caution plate for bowl, and pressure gauge in imperial units: psi, °F	Note 10)	Note 10)	Note 10)	Note 10)	

- Note 1) Option G, M are not assembled and supplied loose at the time of shipment.
- Note 2) 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.
- Note 3) If the compressor is small (0.75 kW, discharge flow is less than 3.5 scfm (100 L/min[ANR])), air leakage from the drain cock may occur during start of operations. N.C. type is recommended.
- Note 4) When the pressure gauge is attached, a 145 psi (1.0 MPa) pressure gauge will be fitted for standard (102 psi [0.7 MPa]) type. 58 psi (0.4 MPa) pressure gauge for 29 psi (0.2 MPa) type.
- Note 5) The bracket position varies depending on the T-spacer or pressure switch mounting.
- Note 6) Make sure that the outlet pressure is released to atmospheric pressure using a pressure gauge.
  - For V1 specification, use the regulator with a set pressure of 22 psi (0.15 MPa) or more to ensure the pressure release.
- Note 7) Pressure can be set higher than the specification pressure in some cases, but use pressure within the specification range.

- Note 8) Without a valve function
- Note 9) For pipe thread type: NPT. This product is for overseas use only according to the new Measurement Law. (The SI unit type is provided for use in Japan.) MPa and psi are shown together on the pressure unit.
  - Cannot be used with M: Round pressure gauge (with color zone). Available by request for special.
- Note 10) O: For pipe thread type: NPT only Note 11) The combination of metal bowl: 2 and 8 is not available.

## **Standard Specifications**

	Model	AC20C-A	AC25C-A	AC30C-A	AC40C-A	AC40C-06-A					
	Air Filter [AF]	AF20-A	AF30-A	AF30-A	AF40-A	AF40-06-A					
Component	Mist Separator [AFM]	AFM20-A	AFM30-A	AFM30-A	AFM40-A	AFM40-06-A					
	Regulator [AR]	AR20-A	AR25-A	AR30-A	AR40-A	AR40-06-A					
Port size	•	1/8, 1/4	1/4, 3/8	1/4, 3/8	1/4, 3/8, 1/2	3/4					
Pressure gau	ge port size [AR]		1/8								
Fluid				Air							
Ambient and	fluid temperature	23 to 140°F (-5 to 60C°) (with no freezing)									
Proof pressu	re	218 psi (1.5 MPa)									
Maximum ope	erating pressure	145 psi (1.0 MPa)									
Minimum ope	erating pressure	7.3 psi (0.05 MPa)									
Set pressure	range [AR]	7.3 to 102 psi (0.05 to 0.7 MPa)									
Nominal filtra	tion rating [AF/AFM]		AF: 5 μm, AFM	: 0.3 μm (99.9% filtere	ed particle size)						
Outlet side oil m	nist concentration [AFM]		MAX 1.0 mg	g/m³ (ANR) (≈ 0.8 ppn	n) Note 2) Note 3)						
Rated flow scfm	(L/min (ANR)) [AFM] Note 1)	7.06 (200)	15.9 (450)	15.9 (450)	38.8 (1100)	38.8 (1100)					
Bowl materia	I [AF/AFM]			Polycarbonate							
Bowl guard [/	AF/AFM]	Semi-standard (Steel) Standard (Polycarbonate)									
Construction	[AR]	Relieving type									
Weight (kg)		0.39	0.67	0.82	1.53	1.66					

Note 1) Conditions: Mist separator inlet pressure: 102 psi (0.7 MPa); The rated flow varies depending on the inlet pressure.

Keep the air flow within the rated flow to prevent an outflow of lubricant to the outlet side. Note 2) When the compressor oil mist discharge concentration is 30 mg/m³ (ANR).

Note 3) Bowl seal and other O-rings are slightly lubricated.

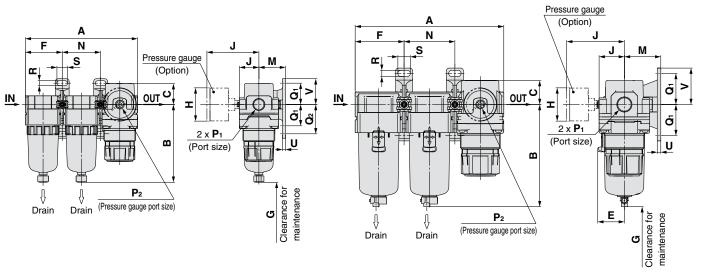


## Series AC20C-A to AC40C-A

## **Dimensions**

## AC20C-A

## AC25C-A to AC40C-06-A



Applicable model		AC20C-A							
Optional/Semi-standard specifications	With auto drain (N.C.)	With drain guide	Metal bowl	Metal bowl with drain guide	With auto drain (N.O./N.C.)				
Dimensions	M5 × 0.8	Width across flats 14 1/8	a a	Width across flats 14	N.O.: Black N.C.: Gray  Thread type/Rc, G: ø10 One-touch fitting Thread type/NPT: ø3/8" One-touch fitting				

Applicable model			AC25	C-A to AC40C-06-A		
Optional/Semi-standard specifications	Metal bowl	Metal bowl with drain guide	Metal bowl with level gauge	Metal bowl with level gauge, with drain guide	With drain guide	Drain cock with barb fitting
Dimensions	<b>a</b>	Width across flats 17	a v	Width across flats 17	Width across flats 17	Barb fitting applicable tubing: T0604

		Standard specifications																
Model	P <sub>1</sub>	P <sub>2</sub>	_	В	С	_	E F G			Bracket mount								
	P1	F2	A	В		_	F		M	N	Q1	Q2	R	S	U	V		
AC20C-A	1/8, 1/4	1/8	126.4	87.6	23.5	_	41.6	40	23.4	30	43.2	24	33	5.5	12	3.5	29	
AC25C-A	1/4, 3/8	1/8	167.4	115.1	23.5	30	55.1	50	30.5	41	57.2	35	_	7	14	4	41	
AC30C-A	1/4, 3/8	1/8	167.4	115.1	27	30	55.1	50	30.5	41	57.2	35	_	7	14	4	41	
AC40C-A	1/4, 3/8, 1/2	1/8	220.4	147.1	33.5	38.4	72.6	75	36.1	50	75.2	40	_	9	18	5	48	
AC40C-06-A	3/4	1/8	235.4	149.1	33.5	38.4	77.6	75	39.6	50	80.2	40	_	9	18	5	48	

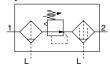
		Optio	nal specific	ations		Semi-standard specifications								
Model	pressure gauge			ressure gauge lor zone)	With auto drain	With barb fitting	With drain guide	Metal bowl	Metal bowl with drain guide	Metal bowl with level gauge	Metal bowl with level gauge, with drain guide			
	Н	J	Н	J	В	В	В	В	В	В	В			
AC20C-A	ø37.5	58.5	ø37.5	59.5	104.9	_	91.4	87.4	93.9	_	_			
AC25C-A	ø37.5	58.5	ø37.5	59.5	156.8	123.6	121.9	117.6	122.1	137.6	142.1			
AC30C-A	ø37.5	65	ø37.5	66	156.8	123.6	121.9	117.6	122.1	137.6	142.1			
AC40C-A	ø42.5	72	ø42.5	72	186.9	155.6	153.9	149.6	154.1	169.6	174.1			
AC40C-06-A	ø42.5	72	ø42.5	72	188.9	157.6	155.9	151.6	156.1	171.6	176.1			



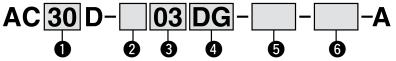
## Filter Regulator + Mist Separator

## AC20D-A to AC40D-A

Symbol



## **How to Order**



- Option/Semi-standard: Select one each for a to j.
- Option/Attachment/Semi-standard symbol: When more than one specification is required, indicate in alphanumeric order.
   Example) AC30D-F03DM-SV-1NR-A

		•	•				=	
		_			2		0	
				Symbol	Description		Body size	
						20	30	40
				Nil	Rc	•	•	•
2		Pipe	thread type	N	NPT	•	•	•
•		pc	anoua typo	F	G	•	•	•
				+	<u>.                                    </u>			
				01	1/8	•	_	_
				02	1/4	•	•	•
8		F	Port size	03	3/8	_	•	•
				04	1/2	_	_	•
				06	3/4	_	_	•
				+				
				Nil	Without auto drain	•	•	•
	=	а	Float type auto drain	C Note 2)	N.C. (Normally closed) Drain port is closed when pressure is not applied.	•	•	•
	Note 1)			D Note 3)	N.O. (Normally open) Drain port is open when pressure is not applied.		•	•
4	Option <sup>n</sup>			+				
	pti		Pressure	Nil	Without pressure gauge	•	•	•
		b	gauge Note 4)	G	Round type pressure gauge (with limit indicator)	•	•	•
			gaage	M	Round type pressure gauge (with color zone)	•	•	•
				+				
		С	Pressure	Nil	Without attachment	•	•	•
	eut		switch	S Note 5)	Mounting position: AW+S+AFM	•	•	•
6	Attachment			+				_
•	tac		Pressure relief	Nil	Without attachment	•	•	•
	₹	d	3 port valve	V	Mounting position: AW+AFM+V	•	•	•
				V1 Note 6)	Mounting position: V+AW+AFM	•	•	•
				+				
		е	Set pressure Note 7)	Nil	7.3 to 102 psi (0.05 to 0.7 MPa) setting	•	•	•
			pressure ""	1	2.9 to 29 psi (0.02 to 0.2 MPa) setting	•	•	•
				+	Polygorhanata hawl			
				Nil 2	Polycarbonate bowl  Metal bowl	•		
				6	Nylon bowl			
		f	Bowl	8	Metal bowl with level gauge			
				C	With bowl guard		_	
	ard			6C	With bowl guard (Nylon bowl)		<del>                                     </del>	<u> </u>
	standard			+	That som gadia (Hylon som)			
6	-sta				With drain cock	•		•
	Semi-		Filter regulator		Drain guide 1/8	•	<u> </u>	
	ű	g	Mist separator	J Note 8)	Drain guide 1/4		•	•
			drain port	<b>W</b> Note 11)	Drain cock with barb fitting (for ø6 x ø4 nylon tube)		•	•
				+				-
			Exhaust	Nil	Relieving type	•	•	•
		h	mechanism	N	Non-relieving type	•	•	•
				+				
			Flour direction	Nil	Flow direction: Left to right	•	•	•
		i	Flow direction	R	Flow direction: Right to left	•	•	•

## Air Combination Series AC20D-A to AC40D-A





#### AC20D-A

#### AC40D-A

				Symbol	Description	20	Body size	40
						20	30	10
6	andard		Pressure unit	Nil	Name plate and pressure gauge in imperial units: MPa	•	•	•
U	Semi-s	Z Note 9)		Z Note 9)	Name plate, caution plate for bowl, and pressure gauge in imperial units: psi, °F	Note 10)	Note 10)	Note 10)

- Note 1) Option G, M are not assembled and supplied loose at the time of shipment.
- Note 2) 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.
- Note 3) If the compressor is small (0.75 kW, discharge flow is less than 3.5 scfm (100 L/min[ANR])), air leakage from the drain cock may occur during start of operations. N.C. type is recommended.
- Note 4) When the pressure gauge is attached, a 145 psi (1.0 MPa) pressure gauge will be fitted for standard (102 psi [0.7 MPa]) type. 58 psi (0.4 MPa) pressure gauge for 29 psi (0.2 MPa) type.
- Note 5) The bracket position varies depending on the pressure switch mounting.
- Note 6) Make sure that the outlet pressure is released to atmospheric pressure using a pressure
  - For V1 specification, use the regulator with a set pressure of 22 psi (0.15 MPa) or more to ensure the pressure release.
- Note 7) Pressure can be set higher than the specification pressure in some cases, but use pressure within the specification range.

Note 8) Without a valve function

available

- Note 9) For pipe thread type: NPT. This product is for overseas use only according to the new Measurement Law. (The SI unit type is provided for use in Japan.) MPa and psi are shown together on the pressure unit. Cannot be used with M: Round pressure gauge (with color zone). Available by request for
- Note 10) : For pipe thread type: NPT only Note 11) The combination of metal bowl: 2 and 8 is not

### **Standard Specifications**

	Model	AC20D-A	AC30D-A	AC40D-A	AC40D-06-A								
0	Filter Regulator [AW]	AW20-A	AW30-A	AW40-A	AW40-06-A								
Component	Mist Separator [AFM]	AFM20-A	AFM30-A	AFM40-A	AFM40-06-A								
Port size		1/8, 1/4	1/4, 3/8	1/4, 3/8, 1/2	3/4								
Pressure gauç	ge port size [AW]		1,	/8									
Fluid			А	ir									
Ambient and f	fluid temperature		23 to 140°F (-5 to 60C°) (with no freezing)										
Proof pressure	е	218 psi (1.5 MPa)											
Maximum ope	rating pressure		145 psi (	(1.0 MPa)									
Minimum oper	rating pressure	7.3 psi (0.05 MPa)											
Set pressure r	range [AW]	7.3 to 102 psi (0.05 to 0.7 MPa)											
Nominal filtrati	ion rating [AW/AFM]	Д	AW: 5 μm, AFM: 0.3 μm (9	99.9% filtered particle size)									
Rated flow scfm	(L/min (ANR)) [AFM] Note 1)	5.3 (150)	11.7 (330)	28.3 (800)	28.3 (800)								
Outlet side oil mist	concentration [AFM] Note 2) 3)		MAX 1.0 mg/m³ (	ANR) (≈ 0.8 ppm)									
Bowl material	[AW/AFM]		Polycai	rbonate									
Bowl guard [A	W/AFM]	Semi-standard (Steel)		Standard (Polycarbonate)									
Construction	[AW]	Relieving type											
Weight (kg)		0.33	0.66	1.24	1.35								

Note 1) Conditions: Mist separator inlet pressure: 73 psi (0.5 MPa); The rated flow varies depending on the inlet pressure. Keep the air flow within the rated flow to prevent an outflow of lubricant to the outlet side.

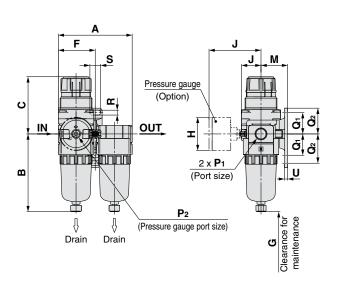
Note 2) When the compressor oil mist discharge concentration is 30 mg/m³ (ANR).

Note 3) Bowl seal and other O-rings are slightly lubricated.

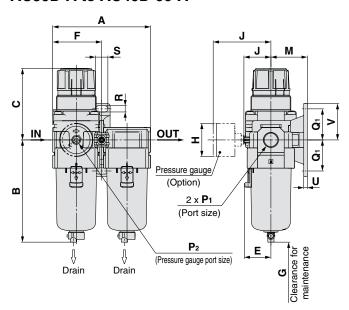
## Sereis AC20D-A to AC40D-A

## **Dimensions**

## AC20D-A



## AC30D-A to AC40D-06-A



Applicable model		AC20D-A									
Optional/Semi-standard specifications	With auto drain (N.C.)	With drain guide	Metal bowl	Metal bowl with drain guide	With auto drain (N.O./N.C.)						
Dimensions	M5 x 0.8	Width across flats 14 1/8	<b>m</b>	Width across flats 14	N.O.: Black N.C.: Gray  Thread type/Rc, G: ø10 One-touch fitting Thread type/NPT: ø3/8" One-touch fitting						

Applicable model		AC30D-A to AC40D-06-A												
Optional/Semi-standard specifications	Metal bowl	Metal bowl with drain guide	Metal bowl with level gauge	Metal bowl with level gauge, with drain guide	With drain guide	Drain cock with barb fitting								
Dimensions	<b>a</b>	Width across flats 17	B	Width across flats 17	Width across	Barb fitting applicable tubing: T0604								

Standard specifications																
Model	P1	P <sub>2</sub>	^	В	C Note)	Е	E	G J Bracket mount								
	P1	F2	Α	В	Citoto	_	_ F	G	J	M	Q1	Q2	R	S	U	V
AC20D-A	1/8, 1/4	1/8	83.2	87.6	67.4	_	41.6	40	23.4	30	24	33	5.5	12	3.5	29
AC30D-A	1/4, 3/8	1/8	110.2	115.1	83.5	30	55.1	50	30.5	41	35	_	7	14	4	41
AC40D-A	1/4, 3/8, 1/2	1/8	145.2	147.1	100	38.4	72.6	75	36.1	50	40	_	9	18	5	48
AC40D-06-A	3/4	1/8	155.2	149.1	101.5	38.4	77.6	75	39.6	50	40	_	9	18	5	48

		Optio	nal specific	ations	,	Semi-standard specifications								
Model	Model Round pressure		Round type pr (with co	ressure gauge lor zone)	With auto drain	With barb fitting	With barb fitting drain guide Metal bowl		Metal bowl with drain guide	Metal bowl with level gauge	Metal bowl with level gauge, with drain guide			
	Н	J	Н	J	В	В	В	В	В	В	В			
AC20D-A	ø37.5	58.5	ø37.5	59.5	104.9	_	91.4	87.4	93.9	_	_			
AC30D-A	ø37.5	65	ø37.5	66	156.8	123.6	121.9	117.6	122.1	137.6	142.1			
AC40D-A	ø42.5	72	ø42.5	72	186.9	155.6	153.9	149.6	154.1	169.6	174.1			
AC40D-06-A	ø42.5	72	ø42.5	72	188.9	157.6	155.9	151.6	156.1	171.6	176.1			

Note) The dimension of  $\ensuremath{\mathsf{C}}$  is the length when the filter regulator knob is unlocked.



## **Air Combination** Series AC **Options/Attachments**

#### Options/Attachments/Part No.

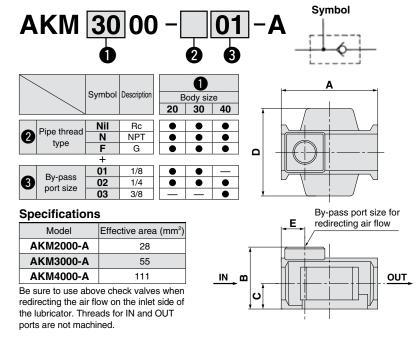
				Part	no.		
_	T	For AC10-A	For AC20-A	For AC25-A	For AC30-A	For AC40-A	For AC40-06-A
ţi.	Model	For AC10A-A	For AC20A-A	_	For AC30A-A	For AC40A-A	For AC40A-06-A
Section		For AC10B-A	For AC20B-A	For AC25B-A	For AC30B-A	For AC40B-A	For AC40B-06-A
0,	Туре	_	For AC20C-A	For AC25C-A	For AC30C-A	For AC40C-A	For AC40C-06-A
		_	For AC20D-A	_	For AC30D-A	For AC40D-A	For AC40D-06-A
_	Round Standard	G27-10-R1		G36-10-□01		G46-1	0-□01
Option	0.02 to 0.2 wir a setting	G27-10-R1 Note 2)		G36-4-□01		G46-4	
G	Round type (with color			G36-10-□01-L		G46-10	
L	है   zone)   ∗0.02 to 0.2 MPa setting			G36-4-□01-L		G46-4-	
	Spacer	Y100-A	Y200-A	Y30	0-A	Y400-A	Y500-A
	Spacer with bracket	Y100T-A	Y200T-A	Y300	DT-A	Y400T-A	Y500T-A
	Check valve Note 3) Note 4)	_	AKM2000-□01-A	AKM3000	` '	AKM4000-(□02)-A	_
			(□02)-A		□02-A	□03-A	
	Pressure switch Note 4)		IS10M-20-A	IS10M		IS10M-40-A	IS10M-50-A
	T-spacer Note 3) Note 4)	Y110-M5-A	Y210-□01-A	Y310-(I	,	Y410-(□02)-A	Y510-(□02)-A
	Горабол	1110 WO 71	(□02)-A □02-A			□03-A	□03-A
1	Pressure relief		VHS20-□01A	VHS30	-□02A	□02A	
E	3 port valve Note 4)	_	□02A	***************************************	□03A	VHS40-□03A	VHS40-□06A
Attachment			20271			□04A	
lac			□01-A	1	□02-A	□02-A	
۱¥	Piping adapter Note 4)	E100-M5-A	E200-□02-A	E300-	□03-A	E400-□03-A	E500-□06-A
	r ipg ap.s.		□03-A		□04-A	□04-A	
						□06-A	
			□01-A		□02-A	□02-A	
	Pressure switch with		IS10E-20□02-A	IS10E-3	0□03-A	IS10E-40□03-A	_
	piping adapter Note 4)		□03-A		□04-A	□04-A	
			V04 = 04 A		704 4	□06-A	V54 500 A
	Cross spacer Note 4)	Y14-M5-A	Y24-□01-A	Y34-□		Y44-□02-A	Y54-□03-A
L	•		□02-A □02-A			□03-A	□04-A

#### \* 2.9 to 29 psi (0.02 to 0.2 MPa)

- Note 1) in round pressure gauge part numbers indicates a pipe thread type. No indication is necessary for R; however, indicate N for NPT. Please contact SMC regarding the pipe thread type NPT and the supply of pressure gauge with psi unit display specifications.
- Note 3) For F.R.L. units, port sizes without ( ) are standard specifications.
- Note 4) Separate interfaces are required for modular unit.

## Check Valve: (K) 1/8, 1/4, 3/8

A check valve with intermediate air release port can be easily installed to prevent a backflow of lubricant when redirecting the air flow and releasing the air on the outlet side of the regulator.



S. D. H. Chin.							The second
Model	By-pass port size	A	В	С	D	Е	Applicable

	Model	By-pass port size	Α	В	С	D	Е	Applicable model
	AKM2000-A	1/8, 1/4	40	28	11	40	11	AC20-A, AC20A-A
	AKM3000-A	1/8, 1/4	53	34	14	48	13	AC25-A AC30-A, AC30A-A
_	AKM4000-A	1/4, 3/8	70	42	18	54	15	AC40-A, AC40A-A <sup>Note)</sup>

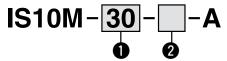
Check valve

Note) Cannot be mounted on the AC40 □-06-A.

\* Refer to the attachment table above for standard by-pass port sizes applicable to the AC.

## **Pressure Switch: (S)**

A compact integrated pressure switch can be easily installed and facilitates the pressure detection of the line.



- Semi-standard: Select one each for a to c.
- ullet Semi-standard symbol: When more than one specification is required, indicate in alphanumeric order. Example) IS10M-30-6LP

			Symbol	Body size					
					Description	20	30	40	50
						20	30	40	30
			Set pressure	Nil	15 to 58 psi (0.1 to 0.4 MPa)				
	0	а	range	6 Note 1)	15 to 87 psi (0.1 to 0.6 MPa)		•	•	•
	<u>a</u>			+					
_	standard		Lead wire	Nil	0.5 m				
2	sta	b	length	L	3 m		•	•	•
	1		lengin	Z	5 m		•	•	•
	Semi			+					
	(လ		Pressure unit of	Nil	MPa				
		С	the scale plate	P Note 2)	MPa/psi dual scale				

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

Note 2) This product is for overseas use only according to the new Measurement Law. (The SI unit type is provided for use in Japan.)

