

Symbol



Product feature

1. The structure is delicate and compact, which is convenient for installation and application.
2. The pressed-in self-locking mechanism can prevent the abnormal movement of the set pressure caused by external interfere.
3. The pressure loss is low and the efficiency of water separating is high.
4. In addition to standard type, lower pressure type is optional (The highest adjustable pressure is 0.4MPa).

Ordering code

AFR		2000	M			1	W	
Model		Type code		Pressure gauge		Filtering grade		
AFR	A Series filter & regulator	Blank	Standard(0.9MPa)	Blank	Pressure gauge	Blank	40μm	
BFR	B Series filter & regulator	L	Lower pressure(0.4MPa)	N	No pressure gauge	W	5μm	
Port size		Accessories		Scale		Thread type		
Series	Port size	Blank	Bracket	1	MPa	Thread type	Scale	
AFR	1500: 1/8"	J	No bracket	2	psi	Blank	PT	MPa or kgf/cm ² & psi
	2000: 1/4"			3	bar	G	G	bar
BFR	3000: 3/8"			4	Double scale (psi, kgf/cm ²)	T	NPT	psi
	4000: 1/2"							
Drain type		Series		Drain type				
AFR		Blank	Semi-auto drain					
		M	Manual drain					
BFR		Blank	Semi-auto drain					
		M	Manual drain					
		A	Automatic drain					

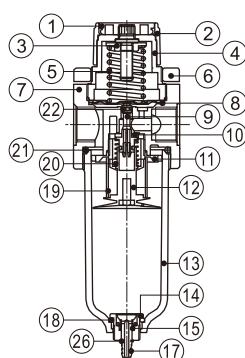
Specification

Model	AFR1500	AFR2000	BFR2000	BFR3000	BFR4000
Fluid	Air				
Port size	1/8"	1/4"	1/4"	3/8"	1/2"
Filtering grade	40μm or 5μm				
Pressure range	Semi-auto and automatic drain:0.15~0.9MPa(20~130psi); Manual drain: 0.05~0.9MPa(7~130psi)				
Max. pressure	1.0MPa(145psi)				
Proof pressure	1.5MPa(215psi)				
Temperature range	-5~70°C				
Capacity of drain bowl	15CC		60CC		
Weight	260g		400g		

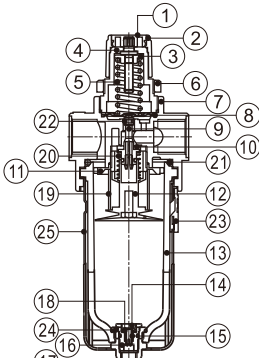
Note: PT thread, G thread and NPT thread are available.

Inner structure and material of major parts

AFR

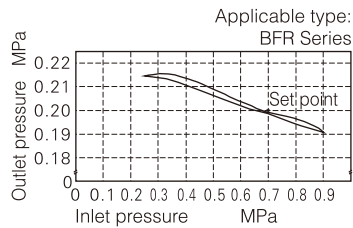
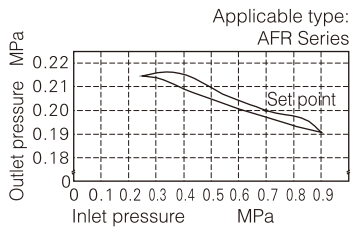


BFR

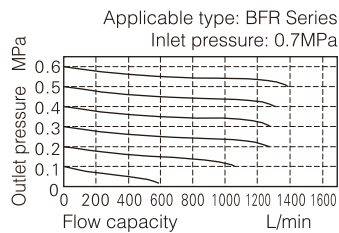
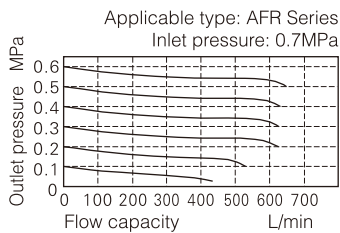


