Modular F.R.L. Units



C C B

Modular Design with Uniform Body Style

Better visibility & environmental resistance

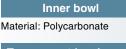


The bowl is covered with a transparent bowl guard!

* Body sizes 30 and larger

The inside is visible from 360°.

 The inner bowl is protected from the environment, allowing for improved safety.



Transparent bowl guard Material: Polycarbonate

New A right angle square type pressure gauge and various attachments have been added.

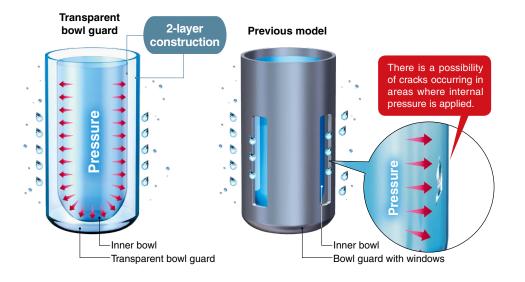
Right Angle Square Type Pressure Gauge 0.8 Cross Adapter **p.9** IN Allows for pressure confirmation Allows for devices to be connected from the knob side on the top, bottom, left, and right Right angle square type Cross adapter pressure gauge 0 SUP OUT 1 ➡OUT2 0 Attachment Page LEMPs ILEMPs Right angle adapter 7 Reducing adapter 10 OUTG End plate 70 Air Filter Mist Separator AFM Series AF Series AC Series



Transparent bowl guard

Better environmental resistance: The transparent bowl guard protects the inner bowl!

The bowl guard with windows has been replaced with a polycarbonate transparent bowl guard. Now, even if the environment changes and the bowl is exposed to corrosive chemical or oil splash, the foreign matter will not come into direct contact with the pressurized bowl. This can reduce the risk of bowl breakage.





Better visibility: 360°

The transparent bowl guard allows for easy checking of the condensate level inside the filter bowl and the remaining oil amount in the lubricator from any direction.



Applicable model * Body sizes 30 and larger

Air Filter

AF

Mist Separator Micro Mist AFM Separator



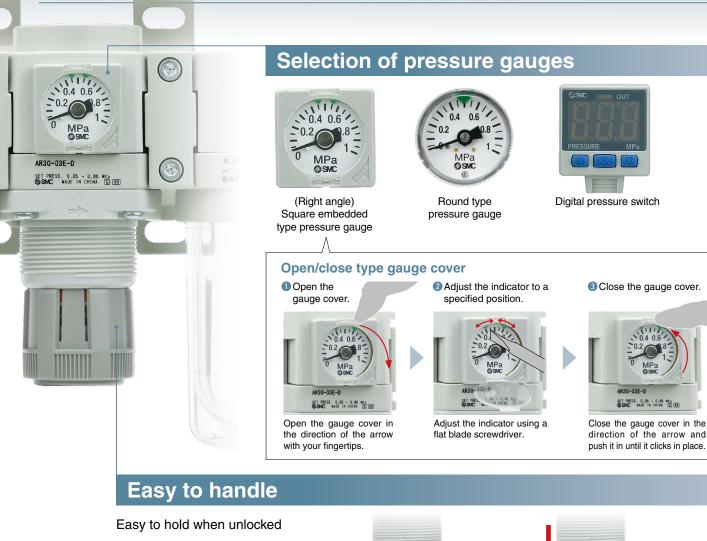




No tools are required.

Easier replacement of the element * AF20-D to AF40-D only

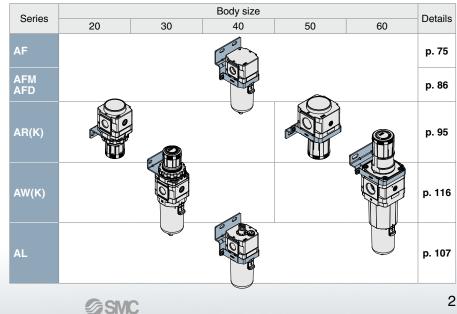




Mounting (Single unit)

.

· The mounting pitch for panel mounting is interchangeable between the AR20(K)-D to AR40(K)-06-D and the AR(K)-B series and between the AW20(K)-D to AW40(K)-06-D and the AW(K)-B series. The brackets and set nuts are the same for both existing and new products.



Pressure regulation while unlocked

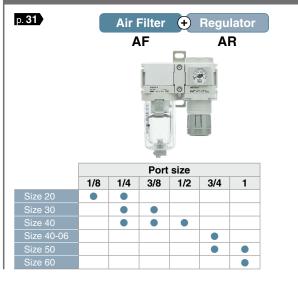
Finger grip

Locked

Series Configuration

AC20 to AC60 Series p. 17 Air Filter 🕂 Regulator 🕂 Lubricator AF AR AL 0 0 100-00-0 112"-11-12" %: 0 Port size 1/8 1/4 3/8 1/2 3/4 1 Size 20 Size 40 Size 60

AC20B to AC60B Series



AC20D to AC40D Series p. 47 Filter Regulator 🕂 Mist Separator AW AFM 0 ------Port size 1/4 3/4 1/8 3/8 1/2 Size 40

AC20A to AC60A Series p. 25 Filter Regulator 🕂 Lubricator AW AL 0 0 Port size 1/8 1/4 3/8 1/2 3/4 1 Size 40-06 Size 50 Size 60

AC20C to AC40C Series

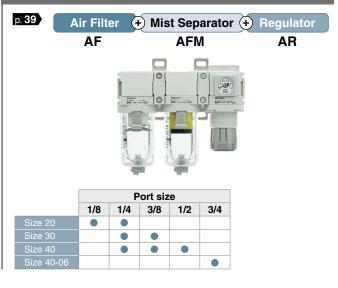
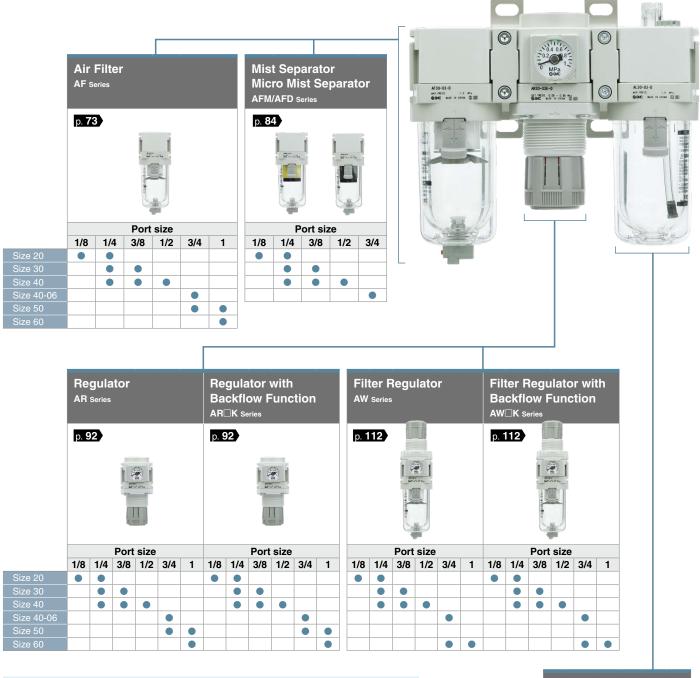
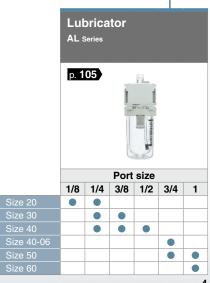


Table of Modular F.R.L. Unit Combinations for AC Assembly





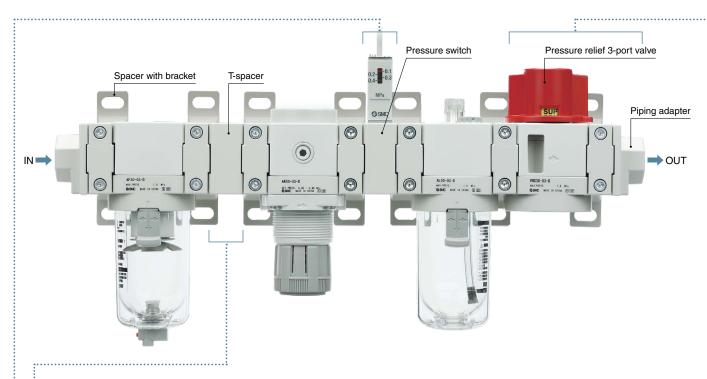




Modular F.R.L. Units AC Series

Refer to the list of spacers for modular connection and spacers with brackets to determine AC-A/B compatibility. Click here for details.

Attachment List



Spacers

T-Spacer Y⊡10 _{Series}		Cross Spacer Y⊡4 series	Spacer Y⊡⊡ Series	Spacer with Bracket
Piping in 2 directions (upward or downwar p. 62		Piping in all 4 directions is possible. p. 63	p.57	p. 57
10	10	Front and back port		© 12 © 12
	Slim type*1	selectable type ^{*1}		
			*1 The mounting pitch is inter	changeable with the existing attach

Pressure Switches

A compact, integrated pressure switch can be easily installed to facilitate the pressure detection of the line.

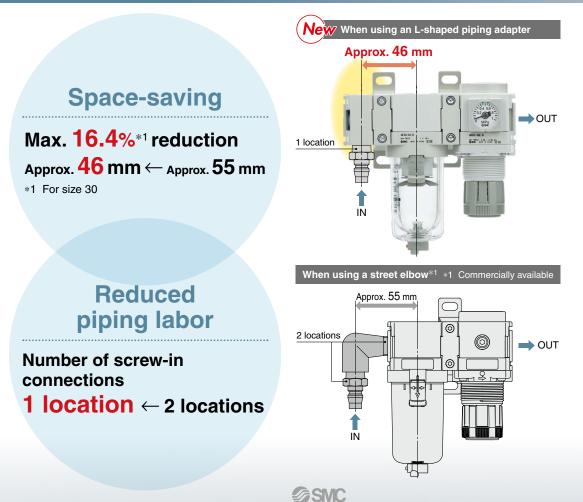
Pressure Switch with T-Spacer IS10T _{Series}	Pressure Switch with L-Shaped Piping Adapter IS10L _{Series}	Pressure Switch IS10M _{Series}	Pressure Switch with Piping Adapter IS10E _{Series}
The OUT side piping can be branched downward. p. 65	OUT side piping: Downward p. 66	p. 64	A piping adapter allows for the installation/removal of the component without removing the piping.

 $\ast 1\,$ The mounting pitch is interchangeable with the existing attachment.

Pressure Relief

Piping Adapters		3-Port Valve	
Piping Adapter	L-Shaped Piping Adapter	T-Shaped Piping Adapter	Pressure Relief 3-Port Valve
E⊡00 _{Series}	E⊡00L _{Series}	E⊡00T _{Series}	VHS Series
A piping adapter allows for the	Upward or downward piping is	Both upward and downward piping	By using a pressure relief 3-port valve,
installation/removal of the component	possible on the inlet side and the	are possible on the inlet and outlet	pressure left in the line can be easily
without removing the piping.	outlet side of F.R.L. units.	sides of F.R.L. units.	exhausted.
p. 59	p. 60	p. 61	p. 58
Right Angle Adapter	Reducing Adapter	Cross Adapter	New End Plate
E⊡10T Series		Y⊡4M _{Series}	E⊟00E Series
Allows for modular connection with the product rotated 90 degrees	Allows for modular connection with products 1 body size larger or smaller	Allows for devices to be connected on the top, bottom, left, and right	For blocking the unused piping ports on sides without a modular connection
p. 68	p. 68	p. 69	p. 70

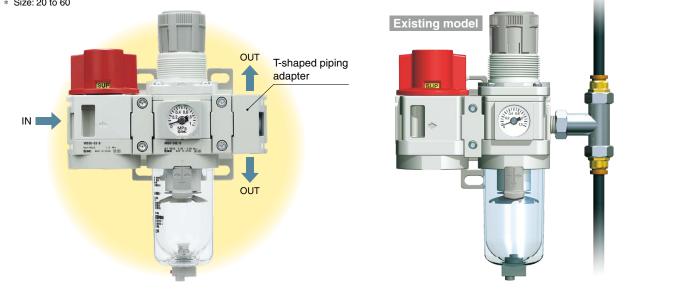
Space-saving design and reduced piping labor



Improved piping design flexibility

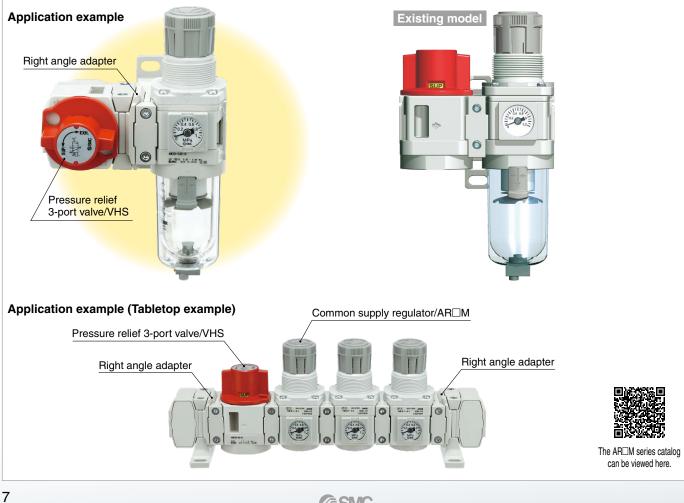
T-shaped Piping Adapter

Air can be released either upward or downward. p.61 * Size: 20 to 60



Right Angle Adapter

Modular connection with the product rotated 90 degrees is possible. p.68 * Size: 20 to 40



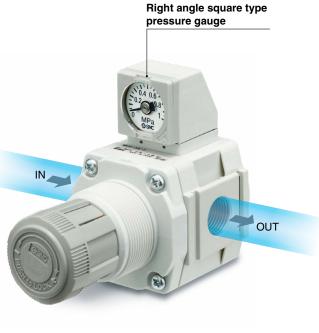
SMC

The direction the pressure gauge faces can be changed freely.

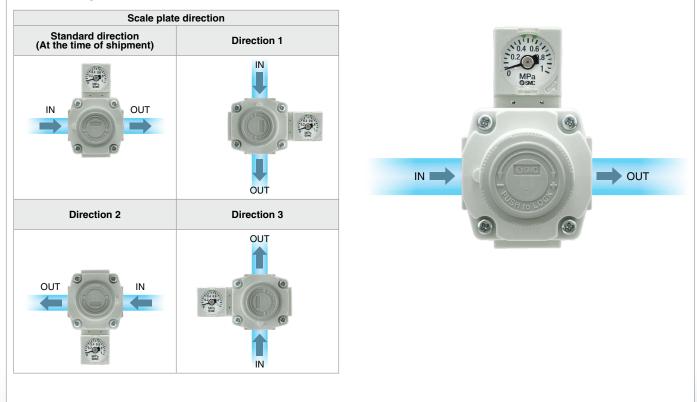
Right Angle Square Type Pressure Gauge

The direction the pressure gauge faces can be changed in 90° increments depending on where the pressure gauge needs to be viewed from.

Pressure ga	uge direction	
Standard direction (At the time of shipment)	Direction 1	
IN 9 OUT	OUT	IN
Direction 2	Direction 3	
OUT	IN OUT	Contraction of the second s



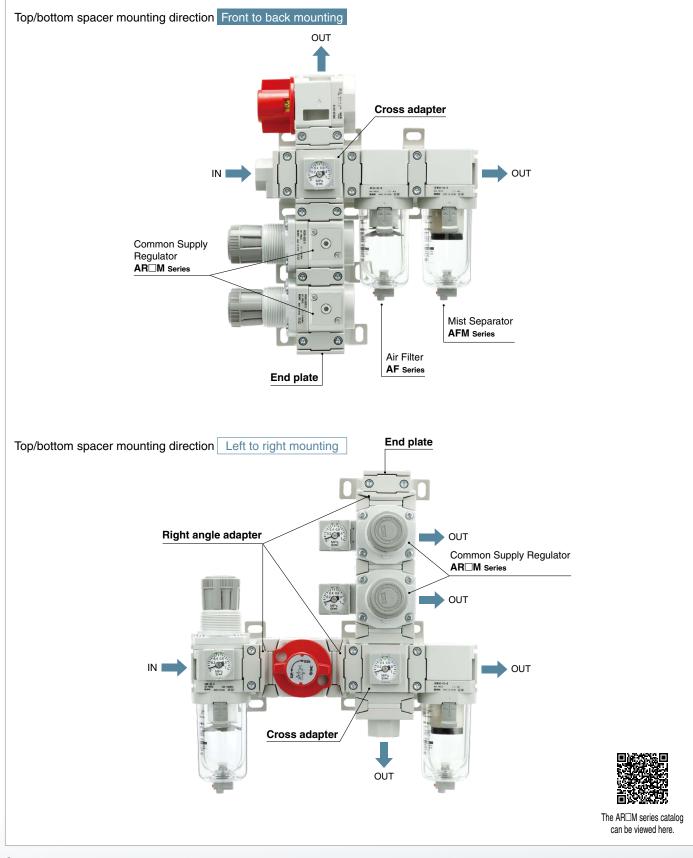
The direction the pressure gauge scale plate faces can also be changed in 90° increments depending on the piping direction.



Improved piping design flexibility

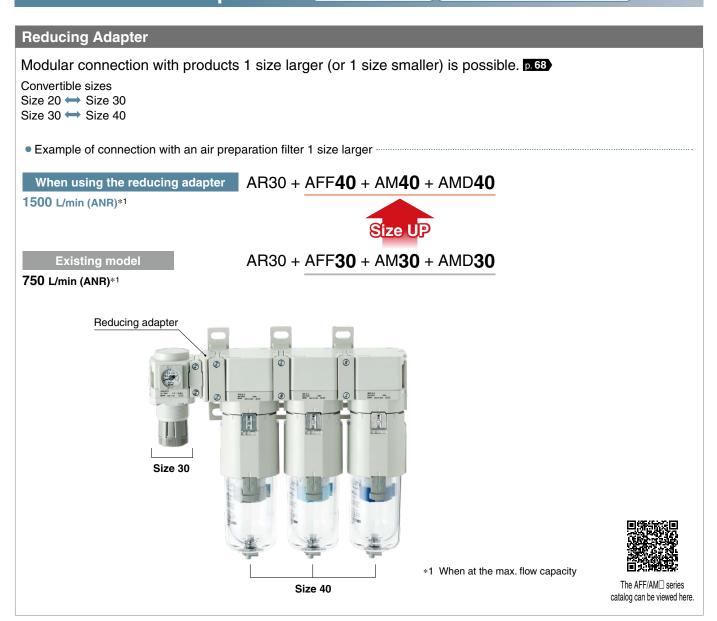
Cross Adapter

Allows for devices to be connected on the top, bottom, left, and right with the use of a spacer between the product and each device **D**.69



SMC

Size conversion is possible Flow capacity UP Extended maintenance cycle



Simple Specials System

Simple Specials System

Short lead times

This system enables us to respond to your special needs (additional machining, accessory assembly, or the designing of a modular unit) and deliver your personalized products as quickly as standard products.

Repeat orders

A system designed to respond quickly and

easily to your special ordering needs

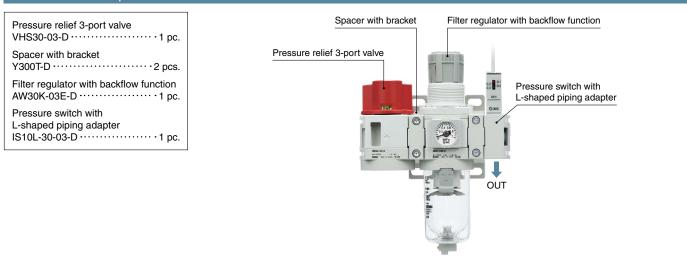
Once we receive a simple special part number from one of your previous orders, we will process the order, manufacture the product, and deliver it to you as quickly as possible.

Please contact your local sales representative for more details.

* Please contact your local sales representative for ordering procedures.

Examples of Simple Specials

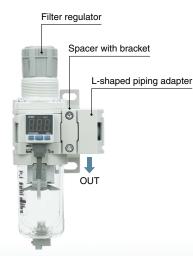
Combination example 1



Combination example 2

Filter regulator AW30-03E1-D ······1 pc.	
Spacer with bracket Y300T-D ······1 pc.	
L-shaped piping adapter E300L-03-D ······1 pc.	

* Please contact your local sales representative for ordering procedures.

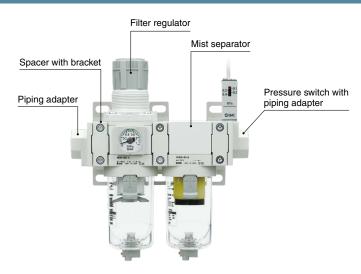


Combination example 3 $\ast~$ Please contact your local sales representative for ordering procedures. L-shaped piping adapter E300L-03-D ······1 pc. Air filter Regulator Spacer with bracket Pressure relief 3-port valve Spacer with bracket By-pass port L-shaped piping adapter Air filter AF30-03-D1 pc. 0 0 6 Regulator I AR30-03E1-D1 pc. 0 0 A730 0 Cross spacer 1 Y34-03-D1 pc. Pressure relief 3-port valve VHS30-03-D ······1 pc. IN Cross spacer By-pass port

Combination example 4

Piping adapter E300-03-D ······1 pc.
Spacer with bracket Y300T-D ····································
Filter regulator AW30-03E-D ······1 pc.
Mist separator AFM30-03-D ······1 pc.
Pressure switch with piping adapter IS10E-30-03-D ······ 1 pc.

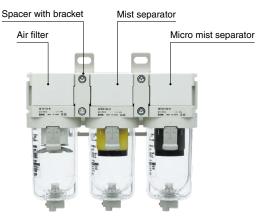
* Please contact your local sales representative for ordering procedures.



Combination example 5

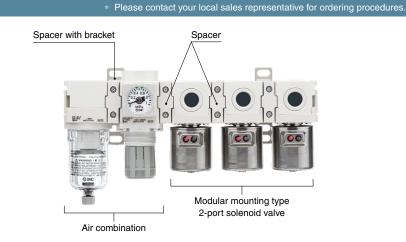
Air filter AF30-03-D ·····1 pc.
Spacer with bracket Y300T-D ······2 pcs.
Mist separator AFM30-03-D ······1 pc.
Micro mist separator AFD30-03-D ······ 1 pc.

* Please contact your local sales representative for ordering procedures.



Combination example 6

Air combination AC20B-02E-D ······1 pc.
Modular mounting type 2-port solenoid valve JSXM21-AN302R-5G-U-F ······3 pcs.
Spacer with bracket Y200T-D ······1 pc.
Spacer Y200-D·····2 pcs.

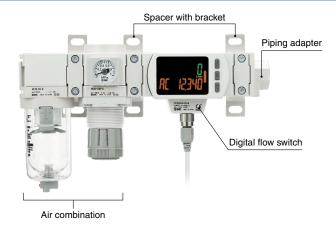


Combination example 7

Digital flow switch PF3A701H-CS-M ······ 1 pc.
Air combination AC30B-03E-D ······1 pc.
Spacer with bracket Y300T-D ······2 pcs.
Piping adapter E300-03-D ······1 pc.

- Avoid mounting the lubricator on the inlet side.
 If a pressure relief 3-port valve is installed on the inlet side of the digital flow switch, causing a backflow of air, the measured value will change.

* Please contact your local sales representative for ordering procedures.

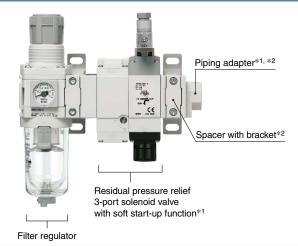


Combination example 8

Filter regulator AW30-03E-D ······ 1 pc.	
Residual pressure relief 3-port solenoid valve with soft start-up function VP546E-5DZ1-S ·······1 pc.	
Spacer with bracket Y300T-D ······2 pcs.	
Piping adapter E300-03-D ······1 pc.	

- *1 Connection threads are not available for the residual pressure relief 3-port solenoid valve. Select a piping adapter.
- *2 Refer to pages 57 and 59 for details on the spacer with bracket and piping adapter.

* Please contact your local sales representative for ordering procedures.



Connectable Modular Components

Common Supply Regulator

AR M(K)-D





Mist Separator Regulator AWM-D **Micro Mist Separator** Regulator AWD-D





Compressed Air Preparation Filter Line Filter AFF Mist Separator AM **Micro Mist Separator AMD** Activated Carbon Filter AMK





OSHA Standard Compliant Pressure Relief 3-Port Valve with Locking Holes VHS -D/VHS W-D















3-Port Solenoid Valve/ **Residual Pressure Release Valve with Detection of Main** Valve Position VP546/746

Direct Operated/Pilot Operated 2-Port Solenoid Valve

JSX/JSX



3-Color Display Digital Flow Switch PF3A7/8H(-L)





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Air Combination: Air Filter + Mist Separator + Regulator AC20C-D to AC40C-D

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Air Combination: Filter Regulator + Mist Separator AC20D-D to AC40D-D

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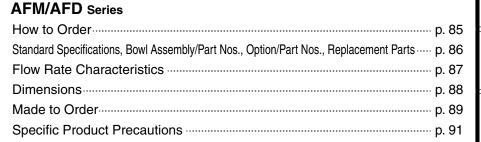




Modular Type Air Filter AF Series

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 AFM / AFD

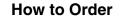
AB

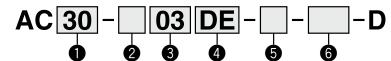
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₹

Air Combination Air Filter + Regulator + Lubricator AC20-D to AC60-D







Option and Semi-standard Symbol Selection

- · Select one each for **a** to **j**.
- \cdot When more than one specification is required, indicate
- in alphanumeric order.
- Example) AC30-F03DE1-16NR-D

						0							
				Symbol	Description			Body size)				
						20	30	40	50	60			
				Nil	Rc								
2		Pi	pe thread type	N *1	NPT	•	•		•	•			
				F *2	G	•			•				
				+									
				01	1/8		_		_	—			
				02	1/4				_	_			
6			Davit size	03	3/8	_			—	—			
8	7		Port size	04	1/2	_	_		—	—			
				06	3/4	_	_		•	—			
				10	1	_	_	—	•				
				+									
			Floot time	Nil	Without auto drain				\bullet				
		а	Float type auto drain	C *4	N.C. (Normally closed) Drain port is closed when pressure is not applied.				\bullet	•			
				D *5	N.O. (Normally open) Drain port is open when pressure is not applied.				\bullet	\bullet			
				+									
	ę			Nil	Without pressure gauge				•	●			
4	Option*3		Pressure gauge*6	E	Square embedded type pressure gauge (with limit indicator)				●	•			
9	D		Flessule gauge	G	Round type pressure gauge (with limit indicator)				●				
		b		М	Round type pressure gauge (with color zone)				●				
				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				•				
				+				, I					
6	Attachment	с	Pressure relief	Nil	Without attachment	•	•	•	•	•			
	Attac		3-port valve	v	Mounting position: $AF + AR + AL + V$	•	•	•	•	_			
				+									
		d	Set pressure*7	Nil	0.05 to 0.85 MPa setting				●	●			
		u	Set plessure	1	0.02 to 0.2 MPa setting				•				
		_		+				,	,				
				Nil	Polycarbonate bowl			•	●				
				2	Metal bowl				●				
		е	Bowl ^{*8}	6	Nylon bowl		•	•	•				
	ard	-		8	Metal bowl with level gauge		•		•				
	and			C	With bowl guard		*9	* ⁹	*9	*9			
6	-sta			6C	With bowl guard (Nylon bowl)		* ¹⁰	* ¹⁰	*10	*10			
	Semi-standard			+									
	Ō		A 1 (11)	Nil	With drain cock		•						
		f	Air filter	J *12	Drain guide 1/8		-	-	_	_			
			drain port*11	14/#12	Drain guide 1/4		•	•	•	•			
				W *13	Drain cock with barb fitting (for ø6 x ø4 nylon tube)								
				+	MPH and during an all	-	-		_				
		g	Lubricator lubricant	Nil 0*14	Without drain cock		•	•	•				
			exhaust port	3 *14	Lubricator with drain cock				•				

Air Combination AC20-D to AC60-D Series



AC

AC30-D

								,	AC30-D		Ļ
								0			AF + AR + AL
		Symt									H H
		Oynn		Desen	plion			60	+		
							20 30	40	50	60	щ
h	Exhaust mechanis	sm Nil	0 11				• •	•		•	
		N	Non-relieving	type			\bullet			\bullet	A
Semi-standard		+									+ AL
i anda	Flow direction	Ni	Flow direction	n: Left to right			• •	•		•	AW
6 st		R	Flow direction	n: Right to left			• •				◄
		+									Ω.
Sei		Ni	Unit on produ	ct label: MPa. °C. F	Pressure gauge in S	I units: MPa	• •				+ AR
i	Unit	Z *1			ssure gauge: MPa/p)*17 ()*17	0*17	0*17	0*17	+
, II,		ZA*			it selection function		× ¹⁸ Δ* ¹⁸			△*18	AF
	e is NPT1/8 (applica				ge is attached, a 1.0		f a lubricator w				
The auto d fitting (appli 2 Drain guide G1/4 (appli 3 Options G loose at the 4 When pres does not sta	4 (applicable to the rrain port comes with icable to the AC30-D a is G1/8 (applicable cable to the AC30-D t and M are not asse to time of shipment. soure is not applied art the auto drain med	n a ø3/8" to AC60-D to the AC to AC60-D mbled an , condens chanism w	One-touch type). *7 Pre 20-D) and pre b. spe d supplied *8 Ret che ate which *9 A b Il be left in (po	e. 0.4 MPa pressure g ssure can be set his ssure in some cases, cification range. er to chemical data mical resistance of the owl guard is provide ycarbonate).	ed as standard equip	This p teation the N. in the provid Canno 1 for (with o The di iment unit se *16 For op	e pipe thread ty roduct is for or ew Measurem ed for use in Ja to be used with olor zone). Ava gital pressure s election functior tions: E1, E2, E	verseas ent Act. apan.) M: Round ailable by switch wil n, setting 3, E4	(The SI un d type press request for l be equippe to psi initially	it type is ure gauge special. d with the y.	AF + AFM +
ending oper 5 If the comp less than 1 drain cock N.C. type is	Releasing the residua rations for the day is r ressor is small (0.75 I 100 L/min (ANR)), a may occur during the recommended.	recommen kW, discha air leakage e start of d	ded. *11 Th rge flow is no e from the *12 W operations. *13 Th *14 W	e combination of float t available. ithout a valve function e combination of metal	is standard equipment (n t type auto drain C and bowl 2 and 8 is not avail Air filter drain port, the	d D is New M use in ∗17 ○: For lable. *18 △: Sel	roduct is for ove Measurement A Japan.) the pipe thread ect with options	ct. (The type: NP	SI unit is pro T only	ovided for	AW + AFM
otaniaai	Model		AC20-D	AC30-D	AC40-D	AC40-06-D	AC50	- D	AC60	ח-ר	
		AF]	AF20-D	AF30-D	AF40-D	AF40-06-D	AC30		AC00		Attachments
Componen		AR]	AR20-D	AR30-D	AR40-D	AR40-06-D	AR50		AR6		Je l
		AL]	AL20-D	AL30-D	AL40-D	AL40-06-D	AL50		AL60		L L
Port size			1/8, 1/4	1/4, 3/8	1/4, 3/8, 1/2	3/4	3/4,	1	1		ac
Pressure ga	auge port size*1 [[AR]	1/8								
Fluid					A	lir					٩
Ambient ar	nd fluid temperate	ures*2	–5 to 60°C (No freezing)								
Proof pres	sure				1.5						
	ating pressure			1	1.0						AF
Auto drain m		[AF]	0.1 MPa			0.15 MPa					4
operating pre		AF]	—		0.05 to 0	0.1 MPa					
Set pressu					0.05 to 0						_
	ed air purity clas										
			8 cm ³	25 cm ³	130 0573-1.20		cm ³				/ AFD
Drain capa	apacity [AF] 8 cm ³ 25 cm ³ 45 cm ³ Port size 1/4: Port size 1/4: 30 L/min (ANR) 45 cm ³									AFM /	
Min. drippi rate ^{*6}	ing flow [[AL]	15 L/min (ANR)	30 L/min (ANR) Port size 3/8: 40 L/min (ANR)	Port size 3/8: 40 L/min (ANR) Port size 1/2: 50 L/min (ANR)	50 L/min (ANR)	190 L/min	(ANR)	220 L/mir	n (ANR)	AR
Oil capacit		[AL]	25 cm ³	55 cm ³		13	5 cm ³				
Recommen	and and the density of the second of the										
Bowl material [AF/AL] Polycarbonate											
	erial [1	Polycar						Ļ
Bowl guar	erial [d [AF/AL] [AF/AL]	Semi-standard (Steel)		Polycar Star	rbonate ndard (Polycarbo	nate)				AL
Bowl guar Constructi	erial [d [AF/AL]	X 7		Polycar Star Relievii	rbonate ndard (Polycarbo ng type	,				AL
Bowl guar	erial [d [AF/AL] [AF/AL]	Semi-standard (Steel) 0.38 kg	0.75 kg	Polycar Star	rbonate ndard (Polycarbo	nate) 3.34 k	٢g	3.60	kg	AL

*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.

*2 -5 to 50°C for the products with the digital pressure switch

*3 For the following conditions in accordance with [Test condition: ISO 8573-4:2001 compliant, Test method ISO 12500-3:2009 compliant]

Conditions: When a new element is used, and the flow capacity, inlet pressure, and the amount of solid bodies on the filter inlet side are stable

*4 The compressed air purity class is indicated based on ISO 8573-1:2010 Compressed air – Part 1: Contaminants and purity classes. For details on this standard, refer to page 131.

*5 The compressed air quality class on the inlet side is [7:4:4].

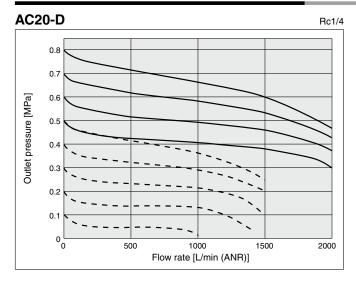
*6 • The flow rate is 5 drops or greater/min under the following conditions: Inlet pressure of 0.5 MPa; Class 1 turbine oil (ISO VG32); Temperature at 20°C; Oil adjustment valve fully open. · For a circuit that repeatedly turns ON and OFF on the outlet side, make the adjustment so that the average air consumption per minute becomes the minimum dripping flow rate or more. 18

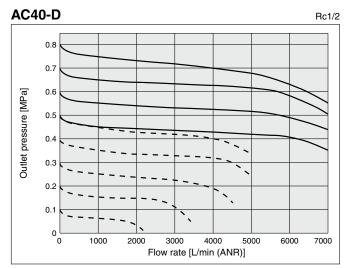


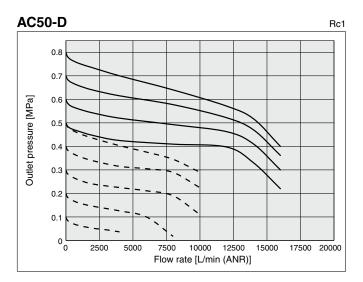
AV

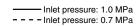
AC20-D to AC60-D Series

Flow Rate Characteristics (Representative values)

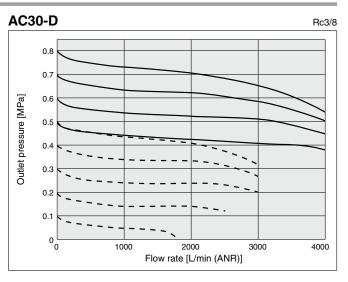




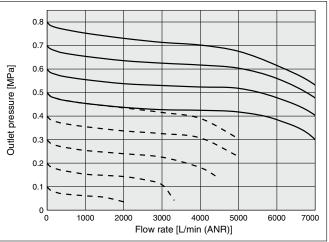


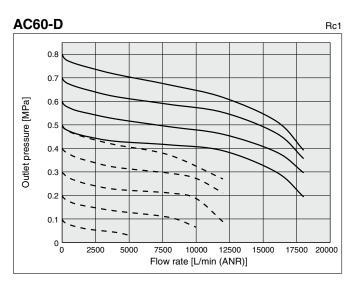


Rc3/4





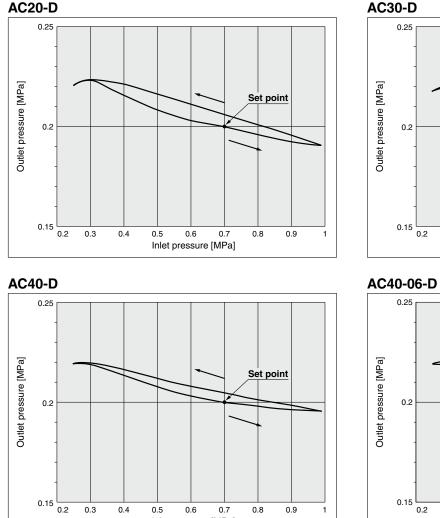




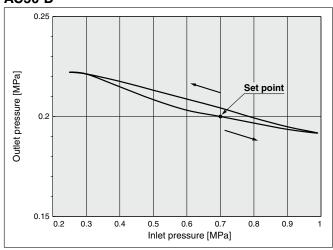
Air Combination AC20-D to AC60-D Series

Pressure Characteristics (Representative values)

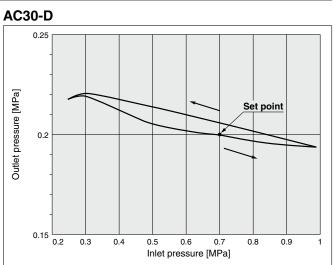
Conditions: Inlet pressure of 0.7 MPa, Outlet pressure of 0.2 MPa, Flow rate 20 L/min (ANR)



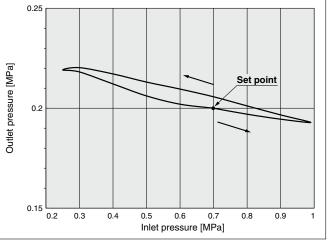




Inlet pressure [MPa]

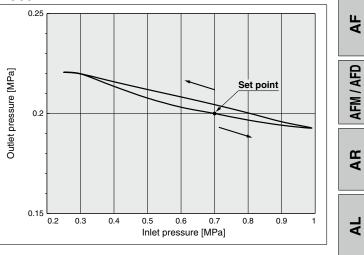








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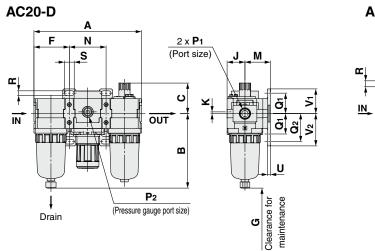


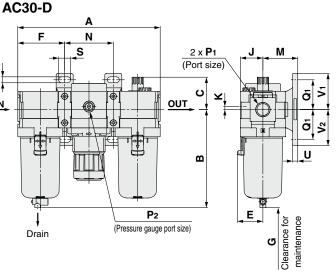


AV

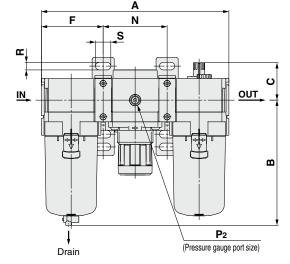
AC20-D to AC60-D Series

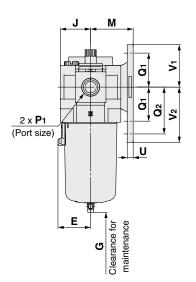
Dimensions



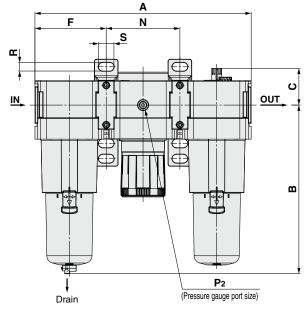


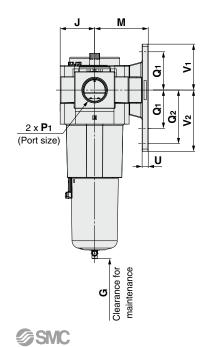
AC40-D to AC40-06-D



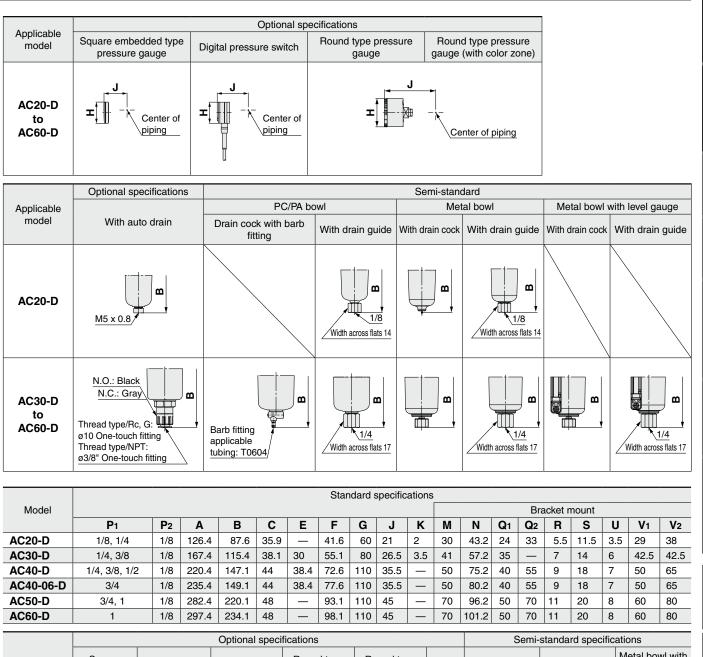


AC50-D to AC60-D





Air Combination AC20-D to AC60-D Series



	Optional specifications												Semi-standard specifications					
Model		Square nbedded Digital pressure Round type pressure pressure pressure			With auto	PC/P4	A bowl	Meta	bowl	Metal b level g	owl with gauge							
Model	type pr gau		swit	ch	press gau		gauge (standa		gauge color z	•	drain	With barb fitting	With drain guide	With drain cock	With drain guide	With drain cock	With drain guide	
	н	J	н	J	Н	J	Н	J	Н	J	В	В	В	В	В	В	В	
AC20-D	□28	27	□27.8	37.5	ø37.5	57.5	ø37.5	58.5	ø37.5	58.5	104.9	—	91.4	87.4	93.9	_	_	
AC30-D	□28	32.5	□27.8	43	ø37.5	63	ø37.5	64	ø37.5	64	157.1	123.9	122.2	117.8	122.3	137.8	142.3	
AC40-D	□28	41.5	□27.8	52	ø42.5	73	ø42.5	73	ø42.5	73	186.9	155.6	153.9	149.5	154	169.5	174	
AC40-06-D	□28	41.5	□27.8	52	ø42.5	73	ø42.5	73	ø42.5	73	188.9	157.6	155.9	151.5	156	171.5	176	
AC50-D	□28	51	□27.8	61.5	ø42.5	82.5	ø42.5	82.5	ø42.5	82.5	259.9	228.6	226.9	222.5	227	242.5	247	
AC60-D	□28	51	□27.8	61.5	ø42.5	82.5	ø42.5	82.5	ø42.5	82.5	273.9	242.6	240.9	236.5	241	256.5	261	

AL AR AFM/AFD

AC

AW + AL AF + AR + AL

AF + AR

AF + AFM + AR

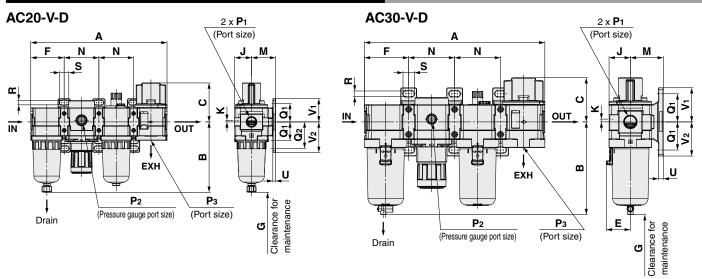
AW + AFM

Attachments

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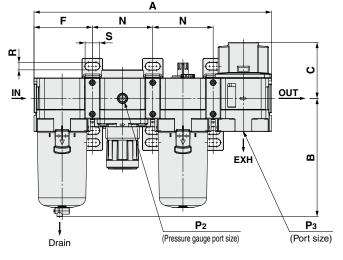
AV

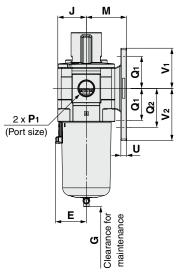
AC20-D to AC60-D Series



Dimensions: With Pressure Relief 3-Port Valve (V)



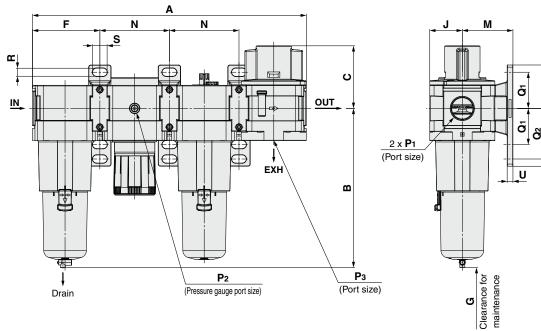




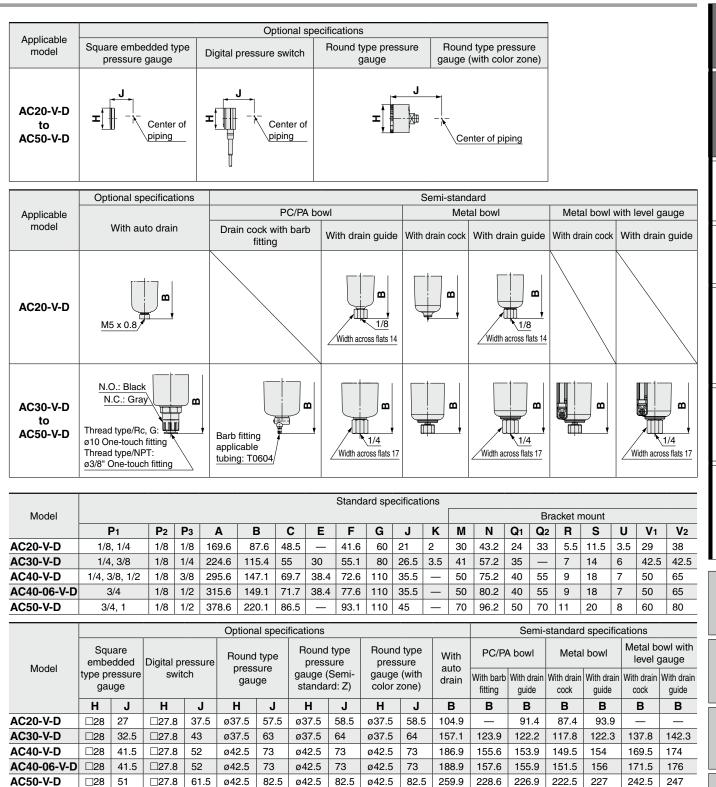
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Air Combination AC20-D to AC60-D Series

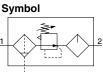


AB

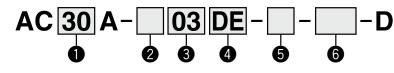
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Air Combination Filter Regulator + Lubricator AC20A-D to AC60A-D







Option and Semi-standard Symbol Selection

 \cdot When more than one specification is required, indicate

in alphanumeric order.

