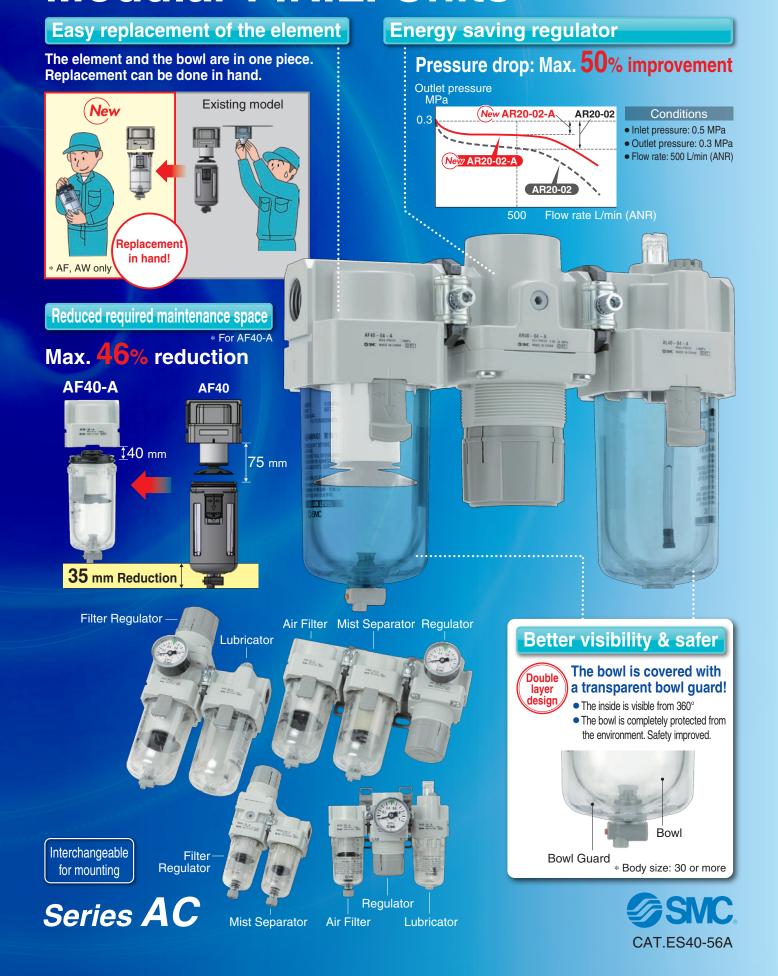
New



Modular F.R.L. Units



Series Configuration

	Dunado		Madal			Port size	!		INDEV
	Produ	ICT	Model	1/8	1/4	3/8	1/2	3/4	INDEX
	AL		AL20-A	0	0				
			AL30-A		0	•			D 50
itor		22 E-1-1-1-1	AL40-A		0	0	0		P.52
Lubricator	Man.	1	AL40-06-A					0	
	AW		AW20-A	•					
	AW								
			AW30-A AW40-A		0	0	0		P.58
ator			AW40-A					•	
Filter Regulator	Wednesday of the second	The state of the s							

Simple Specials System

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



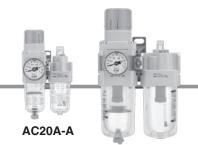
Short lead times

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.

Air Combination Series AC20A-A to AC40A-A



AC40A-A

	Symbo					0		
			Symbol	Description	Body size			
						20	30	40
			Lubricator lubricant	Nil	Without drain cock	•	•	•
		•	exhaust port	3 Note 9)	Lubricator with drain cock	•	•	•
	_			+				
	ard	j	Exhaust	Nil	Relieving type	•	•	•
	and		mechanism	N	Non-relieving type	•	•	•
6	S			+				
	=	k	Flow direction	Nil	Flow direction: Left to right	•	•	•
	Semi		riow direction	R	Flow direction: Right to left	•	•	•
				+				
			Pressure unit	Nil	Name plate and pressure gauge in imperial units: MPa		•	•
	" "		Fiessure unit	Z Note 10)	Name plate, caution plate for bowl, and pressure gauge in imperial units: psi, °F	Note 11)	Note 11)	Note 11)
	4) 0		O M		d augustical Note 4) When the pressure gauge is attached a	NI-+- (0) \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\	a alasta d with the fi	

- 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 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 1.0 MPa pressure gauge will be fitted for standard (0.7 MPa) type. 0.4 MPa pressure gauge for 0.2 MPa type.
- Note 5) Not available with piping port size: 06.
- Note 6) The bracket position varies depending on the pressure switch mounting.
- 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) When selected with the filter regulator drain outlet W, the drain cock of the lubricator is barb fitting.
- Note 10) For 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. Round pressure gauge (with color zone):

Cannot be used with M. Available by request for special.