#### **Specifications**

opoomounomo	
Fluid	Air
Ambient and fluid temperature	23 to 140°F (-5 to 60C°) (with no freezing)
Proof pressure	145 psi (1.0 MPa)
Maximum operating pressure	102 psi (0.7 MPa)
Set pressure range (when OFF)	15 to 58 psi (0.1 to 0.4 MPa)
Hysteresis	12 psi (0.08 MPa) or less

#### **Switch Characteristics**

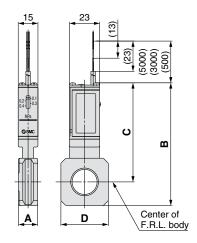
Contact point configuration	1a
Maximum contact point capacity	2 VA (AC), 2 W (DC)
Operating voltage: AC, DC	100 V or less
Maximum operating current	12 V to 24 VAC, DC: 50 mA 48 VAC, DC: 40 mA 100 VAC, DC: 20 mA

Note) For detailed specifications on the IS10 series, refer to the section of our website IS10 series, http://www.smcworld.com

#### **Symbol**





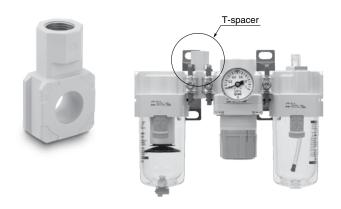


Model	Α	В	С	D	Applicable model
IS10M-20-A	10.6	74.2	64.4	28	AC20□-A
IS10M-30-A	12.6	84.5	70.5	30	AC25□-A, AC30□-A
IS10M-40-A	14.6	93.3	75.3	36	AC40□-A
IS10M-50-A	16.6	97.3	77.3	44	AC40□-06-A

<sup>\*</sup> Separate spacers are required for modular unit.

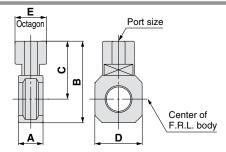
## T-Spacer: (T) 1/8, 1/4, 3/8

Using a T-spacer facilitates the branching of air flow.



### **Caution on Mounting**

If a T-spacer is used on the inlet side of the lubricator, lubricant may be mixed. Use the AKM series check valve to avoid such possibility.



Model Note)	Port size	Α	В	С	D	E	Applicable model
Y110-M5-A	M5 x 0.8	11.2	19	12	14	8	AC10-A, AC10B-A
Y210-□01-A	1/8	14.6	41.8	32	28	19	AC20-A, AC20B-A
Y210-□02-A	1/4	14.0	41.0	11.8   32		19	AC20C-A
Y310-□01-A	1/8	14.6	52.7	38.7	30	19	AC25-A, AC25B-A AC25C-A, AC30-A AC30B-A, AC30C-A
Y310-□02-A	1/4	14.0	52.7	30.7	30	19	AC30B-A, AC30C-A
Y410-□02-A	1/4	18.6	62	44	36	24	AC40-A, AC40B-A
Y410-□03-A	3/8	10.0	02	44	36 24		AC40C-A
Y510-□02-A	1/4	18.6	66	46	44	24	AC40-06-A, AC40B-06-A
Y510-□03-A	3/8	10.0	00	40	44	24	AC40C-06-A

Note) ☐ in model numbers indicates a pipe thread type. No indication is necessary for Rc; however,

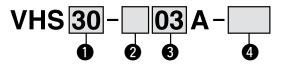
- indicate N for NPT, and F for G.

  \* Separate interfaces are required for modular unit.
- \* Refer to the attachment table on page 28 for standard port sizes when using with the AC.



## **Pressure Relief 3 Port Valve: (V)**

With the use of a pressure relief 3 port valve, pressure left in the line can be easily exhausted.



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

Example) VHS30-03A-RZ

			-					
	\		Symbol	Description	Body size 20   30   40			
			Nil	Rc				
Pipe	threa	d type	N Note)	NPT	Ŏ	Ŏ	Ŏ	
		,,	F Note)	G				
			+					
			01	1/8	•	_	_	
_		02 1/4				•	•	
<b>3</b> P	ort s	size <b>03</b> 3/8				•	•	
			04	1/2	_	_	•	
			06	3/4	_	_	•	
			+					
		Flow	Nil	Flow direction: Left to right	•	•	•	
Comi	а	direction	R	Flow direction: Right to left		•	•	
Semi- standard			+					
Staridard	b	Pressure	Nil	Name plate in imperial units: MPa		•	•	
	D	unit	Z Note)	Name plate in imperial units: psi				
Note) For pipe	thre	and tuno. N	DT only	This product is for everyone u	oo onl		rdina	

Note) For pipe thread type: NPT only. This product is for overseas use only according to the new Measurement Law. (The SI unit type is provided for use in Japan.)

## **Specifications**

Оросии	u (1011)	•												
	Port s	size Specifications												
Model	IN. OUT	EXH	IN -	→ OUT		OUT	$\rightarrow$ EXF	1						
	IIV, OUT		C(dm <sup>3</sup> /s·bar)	b	Cv	C(dm3/s·bar)	b	Cv						
VHS20	1/8	1/8	2.4	0.43	0.65	2.5	0.39	0.69						
V11320	1/4	1/0	3.3	0.40	0.88	3.1	0.51	0.84						
VHS30	1/4	1/4	6.4	0.45	1.7	6.2	0.38	1.7						
VII330	3/8	1/4	8.3	0.41	2.3	7.0	0.41	1.9						
	1/4		7.3	0.49	2.0	8.5	0.35	2.3						
VHS40	3/8	3/8	10.9	0.45	3.0	11.6	0.40	3.1						
	1/2		14.2	0.39	3.8	13.3	0.43	3.6						
VHS40-06	3/4	1/2	18.3	0.31	5.0	17.7	0.37	4.8						

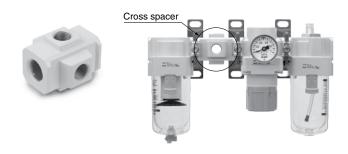
Note) Use an air filter on the IN side for operating protection.

## Cross Spacer: 1/8, 1/4, 3/8, 1/2

Pipings are possible in all 4 directions.

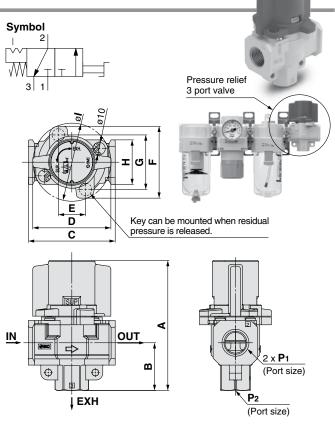
IN/OUT ports are not machined for threads.

Please contact SMC if threaded (machined) ports are required.

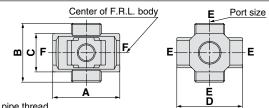


### **Caution on Mounting**

- 1. When mounting a cross spacer directly on the inlet side of the lubricator, be sure to use the AKM series check valve between the lubricator and cross spacer.
- 2. Factory mounting of a cross spacer on the AC model is available as a special order.



Model			St	tandar	d spe	cificat	ions				
Model	P <sub>1</sub>	P <sub>2</sub>	Α	В	С	D	Е	F	G	Н	ı
VHS20	1/8, 1/4	1/8	66.4	22.3	40	37.5	14	46.6	33.6	28	37.5
VHS30	1/4, 3/8	1/4	80.3	29.4	53	49	19	52	38	30	49
VHS40	1/4, 3/8, 1/2	3/8	104.9	38.5	70	63	22	58	44	36	63
VHS40-0	6 3/4	1/2	110.4	42	75	63	22	58	44	44	63



F: Without p	ipe thread
--------------	------------

Model Note)	E (Port size)	Α	В	С	D	Applicable model			
Y14-M5-A	M5 x 0.8	23	16	14	25	AC10□-A			
Y24-□01-A	1/8	40	40	22	40	AC20□-A			
Y24-□02-A	1/4	40	40	22	40	ACZULI-A			
Y34-□01-A	1/8	49	43	28	48	<b>∆</b> C25□- <b>∆</b> ∧C30□-∧			
Y34-□02-A	1/4	49	43	20	40	AC25□-A, AC30□-A			
Y44-□02-A	1/4	60	48	36	54	Λ <i>C</i> 40□-Λ			
Y44-□03-A	3/8	00	40	30	54	AC40□-A			
Y54-□03-A	3/8	72	62	40	62	AC40□-06-A			
Y54-□04-A	1/2	12	02	40	02	AC40 -00-A			

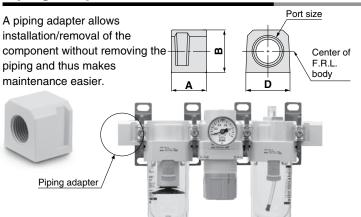
Note)  $\square$  in model numbers indicates a pipe thread type. No indication is necessary for Rc; however, indicate N for NPT, and F for G.

- \* If threaded IN/OUT ports are required, they are available as a special order. Please contact SMC.
- \* Two hexagon socket head plugs are included in the package.



## Sereis AC

## Piping Adapter: 1/8, 1/4, 3/8, 1/2, 3/4



Model Note)	Port size	Α	В	D	Applicable model
E100-M5-A	M5 x 0.8	10	14	14	AC10□-A
E200-□01-A	1/8				
E200-□02-A	1/4	29.8	23.5	28	AC20□-A
E200-□03-A	3/8				
E300-□02-A	1/4				
E300-□03-A	3/8	31.8	30	30	AC25□-A, AC30□-A
E300-□04-A	1/2	]			
E400-□02-A	1/4				
E400-□03-A	3/8	31.8	36	36	AC40□-A
E400-□04-A	1/2	31.8	30	30	AC4ULI-A
E400-□06-A	3/4	1			
E500-□06-A	3/4	31.8	40	44	AC40□-06-A

Note) I in model numbers indicates a pipe thread type. No indication is necessary for Rc; however, indicate N for NPT, and F for G.

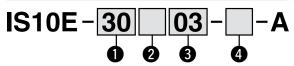
\* Separate interfaces are required for modular unit.

0

**Symbol** 

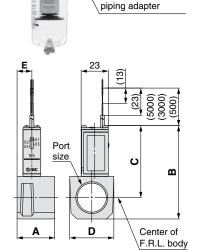
\* Factory mounting of a piping adapter on the AC models is available as a special order.

## **Pressure Switch with Piping Adapter**



- Semi-standard: Select one each for a to d.
- Semi-standard symbol: When more than one specification is required, indicate in alphanumeric order. Example) IS10E-30N03-6PRZ

			Symbol	Description		Body siz		Left
					20	30	40	
			Nil	Rc				
2	Pip	e thread type	N Note)	NPT		•	•	
			F Note)	G		•	•	
			+					
			01	1/8		I —	_	
			02	1/4			•	
8		Port size	03	3/8		•	•	E
			04	1/2	1 -	•	•	-
			06	3/4	1 -	—	•	
			+					
	a	Set pressure	Nil	15 to 58 psi (0.1 to 0.4 MPa)		•	•	
	"	range	6 Note 1)	15 to 87 psi (0.1 to 0.6 MPa)		•	•	
			+					. 1
۾ ا		Landaria.	Nil	0.5 m			•	
da l	b	Lead wire length	٦	3 m			•	
Semi-standard		longui	Z	5 m			•	.
जि ह			+					Ш
e l		Pressure unit of	Nil	MPa		•	•	
v	11	the scale plate	P Note 2)	MPa/psi dual scale			•	
			+					Ш
	0	Mounting	Nil	Right		•		
	ا ل	position	R	Left				
Note 1)	Set	pressure range of	6P (L, R, Z	) is 0.2 to 0.6 MPa				1



Right

Pressure switch with

- (30 to 90 psi).
- Note 2) For pipe thread type: NPT only. This product is for overseas use only according to the new Measurement Law. (The SI unit type is provided for use in Japan.)

#### **Specifications**

Fluid	Air
Ambient and fluid temperature	23 to 140°F (-5 to 60C°) (with no freezing)
Proof pressure	145 psi (1.0 MPa)
Maximum operating pressure	102 psi (0.7 MPa)
Set pressure range (when OFF)	15 to 58 psi (0.1 to 0.4 MPa)
Hysteresis	12 psi (0.08 MPa) or less

#### **Switch Characteristics**

Contact point configuration	1a
Maximum contact point capacity	2 VA (AC), 2 W (DC)
Operating voltage: AC, DC	100 V or less
	12 V to 24 V AC, DC: 50 mA
Maximum operating current	48 V AC, DC: 40 mA
	100 V AC, DC: 20 mA

Model Note 1)	Port size	Α	В	С	D	E	Applicable model
IS10E-20□01-A	1/8						
IS10E-20□02-A	1/4	29.8	66.3	55.3	28	16	AC20□-A
IS10E-20□03-A	3/8						
IS10E-30□02-A	1/4						
IS10E-30□03-A	3/8	31.8	72.8	58.8	30	13	AC25□-A, AC30□-A
IS10E-30□04-A	1/2						
IS10E-40□02-A	1/4						
IS10E-40□03-A	3/8	31.8	78.8	60.8	37	12.5	Note 2)
IS10E-40□04-A	1/2	31.0	70.0	60.6	31	12.5	AC40□-A
IS10E-40□06-A	3/4						

Note 1)  $\square$  in the model numbers indicates a pipe thread type. No indication is necessary for Rc; however, indicate N for NPT,

Note 2) Cannot be mounted on the AC40□-06-A.

- \* Separate interfaces are required for modular unit.
- \* The pressure switch on the AC40 $\square$ -06-A can be mounted by screwing IS10-01S into the piping adapter E500- $\square$ 06-A-X501 (with top-face thread Rc1/8). Products with a premounted switch are available as a special order. Please contact SMC regarding their availability.

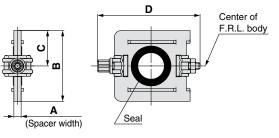


AF

## Series AC

## **Accessories** (Spacers/Brackets)

## **Spacer**



Model		Α	В	С	D	Applicable model
Y100-	4	6	17.9	9	35.4	AC10□-A
Y200-	4	3.2	31.2	15.6	44.9	AC20□-A
Y300-	4	4.2	43.4	21.7	57.9	AC25□-A, AC30□-A
Y400-	4	5.2	53	26.5	68.5	AC40□-A
Y500-	4	5.2	57	28.5	75.6	AC40□-06-A

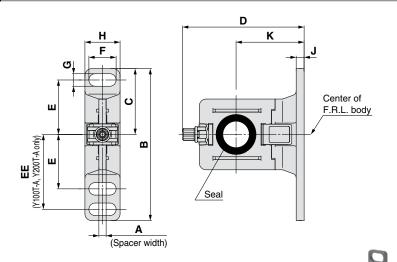


**Replacement Parts** 

Description	Material			Part no.		
Description	iviateriai	Y100-A	Y200-A	Y300-A	Y400-A	Y500-A
Seal	HNBR (NBR) Note 1)	Y120P-050AS Note 2)	Y220P-050S	Y320P-050S	Y420P-050S	Y520P-050S

Note 1) ( ): Size 10 Note 2) Assembly of 2 O-rings

## **Spacer with Bracket**



Model	Α	В	С	D	E	EE	F	G	Н	J	K	Applicable model
Y100T-A	6	56	24.5	43.6	20	27	6.8	4.5	13	3	25	AC10□-A
Y200T-A	3.2	67	29	53.4	24	33	12	5.5	15.5	3.5	30	AC20□-A
Y300T-A	4.2	82	41	71.5	35	_	14	7	19	4	41	AC25□-A, AC30□-A
Y400T-A	5.2	96	48	86.1	40	_	18	9	26	5	50	AC40□-A
Y500T-A	5.2	96	48	89.6	40	_	18	9	26	5	50	AC40□-06-A



Y200T-A

Y400T-A

## **Replacement Parts**

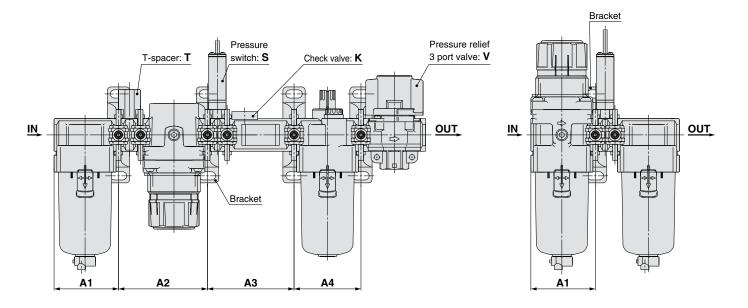
Description	Material			Part no.		
Description	iviateriai	Y100T-A	Y200T-A	Y300T-A	Y400T-A	Y500T-A
Seal	HNBR (NBR) Note 1)	Y120P-050AS Note 2)	Y220P-050S	Y320P-050S	Y420P-050S	Y520P-050S

Note 2) Assembly of 2 O-rings



## Sereis AC

## **Mounting Position for Spacer with Bracket**



Attachment		K			3	1			٧			KS			KT			K	V			KST	
Model	A1	A2	A3	A1	A2	A1	A2	A1	A2	А3	A1	A2	АЗ	A1	A2	A3	A1	A2	A3	A4	A1	A2	A3
AC10-A	_	_	_	_	_	28	48.2	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	
AC20-A	41.6	43.2	43.2	41.6	43.2	41.6	61	41.6	43.2	43.2	41.6	43.2	57	41.6	61	43.2	41.6	43.2	43.2	43.2	41.6	61	57
AC25-A	55.1	57.2	57.2	55.1	57.2	55.1	76	55.1	57.2	57.2	55.1	57.2	74	55.1	76	57.2	55.1	57.2	57.2	57.2	55.1	76	74
AC30-A	55.1	57.2	57.2	55.1	57.2	55.1	76	55.1	57.2	57.2	55.1	57.2	74	55.1	76	57.2	55.1	57.2	57.2	57.2	55.1	76	74
AC40-A	72.6	75.2	75.2	72.6	75.2	72.6	99	72.6	75.2	75.2	72.6	75.2	95	72.6	99	75.2	72.6	75.2	75.2	75.2	72.6	99	95
AC40-06-A	_	_		77.6	80.2	77.6	104	77.6	80.2	80.2	-	_	_	_	_	_		—		_			

Attachment		KS	SV			KTV				KS	TV		S	Т		SV			STV			TV	
Model	A1	A2	A3	A4	A1	A2	A3	A4	A1	A2	А3	A4	A1	A2	A1	A2	A3	A1	A2	A3	A1	A2	A3
AC10-A	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_
AC20-A	41.6	43.2	57	43.2	41.6	61	43.2	43.2	41.6	61	57	43.2	41.6	61	41.6	43.2	57	41.6	61	57	41.6	61	43.2
AC25-A	55.1	57.2	74	57.2	55.1	76	57.2	57.2	55.1	76	74	57.2	55.1	76	55.1	57.2	74	55.1	76	74	55.1	76	57.2
AC30-A	55.1	57.2	74	57.2	55.1	76	57.2	57.2	55.1	76	74	57.2	55.1	76	55.1	57.2	74	55.1	76	74	55.1	76	57.2
AC40-A	72.6	75.2	95	75.2	72.6	99	75.2	75.2	72.6	99	95	75.2	72.6	99	72.6	75.2	95	72.6	99	95	72.6	99	75.2
AC40-06-A	_	_	_	_	_	_	_	_	_	_	_	_	77.6	104	77.6	80.2	102	77.6	104	102	77.6	104	80.2

Attachment	K		S	1	7	K	S		ΚV			KSV		S	<u>v                                     </u>
Model	A1	A2	A1	A1	A2	A1	A2	A1	A2	A3	A1	A2	A3	A1	A2
AC10A-A	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_
AC20A-A	41.6	43.2	41.6	41.6	43.2	41.6	57	41.6	43.2	43.2	41.6	57	43.2	41.6	57
AC30A-A	55.1	57.2	55.1	55.1	57.2	55.1	74	55.1	57.2	57.2	55.1	74	57.2	55.1	74
AC40A-A	72.6	75.2	72.6	72.6	75.2	72.6	95	72.6	75.2	75.2	72.6	95	75.2	72.6	95
AC40A-06-A	I —		77.6	77.6	80.2			_	_	_	_		_	77.6	102

Attachment	S	T	1	/	V	1	S	V	S	/1	Т	V	T\	<b>V</b> 1
Model	A1	A1	A1	A2	A1	A2	A1	A2	A1	A2	A1	A2	A1	A2
AC10B-A	_	28	_	_	_	_	_	_	_	_	_	_	_	_
AC20B-A	41.6	41.6	41.6	43.2	41.6	43.2	41.6	57	41.6	43.2	41.6	61	41.6	43.2
AC25B-A	55.1	55.1	55.1	57.2	55.1	57.2	55.1	74	55.1	57.2	55.1	76	55.1	57.2
AC30B-A	55.1	55.1	55.1	57.2	55.1	57.2	55.1	74	55.1	57.2	55.1	76	55.1	57.2
AC40B-A	72.6	72.6	72.6	75.2	72.6	75.2	72.6	95	72.6	75.2	72.6	99	72.6	75.2
AC40B96-A	77.6	77.6	77.6	80.2	77.6	80.2	77.6	102	77.6	80.2	77.6	104	77.6	80.2

Attachment		3	T			٧			V1			SV			SV1			TV			TV1	
Model	A1	A2	A1	A2	A1	A2	A3	A1	A2	А3	A1	A2	A3	A1	A2	A3	A1	A2	A3	A1	A2	А3
AC20C-A	41.6	43.2	41.6	43.2	41.6	43.2	43.2	41.6	43.2	43.2	41.6	43.2	57	41.6	43.2	43.2	41.6	43.2	61	41.6	43.2	43.2
AC25C-A	55.1	57.2	55.1	57.2	55.1	57.2	57.2	55.1	57.2	57.2	55.1	57.2	74	55.1	57.2	57.2	55.1	57.2	76	55.1	57.2	57.2
AC30C-A	55.1	57.2	55.1	57.2	55.1	57.2	57.2	55.1	57.2	57.2	55.1	57.2	74	55.1	57.2	57.2	55.1	57.2	76	55.1	57.2	57.2
AC40C-A	72.6	75.2	72.6	75.2	72.6	75.2	75.2	72.6	75.2	75.2	72.6	75.2	95	72.6	75.2	75.2	72.6	75.2	99	72.6	75.2	75.2
AC40C-06-A	77.6	80.2	77.6	80.2	77.6	80.2	80.2	77.6	80.2	80.2	77.6	80.2	102	77.6	80.2	80.2	77.6	80.2	104	77.6	80.2	80.2

Attachment	S	1	/	V	1	S	V	SV1		
Model	A1	A1	A2	A1	A2	A1	A2	A1	A2	
AC20D-A	41.6	41.6	43.2	41.6	43.2	41.6	57	41.6	43.2	
AC30D-A	55.1	55.1	57.2	55.1	57.2	55.1	74	55.1	57.2	
AC40D-A	72.6	72.6	75.2	72.6	75.2	72.6	95	72.6	75.2	
AC40D-06-A	77.6	77.6	80.2	77.6	80.2	77.6	102	77.6	80.2	

- A1: Dimension from the end of the IN side to the center of the mounting hole for the first bracket.
- A2: Mounting hole pitch between the first and the second brackets.
- A3: Mounting hole pitch between the second and the third brackets.
- A4: Mounting hole pitch between the third and the fourth brackets.