Example) AC30A-F03D	<u>E1-16NR-</u> D
---------------------	-------------------

		_						Û		
				Symbol	Description			Body	size	
						20) 30			60
				Nil	Rc					
2		Pi	pe thread type	N*1	NPT					
9		• •		F *2	G	Ĭ	-		-	•
				+	5		•			•
				01	1/8			_		
				02	1/4				, _	
				03	3/8		. •) _	
B			Port size	04	1/2) _	_
				06	3/4	_				
				10	1	_		-	- •	
				+						
				Nil	Without auto drain					
		а	Float type auto drain	C *4	N.C. (Normally closed) Drain port is closed when pressure is not applied.	•				
			auto urain	D *5	N.O. (Normally open) Drain port is open when pressure is not applied.		. •			
				+						
	ę			Nil	Without pressure gauge					
	Option ^{*3}		Pressure gauge*6	E	Square embedded type pressure gauge (with limit indicator)					
4	Dpti		Flessule gauge	G	Round type pressure gauge (with limit indicator)					
		b		M	Round type pressure gauge (with color zone)					
		U		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					
_		_		+						
6	Attachment	c	Pressure relief	Nil	Without attachment	•	•			•
	Attacl		3-port valve	v	Mounting position: AW + AL + \mathbf{V}	•	•			_
				+					•	,
		d	Set pressure*7	Nil	0.05 to 0.85 MPa setting					
		u	Set pressure	1	0.02 to 0.2 MPa setting					
				+						
				Nil	Polycarbonate bowl					
				2	Metal bowl					
		е	Bowl ^{*8}	6	Nylon bowl					
		ľ	Bown	8	Metal bowl with level gauge		- ●			•
	σ			С	With bowl guard	•				
	dar			6C	With bowl guard (Nylon bowl)		*	° —*	10*10	⁰ —* ¹⁰
6	Semi-standard			+						
	ni-s			Nil	With drain cock	•	-			•
	Ser	f	Filter regulator	J *12	Drain guide 1/8		-		-	<u> </u>
			drain port*11		Drain guide 1/4		-			•
				W *13	Drain cock with barb fitting (for ø6 x ø4 nylon tube)		- 🛛 🔴			
				+			-	-	-	
		g	Lubricator lubricant		Without drain cock					
			exhaust port	3 *14	Lubricator with drain cock					
			– .	+		_	-		-	
		h	Exhaust	Nil	Relieving type		-		-	
			mechanism	Ν	Non-relieving type					
05										

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[·] Select one each for **a** to **j**.

Air Combination AC20A-D to AC60A-D Series



A A C

AF + AR + AL

AW + AL

AF + AR

AF + AFM + AR

AW + AFM

Attachments

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AFM / AFD

AB

Å

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AC30A-E

								0		
				Symbol	Description		E	Body siz	e	
						20	30	40	50	60
	5		Flow direction	Nil	Flow direction: Left to right					
	standard	•	Flow direction	R	Flow direction: Right to left				•	
6	ano			+						
6				Nil	Unit on product label: MPa, °C, Pressure gauge in SI units: MPa	•		•	•	
	Semi-	j	Unit	Z *15	Unit on product label: psi, °F, Pressure gauge: MPa/psi dual scale	O*17	O*17	O* ¹⁷	O*17	O*17
	0			ZA *16	Digital pressure switch: With unit selection function	△*18	△*18	△*18	△*18	△*18

- *1 Drain guide is NPT1/8 (applicable to the AC20A-D) and NPT1/4 (applicable to the AC30A-D to AC60A-D). The auto drain port comes with a ø3/8" One-touch fitting (applicable to the AC30A-D to AC60A-D).
- *2 Drain guide is G1/8 (applicable to the AC20A-D) and G1/4 (applicable to the AC30A-D to AC60A-D).
- *3 Options G and M are not assembled and supplied loose at the time of shipment.
- *4 When pressure is not applied, condensate which does not start the auto drain mechanism will be left in the bowl. Releasing the residual condensate before ending operations for the day is recommended.
- *5 If the compressor is small (0.75 kW, discharge flow is less than 100 L/min (ANR)), air leakage from the drain cock may occur during the start of operations. N.C. type is recommended.
- *6 When the pressure gauge is attached, a 1.0 MPa pressure gauge will be fitted for standard (0.85 MPa) type. 0.4 MPa pressure gauge for 0.2 MPa type.
 - *7 Pressure can be set higher than the specification pressure in some cases, but use pressure within the specification range.
 - *8 Refer to chemical data on pages 111 and 129 for chemical resistance of the bowl.
 - *9 A bowl guard is provided as standard equipment (polycarbonate).
 - *10 A bowl guard is provided as standard equipment (nylon).
 - The combination of float type auto drain C and D is *11 not available.
- *12 Without a valve function
- *13 The combination of metal bowl 2 and 8 is not available

- *14 When choosing with W: Filter regulator drain port, the drain cock of a lubricator will be with barb
- fittings. For the pipe thread type: NPT *15
 - This product is for overseas use only according to the New Measurement Act. (The SI unit type is provided for use in Japan.) Cannot be used with M: Round type pressure gauge
 - (with color zone). Available by request for special. The digital pressure switch will be equipped with the unit selection function, setting to psi initially. For options: E1, E2, E3, E4
 - This product is for overseas use only according to the New Measurement Act. (The SI unit is provided for use in Japan.)
- *17 O: For the pipe thread type: NPT only
- *18 △: Select with options: E1, E2, E3, E4.

Standard Specifications

Model		AC20A-D	AC30A-D	AC40A-D	AC40A-06-D	AC50A-D	AC60A-D							
Component Filter Regulator	[AW]	AW20-D	AW30-D	AW40-D	AW40-06-D	AW60-D	AW60-D							
Lubricator	[AL]	AL20-D	AL30-D	AL40-D	AL40-06-D	AL50-D	AL60-D							
Port size		1/8, 1/4	1/4, 3/8	1/4, 3/8, 1/2	3/4	3/4, 1	1							
Pressure gauge port size*1	[AW]	1/8												
Fluid		Air												
Ambient and fluid temper	atures*2	-5 to 60°C (No freezing)												
Proof pressure		1.5 MPa												
Max. operating pressure		1.0 MPa												
Auto drain minimum N.C.	[AW]	0.1 MPa 0.15 MPa												
operating pressure N.O.	[AW]	— 0.1 MPa												
Set pressure range	[AW]		0.05 to 0.85 MPa											
Nominal filtration rating ^{*3}	[AW]			5 μ	um									
Compressed air purity cla	ass*4			ISO 8573-1:20	10 [6 : 4 : –]*5									
Drain capacity	[AW]	8 cm ³	25 cm ³		45 cm ³									
Min. dripping flow rate ^{*6}	[AL]	15 L/min (ANR)	Port size 1/4: 30 L/min (ANR) Port size 3/8: 40 L/min (ANR)	Port size 1/4: 30 L/min (ANR) Port size 3/8: 40 L/min (ANR) Port size 1/2: 50 L/min (ANR)	50 L/min (ANR)		220 L/min (ANR)							
Oil capacity	[AL]	25 cm ³	55 cm ³			cm ³								
Recommended lubricant	[AL]			Class 1 turbine	oil (ISO VG32)									
Bowl material	[AW/AL]	Polycarbonate												
Bowl guard	[AW/AL]	Semi-standard (Steel) Standard (Polycarbonate)												
Construction	[AW]	Relieving type												
Weight		0.31 kg	0.58 kg	1.12 kg	1.22 kg	2.90 kg	2.97 kg							

*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.

*2 -5 to 50°C for the products with the digital pressure switch

*3 For the following conditions in accordance with [Test condition: ISO 8573-4:2001 compliant, Test method ISO 12500-3:2009 compliant]

Conditions: When a new element is used, and the flow capacity, inlet pressure, and the amount of solid bodies on the filter inlet side are stable

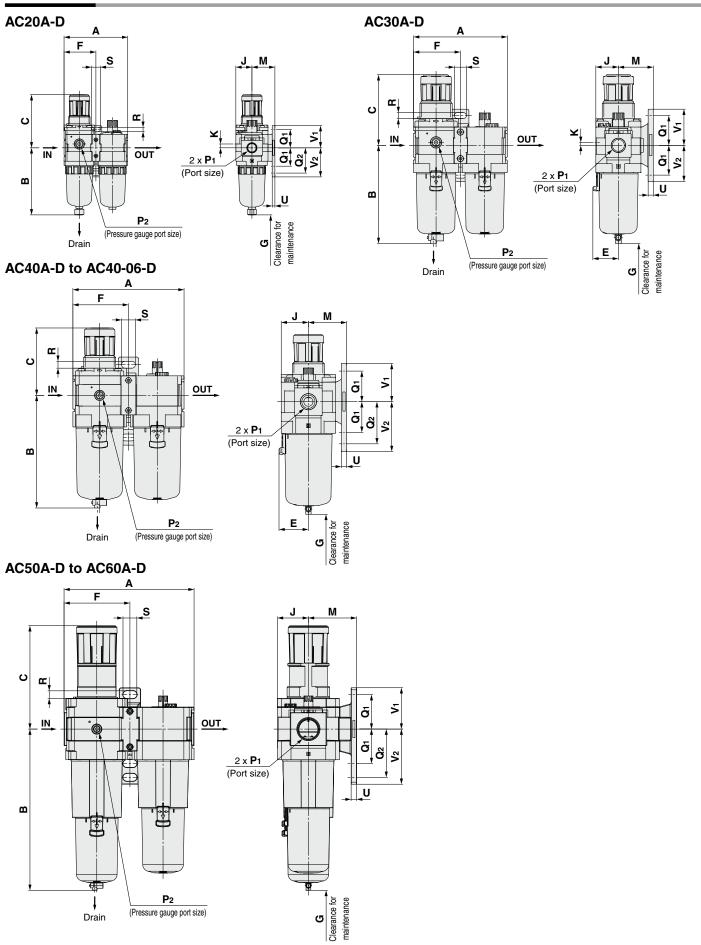
*4 The compressed air purity class is indicated based on ISO 8573-1:2010 Compressed air - Part 1: Contaminants and purity classes.

For details on this standard, refer to page 131. *5 The compressed air quality class on the inlet side is [7:4:4].

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



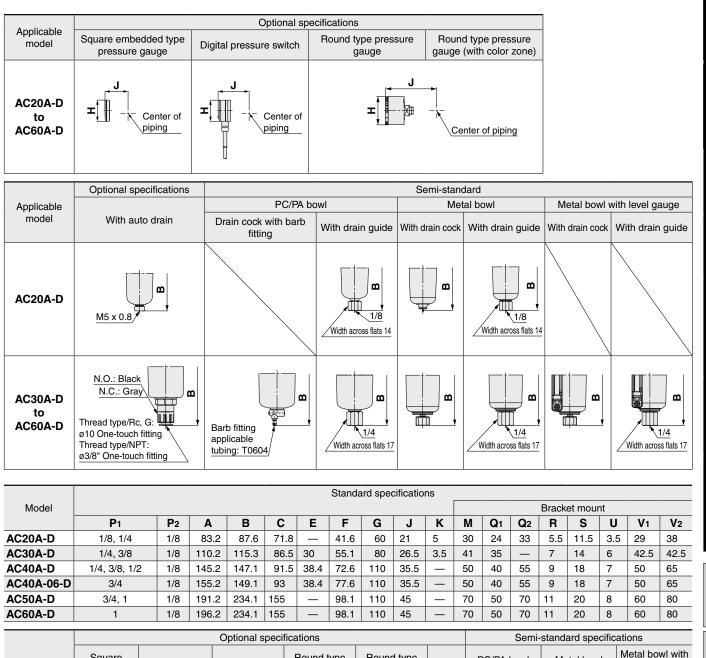
AC20A-D to AC60A-D Series



SMC

Dimensions

Air Combination AC20A-D to AC60A-D Series



					Optiona	ai speci	lications						Semi-	Stanuarc	a specific	alions	
Model		uare edded	Digital pr	Digital pressure		Round type		l type sure	Round press		With auto	PC/PA bowl			l bowl	Metal bowl with level gauge	
WOUEI	1	type pressure gauge		switch				gauge (Semi- standard: Z)		gauge (with color zone)		With barb fitting	With drain guide	With drain cock	With drain guide	With drain cock	With drain guide
	н	J	н	J	н	J	Н	J	н	J	В	В	В	В	В	В	В
AC20A-D	□28	27	□27.8	37.5	ø37.5	57.5	ø37.5	58.5	ø37.5	58.5	104.9	—	91.4	87.4	93.9	—	—
AC30A-D	□28	32.5	□27.8	43	ø37.5	63	ø37.5	64	ø37.5	64	157.1	123.9	122.2	117.8	122.3	137.8	142.3
AC40A-D	□28	41.5	□27.8	52	ø42.5	73	ø42.5	73	ø42.5	73	186.9	155.6	153.9	149.5	154	169.5	174
AC40A-06-	· D □28	41.5	□27.8	52	ø42.5	73	ø42.5	73	ø42.5	73	188.9	157.6	155.9	151.5	156	171.5	176
AC50A-D	□28	51	□27.8	61.5	ø42.5	82.5	ø42.5	82.5	ø42.5	82.5	273.9	242.6	240.9	236.5	241	256.5	261
AC60A-D	□28	51	□27.8	61.5	ø42.5	82.5	ø42.5	82.5	ø42.5	82.5	273.9	242.6	240.9	236.5	241	256.5	261

 AR
 AFM / AFD
 AF
 Attachments
 AW + AFM
 AF + AFM + AR

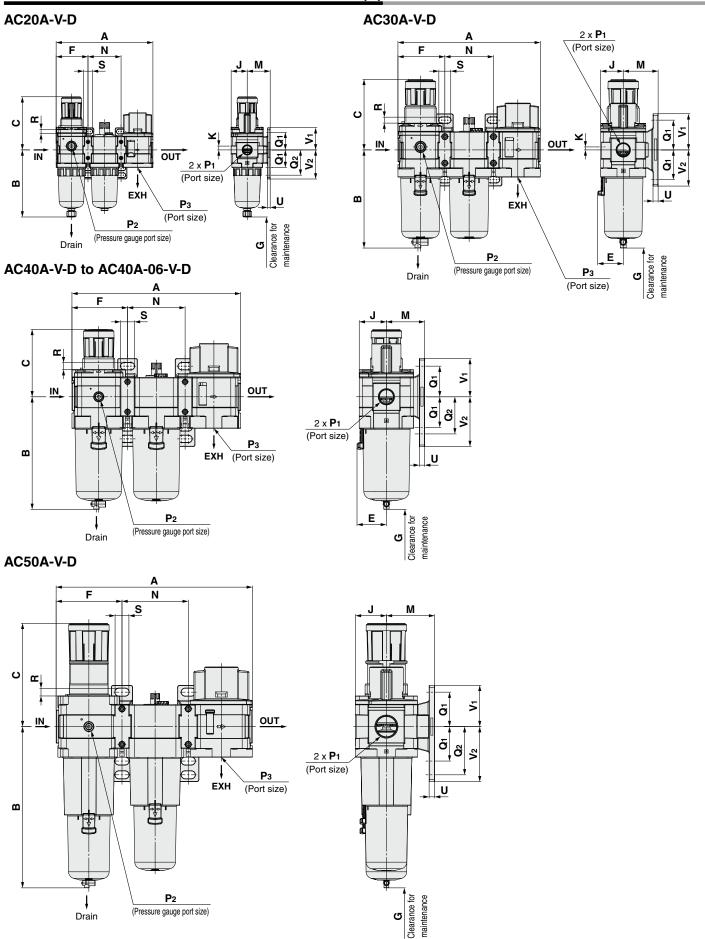
AC

AW + AL AF + AR + AL

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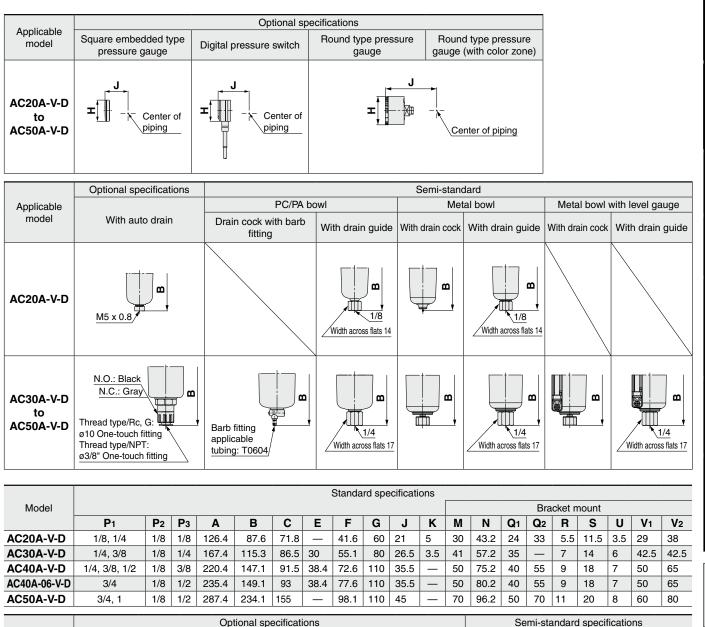
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AC20A-D to AC60A-D Series



Dimensions: With Pressure Relief 3-Port Valve (V)

Air Combination AC20A-D to AC60A-D Series



$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	C20A-V-D	
type pressure gauge switch gauge gauge (Semi-standard: Z) gauge (With color zore) drain With barb fitting With drain guide With drain	Model	
AC20A-V-D □28 27 □27.8 37.5 ø37.5 57.5 ø37.5 58.5 104.9 — 91.4 87.4 93.9 — AC30A-V-D □28 32.5 □27.8 43 ø37.5 63 ø37.5 64 ø37.5 64 157.1 123.9 122.2 117.8 122.3 137.8		
AC30A-V-D 28 32.5 27.8 43 ø37.5 63 ø37.5 64 ø37.5 64 157.1 123.9 122.2 117.8 122.3 137.8		
	20A-V-D	
	30A-V-D	
AC40A-V-D 28 41.5 27.8 52 Ø42.5 73 Ø42.5 73 Ø42.5 73 186.9 155.6 153.9 149.5 154 169.5	40A-V-D	
AC40A-06-V-D 🗆 28 41.5 🔤 27.8 52 Ø42.5 73 Ø42.5 73 Ø42.5 73 Ø42.5 73 188.9 157.6 155.9 151.5 156 171.5	0A-06-V-D	
AC50A-V-D 🗆 28 51 🔤 27.8 61.5 ø42.5 82.5 ø42.5 82.5 ø42.5 82.5 ø42.5 82.5 273.9 242.6 240.9 236.5 241 256.5		

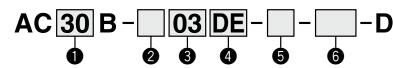
AW

AR

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Air Combination Air Filter + Regulator AC20B-D to AC60B-D

How to Order



Option and Semi-standard Symbol Selection

- Select one each for **a** to **i**.
- When more than one specification is required, indicate in alphanumeric order.
- Example) AC30B-F03DE1-16NR-D

	<u> </u>	<u> </u>		Symbol	Description			0		
				Symbol	Description	20	1	Body size		60
						20	30	40	50	60
				Nil	Rc	•	•	•	•	
0		Pi	pe thread type	N *1	NPT		•	•	•	
				F *2	G					
_				+			1			
				01	1/8		—	—	—	—
				02	1/4		•	•		—
8			Port size	03	3/8		•	•		—
				04	1/2			•	_	
				06	3/4		<u> </u>	•	•	
				10	1			—		•
				+						
			Float type	Nil O*4	Without auto drain		•	•		
		а	auto drain	C*4	N.C. (Normally closed) Drain port is closed when pressure is not applied.		•	•	•	
				D *5	N.O. (Normally open) Drain port is open when pressure is not applied.					
				+	Without proceure gouge				•	
	3*3			Nil E	Without pressure gauge	•	•	•	•	
4	Option*3		Pressure gauge*6	G	Square embedded type pressure gauge (with limit indicator) Round type pressure gauge (with limit indicator)		•	•	•	•
	ő			M	Round type pressure gauge (with finite indicator) Round type pressure gauge (with color zone)		•	•	•	•
		b		E1	Output: NPN output, Electrical entry: Wiring bottom entry		•	•	•	•
			Digital pressure	E1 E2	Output: NPN output, Electrical entry: Wring bottom entry	•	•	•	•	•
			switch	E3	Output: PNP output, Electrical entry: Wring top entry		•		•	•
			ownorr	E4	Output: PNP output, Electrical entry: Wring bottom entry			•	•	
				+	Ouput The ouput, Electrical entry. Writing top entry			•	•	•
	ent			Nil	Without attachment		•	•	•	•
6	Attachment	c	Pressure relief 3-port valve	v	Mounting position: AF + AR + V	•	•	•	•	_
	Atta		5-poir valve	V1*7	Mounting position: \mathbf{V} + AF + AR \Box K	•	•	•	•	_
				+			1			
		-	Set pressure*8	Nil	0.05 to 0.85 MPa setting					•
		d	Set pressure	1	0.02 to 0.2 MPa setting			•	•	•
				+						
				Nil	Polycarbonate bowl			•	•	•
				2	Metal bowl			•	•	•
		е	Bowl*9	6	Nylon bowl			\bullet		
	ard		DOWN	8	Metal bowl with level gauge			•	•	
	Indi			С	With bowl guard	•	*10	*10	*10	*10
6	-sta			6C	With bowl guard (Nylon bowl)		*11	*11	*11	*11
	Semi-standard			+			1			
	ů			Nil	With drain cock	•	•	•	•	•
		f	Air filter drain	J *13	Drain guide 1/8		_	_	_	
			port*12		Drain guide 1/4	<u> </u>	•	•	•	•
				W *14	Drain cock with barb fitting (for ø6 x ø4 nylon tube)			\bullet		
			- · ·	+	Dellas instance	-	-	_	-	_
		g	Exhaust	Nil	Relieving type			•		
			mechanism	N	Non-relieving type			●		

Air Combination AC20B-D to AC60B-D Series



AC

AW + AL || AF + AR + AL

AF + AR

AF + AFM + AR

AW + AFM

Attachments

AF

AFM / AFD

AB

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₹

AC30B-D

	/	<u> </u>		Symbol	Description		E	1 Body size	9	
						20	30	40	50	60
	5	h	Elow direction	Nil	Flow direction: Left to right					●
	tandard	h	Flow direction	R	Flow direction: Right to left					
6	anc			+						
6	ပု			Nil	Unit on product label: MPa, °C, Pressure gauge in SI units: MPa	•		•	•	
	Semi	i	Unit	Z *15	Unit on product label: psi, °F, Pressure gauge: MPa/psi dual scale	O*17	0*17	O* ¹⁷	O* ¹⁷	0*17
	0,			ZA *16	Digital pressure switch: With unit selection function	△*18	△*18	△*18	△*18	\triangle^{*18}
			is NPT1/8 (applicable				tion of meta		nd 8 is not	available.

- and NPT1/4 (applicable to the AC30B-D to AC60B-D). The auto drain port comes with a ø3/8" One-touch fitting (applicable to the AC30B-D to AC60B-D).
- *2 Drain guide is G1/8 (applicable to the AC20B-D) and G1/4 (applicable to the AC30B-D to AC60B-D).
 *3 Options G and M are not assembled and supplied
- loose at the time of shipment.
 *4 When pressure is not applied, condensate which does not start the auto drain mechanism will be left in the bowl. Beleasing the residual condensate before.
- the bowl. Releasing the residual condensate before ending operations for the day is recommended.
 *5 If the compressor is small (0.75 kW, discharge flow is less than 100 L/min (ANR)), air leakage from the drain cock may occur during the start of operations. N.C. type is recommended.
- *6 When the pressure gauge is attached, a 1.0 MPa pressure gauge will be fitted for standard (0.85 MPa)
- type. 0.4 MPa pressure gauge for 0.2 MPa type.
 *7 The regulator is equipped with a backflow function in this configuration. Additionally, when performing maintenance work, make sure that the outlet pressure is released to atmospheric pressure using a pressure
- gauge.*8 Pressure can be set higher than the specification pressure in some cases, but use pressure within the specification range.
- *9 Refer to chemical data on page 83 for chemical resistance of the bowl.
- *10 A bowl guard is provided as standard equipment (polycarbonate).
- *11 A bowl guard is provided as standard equipment (nylon).
- 12 The combination of float type auto drain C and D is not available.
- *13 Without a valve function

- *15 For the pipe thread type: NPT
 - This product is for overseas use only according to the New Measurement Act. (The SI unit type is provided for use in Japan.) Cannot be used with M: Round type pressure gauge (with color zone). Available by request for special.

The digital pressure switch will be equipped with the unit selection function, setting to psi initially. *16 For options: E1, E2, E3, E4

- This product is for overseas use only according to the New Measurement Act. (The SI unit is provided for use in Japan.)
- *17 O: For the pipe thread type: NPT only
- *18 \triangle : Select with options: E1, E2, E3, E4.

Standard Specifications

	Mo	odel		AC20B-D	AC30B-D	AC40B-D	AC40B-06-D	AC50B-D	AC60B-D					
Component	Air Filt	er	[AF]	AF20-D	AF30-D	AF40-D	AF40-06-D	AF50-D	AF60-D					
Component	Regula	tor	[AR]	AR20-D	AR30-D	AR40-D	AR40-06-D	AR50-D	AR60-D					
Port size				1/8, 1/4	1/4, 3/8	1/4, 3/8, 1/2	3/4	3/4, 1	1					
Pressure gau	ge port s	size ^{*1}	[AR]	1/8										
Fluid						A	Nir							
Ambient and	fluid tem	peratures*2		–5 to 60°C (No freezing)										
Proof pressur	e			1.5 MPa										
Max. operatin	g pressi	ıre			1.0 MPa									
Auto drain mi	nimum	N.C.	[AF]	0.1 MPa	0.1 MPa 0.15 MPa									
operating pre	ssure	N.O.	[AF]	— 0.1 MPa										
Set pressure	range		[AR]	0.05 to 0.85 MPa										
Nominal filtra	tion rati	ng*3	[AF]	5 µm										
Compressed	air purit	y class ^{*4}		ISO 8573-1:2010 [6 : 4 : 4]*5										
Drain capacity	у		[AF]	8 cm ³ 25 cm ³ 45 cm ³										
Bowl material			[AF]	Polycarbonate										
Bowl guard			[AF]	Semi-standard (Steel) Standard (Polycarbonate)										
Construction			[AR]	Relieving type										
Weight				0.25 kg	0.51 kg	0.95 kg	1.02 kg	2.20 kg	2.39 kg					

*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.

*2 -5 to 50°C for the products with the digital pressure switch

*3 For the following conditions in accordance with [Test condition: ISO 8573-4:2001 compliant, Test method ISO 12500-3:2009 compliant]

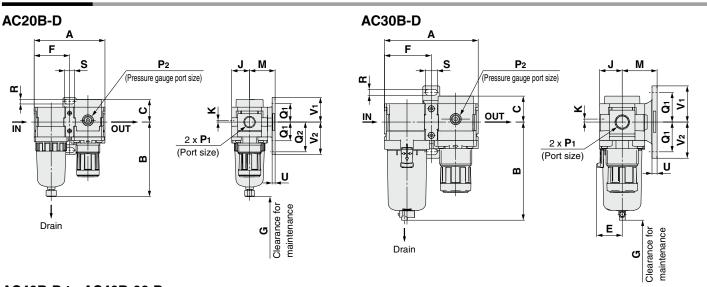
Conditions: When a new element is used, and the flow capacity, inlet pressure, and the amount of solid bodies on the filter inlet side are stable *4 The compressed air purity class is indicated based on ISO 8573-1:2010 Compressed air – Part 1: Contaminants and purity classes.

For details on this standard, refer to page 131.

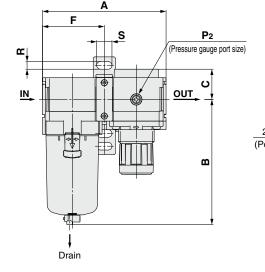
*5 The compressed air quality class on the inlet side is [7:4:4].

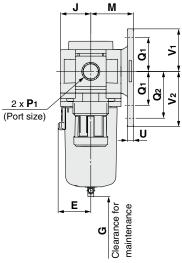
AC20B-D to AC60B-D Series



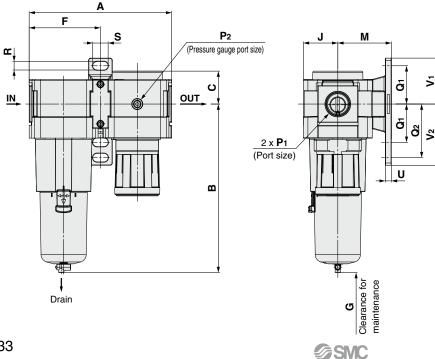




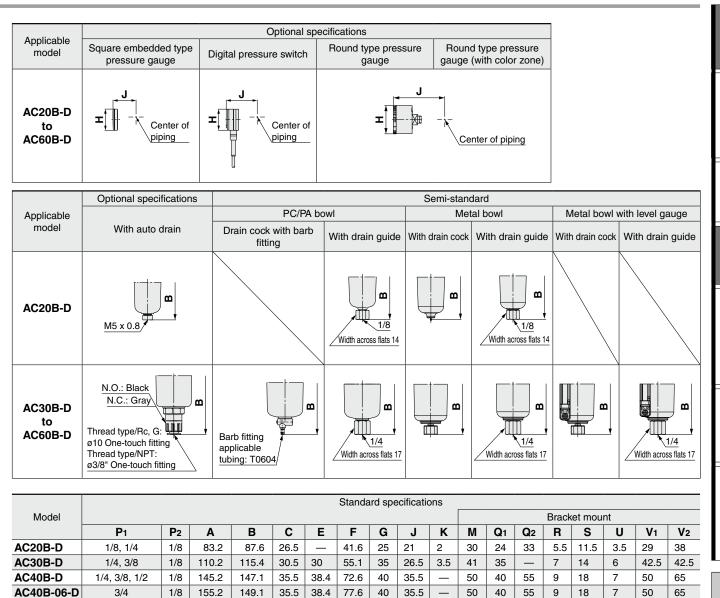




AC50B-D to AC60B-D



Air Combination AC20B-D to AC60B-D Series

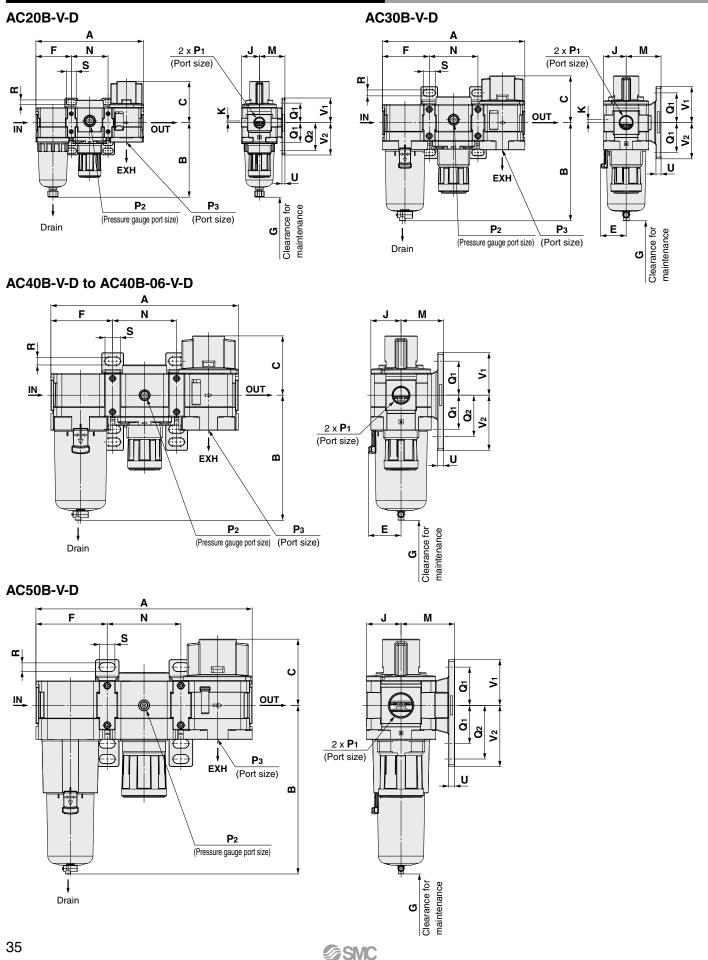


AC50B-D	3	/4, 1	1/8	186.2	220.	1 43		93.1	30	45	_	70 50	70	11 2	20 8	60	80	
AC60B-D		1	1/8	196.2	234.	1 45	—	98.1	30	45	—	70 50	70	11 2	20 8	60	80	
					Optiona	al speci	fications			Î	Semi-standard specifications							
Model	Square embedded type pressure gauge		ded Digital pressure p		Round type		Round type pressure			Round type pressure		PC/F	PC/PA bowl		al bowl		owl with gauge	
Woder					press gau		aude (Semi-		gauge (with color zone)		auto drain	With bar fitting	With drair guide	With drai cock	n With drair guide	With drain cock	With drain guide	
	н	J	Н	J	Н	J	н	J	н	J	В	В	В	В	В	В	В	
AC20B-D	□28	27	□27.8	37.5	ø37.5	57.5	ø37.5	58.5	ø37.5	58.5	104.9	—	91.4	87.4	93.9	—	—	
AC30B-D	□28	32.5	□27.8	43	ø37.5	63	ø37.5	64	ø37.5	64	157.1	123.9	122.2	117.8	122.3	137.8	142.3	
AC40B-D	□28	41.5	□27.8	52	ø42.5	73	ø42.5	73	ø42.5	73	186.9	155.6	153.9	149.5	154	169.5	174	
AC40B-06-D	□28	41.5	□27.8	52	ø42.5	73	ø42.5	73	ø42.5	73	188.9	157.6	155.9	151.5	156	171.5	176	
AC50B-D	□28	51	□27.8	61.5	ø42.5	82.5	ø42.5	82.5	ø42.5	82.5	259.9	228.6	226.9	222.5	227	242.5	247	
AC60B-D	□28	51	□27.8	61.5	ø42.5	82.5	ø42.5	82.5	ø42.5	82.5	273.9	242.6	240.9	236.5	241	256.5	261	

A

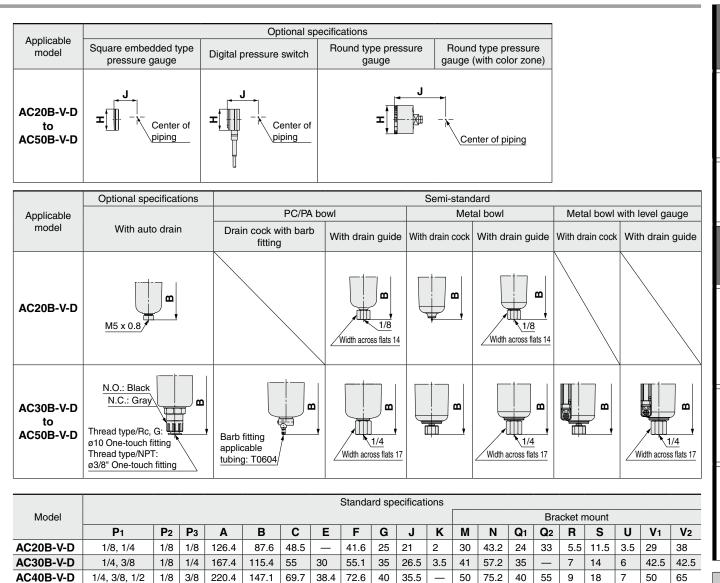
AV

AC20B-D to AC60B-D Series



Dimensions: With Pressure Relief 3-Port Valve (V)

Air Combination AC20B-D to AC60B-D Series



AC50B-V-D	3/-	4, 1	1/8	1/2 2	82.4 22	20.1 8	86.5 -	- [93.1	30	45	-	70	96.2	50	70 1	1	20	3 60	80
					Option	al spec	cification	IS							Sem	i-star	ndarc	specific	ations	
Madal	Squ embe		Digital I	oressure	Round			nd typ ssure		Round		Wi		PC/PA	A bowl	I	Meta	l bowl		owl with gauge
Model	type pr gau		sw	itch	gau		gaug stan	e (Sei dard:		gauge color	•	dra		With barb fitting	With drai guide		i drain ock	With drair guide	With drair cock	With drain guide
	Н	J	н	J	н	J	н		J	Н	J	E	3	В	В		В	В	B	В
AC20B-V-D	□28	27	□27.8	37.5	ø37.5	57.5	ø37.5	5 58	8.5	ø37.5	58.5	104	4.9	_	91.4	8	37.4	93.9	_	—
AC30B-V-D	□28	32.5	□27.8	43	ø37.5	63	ø37.5	5 64	4	ø37.5	64	157	7.1	123.9	122.2	11	7.8	122.3	137.8	142.3
AC40B-V-D	□28	41.5	□27.8	52	ø42.5	73	ø42.5	5 73	3	ø42.5	73	186	6.9	155.6	153.9	14	9.5	154	169.5	174
AC40B-06-V-D	□28	41.5	□27.8	52	ø42.5	73	ø42.5	5 73	3	ø42.5	73	188	3.9	157.6	155.9	15	51.5	156	171.5	176
AC50B-V-D	□28	51	□27.8	61.5	ø42.5	82.5	ø42.5	5 82	2.5	ø42.5	82.5	259	9.9	228.6	226.9	22	2.5	227	242.5	247

77.6

40

35.5

50

_

80.2

40 55 9 18 7

50

65

AC40B-06-V-D

3/4

1/8 1/2 235.4

149.1

71.7

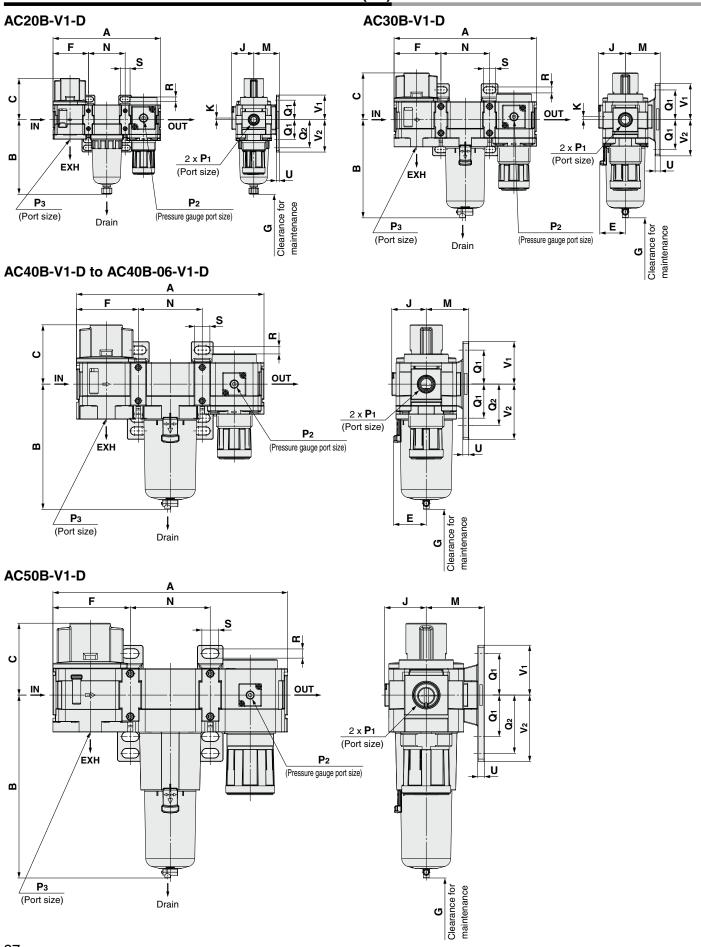
38.4

AC AW + AL AF + AR + AL AF + ARAF + AFM + AR Attachments || AW + AFM ЧF AFM / AFD AR

AV

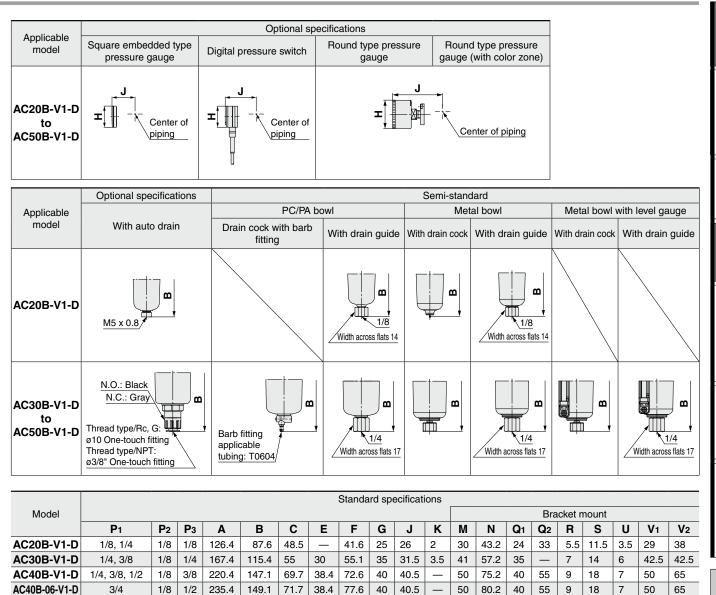
A

AC20B-D to AC60B-D Series



Dimensions: With Pressure Relief 3-Port Valve (V1)

Air Combination AC20B-D to AC60B-D Series



AC50B-V1-D	3/-	4, 1	1/8	1/2 2	82.4 2	20.1	86.5	_	93.1	30	50	—	70	96.2	50 7	0 11	20	8 60	80
					Optior	nal spe	cificati	ions							Sem	-standa	rd specifi	cations	
Madal	Squ embe		Digital p	ressure		d type sure		ound t	. 1		d type sure		/ith uto	PC/PA	bowl	Met	al bowl	1	owl with gauge
Model	type pr gau		swi	tch	· ·	uge		uge (S andarc		• •	e (with zone)		rain	With barb fitting	With drair guide	With dra	n With draii guide	h With drain cock	With drain guide
	Н	J	н	J	н	J	H	H	J	Н	J		В	В	В	В	В	В	В
AC20B-V1-D	□28	27	□27.8	37.5	ø37.5	62.5	5 ø3	7.5	63.5	ø37.5	63.5	10	94.9	—	91.4	87.4	93.9	_	—
AC30B-V1-D	□28	32.5	□27.8	43	ø37.5	68	ø3	7.5	69	ø37.5	69	15	57.1	123.9	122.2	117.8	122.3	137.8	142.3
AC40B-V1-D	□28	41.5	□27.8	52	ø42.5	78	ø4	2.5	78	ø42.5	78	18	86.9	155.6	153.9	149.5	154	169.5	174
AC40B-06-V1-D	□28	41.5	□27.8	52	ø42.5	73	ø4	2.5	73	ø42.5	73	18	8.9	157.6	155.9	151.5	156	171.5	176
AC50B-V1-D	□28	51	□27.8	61.5	ø42.5	82.5	5 ø4	2.5	82.5	ø42.5	82.5	25	9.9	228.6	226.9	222.5	227	242.5	247

AR

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A₹

Air Combination Air Filter + Mist Separator + Regulator AC20C-D to AC40C-D





Option and Semi-standard Symbol Selection



6

6

AC 30 C - 03 DE -

2

Select one each for **a** to **i**.