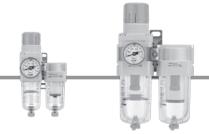
Note 11) O: For thread type: NPT only

Standard Specifications

N	Model	AC20A-A	AC30A-A	AC40A-A	AC40A-06-A		
Component	Filter regulator	AW20-A	AW30-A	AW40-A	AW40-06-A		
Component	Lubricator	AL20-A	AL30-A	AL40-A	AL40-06-A		
Port size		1/8, 1/4	1/4, 3/8	1/4, 3/8, 1/2	3/4		
Pressure gau	ige port size	1/8					
Fluid			A	ir			
Ambient and	fluid temperature	- 5 to 60°C (with no freezing)					
Proof pressu	re	1.5 MPa					
Maximum op	erating pressure	1.0 MPa					
Set pressure	range	0.05 to 0.7 MPa					
Nominal filtra	tion rating	5 μm					
Recommende	ed lubricant	Class 1 turbine oil (ISO VG32)					
Bowl materia	I	Polycarbonate					
Bowl guard		Semi-standard (Steel) Standard (Polycarbonate)					
Regulator co	nstruction	Relieving type					
Weight (kg)		0.33	0.66	1.22	1.34		



Air Combination Series AC20D-A to AC40D-A



AC20D-A

AC40D-A

	Symbol	Description
6 i Pressure unit	Nil	Name plate and pressure gauge in imperial units: MPa
6 Figure 1 j Pressure unit	Z Note 9)	Name plate, caution plate for bowl, and pressure gauge in imperial units: psi, °F
Note 1) Option G. M are not asse	mbled an	d supplied Note 4) When the pressure gauge is attached a

- 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 100 L/min[ANR]), air leakage from the drain cock may occur during start of operations. N.C. type is recommended.
- 1.0 MPa pressure gauge will be fitted for standard (0.7 MPa) type. 0.4 MPa pressure gauge for 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 gauge.
- 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.

	Body size									
	20	30	40							
[
ŀ	Note 10)	○ Note 10)	Note 10)							
Į	Note 10) Note 10) Note 10)									
	Note 9) For thread type: NPT. This product is for									

0

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.

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

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

Standard Specifications

N	/lodel	AC20D-A	AC30D-A	AC40D-A	AC40D-06-A	
0	Filter regulator	AW20-A	AW30-A	AW40-A	AW40-06-A	
Component	Mist separator	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	ge port size		1/	8		
Fluid			A	ir		
Ambient and	fluid temperature		− 5 to 60°C (wi	th no freezing)		
Proof pressu	re	1.5 MPa				
Maximum ope	erating pressure	1.0 MPa				
Minimum ope	erating pressure	0.05 MPa				
Set pressure	range	0.05 to 0.7 MPa				
Nominal filtra	tion rating	AW: 5 μm, AFM: 0.3 μm (99.9% filtered particle size)				
Rated flow (L	/min (ANR)) Note 1)	150	330	800	800	
Outlet side oil	mist concentration	MAX 1.0 mg/m³ (ANR) (≈0.8 ppm) Note 2) Note 3)				
Bowl materia	I		Polycar	bonate		
Bowl guard		Semi-standard (Steel) Standard (Polycarbonate)				
Regulator co	nstruction	Relieving type				
Weight (kg)		0.32	0.65	1.22	1.34	

Note 1) Conditions: Mist separator inlet pressure: 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 O-ring and other O-rings are slightly lubricated.

Modular Type Filter Regulators

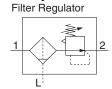
Series AW

Filter Regulator Series AW	Model	Port size	Options
	AW20-A	1/8, 1/4	Bracket
	AW30-A	1/4, 3/8	Float type auto drain Round type
	AW40-A	1/4, 3/8, 1/2	pressure gauge With set nut (for panel mount)*
P.59 to 65	AW40-06-A	3/4	* Mounting pitch is different from existing AW Series.