## AC

AF+AR+AL

## **Modular Type Air Filters**

## Series AF/AFM/AFD

Air Filter Series AF	Model	Port size	Filtration μm	Options
	AF10-A	M5 x 0.8		
	AF20-A	1/8, 1/4		
	AF30-A	1/4, 3/8		Bracket (Except AF10-A)
	AF40-A	1/4, 3/8, 1/2	5	
	AF40-06-A	3/4		Float type auto drain
-	AF50-A	3/4, 1		
P.35 to 43	AF60-A	1		
Mist Separator Series AFM	AFM20-A	1/8, 1/4		
COM-to	AFM30-A	1/4, 3/8	0.3	Bracket
	AFM40-A	1/4, 3/8, 1/2	0.5	Float type auto drain
P.45 to 52	AFM40-06-A	3/4		
Micro Mist Separator Series AFD	AFD20-A	1/8, 1/4		
COLOR	AFD30-A	1/4, 3/8	0.01	Bracket
500	AFD40-A	1/4, 3/8, 1/2	0.01	Float type auto drain
P.45 to 52	AFD40-06-A	3/4		

# Air Filter AF10-A to AF60-A

**Symbol** Air Filter

Air Filter with Auto Drain









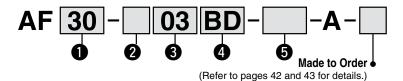


**How to Order** 

AF10-A

AF20-A

AF40-A



- 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) AF30-03BD-R-A

									D		
		_		Symbol	Description			Body			
						10	20	30	40	50	60
				Nil	Metric thread (M5)	•	_	_	_	_	_
2		Dine	thread type		Rc	_		•			
9		ripe	tilleau type	N Note 1)	NPT	_			•		
				F Note 2)	G	_			•		
				+							
				M5	M5 x 0.8		_	_		_	
				01	1/8	_	•	_	_	_	_
				02	1/4	_	•		•	_	
8			Port size	03	3/8	_	_	•	•	_	
				04	1/2	_	_	_	•	_	_
				06	3/4	_	_	_	•	•	_
				10	1		_	_			
				+				,			
		а	Mounting	Nil	Without mounting option			•	<u> </u>		
	_	u	Wiodriting	B Note 3)	With bracket	_			•		
4	Option			+							
•	ဝ		Float type	Nil	Without auto drain		•		•	•	
		b	auto drain	C Note 4)	N.C. (Normally closed) Drain port is closed when pressure is not applied.				•		
			dato diaii.	<b>D</b> Note 5)	N.O. (Normally open) Drain port is open when pressure is not applied.		<b>-</b>		•		
				+							
				Nil	Polycarbonate bowl		•				
				2	Metal bowl		•	•	•	•	
		С	Bowl Note 6)	6	Nylon bowl				•		
			20111	8	Metal bowl with level gauge	_		•	•	•	
				С	With bowl guard		•	—— Note 7)	Note 7)	—— Note 7)	Note 7)
	-			6C	With bowl guard (Nylon bowl)	_		Note 8)	Note 8)	Note 8)	Note 8)
	Semi-standard			+	· · · · · · · · · · · · · · · · · · ·						
	and			Nil	With drain cock						
6	-Ste	d	Drain port Note 9)	J Note 10)	Drain guide 1/8		•	_			
	Ē	-		•	Drain guide 1/4			•	•		
	Se			W Note 11)	Drain cock with barb fitting	_	_		•		
				+							
		е	Flow direction	Nil	Flow direction: Left to right		•	•	•	•	
				R	Flow direction: Right to left				•		
				+	N 1						
		f	Pressure unit	Nil 7 Note 12)	Name plate and caution plate for bowl in imperial units: MPa	O 11 - 12			O Note of the		
				Z Note 12)	Name plate and caution plate for bowl in imperial units: psi, °F	Note 13)	Note 13)	Note 13)	O Note 13)	Note 13)	( Note 13)

- Note 1) Drain guide is NPT1/8 (applicable to the AF20-A) and NPT1/4 (applicable to the AF30-A to AF60-A).
  - The auto drain port comes with ø3/8" One-touch fitting (applicable to the AF30-A to AF60-A).
- Note 2) Drain guide is G1/8 (applicable to the AF20-A) and G1/4 (applicable to the AF30-A to AF60-A).
  - The auto drain port comes with  $\emptyset 10$  One-touch fitting (applicable to the AF30-A to AF60-A).
- Note 3) Option B is not assembled and supplied loose at the time of shipment. Assembly of a bracket and 2 mounting screws.
- Note 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.

- Note 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 start of operations. N.C. type is recommended.
- Note 6) Refer to Chemical data on page 38 for chemical resistance of the bowl.
- Note 7) A bowl guard is provided as standard equipment (polycarbonate).
- Note 8) A bowl guard is provided as standard equipment (nylon).
- Note 9) The combination of float type auto drain: C and D is not available.
- Note 10) Without a valve function
- Note 11) The combination of metal bowl: 2 and 8 is not available.
- Note 12) For pipe thread type: M5, NPT. This product is for overseas use only according to the new Measurement Law. (The SI unit type is provided for use in Japan.)
- Note 13) O: For pipe thread type: M5, NPT only



## Air Filters Series AF10-A to AF60-A

## **Standard Specifications**

Model	AF10-A	AF20-A	AF30-A	AF40-A	AF40-06-A	AF50-A	AF60-A							
Port size	M5 x 0.8	1/8, 1/4	1/4, 3/8	1/4, 3/8, 1/2	3/4	3/4, 1	1							
Fluid		Air												
Ambient and fluid temperature	23 to 140°F (-5 to 60°C) (with no freezing)													
Proof pressure	218 psi (1.5 MPa)													
Maximum operating pressure			1	145 psi (1.0 MPa	1)									
Nominal filtration rating				5 μm										
Drain capacity (cm³)	2.5	8	25		4	5								
Bowl material				Polycarbonate										
Bowl guard	_	Semi-standard (Steel)		Stan	dard (Polycarbo	nate)								
Weight (kg)	0.06	0.08	0.18	0.36	0.41	0.87	1.00							

### Options/Part No.

Optional specifications		Model												
	AF10-A	AF20-A	AF30-A	AF40-A	AF40-06-A	AF50-A	AF60-A							
Bracket assembly Note)	_	AF22P-050AS	AF32P-050AS	AF42P-050AS	AF42P-070AS	AF52P	-050AS							

Note) Assembly of a bracket and 2 mounting screws

### **Bowl Assembly/Part No.**

Bowl	Drain					Mode	el			
material	discharge mechanism	Drain port	Other	AF10-A	AF20-A	AF30-A	AF40-A	AF40-06-A	AF50-A	AF60-A
		With drain cock	_	C1SF-A	C2SF-A	_				
	Manuel	With drain cock	With bowl guard	_	C2SF-C-A	C3SF-A				
	Manual discharge	Drain cock with barb fitting	With bowl guard	_	_	C3SF-W-A		C4SF	-W-A	
Polycarbonate	discriarge	With drain guide	_	_	C2SF□-J-A	_		_	_	
bowl		(without valve function)	With bowl guard	_	C2SF□-CJ-A	C3SF□-J-A		C4SF	□-J-A	
	Automatic	Normally closed (N.C.)	_	AD17-A	AD27-A	_		_	_	
	discharge Note)	Normally closed (N.C.)	With bowl guard	_	AD27-C-A	AD37□-A		AD47	7□-A	
	(Auto drain)	Normally open (N.O.)	With bowl guard	_	_	AD38□-A		AD48	B□-A	
		With drain cock	_	C1SF-6-A	C2SF-6-A	_	_			
	Manual	With drain cock	With bowl guard	_	C2SF-6C-A	C3SF-6-A		C4SF	-6-A	
	Manual discharge	Drain cock with barb fitting	With bowl guard	_	_	C3SF-6W-A		C4SF	-6W-A	
Nylon bowl	discriarge	With drain guide	_	_	C2SF□-6J-A	_				
INVIOLI DOMI		(without valve function)	With bowl guard	_	C2SF□-6CJ-A	C3SF□-6J-A	C4SF□-6J-A			
	Automatic	Normally closed (N.C.)	_	AD17-6-A	AD27-6-A	_	_			
	discharge Note)	Normally closed (N.C.)	With bowl guard	_	AD27-6C-A	AD37□-6-A		AD47	□-6-A	
	(Auto drain)	Normally open (N.O.)	With bowl guard	_	_	AD38□-6-A		AD48	□-6-A	
		With drain cock	_	C1SF-2-A	C2SF-2-A	C3SF-2-A		C4SF	2-A	
	Manual	With drain cock	With level gauge	_	_	C3LF-8-A		C4LF	-8-A	
	discharge	With drain guide	_	_	C2SF□-2J-A	C3SF□-2J-A		C4SF	⊒-2J-A	
Metal bowl		(without valve function)	With level gauge	_	_	C3LF□-8J-A		C4LF	⊒-8J-A	
IVICIAI DOWI	A	Normally closed (N.C.)		AD17-2-A	AD27-2-A	AD37□-2-A		AD47	□-2-A	
	Automatic discharge Note)	INOTHIAITY GIOSEU (IN.C.)	With level gauge		_	AD37□-8-A		AD47	□-8-A	
	(Auto drain)	Normally open (N.O.)	_	_	_	AD38□-2-A		AD48	□-2-A	
	(	Normally open (N.O.)	With level gauge		_	AD38□-8-A		AD48	⊒-8-A	

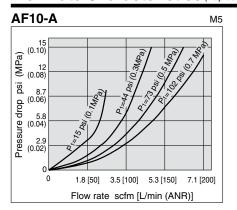
Note) Minimum operating pressure: N.O. type–15 psi (0.1 MPa) (AD38-A, AD48-A); N.C. type–15 psi (0.1 MPa) (AD17-A, AD27-A) and 22 psi (0.15 MPa) (AD37-A, AD47-A). Bowl assembly for the AF20-A to AF60-A models comes with a bowl seal.

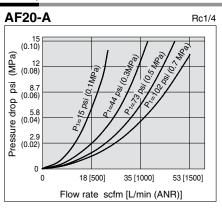
No indication is necessary for Rc thread; however, indicate N for NPT thread, and F for G thread. (For auto drain, Nil: ø10, N: ø3/8")

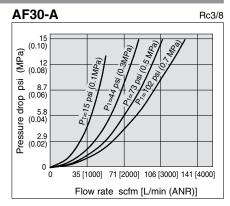
Please consult with SMC separately for psi and °F unit display specifications.

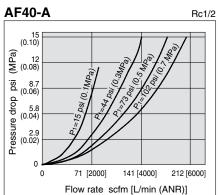
## Series AF10-A to AF60-A

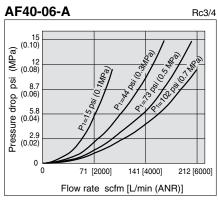
## Flow-rate Characteristics (Representative values)

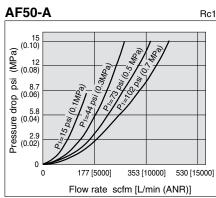


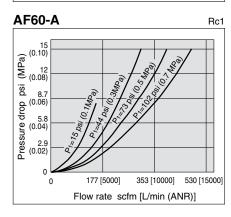












Be sure to read this before handling. Refer to the back cover for Safety Instructions, "Handling Precautions for I SMC Products" and the Operation Manual for F.R.L. Precautions, http://www.smcworld.com

#### **Design/Selection**

## 

1. The standard bowl for the air filter, filter regulator, and lubricator, as well as the sight dome for the lubricator are made of polycarbonate. Do not use in an environment where they are exposed to or come in contact with organic solvents, chemicals, cutting oil, synthetic oil, alkali, and thread lock solutions.

Effects of atmosphere of organic solvents and chemicals, and where these elements are likely to adhere to the equipment. Chemical data for substances causing degradation (Reference)

			Material			
Type	Chemical name	Application examples	Polycar- bonate	Nylor		
Acid	Hydrochloric acid Sulfuric acid, Phosphoric acid Chromic acid	Acid washing liquid for metals	Δ	×		
Alkaline	Sodium hydroxide (Caustic soda) Potash Calcium hydroxide (Slack lime) Ammonia water Carbonate of soda	Degreasing of metals Industrial salts Water-soluble cutting oil	×	0		
Inorganic salts	Sodium sulfide Sulfate of potash Sulfate of soda	_	×	Δ		
Chlorine solvents	Carbon tetrachloride Chloroform Ethylene chloride Methylene chloride	Cleansing liquid for metals Printing ink Dilution	×	Δ		
Aromatic series	Benzene Toluene Paint thinner	Coatings Dry cleaning	×	Δ		
Ketone	Acetone Methyl ethyl ketone Cyclohexane	Photographic film Dry cleaning Textile industries	×	×		
Alcohol	Ethyl alcohol IPA Methyl alcohol	Antifreeze Adhesives	Δ	×		
Oil	Gasoline Kerosene	_	×	0		
Ester	Phthalic acid dimethyl Phthalic acid diethyl Acetic acid	Synthetic oil Anti-rust additives	×	0		
Ether	Methyl ether Ethyl ether	Brake oil additives	×	0		
Amino	Methyl amino	Cutting oil Brake oil additives Rubber accelerator	×	×		
Others	Thread-lock fluid Seawater Leak tester	_	×	Δ		

When the above factors are present, or there is some doubt, use a metal bowl

#### **Maintenance**

## ∕**N Warnin**ɑ

1. Replace the element every 2 years or when the pressure drop becomes 0.1 MPa, whichever comes first, to prevent damage to the element.

### **Mounting/Adjustment**

## **∕** Caution

1. When the bowl is installed on the air filter (AF30-A to AF60-A), install them so that the lock button lines up to the groove of the front (or the back) of the body to avoid drop or damage of the bowl.

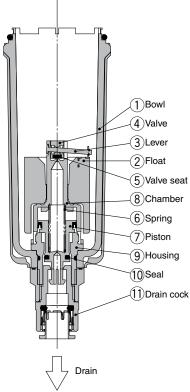




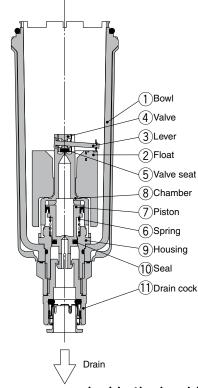
## Series AF10-A to AF60-A

### Working Principle: Float Type Auto Drain

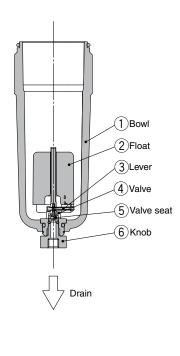
## N.O. type: AD38-A, AD48-A



### N.C. type: AD37-A, AD47-A



## Compact auto drain N.C. type: AD17-A, AD27-A



### • When pressure inside the bowl is released: • When pressure inside the bowl is • When pressure inside the bowl is

When pressure is released from the bowl ①, the piston (7) is lowered by the spring (6).

The sealing action of the seal 10 is interrupted, and the outside air flows inside the bowl 1 through the housing hole (9) and the drain cock (11).

Therefore, if there is an accumulation of condensate in the bowl ①, it will drain out through the drain cock.

#### When pressure is applied inside the bowl:

When pressure is 0.1 MPa or more, the force of the • When pressure is applied inside the bowl: piston 7 surpasses the force of the spring 6, and the piston goes up.

This pushes seal 10 up so that it creates a seal, and the inside of the bowl ①, is shut off from the outside air.

If there is no accumulation of condensate in the bowl ① at this time, the float  $\ensuremath{ \textcircled{2}}$  will be pulled down by its own weight, causing the valve 4, which is connected to the lever 3, to seal the valve seat 5.

#### • When there is an accumulation of condensate in the bowl:

The float ② rises due to its own buoyancy and the seal at the valve seat (5) is interrupted.

This allows the pressure inside the bowl ① to enter the chamber ®. The result is that the combined pressure inside the chamber ® and the force of the spring 6 lowers the piston (7).

This causes the sealing action of the seal 10 to be interrupted, and the accumulated condensate in the bowl ① drains out through the drain cock ①.

Turning the drain cock (1) manually counterclockwise lowers the piston 7, and causes the seal created by the seal 10 to be interrupted, thus allowing the condensate to drain out.

## released:

Even when pressure inside the bowl ① is released, spring 6 keeps the piston 7 in its upward position.

This keeps the seal created by the seal 10 in place; thus, the inside of the bowl 1 is shut off from the outside air.

Therefore, even if there is an accumulation of condensate in the bowl 1, it will not drain out.

Even when pressure is applied inside the bowl q, the combined force of the spring 6 and the pressure inside the bowl q keeps the piston 7 in its upward

This maintains the seal created by the seal 10 in place; thus, the inside of the bowl (1) is shut off from the outside air.

If there is no accumulation of condensate in the bowl 1 at this time, the float 2 will be pulled down by its own weight, causing the valve 4, which is connected to the lever 3. to seal the valve seat 5.

#### When there is an accumulation of condensate in the bowl:

The float ② rises due to its own buoyancy and the seal at the valve seat (5) is interrupted. This allows the pressure inside the bowl 1 to enter the chamber 8.

The result is that the pressure inside the chamber ® surpasses the force of the spring 6 and pushes the piston 7 downward.

This causes the sealing action of the seal 10 to be interrupted and the accumulated condensate in the bowl 1 drains out through the drain cock 11.

Turning the drain cock (1) manually counterclockwise lowers the piston ①, and causes the seal created by the seal 10 to be interrupted, thus allowing the condensate to drain out.

## released:

Even when pressure inside the bowl (1) is released, the weight of the float 2 causes the valve 4, which is connected to the lever 3, to seal the valve seat (5). As a result, the inside of the bowl (1) is shut off from the outside air.

Therefore, even if there is an accumulation of condensate in the bowl 1, it will not drain out.

## When pressure is applied inside the

Even when pressure is applied inside the bowl ①, the weight of the float 2 and the differential pressure that is applied to the valve 2 cause the valve 4 to seal the valve seat 5, and the outside air is shut off from the inside of the bowl 1

#### When there is an accumulation of condensate in the bowl:

The float ② rises due to its own buoyancy and the seal at the valve seat 5 is interrupted.

The condensate inside the bowl ① drains out through the knob 6.

Turning the knob 6 manually counterclockwise lowers it and causes the sealing action of the valve seat 5 to be interrupted, which allows the condensate to drain out.

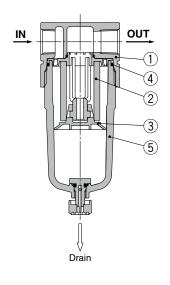


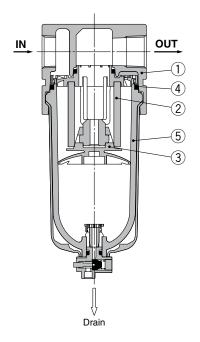
## Construction

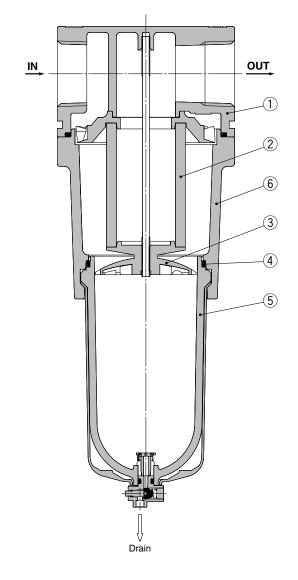
## AF10-A/AF20-A

## AF30-A to AF40-06-A

## AF50-A/AF60-A







### **Component Parts**

No.	Description	Material	Model	Color
-	Body	Zinc die-cast	AF10-A	White
'	Войу	Aluminum die-cast	AF20-A to AF60-A	vvriite
6	Housing	Aluminum die-cast	AF50-A/AF60-A	White

### **Replacement Parts**

No.	Description	Material				Part no.				
INO.	Description	Material	AF10-A	AF20-A	AF30-A	AF40-A	AF40-06-A	AF50-A	AF60-A	
2	Filter element	Non-woven fabric	AF10P-060S	AF20P-060S	AF30P-060S	AF40F	P-060S	AF50P-060S	AF60P-060S	
3	Baffle	PBT	AF10P-040S Note 2)	AF22P-040S	AF32P-040S	AF42F	P-040S	AF50P-040S	AF60P-040S	
4	Bowl seal	NBR	C1SFP-260S	C2SFP-260S	C32FP-260S	C42FP-260S				
5	Bowl assembly Note 1)	Polycarbonate	C1SF-A	C2SF-A	C3SF-A	C4SF-A				

Note 1) Bowl seal is included for the AF20-A to AF60-A. Please contact SMC regarding the supply of bowl assembly with psi and °F unit display specifications. Note 2) The baffle material for the AF10-A (AF10P-040S) only is polyacetal.

AC

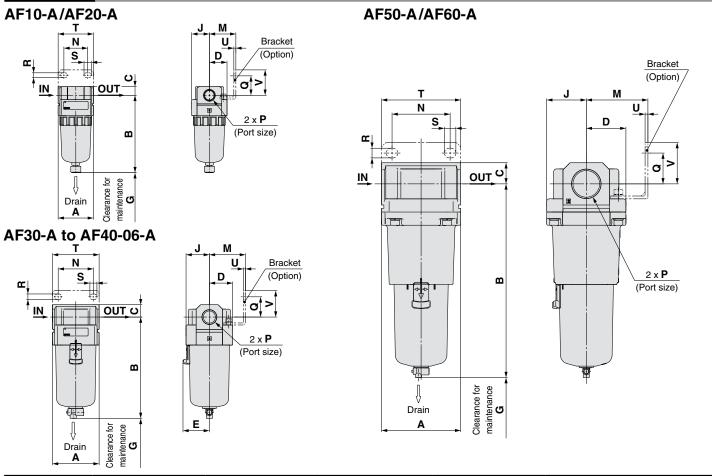
AW+AL AF+AR+AL

AF+AR

AF+AFM+AR

## Series AF10-A to AF60-A

## **Dimensions**



Applicable model	AF10-A	/AF20-A	AF2	20-A	AF30-A to AF60-A			
Optional/Semi-standard specifications	With auto drain (N.C.)	Metal bowl	With drain guide	Metal bowl with drain guide	With auto drain (N.O./N.C.)			
Dimensions	M5 x 0.8	B	Width across flats 14 1/8	Width across flats 14	N.O.: Black N.C.: Gray  Thread type/Rc, G: ø10 One-touch fitting Thread type/NPT: ø3/8" One-touch fitting			

Applicable model			AF	30-A to AF60-A		
Optional/Semi-standard specifications	Metal bowl	Metal bowl with drain guide	Metal bowl with level gauge	Metal bowl with level gauge, with drain guide	With drain guide	Drain cock with barb fitting
Dimensions	<b>B</b>	Width across flats 17 1/4		Width across flats 17	Width across flats 17	Barb fitting applicable tubing: T0604

												Option	al sped	cifica	ations			Semi-standard specifications					
Model	Standard specifications							Bracket mount								With auto drain	With barb fitting	With drain guide	Metal bowl	Metal bowl with drain guide	Metal bowl with level gauge	Metal bowl with level gauge, with drain guide	
	Р	Α	В	С	D	Е	G	J	M	N	Q	R	S	Т	U	٧	В	В	В	В	В	В	В
AF10-A	M5 x 0.8	25	59.9	7	12.5	_	25	12.5	_	_	_	_	_	_	_	_	77.9	_	_	59.3	_	_	_
AF20-A	1/8, 1/4	40	87.6	9.8	20	_	25	20	30	27	22	5.4	8.4	40	2.3	28	104.9	_	91.4	87.4	93.9	_	_
AF30-A	1/4, 3/8	53	115.1	14	26.7	30	35	26.7	41	40	23	6.5	8	53	2.3	30	156.8	123.6	121.9	117.6	122.1	137.6	142.1
AF40-A	1/4, 3/8, 1/2	70	147.1	18	35.5	38.4	40	35.5	50	54	26	8.5	10.5	70	2.3	35	186.9	155.6	153.9	149.6	154.1	169.6	174.1
AF40-06-A	3/4	75	149.1	20	35.5	38.4	40	35.5	50	54	25	8.5	10.5	70	2.3	34	188.9	157.6	155.9	151.6	156.1	171.6	176.1
AF50-A	3/4, 1	90	220.1	24	45	_	30	45	70	66	35	11	13	90	3.2	47	259.9	228.6	226.9	222.6	227.1	242.6	247.1
AF60-A	1	95	234.1	24	47.5		30	47.5	70	66	35	11	13	90	3.2	47	273.9	242.6	240.9	236.6	241.1	256.6	261.1

## Air Filter/AF20-A to AF40-06-A Made to Order



Please contact SMC for detailed dimensions, specifications and lead times.