When more than one specification is required, indicate in alphanumeric order.

Example) AC30C-F03DE1-16NR-D

	<u> </u>	/	_				1	
				Symbol	Description		Body size	
						20	30	40
				Nil	Rc	•		
2		Р	ipe thread type	N *1	NPT	۲		
				F *2	G	۲		
				+				
				01	1/8	•	—	—
				02	1/4	۲		
3			Port size	03	3/8	_		
				04	1/2	_	—	•
				06	3/4	_	—	
				+				
			Float type	Nil	Without auto drain	•	•	•
		а	auto drain	C *4	N.C. (Normally closed) Drain port is closed when pressure is not applied.	•	•	•
				D *5	N.O. (Normally open) Drain port is open when pressure is not applied.	_		
				+				
	ő			Nil	Without pressure gauge	•	•	•
4	Option*3		Pressure gauge*6	E	Square embedded type pressure gauge (with limit indicator)	•	•	•
9	Dpti		Tressure gauge	G	Round type pressure gauge (with limit indicator)	•		
		ь		М	Round type pressure gauge (with color zone)	•		
				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	•		
	· · · · · ·			+				
	Jent		5	Nil	Without attachment	•	•	●
6	Attachment	c	Pressure relief 3-port valve	V	Mounting position: AF + AFM + AR + V	•	•	•
	Atta			V1 *7	Mounting position: \mathbf{V} + AF + AFM + AR \Box K	•		•
				+				
		d	Set pressure*8	Nil	0.05 to 0.85 MPa setting	•	•	•
		_		1	0.02 to 0.2 MPa setting	•		
				+				
				Nil	Polycarbonate bowl	•		
				2	Metal bowl	•		
		е	Bowl ^{*9}	6	Nylon bowl	•		
	ard			8	Metal bowl with level gauge			
	and			С	With bowl guard	•	*10	*10
6	i-st			6C	With bowl guard (Nylon bowl)	۲	*11	*11
	Semi-standard			+				-
	S		Air filter	Nil	With drain cock	•		•
		f	Mist separator	J * ¹³	Drain guide 1/8	•	-	_
			drain port*12	_	Drain guide 1/4	_	•	•
				W *14	Drain cock with barb fitting (for ø6 x ø4 nylon tube)	_		
				+				•
		g	Exhaust mechanism	Nil	Relieving type	•	•	•
				N	Non-relieving type	•		



Air Combination AC20C-D to AC40C-D Series



AC

AF + AR + AL

AW + AL

AF + AR

AF + AFM + AR

AW + AFM

Attachments

ЧF

AFM / AFD

A R

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AC30C-D

/		_		Symbol	Description	20	1 Body size 30	40
	_			Nil	Flow direction: Left to right	•	•	
	standard	h	Flow direction	R	Flow direction: Right to left	•	•	
6	and			+				
U	li-st			Nil	Unit on product label: MPa, °C, Pressure gauge in SI units: MPa			•
	emi-	i	Unit	Z *15	Unit on product label: psi, °F, Pressure gauge: MPa/psi dual scale	O*17	O*17	○*17
	S			ZA *16	Digital pressure switch: With unit selection function	\triangle^{*18}	\triangle^{*18}	△*18
a	and Ni The a	PT1/4 uto dr	is NPT1/8 (applicable to (applicable to the AC30C rain port comes with a g	-D to AC40 3/8" One-t	C-D). pressure gauge will be fitted for standard (0.85 MPa) *14 The com- ouch type. 0.4 MPa pressure gauge for 0.2 MPa type. *15 For the	pipe thread typ	al bowl 2 and 8 e: NPT	is not available.

- fitting (applicable to the AC30C-D to AC40C-D). *2 Drain guide is G1/8 (applicable to the AC20C-D) and G1/4 (applicable to the AC30C-D to AC40C-D).
- *3 Options G and M are not assembled and supplied loose at the time of shipment.
- *4 When pressure is not applied, condensate which does not start the auto drain mechanism will be left in the bowl. Releasing the residual condensate before ending operations for the day is recommended.
- *5 If the compressor is small (0.75 kW, discharge flow is less than 100 L/min (ANR)), air leakage from the drain cock may occur during the start of operations. N.C. type is recommended.
- *7 The regulator is equipped with a backflow function in this
- configuration. Additionally, when performing maintenance work, make sure that the outlet pressure is released to atmospheric pressure using a pressure gauge.
- *8 Pressure can be set higher than the specification pressure in some cases, but use pressure within the , specification range.
- *9 Refer to chemical data on pages 83 and 91 for chemical resistance of the bowl.
- *10 A bowl guard is provided as standard equipment (polycarbonate).
- *11 A bowl guard is provided as standard equipment (nylon). *12 The combination of float type auto drain C and D is not available.
- This product is for overseas use only according to the New Measurement Act. (The SI unit type is provided for use in Japan.)

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

- *16 For options: E1, E2, E3, E4 This product is for overseas use only according to the New Measurement Act. (The SI unit is provided for use in Japan.)
- *17 O: For the pipe thread type: NPT only
- *18 △: Select with options: E1, E2, E3, E4.

Standard Specifications

	Model		AC20C-D	AC30C-D	AC40C-D	AC40C-06-D
	Air Filter	[AF]	AF20-D	AF30-D	AF40-D	AF40-06-D
Component	Mist Separate	or [AFM]	AFM20-D	AFM30-D	AFM40-D	AFM40-06-D
	Regulator	[AR]	AR20-D	AR30-D	AR40-D	AR40-06-D
Port size			1/8, 1/4	1/4, 3/8	1/4, 3/8, 1/2	3/4
Pressure gau	ge port size*1	[AR]		1,	/8	
Fluid				A	ir	
Ambient and f	luid temperatu	res*2		−5 to 60°C (No freezing)	
Proof pressu	re			1.5	MPa	
Max. operatin	g pressure			1.0	MPa	
Auto drain mi	nimum N.C.	[AF/AFM]	0.1 MPa		0.15 MPa	
operating pre	ssure N.O.	[AF/AFM]	_		0.1 MPa	
Set pressure	range	[AR]		0.05 to 0).85 MPa	
Max. flow cap	acity*3	[AFM]	200 L/min (ANR)	450 L/min (ANR)	1100 L/r	min (ANR)
Nominal filtra	tion roting*4	[AF]		5 µ	um	
Nominal filtra	tion rating	[AFM]		0.3 µm (99.9% filt	ered particle size)	
Outlet side oil m	ist concentration	* ^{5, *6} [AFM]		Max. 1.0 mg/r	n³ (≈ 0.8 ppm)	
Compressed	air purity class	*7		ISO 8573-1:20	10 [3 : 4 : 3]*8	
Drain capacit	у	[AF/AFM]	8 cm ³	25 cm ³	45	cm ³
Bowl materia		[AF/AFM]		Polyca	rbonate	
Bowl guard		[AF/AFM]	Semi-standard (Steel)	ç	Standard (Polycarbonate	e)
Construction		[AR]		Relievi	ng type	
Weight			0.38 kg	0.75 kg	1.42 kg	1.54 kg

*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.

*2 -5 to 50°C for the products with the digital pressure switch

Mist separator inlet pressure: 0.7 MPa. Flow at 20°C, atmospheric pressure, and 65% of the relative humidity *3 The maximum flow capacity varies depending on the inlet pressure

Keep the air flow within the maximum flow capacity to prevent an outflow of lubricant to the outlet side. *4 For the following conditions in accordance with [Test condition: ISO 8573-4:2001, Test method ISO 12500-3:2009 compliant] in addition to the conditions above

Conditions: When a new element is used, and the flow capacity, inlet pressure, and the amount of solid bodies on the filter inlet side are stable

*5 The outlet side oil mist concentration for the following conditions in accordance with [Test condition: ISO 8573-2:2007, Test method ISO 12500-1:2007 compliant] in addition to the conditions above

Conditions: When a new element is used, the oil mist concentration on the filter inlet side is 10 mg/m³, and the flow capacity, inlet pressure, and the oil mist concentration on the filter inlet side are stable *6 The bowl seal and other O-rings are slightly lubricated.
*7 The compressed air purity class is indicated based on ISO 8573-1:2010 Compressed air – Part 1: Contaminants and purity classes.

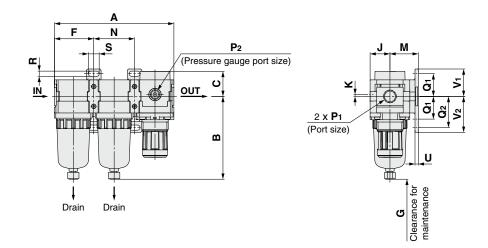
For details on this standard, refer to page 131. *8 The compressed air quality class on the inlet side is [7:4:4].



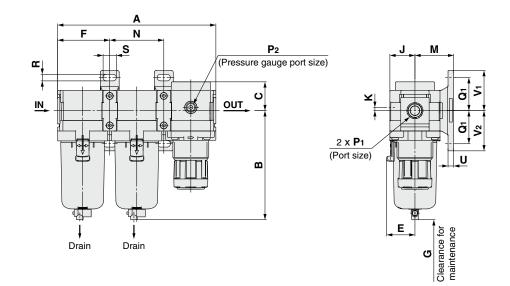
AC20C-D to AC40C-D Series

Dimensions

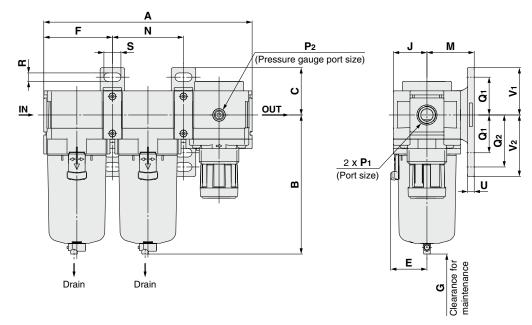
AC20C-D



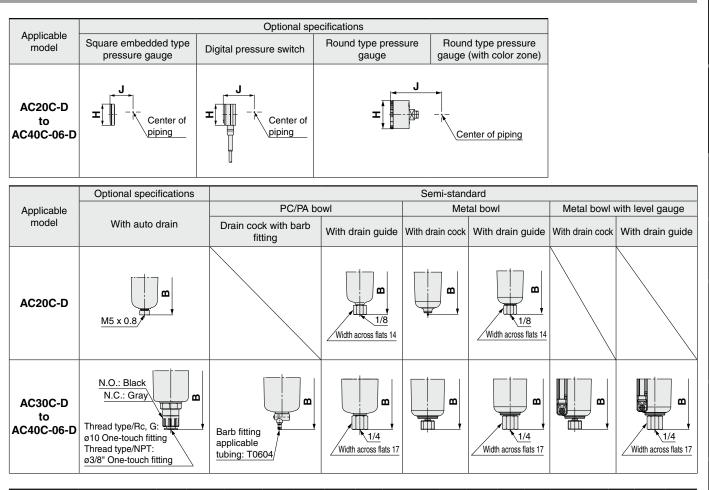
AC30C-D



AC40C-D to AC40C-06-D



Air Combination AC20C-D to AC40C-D Series



							Stan	dard s	specific	ations									
Model														Bra	acket r	nount			
	P 1	P2	Α	В	С	Ε	F	G	J	Κ	Μ	Ν	Q 1	Q 2	R	S	U	V 1	V2
AC20C-D	1/8, 1/4	1/8	126.4	87.6	26.5	_	41.6	45	21	2	30	43.2	24	33	5.5	11.5	3.5	29	38
AC30C-D	1/4, 3/8	1/8	167.4	115.4	30.5	30	55.1	50	26.5	3.5	41	57.2	35	—	7	14	6	42.5	42.5
AC40C-D	1/4, 3/8, 1/2	1/8	220.4	147.1	35.5	38.4	72.6	75	35.5	—	50	75.2	40	55	9	18	7	50	65
AC40C-06-D	3/4	1/8	235.4	149.1	35.5	38.4	77.6	75	35.5	—	50	80.2	40	55	9	18	7	50	65

					Optiona	al speci	fications						Semi-	standarc	l specific	ations	
Model	Squ embe		Digital pr	essure	Round		Round press		Round press		With auto	PC/P4	A bowl	Meta	bowl		owl with gauge
Moder	type pr gau		swite	ch	press gau		gauge (standa		gauge color z			With barb fitting	With drain guide	With drain cock	With drain guide	With drain cock	With drain guide
	Н	J	Н	J	Н	J	Н	J	Н	J	В	В	В	В	В	В	В
AC20C-D	□28	27	□27.8	37.5	ø37.5	57.5	ø37.5	58.5	ø37.5	58.5	104.9	—	91.4	87.4	93.9	_	_
AC30C-D		32.5	□27.8	43	ø37.5	63	ø37.5	64	ø37.5	64	157.1	123.9	122.2	117.8	122.3	137.8	142.3
AC40C-D	□28	41.5	□27.8	52	ø42.5	73	ø42.5	73	ø42.5	73	186.9	155.6	153.9	149.5	154	169.5	174
AC40C-06-D	□28	41.5	□27.8	52	ø42.5	73	ø42.5	73	ø42.5	73	188.9	157.6	155.9	151.5	156	171.5	176

SMC

 AFM / AFD
 AF
 Attachments
 AW + AFM
 AF + AFM + AR
 AF + AR

AC

AW + AL AF + AR + AL

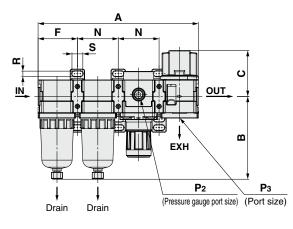
AV

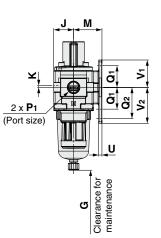
AL

AC20C-D to AC40C-D Series

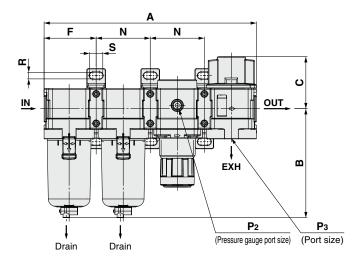
Dimensions: With Pressure Relief 3-Port Valve (V)

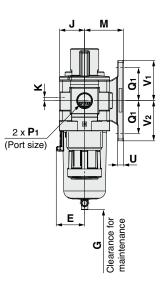
AC20C-V-D



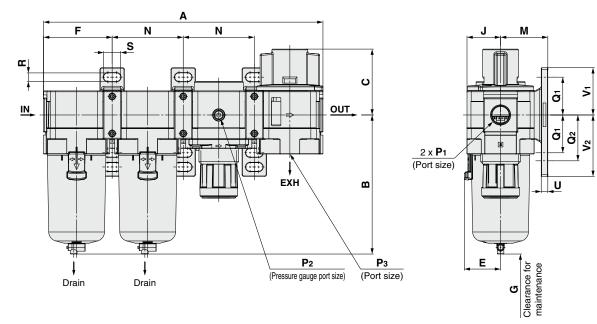


AC30C-V-D

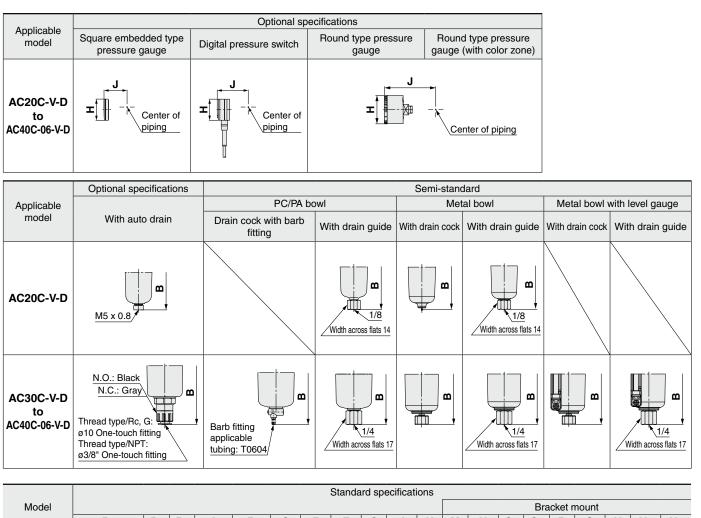




AC40C-V-D to AC40C-06-V-D



Air Combination AC20C-D to AC40C-D Series



Model															Bra	acket r	nount			
	P 1	P 2	Рз	Α	В	С	Ε	F	G	J	Κ	Μ	N	Q 1	Q2	R	S	U	V 1	V2
AC20C-V-D	1/8, 1/4	1/8	1/8	169.6	87.6	48.5	—	41.6	40	21	2	30	43.2	24	33	5.5	11.5	3.5	29	38
AC30C-V-D	1/4, 3/8	1/8	1/4	224.6	115.4	55	30	55.1	50	26.5	3.5	41	57.2	35	—	7	14	6	42.5	42.5
AC40C-V-D	1/4, 3/8, 1/2	1/8	3/8	295.6	147.1	69.7	38.4	72.6	75	35.5	—	50	75.2	40	55	9	18	7	50	65
AC40C-06-V-D	3/4	1/8	1/2	315.6	149.1	71.7	38.4	77.6	75	35.5	—	50	80.2	40	55	9	18	7	50	65

					Optiona	al speci [.]	fications						Semi-	standarc	l specific	ations	
Model	Squ embe		Digital pr	essure	Round		Round press		Round press		With auto	PC/PA	A bowl	Meta	l bowl		owl with gauge
Model	type pr gau		swite	ch	press gau		gauge (standa		gauge color z			With barb fitting	With drain guide	With drain cock	With drain guide	With drain cock	With drain guide
	Н	J	Н	J	Н	J	Н	J	Н	J	В	В	В	В	В	В	В
AC20C-V-D	□28	27	□27.8	37.5	ø37.5	57.5	ø37.5	58.5	ø37.5	58.5	104.9	_	91.4	87.4	93.9	_	_
AC30C-V-D	□28	32.5	□27.8	43	ø37.5	63	ø37.5	64	ø37.5	64	157.1	123.9	122.2	117.8	122.3	137.8	142.3
AC40C-V-D	□28	41.5	□27.8	52	ø42.5	73	ø42.5	73	ø42.5	73	186.9	155.6	153.9	149.5	154	169.5	174
AC40C-06-V-D	□28	41.5	□27.8	52	ø42.5	73	ø42.5	73	ø42.5	73	188.9	157.6	155.9	151.5	156	171.5	176

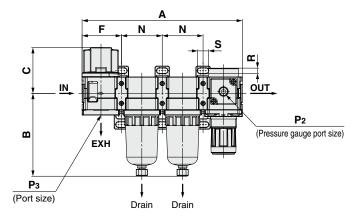
AV

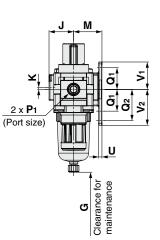
AR

AC20C-D to AC40C-D Series

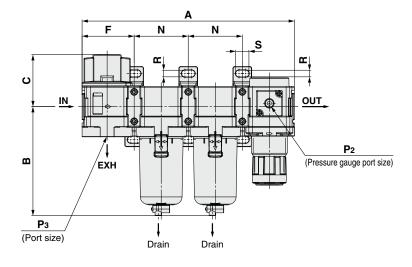
Dimensions: With Pressure Relief 3-Port Valve (V1)

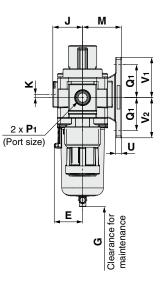
AC20C-V1-D



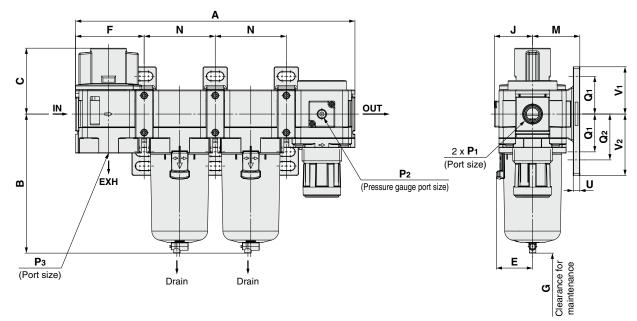


AC30C-V1-D



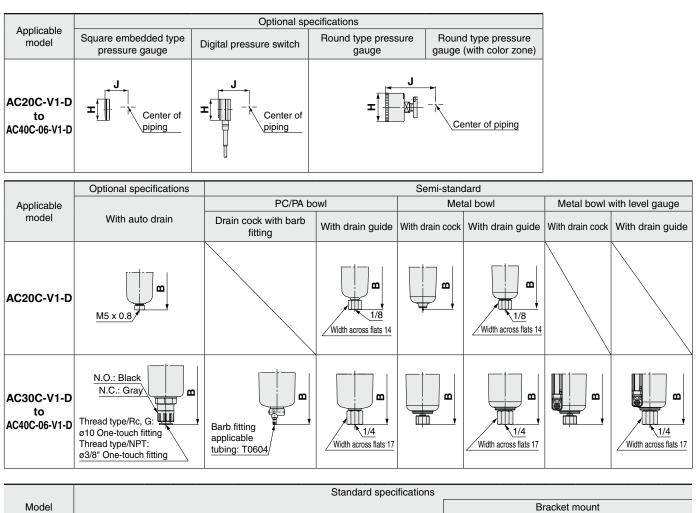


AC40C-V1-D to AC40C-06-V1-D





Air Combination AC20C-D to AC40C-D Series



Model															Bra	icket r	nount			
	P 1	P 2	Рз	Α	В	С	Ε	F	G	J	K	Μ	N	Q 1	Q2	R	S	U	V 1	V2
AC20C-V1-D	1/8, 1/4	1/8	1/8	169.6	87.6	48.5	—	41.6	40	26	2	30	43.2	24	33	5.5	11.5	3.5	29	38
AC30C-V1-D	1/4, 3/8	1/8	1/4	224.6	115.4	55	30	55.1	50	31.5	3.5	41	57.2	35	—	7	14	6	42.5	42.5
AC40C-V1-D	1/4, 3/8, 1/2	1/8	3/8	295.6	147.1	69.7	38.4	72.6	75	40.5	—	50	75.2	40	55	9	18	7	50	65
AC40C-06-V1-D	3/4	1/8	1/2	315.6	149.1	71.7	38.4	77.6	75	40.5	—	50	80.2	40	55	9	18	7	50	65

					Optiona	al speci	fications						Semi-	standard	l specific	ations	
Model	Squ embe	are dded	Digital pr	essure	Round press		Round press		Round press		With auto	PC/PA	bowl	Meta	l bowl		owl with gauge
Woder	type pr gau		swite	ch	gau		gauge (standa		gauge color z		drain	With barb fitting	With drain guide	With drain cock	With drain guide	With drain cock	With drain guide
	Н	J	н	J	Н	J	Н	J	Н	J	В	В	В	В	В	В	В
AC20C-V1-D	□28	27	□27.8	37.5	ø37.5	62.5	ø37.5	63.5	ø37.5	63.5	104.9	—	91.4	87.4	93.9	—	—
AC30C-V1-D	□28	32.5	□27.8	43	ø37.5	68	ø37.5	69	ø37.5	69	157.1	123.9	122.2	117.8	122.3	137.8	142.3
AC40C-V1-D	□28	41.5	□27.8	52	ø42.5	78	ø42.5	78	ø42.5	78	186.9	155.6	153.9	149.5	154	169.5	174
AC40C-06-V1-D	□28	41.5	□27.8	52	ø42.5	73	ø42.5	73	ø42.5	73	188.9	157.6	155.9	151.5	156	171.5	176

46

AR

AL

AV

Air Combination Filter Regulator + Mist Separator AC20D-D to AC40D-D

Symbol



6

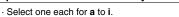
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-D

AC 30 D - 03 DE -

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Option and Semi-standard Symbol Selection



- When more than one specification is required, indicate
- in alphanumeric order.
- Example) AC30D-F03DE1-16NR-D

	<u> </u>		_				0	
				Symbol	Description		Body size	
						20	30	40
	· · ·			Nil	Rc	•		•
2		Р	ipe thread type	N *1	NPT	•	•	•
				F *2	G	•	•	•
				+				
				01	1/8	•	_	_
				02	1/4	•		•
8			Port size	03	3/8	_		•
				04	1/2	_	—	•
				06	3/4	—	—	•
				+				
			Float type	Nil	Without auto drain	•		•
		а	auto drain	C *4	N.C. (Normally closed) Drain port is closed when pressure is not applied.	•	•	•
				D *5	N.O. (Normally open) Drain port is open when pressure is not applied.			•
				+				
	ę			Nil	Without pressure gauge	•		•
4	ou		Pressure gauge*6	E	Square embedded type pressure gauge (with limit indicator)	•	•	•
9	Option*3		Tressure gauge	G	Round type pressure gauge (with limit indicator)	•		•
		b		M	Round type pressure gauge (with color zone)	•		•
				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	•		•
_		_		+				
	ent			Nil	Without attachment	•	•	•
6	hm	с	Pressure relief	V	Mounting position: AW + AFM + V	•		•
	Attachment		3-port valve	V1*7	Mounting position: \mathbf{V} + AW \Box K + AFM	•	•	•
				+				
				Nil	0.05 to 0.85 MPa setting	•		•
		d	Set pressure*8	1	0.02 to 0.2 MPa setting	•		•
				+	J			
				Nil	Polycarbonate bowl	•		•
				2	Metal bowl	•		•
			D1*9	6	Nylon bowl	•		•
		е	Bowl ^{*9}	8	Metal bowl with level gauge	_		•
	-			С	With bowl guard	•	*10	*10
	Jarc			6C	With bowl guard (Nylon bowl)	•	*11	*11
6	Semi-standard			+				
6	ii-st			Nil	With drain cock	٠		•
	Ser	f	Filter regulator Mist separator	J *13	Drain guide 1/8	٠	—	
	0		drain port*12		Drain guide 1/4	_		•
				W *14	Drain cock with barb fitting (for ø6 x ø4 nylon tube)			•
				+				
		~	Exhaust mechanism	Nil	Relieving type	•		•
		g		Ν	Non-relieving type	•		•
				+				
		h	Flow direction	Nil	Flow direction: Left to right	•		•
1				R	Flow direction: Right to left	•	•	•



Air Combination AC20D-D to AC40D-D Series



AC

AF + AR + AL

AW + AL

AF + AR

AF + AFM + AR

AW + AFM

Attachments

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AFM / AFD

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		Symbol	Description	-		1 Body size	
					20	30	40
dard		Nil	Unit on product label: MPa, °C, Pressure gauge in SI units: MPa	a	•	•	
i Semi-standard	Unit	Z *15	Unit on product label: psi, °F, Pressure gauge: MPa/psi dual scal	e	O* ¹⁷	O*17	O*17
Sem		ZA *16	Digital pressure switch: With unit selection function		\triangle^{*18}	\triangle^{*18}	\triangle^{*18}
and NPT1/ AC40D-D).	is NPT1/8 (applicable to /4 (applicable to the The auto drain port con fitting (applicable to th	e AC30D nes with a	-D to pressure gauge will be fitted for standard (0.85 MPa) *14 The ø3/8" type. 0.4 MPa pressure gauge for 0.2 MPa type. ava o-D to *7 The filter regulator is equipped with a backflow function in *15 For	e cor ilable the p	pipe thread typ	metal bowl 2 e: NPT	2 and 8 is not

- AC40D-D). *2 Drain guide is G1/8 (applicable to the AC20D-D) and G1/4 (applicable to the AC30D-D to AC40D-D).
- *3 Options G and M are not assembled and supplied loose at the time of shipment.
- *4 When pressure is not applied, condensate which does not start the auto drain mechanism will be left in the bowl. Releasing the residual condensate before ending operations for the day is recommended.
- *5 If the compressor is small (0.75 kW, discharge flow is less than 100 L/min (ANR)), air leakage from the drain cock may occur during the start of operations. N.C. type is recommended.
- 7 The filter regulator is equipped with a backflow function in this configuration. Additionally, when performing maintenance work, make sure that the outlet pressure is released to atmospheric pressure using a pressure gauge.
- *8 Pressure can be set higher than the specification pressure in some cases, but use pressure within the specification range.
- *9 Refer to chemical data on pages 91 and 129 for chemical resistance of the bowl.
- *10 A bowl guard is provided as standard equipment (polycarbonate).
- *11 A bowl guard is provided as standard equipment (nylon).
 *12 The combination of float type auto drain C and D is not available.
- 15 For the pipe thread type: NPT This product is for overseas use only according to the New Measurement Act. (The SI unit type is provided for use in Japan.) Cannot be used with M: Round type pressure gauge (with color page). And the human state for a state of the second state of th

 (with color zone). Available by request for special. The digital pressure switch will be equipped with the unit selection function, setting to psi initially.
 *16 For options: E1, E2, E3, E4

- This product is for overseas use only according to the New Measurement Act. (The SI unit is provided for use in Japan.)
- *17 O: For the pipe thread type: NPT only
- *18 \triangle : Select with options: E1, E2, E3, E4.

Standard Specifications

	Mc	del		AC20D-D	AC30D-D	AC40D-D	AC40D-06-D
Component	Filter R	egulator	[AW]	AW20-D	AW30-D	AW40-D	AW40-06-D
Component	Mist Se	parator	[AFM]	AFM20-D	AFM30-D	AFM40-D	AFM40-06-D
Port size				1/8, 1/4	1/4, 3/8	1/4, 3/8, 1/2	3/4
Pressure gau	ge port s	size ^{*1}	[AW]		1/	8	
Fluid					A	ir	
Ambient and f	luid temp	peratures*2			−5 to 60°C (No freezing)	
Proof pressu	e				1.5	MPa	
Max. operatin	g pressu	ire			1.01	MPa	
Auto drain mi	nimum	N.C.	[AW/AFM]	0.1 MPa		0.15 MPa	
operating pre	ssure	N.O.	[AW/AFM]	—		0.1 MPa	
Set pressure	range		[AW]		0.05 to 0	.85 MPa	
Max. flow cap	acity*3		[AFM]	200 L/min (ANR)	450 L/min (ANR)	1100 L/n	nin (ANR)
Nominal filtra	tion ratio	*4	[AW]		5 µ	เm	
	uon raui	iy	[AFM]		0.3 µm (99.9% filt	ered particle size)	
Outlet side oil m	ist conce	ntration*5, *6	[AFM]		Max. 1.0 mg/n	n³ (≈ 0.8 ppm)	
Compressed	air purity	/ class*7			ISO 8573-1:20	10 [3 : 4 : 3]*8	
Drain capacit	у		[AW/AFM]	8 cm ³	25 cm ³	45	cm ³
Bowl material			[AW/AFM]		Polycar	bonate	
Bowl guard			[AW/AFM]	Semi-standard (Steel)	S	Standard (Polycarbonate	e)
Construction			[AW]		Relievi	ng type	
Weight				0.30 kg	0.58 kg	1.12 kg	1.21 kg

*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.

*2 -5 to 50°C for the products with the digital pressure switch

*3 Mist separator inlet pressure: 0.7 MPa. Flow at 20°C, atmospheric pressure, and 65% of the relative humidity

The maximum flow capacity varies depending on the inlet pressure.

Keep the air flow within the maximum flow capacity to prevent an outflow of lubricant to the outlet side. *4 For the following conditions in accordance with [Test condition: ISO 8573-4:2001, Test method ISO 12500

4 For the following conditions in accordance with [Test condition: ISO 8573-4:2001, Test method ISO 12500-3:2009 compliant] in addition to the conditions above Conditions: When a new element is used, and the flow capacity, inlet pressure, and the amount of solid bodies on the filter inlet side are stable

*5 The outlet side oil mist concentration for the following conditions in accordance with [Test condition: ISO 8573-2:2007, Test method ISO 12500-1:2007 compliant] in addition to the conditions above

Conditions: When a new element is used, the oil mist concentration on the filter inlet side is 10 mg/m³, and the flow capacity, inlet pressure, and the oil mist concentration on the filter inlet side are stable

*6 The bowl seal and other O-rings are slightly lubricated.

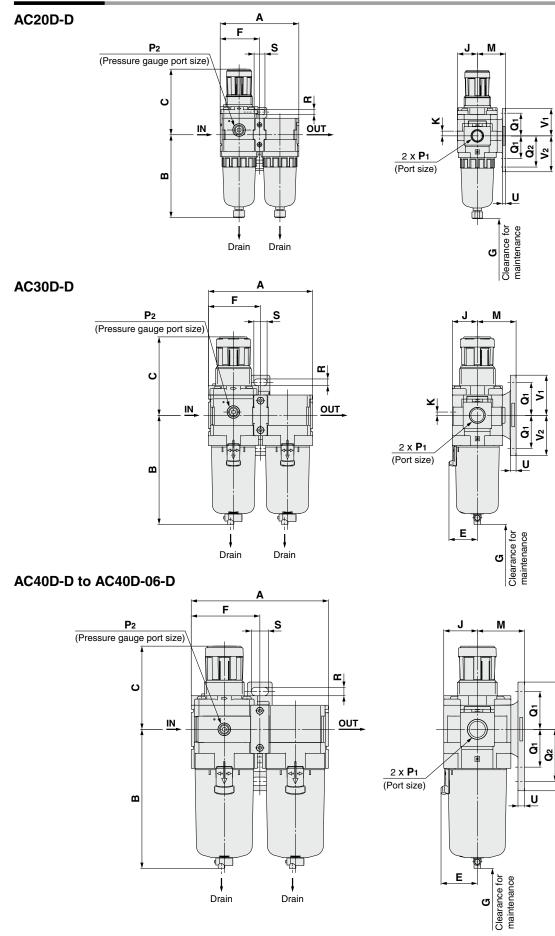
*7 The compressed air purity class is indicated based on ISO 8573-1:2010 Compressed air – Part 1: Contaminants and purity classes.

For details on this standard, refer to page 131.

*8 The compressed air quality class on the inlet side is [7 : 4 : 4].

AC20D-D to AC40D-D Series

Dimensions

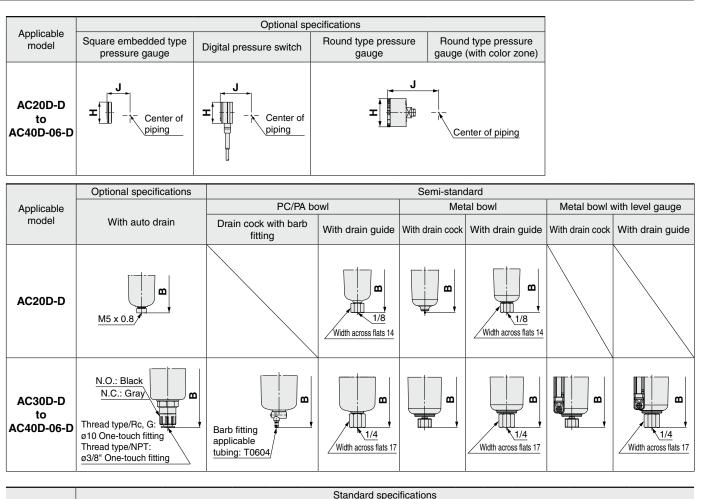


SMC

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Air Combination AC20D-D to AC40D-D Series



							olundui	a opo	omouno									
Model														Brack	et mour	nt		
	P 1	P2	Α	В	С	Е	F	G	J	Κ	М	Q 1	Q2	R	S	U	V 1	V2
AC20D-D	1/8, 1/4	1/8	83.2	87.6	71.8	_	41.6	45	21	5	30	24	33	5.5	11.5	3.5	29	38
AC30D-D	1/4, 3/8	1/8	110.2	115.3	86.5	30	55.1	55	26.5	3.5	41	35	_	7	14	6	42.5	42.5
AC40D-D	1/4, 3/8, 1/2	1/8	145.2	147.1	91.5	38.4	72.6	80	35.5	—	50	40	55	9	18	7	50	65
AC40D-06-D	3/4	1/8	155.2	149.1	93	38.4	77.6	80	35.5	—	50	40	55	9	18	7	50	65

					Optiona	al speci	fications						Semi-	standarc	l specific	ations	
Model	Aodel Square embedded type pressure switch Model Round type pressure gauge (Semi- gauge						Round press		With auto	PC/PA	bowl	Meta	bowl	Metal be level o			
Model	71 1		swite	ch	•		0 0 0		gauge color z			With barb fitting	With drain guide	With drain cock	With drain guide	With drain cock	With drain guide
	Н	J	Н	J	Н	L	Н	J	Н	J	В	В	В	В	В	В	В
AC20D-D	□28	27	□27.8	37.5	ø37.5	57.5	ø37.5	58.5	ø37.5	58.5	104.9	_	91.4	87.4	93.9	_	_
AC30D-D	□28	32.5	□27.8	43	ø37.5	63	ø37.5	64	ø37.5	64	157.1	123.9	122.2	117.8	122.3	137.8	142.3
AC40D-D	□28	41.5	□27.8	52	ø42.5	73	ø42.5	73	ø42.5	73	186.9	155.6	153.9	149.5	154	169.5	174
AC40D-06-D	□28	41.5	□27.8	52	ø42.5	73	ø42.5	73	ø42.5	73	188.9	157.6	155.9	151.5	156	171.5	176

AW

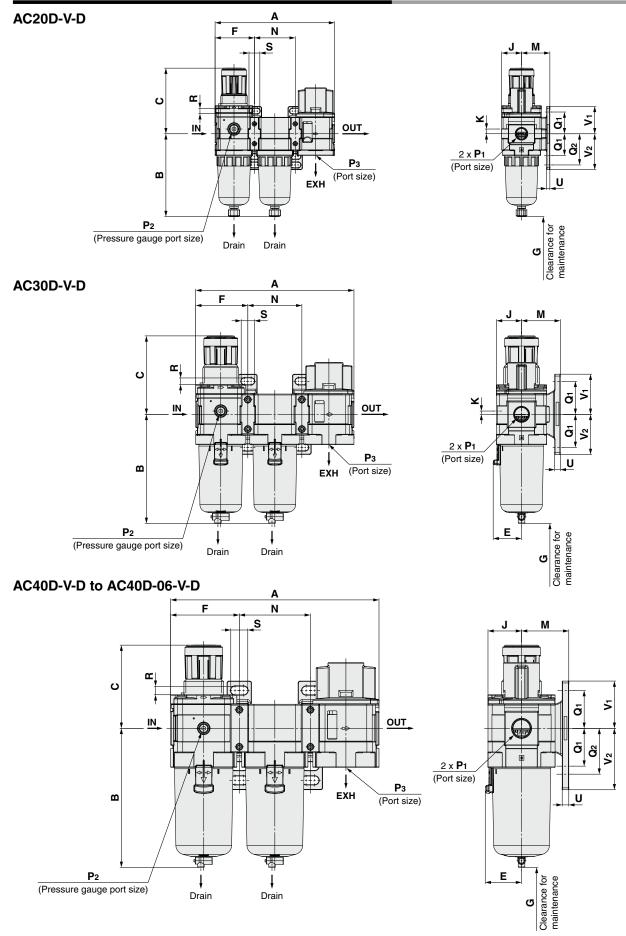
AFM / AFD

AR

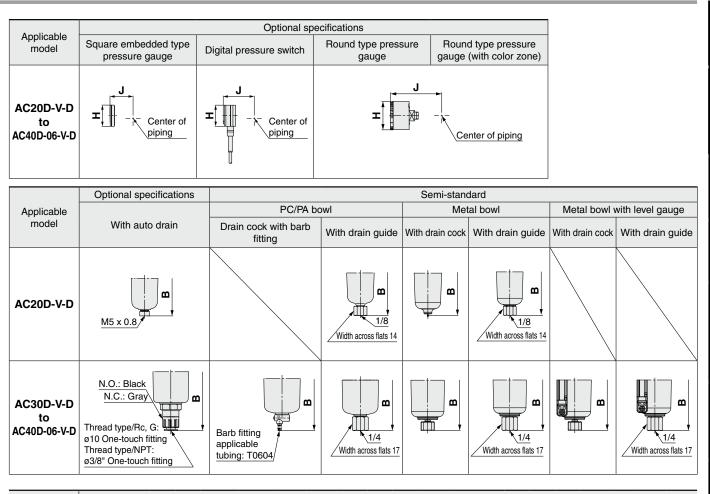
AL

AC20D-D to AC40D-D Series

Dimensions: With Pressure Relief 3-Port Valve (V)



Air Combination AC20D-D to AC40D-D Series



								Standa	rd sp	ecificati	ons									
Model															Bra	acket r	nount			
	P1	P 2	Рз	Α	В	С	Ε	F	G	J	Κ	М	Ν	Q 1	Q2	R	S	U	V 1	V2
AC20D-V-D	1/8, 1/4	1/8	1/8	126.4	87.6	71.8	—	41.6	40	21	5	30	43.2	24	33	5.5	11.5	3.5	29	38
AC30D-V-D	1/4, 3/8	1/8	1/4	167.4	115.3	86.5	30	55.1	55	26.5	3.5	41	57.2	35	—	7	14	6	42.5	42.5
AC40D-V-D	1/4, 3/8, 1/2	1/8	3/8	220.4	147.1	91.5	38.4	72.6	80	35.5	_	50	75.2	40	55	9	18	7	50	65
AC40D-06-V-D	3/4	1/8	1/2	235.4	149.1	93	38.4	77.6	80	35.5	—	50	80.2	40	55	9	18	7	50	65