Filter Regulator

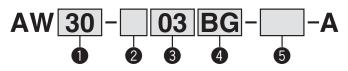
AW20-A to AW40-A

JIS Symbol



• 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

	_	_		Symbol	Description		1 Body size	
						20	30	40
	N			Nil	Rc	•	•	•
2	With backflow		N Note 1)	NPT	•	•	•	
		I	unction	F Note 2)	G	•	•	•
				+				
				01	1/8		_	_
				02	1/4			•
3		Th	read type	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)	•		
6	<u>π</u>	+						
	ote		Float type auto drain	Nil	Without auto drain		•	•
4	z L	b		C Note 5)	N.C. (Normal close) Drain port is closed when pressure is not applied.	•	•	•
	Option Note		adio diani	D Note 6)	N.O. (Normal open) Drain port is open when pressure is not applied.	_		
	ŏĮ,			+		_	_	
			Pressure	Nil	Without pressure gauge		•	•
		С	gauge Note 7)	G	Round type pressure gauge (with limit indicator)		•	•
				M	Round type pressure gauge (with color zone)			
			0.1	+	0.05 to 0.7 MDs softing			
	larc	d	Set pressure Note 8)	Nil	0.05 to 0.7 MPa setting		•	•
A	Semi-standard		pressure "steep		0.02 to 0.2 MPa setting		•	
(5)	ii-st			+ Nil	Polycarbonate bowl			
	Ser	е	Bowl Note 9)	C			Note 10)	Note 10)
	לט				With bowl guard			

A

Filter Regulator Series AW20-A to AW40-A



AW20-A

AW40-A

	Symbol						0	
				Symbol	Description	Body size		
					20	30	40	
				Nil	With drain cock	•	•	•
	1		Drain nort	J Note 11)	Drain guide 1/8	•	_	_
		'	Drain port	J Note 11/	Drain guide 1/4	_	•	•
				W	Drain cock with barb fitting (for ø6 x ø4 nylon tube)	_	•	•
	5			+				
	da	_	Exhaust	Nil	Nil Relieving type		•	•
6	standard	g	mechanism	N	Non-relieving type	•	•	•
9				+				
	Semi	h	Flow direction	Nil	Flow direction: Left to right	•	•	•
	Š	"	Flow direction	R	Flow direction: Right to left	•	•	•
		+						
			Pressure unit	Nil	Name plate, caution plate for bowl, and pressure gauge in imperial units: MPa	•	•	•
			Fiessule uliil	Z Note 12)	Name plate, caution plate for bowl, and pressure gauge in imperial units: psi, °F	O Note 13)	Note 13)	O Note 13)

- Note 1) Drain guide is NPT 1/8 (applicable to the AW20-A) and NPT 1/4 (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 G 1/8 (applicable to the AW20-A) and G 1/4 (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 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 1.0 MPa pressure gauge will be fitted for standard (0.7 MPa) type. 0.4 MPa pressure gauge for 0.2 MPa type.
- Note 8) Pressure can be set higher than the specification pressure in some cases, but use pressure within the specification
- Note 9) Refer to Chemical data on page 62 for chemical resistance of the bowl.
- Note 10) Standard material (polycarbonate)
- Note 11) Without a valve function
- Note 12) For 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) O: For thread type: NPT only

Standard Specifications

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			
Pressure gauge port size		1/	8				
Fluid		Air					
Ambient and fluid temperature		−5 to 60°C (with no freezing)					
Proof pressure		1.5 MPa					
Maximum operating pressure	1.0 MPa						
Set pressure range		0.05 to ().7 MPa				
Nominal filtration rating		5 ֈ	ım				
Drain capacity (cm³)	8	25	4	5			
Bowl material		Polycar	bonate				
Bowl guard	Semi-standard (Steel)	S	tandard (Polycarbonat	e)			
Construction		Relievir	ng type				
Weight (kg)	0.21	0.41	0.75	0.81			



Series AW20-A to AW40-A

Options/Part No.