No.	Item	Material	No.	Item	Material
1	Push button	POM	15	Return spring	Stainless steel
2	Adjusting button	POM	16	Drain seat	POM
3	Adjusting nut	Steel	17	Drain pillar	POM
4	Adjusting seat	POM	18	Drain O-ring	NBR
5	Adjusting spring	SWC	19	Filter element	40μm Madrolon fiber
6	Fixed ring	POM			5μm Agglomerated by bronze grain
7	Body	Aluminum alloy	20	Return spring	Stainless steel
8	Diaphragm	SUS304 & rubber	21	Drain bowl O-ring	NBR
9	Balance needle	POM	22	Needle O-ring	NBR
10	Needle gasket	Aluminum alloy & rubber	23	Bowl guard switch	POM
11	Air guider	POM	24	Gasket	POM
12	Umbrella baffle	POM	25	Bowl guard	PA66
13	Drain bowl	PC	26	Clip	Spring steel
14	Drain kit	POM			

Pressure chart



Flow chart

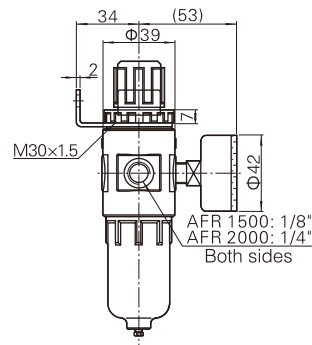
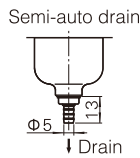
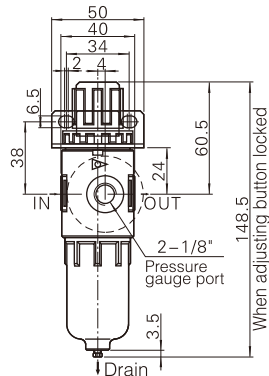


Selection of drain mode

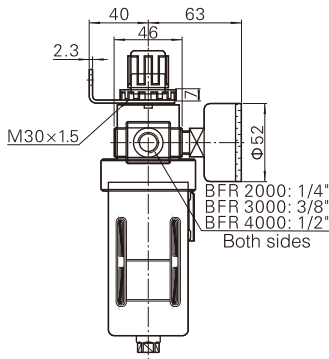
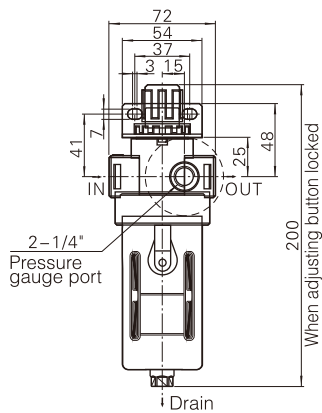
The drain modes of different series are different.
Please refer to AC/BC for details.

Dimensions

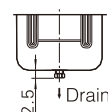
AFR



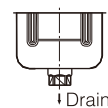
BFR



Manual drain



Automatic drain
Semi-auto drain



FRL

AC/BC

AFB/BFC

AFR/BFR

AF/BF

AR/BR

AL/BL

SR

SDR

AC

AW

AF

AR

AL

F3

F2

F1

F

R

L

USFRL

USFR/L

USFR

USF

USR

USL

QSL

QTY

QIU

QTYH

QSLH

QFRH

AFF

AF(Big)

AL(Big)

AR(Big)

AD402

AH402

AD-5

IR

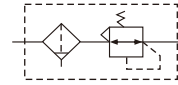
ITV

ACR

F804

PG

Symbol



Ordering code

AW		2000	02	D	
Model		Port size		Drain method	
AW	A Series filter & regulator	M5	M5	Blank	Manual drain
		02	1/4"	A	Semi-auto drain
		03	3/8"	D	Automatic drain
		04	1/2"		
		06	3/4"		
		10	1"		
Series code					
1000	1000 Series				
2000	2000 Series				
3000	3000 Series				
4000	4000 Series				
5000	5000 Series				