					Optiona	al speci [,]	fications						Semi-	standard	l specific	ations	
Model	Round		Round press		Round press		With auto	PC/P4	A bowl	Meta	bowl		owl with gauge				
	type pr gau	essure .ge	swite	ch	press gau		gauge (standa		gauge color z			With barb fitting	With drain guide	With drain cock	With drain guide	With drain cock	With drain guide
	Н	J	Н	J	Н	J	Н	J	Н	J	В	В	В	В	В	В	В
AC20D-V-D	□28	27	□27.8	37.5	ø37.5	57.5	ø37.5	58.5	ø37.5	58.5	104.9	_	91.4	87.4	93.9	_	_
AC30D-V-D	□28	32.5	□27.8	43	ø37.5	63	ø37.5	64	ø37.5	64	157.1	123.9	122.2	117.8	122.3	137.8	142.3
AC40D-V-D	□28	41.5	□27.8	52	ø42.5	73	ø42.5	73	ø42.5	73	186.9	155.6	153.9	149.5	154	169.5	174
AC40D-06-V-D	□28	41.5	□27.8	52	ø42.5	73	ø42.5	73	ø42.5	73	188.9	157.6	155.9	151.5	156	171.5	176

AC AW + AL AF + AR + AL Attachments AW + AFM AF + AFM + AR AF + AR AF AFM / AFD

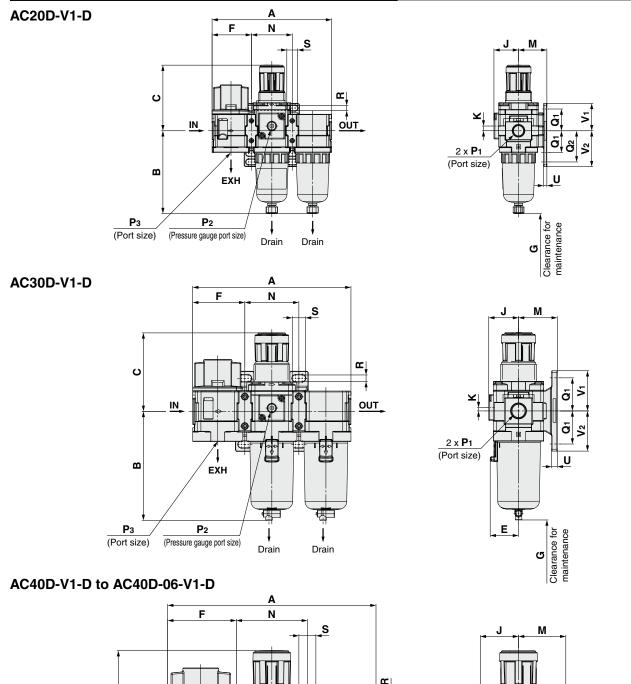
AR

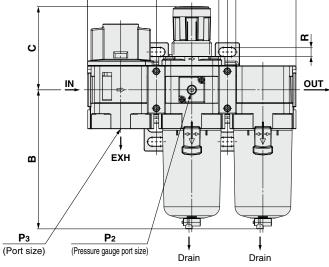
AL

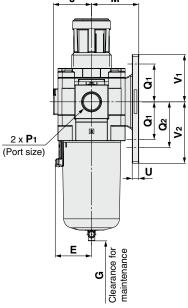
AV

AC20D-D to AC40D-D Series

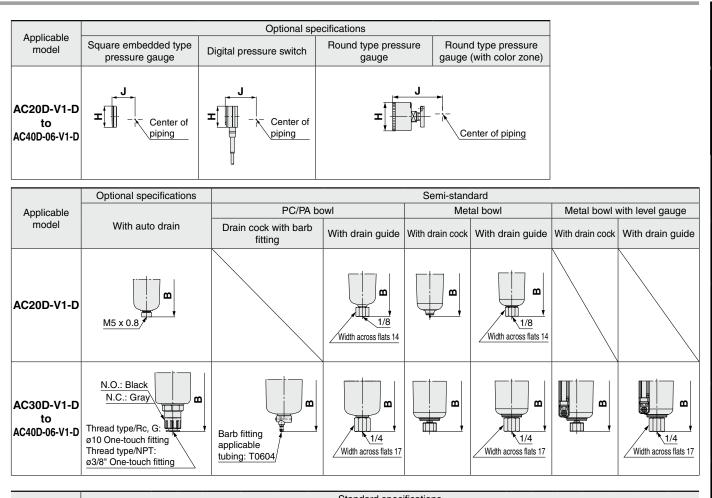
Dimensions: With Pressure Relief 3-Port Valve (V1)





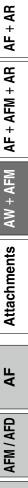


Air Combination AC20D-D to AC40D-D Series



								Standa	ra sp	ecificati	ons									
Model															Bra	icket r	nount			
	P 1	P2	P3	Α	В	С	Ε	F	G	J	Κ	Μ	Ν	Q 1	Q2	R	S	U	V 1	V2
AC20D-V1-D	1/8, 1/4	1/8	1/8	126.4	87.6	71.8	—	41.6	40	26	5	30	43.2	24	33	5.5	11.5	3.5	29	38
AC30D-V1-D	1/4, 3/8	1/8	1/4	167.4	115.3	86.5	30	55.1	55	31.5	3.5	41	57.2	35	—	7	14	6	42.5	42.5
AC40D-V1-D	1/4, 3/8, 1/2	1/8	3/8	220.4	147.1	91.5	38.4	72.6	80	40.5	—	50	75.2	40	55	9	18	7	50	65
AC40D-06-V1-D	3/4	1/8	1/2	235.4	149.1	93	38.4	77.6	80	40.5	—	50	80.2	40	55	9	18	7	50	65

					Optiona	al speci	fications						Semi-	standarc	l specific	ations	
Model	Model Square embedded type pressure gauge Switch					type	Round press		Round press		With auto	PC/PA	A bowl	Meta	bowl	Metal b level g	owl with gauge
Woder			swite	ch	press gau		gauge (standa		gauge color z			With barb fitting	With drain guide	With drain cock	With drain guide	With drain cock	With drain guide
-	Н	J	Н	J	Н	L	Н	J	Н	J	В	В	В	В	В	В	В
AC20D-V1-D	□28	27	□27.8	37.5	ø37.5	62.5	ø37.5	63.5	ø37.5	63.5	104.9	_	91.4	87.4	93.9	_	_
AC30D-V1-D	□28	32.5	□27.8	43	ø37.5	68	ø37.5	69	ø37.5	69	157.1	123.9	122.2	117.8	122.3	137.8	142.3
AC40D-V1-D	□28	41.5	□27.8	52	ø42.5	78	ø42.5	78	ø42.5	78	186.9	155.6	153.9	149.5	154	169.5	174
AC40D-06-V1-D	□28	41.5	□27.8	52	ø42.5	73	ø42.5	73	ø42.5	73	188.9	157.6	155.9	151.5	156	171.5	176



AC

AW + AL AF + AR + AL

AR

AC-D Series Option / Accessory / Attachment Part No. List

					For AOCO -	Ecr A Oco E		t no.	Fer AOFO -	Far Acres 5
				Model	For AC20-D	For AC30-D	For AC40-D	For AC40-06-D	For AC50-D	For AC60-D
Section					For AC20A-D	For AC30A-D	For AC40A-D	For AC40A-06-D	For AC50A-D	For AC60A-E
1					For AC20B-D	For AC30B-D	For AC40B-D	For AC40B-06-D	For AC50B-D	For AC60B-I
	Desc	cription			For AC20C-D	For AC30C-D	For AC40C-D	For AC40C-06-D	-	—
					For AC20D-D	For AC30D-D	For AC40D-D	For AC40D-06-D	-	—
I		Round type	Stan		G36-1		ļ	G46-10		
I	*1		0.02 to 0.2 M		G36-4			G46-4		
I	Pressure	Round type		ndard		0-□01-L	ļ	G46-10		
I	gauge		0.02 to 0.2 M		G36-4-			G46-4-		
I		Square		ndard	L		`	(Pressure gauge c		
Option	<u> </u>	embedded type*2	0.02 to 0.2 M		L			(Pressure gauge co		
,]	· · · ·	ring bottom entry				5-N-25-M (Switch b		
I		pressure		Viring top entry	_ 			5-R-25-M (Switch b		
I	switch			ing bottom entry				5-N-65-M (Switch b	3 3/3	
I			PNP output, W			1	-MLA-X523 [ISE35	5-R-65-M (Switch b		
I	Float t			.C.	AD27-D	AD37-D		AD4		
1	auto di		<u> </u>	.0.		AD38-D		AD4		
ccessory	Space			p. 57	Y200-D	Y300-D	Y400-D	Y500-D	Y60	
. 2000 y	Space	r with bracket	t	p. 57	Y200T-D	Y300T-D	Y400T-D	Y500T-D	Y60	UT-D
i	_				VHS20-□01-D	VHS30-□02-D	VHS40-□02-D		VHS50-□06-D	
I	Pressu	re relief 3-port	valve*5, *6	p. 58	VHS20-⊔01-D VHS20-□02-D	VHS30-⊟02-D VHS30-⊟03-D	VHS40-□03-D	VHS40-□06-D	VHS50-⊟06-D VHS50-⊟10-D	· _
I					v11320-⊟02-D	viiioou-⊡03-D	VHS40-□04-D			l
I							E400-□02-D		E600-	
I	D:!	adapte*F			E200-□01-D	E300-□02-D	E400-□03-D	E500-□06-D	E600-	
I	riping	adapter ^{*5, *6}		p. 59	E200-□02-D	E300-□03-D	E400-□04-D	E500-□10-D	E600-	
I	L	_	_	1	E200-□03-D	E300-□04-D	E400-□06-D		E600-	
I				i		E300L-□01-D	E400L-02-D			⊡04-D
I	L-shar	ped piping ada	apter*5, *6	p. 60	E200L-01-D	E300L-01-D	E400L-02-D	E500L-□04-D		-⊡04-D ·⊡06-D
I		r-ping au			E200L-□02-D	E300L-02-D	E400L-D03-D	E500L-□06-D		.⊡06-D .⊡10-D
I	<u> </u>			——————————————————————————————————————		E300L-003-D	E400L-04-D		E600L-	
I	T-shor	bed piping ada	1pter*5. *6	p. 61	E200T-□01-D	E300T-D01-D	E4001-⊡02-D E400T-⊡03-D	E500T-□04-D	E6001-	
Т		- Piping dui			E200T-□02-D	E3001-02-D E300T-03-D	E4001-⊡03-D E400T-⊡04-D	E500T-□06-D	E6001-	
I	<u> </u>			, i	ti			Y510-□02-D		
I			ì		Y210-□01-D	Y310-□01-D	Y410-□02-D	Y510-⊡02-D Y510-⊡03-D	Y610-	
I			ì	Standard	Y210-⊔01-D Y210-□02-D	Y310-□02-D	Y410-□03-D	Y510-⊡03-D Y510-⊡04-D	Y610-	
I	T-spac	er* ^{5, *6}	p. 62	ļ i	1∠10-⊡02-D	Y310-□03-D	Y410-□04-D	Y510-⊔04-D Y510-□06-D	Y610-	
I					Voto Dot 1					
I			1	Slim type	Y210-□01-1-D	Y310-□01-1-D	Y410-□02-1-D	Y510-□02-1-D	Y610-⊡ X610-⊡	
ł				, , , , , , , , , , , , , , , , , , ,	Y210-□02-1-D	Y310-□02-1-D	Y410-□03-1-D	Y510-□03-1-D	Y610-□	JU4-1-D
I			ì	ļ i		Y34-□01-D	Y44-⊡02-D	Y54-□02-D	Y64-□]03-D
I			ì	Standard	Y24-□01-D	Y34-□02-D	Y44-⊡03-D	Y54-⊡03-D	Y64-⊑	
ttachment			I		Y24-□02-D	Y34-⊡02-D	Y44-⊡04-D	Y54-⊡04-D	Y64-□	
1	Cross	spacer*5, *6	p. 63	لــــــــــــــــــــــــــــــــــــــ	ļ			Y54-⊡06-D		
I			1	Front and	Y24-□01-1-D	Y34-□01-1-D	Y44-□02-1-D	Y54-□03-1-D		
I			ì	back port	Y24-□01-1-D Y24-□02-1-D	Y34-□02-1-D	Y44-⊡03-1-D	Y54-⊡04-1-D	-	-
I			i	selectable type	· ∠ - -'⊔∪2-I-U	Y34-□03-1-D	Y44-⊡04-1-D	Y54-□06-1-D		
I	Dros	I'e ewitch**	D 64	Standard	IS10M-20-D	IS10M-30-D	IS10M-40-D	IS10M-50-D	IS10N	
I	ressu	ure switch*6	p. 64	Slim type		IS10M-30-1-D	IS10M-40-1-D	IS10M-50-1-D	IS10M-	
I								IS10T-50-□02-D		
I		ure switch			IS10T-20-□01-D	IS10T-30-□01-D	IS10T-40-□02-D	IS10T-50-□03-D	IS10T-60	
I		·spacer*5, *6		p. 65	IS10T-20-02-D	IS10T-30-□02-D	IS10T-40-□03-D	IS10T-50-04-D	IS10T-60	
I				Ì		IS10T-30-□03-D	IS10T-40-□04-D	IS10T-50-06-D	IS10T-60	u-⊔06-D
I	Pressu	ure switch		i	10401 27 -	IS10L-30-□01-D	IS10L-40-□02-D		IS101-60	0-□04-D
I		-shaped pipin	g	p. 66	IS10L-20-□01-D	IS10L-30-□02-D	IS10L-40-□02-D	IS10L-50-□04-D		0-⊡04-D 0-⊡06-D
I	adapte		-		IS10L-20-□02-D	IS10L-30-□02-D	IS10L-40-□04-D	IS10L-50-□06-D		0-⊡00-D 0-⊡10-D
I				i	t		IS10E-40-004-D			0-□10-D 0-□06-D
I	Press	ure switch			IS10E-20-01-D			IS10E-50-□06-D	IS10E-6	
I		ure switch iping adapter'	*5, *6	p. 67	IS10E-20-□02-D	IS10E-30-□03-D	IS10E-40-⊡03-D IS10E-40-⊡04-D	1 1	IS10E-6	
I	with b	y auapter			IS10E-20-□03-D	IS10E-30-□04-D	IS10E-40-⊔04-D IS10E-40-□06-D		IS10E-60 IS10E-60	
i	Riah*	Indle adart	*6	n 60	F210TD	FOTOTO	IS10E-40-⊔06-D E410T-D			U
i		angle adapter		p. 68	E210T-D	E310T-D E310B-D		—	—	<u> </u>
I	Reduc	ing adapter*6	ì	p. 68	E310R-D	E310R-D E410B-D	E410R-D	_	_	· _
i		<u> </u>				E410R-D				<u> </u>
ł	Cross End pla	adapter*5, *6		p. 69	Y24M-□02-D	Y34M-□03-D	Y44M-□04-D	—		
	المسام مراجع	070		p. 70	E200E-D	E300E-D	E400E-D	I _ I		

*1 in part numbers for a round type 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.

*2 Including one O-ring and 2 mounting screws

*3 Lead wire with connector (2 m), adapter, lock pin, O-ring (1 pc.), mounting screws (2 pcs.) are attached. []: Switch body only Regarding how to order the digital pressure switch, refer to page 130. *4 Minimum operating pressure: N.O. type-0.1 MPa; N.C. type-0.1 MPa (AD27-D) and 0.15 MPa (AD37-D/AD47-D). Please contact SMC separately for psi and °F unit display specifications.

*5 □ in attachment part numbers indicates a pipe thread type. No indication is necessary for Rc thread; however, indicate N for NPT thread, and F for G thread.

*6 Separate spacers are required for modular units.

AC

AW + AL || AF + AR + AL

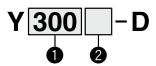
AF + AR

AL

AV

AC-D Series ACCESSOTIES (Spacer / Spacer with Bracket)

Spacer / Spacer with Bracket



Spacer (Y⊡-D) Spacer with bracket (Y□T-D)

		Symbol	Description		Body size	1 e [Applicable	AC size]	
			2000, p.io.	200 [AC20]	300 [AC30]	400 [AC40]	500 [AC40-06]	600 [AC50/AC60]
		Nil	Spacer					
2	Bracket	т	Spacer with bracket	•	•	•	•	•





Standard Specifications

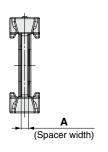
Fluid	Air
Ambient and fluid temperatures	-5 to 60°C (No freezing)
Proof pressure	1.5 MPa
Max. operating pressure	1.0 MPa

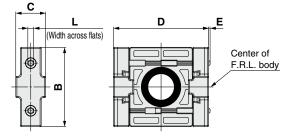
Replacement Parts

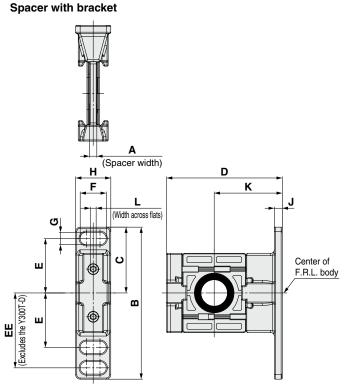
				Part no.		
Description	Material	Y200-D	Y300-D	Y400-D	Y500-D	Y600-D
		Y200T-D	Y300T-D	Y400T-D	Y500T-D	Y600T-D
Seal	HNBR	Y220P-050S	Y320P-050S	Y420P-050S	Y520P-050S	Y620P-050S

Dimensions

Spacer

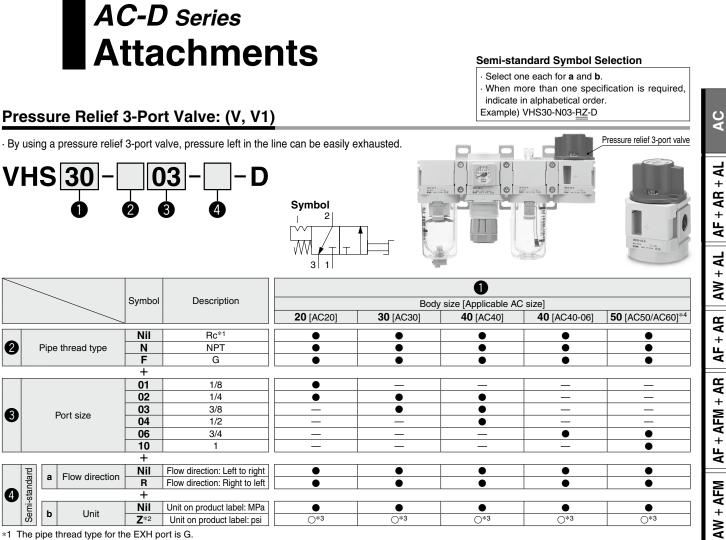






Model	Α	В	С	D	E	L	Applicable size
Y200-D	3.2	35	13.2	42	0.6	2	AC20-D
Y300-D	4.2	43	16.2	53	—	3	AC30-D
Y400-D	5.2	51	19.2	71	—	3	AC40-D
Y500-D	5.2	54	21.2	71	—	3	AC40-06-D
Y600-D	6.2	64	27.2	90		4	AC50-D
1000-D	0.2	04	21.2	90	_	- 4	AC60-D

	-	_	-	_	_		_	-					n
Model	Α	В	C	D	E	EE	F	G	Н	J	K	L	Applicable size
Y200T-D	3.2	67	29	51	24	33	11.5	5.5	15.5	3.5	30	2	AC20-D
Y300T-D	4.2	85	42.5	67.5	35	-	14	7	20	6	41	3	AC30-D
Y400T-D	5.2	115	50	85.5	40	55	18	9	26	7	50	3	AC40-D
Y500T-D	5.2	115	50	85.5	40	55	18	9	26	7	50	3	AC40-06-D
Y600T-D	6.2	140	60	115	50	70	20	4.4	31.2	8	70	4	AC50-D
10001-D	0.2	140	00	115	50	10	20	11	31.2	°	10	0 4	AC60-D



The pipe thread type for the EXH port is G. *1

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

SMC

*3 O: For the pipe thread type: NPT only

*4 The VHS50 can be connected to the AC60.

Standard Specifications

Fluid	Air
Ambient and fluid temperatures	-5 to 60°C (No freezing)
Proof pressure	1.5 MPa
Max. operating pressure	1.0 MPa

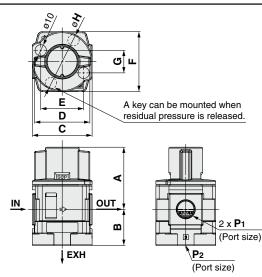
Flow Rate Characteristics

1 Ion Hat									
	Port s								
Model			IN -	→ OUT		$OUT \rightarrow EXH$			
woder	IN, OUT	EXH	C (dm³/s⋅bar)	b	Cv	C (dm³/s⋅bar)	b	Cv	
VHS20	1/8	1/8	4.0	0.41	1.1	3.7	0.42	1.1	
VH320	1/4	1/0	5.8	0.31	1.4	3.8	0.42	1.1	
VHS30	1/4	1/4	8.8	0.44	2.4	8.0	0.46	2.3	
VH330	3/8	1/4	14.1	0.28	3.5	7.8	0.46	2.2	
	1/4		9.5	0.49	2.8	13.3	0.47	3.6	
VHS40	3/8	3/8	17.2	0.47	4.8	13.6	0.47	3.7	
	1/2		26.7	0.29	6.3	13.4	0.43	3.7	
VHS40-06	3/4	1/2	34.0	0.22	7.6	16.1	0.41	4.4	
VHS50	3/4	1/2	45.0	0.26	10.6	23.0	0.49	6.4	
VH350	1	1/2	53.3	0.36	13.5	22.8	0.49	6.3	

Caution on Mounting

- · Use an air filter on the inlet side for operating protection.
- · When mounting a silencer, etc., on the EXH port, refer to the operation manual.





					(0.20)	
l	P1	P 2	Α	В	С	D	Applicable size
1/8	6, 1/4	1/8	48.5	23	40	37	AC20-D
1/4	, 3/8	1/4	55	32	53	49	AC30-D
1/4, 3	3/8, 1/2	3/8	69.7	41.3	70	63	AC40-D
3	3/4	1/2	71.7	43.3	75	63	AC40-06-D
3/	4, 1	1/2	86.5	44.5	90	80	AC50-D/AC60-D
Е	F	G	H	Applical	ole size		
28	42	17.5	40	AC2	0-D	•	
38	53	20	53	AC3	0-D		
52	71	29	70	AC4	0-D		
52	71	29	70	AC40	-06-D		
72	90	33	90	AC50-D/	AC60-D		
	1/8 1/4 1/4, 3 3/ E 28 38 52 52 52	3/4 3/4, 1 E F 28 42 38 53 52 71 52 71	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	$\begin{array}{c c c c c c c c c c c c c c c c c c c $	$\begin{array}{c c c c c c c c c c c c c c c c c c c $	P1 P2 A B C 1/8, 1/4 1/8 48.5 23 40 1/4, 3/8 1/4 55 32 53 1/4, 3/8, 1/2 3/8 69.7 41.3 70 3/4 1/2 71.7 43.3 75 3/4, 1 1/2 86.5 44.5 90 E F G H Applicable size 28 42 17.5 40 AC2∪D 38 53 20 53 AC3∪D 52 71 29 70 AC4U-D 52 71 29 70 AC4U-GED	1/8, 1/4 1/8 48.5 23 40 37 1/4, 3/8 1/4 55 32 53 49 1/4, 3/8, 1/2 3/8 69.7 41.3 70 63 3/4 1/2 71.7 43.3 75 63 3/4, 1 1/2 86.5 44.5 90 80 E F G H Applicable size 28 42 17.5 40 AC20-D 38 53 20 53 AC30-D 52 71 29 70 AC40-D 52 71 29 70 AC40-06-D

<u>Attachments</u>

AF

AFM / AFD

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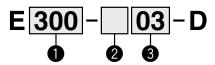
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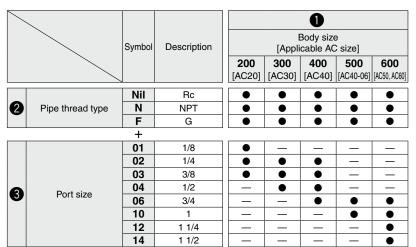
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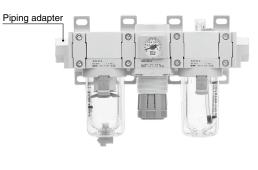
AC-D Series

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

· Using on the inlet side or the outlet side of F.R.L. units makes it easier to perform maintenance, as the component can be installed/ removed without removing the piping.





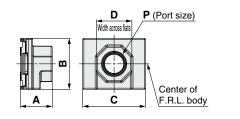




Standard Specifications

Fluid	Air
Ambient and fluid temperatures	−5 to 60°C (No freezing)
Proof pressure	1.5 MPa
Max. operating pressure	1.0 MPa

Dimensions



Model	Р	Α	В	С	D	Applicable AC size
E200-D	1/8, 1/4, 3/8	24	35	42	24	AC20-D
E300-D	1/4, 3/8, 1/2	27	43	53	30	AC30-D
E400-D	1/4, 3/8, 1/2, 3/4	30	51	71	36	AC40-D
E500-D	3/4	31	54	71	36	AC40-06-D
E900-D	1	31	54	1	46	AC40-06-D
E600-D	3/4, 1	39	64	00	46	AC50-D
	1 1/4, 1 1/2	42	64	90	63	AC60-D

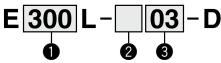
Caution on Mounting

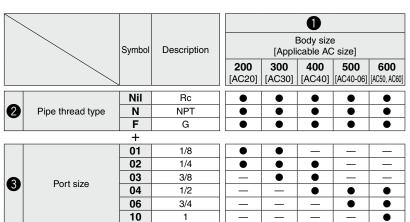
Pipe threads are not provided on the face which connects with the other components. For use, a separate spacer (or spacer with bracket) is required.

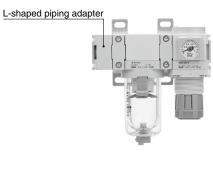
Attachments **AC-D** Series

L-Shaped Piping Adapter: 1/8, 1/4, 3/8, 1/2, 3/4, 1

- · Upward/downward piping is possible on the inlet side and the outlet side of F.R.L. units.
- · Ideal for space-saving and reducing piping labor
- · Using on the inlet side or the outlet side of F.R.L. units makes it easier to perform maintenance, as the component can be installed/ removed without removing the piping.





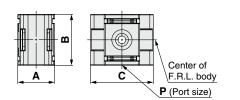




Standard Specifications

Fluid	Air
Ambient and fluid temperatures	−5 to 60°C (No freezing)
Proof pressure	1.5 MPa
Max. operating pressure	1.0 MPa

Dimensions



Model	Р	Α	В	С	Applicable AC size
E200L-D	1/8, 1/4	28	35	42	AC20-D
E300L-D	1/8, 1/4, 3/8	31	43	53	AC30-D
E400L-D	1/4, 3/8, 1/2	39	51	71	AC40-D
E500L-D	1/2, 3/4	47	54	71	AC40-06-D
	1/0 0/4 1	62	64	00	AC50-D
E600L-D	1/2, 3/4, 1	62	64	90	AC60-D

Caution on Mounting

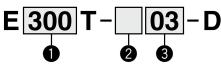
Pipe threads are not provided on the face which connects with the other components. For use, a separate spacer (or spacer with bracket) is required.

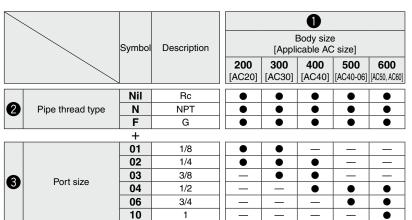
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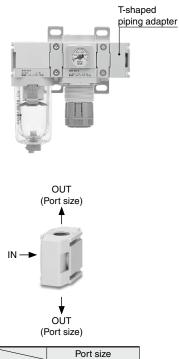
AC-D Series

T-Shaped Piping Adapter: 1/8, 1/4, 3/8, 1/2, 3/4, 1

- · Both upward and downward piping are possible on the inlet and outlet sides of F.R.L. units.
- · Ideal for space-saving and reducing piping labor
- Using on the inlet side or the outlet side of F.R.L. units makes it easier to perform maintenance, as the component can be installed/ removed without removing the piping.







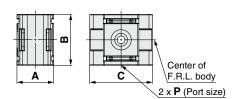
6

IN OUT

Standard Specifications

Fluid	Air
Ambient and fluid temperatures	–5 to 60°C (No freezing)
Proof pressure	1.5 MPa
Max. operating pressure	1.0 MPa

Dimensions



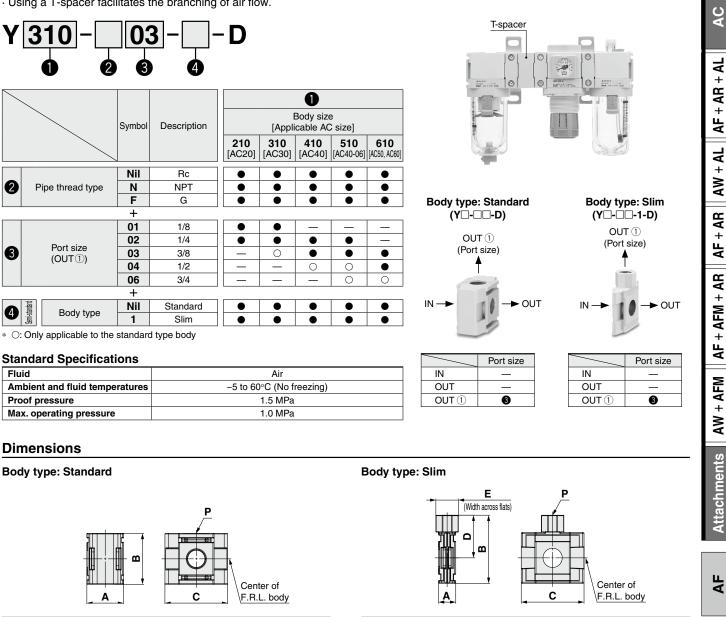
Model	Р	Α	В	С	Applicable AC size
E200T-D	1/8, 1/4	28	35	42	AC20-D
E300T-D	1/8, 1/4, 3/8	31	43	53	AC30-D
E400T-D	1/4, 3/8, 1/2	39	51	71	AC40-D
E500T-D	1/2, 3/4	47	54	71	AC40-06-D
ECONT D	1/0 0/4 1	60	64	00	AC50-D
E600T-D	1/2, 3/4, 1	62	64	90	AC60-D

Caution on Mounting

Pipe threads are not provided on the face which connects with the other components. For use, a separate spacer (or spacer with bracket) is required.

T-Spacer: 1/8, 1/4, 3/8, 1/2, 3/4

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



Model	P	Α	В	С	Applicable AC size
Y210-D	1/8, 1/4	28	35	42	AC20-D
Y310-D	1/8, 1/4, 3/8	31	43	53	AC30-D
Y410-D	1/4, 3/8, 1/2	39	51	71	AC40-D
Y510-D	1/4, 3/8, 1/2, 3/4	47	54	71	AC40-06-D
Y610-D	3/8, 1/2, 3/4	62	64	90	AC50-D, AC60-D

	A			С	1 1	Center	
Model	Р	Α	В	С	D	Е	Applicable AC size
Y210-1-D	1/8, 1/4	14.6	48.5	42	31	19	AC20-D
Y310-1-D	1/8, 1/4	14.6	57.5	53	36	19	AC30-D
Y410-1-D	1/4, 3/8	18.6	67	71	41.5	24	AC40-D
Y510-1-D	1/4, 3/8	18.6	70	63	43	24	AC40-06-D

87

90 55 30

AC50-D, AC60-D

Caution on Mounting

Y610-1-D

3/8, 1/2

22

· Pipe threads are not provided on the face which connects with the other components. For use, a separate spacer (or spacer with bracket) is required.

. The backflow of oil may occur when a spacer is used on the inlet side of the lubricator. Attach a check valve between the lubricator and the product to prevent backflow.

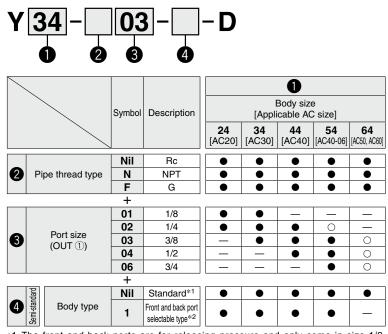
. When the slim body type is to be mounted to a wall using a spacer with bracket, use a spacer on only one side.

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AC-D Series

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

• The piping can be branched upward/downward (OUT ①) or forward/backward (OUT ②).



*1 The front and back ports are for releasing pressure and only come in size 1/8, irrespective of the ③ port size. The minimum port size is 1.4 mm.

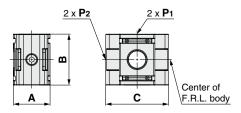
*2 The front and back ports come in the same size as the ③ port size. *3 "O" indicates that only the standard body type is applicable.

Standard Specifications

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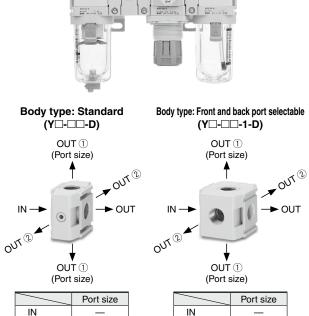
Dimensions

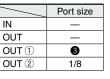
Body type: Standard



Model	P 1	P 2*1	Α	В	С	Applicable AC size
Y24-D	1/8, 1/4	1/8	28	35	42	AC20-D
Y34-D	1/8, 1/4, 3/8	1/8	31	43	53	AC30-D
Y44-D	1/4, 3/8, 1/2	1/8	39	51	71	AC40-D
Y54-D	1/4, 3/8, 1/2, 3/4	1/8	47	54	71	AC40-06-D
Y64-D	3/8, 1/2, 3/4	1/8	62	64	90	AC50-D, AC60-D

 $\ast 1$ A resin plug is attached to the P2 port and shipped together with the product.



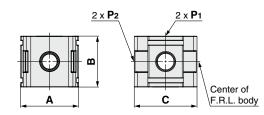


Cross spacer

0

(Port size) IN – OUT – OUT 1 OUT 2 **®**

Body type: Front and back port selectable



Model	P1, P2 *1	Α	В	С	Applicable AC size
Y24-1-D	1/8, 1/4	40	35	42	AC20-D
Y34-1-D	1/8, 1/4, 3/8	49	43	53	AC30-D
Y44-1-D	1/4, 3/8, 1/2	60	51	71	AC40-D
Y54-1-D	3/8, 1/2, 3/4	72	54	71	AC40-06-D

*1 Two hexagon socket head plugs the same size as the P1 and P2 ports are shipped together with the product.

Caution on Mounting

• Pipe threads are not provided on the face which connects with the other components. For use, a separate spacer (or spacer with bracket) is required.

 The backflow of oil may occur when a spacer is used on the inlet side of the lubricator. Attach a check valve between the lubricator and the product to prevent backflow.

SMC

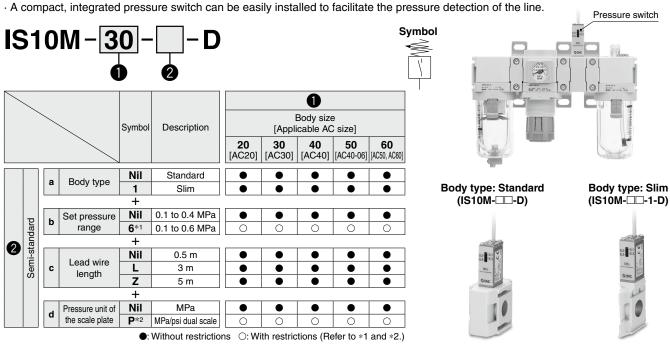
Attachments **AC-D** Series

Semi-standard Symbol Selection

Select one each for **a** to **d**.

 \cdot When more than one specification is required, indicate in alphanumeric order. Example) IS10M-30-6LP-D

Pressure Switch



*1 The set pressure range for the 6P is 0.2 to 0.6 MPa (30 to 90 psi).

*2 This product is for overseas use only according to the New Measurement Act.

(The SI unit type is provided for use in Japan.)

Standard Specifications

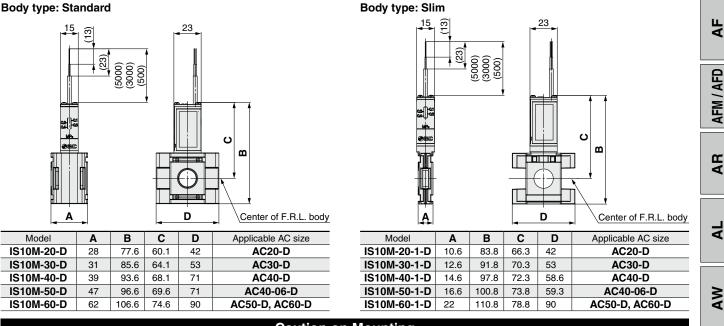
Air					
-5 to 60°C (No freezing)					
1.0 MPa					
0.7 MPa					
0.1 to 0.4 MPa					
0.08 MPa or less					
1a					

Switch Characteristics

Max. contact point capacity	2 VA (AC), 2 W (DC)				
Operating voltage: AC, DC	100 V or less				
Max. operating current	24 VAC, DC or less: 50 mA 48 VAC, DC or less: 40 mA 100 VAC, DC or less: 20 mA				

 For detailed specifications of the IS10 series, refer to the IS10 series section on the SMC website: https://www.smcworld.com

Dimensions



Caution on Mounting

Pipe threads are not provided on the face which connects with the other components. For use, a separate spacer (or spacer with bracket) is required.
When the slim body type is to be mounted to a wall using a spacer with bracket, use a spacer on only one side.

@SMC

AC-D Series

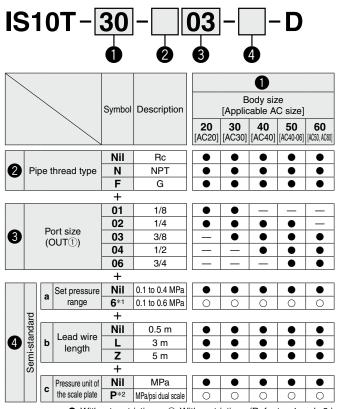
Semi-standard Symbol Selection

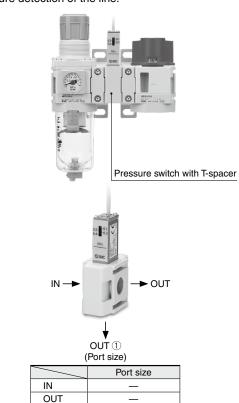
Symbol

Select one each for a to c.
 When more than one specification is required, indicate in alphanumeric order.
 Example) IS10T-30-N03-6LP-D

Pressure Switch with T-Spacer

· A compact, integrated pressure switch can be easily installed to facilitate the pressure detection of the line.





•: Without restrictions O: With restrictions (Refer to *1 and *2.)

*1 The set pressure range for the 6P is 0.2 to 0.6 MPa (30 to 90 psi).

*2 For the pipe thread type: NPT only

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

Standard Specifications

Fluid	Air
Ambient and fluid temperatures	-5 to 60°C (No freezing)
Proof pressure	1.0 MPa
Max. operating pressure	0.7 MPa
Set pressure range (when OFF)	0.1 to 0.4 MPa
Hysteresis	0.08 MPa or less
Contact point configuration	1a

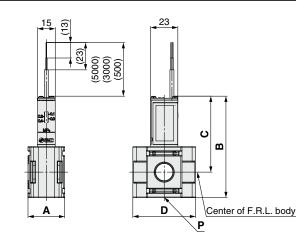
Switch Characteristics

Max. contact point capacity	2 VA (AC), 2 W (DC)				
Operating voltage: AC, DC	100 V or less				
Max. operating current	24 VAC, DC or less: 50 mA 48 VAC, DC or less: 40 mA 100 VAC, DC or less: 20 mA				

* For detailed specifications of the IS10 series, refer to the IS10 series section on the SMC website: https://www.smcworld.com

Dimensions

OUT ①



6

Model	Р	Α	В	С	D	Applicable AC size
IS10T-20-D	1/8, 1/4	28	77.6	60.1	42	AC20-D
IS10T-30-D	1/8, 1/4, 3/8	31	85.6	64.1	53	AC30-D
IS10T-40-D	1/4, 3/8, 1/2	39	93.6	68.1	71	AC40-D
IS10T-50-D	1/4, 3/8, 1/2, 3/4	47	96.6	69.6	71	AC40-06-D
IS10T-60-D	3/8, 1/2, 3/4	62	106.6	74.6	90	AC50-D, AC60-D

Caution on Mounting

• Pipe threads are not provided on the face which connects with the other components. For use, a separate spacer (or spacer with bracket) is required.

The backflow of oil may occur when a spacer is used on the inlet side of the lubricator. Attach a check valve between the lubricator and the product to prevent backflow.

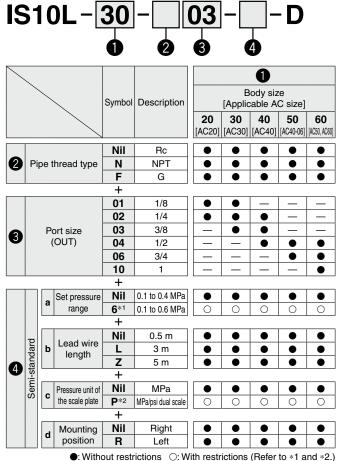
Attachments **AC-D** Series

Semi-standard Symbol Selection

Select one each for a to d. · When more than one specification is required, indicate in alphanumeric order. Example) IS10L-30-N03-6LP-D

Pressure Switch with L-Shaped Piping Adapter

- · A compact, integrated pressure switch can be easily installed to facilitate the pressure detection of the line.
- · Using on the inlet side or the outlet side of F.R.L. units allows the component to be installed/removed without removing the piping.



*1 The set pressure range for the 6P is 0.2 to 0.6 MPa (30 to 90 psi).

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

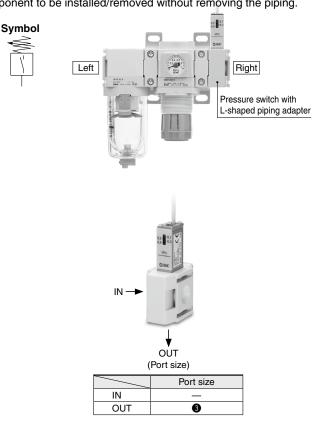
Standard Specifications

Fluid	Air
Ambient and fluid temperatures	-5 to 60°C (No freezing)
Proof pressure	1.0 MPa
Max. operating pressure	0.7 MPa
Set pressure range (when OFF)	0.1 to 0.4 MPa
Hysteresis	0.08 MPa or less
Contact point configuration	1a

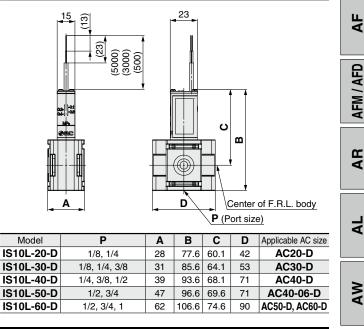
Switch Characteristics

Max. contact point capacity	2 VA (AC), 2 W (DC)
Operating voltage: AC, DC	100 V or less
Max. operating current	24 VAC, DC or less: 50 mA 48 VAC, DC or less: 40 mA 100 VAC, DC or less: 20 mA

* For detailed specifications of the IS10 series, refer to the IS10 series section on the SMC website: https://www.smcworld.com



Dimensions



Caution on Mounting

Pipe threads are not provided on the face which connects with the other components. For use, a separate spacer (or spacer with bracket) is required. **SMC**

^{*2} For the pipe thread type: NPT only

AC-D Series

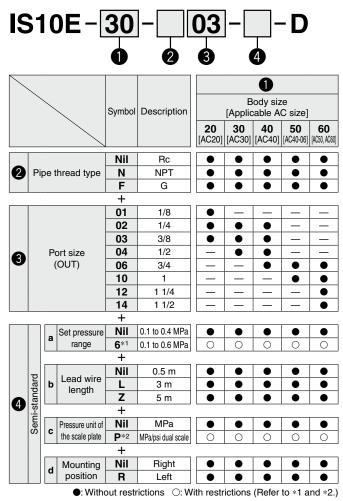
Semi-standard Symbol Selection

Select one each for a to d.
 When more than one specification is required, indicate in alphanumeric order.