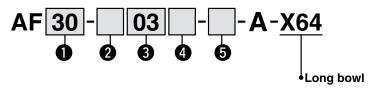
## 1 Long Bowl

Drain capacity is greater than that of standard models.

#### Applicable Model/Drain Capacity

Model	AF20-A	AF30-A	AF40-A	AF40-06-A
Port size	1/8, 1/4	1/4, 3/8	1/4, 3/8, 1/2	3/4
Drain capacity (cm <sup>3</sup> )	19	43	8	8

Note) Please consult with SMC for dimensions.



- 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) AF30-03B-2R-A-X64

						0	
			Symbol	Description		Body size	
					20	30	40
			Nil	Rc	•	•	•
	Pipe	e thread type	N Note 1)	NPT	•	•	•
			F Note 2)	G	•	•	•
			+				
			01	1/8	•	_	
	Port size 02 03 04		02	1/4	•	•	•
			03	3/8	_	•	•
			04	1/2	_	_	•
			06	3/4		_	•
			+				
	Ontion (Mounting) Nil			Without mounting option	•	•	•
			B Note 3)	With bracket	•	•	•
			+				
		a Bowl Note 4)	Nil	Polycarbonate bowl	•	•	•
			2	Metal bowl	•	•	•
	а		6	Nylon bowl	•	•	•
			С	With bowl guard	•	Note 5)	Note 5)
			6C	With bowl guard (Nylon bowl)	•	Note 6)	Note 6)
_	,		+				
dar	5		Nil	With drain cock	•	•	•
stan	b	Drain port	Note 7)	Drain guide 1/8	•	_	
, ic		Diam port	•	Drain guide 1/4		•	•
Semi-standard			W Note 8)	Drain cock with barb fitting (for ø6 x ø4 nylon tube)	_	•	•
"	1		+				
	c	Flow direction Ni		Flow direction: Left to right	•	•	•
			R	Flow direction: Right to left	•		•
			+				
	<b>d</b> Pressure un		Nil	Name plate and caution plate for bowl in imperial units: MPa	•	•	•
	J	1 1000die dille	Z Note 9)	Name plate and caution plate for bowl in imperial units: psi, °F	Note 10)	Note 10)	Note 10)

Note 1) Drain guide is NPT1/8 (applicable to the AF20-A) and NPT1/4 (applicable to the AF30-A to AF40-06-A).

Note 2) Drain guide is G1/8 (applicable to the AF20-A) and G1/4 (applicable to the AF30-A to AF40-06-A).

Note 3) A bracket is not assembled and supplied loose at the time of shipment. Including 2 mounting screws.

Note 4) Refer to Chemical data on page 38 for chemical resistance of the bowl.

Note 5) A bowl guard is provided as standard equipment (polycarbonate).

Note 6) A bowl guard is provided as standard equipment (nylon).

Note 7) Without a valve function

Note 8) The combination of metal bowl: 2 is not available.

Note 9) For pipe thread type: NPT. This product is for overseas use only according to the new Measurement Law. (The SI unit type is provided for use in Japan.)

Note 10) O: For pipe thread type: NPT only



AC

AF+AR+AL

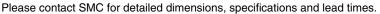
AF+AFM+AR

Attachment | AW+AFM |

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## Air Filter/AF20-A to AF40-06-A

## **Made to Order**



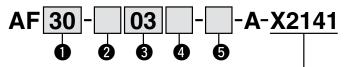


#### 2 With Element Service Indicator

Clogging status of elements can be checked visually.

#### **Applicable Model**

Model	AF20-A	AF30-A	AF40-A	AF40-06-A
Port size	1/8, 1/4	1/4, 3/8	1/4, 3/8, 1/2	3/4



- 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) AF30-03BD-2R-A-X2141

#### With element service indicator

A special body type is required to mount the element service indicator. It cannot be mounted on a standard body.

		_					0	
	Syr				Description		Body size	
						20	30	40
				Nil	Rc	•	•	•
2	1		N Note 1)	NPT	•	•	•	
		F Note 2)		F Note 2)	G	•	•	•
				+				
				01	1/8	•	_	_
		02			1/4	•	•	•
3			Port size	03	3/8	_	•	•
	04			04	1/2	_	_	•
				06	3/4	_	_	•
				+				
	Option	a Mounting		Nil	Without mounting option	•	•	•
		a	iviouriting	B Note 3)	With bracket	•	•	•
				+				
4			[] a a b b a	Nil	Without auto drain	•	•	•
		b	Float type auto drain	C Note 4)	N.C. (Normally closed) Drain port is closed when pressure is not applied.	•	•	•
			auto urairi	D Note 5)	N.O. (Normally open) Drain port is open when pressure is not applied.	_	•	•
				+				
			Bowl Note 6)	Nil	Polycarbonate bowl	•	•	•
				2	Metal bowl	•	•	•
				6	Nylon bowl	•	•	•
		С	BOWI	8	Metal bowl with level gauge	_	•	•
				С	With bowl guard	•	Note 7)	Note 7)
				6C	With bowl guard (Nylon bowl)	•	Note 8)	Note 8)
	힏			+				
	Semi-standard			Nil	With drain cock	•	•	•
6	sta	۱ ۵	Drain port Note 12)	Note 9)	Drain guide 1/8	•	_	_
	\=	a Drain port Note	Diain port		Drain guide 1/4	_	•	•
	Se	W Note			Drain cock with barb fitting (for ø6 x ø4 nylon tube)	_	•	•
				+				
		e Flow direction Nil		Nil	Flow direction: Left to right	•	•	•
			I low direction	R	Flow direction: Right to left	•	•	•
				+				
		f	Pressure unit	Nil	Name plate and caution plate for bowl in imperial units: MPa	•	•	•
			i iessuie uliit	<b>Z</b> Note 10)	Name plate and caution plate for bowl in imperial units: psi, °F	Note 11)	Note 11)	Note 11)

Note 1) Drain guide is NPT1/8 (applicable to the AF20-A) and NPT1/4 (applicable to the AF30-A to AF40-06-A).

The auto drain port comes with ø3/8" One-touch fitting (applicable to the AF30-A to AF40-06-A).

- Note 2) Drain guide is G1/8 (applicable to the AF20-A) and G1/4 (applicable to the AF30-A to AF40-06-A).
- Note 3) A bracket is not assembled and supplied loose at the time of shipment. Including 2 mounting screws.
- Note 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.

- Note 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 start of operations. N.C. type is recommended.
- Note 6) Refer to Chemical data on page 38 for chemical resistance of the bowl.
- Note 7) A bowl guard is provided as standard equipment (polycarbonate).
- Note 8) A bowl guard is provided as standard equipment (nylon).

Note 9) Without a valve function

- Note 10) For pipe thread type: NPT. This product is for overseas use only according to the new Measurement Law. (The SI unit type is provided for use in Japan.)
- Note 11) O: For pipe thread type: NPT only
- Note 12) The combination of float type auto drain: C and D is not available.
- Note 13) The combination of metal bowl: 2 and 8 is not available.



## **Mist Separator** AFM20-A to AFM40-A **Micro Mist Separator** AFD20-A to AFD40-A







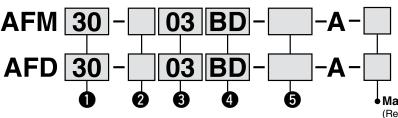
Micro Mist Separator







**How to Order** 



• Series AFM Nominal filtration rating: 0.3 μm • Series AFD Nominal filtration rating: 0.01  $\mu$ m

- 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) AFM30-03BD-B-A

<b>AFD</b>	30 -	_	03	BD-	-	-A-
	0	2	8	4	6	Made to Order     (Refer to pages 51 and 52 for details.)

	_	_					0	
				Symbol	Description		Body size	
						20	30	40
				Nil	Rc	•	•	•
2	Pipe thread type N Note 1)			N Note 1)	NPT	•	•	•
				F Note 2)	G	•	•	•
				+			1	1
				01	1/8	•	_	_
		02			1/4	•	•	•
8	Port size 03		03	3/8	_	•	•	
	04			04	1/2	_	_	•
				06	3/4		_	•
				+				
		а	Mounting	Nil	Without mounting option	•	•	•
	Option	a	Mounting	B Note 3)	With bracket	•	•	•
4				+				1
	g		Float type	Nil	Without auto drain	•	•	•
		b	auto drain	C Note 4)	N.C. (Normally closed) Drain port is closed when pressure is not applied.	•	•	•
				D Note 5)	N.O. (Normally open) Drainport is open when pressure is not applied.	_	•	•
			Γ	+				
				Nil	Polycarbonate bowl	•	•	•
				2	Metal bowl	•	•	•
		С	Bowl Note 6)	6	Nylon bowl	•	•	•
			Bowi	8	Metal bowl with level gauge	_	•	•
				С	With bowl guard	•	Note 7)	Note 7)
	_			6C	With bowl guard (Nylon bowl)	•	Note 8)	Note 8)
	larc		I	+	NAMES A CONTRACTOR OF THE PARTY			
	anc			Nil	With drain cock	•	•	•
6	Semi-standard	d	Drain port Note 12)	J Note 9)	Drain guide 1/8	•		_
	em				Drain guide 1/4		•	•
	S			<b>W</b> Note 13)	Drain cock with barb fitting (for ø6 x ø4 nylon tube)	_	•	•
				+	Flore Constant Left to date			
		A   Flow direction		Nil	Flow direction: Left to right	•		
				R	Flow direction: Right to left			•
				+ Nil	Name plate and caution plate for bowl in imperial units: MPa			
		f	Pressure unit	Z Note 10)		Note 11)	Note 11)	Note 11)
				<b>4</b> 11010 10)	Name plate and caution plate for bowl in imperial units: psi, °F		) (Note 11)	U 11010 117

Note 1) Drain guide is NPT1/8 (applicable to the AFM20-A, AFD20-A) and NPT1/4 (applicable to the AFM30-A/40-A, AFD30-A/40-A).

The auto drain port comes with ø3/8" One-touch fitting (applicable to the AFM30-A/40-A, AFD30-A/40-A).

Note 2) Drain guide is G1/8 (applicable to the AFM20-A, AFD20-A) and G1/4 (applicable to the AFM30-A/40-A, AFD30-A/40-A).

Note 3) A bracket is not assembled and supplied loose at the time of shipment. Including 2 mounting

Note 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.

Note 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 start of operations. N.C. type is recommended.

Note 6) Refer to Chemical data on page 48 for chemical resistance of the bowl.

Note 7) A bowl guard is provided as standard equipment (polycarbonate).

Note 8) A bowl guard is provided as standard equipment (nylon).

Note 9) Without a valve function

Note 10) For pipe thread type: NPT. This product is for overseas use only according to the new Measurement Law. (The SI unit type is provided for use in Japan.)

Note 11) O: For pipe thread type: NPT only

Note 12) The combination of float type auto drain: C and D is not available.

Note 13) The combination of metal bowl: 2 and 8 is not available.



## Mist Separator Series AFM20-A to AFM40-A Micro Mist Separator Series AFD20-A to AFD40-A

#### **Standard Specifications**

Model		AFM20-A AFD20-A	AFM30-A AFD30-A	AFM40-A AFD40-A	AFM40-06-A AFD40-06-A		
Port size		1/8, 1/4	1/4, 3/8	1/4, 3/8, 1/2	3/4		
Fluid			A	ir			
Ambient and fluid temperature	•	2	23 to 140 °F (- 5 to 60	0°C) (with no freezing)			
Proof pressure			218 psi (	1.5 MPa)			
Maximum operating pressure			145 psi (	1.0 MPa)			
Minimum operating pressure			7.3 psi (0	.05 MPa)			
Nominal filtration rating	AFM20-A to AFM40-06-A	0.3 μm (99.9% filtered particle size)					
Nominal intration rating	AFD20-A to AFD40-06-A						
Outlet side oil mist	AFM20-A to AFM40-06-A						
concentration	AFD20-A to AFD40-06-A	Max. 0.1 mg/m <sup>3</sup> (ANR) (E	Before saturated with oil 0	.01 mg/m³ (ANR) or less ≈	0.008 ppm) Note 2) Note 3)		
Rated flow (L/min (ANR)) Note 1)	AFM20-A to AFM40-06-A	200	450	11	00		
nated now (Limit (ANT))	AFD20-A to AFD40-06-A	120	240	6	00		
Drain capacity (cm³)		8	25	4	5		
Bowl material	Bowl material			Polycarbonate			
Bowl guard	Bowl guard			Standard (Polycarbonate)			
Weight (kg)		0.09	0.19	0.38	0.43		

Note 1) Conditions: Inlet pressure: 102 psi (0.7MPa); The rated flow varies depending on the inlet pressure.

#### Options/Part No.

	Model					
Optional specifications	AFM20-A AFD20-A	AFM30-A AFD30-A	AFM40-A AFD40-A	AFM40-06-A AFD40-06-A		
Bracket assembly Note 1)	AF22P-050AS	AF32P-050AS	AF42P-050AS AF42P-070AS			
Float type auto drain Note 2) Note 3)	N.C.	AD27-A	AD37-A	AD47-A		
Float type auto diani	N.O.	_	AD38-A	AD48-A		

Note 1) Assembly of a bracket and 2 mounting screws

#### Bowl Assembly/Part No.

Bowl	Drain				Mod	del	
material	discharge mechanism	Drain port	Other	AFM20-A AFD20-A	AFM30-A AFD30-A	AFM40-A AFD40-A	AFM40-06-A AFD40-06-A
		With drain cock	_	C2SF-A	<u>—</u>		_
	Manual discharge	With drain cock	With bowl guard	C2SF-C-A	C3SF-A	C4	SF-A
		Drain cock with barb fitting	With bowl guard	_	C3SF-W-A	C4S	F-W-A
olycarbonate	uiscriarge	With drain guide	_	C2SF□-J-A	_		
bowl		(without valve function)	With bowl guard	C2SF□-CJ-A	C3SF□-J-A	C4SF	-□-J-A
	Automatic Note)	Normally closed (N.C.)	_	AD27-A	_		
	discharge	, ,	With bowl guard	AD27-C-A	AD37□-A	AD4	-7□-A
	(Auto drain)	Normally open (N.O.)	With bowl guard	_	AD38□-A	AD48□-A	
	Manual discharge	With drain cock	_	C2SF-6-A	_	<del>_</del>	
		Willi dialii cock	With bowl guard	C2SF-6C-A	C3SF-6-A	C4SF-6-A	
		Drain cock with barb fitting	With bowl guard	_	C3SF-6W-A	C4SF-6W-A	
lylon bowl		With drain guide	_	C2SF□-6J-A	_	<del>-</del>	
Nylon bowi		(without valve function)	With bowl guard	C2SF□-6CJ-A	C3SF□-6J-A	C4SF	□-6J-A
	Automatic Note)	Normally aloned (N.C.)	_	AD27-6-A	_		
	discharge	Normally closed (N.C.)	With bowl guard	AD27-6C-A	AD37□-6-A	AD47	7□-6-A
	(Auto drain)	Normally open (N.O.)	With bowl guard	_	AD38□-6-A	AD48	3□-6-A
		With drain cock	_	C2SF-2-A	C3SF-2-A	C4S	F-2-A
	Manual	Willi dialii cock	With level gauge	_	C3LF-8-A	C4L	F-8-A
	discharge	With drain guide	_	C2SF□-2J-A	C3SF□-2J-A	C4SF	□-2J-A
/letal bowl		(without valve function)	With level gauge	_	C3LF□-8J-A	C4LF	□-8J-A
netai DOWI	Automatic Note)	Normally closed (N.C.)		AD27-2-A	AD37□-2-A	AD47	7□-2-A
	discharge	INOTHIAITY GIOSEU (IN.C.)	With level gauge		AD37□-8-A	AD47	7□-8-A
	(Auto drain)		_	_	AD38□-2-A	AD48	3□-2-A
	(Auto dialii)	Normally open (N.O.)	With level gauge	_	AD38□-8-A	AD48	3□-8-A

Note) Minimum operating pressure: N.O. type-15 (0.1 MPa) (AD38-A, AD48-A); N.C. type-15 psi (0.1 MPa) (AD17-A, AD27-A) and 22 psi (0.15 MPa) (AD37-A, AD47-A). Bowl assembly for the AFM20-A to AFM40-06-A, AFD20-A to AFD40-06-A models comes with a bowl seal.

Please consult with SMC separately for psi and °F unit display specifications.



Keep the air flow within the rated flow to prevent an outflow of lubricant to the outlet side. Note 2) When the compressor oil mist discharge concentration is 30 mg/m³ (ANR).

Note 3) Bowl seal and other O-rings are slightly lubricated.

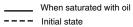
Note 2) Minimum operating pressure: N.O. type-15 psi (0.1 MPa); N.C. type-15 psi (0.1 MPa) (AD27-A) and 22 psi (0.15 MPa) (AD37-A/AD47-A). Please consult with SMC separately for psi and °F unit display specifications.

Note 3) Please consult with SMC for details on drain piping to fit NPT or G port sizes.

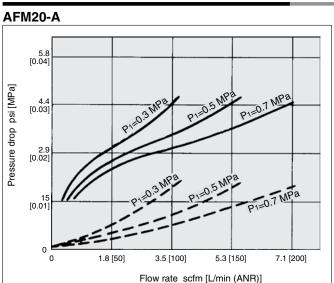
<sup>🗆</sup> in bowl assembly part numbers indicates a pipe thread type (applicable tubing for auto drain). No indication is necessary for Rc thread; however, indicate N for NPT thread, and F for G thread. (For auto drain, Nil: ø10, N: ø3/8")

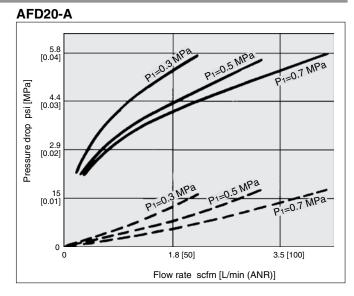
## Series AFM20-A to AFM40-A Series AFD20-A to AFD40-A

## Flow-rate Characteristics (Representative values)

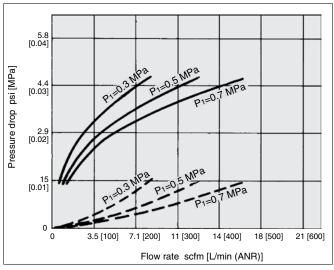


P1 = 44 psi (0.3 MPa) P1 = 73 psi (0.5 Mpa) P1 = 102 psi (0.7 MPa)

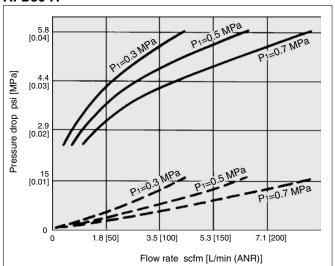




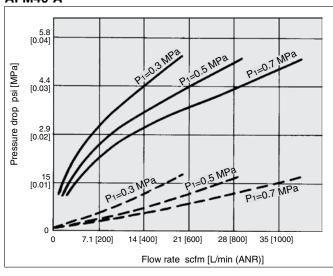
## AFM30-A



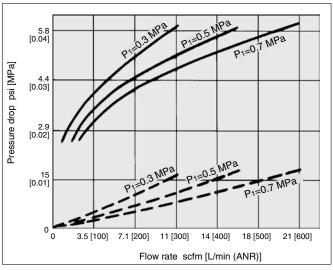




## AFM40-A



#### AFD40-A





### Design/Selection

## **⚠** Warning

1. The standard bowl for the air filter, filter regulator, and lubricator, as well as the sight dome for the lubricator are made of polycarbonate. Do not use in an environment where they are exposed to or come in contact with organic solvents, chemicals, cutting oil, synthetic oil, alkali, and thread lock solutions.

Effects of atmosphere of organic solvents and chemicals, and where these elements are likely to adhere to the equipment. Chemical data for substances causing degradation (Reference)

			Mate	erial
Туре	Chemical name	Application examples	Polycar- bonate	Nylor
Acid	Hydrochloric acid Sulfuric acid, Phosphoric acid Chromic acid	Acid washing liquid for metals	Δ	×
Alkaline	Sodium hydroxide (Caustic soda) Potash Calcium hydroxide (Slack lime) Ammonia water Carbonate of soda	ash um hydroxide (Slack lime) monia water  Degreasing of metals Industrial salts Water-soluble cutting oil		0
Inorganic salts	Sodium sulfide Sulfate of potash Sulfate of soda	-	×	Δ
Chlorine solvents	Carbon tetrachloride Chloroform Ethylene chloride Methylene chloride	Cleansing liquid for metals Printing ink Dilution	×	Δ
Aromatic series	Benzene Toluene Paint thinner	Coatings Dry cleaning	×	Δ
Ketone	Acetone Methyl ethyl ketone Cyclohexane	Photographic film Dry cleaning Textile industries	×	×
Alcohol	Ethyl alcohol IPA Methyl alcohol	Antifreeze Adhesives	Δ	×
Oil	Gasoline Kerosene	_	×	0
Ester	Phthalic acid dimethyl Phthalic acid diethyl Acetic acid	Synthetic oil Anti-rust additives	×	0
Ether	Methyl ether Ethyl ether	Brake oil additives	×	0
Amino	Methyl amino	Cutting oil Brake oil additives Rubber accelerator	×	×
Others	Thread-lock fluid Seawater Leak tester	_	×	Δ

When the above factors are present, or there is some doubt, use a metal bowl for safety.