<u> </u>										
	Ontional appoifi	ootiono	Model							
	Optional specifi	Callons	AW20-A	AW30-A	AW40-A AW40-06-A					
Bracket assembly Note 1)			AR22P-270AS	AR32P-270AS	AR42P-270AS					
Set nut			AR22P-260S	AR32P-260S	AR42F	P-260S				
	Round type Note 2)	Standard	G36-10-□01		G46-10-□01					
Pressure		0.02 to 0.2 MPa setting	G36-4	1-□01	G46-4-□01					
gauge	Round type Note 2)	Standard	G36-10)-□01-L	G46-10)-□01-L				
	(with color zone)	0.02 to 0.2 MPa setting	G36-4-	G36-4-□01-L		-□01-L				
Float type auto drain		N.C.	AD27-A	AD37-A	AD4	17-A				
		N.O.	_	AD38-A	AD4	18-A				

Semi-standard/Bowl Assembly Part No.

Se	mi-stan	dard spe	ecificatio	ns		Model				
Bowl material	auto diairi		t type With With drain drain drain		With	AW20-A	AW30-A	AW40-A AW40-06-		
	N.C.	N.O.	guide	fitting	guard					
	_	_	_	_		C2SF-C-A	_	_		
		_	_	_		AD27-C-A	_	_	_	
Polycarbonate	_	_	•	_	_	C2SF-J-A	C3SF-J-A	C4SF-J-A		
	_	_	_		_	_	C3SF-W-A	C4SF-W-A		
	_	_		_		C2SF-CJ-A	_	_	_	

Note 1) Assembly of a bracket and set nuts

Note 2) ☐ in part numbers for a round pressure gauge indicates a type of connection thread. 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 3) Minimum operating pressure: N.O. type–0.1 MPa; N.C. type–0.1 MPa (AD27-A) and 0.15 MPa (AD37-A/47-A).

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

Note 4) Please consult SMC for details on drain piping to fit NPT or G port sizes.

The bowl assembly includes the bowl O-ring.

⚠ Specific Product Precautions

Be sure to read before handling. Refer to back cover for Safety Instructions, "Handling Precautions for SMC I Products" (M-E03-3) and the Operation Manual for F.R.L. Precautions.

Please download it via our website, 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 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 and bowl quard 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						
Туре	Chemical name	Application examples	Polycarbonate						
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	×						
Inorganic salts	Sodium sulfide Sulfate of potash Sulfate of soda	_	×						
Chlorine solvents	Carbon tetrachloride Chloroform Ethylene chloride Methylene chloride	Cleansing liquid for metals Printing ink Dilution	×						
Aromatic series	Benzene Toluene Paint thinner	Coatings Dry cleaning	×						
Ketone	Acetone Methyl ethyl ketone Cyclohexane	Photographic film Dry cleaning Textile industries	×						
Alcohol	Ethyl alcohol IPA Methyl alcohol	Antifreeze Adhesives	Δ						
Oil	Gasoline Kerosene	_	×						
Ester	Phthalic acid dimethyl Phthalic acid dimethyl Acetic acid	Synthetic oil Anti-rust additives	×						
Ether	Methyl ether Ethyl ether	Brake oil additives	×						
Amino	Methyl amino	Cutting oil Brake oil additives Rubber accelerato	×						
Other	Thread-lock fluid Seawater Leak tester	_	×						
\triangle : Some effects may occur \times : Effects will occur									

Maintenance

\land 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 and 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.

Mounting and Adjustment

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. Consult SMC if the pulsation problem is not resolved.
- 3. When the bowl is installed, 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.

SMC

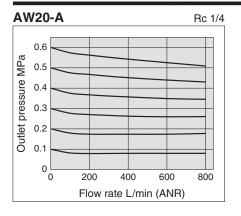


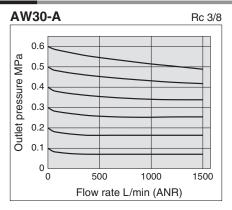


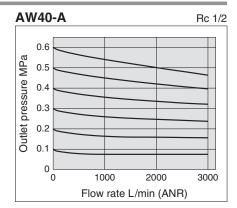
Series AW20-A to AW40-A

Flow Characteristics (Representative values)

Condition: Inlet pressure 0.7 MPa



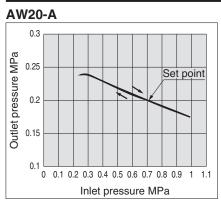


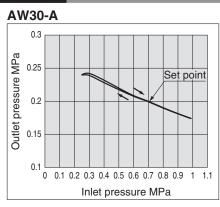


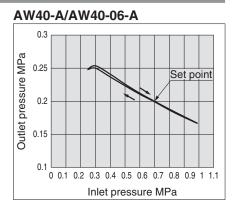
AW40-06-A Rc 3/4 0.6 Outlet pressure MPa 0.5 0.4 0.3 0.2 0.1 0 0 1000 2000 3000 4000 Flow rate L/min (ANR)