Example) IS10E-30-N03-6LP-D

Pressure Switch with Piping Adapter

· A compact, integrated pressure switch can be easily installed to facilitate the pressure detection of the line.



*1 The set pressure range for the 6P is 0.2 to 0.6 MPa (30 to 90 psi).

*2 For the pipe thread type: NPT only

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

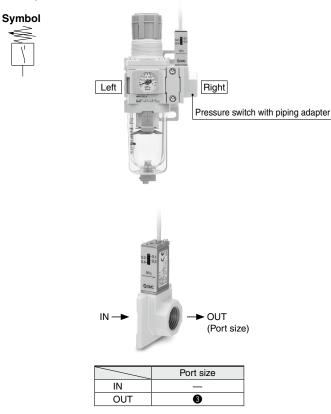
Standard Specifications

Fluid	Air
Ambient and fluid temperatures	−5 to 60°C (No freezing)
Proof pressure	1.0 MPa
Max. operating pressure	0.7 MPa
Set pressure range (when OFF)	0.1 to 0.4 MPa
Hysteresis	0.08 MPa or less
Contact point configuration	1a

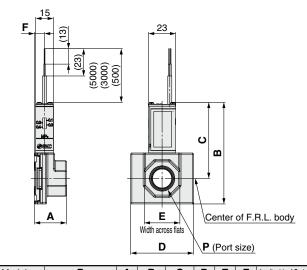
Switch Characteristics

Max. contact point capacity	2 VA (AC), 2 W (DC)
Operating voltage: AC, DC	100 V or less
Max. operating current	24 VAC, DC or less: 50 mA 48 VAC, DC or less: 40 mA 100 VAC, DC or less: 20 mA

* For detailed specifications of the IS10 series, refer to the IS10 series section on the SMC website: https://www.smcworld.com



Dimensions



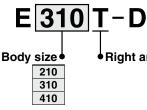
Model	Р	Α	В	С	D	Ε	F	Applicable AC size
IS10E-20-D	1/8, 1/4, 3/8	24	77.8	60.3	42	24		AC20-D
IS10E-30-D	1/4, 3/8, 1/2	27	85.8	64.3	53	30]	AC30-D
IS10E-40-D	1/4, 3/8, 1/2, 3/4	30	93.8	68.3	71	36	8.5	AC40-D
IS10E-50-D	3/4	31 96.	00.0	69.8	71	36		AC40-06-D
	1		90.0		1	46		AC40-00-D
IS10E-60-D	3/4, 1	39	106.8	74.8	90	46	9.5	AC50-D,
	1 1/4, 1 1/2	42	100.0	74.8		63		AC60-D

Caution on Mounting

Pipe threads are not provided on the face which connects with the other components. For use, a separate spacer (or spacer with bracket) is required. 67

Right Angle Adapter

· Allows for modular connection with the product rotated 90 degrees

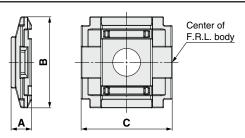


Right angle adapter

Standard Specifications

Fluid	Air			
Ambient and fluid temperatures	–5 to 60°C (No freezing)			
Proof pressure	1.5 MPa			
Max. operating pressure	1.0 MPa			

Dimensions



Right angle	adapter

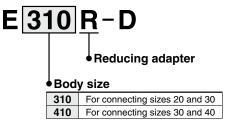
Model	Α	В	С	Applicable AC size
E210T-D	9	42	42	AC20-D
E310T-D	12	53	53	AC30-D
E410T-D	15	71	71	AC40-D

Caution on Mounting

- · Pipe threads are not provided on the face which connects with the other components. For use, a separate spacer (or spacer with bracket) is required.
- · When mounting to a wall using a spacer with bracket, use a spacer on only one side.

Reducing Adapter

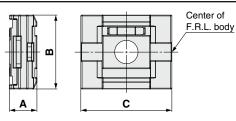
· Allows for modular connection with products 1 body size larger or smaller



Standard Specifications

Fluid	Air
Ambient and fluid temperatures	-5 to 60°C (No freezing)
Proof pressure	1.5 MPa
Max. operating pressure	1.0 MPa

Dimensions





Reducing adapter

Model	Α	В	С	Applicable AC size
E310R-D	16	43	53	AC20-D, AC30-D
E410R-D	20	51	71	AC30-D, AC40-D

AR

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A₹

Caution on Mounting

- · Pipe threads are not provided on the face which connects with the other components. For use, a separate spacer (or spacer with bracket) is required.
- \cdot When mounting to a wall using a spacer with bracket, use a spacer on only one side.

AC-D Series

Semi-standard Symbol Selection

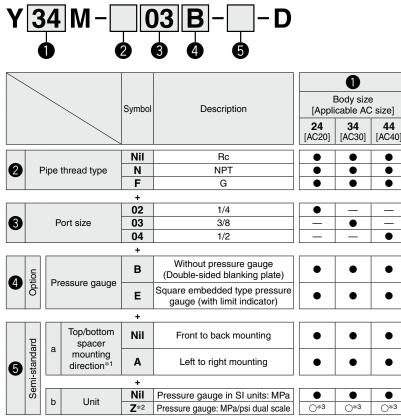
Select one each for a and b.

When more than one specification is required, indicate in alphabetical order.

Example) Y34M-N03E-AZ-D

Cross Adapter: 1/4, 3/8, 1/2

· Allows for devices to be connected on the top, bottom, left, and right with a spacer



*1 It is possible to change the mounting direction of the spacer (From front to back to left to

right). For details on how to do so, refer to the operation manual. For the pipe thread type: NPT. This product is for overseas use only according to the New *2 Measurement Act. (The SI unit type is provided for use in Japan.)

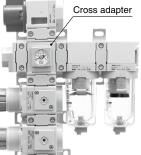
*3 O: For the pipe thread type: NPT only

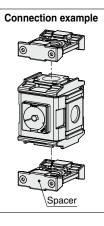
Standard Specifications

Fluid	Air
Ambient and fluid temperatures	-5 to 60°C (No freezing)
Proof pressure	1.5 MPa
Max. operating pressure	1.0 MPa

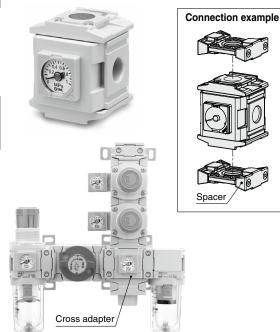
Top/bottom spacer mounting direction: Front to back mounting (Nil)







Top/bottom spacer mounting direction: Left to right mounting (A)



Caution on Mounting

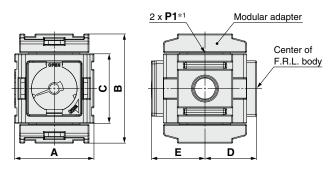
· Pipe threads are not provided on the face which connects with the other components. For use, a separate spacer (or spacer with bracket) is required.

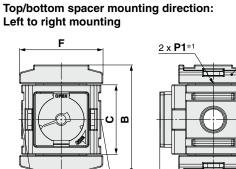
. The backflow of oil may occur when a spacer is used on the inlet side of the lubricator. Attach a check valve between the lubricator and the product to prevent backflow.

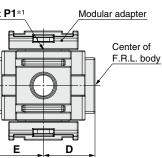


Dimensions

Top/bottom spacer mounting direction: Front to back mounting





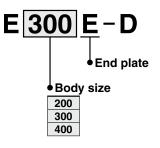


							Optional specifications			
Model		Star	ndard specificat	ions	Without	Square	Spacer	Applicable AC		
mouor					pressure	embedded type	Left to right	size		
							pressure gauge	mounting		
	P1 *1	Α	B C D		E	E	F			
Y24M-D	1/4	40	55	35	26	26	27	42	AC20-D	
Y34M-D	3/8	53	63	43	31.5	31.5	32.5	53	AC30-D	
Y44M-D	1/2	70	77	51	40.5	40.5	41.5	71	AC40-D	

*1 By removing the modular adapter, the female threads on the top and bottom surfaces can be used as piping ports for air release.

End Plate

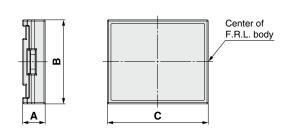
 \cdot For blocking the unused piping ports on sides without a modular connection



Standard Specifications

Fluid	Air
Ambient and fluid temperatures	-5 to 60°C (No freezing)
Proof pressure	1.5 MPa
Max. operating pressure	1.0 MPa

Dimensions





Model	Α	В	С	Applicable AC size
E200E-D	9.4	35	42	AC20-D
E300E-D	9.4	43	53	AC30-D
E400E-D	12.4	51	71	AC40-D

Caution on Mounting

· Pipe threads are not provided on the face which connects with the other components. For use, a separate spacer (or spacer with bracket) is required.

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AC-D Series Specific Product Precautions

Be sure to read this before handling the products. Refer to the back cover for safety instructions. For F.R.L. units precautions, refer to the "Handling Precautions for SMC Products" and the "Operation Manual" on the SMC website: https://www.smcworld.com

Air Supply

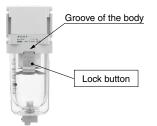
A Caution

1. Use an air filter with 5 μ 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

A Caution

 When the bowl is installed on the air filter, filter regulator, lubricator, mist separator, or micro mist separator (AC30-D to AC60-D), 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.



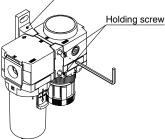
2. Tighten the 2 holding screws on the spacer with bracket or spacer evenly.

Tighten them to the recommended tightening torque.

Insufficient tightening torque may result in loosening or sealing failure. Excessive tightening torque may damage the thread, etc.

Recommended Torque Unit: N-I								
Applicable model	AC20□	AC30□	AC40□	AC40⊡-06	AC50□ AC60□			
Spacer with bracket part no.	Y200T-D	Y300T-D	Y400T-D	Y500T-D	Y600T-D			
Spacer part no.	Y200-D	Y300-D	Y400-D	Y500-D	Y600-D			
Torque	0.36 ±0.036	1.2 ±0.05	1.2 ±0.05	1.4 ±0.05	2.0 ±0.1			

Spacer with bracket



Selection

\land Warning

1. Piping load and moment

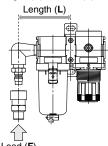
Avoid any torsional or bending moments other than those caused by the equipment's own weight as failure to do so may result in damage.

Support external piping separately. If moment application is unavoidable during operation, the moment should be lower than the max. moment shown below.

Piping materials without flexibility, such as steel tube piping, are prone to being affected by excess moment loads or vibrations from the piping side. Use flexible tubing in between to avoid such effects.

_						Unit: N·m
	Applicable model	AC20□	AC30□	AC40□	AC40□-06	AC50□ AC60□
	Max. moment (M)	14.5	16	19.5	35	45

Max. moment (M) = Length (L) x Load (F)



2. Float type auto drain

Operate under the following conditions to avoid a malfunction. <N.O. type>

 Operating compressor: 0.75 kW (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 (200 L/min (ANR)) of the compressor capacity is required.

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

A Caution

- When releasing air at the intermediate position using a T-spacer on the inlet side of the lubricator, lubricant may backflow. 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 (AKM series) 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 manner.
- **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.
- 4. When operating at an inlet pressure lower than the inlet pressure used in the flow rate characteristics graph, the pressure drop on the outlet side may be greater. Therefore, be sure to conduct testing using the actual equipment.

For air combination selection, refer to the "Product Selection Guide." $\label{eq:selection}$

AC	
AW + AL AF + AR + AL	
AW + AL	
AF + AR	
AF + AFM + AR	
AW + AFM	
Attachments	
AF	
AFM / AFD	
AR	
AL	
AW	

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Modular Type Air Filter **AF Series**

Air Filter AF Series	Model	Port size	Filtration [µm]	Options
	AF20-D	1/8, 1/4		
and and a ten and and ten and and	AF30-D	1/4, 3/8		
	AF40-D 1/4, 3/8, 1/2 5	Bracket		
	AF40-06-D	3/4		Float type auto drain
	AF50-D	3/4, 1		
p. 74 to 83	AF60-D	1		

nb =ilte				20-D to Al						PER-4 Ren - 23 Ma C BET REN ER
\prec		Air Filter with 2 1	Auto Drai	in					NUMBER OF	
	I	I		How to Order					AF	30-D
٩F	: 3)3 6		 Select on When model in alphan Example) 	e each fo ore than o umeric o	or a to g . one specif oder.	ication is r		
	<u> </u>		Symbol	Description						
			Cymbol	Decomption		20	30	Body size	, 50	60
			Nil	Rc					•	
2	Pip	be thread type	N	NPT		•	•	•	•	•
			F +	G		U			•	
			01	1/8			—	—		
	Port size	02	<u> </u>		•		•		<u> </u>	
3		03	1/2			•	•		\vdash	
			06	3/4				•	•	—
			10	1			—	—	•	
			+ Nil	Without mounting option					-	
	а	Mounting	B*1	With bracket						
			+						-	
ð	+	Float type auto	Nil	Without auto drain		•	•	•	•	•
	b	drain*2	C*3 D*4	N.C. (Normally closed) Drain port is closed when pressure is not N.O. (Normally open) Drain port is open when pressure is not				•	<u> </u>	
			+	N.O. (Normally open) Drain port is open when pressure is not	applieu.		•	U	•	
			Nil	Polycarbonate bowl					•	
			2	Metal bowl		•	•	•	•	
	c	Bowl ^{*5}	6	Nylon bowl				•	•	
			8 C	Metal bowl with level gauge With bowl guard		•	• *6	● *6		*6
			6C	With bowl guard (Nylon bowl)		•	*7	*7	*7	*7
			+				r	······································		
L'	d	Indicator	Nil	Without indicator		•		● ●*12	•	
Sami-standard			<u> L</u> +	With element service indicator*14				U ¹⁰ 12	•	•
5			Nil	With drain cock					•	
	е	Drain port*8	J *9	Drain guide 1/8			-	—	—	—
U.	Ũ	Drain port	_	Drain guide 1/4			•	•	•	•
			W *10 +	Drain cock with barb fitting					•	
			Nil	Flow direction: Left to right					•	
	f	Flow direction	R	Flow direction: Right to left			Ŏ	•	Ŏ	•
			+							
	g	Unit	Nil Z *11	Unit on product label: MPa, °C Unit on product label: psi, °F			● ○* ¹³	● ○* ¹³		● ○* ¹³

*3 When pressure is not applied, condensate which does not start the auto drain mechanism will be left in the bowl. Releasing the residual condensate before ending operations for the day is recommended.

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

*5 Refer to chemical data on page 83 for chemical resistance of the bowl.
*6 A bowl guard is provided as standard equipment (polycarbonate).

*7 A bowl guard is provided as standard equipment (polycarbonate).
*8 The combination of float type auto drain C and D is not available.
*9 Without a valve function. The mounting screws are the same as the thread of 2.
*10 The combination of metal bowl 2 and 8 is not available.

*11 For the pipe thread type: NPT. This product is for overseas use only according to the New Measurement Act. (The SI unit type is provided for use in Japan.)

*12 Excludes port size "06"
*13 O: For the pipe thread type: NPT only
*14 A special body type is required to mount the element service indicator. It cannot be mounted on a standard body.



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AF20-D to AF60-D Series

Standard Specifications

Model	AF20-D	AF30-D	AF40-D	AF40-06-D	AF50-D	AF60-D				
Port size	1/8, 1/4	1/4, 3/8	1/4, 3/8, 1/2	3/4	3/4, 1	1				
Fluid			A	lir						
Ambient and fluid temperatures			−5 to 60°C (No freezing)						
Proof pressure	1.5 MPa									
Max. operating pressure			1.0	MPa						
Auto drain minimum N.C.	0.1 MPa		0.15 MPa							
operating pressure N.O.	— 0.1 MPa									
Nominal filtration rating ^{*1}	5 μm									
Compressed air purity class ^{*2}			ISO 8573-1:20	10 [6 : 8 : 4] ^{*3}						
Drain capacity	8 cm ³	25 cm ³		45 0	cm ³					
Bowl material			Polyca	rbonate						
Bowl guard	Semi-standard (Steel)		Star	ndard (Polycarbon	ate)					
Weight	0.09 kg	0.17 kg	0.35 kg	0.39 kg	0.85 kg	0.92 kg				

*1 For the following conditions in accordance with [Test condition: ISO 8573-4:2001 compliant, Test method ISO 12500-3:2009 compliant] Conditions: When a new element is used, and the flow capacity, inlet pressure, and the amount of solid bodies on the filter inlet side are stable

*2 The compressed air purity class is indicated based on ISO 8573-1:2010 Compressed air - Part 1: Contaminants and purity classes.

For details on this standard, refer to page 131. *3 The compressed air quality class on the inlet side is [7:9:4].

Bowl Assembly/Part Nos.

Bowl	Drain discharge	Ducin nort	Other			Мо	del			
material	mechanism	Drain port	Other	AF20-D	AF30-D	AF40-D	AF40-06-D	AF50-D	AF60-D	
		With drain cock	—	C2SF-D	—			-		
		With drain cock	With bowl guard	C2SF-C-D	C3SF-D		C4S	F-D		
	Manual	Drain cock with barb fitting	With bowl guard	—	C3SF-W-D		C4SF	-W-D		
Dolycorhonoto		With drain guide	_	C2SF□-J-D	—			-		
Polycarbonate		(without valve function)	With bowl guard	C2SF□-CJ-D	C3SF□-J-D	C4SF□-J-D				
	Automatic*1	Normally closed (N.C.)	_	AD27-D	—	_				
		Normally closed (N.C.)	With bowl guard	AD27-C-D	AD37□-D	AD47□-D				
	(Auto drain)	Normally open (N.O.)	With bowl guard	—	AD38□-D	AD48□-D				
		With drain cock	—	C2SF-6-A	—					
		With train cock	With bowl guard	C2SF-6C-A	C3SF-6-A	C4SF-6-A				
	Manual	Drain cock with barb fitting	With bowl guard	—	C3SF-6W-A	C4SF-6W-A				
Nylon		With drain guide	_	C2SF□-6J-A						
INVIOIT		(without valve function)	With bowl guard	C2SF□-6CJ-A	A C3SF□-6J-A C4SF□-6J-A					
	Automatic*1	Normally closed (N.C.)	_	AD27-6-A	—					
	(Auto drain)	Normally closed (N.C.)	With bowl guard	AD27-6C-A	AD37□-6-A		AD47]-6-A		
	(Auto urain)	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	With train cock	With level gauge	—	C3LF-8-A		C4LF	-8-A		
	Mariuar	With drain guide	_	C2SF□-2J-A	C3SF□-2J-A		C4SF	-2J-A		
Metal		(without valve function)	With level gauge	—	C3LF□-8J-A		C4LF]-8J-A		
weta		Normally closed (N.C.)	_	AD27-2-A	AD37[]-2-A		AD47]-2-A		
	Automatic*1	Normally closed (N.C.)	With level gauge	—	AD37[]-8-A		AD47]-8-A		
	(Auto drain)	drain)			AD380-2-A		AD48]-2-A		
		Normally open (N.O.)	With level gauge	—	AD380-8-A		AD48]-8-A		

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*1 The bowl assembly 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 contact SMC separately for psi and °F unit display specifications.

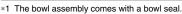
Option/Part Nos.

Optional			Mc	del						
specifications	AF20-D	AF30-D	AF40-D	AF40-06-D	AF50-D	AF60-D				
Bracket	AF24P-	AF34P-	AF44P-	AF49P-		07040				
assembly*1	070AS	070AS	070AS	070AS	AF54P-070AS					
Auto drain		Refer to "Bowl Assembly/Part Nos."								

*1 The assembly consists of a bracket A/B and 2 mounting screws.

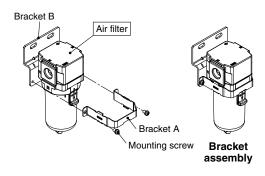
Replacement Parts

Description			Par	t no.					
Description	AF20-D	AF30-D	AF40-D	AF40-06-D	AF50-D	AF60-D			
Filter element	AF20P-	AF30P-	A E 4 O E	2-060S	AF50P-	AF60P-			
Filler element	060S	060S		-0003	060S	060S			
Baffle	AF24P-	AF34P-	A E 4 4 E	2-040S	AF54P-	AF64P-			
Dame	040S	040S		-0405	040S	040S			
Bowl seal	C2SFP-	C32FP-		C42FF	2605				
DOWI Seal	260S	260S		04266	-2003				
Bowl	Refer to "Bowl Assembly/Part Nos."								
assembly*1, *2		neiei	IU DOWIAS	sembly/Fan	1105.				

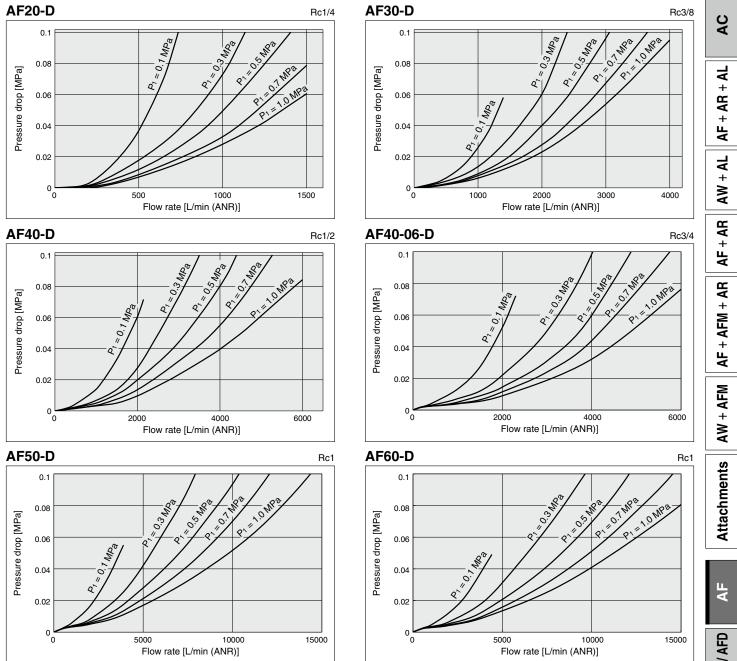


*2 Please contact SMC separately for psi and °F unit display specifications.

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Air Filter AF20-D to AF60-D Series



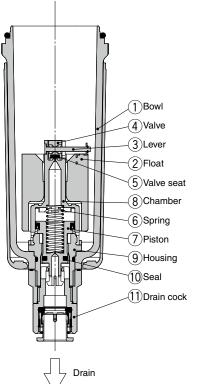
Flow Rate Characteristics (Representative values)

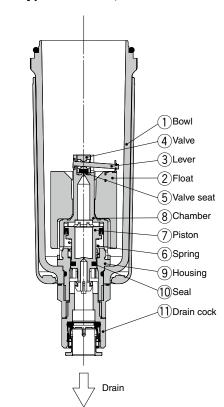


AF20-D to AF60-D Series

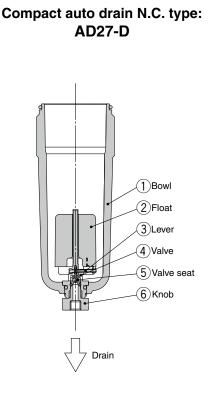
Working Principle: Float Type Auto Drain

N.O. type: AD38-D, AD48-D





N.C. type: AD37-D, AD47-D



• 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 $(\widehat{0})$ is interrupted, and the outside air flows inside the bowl (1) through the housing hole (9) and the drain cock $(\widehat{1})$.

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 piston (\mathcal{T}) surpasses the force of the spring (6), and the piston goes up.

This pushes seal $\widehat{(0)}$ up so that it creates a seal, and the inside of the bowl $(\widehat{1})$, 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 (and the force of the spring (lowers the piston (). This causes the sealing action of the seal () 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 $\overline{\mathcal{O}}$, 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, spring $(\widehat{6})$ keeps the piston $(\overline{7})$ 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 $(\ensuremath{\overline{1}}),$ 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 (7) in its upward position.

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 (8) surpasses the force of the spring (6) and pushes the piston 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 (7), and causes the seal created by the seal (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, 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.

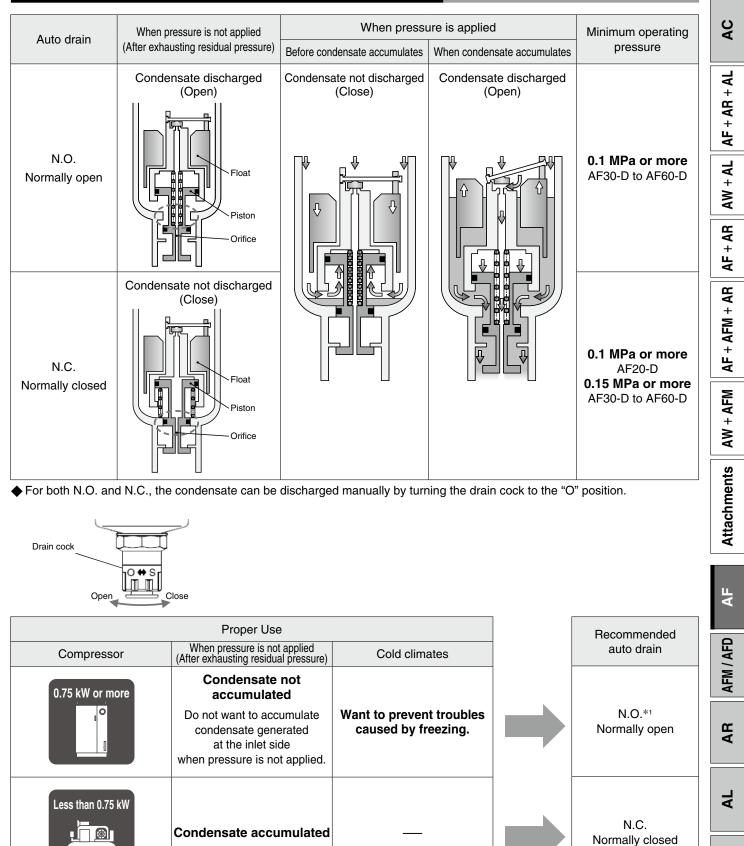
The condensate inside the bowl (1) drains out through the knob (6).

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.



Air Filter AF20-D to AF60-D Series





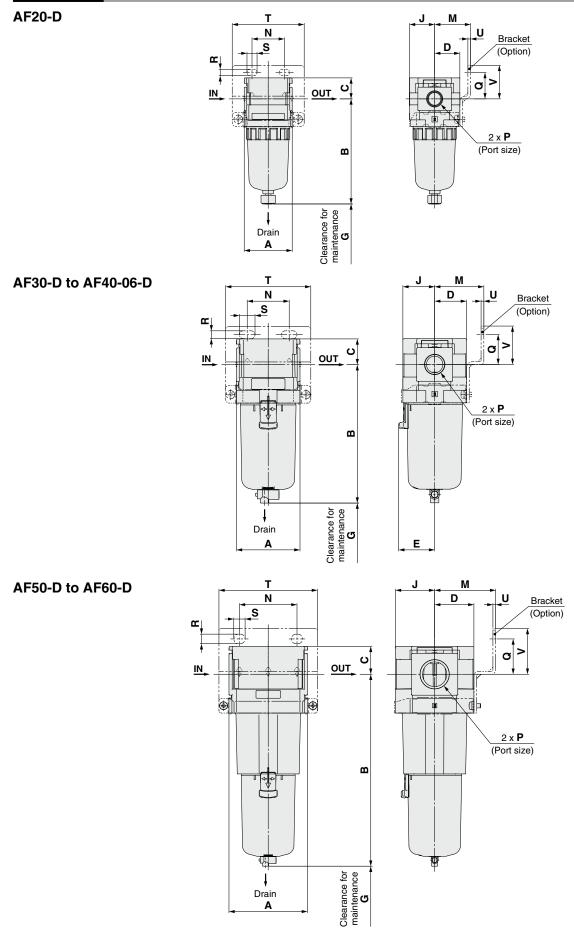
*1 For N.O. (Normally open) type, the condensate discharge passage is open when pressure is not applied. For this reason, the drain port is not closed completely in a compressor with a small supply amount (less than 0.75 kW) and the air will ceaselessly blow out.



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AF20-D to AF60-D Series

Dimensions



Air Filter AF20-D to AF60-D Series

	Optional specifications				Semi-standard				U.
Applicable		PC/PA	bowl	Meta	al bowl	Metal bowl w	vith level gauge	With	4
model	With auto drain	Drain cock with barb fitting	With drain guide	With drain cock	With drain guide	With drain cock	With drain guide	element service indicator	
AF20-D	M5 x 0.8		Width across flats 14		Width across flats 14			5	+ AL AF + AR + AL
	N.O.: Black N.C.: Gray Thread type/Rc, G: ø10 One-touch fitting Thread type/NPT: ø3/8" One-touch fitting	Barb fitting applicable tubing: T0604	Vidth across flats 17		Width across flats 17	n e	1/4 Width across flats 17	5	AR AF + AR AW

												Optior	nal spec	cification	าร		
Model		Standard specifications							Bracket mount							With auto drain	
	Р	Α	В	С	D	Е	G	J	М	Ν	Q	R	S	Т	U	V	В
AF20-D	1/8, 1/4	40	87.6	17.5	21	—	25	21	30	27	22	5.4	8.4	60	2.3	28	104.9
AF30-D	1/4, 3/8	53	115.4	21.5	26.5	30	35	26.5	41	35	25	6.5	13	71	2.3	32	157.1
AF40-D	1/4, 3/8, 1/2	70	147.1	25.5	35.5	38.4	40	35.5	50	52	30	8.5	12.5	88	2.3	39	186.9
AF40-06-D	3/4	75	149.1	27	35.5	38.4	40	35.5	50	52	34	8.5	12.5	88	2.3	43	188.9
AF50-D	3/4, 1	90	220.1	32	45	—	30	45	70	66	40.5	11	13	113	3.2	52.5	259.9
AF60-D	1	95	234.1	32	45	—	30	45	70	66	40.5	11	13	113	3.2	52.5	273.9

			Serr	ni-standard	l specificat	ions			
Model	PC/P/	A bowl	Metal	bowl	Metal be level g	o	With element		
Model	With barb fitting	With drain guide	With drain cock	With drain guide	With drain With drain cock guide		service indicator		
	В	В	В	В	В	В	Α	C1	
AF20-D	—	91.4	87.4	93.9	_		40	50.6	
AF30-D	123.9	122.2	117.8	122.3	137.8	142.3	53	54.3	
AF40-D	155.6	153.9	149.5	154	169.5	174	70	58.3	
AF40-06-D	157.6	155.9	151.5	156	171.5	176	—	—	
AF50-D	228.6	226.9	222.5	227	242.5	247	90	64.3	
AF60-D	242.6	240.9	236.5	241	256.5	261	90* ¹	64.3	

*1 For the type with an element service indicator, the A dimension differs from that of the standard specification.

AF

AFM / AFD

AR

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Air Filter/AF20-D to AF60-D Made to Order

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



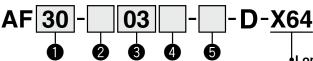
1Long Bowl

Drain capacity is greater than that of standard models.

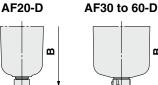
Applicable Models/Drain Capacity

Model	AF20-D	AF30-D	F30-D AF40-D AF40-06		AF50-D	AF60-D
Port size	1/8, 1/4	1/4, 3/8	1/4, 3/8, 1/2	3/4	3/4 3/4, 1	
Drain capacity [cm3]	19	43		8	8	
B dimension [mm]*1	108.1	137.4	167.2	169.2	240.2	254.2

*1 For polycarbonate bowls. Please contact SMC for other bowl materials.



Long bowl





Semi-standard Symbol Selection

Select one each for a to d.

· When more than one specification is required, indicate in alphanumeric order. Example) AF30-F03B-2JR-D-X64

								0		
				Symbol	Description			Body size		
						20	30	40	50	60
				Nil	Rc					
2		Pipe	e thread type	Ν	NPT			•	•	•
				F	G		•	•	•	•
				+						
				01	1/8		_	_	—	_
				02	1/4		•	•	—	—
6			Port size	03	3/8	—		•	_	_
8			Port Size	04	1/2	—	_	•	—	—
				06	3/4	_	_		•	—
				10	1	—	_	—	•	•
				+						
4		Ontio	on (Mounting)	Nil	Without mounting option			•		•
4	' `	Oplic	on (wounting)	B *1	With bracket			•	•	•
				+						
				Nil	Polycarbonate bowl			•		•
				2	Metal bowl					•
		а	Bowl ^{*2}	6	Nylon bowl			•	\bullet	•
				С	With bowl guard		—* ³	—* ³	—* ³	* ³
				6C	With bowl guard (Nylon bowl)		*4	*4	*4	*4
				+						
	dar			Nil	With drain cock			•		•
6	tan	b	Drain port	J *5	Drain guide 1/8			—	—	
U	Semi-standard	D	Drain port	-	Drain guide 1/4	—				
	Sen			W *6	Drain cock with barb fitting			•		•
				+						
		с	Flow direction	Nil	Flow direction: Left to right		•	•	•	•
		Ŭ		R	Flow direction: Right to left			•	\bullet	\bullet
				+						
		d	Unit	Nil	Unit on product label: MPa, °C			•	•	•
		u	Onit	Z *7	Unit on product label: psi, °F	0*8	0*8	0*8	0*8	0*8

*1 Option B is included in the package with the product but does not come assembled. The assembly consists of 2 types of the bracket and 2 mounting screws.

*2 Refer to chemical data on page 83 for chemical resistance of the bowl.

*3 A bowl guard is provided as standard equipment (polycarbonate).
 *4 A bowl guard is provided as standard equipment (nylon).

*5 Without a valve function. The mounting screws are the same as the thread of 2

*6 The combination of metal bowl 2 is not available.

*7 For the pipe thread type: NPT. This product is for overseas use only according to the New Measurement Act. (The SI unit type is provided for use in Japan.) *8 O: For the pipe thread type: NPT only



AF20-A to AF60-A Air Filter Made to Order

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



③ Special Temperature Environment

Special materials are used in the manufacturing of seals and resin parts to allow them to withstand various temperature conditions in cold or tropical (hot) climates.

Specifications

Made-to-order part no.		-X430	-X440
Environment		Low temperature	High temperature
Ambient temperature [°C]		-30 to 60	-5 to 80
Fluid tem	perature [°C]	-5 to 60 (with	n no freezing)
Material	Rubber parts	Special NBR	FKM
Material	Main parts	Metal (Aluminu	m die-cast_etc)

Applicable Model

Model	AF30-A	AF40-A	AF40-06-A	AF50-A	AF60-A
Port size	1/4, 3/8	1/4, 3/8, 1/2	3/4	3/4, 1	1

Α	F	3(1	0 - [2	03 B - 2 9 9 9				30
• S s	emi-	-sta fica	ndard sy	mbol: V	e each for a to c . Vhen more than one indicate in alphabetic	X430	tem Low	high/ perat	ure rature
Ex	amp	le) /	AF30-03	B-2R-A	-X430	X44U) High	tempe	rature
				Symbol	Description		Body) / size	
						30	40	50	60
				Nil	Rc				
2	P	ipe	thread	N*1	NPT				
9		ty	ре	F*2	G		•		
				+	<u> </u>		•	•	•
				02	1/4		•	_	_
				03	3/8		•	-	_
8	1	Port	t size	04	1/2	_		—	_
				06	3/4	_	•	•	—
				10	1	_	—		
				+					
			tion	Nil	Without mounting option		•	•	
9	()	Nou	inting)	B *3	With bracket				
		_		+					
5		Bo	wl*4	2	Metal bowl		•		•
				+ Nil	With drain cock				
		а	Drain port	J*5	Drain guide 1/4		•		•
			pon	+	Drain guide 1/4		•	•	•
	b Flow direction		- T	Flow direction: Left to right					
			direction	B	Flow direction: Right to left				
6	-sta			+		-	-		-
	Semi		Pressure	Nil	Name plate and caution plate for bowl in SI units: MPa	•	•	•	•
		С	unit	Z *6	Name plate and caution plate for bowl in imperial units: psi, °F	0*7	0*7	0*7	0*7

^{*1} Drain guide is NPT1/4.

*3 A bracket is not assembled and supplied loose at the time of shipment. Including 2 mounting screws
*4 Only metal bowl 2 is available.

*4 Only metal bowl 2 is available
 *5 Without a valve function

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

*7 O: For pipe thread type: NPT only

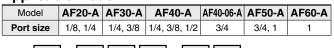
④ High Pressure

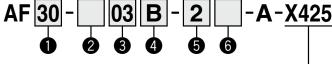
Strong materials are used in the manufacturing of air filters intended for high pressure operation.

Specifications

Made-to-order part no.	-X425
Proof pressure [MPa]	3.0
Maximum operating pressure [MPa]	2.0
Ambient and fluid temperature [°C]	-5 to 60 (with no freezing)

Applicable Model





For high pressure

• Semi-standard: Select one each for **a** to **c**.

 Semi-standard symbol: When more than one specification is required, indicate in alphabetic order.

Example) AF30-03B-2R-A-X425

			AF30-03							
								0		
	Sy			Symbol Description		Body size				
						20	30	40	50	60
	Nil				Rc		•	•	•	
2	Pipe thread N*		N*1	NPT	•	•	•	•		
			F *2	G	•	•	•	•		
				+						
				01	1/8		_	_	—	—
				02	1/4	•		•	_	—
8		Dor	t size	03	3/8	—			—	—
3		POI	l size	04	1/2	_	—		—	—
				06	3/4	—	—			—
				10	1	_	—	—		
				+						
		Op	otion	Nil	Without mounting option					\bullet
4	(Μοι	inting)	B *3	With bracket					
				+						
6		Bo	wl*4	2	Metal bowl		•	•	•	
		00	vv1	8	Metal bowl with level gauge	_				
				+						
			Drain	Nil	With drain cock	•	•	•	•	•
		а	port	J ∗5	Drain guide 1/8		—	—	_	—
				-	Drain guide 1/4	_				
	ard	_		+						
	6 Flow B direction		Nil	Flow direction: Left to right					•	
6			R	Flow direction: Right to left						
	j L L	_	r	+						
	w.	с	Pressure	Nil	Name plate and caution plate for bowl in SI units: MPa	•	•	•	•	•
		C	unit	Z *6	Name plate and caution plate for bowl in imperial units: psi, °F	0*7	0*7	0*7	O*7	0* ⁷

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

*2 Drain guide is G1/8 (applicable to the AF20-A) and G1/4 (applicable to the AF30-A to AF60-A).

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

*4 Only metal bowl 2 and 8 are available.

*5 Without a valve function

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

*7 O: For pipe thread type: NPT only



^{*2} Drain guide is G1/4.

SMC

Air Filter/AF20-D to AF60-D Made to Order

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



19473-0-14 MCARD. 184

2 Clean Series

For details, refer to the Clean Series/Low Particle Generation section of the Web Catalog.



Clean Series

③ Copper, Fluorine and Silicone-free + Low Particle Generation

For details, refer to the Clean Series/Low Particle Generation section of the Web Catalog.

21 - Standard model no.

Copper, fluorine and silicone-free + Low particle generation

AL

AV



AF-D Series Specific Product Precautions

Be sure to read this before handling the products. Refer to the back cover for safety instructions. For F.R.L. units precautions, refer to the "Handling Precautions for SMC Products" and the "Operation Manual" on the SMC website: https://www.smcworld.com

Design / Selection

\land Warning

1. The bowl material of the standard air filter is 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.

Chemical resistance of polycarbonate or nylon bowl

			Material								
Туре	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 Sodium carbonate	Degreasing of metals Industrial salts Water-soluble cutting oil	×	0							
Inorganic salts	Sodium sulfide Potassium nitrate Sodium sulfate	—	×	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: Essential	ly safe △: Some effect	ts may occur. X: Effe	ects will o	\bigcirc : Essentially safe \triangle : Some effects may occur. \times : Effects will occur.							

O: Essentially safe △: Some effects may occur. ×: Effects will occur.
 When the above factors are present, or there is some doubt, use a metal bowl for safety.

The display window material for the semi-standard type with an element service indicator is nylon.

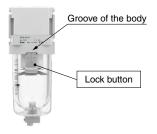
Maintenance

A Warning

Mounting / Adjustment

\land Caution

1. When the bowl is installed on the air filter (AF30-D to AF60-D), 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.



Handling

A Caution

- The element service indicator (Semi-standard: L) is used to check the pressure differential between the IN and OUT sides. When operating at a flow rate with a pressure differential exceeding 0.025 MPa, the element service indicator may operate even when the element is in its initial state.
- **2.** For models with an element service indicator, adjust the flow rate in the direction that increases the flow rate.

If the designated flow rate is exceeded, reset the flow rate to zero and readjust it until the designated flow rate is reached.

3. For models with an element service indicator, as the element becomes more clogged, the indicator will display an increasing level of red. Be sure to replace the element before the level of red reaches the top of the indicator.

^{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.

Modular Type Mist Separator/Micro Mist Separator **AFN/AFD Series**

Mist Separator AFM Series	Model	Port size	Filtration [µm]	Options
i i	AFM20-D	1/8, 1/4		
And a diama	AFM30-D	1/4, 3/8		Bracket
	AFM40-D	0.3 I/4, 3/8, 1/2	Float type auto drain	
p. 85 to 91	AFM40-06-D	3/4	-	
Micro Mist Separator AFD Series	AFD20-D	1/8, 1/4		
	AFD30-D	1/4, 3/8	0.01	Bracket
	AFD40-D	1/4, 3/8, 1/2	0.01	Float type auto drain
p. 85 to 91	AFD40-06-D	3/4		

AFM / AFD

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		Micro	Mist S	20-D to AFM40-D Separator 0-D to AFD40-D		and the second sec	ana da fara da
mbo t Sep			eparator				
	i	1		How to Order	A	AFM30-D	AFD30
	M D		03	Select one When more in alphanum	Semi-stance each for a to g than one speneric order. M30-F03BD-2	cification is red	
		U G	3			0	
			Symbol	Description	20	Body size	e 40
	Pij	pe thread type	Nil N F	Rc NPT G		•	•
			+				
		Port size	01 02 03 04 06	1/8 1/4 3/8 1/2 3/4		• • • • • •	
L	a	Mounting	+ Nil B*1	Without mounting option With bracket		•	•
Option	b	Float type auto drain ^{*2}	+ Nil C* ³ D* ⁴	Without auto drain N.C. (Normally closed) Drain port is closed when pressure is not applied N.O. (Normally open) Drain port is open when pressure is not applied		•	•
			+ Nil	Polycarbonate bowl			
	c	Bowl ^{*5}	2 6 8 C	Metal bowl Nylon bowl Metal bowl with level gauge With bowl guard		•	•
			6C +	With bowl guard (Nylon bowl)	•	*7	*
ndard	d	Indicator	Nil L M	Without indicator With element service indicator*14, *15 With clogging switch (1 point)*14, *16		•	•*1
ni-standard	d	Indicator	Nil L M MM +	With element service indicator ^{*14, *15} With clogging switch (1 point) ^{*14, *16} With clogging switch (2 points) ^{*14, *16}		•	•*1
Semi-standard	d	Indicator Drain port*8	Nil L M MM + Nil J* ⁹	With element service indicator*14, *15 With clogging switch (1 point)*14, *16 With clogging switch (2 points)*14, *16 With drain cock Drain guide 1/8 Drain guide 1/4		• • • •	•*1
Semi-standard			Nil L M MM + Nil	With element service indicator*14, *15 With clogging switch (1 point)*14, *16 With clogging switch (2 points)*14, *16 With drain cock Drain guide 1/8		•	

*** When pressure is not solar back on the residual condensate before ending operations for the day is recommended.
** If the compressor is small (0.75 kW, discharge flow is less than 100 L/min (ANR)), air leakage from the drain cock may occur during the start of operations. N.C. type is recommended.
*5 Refer to chemical data on page 91 for chemical resistance of the bowl.
*6 A bowl guard is provided as standard equipment (polycarbonate).
*7 A bowl guard is provided as standard equipment (nylon).