#### Air Supply

## **⚠** Caution

- 1. Install an air filter (Series AF) as a pre-filter on the inlet side of the mist separator to prevent premature clogging.
- 2. Install a mist separator (Series AFM) as a pre-filter on the inlet side of the micro mist separator to prevent premature clogging.
- 3. Do not install on the inlet side of the dryer as this can cause premature clogging of the element.

#### Maintenance

## **∕**∿ Warning

1. Replace the element every 2 years or when the pressure drop becomes 15 psi (0.1 MPa), whichever comes first, to prevent damage to the element.

#### Mounting/Adjustment

## ∕!\ Caution

1. When the bowl is installed on the mist separator (AFM30-A/AFM40-A), or micro mist separator (AFD30-A/ AFD40-A), install them so that the lock button lines up to the groove of the front (or the back) of the body to avoid drop or damage of the bowl.



#### Design

## **∕∖∖ Caution**

1. Design the system so that the mist separator is installed in a pulsation-free location. The difference between internal and external pressure inside the element should be kept within 15 psi (0.1 MPa), as exceeding this value could cause damage.

#### Selection

## **∕** Caution

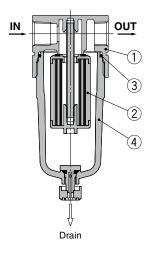
- 1. Do not allow air flow that exceeds the rated flow. If the air flow is allowed outside the range of the rated flow even momentarily, drainage and lubricant may splash at the outlet side or cause damage to the component.
- 2. Do not use in a low pressure application (such as a blower). An F.R.L. unit has its own minimum operating pressure depending on the equipment and is designed specifically to function with compressed air. If used below the minimum operating pressure, a loss of performance and malfunction can occur. Please contact SMC if an application under such conditions cannot be avoided.



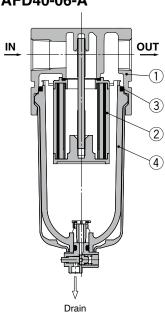
## Series AFM20-A to AFM40-A Series AFD20-A to AFD40-A

## Construction

## AFM20-A AFD20-A



## AFM30-A to AFM40-06-A AFD30-A to AFD40-06-A



#### **Component Parts**

No.	Description	Material	Model	Color
1	Body	Aluminum die-cast	AFM20-A to AFM40-06-A AFD20-A to AFD40-06-A	White

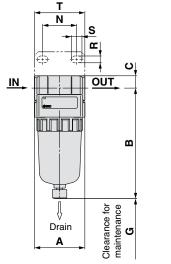
#### **Replacement Parts**

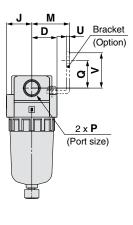
cp	phaement i are									
	Description			Part no.						
No.			Material	AFM20-A AFD20-A	AFM30-A AFD30-A	AFM40-A AFD40-A	AFM40-06-A AFD40-06-A			
2		AFM20 to 40	_	AFM20P-060AS	AFM30P-060AS	AFM40P-060AS				
2	Element assembly AFD20 to 40		_	AFD20P-060AS	AFD30P-060AS	AFD40F	P-060AS			
3	Bowl seal		NBR	C2SFP-260S	C32FP-260S	C42FP-260S				
4	Bowl assembly Note)		Polycarbonate	C2SF-A	C3SF-A	C45	F-A			

Note) Bowl seal is included. Please contact SMC regarding the supply of bowl assembly with psi and °F unit display specifications.

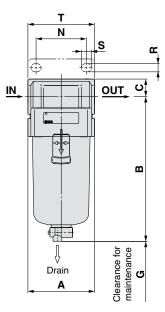


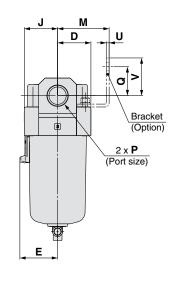
## AFM20-A AFD20-A



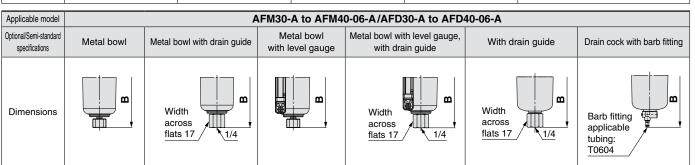


## AFM30-A to AFM40-06-A AFD30-A to AFD40-06-A





Applicable model		AFM20-A	/AFD20-A		AFM30-A to AFM40-06-A/AFD30-A to AFD40-06-A
Optional/Semi-standard specifications	With auto drain (N.C.)	With drain guide	Metal bowl	Metal bowl with drain guide	With auto drain (N.O./N.C.)
Dimensions	M5 x 0.8	Width across flats 14	<b>a</b>	Width across flats 14	N.O.: Black N.C.: Gray  Thread type/Rc, G: ø10 One-touch fitting Thread type/NPT: ø3/8" One-touch fitting



		Standard specifications							Optional specifications								
Model	Standard Specifications								Bracket mount							With auto drain	
	Р	Α	В	С	D	E	G	J	М	N	Q	R	S	Т	U	٧	В
AFM20-A/AFD20-A	1/8, 1/4	40	87.6	9.8	20	_	40	20	30	27	22	5.4	8.4	40	2.3	28	104.9
AFM30-A/AFD30-A	1/4, 3/8	53	115.1	14	26.7	30	50	26.7	41	40	23	6.5	8	53	2.3	30	156.8
AFM40-A/AFD40-A	1/4, 3/8, 1/2	70	147.1	18	35.5	38.4	75	35.5	50	54	26	8.5	10.5	70	2.3	35	186.9
AFM40-06-A/AFD40-06-A	3/4	75	149.1	20	35.5	38.4	75	35.5	50	54	25	8.5	10.5	70	2.3	34	188.9

	Semi-standard specifications											
Model	With barb fitting	th barb fitting With drain guide		Metal bowl with drain guide	Metal bowl with level gauge	Metal bowl with level gauge, with drain guide						
	В	В	В	В	В	В						
AFM20-A/AFD20-A	_	91.4	87.4	93.9	_	_						
AFM30-A/AFD30-A	123.6	121.9	117.6	122.1	137.6	142.1						
AFM40-A/AFD40-A	155.6	153.9	149.6	154.1	169.6	174.1						
AFM40-06-A/AFD40-06-A	157.6	155.9	151.6	156.1	171.6	176.1						



# Mist Separator/*AFM20-A to AFM40-06-A*Micro Mist Separator/*AFD20-A to AFD40-06-A*







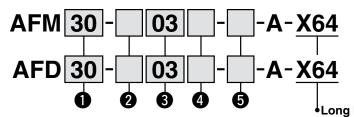
## 1 Long Bowl

Drain capacity is greater than that of standard models.

#### Applicable Model/Drain Capacity

Model	AFM20-A, AFD20-A	AFM30-A, AFD30-A	AFM40-A, AFD40-A	AFM40-06-A, AFD40-06-A	
Port size	1/8, 1/4	1/4, 3/8	1/4, 3/8, 1/2	3/4	
Drain capacity (cm <sup>3</sup> )	city (cm³) 19 43 88				

Note) Please consult with SMC for dimensions.



- 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) AFM30-03B-2R-A-X64

					3							
	_	_					0					
				Symbol	Description		Body size					
						20	30	40				
				Nil	Rc	•	•	•				
2		Pipe	thread type	N Note 1)	NPT	•	•	•				
		•	7.	F Note 2)	G	•	•	•				
				+			'					
				01	1/8	•	_	_				
				02	1/4	•	•	•				
8	)		Port size	03	3/8	_	•	•				
				04	1/2	_	_	•				
<b>3</b> F		06	3/4	_	_	•						
	•			+								
		Ontic	on (Mounting)	Nil	Without mounting option	•	•	•				
U	'	Jplic	on (wounting)	B Note 3)	With bracket	•	•					
				+								
			Bowl Note 4)	Nil	Polycarbonate bowl	•	•	•				
				2	Metal bowl	•	•	•				
		а		6	Nylon bowl	•	•	•				
									С	With bowl guard	•	Note 5)
				6C	With bowl guard (Nylon bowl)	•	Note 6)	Note 6)				
	احا	_		+								
	dar			Nil	With drain cock	•	•	•				
A	ta	b	Drain port	Note 7)	Drain guide 1/8	•	_	_				
•	J-i-S		Brain port		Drain guide 1/4	_	•	•				
	Sen			W Note 8)	Drain cock with barb fitting (for ø6 x ø4 nylon tube)	_	•	•				
		С	Flow direction	Nil	Flow direction: Left to right	•	•	•				
			517 4110011011	R	Flow direction: Right to left	•	•					
				+		_						
		d	Pressure unit	Nil	Name plate and caution plate for bowl in imperial units: MPa	•	•	•				
		-	1 1000die dille	Z Note 9)	Name plate and caution plate for bowl in imperial units: psi, °F	Note 10)	Note 10)	Note 10)				

- Note 1) Drain guide is NPT1/8 (applicable to the AFM20-A, AFD20-A) and NPT1/4 (applicable to the AFM30-A/40-A, AFD30-A/40-A).
- Note 2) Drain guide is G1/8 (applicable to the AFM20-A, AFD20-A) and G1/4 (applicable to the AFM30-A/40-A, AFD30-A/40-A).
- Note 3) A bracket is not assembled and supplied loose at the time of shipment. Including 2 mounting screws.
- Note 4) Refer to Chemical data on page 48 for chemical resistance of the bowl.
- Note 5) A bowl guard is provided as standard equipment (polycarbonate).
- Note 6) A bowl guard is provided as standard equipment (nylon).
- Note 7) Without a valve function
- Note 8) The combination of metal bowl: 2 is not available.
- Note 9) For pipe thread type: NPT. This product is for overseas use only according to the new Measurement Law. (The SI unit type is provided for use in Japan.)



Made to Order

## Mist Separator/AFM20-A to AFM40-06-A Micro Mist Separator/AFD20-A to AFD40-06-A lade to O

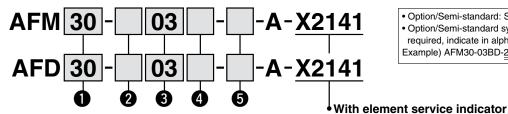
Please contact SMC for detailed dimensions, specifications and lead times.

## 2With Element Service Indicator

Clogging status of elements can be checked visually.

#### **Applicable Model**

Model	AFM20-A, AFD20-A	AFM30-A, AFD30-A	AFM40-A, AFD40-A	AFM40-06-A, AFD40-06-A	
Port size	1/8, 1/4	1/4, 3/8	1/4, 3/8, 1/2	3/4	



- 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) AFM30-03BD-2R-A-X2141

A speci	al boo	dy type is required	to mount	the element service indicator. It cannot be mounted on a standar	rd body.		
						0	
			Symbol	Description		Body size	
					20	30	40
			Nil	Rc	•	•	•
2	Pipe	e thread type	N Note 1)	NPT	•	•	•
			F Note 2)	G	•	•	•
			+				
			01	1/8	•	_	_
			02	1/4	•	•	•
3		Port size	03	3/8	_	•	•
			04	1/2	_	_	•
			06	3/4	_	_	•
			+			1	
			Nil	Without mounting option	•		
	a	Mounting	B Note 3)	With bracket	Ŏ		
Option			+				
g E			Nil	Without auto drain			
0	b	Float type	C Note 4)	N.C. (Normally closed) Drain port is closed when pressure is not applied.			
		auto drain	D Note 5)	N.O. (Normally open) Drain port is open when pressure is not applied.			
			+	14.0. (Normany open) Brain port is open when pressure is not applied.			
			Nil	Polycarbonate bowl			
			2	Metal bowl			
			6	Nylon bowl			
	С	Bowl Note 6)	8	Metal bowl with level gauge			
			C	With bowl guard		Note 7)	Note 7)
			6C	With bowl guard (Nylon bowl)		Note 8)	Note 8)
Ģ			+	Willi bowl guard (Nylon bowl)			
Semi-standard			H Nil	With drain cock			•
a l							
i-sta	d	Drain port Note 12)	J Note 9)	Drain guide 1/8			_
Ĭ.E			W Note 13)	Drain guide 1/4  Proin cook with borb fitting (for a6 x a4 pylon tubo)	<del>_</del>		
Š			+	Drain cock with barb fitting (for ø6 x ø4 nylon tube)			
				Flow divestion. Left to right			
	е	Flow direction	Nil	Flow direction: Left to right			
			R	Flow direction: Right to left			
			+	N 1, 1, 1, 7, 1, 7, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1,			
	f	Pressure unit	Nil 7 Note 10)	Name plate and caution plate for bowl in imperial units: MPa	Note 11)	Note 11)	Note 11)
			Z Note 10)	Name plate and caution plate for bowl in imperial units: psi, °F	Note 11)	I O NOTE IT	( Note 11)

Note 1) Drain guide is NPT1/8 (applicable to the AFM20-A, AFD20-A) and NPT1/4 (applicable to the AFM30-A/40-A, AFD30-A/40-A).

The auto drain port comes with ø3/8" One-touch fitting (applicable to the AFM30-A/40-A, AFD30-A/40-A), Note 2) Drain guide is G1/8 (applicable to the AFM20-A, AFD20-A) and G1/4 (applicable to the

AFM30-A/40-A, AFD30-A/40-A). Note 3) A bracket is not assembled and supplied loose at the time of shipment. Including 2

mounting screws Note 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.

Note 5) If the compressor is small (0.75 kW, discharge flow is less than 3.5 scfm (100 L/min [ANR])), air leakage from the drain cock may occur during start of operations. N.C.

type is recommended.

Note 6) Refer to Chemical data on page 48 for chemical resistance of the bowl.

Note 7) A bowl guard is provided as standard equipment (polycarbonate).

Note 8) A bowl guard is provided as standard equipment (nylon).

Note 9) Without a valve function

Note 10) For pipe thread type: NPT. This product is for overseas use only according to the new Measurement Law. (The SI unit type is provided for use in Japan.)

Note 11) O: For pipe thread type: NPT only

Note 12) The combination of float type auto drain: C and D is not available.

Note 13) The combination of metal bowl: 2 and 8 is not available.



## **Modular Type** Regulator Series AR

Regulator Series AR	Model	Port size	Options
	AR10-A	M5 x 0.8	
Wilder   1	AR20-A	1/8, 1/4	Bracket
	AR25-A	1/4 2/9	
02 08 1 02 08 1 MP 1 09 00	AR30-A	1/4, 3/8	Round type pressure gauge
	AR40-A	1/4, 3/8, 1/2	Set nut (for panel mount)*
P.55 to 62	AR40-06-A	3/4	* The AR20-A to AR40-06-A are not compatible with existing AR series.



## Regulator

## AR10-A to AR40-A







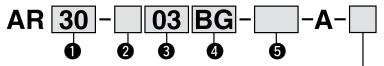


## How to order

AR10-A

AR20-A

AR30-A



- 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) AR30-03BG-1N-A

#### Made to Order

(Refer to pages 61 and 62 for details.)

					(Refer to pages 61 and 0	62 for detail	s.)			
	_	_						0		
		_		Symbol	Description			Body size	,	
						10		30	40	
				AI!I	Metric thread (M5)	•	_	_	_	_
		ς.		Nil	Rc		•	•	•	•
2	1	Pipe	thread type	N	NPT		•	•	•	•
				F	G		•	•	•	•
				+						
				M5	M5		_	_	_	_
				01	1/8		•	_	_	_
A			Port size 02		1/4	II —	•	•	•	•
8			Port size	03	3/8		_	•	•	•
				04	1/2	l —	_	_	_	•
				06	3/4		_	_	_	•
				+				,		
				Nil	Without mounting option	•	•	•	•	•
	(1 6	а	Mounting	B Note 2)	With bracket		•	•	•	
	(e 1)			Н	With set nut (for panel mount) Note 3)		•	•	•	
Λ	N N			+						
4	Option Note 1)			Nil	Without pressure gauge		•	•	•	
	<u>o</u>	b	Pressure	G	Round type pressure gauge (without limit indicator)		_	_	_	_
		0	gauge Note 4)	_ G	Round type pressure gauge (with limit indicator)		•	•		
				M	Round type pressure gauge (with color zone)		•			
				+						
		С	Set	Nil	7.3 to 102 psi (0.05 to 0.7 MPa) setting		•	•	•	
			pressure Note 5)	1	2.9 to 29 psi (0.02 to 0.2 MPa) setting			•		
				+						
		d	Exhaust	Nil	Relieving type		•	•	•	•
	ام	u	mechanism	N	Non-relieving type		•	•	•	
	dar			+						
6	tan	е	Flow direction	Nil	Flow direction: Left to right	•	•	•	•	•
9	Semi-standard		1 low direction	R	Flow direction: Right to left			•		
	Sen			+						
	0,	f	Knob	Nil	Downward		•	•	•	•
			11100	Υ	Upward					
				+						
		a	Pressure unit	Nil	Name plate and pressure gauge in imperial units: MPa		•	•	•	•
		g	i iossuio uilit	Z Note 6)	Name plate and pressure gauge in imperial units: psi	Note 7)	Note 7)	Note 7)	Note 7)	Note 7)

Note 1) Option B, G, H, M are not assembled and supplied loose at the time of shipment.

Note 2) Assembly of a bracket and set nuts

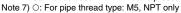
Note 3) Only for the AR20-A to 40-A

Note 4) When the pressure gauge is attached, a 145 psi (1.0 MPa) pressure gauge will be fitted for standard (102 psi [0.7 MPa]) type. 58 psi (0.4 MPa) pressure gauge for 29 psi (0.2 MPa) type (145 psi [1.0 MPa] pressure gauge only for the AR10-A).

Note 5) Pressure can be set higher than the specification pressure in some cases, but use pressure within the specification range.

Note 6) For pipe thread type: NPT

This product is for overseas use only according to the new Measurement Law. (The SI unit type is provided for use in Japan.) Cannot be used with M: Round pressure gauge (with color zone). Available by request for special.





### **Standard Specifications**

Model	AR10-A	AR20-A	AR25-A	AR30-A	AR40-A	AR40-06-A				
Port size	M5 x 0.8	1/8, 1/4	1/4, 3/8	1/4, 3/8	1/4, 3/8, 1/2	3/4				
Pressure gauge port size	1/16 Note)			1/8						
Fluid			F	Air						
Ambient and fluid temperature		23 to 140°F (- 5 to 60°C) (with no freezing)								
Proof pressure		218 psi (1.5 MPa)								
Maximum operating pressure			145 psi (	1.0 MPa)						
Set pressure range			7.3 to 102 psi (	0.05 to 0.7 MPa)						
Construction		Relieving type								
Weight (kg)	0.06	0.17	0.19	0.34	0.58	0.60				

Note) Use a bushing (part no: 131368) when connecting the R1/8 pressure gauge to the Rc1/16.

### Options/Part No.

	Ontional	specifications	Model										
	Optional	specifications	AR10-A	AR20-A	AR25-A	AR40-A	AR40-06-A						
Bracket assembly Note 1)			AR12P-270AS	AR22P-270AS	AR27P-270AS	AR32P-270AS	AR42P-270AS	AR42P-270AS					
S	et nut		AR12P-260S	AR22P-260S	AR22P-260S	AR32P-260S	AR42P-260S	AR42P-260S					
e	Round	Standard	G27-10-R1	G36-10-□01			G46-10-□01						
ega	type	*0.02 to 0.2 MPa setting	G27-10-R1 Note 3)		G36-4-□01	G46-4-□01							
lss	Round type	Standard	_		G36-10-□01-L	G36-10-□01-L		-□01-L					
P		*0.02 to 0.2 MPa setting	_	G36-4-□01-L			G46-4-□01-L						

\* 2.9 to 29 psi (0.02 to 0.2 MPa) setting

Note 1) Assembly of a bracket and set nuts

Note 2) I in round pressure gauge part numbers indicates a pipe thread type. No indication is necessary for R; however, indicate N for NPT.

Please contact SMC regarding the pipe thread type NPT and the supply of pressure gauge with psi unit display specifications.

Note 3) Standard pressure gauge

## **↑** Specific Product Precautions

Be sure to read this before handling. Refer to the back cover for Safety Instructions, "Handling Precautions for I SMC Products" and the Operation Manual for F.R.L. Precautions, http://www.smcworld.com

#### Selection

## \land Warning

1. Although exhaust of the residual pressure to the inlet side is possible when eliminating the inlet pressure, exhaust is not possible when the set pressure is 22 psi (0.15 MPa) or less. Use the regulator with backflow function.

#### Maintenance

## **⚠** Warning

1. When using the regulator between a solenoid valve and an actuator, check the pressure gauge periodically. Sudden pressure fluctuations may shorten the durability of the pressure gauge. A digital pressure gauge is recommended for such situation or as deemed necessary.

#### Mounting/Adjustment

## 🗥 Warning

- 1. Set the regulator while verifying the displayed values of the inlet and outlet pressure gauges. Turning the regulator knob excessively can cause damage to the internal parts.
- 2. Do not use tools on the pressure regulator knob as this may cause damage. It must be operated manually.

## **Caution**

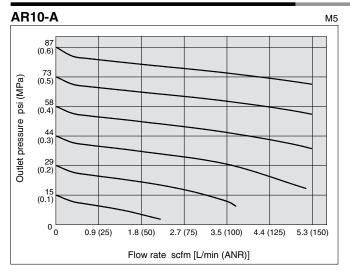
- 1. Be sure to unlock the knob before adjusting the pressure and lock it after setting the pressure. Failure to follow this procedure can cause damage to the knob and the outlet pressure may fluctuate.
  - Pull the pressure regulator knob to unlock. (You can visually verify this with the "orange mark" that appears in the gap.)
  - Push the pressure regulator knob to lock. When the knob is not easily locked, turn it left and right a little and then push it (when the knob is locked, the "orange mark", i.e., the gap will disap-
- 2. Pulsation will be generated when the difference between the inlet and the outlet pressure is large. In this case, reduce the pressure difference between the inlet and the outlet. Please consult with SMC if the pulsation problem is not resolved.