Specification

Model	Manual drain	AW1000-M5	AW2000-02	AW3000-02	AW3000-03	AW4000-03	AW4000-04	AW4000-06	AW5000-06	AW5000-10
	Automatic drain	AW1000-M5D	AW2000-02D	AW3000-02D	AW3000-03D	AW4000-03D	AW4000-04D	AW4000-06D	AW5000-06D	AW5000-10D
Port size		M5x8	1/4"	1/4"	3/8"	3/8"	1/2"	3/4"	3/4"	1"
Pressure gauge size		1/16"	1/8"	1/8"	1/8"	1/8"	1/4"	1/4"	1/4"	1/4"
Rated flow (L/min)		100	550	2000	2000	4000	4000	4500	5000	5000
Proof pressure		1.5MPa{15.3kgf/cm ² }								
Max. pressure		1.0MPa{10.2kgf/cm ² }								
Temperature range		5~60℃								
Filtering grade		5μm or 40μm								
Recommended oil		Turbine No. 1 oil ISO VG32								
Cup material		Polycarbonate								
Cup protective cover		AW1000~2000(Without) AW3000~5000(With)								
Pressure range		AW1000: 0.05-0.7MPa(0.51~7.1kgf/cm ²); AW2000~5000: 0.05~0.85MPa(0.51~8.7kgf/cm ²)								
Valve type		With overflow								
Assembly	Manual drain	C100F	C200F	C300F	C300F	C400F	C400F	-	-	-
	Automatic drain	AD61	AD62	AD43	AD43	AD44	AD44	-	-	-
Weight(kg)		0.09	0.36	0.56	0.56	1.15	1.15	1.21	1.7	1.7

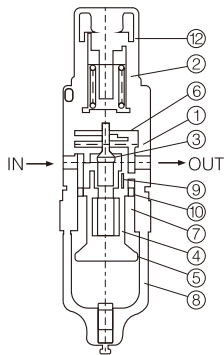
Note: 1. there are 2, 10, 20, 40, 70, 100μm to choose from;

2. Standard automatic drainage for normally open (N.O.), AW3000~5000 also has normally closed (N.C.) to choose from, and the lowest use pressure: normally open -0.1MPa (1kgf/cm²), normally closed -0.15MPa (1.5kgf/cm²);

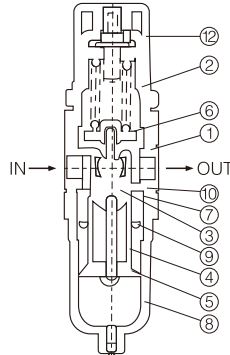
3. Supply pressure is 0.7MPa (7.1kgf/cm²) case.

Inner structure

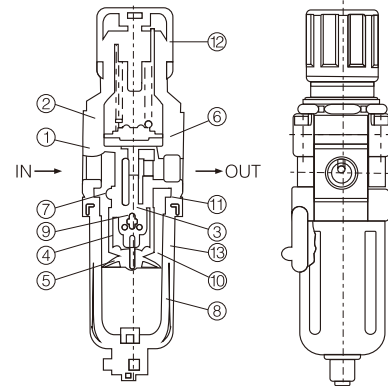
AW1000



AW2000



AW3000/4000



FRL

AC/BC

AFC/BFC

AFR/BFR

AF/BF

AR/BR

AL/BL

SR

SDR

AC

AW

AF

AR

AL

F3

F2

F1

F

R

L

USFRL

USFR/L

USFR

USF

USR

USL

QSL

QTY

QIU

QTYH

QSLH

QFRH

AFF

AF(Big)

AL(Big)

AR(Big)

AD402

AH402

AD-5

IR

ITV

ACR

F804

PG

FRL

AC/BC

AFC/BFC

AFR/BFR

AF/BF

AR/BR

AL/BL

SR

SDR

AC

AW

AF

AR

AL

F3

F2

F1

F

R

L

USFRL

USFR/L

USFR

USF

USR

USL

QSL

QTY

QIU

QTYH

QSLH

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AFF

AF(Big)

AL(Big)

AR(Big)