- *12 Excludes port size "06"
 *13 O: For the pipe thread type: NPT only
 *14 A special body type is required to mount the element service indicator or clogging switch. It cannot be mounted on a standard body.

*15 An auto switch cannot be installed with this option.
*16 This option is equipped with a reed auto switch (model: D-A93VL). Refer to the auto switch catalog for the auto switch specifications.

Mist Separator AFM20-D to AFM40-D Series Micro Mist Separator AFD20-D to AFD40-D Series

and the flow capacity, inlet pressure, and the oil mist concentration on the filter inlet side are stable *4 The bowl seal and other O-rings are slightly lubricated.

*4 The bow seal and other O-hings are slightly lubricated.
*5 The compressed air purity class is indicated based on ISO 8573-1:2010 Compressed air – Part 1: Contaminants and purity classes. For details on this standard, refer to page 131.
*6 The compressed air quality class on the inlet side is [6 : 8 : 4].
*7 The compressed air quality class on the inlet side is [3 : 7 : 3].

Standard Specifications

Мо	del		AFM20-D/AFD20-D	AFM30-D/AFD30-D	AFM40-D/AFD40-D	AFM40-06-D/AFD40-06-I		
Port size			1/8, 1/4	1/4, 3/8	1/4, 3/8, 1/2	3/4		
Fluid				Air				
Ambient and fluid t	emperature	es		–5 to 60°C (No freezing)			
Proof pressure	-			1.5	MPa			
Max. operating pres	ssure			1.0	MPa			
Min. operating pres	sure			0.05	MPa			
Auto drain minimum	N.C.		0.1 MPa		0.15 MPa			
operating pressure	N.O.		—		0.1 MPa			
Max. flow capacity*1		[AFM]	200 L/min (ANR)	450 L/min (ANR)	1100 L/min (ANR)			
wax. now capacity	-	[AFD]	120 L/min (ANR)	240 L/min (ANR)	600 L/min (ANR)			
Nominal filtration r	atina*2	[AFM]	0.3 μm (Filtration efficiency: 99.9%)					
	ating	[AFD]	0.01 µm (Filtration efficiency: 99.9%)					
Outlet side oil mist		[AFM]			n³ (≈ 0.8 ppm)			
concentration*3, *4		[AFD]	Max. 0.1	mg/m ³ (Before saturated wit		008 ppm)		
Compressed air pu	rity	[AFM]		ISO 8573-1:20	10 [3 : 7 : 3]*6			
class*5		[AFD]		ISO 8573-1:20	10 [1 : 7 : 2]* ⁷			
Drain capacity			8 cm ³	25 cm ³	45	cm ³		
Bowl material				Polyca	rbonate			
Bowl guard			Semi-standard (Steel)		Standard (Polycarbonate)			
Weight			0.10 kg	0.18 kg	0.37 kg	0.40 kg		

The maximum flow capacity varies depending on the inlet pressure. Keep the air flow within the maximum flow capacity to prevent an outflow of lubricant to the outlet side.

For the following conditions in accordance with [Test condition: ISO 8573-4:2001, Test method ISO 12500-3:2009 compliant] in addition to the conditions above Conditions: When a new element is used, and the flow capacity, inlet pressure, and the amount of solid bodies on the filter inlet side are stable *2

*3 The outlet side oil mist concentration for the following conditions in accordance with [Test condition:

Bowl Assembly/Part Nos

DOWLA	own Assembly/Part Nos.								
Bowl	Drain discharge	Ducin next	Other		Мо	del			
material	mechanism	Drain port	Other	AFM20-D/AFD20-D	AFM30-D/AFD30-D	AFM40-D/AFD40-D AFM40-06-D/AFD40-06-D			
		With drain cock	_	C2SF-D	—				
		WITH GRAIT COCK	With bowl guard	C2SF-C-D	C3SF-D	C4SF-D			
	Manual	Drain cock with barb fitting	With bowl guard	—	C3SF-W-D	C4SF-W-D			
Delveerbenete		With drain guide	_	C2SF□-J-D	—	—			
Polycarbonate		(without valve function)	With bowl guard	C2SF□-CJ-D	C3SF□-J-D	C4SF□-J-D			
	Automatic*1	Normally closed (N.C.)	—	AD27-D	—				
	(Automatic*)	Normally closed (N.C.)	With bowl guard	AD27-C-D	AD37□-D	AD47□-D			
	(Auto urain)	Normally open (N.O.)	With bowl guard	—	AD38□-D	AD48□-D			
		With drain cock	—	C2SF-6-A	—				
		With drain Cock	With bowl guard	C2SF-6C-A	C3SF-6-A	C4SF-6-A			
	Manual	Drain cock with barb fitting	With bowl guard	—	C3SF-6W-A	C4SF-6W-A			
Nylon		With drain guide	—	C2SF□-6J-A	—	—			
Nyion		(without valve function)	With bowl guard	C2SF□-6CJ-A	C3SF□-6J-A	C4SF□-6J-A			
	Automatic*1	Normally closed (N.C.)	—	AD27-6-A	—	—			
	(Auto drain)	Normally closed (N.C.)	With bowl guard	AD27-6C-A	AD37□-6-A	AD47□-6-A			
	(Auto urain)	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	With drain Cock	With level gauge	—	C3LF-8-A	C4LF-8-A			
	Manual	With drain guide	—	C2SF□-2J-A	C3SF□-2J-A	C4SF□-2J-A			
Metal		(without valve function)	With level gauge	—	C3LF□-8J-A	C4LF⊡-8J-A			
Wietai		Normally closed (N.C.)	—	AD27-2-A	AD37□-2-A	AD47□-2-A			
	Automatic*1	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			
		Normally open (N.O.)	With level gauge	_	AD38□-8-A	AD48□-8-A			

*1 The bowl assembly 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 contact SMC separately for psi and °F unit display specifications.

SMC

Option/Part Nos.

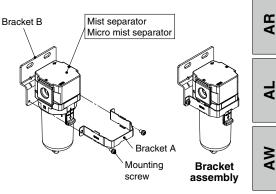
		Мо	del	
Optional specifications	AFM20-D AFD20-D	AFM30-D AFD30-D	AFM40-D AFD40-D	AFM40-06-D AFD40-06-D
Bracket assembly ^{*1}	AF24P-070AS	AF34P-070AS	AF44P-070AS	AF49P-070AS
Auto drain		Refer to "Bowl As	sembly/Part Nos."	

*1 The assembly consists of a bracket A/B and 2 mounting screws.

Replacement Parts

			Part no.					
Description		AFM20-D AFD20-D	AFM30-D AFD30-D	AFM40-D AFD40-D	AFM40-06-D AFD40-06-D			
Element	AFM20 to 40-D	AFM20P-060AS	AFM30P-060AS	AFM40P-060AS				
assembly	AFD20 to 40-D	AFD20P-060AS	AFD30P-060AS	AFD40F	P-060AS			
Bowl seal		C2SFP-260S	C32FP-260S	C42FP-260S				
Bowl assembly ^{*1, *2}			Refer to "Bowl Assembly/Part Nos."					

*1 The bowl assembly comes with a bowl seal.
 *2 Please contact SMC separately for psi and °F unit display specifications.



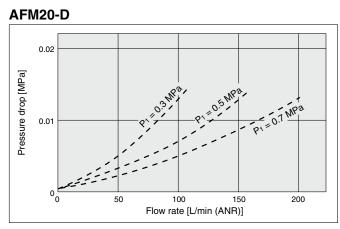
AF

AFM / AFD

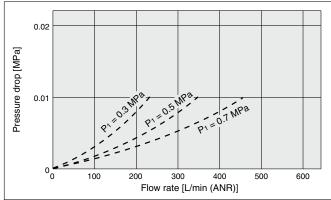
AFM20-D to AFM40-D Series AFD20-D to AFD40-D Series

Flow Rate Characteristics (Representative values)

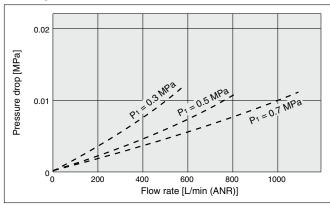
- - - - Initial state

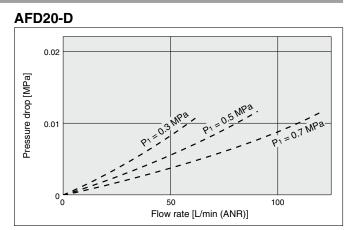


AFM30-D

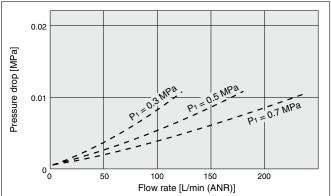




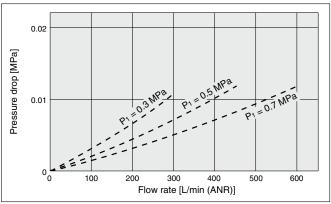




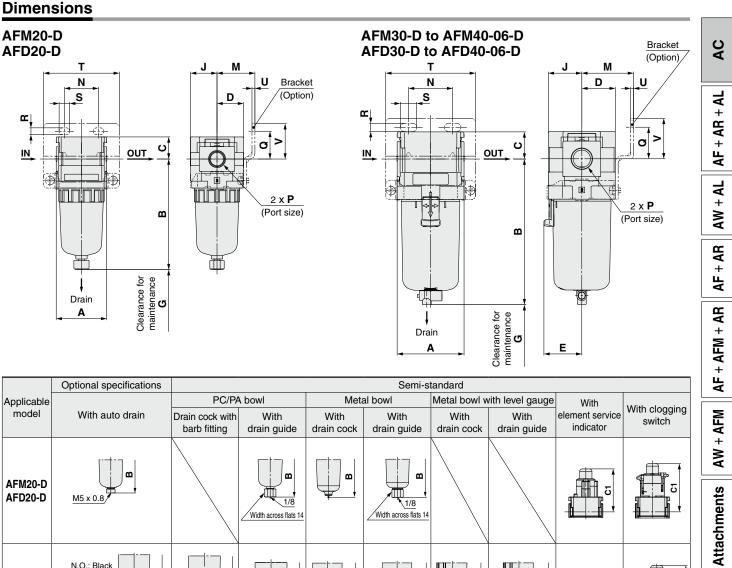
AFD30-D







Mist Separator AFM20-D to AFM40-D Series Micro Mist Separator AFD20-D to AFD40-D Series



	Optional specifications		Semi-standard						
Applicable		PC/PA			al bowl		vith level gauge		With clogging
model	With auto drain	Drain cock with barb fitting	With drain guide	With drain cock	With drain guide	With drain cock	With drain guide	element service indicator	switch
AFM20-D AFD20-D	M5 x 0.8		Vidth across flats 14	B	1/8 Width across flats 14			c1	
AFM30-D to AFM40-06-D AFD30-D to AFD40-06-D	N.O.: Black N.C.: Gray Thread type/Rc, G: ø10 One-touch fitting Thread type/NPT: ø3/8" One-touch fitting	Barb fitting applicable tubing: T0604	Vidth across flats 17		Width across flats 17		Width across flats 17		

												Option	al spec	ificatio	ns			AFD
Model	Standard specifications						Bracket mount						With auto drain	AFM / A				
	Р	Α	В	С	D	Ε	G	J	М	Ν	Q	R	S	Т	U	V	В	
AFM20-D/AFD20-D	1/8, 1/4	40	87.6	17.5	21	_	45	21	30	27	22	5.4	8.4	60	2.3	28	104.9	œ
AFM30-D/AFD30-D	1/4, 3/8	53	115.4	21.5	26.5	30	50	26.5	41	35	25	6.5	13	71	2.3	32	157.1	AF
AFM40-D/AFD40-D	1/4, 3/8, 1/2	70	147.1	25.5	35.5	38.4	75	35.5	50	52	30	8.5	12.5	88	2.3	39	186.9	
AFM40-06-D/AFD40-06-D	3/4	75	149.1	27	35.5	38.4	75	35.5	50	52	34	8.5	12.5	88	2.3	43	188.9	

SMC

		Semi-standard specifications										
Model	PC/PA bowl		Metal bowl		Metal be level g	owl with gauge	With element	With clogging				
Model	With barb fitting	With drain guide	With drain cock	With drain guide	With drain cock	With drain guide	service indicator	switch				
	В	В	В	В	В	В	C1	C1				
AFM20-D/AFD20-D	—	91.4	87.4	93.9	—	—	50.6	56.6				
AFM30-D/AFD30-D	123.9	122.2	117.8	122.3	137.8	142.3	54.3	60.3				
AFM40-D/AFD40-D	155.6	153.9	149.5	154	169.5	174	58.3	64.3				
AFM40-06-D/AFD40-06-D	157.6	155.9	151.5	156	171.5	176		_				

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Mist Separator/AFM20-D to AFM40-06-D Micro Mist Separator/AFD20-D to AFD40-06-D Made to Order

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



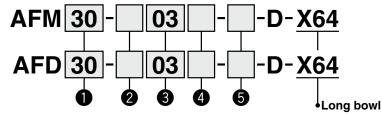
1 Long Bowl

Drain capacity is greater than that of standard models.

Applicable Models/Drain Capacity

Model	AFM20-D/AFD20-D	AFM30-D/AFD30-D	AFM40-D/AFD40-D	AFM40-06-D/AFD40-06-D	
Port size	1/8, 1/4	1/4, 3/8	3/4		
Drain capacity [cm ³]	19	43	88		
B dimension [mm]*1	108.1	137.4	167.2	169.2	

*1 For polycarbonate bowls. Please contact SMC for other bowl materials.



AFM20-D AFD20-D

AFM30 to 40-06-D AFD30 to 40-06-D





Semi-standard Symbol Selection

Select one each for a to d.

When more than one specification is required, indicate in alphanumeric order. Example) AFM30-F03B-2JR-D-X64

							1	
				Symbol	Description		Body size	
						20	30	40
				Nil	Rc	•	•	•
2		Pipe	e thread type	Ν	NPT		•	•
				F	G	•	•	•
				+				
				01	1/8		—	—
				02	1/4		•	•
8			Port size	03	3/8	_	•	•
-				04	1/2	—	—	•
				06	3/4	_	-	•
				+				
	Option (Mounting)		(Mounting)	Nil	Without mounting option	•	•	•
4			B *1	With bracket	•	•	•	
				+				
				Nil	Polycarbonate bowl		•	•
				2	Metal bowl	•	•	•
		a	Bowl ^{*2}	6	Nylon bowl		•	•
				С	With bowl guard		*3	* ³
				6C	With bowl guard (Nylon bowl)		*4	*4
	5			+				
	dar			Nil	With drain cock		•	•
6	an	b	Drain port	J *5	Drain guide 1/8		—	_
9	i-st	D	Drain port	-	Drain guide 1/4		•	•
	Semi-standard			W *6	Drain cock with barb fitting	_		\bullet
				+				
		с	Flow direction	Nil	Flow direction: Left to right	•	•	•
		C		R	Flow direction: Right to left		•	●
				+				
		d	Unit	Nil	Unit on product label: MPa, °C	•	•	•
		u	Onic	Z *7	Unit on product label: psi, °F	○*8	○*8	○*8

*1 Option B is included in the package with the product but does not come assembled. The assembly consists of 2 types of the bracket and 2 mounting screws.
*2 Refer to chemical data on page 91 for chemical resistance of the bowl.

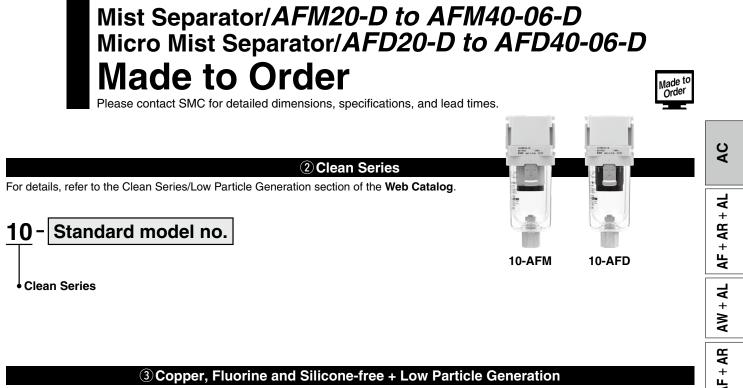
*3 A bowl guard is provided as standard equipment (polycarbonate).

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

*5 Without a valve function. The mounting screws are the same as the thread of ②.
 *6 The combination of metal bowl 2 is not available.

*7 For the pipe thread type: NPT. This product is for overseas use only according to the New Measurement Act. (The SI unit type is provided for use in Japan.) *8 \bigcirc : For the pipe thread type: NPT only





For details, refer to the Clean Series/Low Particle Generation section of the Web Catalog.

21 - Standard model no.

Copper, Fluorine and Silicone-free + Low Particle Generation

AV



AFM-D/AFD-D Series Specific Product Precautions 1

Be sure to read this before handling the products. Refer to the back cover for safety instructions. For F.R.L. units precautions, refer to the "Handling Precautions for SMC Products" and the "Operation Manual" on the SMC website: https://www.smcworld.com

Design / Selection

\land Warning

1. The bowl material of the standard mist separator and micro mist separator is 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.

			Mat	erial
Туре	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 Sodium carbonate	Degreasing of metals Industrial salts Water-soluble cutting oil	×	0
Inorganic salts	Sodium sulfide Potassium nitrate Sodium sulfate	—	×	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: Essentially safe △: Some effects may occur. ×: Effects will occur.
 When the above factors are present, or there is some doubt, use a metal bowl for safety.

 The display window material for the semi-standard type with an element service indicator or clogging switch is nylon.

Air Supply

A Caution

- **1.** Install an air filter (AF series) as a pre-filter on the inlet side of the mist separator to prevent premature clogging.
- **2.** Install a mist separator (AFM series) 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 0.1 MPa, whichever comes first, to prevent damage to the element.

▲ Caution

1. For the product equipped with a clogging switch, replace the element even if it has been used for 2 years or less when the installed auto switch (SW) is detected.

Element status when auto switch is detected

Symbol	No. of SW	Installation of SW	When SW is detected
-м	SW1	No	—
-171	SW2	Yes	Warning
-мм	SW1	Yes	Caution
-11111	SW2	Yes	Warning

Caution: Replacement is recommended because the element is clogged. Warning: The element is clogged, which may result in the destruction of the element. Be sure to replace the element.



 Since the clogging switch does not have an output holding mechanism, note that the output will be OFF when there is no air flow in the element (when the equipment is stopped, etc.).

Mounting / Adjustment

▲ Caution

 When the bowl is installed on the mist separator (AFM30-D/AFM40-D), or micro mist separator (AFD30-D/AFD40-D), 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.







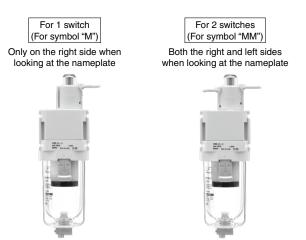
AFM-D/AFD-D Series Specific Product Precautions 2

Be sure to read this before handling the products. Refer to the back cover for safety instructions. For F.R.L. units precautions, refer to the "Handling Precautions for SMC Products" and the "Operation Manual" on the SMC website: https://www.smcworld.com

Mounting / Adjustment

\land Warning

- 1. When using the product with a clogging switch, note the following points
 - (1) Refer to the figure below to check the position of the auto switch.



- (2) Do not hit the auto switch with a tool or allow it to receive any other impacts. Doing so may cause damage.
- (3) Do not attach or detach the auto switch equipped with a clogging switch. Otherwise, the detection accuracy of the clogging switch may be reduced. In addition, note that an auto switch with an element service indicator cannot be installed in combination.
- (4) Do not place magnetic objects near the product. Otherwise, a machine failure may result.

Design

A Caution

 Design the system so that the mist separator or micro 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

A Caution

- 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.

Handling

▲ Caution

The element service indicator (semi-standard: L) and clogging switch (semi-standard: M, MM) are used to check the pressure differential between the IN and OUT sides.

When operating at a flow rate with a pressure differential exceeding 0.025 MPa, the element service indicator and clogging switch may operate even when the element is in its initial state.

2. For models with an element service indicator or clogging switch, adjust the flow rate in the direction that increases the flow rate.

If the designated flow rate is exceeded, reset the flow rate to zero and readjust it until the designated flow rate is reached.

3. For models with an element service indicator or clogging switch, as the element becomes more clogged, the indicator will display an increasing level of red. Be sure to replace the element before the level of red reaches the top of the indicator.

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Modular Type Regulator **AR Series**

Regulator AR Series	Model	Port size	Set pressure	Options
	AR20(K)-D	1/8, 1/4		Bracket Set nut
	AR30(K)-D	1/4, 3/8		(for panel mount) Square embedded type pressure gauge
52 Moeters East Land Star	AR40(K)-D	1/4, 3/8, 1/2	0.05 to 0.85 MPa	Right angle square type pressure gauge
	AR40(K)-06-D	3/4	0.02 to 0.2 MPa	Digital pressure switch Round type pressure gauge
	AR50(K)-D	3/4, 1		Bracket Square embedded type pressure gauge
p. 93 to 103	AR60(K)-D	1		Digital pressure switch Round type pressure gauge

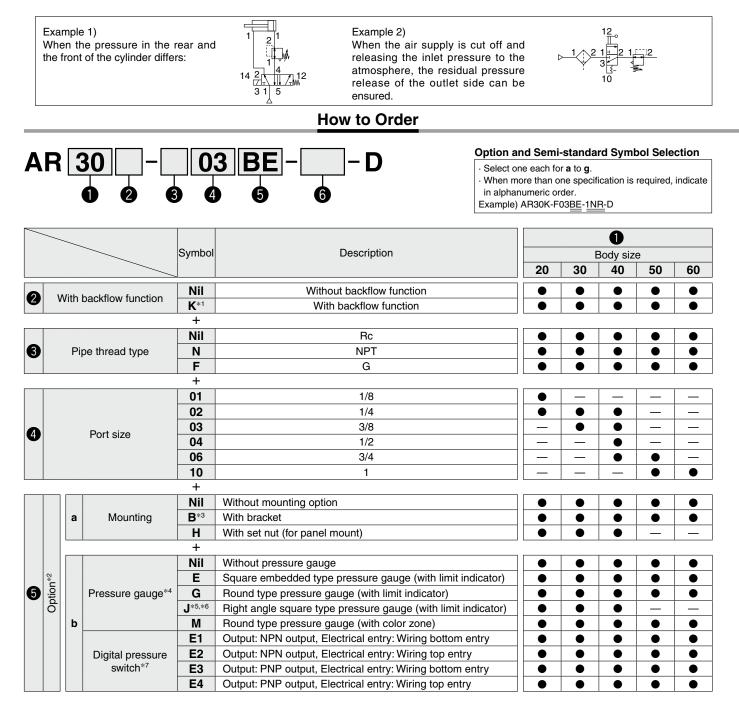
AW

AF





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



Regulator AR20-D to AR60-D Series Regulator with Backflow Function AR20K-D to AR60K-D Series



AR30-D

						-	1			
			Symbol	Description	Body size					
					20	30	40	50	60	
		Cot processes	Nil	0.05 to 0.85 MPa setting				•		
	С	Set pressure*8	1	0.02 to 0.2 MPa setting	•			•	\bullet	
			+							
	d	Exhaust	Nil	Relieving type				•	\bullet	
	u	mechanism	Ν	Non-relieving type	•			•	\bullet	
pi			+							
ndå	е	Flow direction	Nil	Flow direction: Left to right				•	\bullet	
Semi-standard	e	Flow direction	R	Flow direction: Right to left				•	\bullet	
j.Ę			+							
မီ		Knob	Nil	Downward	•			•	•	
		KIIOD	Y	Upward				•	\bullet	
			+							
			Nil	Unit on product label: MPa, Pressure gauge in SI units: MPa	•			•	\bullet	
	g	Unit	Z *9	Unit on product label: psi, Pressure gauge: MPa/psi dual scale	O*11	O*11	O*11	O*11	O*11	
			ZA *10	Digital pressure switch: With unit selection function	△*12	△*12	△*12	△*12	\triangle^{*12}	

*1 Set the inlet pressure to at least 0.05 MPa higher than the set pressure.

*2 Options B, G, H, and M are not assembled and supplied loose at the time of shipment.

*3 The assembly consists of a bracket and set nuts (applicable to the AR20(K)-D to AR40(K)-D). For the AR50(K)-D and AR60(K)-D, the assembly consists of 2 types of the bracket and 2 mounting screws.

*4 When the pressure gauge is attached, a 1.0 MPa pressure gauge will be fitted for standard (0.85 MPa) type. 0.4 MPa pressure gauge for 0.2 MPa type.

*5 Cannot be selected for the type with a set nut (option "H")

 *6 The direction the pressure gauge scale plate faces is from the knob side.
 *7 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.)

*8 Pressure can be set higher than the specification pressure in some cases, but use pressure within the specification range. *9 For the pipe thread type: NPT

This product is for overseas use only according to the New Measurement Act. (The SI unit type is provided for use in Japan.) Cannot be used with M: Round type pressure gauge (with color zone). Available by request for special. The digital pressure switch will be equipped with the unit selection function, setting to psi initially. *10 For options: E1, E2, E3, E4

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

*11 O: For the pipe thread type: NPT only

*12 \triangle : Select with options: E1, E2, E3, E4.

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AR20-D to AR60-D Series AR20K-D to AR60K-D Series

Standard Specifications

1/4, 3/8	A	3/4 /8 .ir	3/4, 1	1							
	A	-									
		ir		-							
	Air										
–5 to 60°C (No freezing)											
1.5 MPa											
	1.0	MPa									
	0.05 to 0).85 MPa									
Relieving type											
0.27 kg	0.48 kg	0.51 kg	1.13 kg	1.25 kg							
	0.27 kg	1.5 1.0 0.05 to 0 Relievi	1.5 MPa 1.0 MPa 0.05 to 0.85 MPa Relieving type	1.5 MPa 1.0 MPa 0.05 to 0.85 MPa Relieving type							

*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.

*2 -5 to 50°C for the products with the digital pressure switch

Option/Part Nos.

Optional specifications					Мо	odel				
U	plional specifica		AR20(K)-D	AR30(K)-D	AR40(K)-D	AR40(K)-06-D	AR50(K)-D	AR60(K)-D		
Bracket as	sembly ^{*1}		AR23P-270AS	AR33P-270AS	AR43P	-270AS	AR54P	-270AS		
Set nut			AR23P-260S	AR33P-260S	AR43I		*2			
		Standard	G36-1	0-🗆01	G46-10-□01					
	Round type	0.02 to 0.2 MPa setting	G36-4-⊡01		G46-4-⊡01					
	Round type	Standard	G36-10)-□01-L	G46-10-□01-L					
Pressure gauge ^{*3}	(with color zone)	0.02 to 0.2 MPa setting	G36-4-	-□01-L	G46-4-□01-L					
	Square	Standard		GC3-10AS-D [GC3P-030AS (Pressure gauge cover only)]						
	embedded type ^{*4}	0.02 to 0.2 MPa setting		GC3-4AS-E	GC3P-030AS					
	Dialat an ala	Standard		GC3-10AS-J-D [0	-					
	Right angle square type ^{*5}	0.02 to 0.2 MPa setting		GC3-4AS-J-D [(_					
		NPN output, Wiring bottom entry	ISE35-N-25-MLA-X523 [ISE35-N-25-M (Switch body only)]*6							
Digital pro	ssura switch	NPN output, Wiring top entry	ISE35-B-25-MI A-X523 [ISE35-B-25-M (Switch body only)]*6							
Digital pre	Digital pressure switch			ISE35-N-65-N	/ILA-X523 [ISE3	5-N-65-M (Switch	body only)]*6			
		PNP output, Wiring top entry		ISE35-R-65-N	5-R-65-M (Switch	h body only)]*6				

*1 The assembly consists of a bracket and set nuts. For the AR50(K)-D and AR60(K)-D, the assembly consists of a bracket A/B and 2 mounting screws.

*2 Please contact SMC regarding the set nuts for the AR50(K)-D and AR60(K)-D.

*3 □ 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 both MPa and psi unit specifications.
 *4 Including one O-ring and 2 mounting screws. []: Pressure gauge cover only

*5 The right angle square type pressure gauge only includes the pressure gauge body. The pressure gauge body comes with 1 O-ring and 2 mounting screws.

In addition, the part number in brackets includes a pressure gauge with a right angle adapter as well as an adapter, lock pin, 1 O-ring, and 2 mounting screws.

*6 In addition to the pressure switch body, lead wire with connector (2 m), adapter, lock pin, O-ring (1 pc.), mounting screws (2 pcs.) are attached.
[]: Switch body only (For the digital pressure switch specifications, refer to page 130.)

assembly

AR20(K)-D to AR40(K)-06-D AR50(K)-D/AR60(K)-D Set nut Regulator Bracket Bracket B Regulator Bracket A Bracket Bracket Mounting screw assembly

Replacement Parts

Deser	intion			Par	t no.				
Descr	iption	AR20(K)-D	AR30(K)-D	AR40(K)-D	AR40(K)-06-D	AR50(K)-D	AR60(K)-D		
Valve assembly		AR24P-060AS	AR34P-060AS	AR44P-060AS	AR49P-060AS	AR54P-060AS	AR64P-060AS		
Diaphragm	Relieving type	AR24P-150AS	AR34P-150AS	AR44P	-150AS	AR54P	-150AS		
assembly	Non-relieving type	AR24P-150AS-N	AR34P-150AS-N	AR44P-1	150AS-N	AR54P-150AS-N			
Valve guide a	ssembly	AR24P-050AS	AR34P-050AS	AR44P	-050AS	AR54P	-050AS		
Check valve a	assembly ^{*1}			AR24KF	P-020AS				

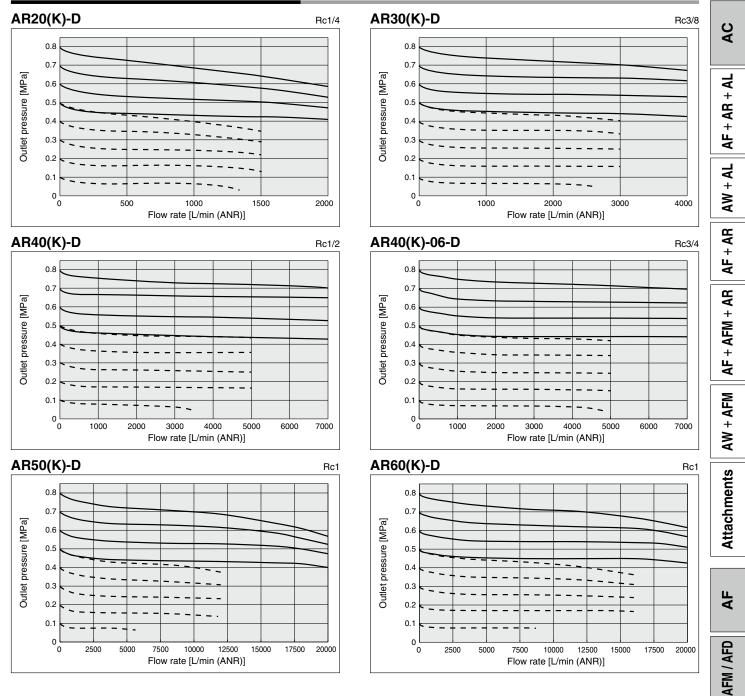
*1 The check valve assembly is applicable for a regulator with backflow function (AR20K-D to AR60K-D) only. The assembly consists of a check valve cover, check valve body assembly, and 2 mounting screws.



Regulator AR20-D to AR60-D Series Regulator with Backflow Function AR20K-D to AR60K-D Series

Flow Rate Characteristics (Representative values)

Inlet pressure: 1.0 MPa
 - - - Inlet pressure: 0.7 MPa



AR

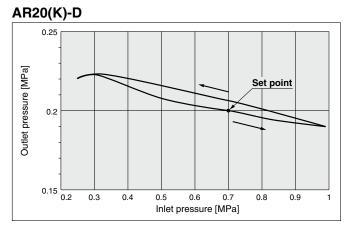
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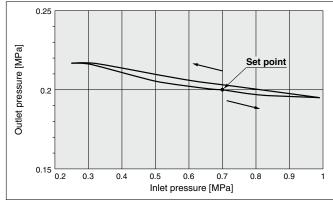
AR20-D to AR60-D Series AR20K-D to AR60K-D Series

Pressure Characteristics (Representative values)

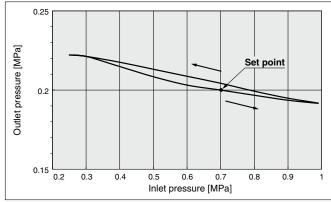
Conditions: Inlet pressure of 0.7 MPa, Outlet pressure of 0.2 MPa, Flow rate 20 L/min (ANR)

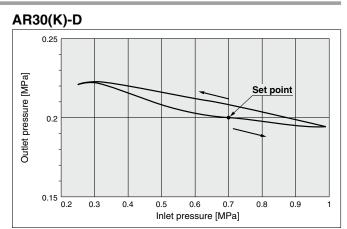




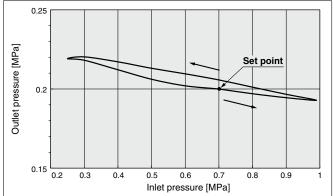




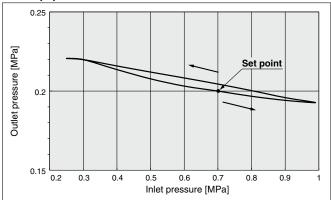






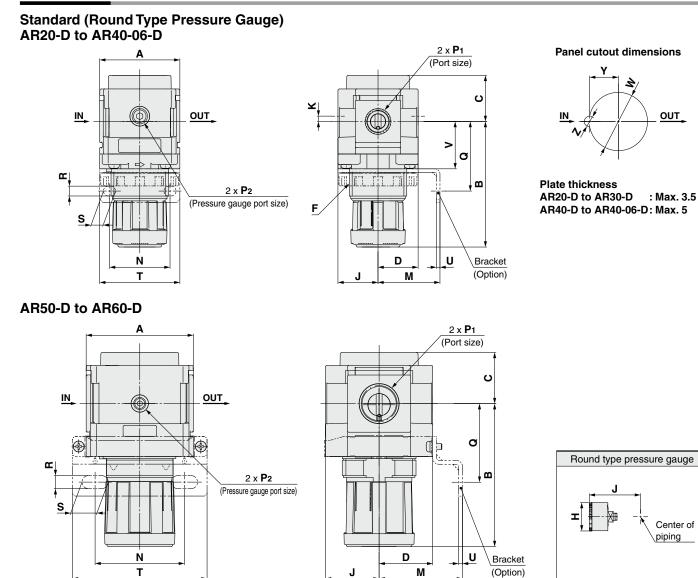






Regulator AR20-D to AR60-D Series Regulator with Backflow Function AR20K-D to AR60K-D Series

Dimensions



											Op	otional sp	ecificatio	ns	
Model			5	Standard	specific	ations				Round		Round type pressure gauge (Semi-standard: Z)		Round type pressure gauge (with color zone)	
	P 1	P2	Α	B *1	С	D	J	K	н	J	н	J	Н	J	
AR20-D	1/8, 1/4	1/8	40	66.8	26.5	21	M28 x 1	21	2	ø37.5	57.5	ø37.5	58.5	ø37.5	58.5
AR30-D	1/4, 3/8	1/8	53	86.5	30.5	26.5	M38 x 1.5	26.5	3.5	ø37.5	63	ø37.5	64	ø37.5	64
AR40-D	1/4, 3/8, 1/2	1/8	70	91.5	35.5	35.5	M42 x 1.5	35.5	—	ø42.5	73	ø42.5	73	ø42.5	73
AR40-06-D	3/4	1/8	75	93	35.5	35.5	M42 x 1.5	35.5	—	ø42.5	73	ø42.5	73	ø42.5	73
AR50-D	3/4, 1	3/4, 1 1/8 90 125 43 45 — 45										ø42.5	82.5	ø42.5	82.5
AR60-D	1	1/8	95	155	45	45	—	45	—	ø42.5	82.5	ø42.5	82.5	ø42.5	82.5

SMC

					Optiona	al specif	ications				
Model			Bra	acket mo	ount				Panel	mount	
	М	N	Q	R	S	Т	U	V	w	Y	Z
AR20-D	30	34	43.9	5.4	15.4	55	2.3	24.7	28.5	14	6
AR30-D	41	40	46	6.5	8	53	2.3	31.3	38.5	19	7
AR40-D	50	54	54	8.5	10.5	70	2.3	35.5	42.5	21	7
AR40-06-D	50	54	55.5	8.5	10.5	70	2.3	37	42.5	21	7
AR50-D	70	75	66	11	22	113	3.2	—	—	—	—
AR60-D	70	75	66	11	22	113	3.2	_	_	_	_

*1 The dimension of B is the length when the regulator knob is unlocked.

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AC

AW + AL AF + AF + AL

AF + AR

AF + AFM + AR

Attachments AW + AFM

AF

AFM / AFD

AR

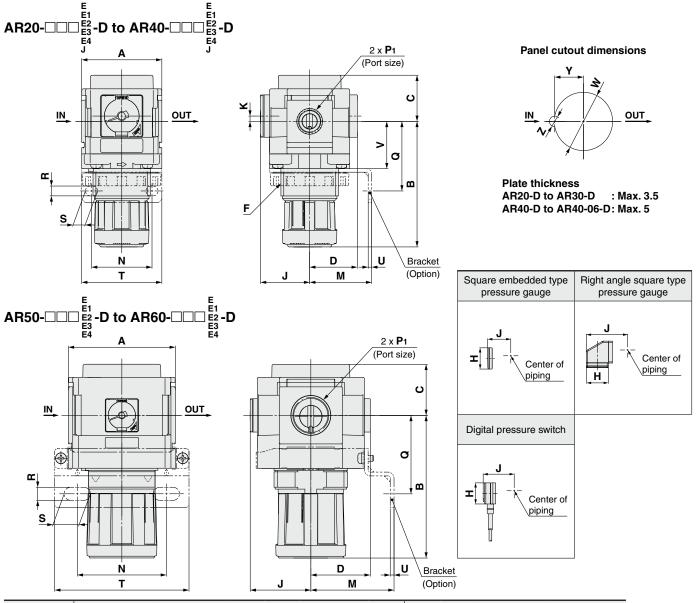
AL

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AR20-D to AR60-D Series AR20K-D to AR60K-D Series

Dimensions

Standard (Square Embedded Type Pressure Gauge, Right Angle Square Type Pressure Gauge, Digital Pressure Switch)



									O	otional sp	pecificat	ions	
Model		5	Standard	specific	ations				mbedded sure gauge	Right ang type press	le square ure gauge	Digital pressure switch	
	P 1	A	B *1	С	D	K	Н	J	H	J	Н	J	
AR20-D	1/8, 1/4	40	66.8	26.5	26	M28 x 1	2	□28	27	□28	54.3	□27.8	37.5
AR30-D	1/4, 3/8	53	86.5	30.5	31.5	M38 x 1.5	3.5	□28	32.5	□28	59.8	□27.8	43
AR40-D	1/4, 3/8, 1/2	70	91.5	35.5	40.5	M42 x 1.5	—	□28	41.5	□28	68.8	□27.8	52
AR40-06-D	3/4	75	93	35.5	40.5	M42 x 1.5	—	□28	41.5	□28	68.8	□27.8	52
AR50-D	3/4, 1	90	125	43	50		—	□28	51	_	—	□27.8	61.5
AR60-D	1	95	155	45	50	_	_	□28	51	_	—	□27.8	61.5

SMC

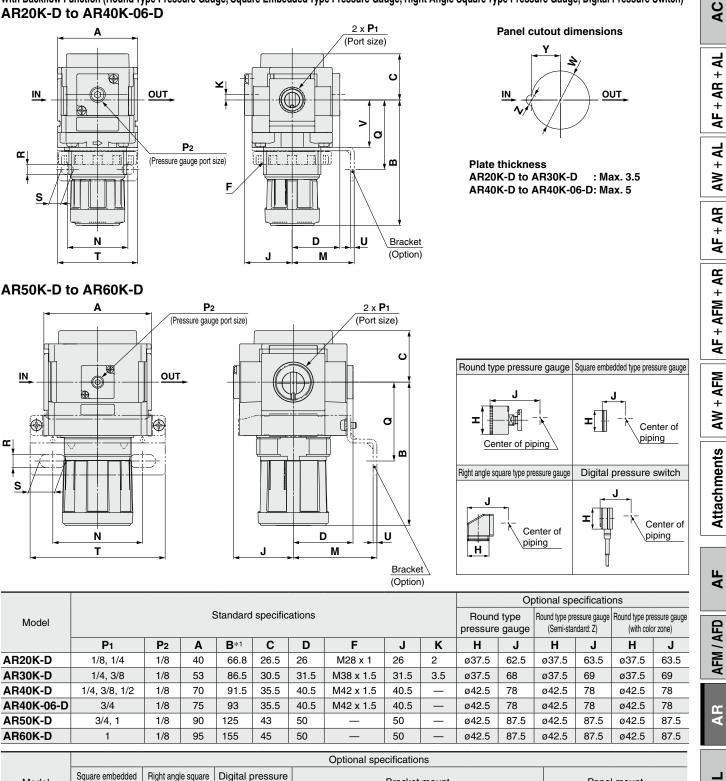
		Optional specifications													
Model			Bra	acket mo	unt				Panel	mount					
	М	N	Q	R	S	Т	U	V	W	Y	Z				
AR20-D	30	34	43.9	5.4	15.4	55	2.3	24.7	28.5	14	6				
AR30-D	41	40	46	6.5	8	53	2.3	31.3	38.5	19	7				
AR40-D	50	54	54	8.5	10.5	70	2.3	35.5	42.5	21	7				
AR40-06-D	50	54	55.5	8.5	10.5	70	2.3	37	42.5	21	7				
AR50-D	70	75	66	11	22	113	3.2	_	_	_	_				
AR60-D	70	75	66	11	22	113	3.2	—	—	—	—				

*1 The dimension of B is the length when the regulator knob is unlocked.

Regulator AR20-D to AR60-D Series Regulator with Backflow Function AR20K-D to AR60K-D Series

Dimensions

With Backflow Function (Round Type Pressure Gauge, Square Embedded Type Pressure Gauge, Right Angle Square Type Pressure Gauge, Digital Pressure Switch) AR20K-D to AR40K-06-D



Model		mbedded sure gauge	Right and type press	gle square sure gauge	Digital p swit			Bracket mount						Panel mount					Ì
	Н	J	Н	J	Н	J	М	N	Q	R	S	Т	U	V	W	Y	Z		
AR20K-D	□28	27	□28	54.3	□27.8	37.5	30	34	43.9	5.4	15.4	55	2.3	24.7	28.5	14	6		Ē
AR30K-D	□28	32.5	□28	59.8	□27.8	43	41	40	46	6.5	8	53	2.3	31.3	38.5	19	7		
AR40K-D	□28	41.5	□28	68.8	□27.8	52	50	54	54	8.5	10.5	70	2.3	35.5	42.5	21	7		
AR40K-06-D	□28	41.5	□28	68.8	□27.8	52	50	54	55.5	8.5	10.5	70	2.3	37	42.5	21	7		
AR50K-D	□28	51	—	—	□27.8	61.5	70	75	66	11	22	113	3.2	—	—	—	—		_
AR60K-D	□28	51	—		□27.8	61.5	70	75	66	11	22	113	3.2		—	_	—		

*1 The dimension of B is the length when the regulator knob is unlocked.

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Regulator/AR20-D to AR60-D Regulator with Backflow Function/AR20K-D to AR60K-D Made to Order

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



10.4 MPa Setting

The setting specification is 0.4 MPa. When a pressure gauge is included, the display will show a range from 0 to 0.7 MPa.