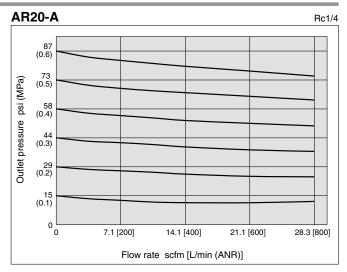


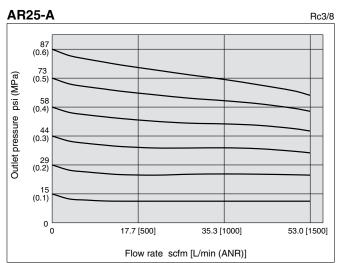
## Series AR10-A to AR40-A

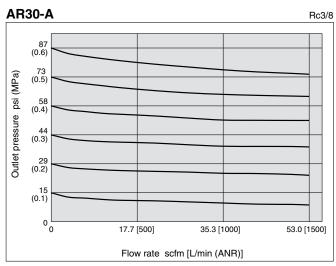
#### Flow-rate Characteristics (Representative values)

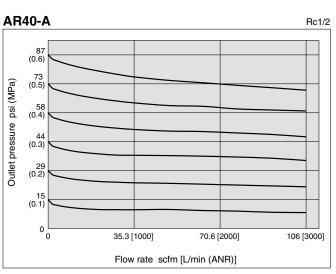
Condition: Inlet pressure 102 psi (0.7 MPa)

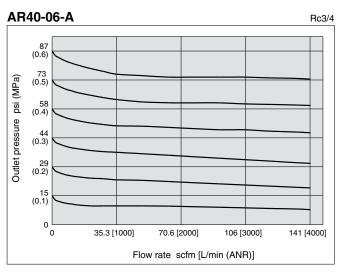






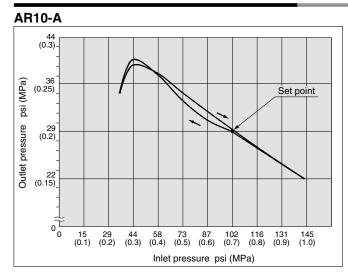


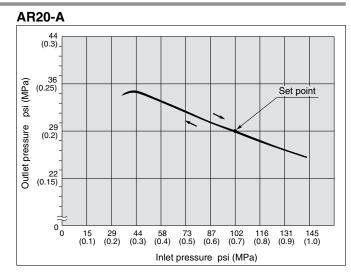




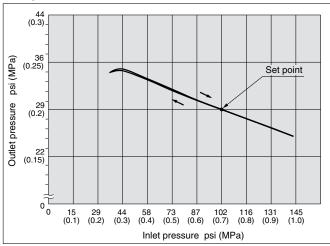
## Regulator Series AR10-A to AR40-A

Pressure Characteristics (Representative values) Conditions: Inlet pressure 102 psi (0.7 MPa), Outlet pressure 29 psi (0.2 MPa), Flow rate 0.71 scfm [20 L/min (ANR)]

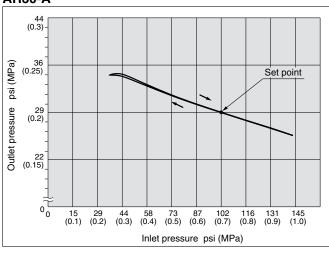




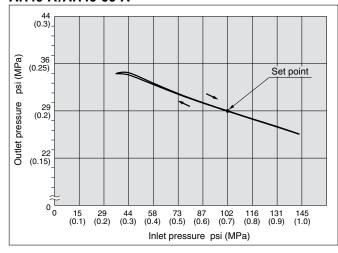








#### AR40-A/AR40-06-A



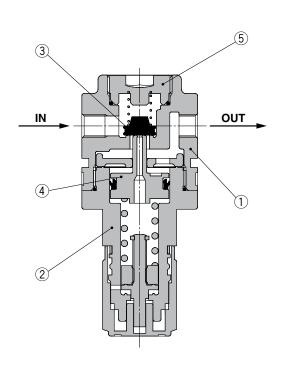
AC

Attachment | AW+AFM | AF+AFM+AR | AF+AR | AW+AL | AF+AR+AL

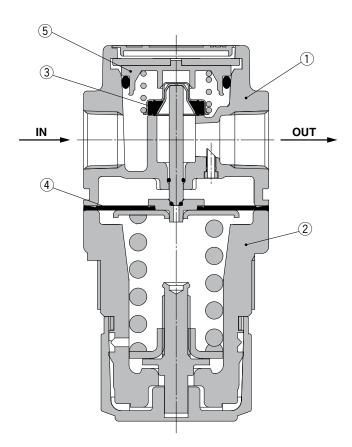


## Construction

AR10-A



AR20-A to 40-06-A



#### **Component Parts**

No.	Description	Material	Model	Color
4	Body	Zinc die-cast	AR10-A	White
٠	Войу	Aluminum die-cast	AR20-A to AR40-A	vviille
2	Bonnet	Polyacetal AR10-A to AR40-A		White

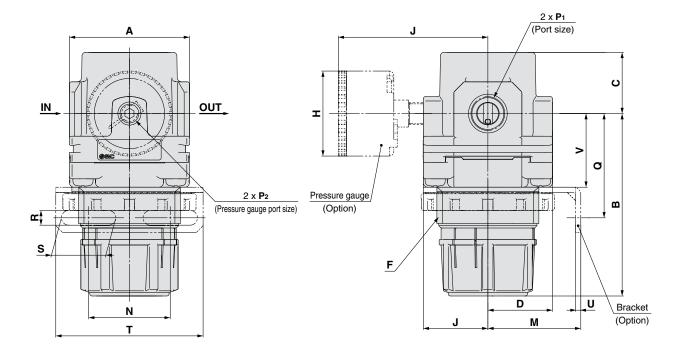
#### **Replacement Parts**

No.	Description	Material	Part no.								
NO.		Iviateriai	AR10-A	AR20-A	AR25-A	AR30-A	AR40-A	AR40-06-A			
3	Valve assembly	Stainless steel, HNBR	AR10P-090S	AR22P-060AS		AR32P-060AS	AR42P-060AS				
4	Diaphragm assembly	Weatherable NBR	AR10P-150AS Note)	AR22P	-150AS	AR32P-150AS	AR42P-150AS				
5	Valve guide assembly	Polyacetal	131329	AR22P-050AS		AR32P-050AS	AR42P	-050AS			

Note) The AR10-A is a piston type. Assembly of a piston and a seal (KSYP-13).



#### AR10-A to AR40-06-A



Note)

#### Panel fitting dimensions

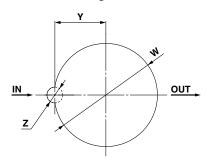


Plate thickness

AR10-A : Max. 3.5 : Max. 4 AR20-A to AR25-A AR30-A to AR40-06-A: Max. 8

														Opt	ional s	pecifi	ication	s					
Model		Standard specifications						pres	d type sure uge	Round pressure (with col	gauge						Panel mount						
	<b>P</b> 1	P <sub>2</sub>	Α	В	С	D	F	J	Н	J	Н	L	М	Ν	Q	R	S	Т	U	٧	W	Υ	Z
AR10-A	M5 x 0.8	1/16	25	47.4	11	12.5	M18 x 1	12.5	ø26	26	_	_	25	28	30	4.5	6.5	40	2	18	18.5		_
AR20-A	1/8, 1/4	1/8	40	67.4	23.5	22	M36 x 1.5	22	ø37.5	58.5	ø37.5	59.5	30	34	43.9	5.4	15.4	55	2.3	27.3	36.5	17.5	6
AR25-A	1/4, 3/8	1/8	53	70.4	23.5	22	M36 x 1.5	22	ø37.5	58.5	ø37.5	59.5	30	34	44.3	5.4	15.4	55	2.3	30.3	36.5	17.5	6
AR30-A	1/4, 3/8	1/8	53	83.5	27	28.5	M45 x 1.5	28.5	ø37.5	65	ø37.5	66	41	36	46	6.5	24	65	2.3	32.5	45.5	22.5	7
AR40-A	1/4, 3/8, 1/2	1/8	70	100	33.5	34.5	M52 x 1.5	34.5	ø42.5	72	ø42.5	72	50	38	54	8.5	26.5	70	2.3	38.4	52.5	26	7
AR40-06-A	3/4	1/8	75	101.5	33.5	34.5	M52 x 1.5	34.5	ø42.5	72	ø42.5	72	50	38	55.5	8.5	26.5	70	2.3	39.9	52.5	26	7

Note) The dimension of B is the length when the filter regulator knob is unlocked.



AC

AF+AR AW+AL AF+AR+AL

Attachment | AW+AFM | AF+AFM+AR

AF

AB

A



# Regulator/AR20-A to AR40-06-A Made to Order



Please contact SMC for detailed dimensions, specifications and lead times.

#### 1 0.4 MPa Setting

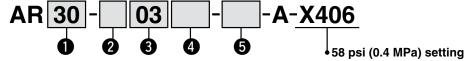
The maximum set pressure is 58 psi (0.4 MPa. When a pressure gauge is included, the display will show a range from 0 to 102 psi (0.7 MPa).

#### **Specifications**

Proof pressure	218 psi (1.5 MPa)
Maximum operating pressure	145 psi (1.0 MPa)
Set pressure range	7.3 to 58 psi (0.05 to 0.4 MPa)

#### **Applicable Model**

Model	AR20-A	AR25-A	AR30-A	AR40-A	AR40-06-A
Port size	1/8, 1/4	1/4, 3/8	1/4, 3/8	1/4, 3/8, 1/2	3/4



- $\bullet$  Option/Semi-standard: Select one each for  $\boldsymbol{a}$  to  $\boldsymbol{f}.$
- Option/Semi-standard symbol: When more than one specification is required, indicate in alphanumeric order.
   Example) AR30-03BG-NR-A-X406

	_	_			-			D	
		Ì		Symbol	Description		Body	size	
						20	25	30	40
				Nil	Rc	•	•	•	•
2		Pipe	thread type	N	NPT	•	•	•	•
				F	G	•	•	•	•
				+			•		
				01	1/8	•	_	_	_
				02	1/4	•	•	•	•
8			Port size	03	3/8	_	•	•	•
				04	1/2	_	_	_	•
				06	3/4	_	_	_	•
				+					
				Nil	Without mounting option	•		•	•
	_	а	Mounting	B Note 2)	With bracket	•	•	•	•
	Option Note 1)			Н	With set nut (for panel mount) Note 3)	•		•	•
4	on			+					
	þ			Nil	Without pressure gauge	•		•	•
		b	Pressure gauge	G	Round type pressure gauge (with limit indicator)	•	•	•	•
				M	Round type pressure gauge (with color zone)	•		•	•
				+					
		С	Exhaust	Nil	Relieving type	•	•	•	•
			mechanism	N	Non-relieving type		•		•
				+					
	ard	d	Flow direction	Nil	Flow direction: Left to right	•	•	•	•
	ıng	•	Tion andonon	R	Flow direction: Right to left			•	•
6	Semi-standard			+					
	j W	е	Knob	Nil	Downward		•	•	•
	Š		14100	Y	Upward			•	•
				+			_	_	
		f	Pressure unit	Nil	Name plate and caution plate for bowl in imperial units: MPa	•	•	•	•
				Z Note 4)	Name plate and caution plate for bowl in imperial units: psi	Note 5)	Note 5)	Note 5)	Note 5)

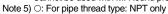
Note 1) Option B, G, H, M are not assembled and supplied loose at the time of shipment.

Note 2) Assembly of a bracket and set nuts

Note 3) Only for the AR20-A to 40-A

Note 4) For pipe thread type: NPT

This product is for overseas use only according to the new Measurement Law. (The SI unit type is provided for use in Japan.) Cannot be used with M: Round pressure gauge (with color zone). Available by request for special.





## Regulator/AR20-A to AR40-06-A **Made to Order**

Please contact SMC for detailed dimensions, specifications and lead times.

#### 2 0.85 MPa Setting

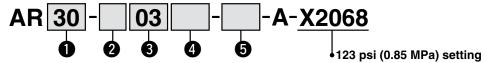
The maximum set pressure is 123 psi (0.85 MPa. When a pressure gauge is included, the display will show a range from 0 to 145 psi (1.0 MPa).

#### **Specifications**

Proof pressure	218 psi (1.5 MPa)
Maximum operating pressure	145 psi (1.0 MPa)
Set pressure range	7.3 to 58 psi (0.05 to 0.85 MPa)

#### **Applicable Model**

Model	AR20-A	AR25-A	AR30-A	AR40-A	AR40-06-A
Port size	1/8, 1/4	1/4, 3/8	1/4, 3/8	1/4, 3/8, 1/2	3/4



- 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) AR30-03BG-NR-A-X2068

	_						D	
			Symbol	Description		Body	size	
					20	25	30	40
			Nil	Rc	•	•	•	•
3	Pipe	thread type	N	NPT	•	•	•	•
			F	G	•	•	•	•
			+					
			01	1/8	•	_	_	_
			02	1/4	•	•	•	•
3		Port size	03	3/8	_	•	•	•
			04	1/2	_	_	_	•
			06	3/4	_	_	_	•
			+					
			Nil	Without mounting option	•	•	•	•
	а	Mounting	B Note 2)	With bracket	•	•	•	•
Option Note 1)			Н	With set nut (for panel mount) Note 3)	•	•	•	•
			+					
pti			Nil	Without pressure gauge	•	•	•	•
	b	Pressure gauge	G	Round type pressure gauge (with limit indicator)	•	•	•	•
			M	Round type pressure gauge (with color zone)	•	•	•	•
			+			·		
		Exhaust	Nil	Relieving type	•	•	•	•
	C	mechanism	N	Non-relieving type	•	•	•	•
			+					
2	d	Flow direction	Nil	Flow direction: Left to right	•	•	•	•
lg	l a	Flow direction	R	Flow direction: Right to left	•	•	•	•
Semi-standard			+					
Ë		Knob	Nil	Downward	•	•	•	•
Se	е	KIIOD	Υ	Upward	•	•	•	•
			+					
	f	Proceure unit	Nil	Name plate and caution plate for bowl in imperial units: MPa	•	•	•	•
		Pressure unit	Z Note 4)	Name plate and caution plate for bowl in imperial units: psi	Note 5)	Note 5)	Note 5)	Note 5)

Note 1) Option B, G, H, M are not assembled and supplied loose at the time of shipment.

Note 2) Assembly of a bracket and set nuts

Note 3) Only for the AR20-A to 40-A

Note 4) For pipe thread type: NPT

This product is for overseas use only according to the new Measurement Law. (The SI unit type is provided for use in Japan.) Cannot be used with M: Round pressure gauge (with color zone). Available by request for special.

Note 5) O: For pipe thread type: NPT only



AC

AF+AR+AL

AW+AL

AF+AR

AF+AFM+AR

Attachment | AW+AFM

₹

## AC

AW+AL AF+AR+AL

## **Modular Type** Lubricator

# Series AL

Lubricator Series AL		Model	Port size	Option
		AL10-A	M5 x 0.8	
	- Da	AL20-A	1/8, 1/4	
	Note that a second seco	AL30-A	1/4, 3/8	
A Section Te	To a second	AL40-A	1/4, 3/8, 1/2	Bracket (Except AL10-A)
90.		AL40-06-A	3/4	
		AL50-A	3/4, 1	
P.65 to 70		AL60-A	1	

## Lubricator

# AL10-A to AL60-A

Symbol



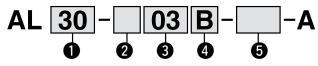






AL40-A

#### **How to Order**



- 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) AL30-03B-3RW-A

	\	_							D		
				Symbol	Description			Body	/ size		
						10	20	30	40	50	60
				NI:	Metric thread (M5)	•	T —	T —	_	_	_
•		D:	Alessa e al Arma e	Nil	Rc		•	•	•	•	•
0		Pipe	thread type	N	NPT		•	•	•	•	•
				F	G	_	•	•	•	•	•
				+							
				M5	M5 x 0.8		_	_	l —	_	_
				01	1/8		•	<u> </u>	_	_	_
				02	1/4	_	•	•	•	_	_
8		1	Port size	03	3/8		_	•	•	_	_
Ĭ				<b>04</b> 1/2					•	_	_
				06	3/4	_	_	<b>—</b>	•	•	_
				10	1	_	_	<b>—</b>	_	•	•
				+			•				
4	,	Ontic	on (Mounting)	Nil	Without mounting option		•	•	•	•	•
U		Optic	or (Mourting)	B Note 1)	With bracket	_	•	•	•	•	•
				+							
				Nil	Polycarbonate bowl	•		•	•	•	•
				2	Metal bowl			•	•	•	
			Bowl Note 2)	6	Nylon bowl				•		
		а	DOWI 7	8	Metal bowl with level gauge	_	_	•	•	•	•
				С	With bowl guard	_		Note 3)	Note 3)	Note 3)	Note 3)
	_			6C	With bowl guard (Nylon bowl)	_		Note 4)	Note 4)	Note 4)	Note 4)
	  arc			+							
A	an		المستمين والسال	Nil	Without drain cock		•	•	•		
6	i-st	b	Lubricant exhaust port	3	With drain cock		•	_	_	_	_
	Semi-standard		CATIQUE POIT	<b>3W</b> Note 5)	Drain cock with barb fitting	-	_	•	•	•	•
	(0)			+	_						
			Flow direction	Nil	Flow direction: Left to right	•	•	•	•	•	•
		С	I low direction	R	Flow direction: Right to left		•	•	•	•	
				+							
		d	Pressure unit	Nil	Name plate and caution plate: MPa	•	•	•	•	•	•
		u	i iessuie uilli	Z Note 6)	Name plate and caution plate: psi, °F	Note 7	) Note 7)	Note 7)	Note 7)	Note 7)	Note 7)

Note 1) Option is not assembled and supplied loose at the time of shipment.

Note 2) Refer to Chemical data on page 68 for chemical resistance of the bowl.

Note 3) A bowl guard is provided as standard equipment (polycarbonate).

Note 4) A bowl guard is provided as standard equipment (nylon).

Note 5) The combination of metal bowl: 2 and 8 is not available.

Note 6) For pipe thread type: M5, NPT. This product is for overseas use only according to the new Measurement Law. (The SI unit type is provided for use in Japan.)

Note 7) O: For pipe thread type: M5, NPT only



## Lubricator Series AL10-A to AL60-A

#### **Standard Specifications**

Model	AL10-A	AL20-A	AL30-A	AL40-A	AL40-06-A	AL50-A	AL60-A		
Port size	M5 x 0.8	1/8, 1/4	1/4, 3/8	1/4, 3/8, 1/2	3/4	3/4, 1	1		
Fluid		<u> </u>		Air					
Ambient and fluid temperature			23 to140°F (-	-5 to 60°C) (with	no freezing)				
Proof pressure	218 psi (1.5 MPa)								
Maximum operating pressure			1	45 psi (1.0 MPa)	)				
Minimum dripping flow rate scfm [L/min (ANR)] Note)	0.14 [4]	0.53 [15]	1/4: 1.06 [30] 3/8: 1.41 [40]	1/4: 1.06 [30] 3/8: 1.41 [40] 1/2: 1.77 [50]	1.77 [50]	6.71 [190]	7.77 [220]		
Oil capacity (cm³)	7	25	55		13	35			
Recommended lubricant			Class	turbine oil (ISO	VG32)				
Bowl material				Polycarbonate					
Bowl guard	_	Semi-standard (Steel)		Stan	dard (Polycarbor	nate)			
Weight (kg)	0.07	0.10	0.20	0.38	0.43	0.94	1.09		

Note) • The flow rate is 5 drops or greater/min under the following conditions: Inlet pressure of 73 psi (0.5 MPa); Class 1 turbine oil (ISO VG3); Temperature at 68°F (20°C); Oil adjustment valve fully open.

#### Option/Part No.

Optional specifications				Model			
Optional specifications	AL10-A	AL20-A	AL30-A	AL40-A	AL40-06-A	AL50-A	AL60-A
Bracket assembly Note)	_	AF22P-050AS	AF32P-050AS	AF42P-050AS	AF42P-070AS	AF52P	-050AS

Note) Assembly of a bracket and 2 mounting screws

#### Bowl Assembly/Part No.

David	Lubriana					Model					
Bowl material	Lubricant exhaust port	Other	AL10-A	AL20-A	AL30-A	AL40-A	AL40-06-A	AL50-A	AL60-A		
	Without drain cock	_	C1SL-A	C2SL-A	_		_	=			
Dalvaarhanata	Williout drain cock	With bowl guard	_	C2SL-C-A	C3SL-A	C4SL-A					
Polycarbonate bowl	With drain cock	_	C1SL-3-A	C2SL-3-A	_		_	_			
Down	Willi dialli Cock	With bowl guard		C2SL-3C-A	C3SL-3-A	C4SL-3-A					
	Drain cock with barb fitting	With bowl guard	_	_	C3SL-3W-A	C4SL-3W-A					
	Without drain cock	_	C1SL-6-A	C2SL-6-A	_	_					
	Williout dialii cock	With bowl guard	_	C2SL-6C-A	C3SL-6-A	C4SL-6-A					
Nylon bowl	With drain cock	_	C1SL-36-A	C2SL-36-A	_		_	_			
	Willi draili Cock	With bowl guard	_	C2SL-36C-A	C3SL-36-A		C4SL	-36-A			
	Drain cock with barb fitting	With bowl guard	_	_	C3SL-36W-A		C4SL-	36W-A			
	Without drain cock	_	C1SL-2-A	C2SL-2-A	C3SL-2-A		C4SI	2-A			
Metal bowl	Williout dialii cock	With level gauge		_	C3LL-8-A		C4LL	8-A			
IVICIAI DOWI	With drain cock	_	C1SL-23-A	C2SL-23-A	C3SL-23-A		C4SL	-23-A			
	Willi Grain COCK	With level gauge	_	_	C3LL-38-A		C4LL	-38-A			

Note) · Bowl assembly for the AL20-A to AL60-A models comes with a bowl seal.

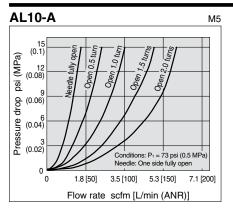
For a circuit that repeatedly turns ON and OFF on the outlet side, make the adjustment so that the average air consumption per minute becomes the minimum dripping flow rate or more.

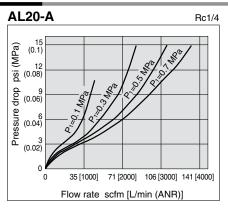
<sup>·</sup> Please consult with SMC separately for psi and °F unit display specifications.

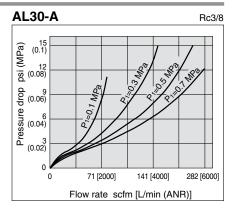
#### Series AL10-A to AL60-A

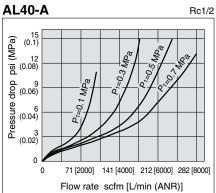
#### Flow-rate Characteristics (Representative values)

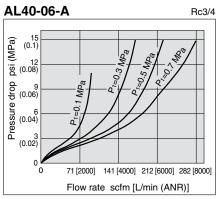
P1 = 44 psi (0.3 MPa) P1 = 73 psi (0.5 Mpa) P1 = 102 psi (0.7 MPa)

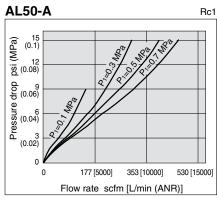


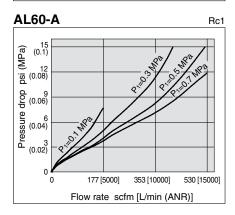




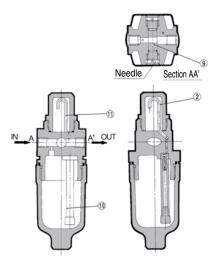








#### **Working Principle: AL10 Type**



A portion of the air introduced from the IN side pressurizes the lubricant inside the bowl. The remainder of the air passes through the needle (a), and flows to the OUT side. The differential pressure between the inside of the bowl and the inside of the sight dome (a), causes the lubricant inside the bowl into the oil passage (b). The lubricant drips from the dripping tube (d), and lubricates the OUT side. The amount of lubricant is adjusted by the needle (a) on the front face. Turning the needle clockwise increases the amount of the lubricant, and turning it counterclockwise until fully open shuts off the lubricant. The needle on the side that is not used should be left fully open.