Pressure Characteristics (Representative values)

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



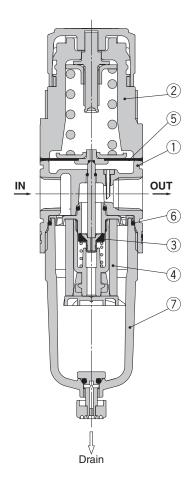




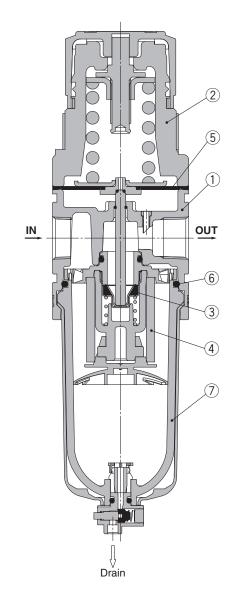
Filter Regulator Series AW20-A to AW40-A

Construction

AW20-A



AW30-A to AW40-06-A



Component Parts

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

Replacement Parts

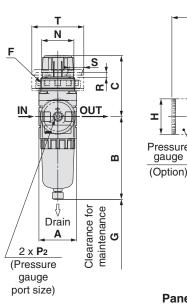
No.	Description	Material	Part no.									
	Description	Ivialeriai	AW20-A	AW30-A	AW40-A	AW40-06-A						
3	Valve assembly	Stainless steel, HNBR	AW22P-060AS	AW32P-060AS	AW42F	-060AS						
4	Filter element	Non-woven fabric	AF20P-060S	AF30P-060S	AF40F	P-060S						
5	Diaphragm assembly	Weatherable NBR	AR22P-150AS	AR32P-150AS	AR42P	-150AS						
6	Bowl seal	NBR	C2SFP-260S	C32FP-260S	C42FI	P-260S						
7	Bowl assembly Note)	Polycarbonate	C2SF-A	C3SF-A	C45	SF-A						

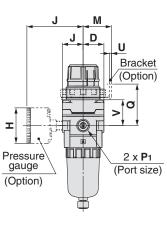
Note) Bowl seal is included. Please contact SMC regarding the bowl assembly supply for psi and °F unit specifications.

Series AW20-A to AW40-A

Dimensions

AW20-A





Panel fitting dimension

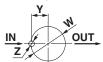
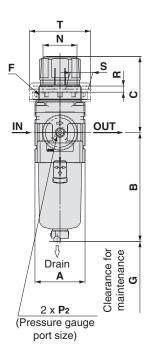
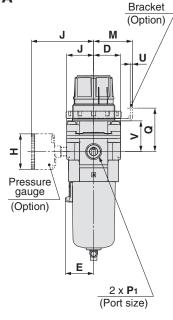


Plate thickness AW20-A: Max.4

AW30-A to AW40-06-A





Panel fitting dimension

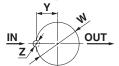


Plate thickness AW30-A to AW40-06-A: MAX.8

Applicable model		20-A	AWS	30-A to AW40-A	
Optional/Semi-standard specifications	With auto drain (N.C.)	With drain guide	With auto drain (N.O./N.C.)	With drain guide	Drain cock with barb fitting
Dimensions	M 5 x 0.8	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	Width across flats 17	Barb fitting Applicable tubing: T0604

	Ctandard angolfications									Optional specifications				
Model		Standard specifications									Round type pressure gauge Round type pressure gauge (with color zone)			
	P1	P2	Α	В	CNote)	D	E	F	G	J	Н	J	Н	J
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	Bracket mount								Panel mount With auto drain				With barb fitting	With drain guide
	М	N	Q	R	S	Т	U	٧	W	Υ	Z	В	В	В
AW20-A	30	34	43.9	5.4	15.4	55	2.3	27.3	36.5	17.5	6	104.9	_	91.4
AW30-A	41	36	46	6.5	24	65	2.3	32.5	45.5	22.5	7	156.8	123.6	121.9
AW40-A	50	38	54	8.5	26.5	70	2.3	38.4	52.5	26	7	186.9	155.6	153.9
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

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