Specifications

Made-to-order part no.	-X406
Proof pressure [MPa]	1.5
Max. operating pressure [MPa]	1.0
Set pressure range [MPa]*1	0.05 to 0.4

*1 Pressure can be set higher than the specification pressure in some cases, but use pressure within the specification range

Applicable Models

Mod	lel	AR20(K)-D	AR30	(K)-D	AR40(K)-D	AR40(K)-06-D	Α	R50(K)-D	A	R60(K)-	D	
Port s	size	1/8, 1/4	1/4,	3/8	1/4, 3/8, 1/2	3/4		3/4, 1		1		
٩R	3		03	-	-D-	X406	ting	Option and · Select one · When mor indicate in Example) A	e each fo re than o alphabe	r a to f . ne specifi tical orde	cation is i	
<u> </u>										0		
			Symbol		Descrip	tion				Body size		
								20	30	40	50	60
2	With I	backflow function	Nil		Without backflo							
7	vviuiii	Jacknow runction	K *1		With backflow	v function						
			+								-	
3	D:-	o throad tupo	Nil		Rc NPT				-		•	
ע	PI	be thread type	F		G					•		
			+		u				-		-	
			01		1/8				_	_	_	_
			02		1/4				•	•	_	- 1
		Dort oizo	03		3/8				•	•	_	- 1
Port size			04		1/2				_	•	—	
			06		3/4				—			-
			10		1				—	-	•	
			+									
			Nil Wit	nout mounting	option				•	•	•	•
	a	Mounting		n bracket n set nut (for p	anal maunt)				•	•	•	•
				i set nut (ior p	anei mount)							
				nout pressure	naude				•		•	
N *						ge (with limit indicator)			•	•	ě	Ĭ
tion (Pressure gauge*4			ure gauge (with lim				•	•	•	•
Option*2				<u> </u>	~ ~ (uge (with limit indicator)			•	•	_	_
	b				ure gauge (with col				•	•	•	•
			E1 Out	put: NPN outp	ut, Electrical entry:	Wiring bottom entry			•	•	•	•
		Digital pressure	E2 Out	put: NPN outp	ut, Electrical entry:	Wiring top entry						
		switch*7				Wiring bottom entry			•		•	•
				put: PNP outp	ut, Electrical entry:	Wiring top entry						
_			+						-		-	-
	c	Exhaust mechanism		eving type							•	
			N Nor	-relieving type					•		•	
				v direction: Le	t to right						•	
ard	d	Flow direction		v direction: Le								
Semi-standard			+						-			
-sta				vnward								
emi	e	Knob	Y Upv						•	•	•	•
Ň			+									
				on product la	oel: MPa, Pressure	gauge in SI units: MPa					•	
	f	Unit		on product la	oel: psi, Pressure g	auge: MPa/psi dual scal	e	O*10	O*10	O*10	O*10	0*10
	ZA ^{*9} Digital pressure switch: With unit selection function							∆*11			∆*11	

*1 Set the inlet pressure to at least 0.05 MPa higher than the set pressure.
 *2 Options B, G, H, and M are not assembled and supplied loose at the time of shipment.

*3 The assembly consists of a bracket and set nuts (applicable to the AR20(K)-D to AR40(K)-D). The 0/F0/(L) and 0/F0/(L) accompliant include 2 trans of brackets and 2

The AR50(K)-D and AR60(K)-D assemblies include 2 types of brackets and 2 mounting screws.

*4 A 0.7 MPa pressure gauge will be fitted.

*5 Cannot be selected for the type with a set nut (option "H")
*6 The direction the pressure gauge scale plate faces is from the knob site

*6 The direction the pressure gauge scale plate faces is from the knob side.

*7 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.)
*8 For the pipe thread type: NPT This product is for overseas use only according to the New Measurement Act. (The SI unit

This product is for overseas use only according to the New Measurement Act. (The SI unit type is provided for use in Japan.) Cannot be used with M: Round type pressure gauge (with color zone). Available by request for special. The digital pressure switch will be equipped with the unit selection function, setting to psi initially.

 *9 For options: E1, E2, E3, E4. This product is for overseas use only according to the New Measurement Act. (The SI unit type is provided for use in Japan.)
 *10 O: For the pipe thread type: NPT only

*10 \triangle : Select with options: E1, E2, E3, E4.



AR20-B to AR60-B Regulator Made to Order Made to Order

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



1 Special Temperature Environment

Special materials are used in the manufacturing of seals and resin parts to allow them to withstand various temperature conditions in cold or tropical (hot) climates.

Specifications

<u>-2h</u>	ec	IIIC	ation	S											
Ma	ade-	to-or	der part	no.		-X430		-X440							
En	viro	nmer	nt		Lov	v temperatur	e	ł	ligh	tempe	eratur	e			
Am	bien	t tem	peratur	e [°C]		-30 to 60			-	-5 to 8	30				
			rature			-5 to 60) (wi	th no f	reezi	ng)					
		R	ubber p		S	pecial NBR				FKM					
Ma	teria	al 🛏	ain par			Metal (Alu	imini	um die	-cast	. etc.)					
Ap	ila		ole M		1					,,					
<u> </u>	Mod				R30-B	AR40-B	AR	40-06-B	AR	50-B	AR	60-B			
Pe	ort s	ize	1/4, 3	/8 1	/4, 3/8	1/4, 3/8, 1/2		3/4	3/-	4, 1		1			
A	R	3(0) -[2	03 6	BG -	6]-)	B	- 🗙	43	80			
• C th a	Optio nan Ipha	on/Sei one s inume	mi-stan pecifica eric ord	dard sy ation is er.	ymbol: \	e each for a to When more d, indicate in 30	-	X43 X44	te 0 La	or hi empe ow ter igh te	eratu npera	ure Iture			
	<u> </u>			Symbol		Description		25	В 30	0 ody siz	ze 50	60			
				N121	1	D.			•						
6	Din	a thra	ad turna	Nil		Rc NPT				•	•	•			
2	Fibe	eune	ad type	F	-	G			-		•				
				+					•	•	-	-			
				02		1/4			•		_	_			
				03		3/8		۲	•	—	—				
8		Port s	size	04		1/2			_		—	_			
				06		3/4		_	_	•	•				
				10		1			—	_					
				+	A Cille										
				Nil B*2		t mounting opt	lion				•	•			
		a N	Nounting	D	With s			-	•	-	•	-			
4	Б			н		nel mount)			۲		—				
•	Option *1			+	1.0.00	,									
		b	Pressure gauge	G *3		ype pressure ga ut limit indicate		•	•	•	•	•			
				+	La c										
		c p	Set pressure	Nil 1*4		0.85 MPa set 0.2 MPa setti		•	•	•	•	•			
				+	Della					-		-			
		d	Exhaust	Nil	-	ng type									
			nechanism	N +	INON-re	lieving type			•	-	•	-			
	ard		Flow	Nil	Flow di	rection: Left to ri	aht		•	•	•	•			
	and	e	lirection	R	-	rection: Right to	0					•			
6	i-sté	~		+	1.1.511 011				-	-		-			
	Semi-standard	f	Knob	Nil Y	Downv Upwar			•	•	•	•	•			
				+											
		g F	Pressure unit	Nil	gauge	plate and press in SI units: MPa plate and press	a	•	•	•	•	•			
			unit	Z *5	gauge units: p	in imperial	⊖*6	○*6	○*6	○*6	○*6				

*1 Options B, G, H are not assembled and supplied loose at the time of shipment. *2 Assembly of a bracket and set nuts (AR25-B to AR40-B)

Including 2 mounting screws for the AR50-B and AR60-B

- *3 Mounting thread for pressure gauge: 1/8, Pressure gauge type: G43
 *4 The only difference from the standard specifications is the spring for the regulator. It does not restrict the setting of 0.2 MPa or more. When the pressure gauge is
- attached, a 0.4 MPa pressure gauge will be fitted. *5 For pipe thread type: NPT. This product is for overseas use only according to the new Measurement Act. (The SI unit type is provided for use in Japan.)

*6 O: For pipe thread type: NPT only

AR30-03-B-X430/440/425

2 High Pressure

Stronger materials are used for the manufacturing of regulators intended for high-pressure operation.

The modified construction also allows for a wider set pressure range.

Specifications

Made-to-order part no.	-X425
Proof pressure [MPa]	3.0
Maximum operating pressure [MPa]	2.0
Set pressure range [MPa]	0.1 to 1.7
Ambient and fluid temperature [°C]	-5 to 60 (with no freezing)

Applicable Model

AR20-B AR25-B AR30-B AR40-B AR40-06-B AR50-B AR60-B Model Port size 1/8, 1/4 1/4, 3/8 1/4, 3/8 1/4, 3/8 1/2 3/4 3/4, 1 1

30 03 BG AR B-X425 5 For high pressure

• Option/Semi-standard: Select one each for a to f.

· Option/Semi-standard symbol: When more than one specification is

required, indicate in alphabetic order.

Example) AR30-03BG-NR-B-X425

	<			Querkal	Description				_		
				Symbol	Description			Body			
						20	25	30	40	50	60
				Nil	Rc				•		
2	Pic	e th	read type	N	NPT	•	•	•	•	•	Ť
9				F	G	Ō	Ō	ě	ě	Ŏ	Ŏ
				+							
				01	1/8		—	-	—	_	—
				02	1/4	•	•	۲	•	—	_
6		De	t size	03	3/8	-	•	٠	٠	—	—
8		P0	t size	04	1/2	—	—	—	٠	—	—
				06	3/4	_		_			_
				10	1	—	—	—	—	•	
				+							
				Nil	Without mounting option				•		
		a	Mounting	B *2	With bracket			۲	۲	•	
	Option *1	a	wounting	н	With set nut						
4	tio				(for panel mount)			•	•		
	ő	_	1	+							
		ь	Pressure	G *3	Round type pressure switch		•	•	•	•	
		_	gauge		(with limit indicator)		-	•	•	-	•
			1	+							
		c	Exhaust	Nil	Relieving type			•	•	•	
		_	mechanism	Ν	Non-relieving type						
		_	1	+			-	-	_	-	
	_	d	Flow	Nil	Flow direction: Left to right		•	•	•	•	
	arc		direction	R	Flow direction: Right to left				•		
	e Knob		+	-			-	_	-		
6	-sti	e	Knob	Nil	Downward		•	•	•	•	
	emi			Y	Upward			•	•	•	•
	ů			+				r			
		f	Pressure	Nil	Name plate and pressure gauge in SI units: MPa	•	•	•	•	•	•
			unit	Z *4	Name plate and pressure gauge in imperial units: psi	○*5	○*5	0*5	○*5	○*5	○*5

*1 Options B, G, H are not assembled and supplied loose at the time of shipment.
 *2 Assembly of a bracket and set nuts (AR20-B to AR40-B)

Including 2 mounting screws for the AR50-B and AR60-B

*3 Mounting thread for pressure gauge: 1/8, Pressure gauge type: G46-20-□
*4 For pipe thread type: NPT. This product is for overseas use only according to the new Measurement Act. (The SI unit type is provided for use in Japan.)

*5 O: For pipe thread type: NPT only



SMC



For details, refer to the Clean Series/Low Particle Generation section of the Web Catalog.

21 - Standard model no.

Copper, Fluorine and Silicone-free + Low Particle Generation

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AR(K)-D Series Specific Product Precautions

Be sure to read this before handling the products. Refer to the back cover for safety instructions. For F.R.L. units precautions, refer to the "Handling Precautions for SMC Products" and the "Operation Manual" on the SMC website: https://www.smcworld.com

Design / Selection

\land Warning

 Residual pressure disposal (outlet pressure removal) is not possible for the AR20-D to AR60-D even though the inlet pressure is exhausted. When the residual pressure disposal is performed, use the regulator with a backflow function (AR20K-D to AR60K-D).

A Caution

1. When operating at an inlet pressure lower than the inlet pressure used in the flow rate characteristics graph, the pressure drop on the outlet side may be greater. Therefore, be sure to conduct testing using the actual equipment.

For pressure control equipment selection, refer to the "Product Selection Guide."

Maintenance

\land Warning

 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

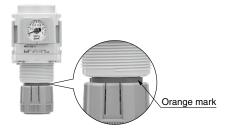
\land Warning

- **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.
- 3. Before replacing or changing the mounting direction of the pressure gauge, or changing the direction of the scale plate, be sure to release the inlet and outlet pressure completely.

It is dangerous to replace or change the mounting direction of the pressure gauge, or change the direction of the scale plate, while it is under pressure.

A 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).



Piping

M Warning

 To screw the pressure gauge and piping materials into the pressure gauge port on the product, tighten to the recommended torque (3 to 5 N·m) while securely holding the AR(K)-D in place. Additionally, when mounting a One-touch fitting to the pressure gauge port, refer to the Fittings and Tubing Precautions.



AC
AF + AR + AL
AW + AL
AF + AR
AF + AFM + AR
AW + AFM
Attachments
AF
AFM / AFD
AR
AL
AW



Modular Type Lubricator **AL Series**

Lubricator AL Series	Model	Port size	Options
	AL20-D	1/8, 1/4	
K19426 arteu ar an ar Boc maran ar ar	AL30-D	1/4, 3/8	
	AL40-D	1/4, 3/8, 1/2	Bracket
	AL40-06-D	3/4	Diacket
	AL50-D	3/4, 1	
p. 106 to 111	AL60-D	1	

	${\leftarrow}$		Ľ	20-D to A	<i>AL</i>	60)-	D		
-)3 [8	How to Order	Semi-sta · Select or · When mo in alphan Example)	e each fo ore than c umeric o	or a to d . one speci rder.	fication is	n	L30-D
	<u> </u>		Symbol	Description				1 Body size	9	
						20	30	40	50	60
			Nil Rc						•	
Pipe thread type	N	NPT		•	•	•	•	•		
	_		F +	G		•			•	
			- 01	1/8			_	_	_	_
			02	1/4		•	•	•	_	
			03	3/8		_	•	•	_	
		Port size	04	1/2		_	_	•		_
			06	3/4		_	_			_
			10	1		_				
			+							
	Op	tion (Mounting)	Nil B*1	Without mounting option				•	•	•
			+	With bracket		•			•	
			Nil	Polycarbonate bowl					•	
			2	Metal bowl		•	•	•	•	•
	-	Bowl*2	6	Nylon bowl		•		•	•	•
	а	DOML	8	Metal bowl with level gauge		_			•	
			С	With bowl guard		•	*3	*3	*3	*3
			6C	With bowl guard (Nylon bowl)		•	*4	*4	*4	*4
			+ Nil	Without drain cock]					
b Lubricant exhaust		3	With drain cock		•	•		•	•	
	~	port	3W*5	Drain cock with barb fitting		_	•	•	•	•
			+							-
	_	Flow direction	Nil	Flow direction: Left to right						
	С	Flow direction	R	Flow direction: Right to left					•	
			+							
	d	Unit	Nil	Unit on product label: MPa, °C		•	•	•	•	• 0*7
1			Z *6	Unit on product label: psi, °F		0*7	0*7	0*7	○*7	1 ()*/

*1 Option B is included in the package with the product but does not come assembled. The assembly consists of 2 types of the b
*2 Refer to chemical data on page 111 for chemical resistance of the bowl.
*3 A bowl guard is provided as standard equipment (polycarbonate).
*4 A bowl guard is provided as standard equipment (nylon).
*5 The combination of metal bowl 2 and 8 is not available.
*6 For the pipe thread type: NPT
This product is for overseas use only according to the New Measurement Act. (The SI unit type is provided for use in Japan.)
*7 O: For the pipe thread type: NPT only

SMC

AL

AW

AL20-D to AL60-D Series

Standard Specifications

Model	AL20-D	AL30-D	AL40-D	AL40-06-D	AL50-D	AL60-D				
Port size	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 temperatures	–5 to 60°C (No freezing)									
Proof pressure		1.5 MPa								
Max. operating pressure			1.0	MPa						
Min. dripping flow rate*1	15 L/min (ANR)	Port size 1/4: 30 L/min (ANR) Port size 3/8: 40 L/min (ANR)	Port size 1/4: 30 L/min (ANR) Port size 3/8: 40 L/min (ANR) Port size 1/2: 50 L/min (ANR)	50 L/min (ANR)	190 L/min (ANR)	220 L/min (ANR)				
Oil capacity	25 cm ³	55 cm ³		135	cm ³					
Recommended lubricant			Class 1 turbine	oil (ISO VG32)						
Bowl material			Polyca	rbonate						
Bowl guard	Semi-standard (Steel)	I) Standard (Polycarbonate)								
Weight	0.10 kg	0.18 kg	0.37 kg	0.41 kg	0.92 kg	0.99 kg				

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

Bowl Assembly/Part Nos.

Bowl	Lubricant exhaust	Other			Мс	odel			
material	port	Other	AL20-D	AL30-D	AL40-D	AL40-06-D	AL50-D	AL60-D	
	Without drain cock	—	C2SL-D	—	_				
	Without urain cock	With bowl guard	C2SL-C-D	C3SL-D	C4SL-D				
Polycarbonate	With drain cock	—	C2SL-3-D	—		_	_		
FUIYCAIDUIIALE	With train cock	With bowl guard	C2SL-3C-D	C3SL-3-D		C4SL	3-D		
	Drain cock with barb fitting	With bowl guard	—	C3SL-3W-D	C4SL-3W-D				
	Without drain cock	—	C2SL-6-A	—	_				
	Without drain cock	With bowl guard	C2SL-6C-A	C3SL-6-A	C4SL-6-A				
Nylon	With drain cock	—	C2SL-36-A	—	_				
INVIOL	With thain 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	—	C2SL-2-A	C3SL-2-A		C4SL	2-A		
Matal	Without urain cock	With level gauge	—	C3LL-8-A		C4LL	8-A		
Metal	With drain cock	_	C2SL-23-A	C3SL-23-A	A C4SL-23-A				
	With Grain Cock	With level gauge		C3LL-38-A		C4LL	-38-A		

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*1 The bowl assembly comes with a bowl seal. Please contact SMC separately for psi and °F unit display specifications.

Option/Part Nos.

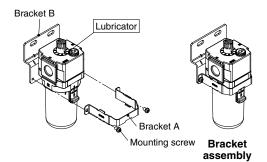
Optional	Model								
specifications	AL20-D	AL30-D	AL40-D	AL40-06-D	AL50-D	AL60-D			
Bracket assembly ^{*1}	AF24P-070AS	AF34P-070AS	AF44P-070AS	AF49P-070AS	AF54P	-070AS			

*1 The assembly consists of a bracket A/B and 2 mounting screws.

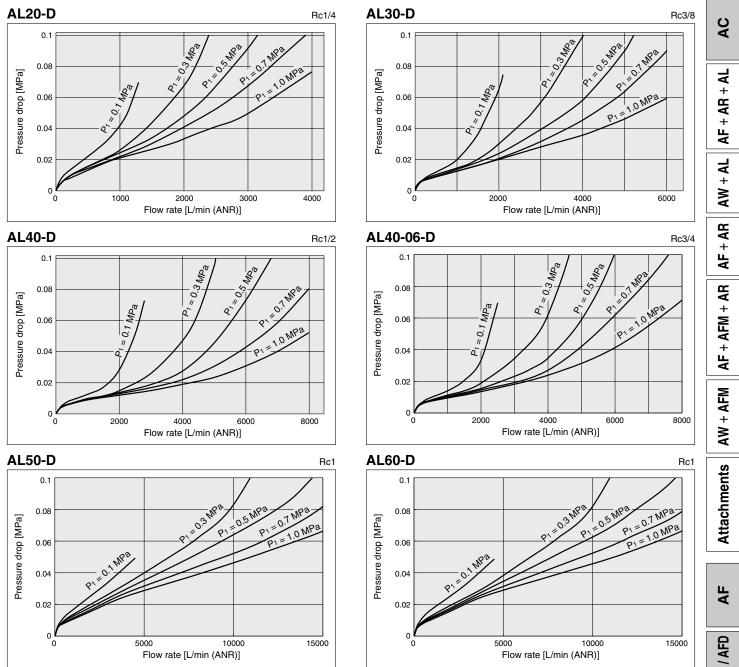
Replacement Parts

Description			Par	t no.						
Description	AL20-D	AL30-D	AL40-D	AL40-06-D	AL50-D	AL60-D				
Sight dome assembly		AL20P-080AS								
Lubrication plug assembly	AL24P-060AS	AL34P-060AS	AL44P-060AS							
Damper retainer assembly	AL20P-030AS	AL30P-030AS	AL40P	-030AS	AL54P-030AS	AL60P-030AS				
Damper assembly	AL20P-040S	AL30P-040S	AL44F	2-040S	AL60P	-040AS				
Bowl seal	C2SFP-260S	C32FP-260S	C42FP-260S							
Bowl assembly*1, *2		Refer to "Bowl Assembly/Part Nos."								

*1 The bowl assembly comes with a bowl seal.
*2 Please contact SMC separately for psi and °F unit display specifications.



Lubricator AL20-D to AL60-D Series



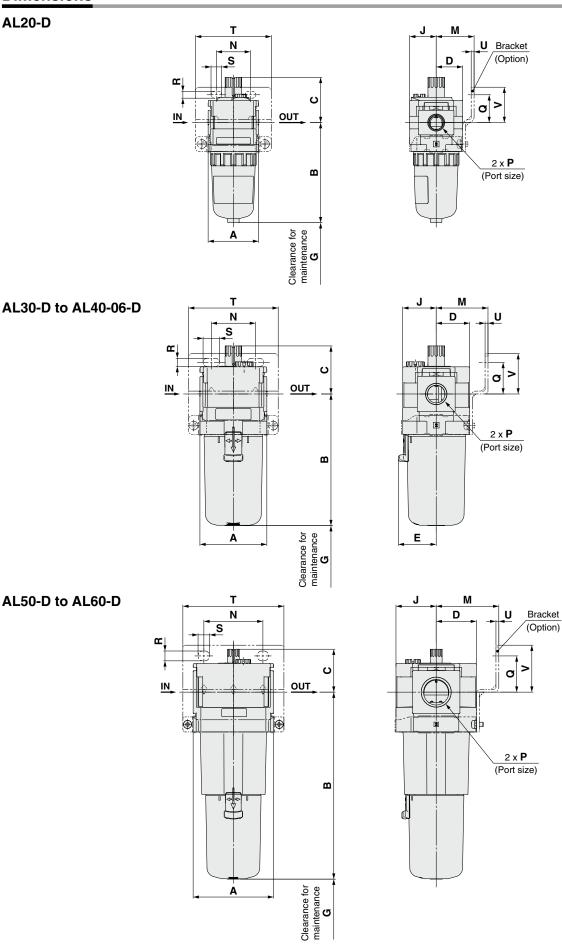
Flow Rate Characteristics (Representative values)



AL20-D to AL60-D Series

Dimensions





SMC

Lubricator AL20-D to AL60-D Series

	Semi-standard PC/PA bowl Metal bowl Metal bowl With level gauge						AC
Applicable	PC	C/PA bowl	Metal bowl wi	bowl with level gauge			
model	With drain cock	Drain cock with barb fitting	Without drain cock	With drain cock	Without drain cock	With drain cock	
AL20-D	n		m				AL AF + AR + AL
AL30-D to AL60-D	a a	Barb fitting applicable tubing: T0604					AF + AR AW + A

		Standard specifications									Optional specifications					
Model	Standard specifications								Bracket mount							
	Р	Α	В	С	D	E	G	J	М	Ν	Q	R	S	Т	U	V
AL20-D	1/8, 1/4	40	79.3	35.9	21	—	60	21	30	27	22	5.4	8.4	60	2.3	28
AL30-D	1/4, 3/8	53	104.3	38.1	26.5	30	80	26.5	41	35	25	6.5	13	71	2.3	32
AL40-D	1/4, 3/8, 1/2	70	136.1	44	35.5	38.4	110	35.5	50	52	30	8.5	12.5	88	2.3	39
AL40-06-D	3/4	75	138.1	44	35.5	38.4	110	35.5	50	52	34	8.5	12.5	88	2.3	43
AL50-D	3/4, 1	90	209.1	48	45	—	110	45	70	66	40.5	11	13	113	3.2	52.5
AL60-D	1	95	223.1	48	45	—	110	45	70	66	40.5	11	13	113	3.2	52.5

		Sem	ni-standard	l specificat	ions		
	PC/P4	A bowl	Metal	bowl	Metal bowl with level gauge		
Model	With drain cock	With barb fitting	Without drain cock	With drain cock	Without drain cock	With drain cock	
	В	В	В	В	В	В	
AL20-D	87.6	—	84.5	87.4	_	_	
AL30-D	115.4	123.9	104.3	117.8	124.3	137.8	
AL40-D	147.1	155.6	136	149.5	156.1	169.5	
AL40-06-D	149.1	157.6	138	151.5	158.1	171.5	
AL50-D	220.1	228.6	209	222.5	229	242.5	
AL60-D	234.1	242.6	223	236.5	243	256.5	

AL

AW

AF



AL-D Series Specific Product Precautions

Be sure to read this before handling the products. Refer to the back cover for safety instructions. For F.R.L. units precautions, refer to the "Handling Precautions for SMC Products" and the "Operation Manual" on the SMC website: https://www.smcworld.com

Design / Selection

M Warning

- **1.** Do not introduce air from the outlet side as this can damage the damper.
- 2. The standard bowl and sight dome of the lubricator is 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.

Chemical resistance of polycarbonate bowl with sight dome and nylon bowl with sight dome

Туре	Chemical name	Application examples	Material			
Type	Chemica 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 Sodium carbonate	Degreasing of metals Industrial salts Water-soluble cutting oil	×	0		
Inorganic salts	Sodium sulfide Potassium nitrate Sodium sulfate	_	×	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 ally safe \triangle : Some effect	_	×	Δ		

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

Design / Selection

A Caution

1. When the piping is branched on the inlet side, install a check valve to prevent the lubricant from back flowing.

Maintenance

\land Warning

- **1.** For the AL20-D, replenish the lubricant after releasing the inlet pressure. Lubrication cannot take place under a pressurized condition.
- Tighten the lubrication plug to the recommended tightening torque. Insufficient tightening torque may cause loosening or defective sealing. Excessive tightening torque may damage the thread, etc.

Recommended Torque

i i coominenta	cu i olque		Onit. Nam
Model	AL20-D	AL30-D	AL40-D AL40-06-D AL50-D AL60-D
Torque	0.25 to 0.35	0.35 to 0.45	0.5 to 0.6

Unit[,] N₂m

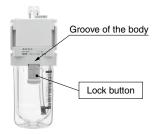
3. Adjustment of the oil regulating valve (sight dome assembly) for models from the AL20-D to AL60-D should be carried out manually. Turning it counterclockwise increases the dripping amount, and turning it clockwise reduces the dripping amount. The use of tools can result in damage to the unit. From 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.

Mounting / Adjustment

A Caution

SMC

1. When the lubricator bowl is installed on the AL30-D to AL60-D, 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.



Modular Type Filter Regulator **AV Series**

Filter Regulator AW Series	Model	Port size	Set pressure	Options	AF + AR + AL
	AW20(K)-D	1/8, 1/4			AW + AL
	AW30(K)-D	1/4, 3/8		Bracket Set nut	R AF + AR
	AW40(K)-D	1/4, 3/8, 1/2	0.05 to 0.85 MPa 0.02 to 0.2 MPa	(for panel mount) Float type auto drain Square embedded type pressure gauge	+ AFM + AR
				Digital pressure switch Round type pressure gauge	AW + AFM
		0/4	-		
	AW40(K)-06-D	3/4			Attachments
	AW60(K)-D			Bracket Float type auto drain Square embedded type pressure gauge Digital pressure switch	Attac
p. 113 to 129				Round type pressure gauge	AF

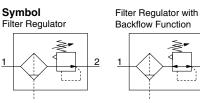
SMC

AFM / AFD

AR

AC

Filter Regulator	
AW20-D to AW60-D	i
Filter Regulator with Backflow Function	
AW20K-D to AW60K-D	



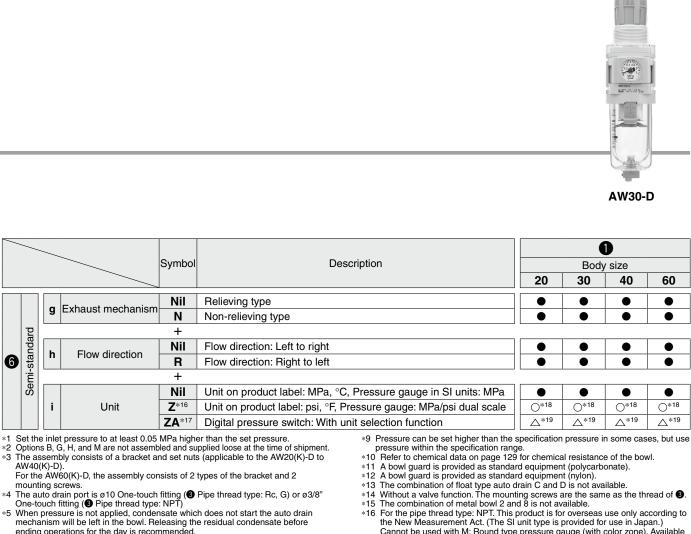
2

\cdot Integrated filter and regulator units save space and require less piping.

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

Example) When the air supply is cut off and releasing the inlet pressure to the atmosphere, the residual $\,\,\triangleright\,\,$ 3 pressure release of the outlet side can be ensured.

1	W		30 - • 2 5	03		tion and Se elect one eac /hen more tha alphanumeri ample) AW30	h for a to an one spe c order.	i. ecification		
/	<u> </u>	_		Symbol	Description	-		Body	-	
							20	30	40	60
		A /:+l=	ha aliflain fina atian	Nil	Without backflow function		•	•		۲
	v	vith	backflow function	K *1	With backflow function		●		●	۲
				+						
				Nil	Rc		•	•	•	•
9		Pi	pe thread type	N	NPT		•	•	•	
				F +	G		•	●		•
				01	1/8		•			_
				02	1/4		•	•	•	_
			Dantaina	03	3/8			•	•	_
			Port size	04	1/2		_	_	\bullet	_
				06	3/4		—	—		
				10	1		—	—	—	•
_				+			-	-	- 1	
				Nil	Without mounting option		•	•	•	•
		а	Mounting	B *3	With bracket		•	•	•	•
				H +	With set nut (for panel mount)		U	•	U	_
				Nil	Without auto drain		•	•		•
		b	Float type auto	C*5	N.C. (Normally closed) Drain port is closed when pressure is not	applied.	•	•	•	ĕ
	~	-	drain*4	D *6	N.O. (Normally open) Drain port is open when pressure is not		_	•	•	Ŏ
	Option*2			+						
	ptic			Nil	Without pressure gauge		•	•	●	•
	0		Pressure gauge*7	E	Square embedded type pressure gauge (with limit indica	ator)				۲
			Flessule gauge	G	Round type pressure gauge (with limit indicator)		●	●	●	•
		с		М	Round type pressure gauge (with color zone)		●	•	●	•
		-		E1	Output: NPN output, Electrical entry: Wiring bottom entry	/	•	•	•	•
			Digital pressure switch ^{*8}	E2	Output: NPN output, Electrical entry: Wiring top entry		•	•	•	•
			Switch	E3 E4	Output: PNP output, Electrical entry: Wiring bottom entry Output: PNP output, Electrical entry: Wiring top entry	/	•	•	•	
				<u> </u>	Output. FIVE Output, Electrical entry. Winny top entry			•	U	•
				Nil	0.05 to 0.85 MPa setting		•			•
		d	Set pressure*9	1	0.02 to 0.2 MPa setting		•	•	•	•
				+	v				I	
				Nil	Polycarbonate bowl				lacksquare	•
	p			2	Metal bowl		•	●	●	•
	Ida	е	Bowl ^{*10}	6	Nylon bowl		•	•	•	•
	Semi-standard			8	Metal bowl with level gauge		_	● *11	● *11	*1
	ц.			C 6C	With bowl guard		•	*12	*12	*1
	Sel			+	With bowl guard (Nylon bowl)		•			
				T Nil	With drain cock			•		•
					Drain guide 1/8		•	_	-	
		f	Drain port*13	J *14	Drain guide 1/4		_	•		•
				W *15	Drain cock with barb fitting		_	•	•	Ť



ending operations for the day is recommended. *6 If the compressor is small (0.75 kW, discharge flow is less than 100 L/min (ANR)), air leakage from the drain cock may occur during the start of operations. N.C. type is recommended.

Semi-standard

i

6

*1 *3

- *7 When the pressure gauge is attached, a 1.0 MPa pressure gauge will be fitted for standard (0.85 MPa) type. 0.4 MPa pressure gauge for 0.2 MPa type.
 *8 When choosing with H (panel mount), the installation space for lead wires will not be secured. In this case, select "wiring bottom entry" for the electrical entry.
- Cannot be used with M: Round type pressure gauge (with color zone). Available by request for special. The digital pressure switch will be equipped with the unit selection function, setting to psi initially. *17 For options: E1, E2, E3, E4 This product is for overneed use only according to the New Macauran in the The options: E1, E2, E3, E4
 This product is for overseas use only according to the New Measurement Act. (The SI unit type is provided for use in Japan.)
 *18 ○: For the pipe thread type: NPT only
 *19 △: Select with options: E1, E2, E3, E4.

AW + AFMAttachments AF AFM / AFD A R

AC

AF + AR + AL

+ AL

Å

AF + AR

AF + AFM + AR

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AW20-D to AW60-D Series AW20K-D to AW60K-D Series

Standard Specifications

М	odel	AW20-D	AW30-D	AW40-D	AW40-06-D	AW60-D		
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 ^{*1}			1/8				
Fluid				Air				
Ambient and fluid ter	nperatures*2		-{	5 to 60°C (No freezi	ng)			
Proof pressure				1.5 MPa				
Max. operating press	ure			1.0 MPa				
Auto drain minimum N.C.		0.1 MPa	0.1 MPa 0.15 MPa					
operating pressure	N.O.	— 0.1 MPa						
Set pressure range		0.05 to 0.85 MPa						
Nominal filtration rati	ng ^{*3}	5 μm						
Compressed air purit	y class ^{*4}	ISO 8573-1:2010 [6 : 4 : 4]*5						
Drain capacity		8 cm ³	25 cm ³		45 cm ³			
Bowl material				Polycarbonate				
Bowl guard		Semi-standard (Steel)	Semi-standard (Steel) Standard (Polycarbonate)					
Construction		Relieving type						
Weight		0.18 kg	0.34 kg	0.64 kg	0.69 kg	1.76 kg		

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.
*2 -5 to 50°C for the products with the digital pressure switch
*3 For the following conditions in accordance with [Test condition: ISO 8573-4:2001 compliant, Test method ISO 12500-3:2009 compliant] Conditions: When a new element is used, and the flow capacity, inlet pressure, and the amount of solid bodies on the filter inlet side are stable
*4 The compressed air purity class is indicated based on ISO 8573-1:2010 Compressed air – Part 1: Contaminants and purity classes. For details on this standard, refer to page 131.
*5 The compressed air quality class on the inlet side is [7:4:4].

Bowl Assembly/Part Nos.

Bowl	Drain discharge	Ducin a cut	Other			Model			
material	mechanism	Drain port	Other	AW20-D	AW30-D	AW40-D	AW40-06-D	AW60-D	
		With drain cock	—	C2SF-D	_		—		
		With train cock	With bowl guard	C2SF-C-D	C3SF-D		C4SF-D		
	Manual	Drain cock with barb fitting	With bowl guard	—	C3SF-W-D	C4SF-W-D			
Polycarbonate		With drain guide	—	C2SF□-J-D	_		—		
FOIYCarbonale		(without valve function)	With bowl guard	C2SF□-CJ-D	C3SF□-J-D		C4SF□-J-D		
		Normally closed	—	AD27-D	—		—		
	Automatic*1	(N.C.)	With bowl guard	AD27-C-D	AD37□-D		AD47□-D		
	(Auto drain)	Normally open (N.O.)	With bowl guard	—	AD38□-D		AD48□-D		
	Manual	With drain cock	_	C2SF-6-A	_		—		
		WITT UTAIL 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		
Nylon		With drain guide	—	C2SF□-6J-A	—		—		
Nyion		(without valve function)	With bowl guard	C2SF□-6CJ-A	C3SF□-6J-A		C4SF□-6J-A		
		Normally closed	—	AD27-6-A	—		—		
	Automatic*1	(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		C4SF-2-A		
	Manual	With drain cock	With level gauge	—	C3LF-8-A		C4LF-8-A		
	Mariuai	With drain guide	—	C2SF□-2J-A	C3SF□-2J-A		C4SF□-2J-A		
Metal		(without valve function)	With level gauge	—	C3LF□-8J-A		C4LF□-8J-A		
ivietal		Normally closed		AD27-2-A	AD37□-2-A		AD47□-2-A		
	Automatic*1	(N.C.)	With level gauge		AD37□-8-A		AD47[]-8-A		
	(Auto drain)	Normally open	—	—	AD38□-2-A		AD48□-2-A		
		(N.O.)	With level gauge	_	AD38□-8-A		AD48□-8-A		

*1 The bowl assembly 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 contact SMC separately for psi and °F unit display specifications.

Option/Part Nos.

AW20(K)-D AW30(K)-D AW40(K)-D AW40(K)-0-D AW6 Bracket assembly*1 AW23P-270AS AR33P-270AS AR43P-270AS AR54F Set nut AR23P-260S AR33P-260S AR43P-260S AR43P-260S - Round type Standard G36-10-□01 G46-10-□01 G46-4-□01 - Pressure gauge*3 Round type Standard G36-4-□01-□01-L G46-10-□01-L -				Model			200	Optional specifications			
Set nut AR23P-260S AR33P-260S AR43P-260S - Round type Standard G36-10-001 G46-10-001 - Pressure gauge*3 Round type Standard G36-10-001-L G46-10-001-L - 0.02 to 0.2 MPa setting G36-10-001-L G46-10-001-L - - -		AW60(K)-D	AW40(K)-06-D	AW40(K)-D	AW30(K)-D	AW20(K)-D	ns	Optional specificatio			
Standard Standard G36-10-□01 G46-10-□01 Pressure gauge*3 Round type (with color zone) Standard G36-10-□01-L G46-10-□01-L	S	AR54P-270AS	8P-270AS	AR43P	AR33P-270AS	AW23P-270AS		sembly ^{*1}	Bracket as		
Round type 0.02 to 0.2 MPa setting G36-4-□01 G46-4-□01 Pressure gauge*3 Round type (with color zone) Standard G36-10-□01-L G46-10-□01-L		*2	3P-260S	AR43F	AR33P-260S	AR23P-260S			Set nut		
Pressure gauge*3 Round type (with color zone) Standard G36-401 G46-401 0.02 to 0.2 MPa 0.36-401-1 G46-401-1 G46-401-1			G46-10-□01		0-□01	G36-1	Standard	Standard			
Pressure auge*3 (with color zone) 0.02 to 0.2 MPa G36-4-01-1 G46-4-01-1			G46-4-□01			G36-4		Round type			
gauge ^{*3} (with color zone) 0.02 to 0.2 MPa G36-4- \Box 01-l G46-4- \Box 01-l			G46-10-□01-L)-□01-L	G36-10	Standard	Darris data a	D		
		G46-4-□01-L			-□01-L	G36-4	0.02 to 0.2 MPa setting				
GC3-10AS-D [GC3P-030AS (Pressure gauge cover only)]			re gauge cover only)]	P-030AS (Pressure	Standard	0					
Square embedded type*4 0.02 to 0.2 MPa setting GC3-4AS-D [GC3P-030AS (Pressure gauge cover only)]			re gauge cover only)]								
NPN output, Wiring bottom entry ISE35-N-25-MLA-X523 [ISE35-N-25-M (Switch body only)]*5		ISE35-N-25-MLA-X523 [ISE35-N-25-M (Switch body only)]*5									
NPN output, Wiring top entry ISE35-R-25-MLA-X523 [ISE35-R-25-M (Switch body only)]*5		\$5	/ (Switch body only)]	23 [ISE35-R-25-M	SE35-R-25-MLA-X5	١		ouro ouitab	Distal and		
Digital pressure switch PNP output, Wiring bottom entry ISE35-N-65-MLA-X523 [ISE35-N-65-M (Switch body only)]*5		ISE35-N-65-MLA-X523 [ISE35-N-65-M (Switch body only)]*5						soure switch	Digital pres		
PNP output, Wiring top entryISE35-R-65-MLA-X523 [ISE35-R-65-M (Switch body only)]*5		\$5	ISE35-R-65-MLA-X523 [ISE35-R-65-M (Switch body only)]*5								

*1 The assembly consists of a bracket and set nuts. For the AW60(K)-D, the assembly consists of a bracket A/B and 2 mounting screws.

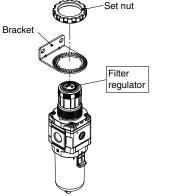
the pressure gauge supply for both MPa and psi unit specifications.

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

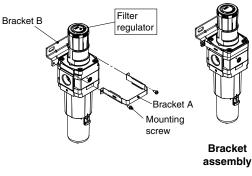
* In addition to the pressure switch body, lead wire with connector (2 m), adapter, lock pin, O-ring (1 pc.), mounting screws (2 pcs.) are attached.
[]: Switch body only (Regarding how to order the digital pressure switch, refer to page 130.)

AW20(K)-D to AW40(K)-06-D

AW60(K)-D







Replacement Parts

Dee	cription			Part no.					
Desi	cription	AW20(K)-D	AW30(K)-D	AW40(K)-D	AW40(K)-06-D	AW60(K)-D			
Valve assembly		AW24P-060AS	AW34P-060AS	AW44P-060AS	AW44P-060AS AW49P-060AS				
Filter element	t	AF20P-060S	AF30P-060S	AF40F	2-060S	AW60P-060S			
Baffle		AF24P-040S	AF34P-040S	AF44P-040S		AW64P-030S			
Diaphragm	Relieving type	AR24P-150AS	AR34P-150AS	AR44P-150AS		AR54P-150AS			
assembly	Non-relieving type	AR24P-150AS-N	AR34P-150AS-N	AR44P-1	150AS-N	AR54P-150AS-N			
Bowl seal		C2SFP-260S	C32FP-260S		C42FP-260S				
Bowl assemb	ly ^{*1, *2}		Refer	to "Bowl Assembly/Par	t Nos."				
Check valve assembly ^{*3}			AR24KP-020AS						

*1 The bowl assembly comes with a bowl seal.
*2 Please contact SMC separately for psi and °F unit display specifications.
*3 The check valve assembly is applicable for a filter regulator with backflow function (AW20K-D to AW60K-D) only. The assembly consists of a check valve cover, check valve body assembly, and 2 mounting screws.