Be sure to read this before handling. Refer to the back cover for Safety Instructions, "Handling Precautions for I SMC Products" and the Operation Manual for F.R.L. Precautions, http://www.smcworld.com

#### Selection

## **∕**∖\Warning

- 1. Do not introduce air from the outlet side as this can damage the bumper.
- 2. The standard bowl for the air filter, filter regulator, and lubricator, as well as the sight dome for the lubricator are made of polycarbonate. Do not use in an environment where they are exposed to or come in contact with organic solvents, chemicals, cutting oil, synthetic oil, alkali, and thread lock solutions.

Effects of atmosphere of organic solvents and chemicals, and where these elements are likely to adhere to the equipment. Chemical data for substances causing degradation (Reference)

Type	Chemical name	Application examples	Mate	
			Polycarbonate	Nylon
Acid	Hydrochloric acid Sulfuric acid, Phosphoric acid	Acid washing liquid	Δ	×
	Chromic acid	for metals		
	Sodium hydroxide (Caustic soda)			
	Potash	Degreasing of metals		
Alkaline	Calcium hydroxide (Slack lime)	Industrial salts	×	0
	Ammonia water	Water-soluble cutting oil		
	Carbonate of soda			
Inorganic	Sodium sulfide			
salts	Sulfate of potash	_	×	$\triangle$
Saits	Sulfate of soda			
	Carbon tetrachloride	Cleansing liquid for metals		
Chlorine	Chloroform	Printing ink	<sub>×</sub>	Δ
solvents	Ethylene chloride	Dilution		_
	Methylene chloride			
Aromatic	Benzene	Coatings		
series	Toluene	Dry cleaning	×	Δ
	Paint thinner			
12.1	Acetone	Photographic film		
Ketone	Methyl ethyl ketone	Dry cleaning Textile industries	×	×
	Cyclohexane Ethyl alcohol	rextile industries		
Alcohol	IPA	Antifreeze		×
Alconor	Methyl alcohol	Adhesives		^
	Welly alconor			
Oil	Gasoline	_	<sub>×</sub>	0
0	Kerosene		'`	Ŭ
	Phthalic acid dimethyl			
Ester	Phthalic acid diethyl	Synthetic oil	×	0
	Acetic acid	Anti-rust additives		
Ethor	Methyl ether	Dvolce oil odditis:		
Ether	Ethyl ether	Brake oil additives	×	0
		Cutting oil		
Amino	Methyl amino	Brake oil additives	×	×
		Rubber accelerator		
	Thread-lock fluid			
Others	Seawater	_	×	Δ
	Leak tester			
O: Essential	ly safe $\triangle$ : Some effective	cts may occur. X: Effe	cts will o	ccur.

When the above factors are present, or there is some doubt, use a metal bowl for safety.

#### Selection

## **.** Caution

1. Use a check valve (Series AKM) to prevent back flow of the lubricant when redirecting the air flow before the lubricator.

#### Maintenance

## ∕!\Warning

- 1. For the AL10-A/AL20-A type, replenish the lubricant after releasing the inlet pressure. Lubrication cannot take place under a pressurized condition.
- 2. Adjustment of the oil regulating valve for models from the AL20-A to AL60-A should be carried out manually. Turning it counterclockwise increases the dripping amount, and turning it clockwise reduces the dripping amount. The use of tools etc. can result in damage to the unit. From the fully closed position, three rotations will bring it to the fully open position. Do not rotate it any further than this. Note that the numbered scale markings are guidelines for adjusting the position, and not indicators of the dripping amount.

## ∕.\Caution

1. Check the dripping amount once a day. Drip failure can cause damage to the components that need lubrication.

#### Mounting/Adjustment

#### **∕∖**Caution

1. When the bowl is installed on the AL30-A to AL60-A, install them so that the lock button lines up to the groove of the front (or the back) of the body to avoid drop or damage of the bowl.

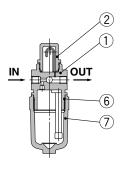


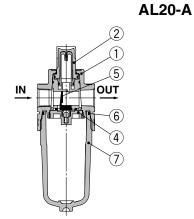


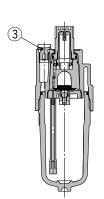
## Series AL10-A to AL60-A

#### Construction

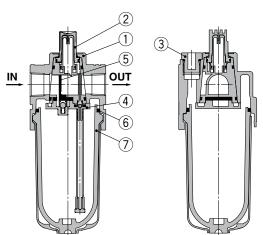
AL10-A



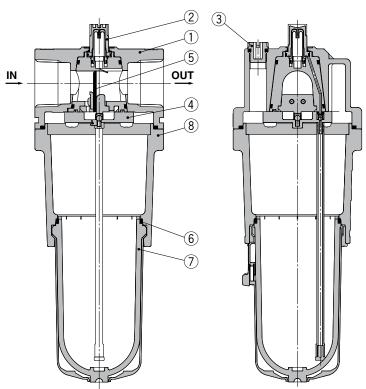




#### AL30-A/AL40-A







#### **Component Parts**

No.	Description	Material	Model	Color
-1	Body	Zinc die-cast	AL10-A	White
'	Войу	Aluminum die-cast	AL20-A to AL60-A	vviille
8	Housing	Aluminum die-cast	AL50-A/AL60-A	White

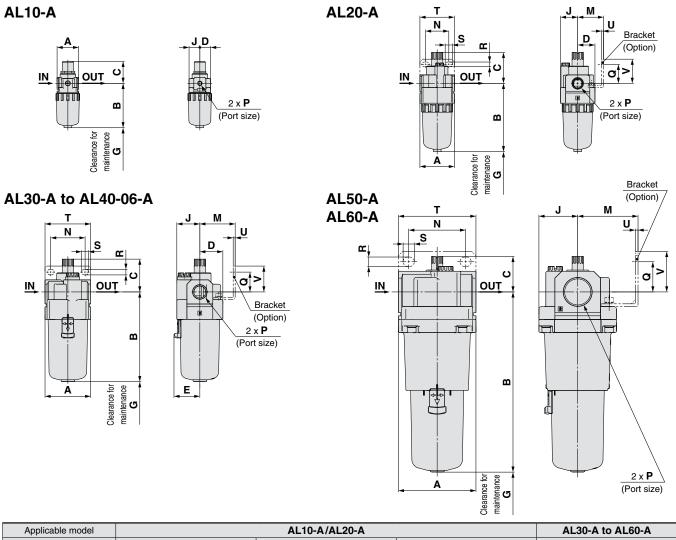
#### **Replacement Parts**

No.	Description	Material				Part no.			
INO.	Description	ivialeriai	AL10-A	AL20-A	AL30-A	AL40-A	AL40-06-A	AL50-A	AL60-A
2	Sight dome assembly	Polycarbonate	AL10P-080AS			AL20P	-080AS		
3	Lubrication plug assembly	_	_	AL22P-060AS	AL32P-060AS		AL42P	-060AS	
4	Bumper retainer assembly	_	_	AL20P-030AS	AL30P-030AS	AL40P-030AS		AL50P-030AS	AL60P-030AS
5	Bumper (assembly)	Synthetic resin	_	AL20P-040S	AL30P-040S	AL40F	P-040S	AL50P-040AS	AL60P-040AS
6	Bowl seal	NBR	C1SFP-260S	C2SFP-260S	C32FP-260S		C42FF	P-260S	
7	Bowl assembly Note)	Polycarbonate	C1SL-A	C2SL-A	C3SL-A		C45	SL-A	

Note) · Bowl seal is included for the AL20-A to AL60-A. Please consult with SMC separately for psi and °F unit display specifications.

 $<sup>\</sup>cdot \ \, \text{Bowl assembly for the AL30-A to AL60-A models comes with a bowl guard (Material: Polycarbonate)}.$ 





Applicable model		AL10-A/AL20-A		AL30-A to AL60-A
Optional/Semi-standard specifications	With drain cock	Metal bowl	Metal bowl with drain cock	Metal bowl
Dimensions	<b>a</b>	<b>a</b>	<b>B</b>	В

Applicable model			AL30-A to AL60-	·A	
Optional/Semi-standard specifications	With drain cock	Metal bowl with level gauge	Metal bowl with drain cock	Metal bowl with level gauge, with drain cock	Drain cock with barb fitting
Dimensions	B	B	8	B	Barb fitting applicable tubing: T0604

											Optio	onal sp	ecifica	tion	s			Sem	-standar	d specific	cations	
Model		Standard specifications							Bracket mount							With drain cock	With barb fitting	Metal bowl	Metal bowl with drain cock	with level	Metal bowl with level gauge, with drain cock	
	P A B C D E G					J	M	N	Q	R	S	Т	U	٧	В	В	В	В	В	В		
AL10-A	M5 x 0.8	25	51.5	25.5	12.5	_	35	12.5	_	_	_	_	_	_	_	_	59.9	_	56.3	59.3	_	
AL20-A	1/8, 1/4	40	79.3	35.9	20	_	60	20	30	27	22	5.4	8.4	40	2.3	28	87.7	_	84.5	87.5	_	_
AL30-A	1/4, 3/8	53	104.1	38.1	26.7	30	80	26.7	41	40	23	6.5	8	53	2.3	30	115.1	123.6	104.1	117.6	124.1	137.6
AL40-A	1/4, 3/8, 1/2	70	136.1	39.8	35.5	38.4	110	35.5	50	54	26	8.5	10.5	70	2.3	35	147.1	155.6	136.1	149.6	156.1	169.6
AL40-06-A	3/4	75	138.1	37.8	35.5	38.4	110	35.5	50	54	25	8.5	10.5	70	2.3	34	149.1	157.6	138.1	151.6	158.1	171.6
AL50-A	3/4, 1	90	209.1	41.2	45	_	110	45	70	66	35	11	13	90	3.2	47	220.1	228.6	209.1	222.6	229.1	246.2
AL60-A	1	1 95 223.1 44.7 47.5 — 110						47.5	70	66	35	11	13	90	3.2	47	234.1	242.6	223.1	236.6	243.1	256.6

## AC

AF+AR+AL

## **Modular Type** Filter Regulator

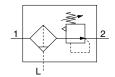
# Series AW

Filter Regulator Series AW	Model	Port size	Options
an a	AW10-A	M5 x 0.8	Bracket
	AW20-A	1/8, 1/4	Float type auto drain
	AW30-A	1/4, 3/8	Round type pressure gauge
	AW40-A	1/4, 3/8, 1/2	Set nut (for panel mount)*
P.73 to 84	AW40-06-A	3/4	* For the AW20-A to AW40-06-A, mounting pitch is different from existing AW series.

## **Filter Regulator**

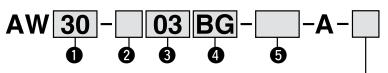
## AW10-A to AW40-A

## **Symbol** Filter Regulator



• Integrated filter and regulator units save space and require less piping.

#### **How to Order**



- 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) AW30-03BG-1N-A

Made to Order

(Refer to pages 81 to 84 for details.)

					(Refer to pages 81 to 84 fo	or details.)			
	_							0	
	,		_	Symbol	Description			y size	
					·	10	20	30	40
				l l	Metric thread (M5)	•	_		
				Nil	Rc		•		
0		Pipe	thread type	N Note 1)	NPT		•	•	
				F Note 2)	G	_	•	•	
				+	-				
				M5	M5	•	_	_	
				01	1/8	_	•	_	_
_			Dankaina	02	1/4	_	•	•	•
8			Port size	03	3/8	_	_	•	•
				04	1/2	_	_	_	•
				06	3/4	_	_	_	•
				+					
				Nil	Without mounting option	•	•	•	•
		а	Mounting	B Note 4)	With bracket	•	•	•	•
				Н	With set nut (for panel mount)		•	•	
				+					
	te 3)		Float type	Nil	Without auto drain		•	•	•
A	ž	b	auto drain	C Note 5)	N.C. (Normally closed) Drain port is closed when pressure is not applied.	•	•	•	•
•	Option Note 3)			D Note 6)	N.O. (Normally open) Drain port is open when pressure is not applied.	_	_		
	O			+	· · · · · · · · · · · · · · · · · · ·				
				Nil	Without pressure gauge	•	•	•	•
		С	Pressure	G	Round type pressure gauge (without limit indicator)	•		_	
			gauge Note 7)		Round type pressure gauge (with limit indicator)		•	•	•
				M	Round type pressure gauge (with color zone)		•		
			0-4	+ Nil	7.3 to 102 psi (0.05 to 0.7 MPa) setting		•		
		d	Set pressure Note 8)	1	2.9 to 29 psi (0.02 to 0.2 MPa) setting				
	٦		procoure	+	2.3 to 23 psi (0.02 to 0.2 ivira) setting		_	•	
	Semi-standard			Nil	Polycarbonate bowl				
6	tan			2	Metal bowl				
9	Ji-S			6	Nylon bowl		•		
	Sen	е	Bowl Note 9)	8	Metal bowl with level gauge			•	
	0,			C	With bowl guard		•	Note 10)	Note 10)
				6C	With bowl guard (Nylon bowl)			Note 11)	Note 11)
				00	Jo gadia (itylon both)			1	

## Filter Regulator Series AW 10-A to AW40-A



AW10-A

AW20-A

AW40-A

	_	_		Symbol	Description		<b>1</b> Body	/ size	
					·	10	20	30	40
				Nil	With drain cock	•	•	•	•
			Drain port Note 12)	■ Note 13)	Drain guide 1/8	_	•	_	_
		1	Drain port 100 127	J	Drain guide 1/4	_	_	•	•
				<b>W</b> Note 14)	Drain cock with barb fitting (for ø6 x ø4 nylon tube)	_	_	•	•
	밀			+					
	nd	~	Exhaust	Nil	Relieving type	•	•	•	•
6	Semi-standard	g	mechanism	N	Non-relieving type	•	•	•	•
	<del>`</del> Ė			+					
	Se	h	Flow direction	Nil	Flow direction: Left to right	•	•	•	•
		- 11	Flow direction	R	Flow direction: Right to left	•	•	•	•
				+					
			Pressure unit	Nil	Name plate, caution plate for bowl, and pressure gauge in imperial units: MPa	•	•	•	•
		1	Fressure unit	<b>Z</b> Note 15)	Name plate, caution plate for bowl, and pressure gauge in imperial units: psi, °F	O Note 16)	O Note 16)	O Note 16)	O Note 16)

- Note 1) Drain guide is NPT1/8 (applicable to the AW20-A) and NPT1/4 (applicable to the AW30-A to AW40-A). The auto drain port comes with ø3/8" One-touch fitting (applicable to the AW30-A to AW40-A).
- Note 2) Drain guide is G1/8 (applicable to the AW20-A) and G1/4 (applicable to the AW30-A to AW40-A).
- Note 3) Option B, G, H, M are not assembled and supplied loose at the time of shipment.
- Note 4) Assembly of a bracket and set nuts
- Note 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.
- Note 6) If the compressor is small (0.75 kW, discharge flow is less than 3.5 scfm (100 L/min[ANR])), air leakage from the drain cock may occur during start of operations. N.C. type is recommended.
- Note 7) When the pressure gauge is attached, a 145 psi (1.0 MPa) pressure gauge will be fitted for standard (102 psi [0.7 MPa]) type. 58 psi (0.4 MPa) pressure gauge for 29 psi (0.2 MPa) type (145 psi [1.0 MPa] pressure gauge only for the AW10-A).
- Note 8) Pressure can be set higher than the specification pressure in some cases, but use pressure within the specification range.
- Note 9) Refer to Chemical data on page 76 for chemical resistance of the bowl.
- Note 10) A bowl guard is provided as standard

- equipment (polycarbonate).
- Note 11) A bowl guard is provided as standard equipment (nylon).
- Note 12) The combination of float type auto drain: C and D is not available.
- Note 13) Without a valve function
- Note 14) The combination of metal bowl: 2 and 8 is not available.
- Note 15) For pipe thread type: NPT. This product is for overseas use only according to the new Measurement Law. (The SI unit type is provided for use in Japan.) Cannot be used with M: Round pressure gauge (with color zone). Available by request for special.
- Note 16) O: For pipe thread type: M5, NPT only

#### **Standard Specifications**

Model	AW10-A	AW20-A	AW30-A	AW40-A	AW40-06-A				
Port size	M5 x 0.8	1/8, 1/4	1/4, 3/8	1/4, 3/8, 1/2	3/4				
Pressure gauge port size	1/16 Note)		1	/8					
Fluid			Air						
Ambient and fluid temperature		23 to 140°F (-5 to 60°C) (with no freezing)							
Proof pressure		218 psi (1	.5 MPa)						
Maximum operating pressure		145 psi (1	.0 MPa)						
Set pressure range		7.3 to 102 (0.0	5 to 0.7 MPa)						
Nominal filtration rating			5 μm						
Drain capacity (cm³)	2.5	8	25	4:	5				
Bowl material			Polycarbonate						
Bowl guard	Semi-standard (Steel)  Standard (Polycarbonate)								
Construction		<u>.</u>	Relieving type						
Weight (kg)	0.09	0.21	0.41	0.75	0.81				

Note) Use a bushing (part no: 131368) when connecting the R1/8 pressure gauge to the Rc1/16.



## Series AW10-A to AW40-A

#### Options/Part No.

	Optional specifica	ations		Model						
	Optional specifica	1110115	AW10-A	AW20-A	AW30-A	AW40-A	AW40-06-A			
Bracket a	ssembly Note 1)		AR12P-270AS	AR22P-270AS	AR32P-270AS	AR42P-270AS				
Set nut			AR12P-260S	AR22P-260S	AR32P-260S	AR42F	P-260S			
	Standard Standard		G27-10-R1	G36-1	0-□01	G46-1	0-□01			
Note 2)	Round type	2.9 to 29 psi	Note 3)							
Pressure		(0.02 to 0.2 MPa) setting	G27-10-R1	G36-4	1- 01	G46-4	1- 01			
gauge	ge Round type Standard		_	G36-10	-□01-L	G46-10-□01-L				
	(with color zone)	2.9 to 29 psi (0.02 to 0.2 MPa) setting	_	G36-4-	-□01-L	G46-4-□01-L				

Note 1) Assembly of a bracket and set nuts

#### Bowl Assembly/Part No.

David	Drain					Model		
Bowl material	discharge mechanism	Drain port	Other	AW10-A	AW20-A	AW30-A	AW40-A	AW40-06-A
		With drain cock	_	C1SF-A	C2SF-A	_	_	_
	Manuel	Willi dialli cock	With bowl guard	_	C2SF-C-A	C3SF-A	C4S	F-A
	Manual discharge	Drain cock with barb fitting	With bowl guard	_	_	C3SF-W-A	C4SF	-W-A
Polycarbonate	discriarge	With drain guide		_	C2SF□-J-A	_	_	_
bowl		(without valve function)	With bowl guard	_	C2SF□-CJ-A	C3SF□-J-A	C4SF	□-J-A
	Automatic	Normally closed (N.C.)		AD17-A	AD27-A	_	_	_
	discharge Note)	INOTHIAITY Closed (IN.C.)	With bowl guard	_	AD27-C-A	AD37□-A	AD47	′□-A
		Normally open (N.O.)	With bowl guard	_	_	AD38□-A	AD48	B□-A
		With drain and		C1SF-6-A	C2SF-6-A	_	_	
	Manuel	Willi dialli cock	With bowl guard	_	C2SF-6C-A	C3SF-6-A	C4SF	-6-A
	Manual discharge	Drain cock with barb fitting	With bowl guard	_	_	C3SF-6W-A	C4SF-	-6W-A
Nylon bowl	discriarge	With drain guide		_	C2SF□-6J-A	_	_	_
INVIOLI DOWL		(without valve function)	With bowl guard	_	C2SF□-6CJ-A	C3SF□-6J-A	C4SF	]-6J-A
	Automatic	Normally closed (N.C.)		AD17-6-A	AD27-6-A	_	_	_
		Normally closed (N.C.)	With bowl guard	_	AD27-6C-A	AD37□-6-A	AD47	□-6-A
	(Auto drain)	Normally open (N.O.)	With bowl guard	_	_	AD38□-6-A	AD48	□-6-A
		With drain cock		C1SF-2-A	C2SF-2-A	C3SF-2-A	C4SF	-2-A
	Manual	Willi dialli cock	With level gauge	_	_	C3LF-8-A	C4LF	-8-A
	discharge	With drain guide		_	C2SF□-2J-A	C3SF□-2J-A	C4SF	]-2J-A
Metal bowl		(without valve function)	With level gauge	_	_	C3LF□-8J-A	C4LF	]-8J-A
IVICIAI DOWI	A	Normally closed (N.C.)		AD17-2-A	AD27-2-A	AD37□-2-A	AD47	□-2-A
	Automatic discharge Note)	· ' '	With level gauge		_	AD37□-8-A	AD47	□-8-A
		Normally open (N.O.)		_	_	AD38□-2-A	AD48	□-2-A
	(. 1010 01011)	inomally open (N.O.)	With level gauge	_	_	AD38□-8-A	AD48	□-8-A

Note) Minimum operating pressure: N.O. type–15 psi (0.1 MPa) (AD38-A, AD48-A); N.C. type–15 psi (0.1 MPa) (AD17-A, AD27-A) and 22 psi (0.15 MPa) (AD37-A, AD47-A). Bowl assembly for the AW10-A to AW40-06-A models comes with a bowl seal.



Note 2) in round pressure gauge part numbers indicates a pipe thread type. No indication is necessary for R; however, indicate N for NPT. Please contact SMC regarding the pipe thread type NPT and the supply of pressure gauge with psi unit display specifications.

Note 3) Standard pressure gauge

<sup>☐</sup> in bowl assembly part numbers indicates a pipe thread type (applicable tubing for auto drain).

No indication is necessary for Rc thread; however, indicate N for NPT thread, and F for G thread. (For auto drain, Nil: ø10, N: ø3/8")

Please consult with SMC separately for psi and °F unit display specifications.

Be sure to read this before handling. Refer to the back cover for Safety Instructions, "Handling Precautions for I SMC Products" and the Operation Manual for F.R.L. Precautions, http://www.smcworld.com

#### **Design/Selection**

## 🕂 Warning

- 1. Although exhaust of the residual pressure to the inlet side is possible when eliminating the inlet pressure, exhaust is not possible when the set pressure is 22 psi (0.15 MPa) or less. Use the regulator with backflow function.
- 2. The standard bowl for the air filter, filter regulator, and lubricator, as well as the sight dome for the lubricator are made of polycarbonate. Do not use in an environment where they are exposed to or come in contact with organic solvents, chemicals, cutting oil, synthetic oil, alkali, and thread lock solutions.