SMC

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AFM / AFD

AB

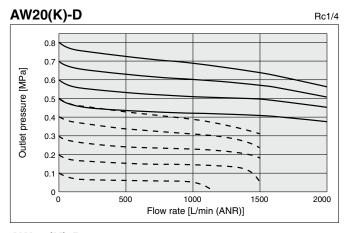
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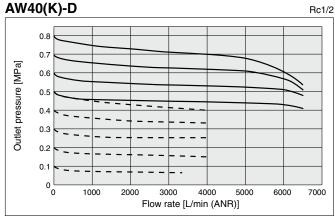
AV

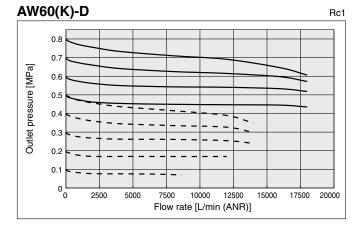
116 ®

AW20-D to AW60-D Series AW20K-D to AW60K-D Series

Flow Rate Characteristics (Representative values)

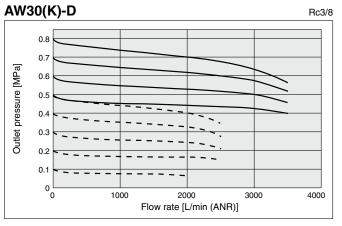




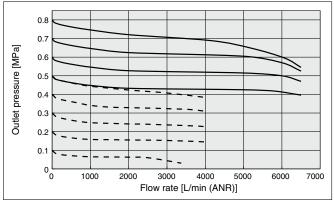


Inlet pressure: 1.0 MPa
 Inlet pressure: 0.7 MPa

Rc3/4

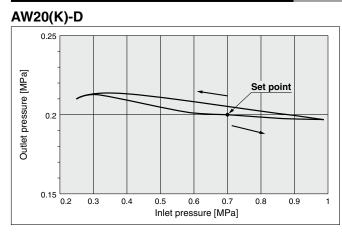




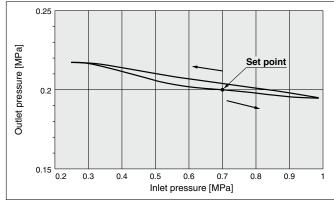


Pressure Characteristics (Representative values)

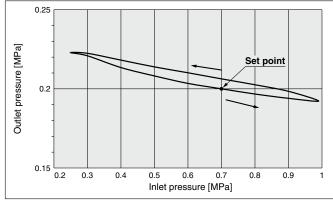
Conditions: Inlet pressure of 0.7 MPa, Outlet pressure of 0.2 MPa, Flow rate 20 L/min (ANR)

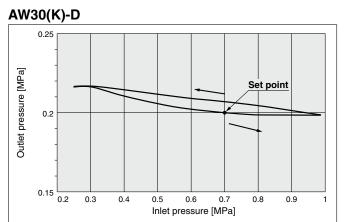




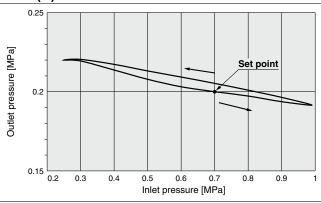












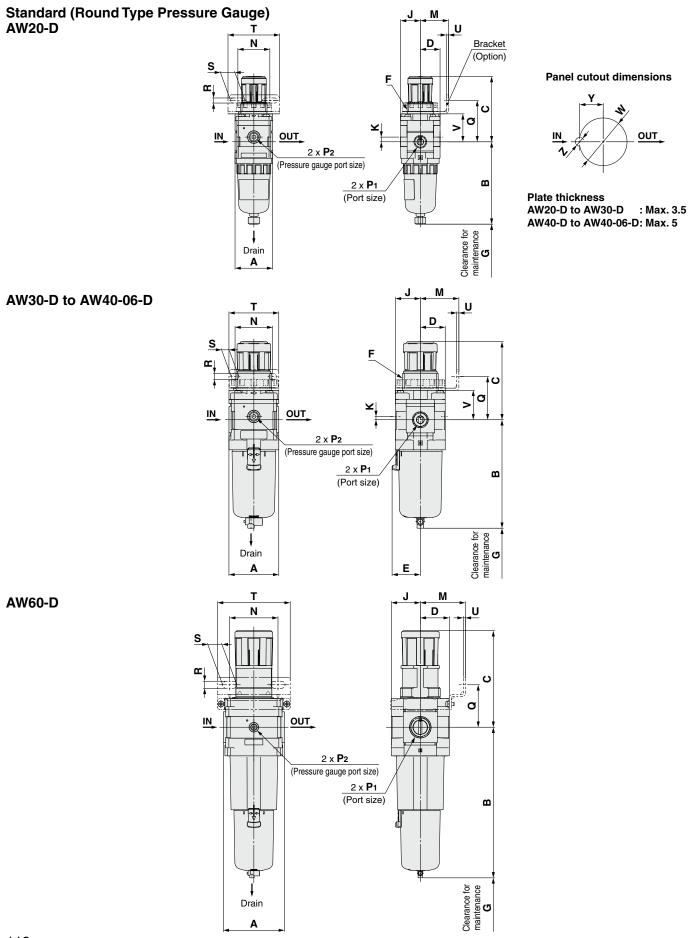
118

A

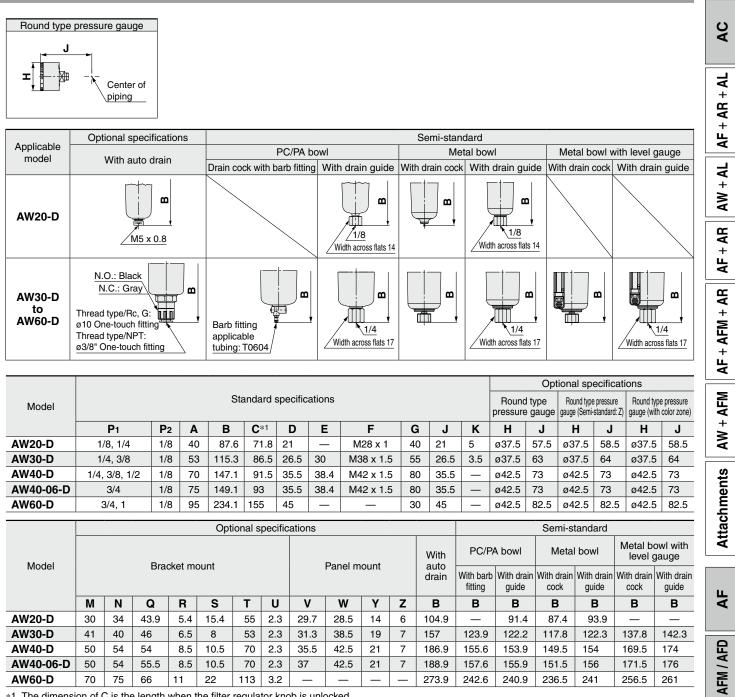
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AW20-D to AW60-D Series AW20K-D to AW60K-D Series

Dimensions



SMC



*1 The dimension of C is the length when the filter regulator knob is unlocked.

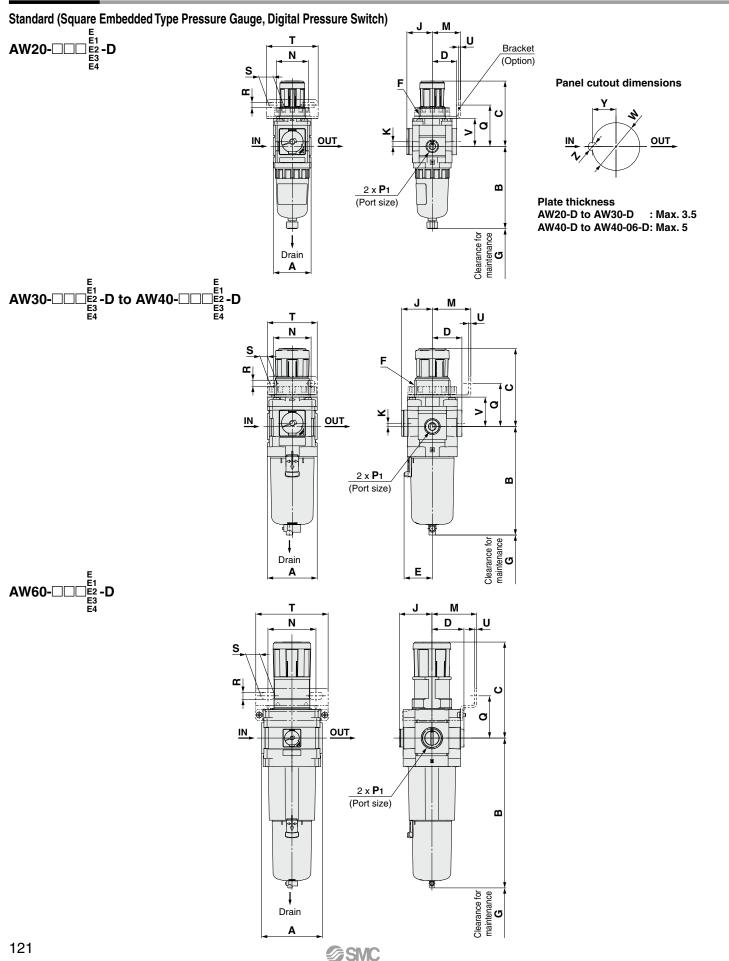
AR

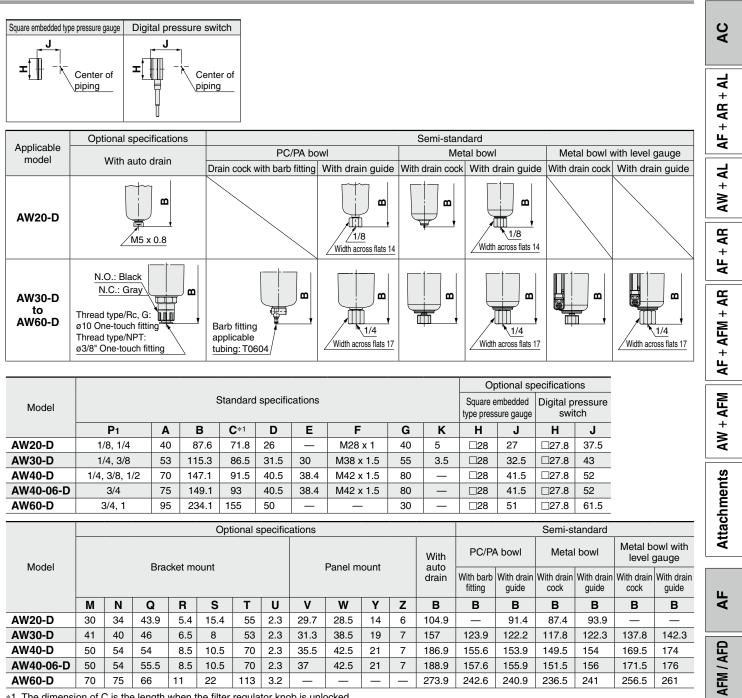
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AW20-D to AW60-D Series AW20K-D to AW60K-D Series

Dimensions





SMC

*1 The dimension of C is the length when the filter regulator knob is unlocked.



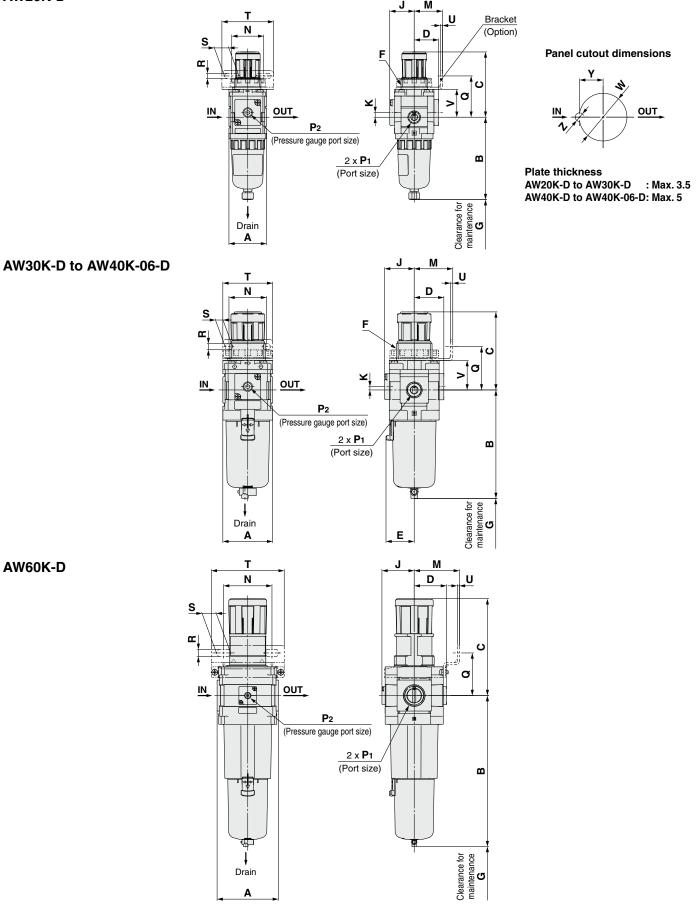
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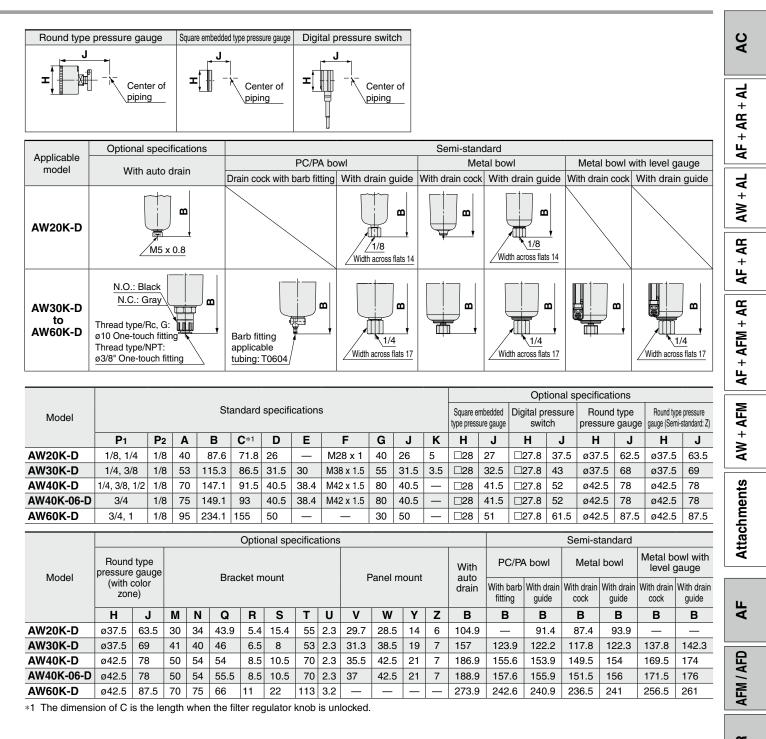
AW20-D to AW60-D Series AW20K-D to AW60K-D Series

Dimensions

With Backflow Function (Round Type Pressure Gauge, Square Embedded Type Pressure Gauge, Digital Pressure Switch) AW20K-D



SMC



AR

AL

AW

Filter Regulator/AW20-D to AW60-D Filter Regulator with Backflow Function/AW20K-D to AW60K-D Made to Order Made

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



① 0.4 MPa Setting

The setting specification is 0.4 MPa.

When a pressure gauge is included, the display will show a range from 0 to 0.7 MPa.

Specifications

Made-to-order part no.	-X406
Proof pressure [MPa]	1.5
Max. operating pressure [MPa]	1.0
Set pressure range [MPa]*1	0.05 to 0.4

*1 Pressure can be set higher than the specification pressure in some cases, but use pressure within the specification range.

Applicable Models

Model	AW20(K)-D	AW30(K)-D	AW40(K)-D	AW40(K)-06-D	AW60(K)-D
Port size	1/8, 1/4	1/4, 3/8	1/4, 3/8, 1/2	3/4	3/4, 1

2 Long Bowl

Drain capacity is greater than that of standard models.

Applicable Models/Drain Capacity

Model	AW20(K)-D	AW30(K)-D	AW40(K)-D	AW40(K)-06-D	AW60(K)-D	
Port size	1/8, 1/4	1/4, 3/8	1/4, 3/8, 1/2	3/4	3/4, 1	
Drain capacity [cm3]	19	43		88		
B dimension [mm]*1	108.1	137.3	167.2	169.2	254.2	

*1 For polycarbonate bowls. Please contact SMC for other bowl materials.

AW20-D AW30 to 60-D



V	V	3(0		03 - D-X406								
		4		8	4 6 6								
		U	9	0	4 5 5 X406	0.4 MF	a setting						
					X64		g bowl	<u>'</u>					
otic	- -	hnd	Somi-stand	ard Syn	nbol Selection		9.2011						
				aru Syn									
			each for a to i.		is assumed indicate in states and a	0		0				Baud	
			V30K-F03BE-2		is required, indicate in alphanumeric order.	υ.	4 IVIPá	a Setti	ng		Long	Bowl	
xan	ipie,) AV			08								
								1				1	
	_	<u> </u>	_	Symbol	Description								
					Decemption	20	30	y size 40	60	20	30	y size 40	60
										-		-	
With backflow function		Nil K*1	Without backflow function	•	•	•	•		•	•	•		
				∣ ⊼ *' +	With backflow function	•	•	•	•		U	•	
Pipe thread type		Nil	Rc										
		N	NPT	•	•	- Ŭ	ě	•	•	•	ē		
		F	G	•	•	•	•	•	•	•			
				+									
			01	1/8		-	-			-	—		
				02	1/4	•	•	•			•	•	
		P	ort size	03	3/8 1/2	_	•	•	-	_	•	•	
				04	3/4		-	•				•	-
				10	1							—	
				+			1	1	•		1	1	
Τ				Nil	Without mounting option								
		a	Mounting	B *3	With bracket								
				H	With set nut (for panel mount)	•			-				-
				+								1	
		ь	Float type auto	Nil C*5	Without auto drain	•	•	•	•			-	
		D	drain*4	D*6	Float type auto drain (N.C.): Drain port is closed when pressure is not applied. Float type auto drain (N.O.): Drain port is open when pressure is not applied.	•	•	•	•			_	
9	Option*2			+ +	Proat type auto drain (N.O.). Drain port is open when pressure is not applied.	—	•	•	•		-	—	-
:	otio			Nil	Without pressure gauge	•			•				
0	ő		Pressure	E	Square embedded type pressure gauge (with limit indicator)	•	ě	•	ě		ě	ě	ĕ
			gauge*7	G	Round type pressure gauge (with limit indicator)	•	•	•	ě		•	•	
				M	Round type pressure gauge (with color zone)	•	•	•	•	•	•	•	ē
		C	D: :- 1	E1	Output: NPN output, Electrical entry: Wiring bottom entry	•	ě	l i	•	•	Ŏ	ě	Č
			Digital	E2	Output: NPN output, Electrical entry: Wiring top entry	•	•	•	•	•	•	•	•
			pressure switch ^{*8}	E3	Output: PNP output, Electrical entry: Wiring bottom entry	•							
			SWITCH	E4	Output: PNP output, Electrical entry: Wiring top entry								•

How to Order

*1 Set the inlet pressure to at least 0.05 MPa higher than the set pressure.
*2 Options B, G, H, and M are not assembled and supplied loose at the time of shipment.
*3 The assembly consists of a bracket and set nuts (applicable to the AW20(K)-D to AW40(K)-D). The AR60(K)-D assembly includes 2 types of brackets and 2 mounting screws.
*4 The auto drain port is o10 One-touch fitting (
 Pipe thread type: NPT)

*5 When pressure is not applied, condensate which does not start the auto drain mechanism will be left in the bowl. Releasing the residual condensate before ending onpertions for the day is recommended ending operations for the day is recommended.

air leakage from the drain cock may occur during the start of operations. N.C. type is recommended.

s recommended.
*7 When the pressure gauge is attached, a 1.0 MPa pressure gauge will be fitted for standard (0.85 MPa) type. 0.4 MPa pressure gauge for 0.2 MPa type. 0.7 MPa pressure gauge for 0.4 MPa type (-X406).
*8 When choosing with H (panel mount), the installation space for lead wires will not be secured. In this case, select "wiring bottom entry" for the electrical entry.



0.4 MPa Setting

Long Bowl

0 0 Symbol Description Body size Body size 20 30 40 60 20 30 40 60 Nil 0.05 to 0.85 MPa setting d Set pressure*9 0.02 to 0.2 MPa setting • 1 Nil . • Polycarbonate bowl . Metal bowl 2 . . . • . . • . • • • • • • . . 6 Nvlon bowl е Bowl*10 Metal bowl with level gauge • • 8 • *11 *1 .*11 .*11 With bowl guard • С • *12 _*12 *12 *12 _*12 6C With bowl guard (Nylon bowl) Semi-standard Nil With drain cock • . • • . . • • AFM / AFD Drain guide 1/8 • . 6 Drain port*13 **J***14 f Drain guide 1/4 **W***15 Drain cock with barb fitting . . . • • Nil Exhaust Relieving type . . g mechanism Ν Non-relieving type • Nil Flow direction: Left to right . h Flow direction Flow direction: Right to left R . • • Nil Unit on product label: MPa, °C, Pressure gauge in SI units: MPa **Z***16 O*18 i Unit Unit on product label: psi, °F, Pressure gauge: MPa/psi dual scale ○*18 ○*18 ○*18 ○*18 O*18 ○*18 ○*18 ZA*17 Digital pressure switch: With unit selection function ∆*19 ∆*19 ∆*19 ∆*19 ∆*19 ∆*19 ∆*19 ∆*19

*9 Pressure can be set higher than the specification pressure in some cases, but use pressure within the specification range.

*10 Refer to chemical data on page 129 for chemical resistance of the bowl.
*11 A bowl guard is provided as standard equipment (polycarbonate).

*12 A bowl guard is provided as standard equipment (pylon).
*13 The combination of float type auto drain C and D is not available.
*14 Without a valve function. The mounting screws are the same as the thread of **③**.
*15 The combination of metal bowl 2 and 8 is not available.
*16 For the pipe thread type: NPT This product is for overseas use only according to the New Measurement Act. (The SI unit two is provided for use in Japan) Cannot he used with M: Bound (The SI unit type is provided for use in Japan.) Cannot be used with M: Round type pressure gauge (with color zone). Available by request for special. The digital pressure switch will be equipped with the unit selection function, setting to psi initially.

*17 For options: E1, E2, E3, E4 This product is for overseas use only according to the New Measurement Act. (The SI unit type is provided for use in Japan.) *18 O: For the pipe thread type: NPT only *19 ∆: Select with options: E1, E2, E3, E4.

AV

AB

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AW30-B to AW60-B Filter Regulator Made to Order

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

X430 Low temperature X440 High temperature

(1) Special Temperature Environment

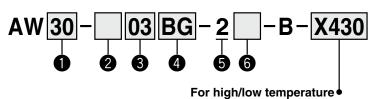
Special materials are used in the manufacturing of seals and resin parts to allow them to withstand various temperature conditions in cold or tropical (hot) climates.

Specifications

Made-to-	order part no.	-X430	-X440								
Environment		Low temperature	High temperature								
Ambient to	emperature [°C]	-30 to 60	–5 to 80								
Fluid tem	perature [°C]	-5 to 60 (with no freezing)									
Matarial	Rubber parts	Special NBR	FKM								
Material	Main parts	Metal (Aluminu	m die-cast, etc.)								

Applicable Model

Model	AW30-B	AW40-B	AW40-06-B	AW60-B
Port size	1/4, 3/8	1/4, 3/8, 1/2	3/4	3/4, 1





AW30-03-2-B-X440

• 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) AW30-03BG-2N-B-X430

$\left \right $	/	_					0		
				Symbol	Description		Body size		
						30	40	60	
				Nil	Rc	•	•	•	
2		Pipe	thread type	N	NPT	•	•	•	
				F	G				
				+					
				02	1/4		•	_	
_				03	3/8		•	—	
3		I	Port size	04	1/2	—	•	—	
				06	3/4	_	•	•	
				10	1	_	_	\bullet	
			i .	+			1		
				Nil	Without mounting option	•	•	•	
		a Mountir	Mounting	Mounting	B *2	With bracket	•	•	•
4	Option*1			Н	With set nut (for panel mount)	•	•	—	
-	b		1	+			1		
		b Pressure gauge		Nil	Without pressure gauge	•	•		
			G *3	Round type pressure gauge (without limit indicator)	•	•	\bullet		
				+		-	- 1	-	
6			Bowl *4	2	Metal bowl		•	\bullet	
				+		•	•	•	
		с	Set pressure	Nil	0.05 to 0.85 MPa setting	•	•	•	
				1 *5	0.02 to 0.2 MPa setting	•	•		
			1	+	APUL desta cont	•			
		d	Drain port	Nil J*6	With drain cock	•	•	•	
	Semi-standard			J *⁰+	Drain guide 1/4			U	
_	ndi			+ Nil	Deligning type	•		•	
6	sta	е	Exhaust mechanism	N	Relieving type				
	3			+			U		
	Se			Nil	Flow direction: Left to right	•			
		f	Flow direction	R	Flow direction: Right to left			•	
				+		•	•	•	
				Nil	Name plate, caution plate for bowl, and pressure gauge in SI units: MPa	•	•	•	
		g	Pressure unit	Z *7	Name plate, caution plate for bowl, and pressure gauge in imperial units: psi, °F	O*8		 *8	
					aupplied loose at the time of chipment	~	Ŭ		

*1 Options B, G, H are not assembled and supplied loose at the time of shipment.

*2 Assembly of a bracket and set nuts (AW30-B to AW40-B)

Including 2 mounting screws for the AW60-B *3 Mounting thread for pressure gauge: 1/8, Pressure gauge type: G43 *4 Only metal bowl 2 is available.

*5 The only difference from the standard specifications is the spring for the regulator. It does not restrict the setting of 0.2 MPa or more. When the pressure gauge is attached, a 0.4 MPa pressure gauge will be fitted.

*6 Without a valve function

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

*8 O: For pipe thread type: NPT only





AW20-B to AW60-B Filter Regulator Made to Order

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

For high pressure



2 High Pressure

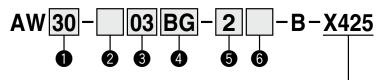
Strong materials are used in the manufacturing of filter regulators intended for high pressure operation. Also, construction modification allows a wider set pressure range.

Specifications

Made-to-order part no.	-X425
Proof pressure [MPa]	3.0
Maximum operating pressure [MPa]	2.0
Set pressure range [MPa]	0.1 to 1.7
Ambient and fluid temperature [°C]	-5 to 60°C (with no freezing)

Applicable Model

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





AW30-03-2-B-X425

• 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) AW30-03BG-2N-B-X425

	<u> </u>	_					1		
			Symbol	Description		Body	size		
						20	30	40	60
				Nil	Rc	•	•	•	•
2		Pipe	thread type	Ν	NPT	•	•	•	•
				F	G	•	•	•	•
				+					
				01	1/8	•	—	—	—
				02	1/4	•	•	•	_
2			ort size	03	3/8	_	•	•	_
3		г	on size	04	1/2	—	—	•	—
				06	3/4	_	_	•	•
				10	1	_	_	-	•
				+					
	₊ а			Nil	Without mounting option	•	•	•	•
5		a	Mounting	B *2	With bracket	•	•	•	•
			Н	With set nut (for panel mount)	•	•	•	_	
	Obtion		+						
	2	b Pressure gauge		Nil	Without pressure gauge	•		•	•
			G *3	Round type pressure gauge (with limit indicator)	•	•	•	•	
				+					
R	Bowl *4		Zourl *4	2	Metal bowl	•	•	•	•
9			8	Metal bowl with level gauge	—		•	•	
	_			+					
		Exhaust mechanism	Nil	Relieving type	•	•	•	•	
		c Exhaust mechanism		Ν	Non-relieving type	•	•	•	•
				+					
1	e		Drain port	Nil	With drain cock	•	•	•	•
1	da	d		J*5	Drain guide 1/8	•	—	—	_
6 B	lan			-	Drain guide 1/4	—	•	•	•
	s-l			+					
	semi-standard	е	Flow direction	Nil	Flow direction: Left to right	•	•	•	•
0	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	9		R	Flow direction: Right to left	•	•	•	•
		<u> </u>		+	·				
		f	Pressure unit	Nil	Name plate, caution plate for bowl, and pressure gauge in SI units: MPa	•	•	•	•
		<u> </u>	i iessule ullit	Z *6	Name plate, caution plate for bowl, and pressure gauge in imperial units: psi, °F	○*7	0*7	0*7	O*7

*1 Options B, G, H are not assembled and supplied loose at the time of shipment.
 *2 Assembly of a bracket and set nuts (AW20-B to AW40-B)

Including 2 mounting screws for the AW60-B

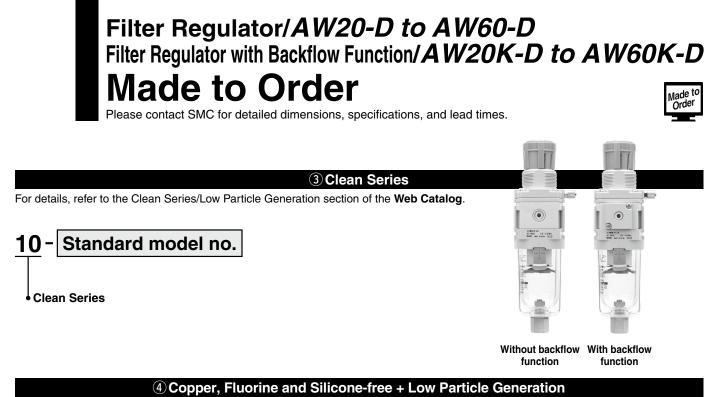
*3 Mounting thread for pressure gauge: 1/8, Pressure gauge type: G46-20-*4 Only metal bowl 2 and 8 are available.

*5 Without a valve function

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

*7 O: For pipe thread type: NPT only





For details, refer to the Clean Series/Low Particle Generation section of the Web Catalog.

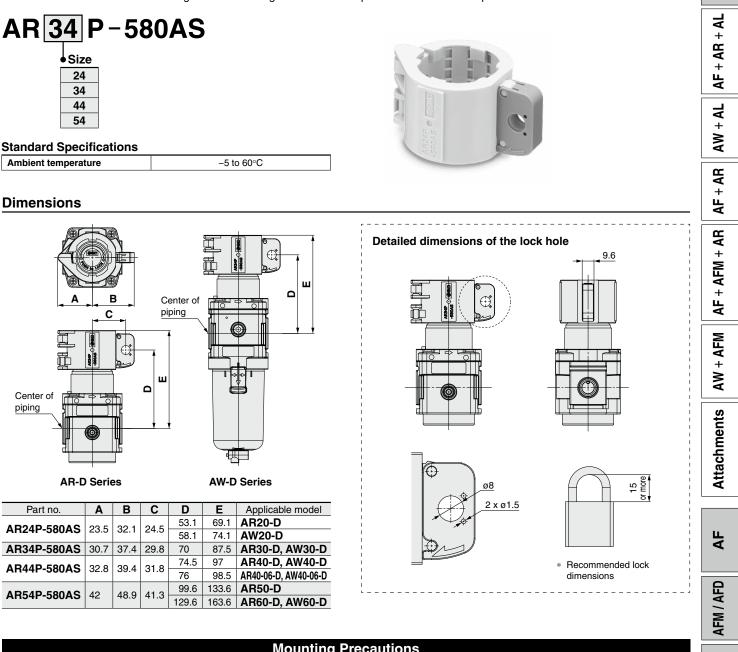
21 - Standard model no.

Copper, Fluorine and Silicone-free + Low Particle Generation



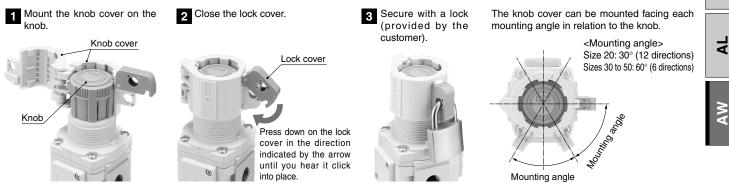
Knob Cover

Can be mounted on the knob of a regulator or filter regulator in order to prevent the accidental operation of the knob



Mounting Precautions

Before mounting the knob cover, confirm that the knob is in the locked state (in which the orange line is not visible). Mount the cover in accordance with the mounting instructions below.



SMC

AR

AC



AW(K)-D Series Specific Product Precautions

Be sure to read this before handling the products. Refer to the back cover for safety instructions. For F.R.L. units precautions, refer to the "Handling Precautions for SMC Products" and the "Operation Manual" on the SMC website: https://www.smcworld.com

Design / Selection

A Warning

- Residual pressure disposal (outlet pressure removal) is not possible for the AW20-D to AW60-D even though the inlet pressure is exhausted. When the residual pressure disposal is performed, use the filter regulator with backflow function (AW20K-D to AW60K-D).
- 2. The bowl material of the standard filter regulator is 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.

Chemical resistance of polycarbonate or nylon bowl

			Mat	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 Sodium carbonate	Degreasing of metals Industrial salts Water-soluble cutting oil	×	0
Inorganic salts	Sodium sulfide Potassium nitrate Sodium sulfate	_	×	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: Esse	ntially safe \triangle : Some	effects may occur. X:	Effects will	occur.

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

A Caution

1. When operating at an inlet pressure lower than the inlet pressure used in the flow rate characteristics graph, the pressure drop on the outlet side may be greater. Therefore, be sure to conduct testing using the actual equipment.

For pressure control equipment selection, refer to the "Product Selection Guide."

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 / Adjustment

\land Warning

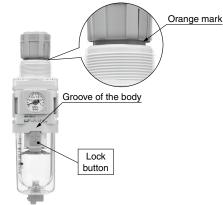
- Set the filter regulator while verifying the displayed values of the inlet and outlet pressure gauges. Turning the regulator knob excessively can cause damage to the internal parts.
- **2.** Do not use tools on the pressure regulator knob as this may cause damage. It must be operated manually.

A 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).



 When the bowl is installed on the AW30-D to AW60-D, 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.

Piping

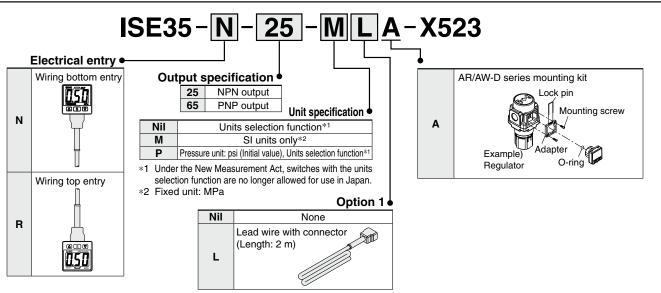
\land Warning

 To screw the pressure gauge and piping materials into the pressure gauge port on the product, tighten to the recommended torque (3 to 5 N·m) while securely holding the AW(K)-D in place. Additionally, when mounting a One-touch fitting to the pressure gauge port, refer to the Fittings and Tubing Precautions.

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Digital Pressure Switch/ISE35-X523 Related Product

How to Order



Options/Part Nos.

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

Description	Part no.	Note		
Lead wire with	ZS-32-A	Length: 2 m (With rubber cover)		
connector	20-02-A	Lengur. 2 III (With Tubber Cover)		
Mounting kit	ZS-32-C-X473	For ISE35-□-A-X523 (AR/AW-D series) Set screw (3 x 8 L, 2 pcs.), adapter, lock pin, and O-ring are attached.		

Applicable Series Product series that this product can be installed in

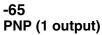
Product series	Model
	AC20-D, AC30-D, AC40-D, AC50-D, AC60-D
	AC20A-D, AC30A-D, AC40A-D, AC50A-D, AC60A-D
F.R.L. units	AC20B-D, AC30B-D, AC40B-D, AC50B-D, AC60B-D
	AC20C-D, AC30C-D, AC40C-D
	AC20D-D, AC30D-D, AC40D-D
Degulator	AR20(K)-D, AR30(K)-D, AR40(K)-D,
Regulator	AR50(K)-D, AR60(K)-D
Filter regulator	AW20(K)-D, AW30(K)-D, AW40(K)-D, AW60(K)-D
Mist separator regulator	AWM20-D, AWM30-D, AWM40-D
Micro mist separator regulator	AWD20-D, AWD30-D, AWD40-D

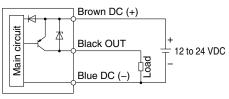
Specifications

Rated pressure range	0 to 1 MPa			
Display/Set pressure range	-0.1 to 1 MPa			
Withstand pressure	1.5 MPa			
Display/Smallest settable increment	0.01 MPa			
Applicable fluid Air, Nor	n-corrosive gas, Non-flammable gas			
Power supply voltage 12 to 24 VDC ±10%, Rit	pple (p-p) 10% or less (With power supply polarity protection)			
Current consumption	55 mA or less (at no load)			
Switch output NPN or	PNP open collector output: 1 output			
Max. load current	80 mA			
Max. applied voltage	30 V (With NPN output)			
Residual voltage 1 V or	1 V or less (With load current of 80 mA)			
Response time 1	1 s (0.25, 0.5, 2, 3 s selections)			
Short circuit protection	Yes			
Repeatability	±1% F.S.			
Hysteresis mode A	Adjustable (Can be set from 0)			
Window comparator mode	Aujustable (Call be set from 0)			
	3-digit, 7-segment indicator, 2-color display (Red/Green) A switch can be operated simultaneously.			
Display accuracy±2% F.S. ±1	±2% F.S. ±1 digit (at 25°C ±3°C ambient temperature)			
	p when output is turned ON (Green)			
Environmental Enclosure	IP40			
resistance Operating temperature range -5 to 5	50°C (No condensation or freezing)			
Oilproot	f heavy-duty vinyl cable			
Lead wire with connector 3 cores	, ø3.4, 2 m			
(Option: L) Conduct	tor cross section: 0.2 mm ² (AWG25)			
	or O.D.: 1.16 mm			
Weight Approx. 14 g (Body o	nly), Approx. 38 g (Including lead wire with connector)			
Standards CE/U	KCA marking, UL/CSA (E216656)			

Internal Circuits and Wiring Examples

-25 NPN (1 output) Brown DC (+) Black OUT Black OUT Blue DC (-)





International Standard ISO 8573-1:2010 Compressed Air Purity Classes

Compressed air is used in a variety of manufacturing processes. In this age, compressed air with a high degree of purity is becoming increasingly necessary.

For this reason, it is necessary to remove contaminants from systems which supply compressed air and to secure the quality. The standard which stipulates the class according to the quantities of contaminants in compressed air is ISO 8573-1.

[Outline]

[Scope]

Stipulates the purity class of contaminants (particles, water, oil) mixed in with the compressed air

Can be used in various places in compressed air systems

[Terms and Definitions]

- Purity class: An index assigned for each classification obtained by dividing the concentration of each contaminant into ranges
- \cdot Particle: Small discrete mass of solid or liquid matter
- · Humidity and liquid water: Water vapor (gas), Water droplets

[Purity Classes]

· Oil: Liquid oil, Oil mist, Vapor

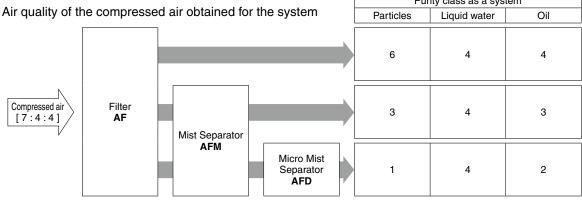
· ·						
	Parti	icles		Humidity and	Oil	
Maximum number of partic	Maximum number of particles per cubic meter as a function of particle size d [µm] Mass concentratio				Concentration of liquid water Cw	Concentration of total oil
$0.1 < d \le 0.5$	$0.5 < d \le 1.0$	$1.0 < d \le 5.0$	[mg/m3]	[°C]	[g/m3]	[mg/m³]
	As spec	cified by the equipme	nt user or supplier and	d more stringent than	class 1	
≤ 20000	≤ 400	≤ 10	—	≤ -70	—	≤ 0.01
≤ 400000	≤ 6000	≤ 100	—	≤ -40	—	≤ 0.1
—	≤ 90000	≤ 1000	—	≤ −20	—	≤1
—	—	≤ 10000	—	≤ +3	—	≤ 5
—	_	≤ 1 00000	—	≤ +7	—	—
—	—	—	$0 < Cp \le 5$	≤ +10	—	—
—	—	—	5 < Cp ≤ 10	—	Cw ≤ 0.5	—
—	—	—	—	—	0.5 < Cw ≤ 5	—
—	—	_	—	—	$5 < Cw \le 10$	—
—	—	_	Cp > 10	—	Cw > 10	> 5
	$\begin{array}{l} \text{Maximum number of partic}\\ 0.1 < d \leq 0.5\\ \leq 20000 \end{array}$	Maximum number of particles per cubic meter as a fun $0.1 < d \le 0.5$ $0.5 < d \le 1.0$ As spectrum ≤ 20000 ≤ 400 ≤ 400000 ≤ 6000	ParticlesMaximum number of particles per cubic meter as a function of particle size d [µm] $0.1 < d \le 0.5$ $0.5 < d \le 1.0$ $1.0 < d \le 5.0$ As specified by the equipme ≤ 20000 ≤ 400 ≤ 10 ≤ 400000 ≤ 6000 ≤ 100 $$ ≤ 90000 ≤ 10000 $$ ≤ 10000	Particles Maximum number of particles per cubic meter as a function of particle size d [µm] Mass concentration Cp $0.1 < d \le 0.5$ $0.5 < d \le 1.0$ $1.0 < d \le 5.0$ [mg/m3] As specified by the equipment user or supplier and second secon	Particles Humidity and Maximum number of particles per cubic meter as a function of particle size d [µm] Mass concentration Cp Pressure dew point $0.1 < d \le 0.5$ $0.5 < d \le 1.0$ $1.0 < d \le 5.0$ $[mg/m3]$ [°C] As specified by the equipment user or supplier and more stringent than ≤ 20000 ≤ 400 ≤ 10 $ < -70$ ≤ 400000 ≤ 6000 ≤ 100 $ < -40$ $ \le 90000$ ≤ 1000 $ < -40$ $ \le 90000$ ≤ 1000 $ < -40$ $ \le 10000$ $ < -20$ $ < 10000$ $ < -20$ $ < 100000$ $ < +3$ $ < +7$ $ < -20$ $ < +3$ $ < -20$ $-$	ParticlesHumidity and liquid waterMaximum number of particles per cubic meter as a function of particle size d [µm]Mass concentration CpPressure dew pointConcentration of liquid water Cw $0.1 < d \le 0.5$ $0.5 < d \le 1.0$ $1.0 < d \le 5.0$ $[mg/m3]$ [°C] $[g/m3]$ As specified by the equipment user or supplier and more stringent than class 1 ≤ 20000 ≤ 400 ≤ 100 $ \le -70$ $ \le 400000$ ≤ 6000 ≤ 100 $ \le -40$ $ \le 90000$ ≤ 1000 $ \le -20$ $ \le 10000$ $ \le +33$ $ \le 100000$ $ \le +33$ $ 0 < Cp \le 5$ $\le +10$ $ 0 < Cp \le 5$ $\le +10$ $ -$

[How to Perform a Test to Check the Performance]

ISO 12500, which sets out the test method to be used in order to check the filter performance for each of the three kinds of contaminants, is indicated below.

- · Particle: ISO 12500-3:2009
- · Liquid water: ISO 12500-4:2009
- · Oil: ISO 12500-1:2007
- * Measured using a dedicated evaluation system which has been certified according to ISO 12500-□ and also by a third party (Certified)

[Purity Class Designation Example] ISO 8573-1:2010 [4 : 6 : 2] • Oil class 2 Concentration of total oil ≤ 0.1 mg/m³ • Humidity and liquid water class 4 1.0 µm < d ≤ Particles of 5.0 µm ≤ 10000 particles/m³ • Humidity and liquid water class 6 Pressure dew point ≤ +10°C Purity class as a system



The class indicates the compressed air purity according to ISO 8573-1:2010 (JIS B 8392-1:2012) and indicates the maximum purity class which can be obtained using that system. Note, however, that this value will differ according to the inlet air conditions.



▲ 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 which, if not avoided, could result in minor or moderate injury.
- Warning: Warning indicates a hazard with a medium level of risk which, if not avoided, could result in death or serious injury.

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

AWarning

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 equipment.

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

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

- 3. Do not service or attempt to remove product and machinery/ equipment until safety is confirmed.
 - 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.
 - 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.

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

 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

- 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.
- 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.

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.

Edition B * Attachments have been added. * The number of pages has been increased from 72 to 104. Edition C * Sizes 40-06, 50, and 60 have been added to the AC series. * Sizes 40-06, 50, and 60 have been added to the AF, AR(K), and AL. * The VHS40-06 and 50 have been added. * Size 40-06 has been added to the AFM/AFD. * Sizes 40-06 and 60 have been added to the AW(K). * Made to order options have been added. * The number of pages has been increased from 104 to 112.	YV ZQ	Edition D * A right angle square type pressure gauge has been added. * Various attachments have been added: Right angle/Reducing/Cross adapter, End plate * Made to order options have been added: Clean Series, Copper, fluorine and silicone-free + Low particle generation (AF, AR, AW) * A knob cover (option) has been added. * Connectable modular components have been added. * The number of pages has been increased from 112 to 136.
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Safety Instructions Be sure to read the "Handling Precautions for SMC Products" (M-E03-3) and "Operation Manual" before use.

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Specifications are subject to change without prior notice and any obligation on the part of the manufacturer.