Effects of atmosphere of organic solvents and chemicals, and where these elements are likely to adhere to the equipment. Chemical data for substances causing degradation (Reference)

Tuno	Chamical name	Application everyles	Mate	erial
Type	Chemical name	Application examples	Polycarbonate	Nylon
Acid	Hydrochloric acid Sulfuric acid, Phosphoric acid Chromic acid	Acid washing liquid for metals	Δ	×
Alkaline	Sodium hydroxide (Caustic soda) Potash Calcium hydroxide (Slack lime) Ammonia water Carbonate of soda	Degreasing of metals Industrial salts Water-soluble cutting oil	×	0
Inorganic salts	Sodium sulfide Sulfate of potash Sulfate of soda	_	×	Δ
Chlorine solvents	Carbon tetrachloride Chloroform Ethylene chloride Methylene chloride	Cleansing liquid for metals Printing ink Dilution	×	Δ
Aromatic Series Benzene Toluene Paint thinner		Coatings Dry cleaning	×	Δ
Ketone	Acetone Methyl ethyl ketone Cyclohexane	Photographic film Dry cleaning Textile industries	×	×
Alcohol	Ethyl alcohol IPA Methyl alcohol	Antifreeze Adhesives	Δ	×
Oil	Gasoline Kerosene	_	×	0
Ester	Phthalic acid dimethyl Phthalic acid diethyl Acetic acid	Synthetic oil Anti-rust additives	×	0
Ether	Methyl ether Ethyl ether	Brake oil additives	×	0
Amino	Methyl amino	Cutting oil Brake oil additives Rubber accelerator	×	×
Others	Thread-lock fluid Seawater Leak tester	_	×	Δ

When the above factors are present, or there is some doubt, use a metal bowl for safety

#### Maintenance

## 🗥 Warning

1. Replace the element every 2 years or when the pressure drop becomes 15 psi (0.1 MPa), whichever comes first, to prevent damage to the element.

#### Mounting/Adjustment

## ∕!\ Warninɑ

- 1. Set the regulator while verifying the displayed values of the inlet and outlet pressure gauges. Turning the regulator knob excessively can cause damage to the internal parts.
- 2. Do not use tools on the pressure regulator knob as this may cause damage. It must be operated manually.

## ∕!\ Caution

- 1. Be sure to unlock the knob before adjusting the pressure and lock it after setting the pressure. Failure to follow this procedure can cause damage to the knob and the outlet pressure may fluctuate.
  - Pull the pressure regulator knob to unlock. (You can visually verify this with the "orange mark" that appears in the gap.)
  - Push the pressure regulator knob to lock. When the knob is not easily locked, turn it left and right a little and then push it (when the knob is locked, the "orange mark", i.e., the gap will disappear).
- 2. Pulsation will be generated when the difference between the inlet and the outlet pressure is large. In this case, reduce the pressure difference between the inlet and the outlet. Please consult with SMC if the pulsation problem is not resolved.
- 3. When the bowl is installed on the AW30-A/AW40-A, install them so that the lock button lines up to the groove of the front (or the back) of the body to avoid drop or damage of the bowl.



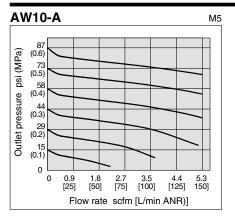


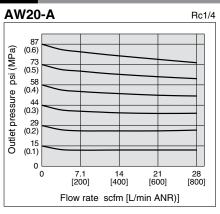


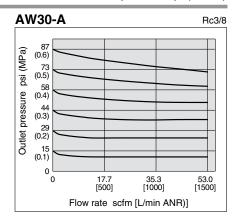
## Series AW10-A to AW40-A

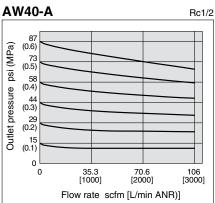
#### Flow-rate Characteristics (Representative values)

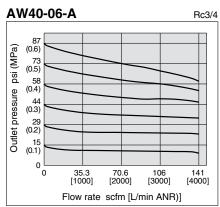
Condition: Inlet pressure 102 psi (0.7 MPa)





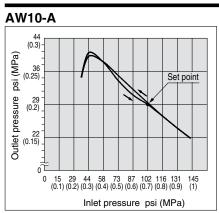


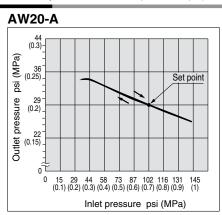


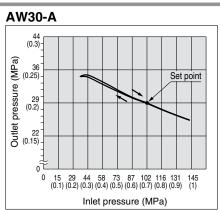


#### Pressure Characteristics (Representative values)

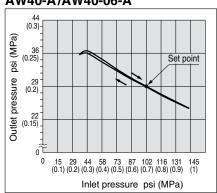
Conditions: Inlet pressure 102 psi (0.7 MPa), Outlet pressure 29 psi (0.2 MPa), Flow rate 0.71 scfm [20 L/min (ANR)]







#### AW40-A/AW40-06-A



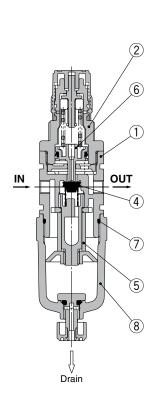
AC

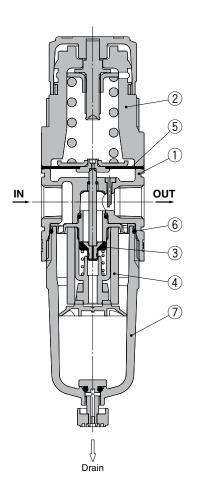
#### Construction

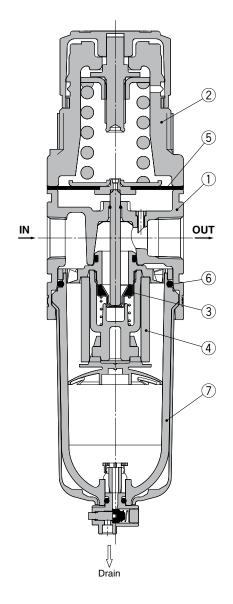
#### **AW10-A**



#### AW30-A to AW40-06-A







#### **Component Parts**

No.	Description	Material	Color	
-1	Body	Zinc die-cast	AW10-A	White
'	Войу	Aluminum die-cast	AW20-A to AW40-06-A	vviille
2	Bonnet	Polyacetal	AW10-A to AW40-06-A	White

#### **Replacement Parts**

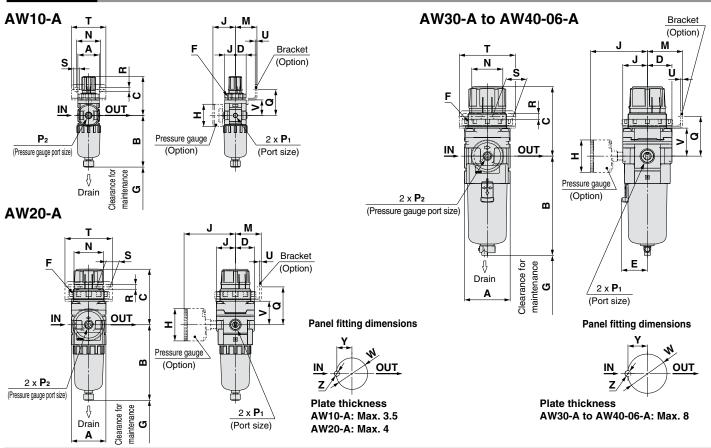
No.	Description	Material		Part no.								
INO.	Description	Material	AW10-A	AW20-A	AW30-A	AW40-A	AW40-06-A					
3	Valve assembly	Stainless steel, HNBR	AR10P-090S	AW22P-060AS	AW32P-060AS	AW42F	2-060AS					
4	Filter element	Non-woven fabric	Non-woven fabric AF10P-060S AF20P-060S		AF30P-060S	AF40F	P-060S					
5	Diaphragm assembly	Weatherable NBR	AR10P-150AS Note 1)	AR22P-150AS	AR32P-150AS	AR42P	-150AS					
6	Bowl seal	NBR	C1SFP-260S	C2SFP-260S	C32FP-260S	C42FF	P-260S					
7	Bowl assembly Note 2)	Polycarbonate	C1SF-A	C2SF-A	C3SF-A	C45	SF-A					

Note 1) The AW10-A is a piston type. Assembly of a piston and a seal (KSYP-13).

Note 2) Bowl seal is included for the AW20-A to AW40-06-A. Please contact SMC regarding the supply of bowl assembly with psi and °F unit display specifications.

## Series AW10-A to AW40-A

#### **Dimensions**

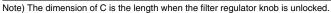


Applicable model	AW10-A/A	W20-A	AW	20-A	AW30-A to AW40-06-A		
Optional/Semi-standard specifications	With auto drain (N.C.)	Metal bowl	With drain guide	Metal bowl with drain guide	With auto drain (N.O./N.C.)		
Dimensions	M5 x 0.8	В	Width across flats 14 1/8	Width across flats 14	N.O.: Black N.C.: Gray  Thread type/Rc, G: Ø10 One-touch fitting Thread type/NPT: Ø3/8" One-touch fitting		

Applicable model			AV	V30-A to AW40-06-A		
Optional/Semi-standard specifications	Metal bowl	Metal bowl with drain guide	Metal bowl with level gauge	Metal bowl with level gauge, with drain guide	With drain guide	Drain cock with barb fitting
Dimensions	В	Width across flats 17 1/4	B	Width across flats 17	Width across flats 17	Barb fitting applicable tubing: T0604

		Standard specifications										Optional specifications				
Model												Round type pressure gauge Round type pressure gauge (with color zone)				
	P1									Н	J	Н	J			
AW10-A	M5 x 0.8	1/16	25	59.9	47.4	12.5	_	M18 x 1	25	12.5	ø26	26	_	_		
AW20-A	1/8, 1/4	1/8	40	87.6	67.4	22	_	M36 x 1.5	25	22	ø37.5	58.5	ø37.5	59.5		
AW30-A	1/4, 3/8	1/8	53	115.1	83.5	28.5	30	M45 x 1.5	35	28.5	ø37.5	65	ø37.5	66		
AW40-A	1/4, 3/8, 1/2	1/8	70	147.1	100	34.5	38.4	M52 x 1.5	40	34.5	ø42.5	72	ø42.5	72		
AW40-06-A	3/4	1/8	75	149.1	101.5	34.5	38.4	M52 x 1.5	40	34.5	ø42.5	72	ø42.5	72		

	Optional specifications										Semi-standard specifications							
Model			Brac	ket m	ount						With auto drain	With barb fitting	With drain guide	Metal bowl	Metal bowl with drain guide	Metal bowl with level gauge	Metal bowl with level gauge, with drain guide	
	M N Q R S T U					U	٧	W	Υ	Z	В	В	В	В	В	В	В	
AW10-A	25	28	30	4.5	6.5	40	2	18	18.5	_	_	77.9	_	_	59.3	_	_	_
AW20-A	30	34	43.9	5.4	15.4	55	2.3	27.3	36.5	17.5	6	104.9	_	91.4	87.4	93.9	_	_
AW30-A	41	36	46	6.5	24	65	2.3	32.5	45.5	22.5	7	156.8	123.6	121.9	117.6	122.1	137.6	142.1
AW40-A	50	38	54	8.5	26.5	70	2.3	38.4	52.5	26	7	186.9	155.6	1539	149.6	154.1	169.6	174.1
AW40-06-A	50	38	55.5	8.5	26.5	70	2.3	39.9	52.5	26	7	188.9	157.6	155.9	151.6	156.1	171.6	176.1





# Filter Regulator/AW20-A to AW40-06-A Made to Order



**Long Bowl** 

40

Note 7)

Note 7)

Please contact SMC for detailed dimensions, specifications and lead times.

#### 1 0.4 MPa Setting

The maximum set pressure is 58 psi (0.4 MPa). When a pressure gauge is included, the display will show a range from 0 to 102 psi (0.7 MPa).

#### **Specifications**

Proof pressure	218 psi (1.5 MPa)
Maximum operating pressure	145 psi (1.0 MPa)
Set pressure range	7.3 to 58 psi (0.05 to 0.4 MPa)

#### **Applicable Model**

• Option/Semi-standard: Select one each for a to i.

Model	AW20-A	AW30-A	AW40-A	AW40-06-A
Port size	1/8. 1/4	1/4, 3/8	1/4, 3/8, 1/2	3/4

#### 2 Long Bowl

Drain capacity is greater than that of standard models.

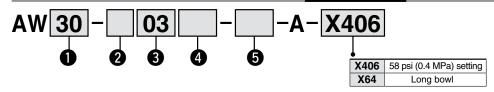
#### **Applicable Model/Drain Capacity**

58 psi (0.4 MPa)

Model	AW20-A	AW30-A	AW40-A	AW40-06-A
Port size	1/8, 1/4	1/4, 3/8	1/4, 3/8, 1/2	3/4
Drain capacity (cm <sup>3</sup> )	19	43	8	8

Note) Please consult with SMC for dimensions.

#### **How to Order**



Option/Semi-standard symbol: When more than one specification is required, indicate in alphanumeric order.

Note 2)

Setting Example) AW30-03BG-2N-A-X406 O O Symbol Description Body size Body size 20 30 40 20 30 Nil Rc 0 Note 1) NPT Pipe thread type

G

Round type pressure gauge (with limit indicator)

- 01 1/8 02 1/4 • • 03 8 Port size 3/8 lacktriangle• 04 1/2 06 3/4
  - + Nil Without mounting option а Mounting R Note 4) With bracket • Н With set nut (for panel mount) + Nil Without auto drain Float type Option <sup>1</sup> b C Note 5) Float type auto drain (N.C.) auto drain Note 6) Float type auto drain (N.O.) Nil Without pressure gauge

					M	Round type pressure gauge (with color zone)			
Note	1) C	)ra	ain	guide is NPT1/8 (app	licable to	the AW20-A) and NPT1/4 (applicable to the			
	A	١V	V30	)-A to AW40-A)					

G

The auto drain port comes with ø3/8" One-touch fitting (applicable to the AW30-A to AW40-A).

Note 2) Drain guide is G1/8 (applicable to the AW20-A) and G1/4 (applicable to the AW30-A to AW40-A)

Note 3) Option B, G, H, M are not assembled and supplied loose at the time of shipment.

Note 4) Assembly of a bracket and set nuts

Pressure gauge

Note 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.

Note 7)

Note 7)

Note 7)

- Note 6) If the compressor is small (0.75 kW, discharge flow is less than 3.5 scfm (100 L/min [ANR]), air leakage from the drain cock may occur during start of operations. N.C. type is recommended.
- Note 7) When the pressure gauge is attached, a 145 psi (1.0 MPa) pressure gauge will be fitted for standard (102 psi [0.7 MPa]) type. 58 psi (0.4 MPa) pressure gauge for 29 psi (0.2 MPa) type.



4

					58 p	si (0.4 l Setting		L	ong Bo	wl
	_		Symbol	Description		Body size		Body size		
				·	20	30	40	20	30	40
		Set	Nil	7.3 to 102 psi (0.05 to 0.7 MPa) setting	_			•	•	•
	d	pressure Note 8)	1	2.9 to 29 psi (0.02 to 0.2 MPa) setting	_	_	_	•	•	•
			+				'			
		Bowl Note 9)	Nil	Polycarbonate bowl	•	•	•		•	•
			2	Metal bowl	•	•	•		•	•
			6	Nylon bowl	•	•	•	•	•	•
	е		8	Metal bowl with level gauge	_	•	•	_	_	_
			С	With bowl guard	•	_	_	•	Note 11)	Note 11)
			6C	With bowl guard (Nylon bowl)	•	_	_		Note 12)	Note 12)
l d			+							
Semi-standard		Note 10)  Drain port	Nil	With drain cock	•	•	•	•	•	•
<b>9</b> sta	f		. Note 13)	Drain guide 1/8		_	_		_	_
Ë	•	Diain port	J 15/	Drain guide 1/4	_	•		_	•	•
S			<b>W</b> Note 14)	Drain cock with barb fitting (for ø6 x ø4 nylon tube)	_	•		_		
			+							
	g	Exhaust	Nil	Relieving type	•	•	•		•	•
	9	mechanism	N	Non-relieving type		•				
	l		+							
	h	Flow direction	Nil	Flow direction: Left to right	•	•	•		•	•
		517 411 5511011	R	Flow direction: Right to left						
	ا		+							
	l	Pressure unit	Nil	Name plate and caution plate for bowl in imperial units: MPa		•				•
		1 1000dio dilit	<b>Z</b> Note 15)	Name plate and caution plate for bowl in imperial units: psi, °F	Note 16)	Note 16)	Note 16)	Note 16)	Note 16)	Note 16)

Note 8) Pressure can be set higher than the specification pressure in some cases, but use pressure within the specification range.

Note 9) Refer to Chemical data on page 76 for chemical resistance of the bowl.

Note 10) The combination of float type auto drain: C and D is not available.

Note 11) A bowl guard is provided as standard equipment (polycarbonate).

Note 12) A bowl guard is provided as standard equipment (nylon).

Note 13) Without a valve function

Note 14) The combination of metal bowl: 2 and 8 is not available.

Note 15) For pipe thread type: NPT. This product is for overseas use only according to the new Measurement Law. (The SI unit type is provided for use in Japan.) Cannot be used with M: Round pressure gauge (with color zone). Available by request for special.

Note 16) O: For pipe thread type: NPT only



# Filter Regulator/AW20-A to AW40-06-A Made to Order



Please contact SMC for detailed dimensions, specifications and lead times.

#### 3 0.85 MPa Setting

The maximum set pressure is 123 psi (0.85 MPa). When a pressure gauge is included, the display will show a range from 0 to 145 psi (1.0 MPa).

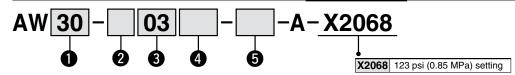
#### **Specifications**

Proof pressure	218 psi (1.5 MPa)
Maximum operating pressure	145 psi (1.0 MPa)
Set pressure range	7.3 to 123 p[si (0.05 to 0.85 MPa)

#### **Applicable Model**

Model	AW20-A	AW30-A	AW40-A	AW40-06-A	
Port size	1/8, 1/4	1/4, 3/8	1/4, 3/8, 1/2	3/4	

#### **How to Order**



- 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) AW30-03BG-2N-A-X2068

#### 123 psi (0.85 MPa) Setting

Cum				Currelle ell	Description	0				
Symbol					Description		Body size			
						20	30	40		
				Nil	Rc	•	•	•		
2	2 Pipe thread type				NPT	•	•	•		
					G	•	•	•		
				+						
01					1/8	•	_			
				02	1/4	•	•	•		
8			Port size	03	3/8	_	•	•		
				04	1/2	_	_	•		
				06	3/4	_	_	•		
				+						
				Nil	Without mounting option	•	•	•		
		а	Mounting	<b>B</b> Note 4)	With bracket	•	•	•		
				Н	With set nut (for panel mount)	•	•	•		
	<u></u>			+			,	·		
	Option Note 3)		Float type auto drain	Nil	Without auto drain	•	•			
4	l c	b		C Note 5)	Float type auto drain (N.C.)	•	•	•		
	ġ			D Note 6)	Float type auto drain (N.O.)	_	•	•		
				+			•			
				Nil	Without pressure gauge	•	•	•		
		С	Pressure gauge	G	Round type pressure gauge (with limit indicator)	•	•	•		
				M	Round type pressure gauge (with color zone)	•	•	•		

Note 1) Drain guide is NPT1/8 (applicable to the AW20-A) and NPT1/4 (applicable to the AW30-A to AW40-A).

The auto drain port comes with ø3/8" One-touch fitting (applicable to the AW30-A to AW40-A).

Note 2) Drain guide is G1/8 (applicable to the AW20-A) and G1/4 (applicable to the AW30-A to AW40-A).

Note 3) Option B, G, H, M are not assembled and supplied loose at the time of shipment.

Note 4) Assembly of a bracket and set nuts

Note 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.

Note 6) If the compressor is small (0.75 kW, discharge flow is less than 3.5 scfm (100 L/min [ANR]), air leakage from the drain cock may occur during start of operations. N.C. type is recommended.



A

#### 123 psi (0.85 MPa) Setting

	_					0			
					Description	Body size			
							30	40	
				Nil	Polycarbonate bowl	•	•	•	
				2	Metal bowl	•	•	•	
		d	Bowl Note 7)	6	Nylon bowl	•	•	•	
		a	BOMI Note 7)	8	Metal bowl with level gauge	_	•	•	
				С	With bowl guard	•	_	_	
				6C	With bowl guard (Nylon bowl)	•	_	_	
				+					
	Semi-standard		Note 8)  Drain port	Nil	With drain cock	•	•	•	
		e		J Note 9)	Drain guide 1/8	•	_	_	
A		-			Drain guide 1/4	_	•	•	
9				<b>W</b> Note 10)	Drain cock with barb fitting (for ø6 x ø4 nylon tube)	_	•	•	
				+					
		f	Exhaust	Nil	Relieving type	•	•	•	
			mechanism	N	Non-relieving type	•	•	•	
				+					
		_	Flow direction	Nil	Flow direction: Left to right	•	•		
		g		R	Flow direction: Right to left	•	•	•	
				+					
		h	Pressure unit	Nil	Name plate and caution plate for bowl in imperial units: MPa	•	•	•	
		••	i iessuie uliit	<b>Z</b> Note 11)	Name plate and caution plate for bowl in imperial units: psi, °F	Note 12)	Note 12)	Note 12)	

Note 7) Refer to Chemical data on page 76 for chemical resistance of the bowl.

Note 8) The combination of float type auto drain: C and D is not available.

Note 9) Without a valve function

Note 10) The combination of metal bowl: 2 and 8 is not available.

Note 11) For pipe thread type: NPT. This product is for overseas use only according to the new Measurement Law. (The SI unit type is provided for use in Japan.) Cannot be used with M: Round pressure gauge (with color zone). Available by request for special.

Note 12) O: For pipe thread type: NPT only

## **⚠** 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 indicates a hazard with a low level of risk Caution: which, if not avoided, could result in minor or moderate injury

Э.

Warning indicates a hazard with a medium level of Warning: 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.

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\*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.

#### **⚠** 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 catalog 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.

## **⚠** 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 catalog information, with a view to giving due consideration to any possibility of equipment failure when configuring the

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

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
- 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 catalog.
  - 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.

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



# Revision history Edition B • Metal bowl, Metal bowl with level gauge, With bowl guard added. • Made to Order (Long bowl, With element service indicator) added. • Number of pages increased from 76 to 80. RU Edition C • Nylon bowl added. • The construction drawings of the AW replaced. Body size 10 added. (AR, AW, AF, AL, AC) • Body size 50, 60 added. (AF, AL) • Spacer changed. • Number of pages increased from 80 to 88. SW



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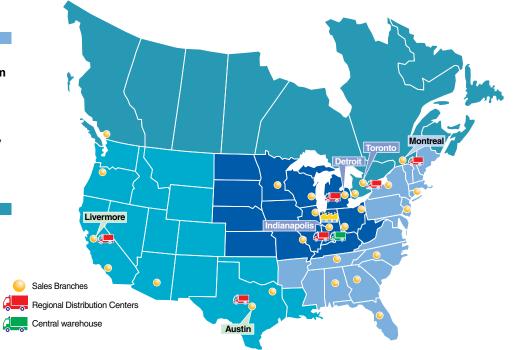
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