AD402

AH402

AD-5

IR

ITV

ACR

F804

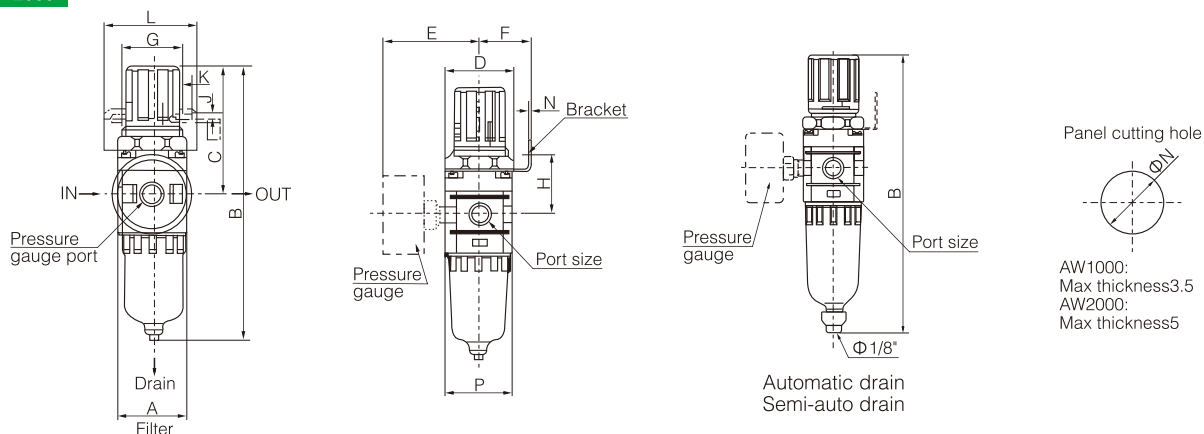
PG

Main parts

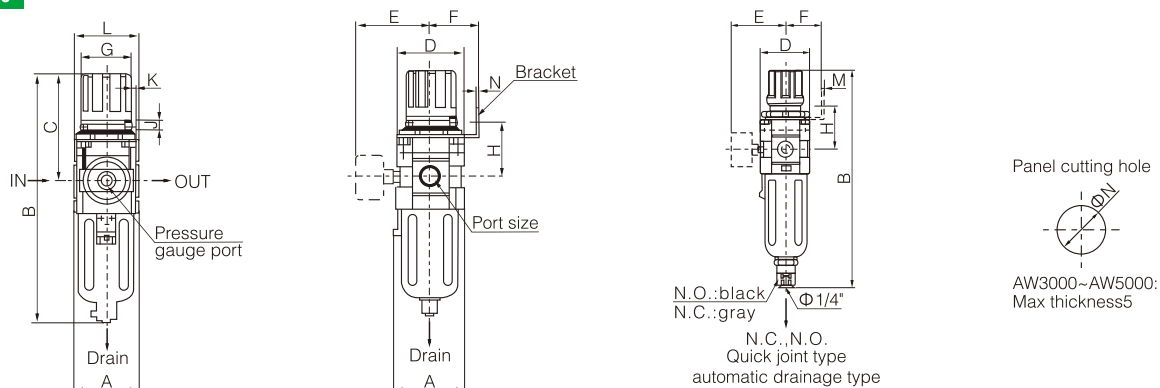
No.	Parts name	Material		
		AW1000	AW2000~3000	AW4000~5000
1	Valve boby	Zinc die casting	Aluminum die casting	
2	Valve cover	Reinforced Nylon		Aluminum die casting
3	Valve core assembly	Brass, Rubber		
4	Filter element	Brass		
5	Drain board	ABS		
6	Film	Rubber		
7	Whirlwind blade	ABS		
8	Water storage cup(Protective cover)	Polycarbonate(Cold-rolled sheet)		
9	Spring	Stainless Steel		
10	O-ring	Rubber		
11	O-ring	Rubber		
12	Hand wheel	Reinforced nylon		
13	Middle part	Aluminum die casting		

Dimensions

AW1000~2000



AW3000~5000



Model	Port size	A	B	C	D	E	F	G	H	J	K	L	M	N	P	B(Automatic drain)
Aw1000	M5×0.8	25	109.5	50.5	25	26	25	28	30	4.5	6.5	40	2.0	20.5	28	130
AW2000	1/4"	40	164.5	78	40	56.8	30	30	45	5.4	15.4	55	2.3	33.5	40	187.5
AW3000	1/4"·3/8"	53	211	92.5	53	60.8	41	40	46	6.5	8.0	53	2.3	42.5	56	248.5
AW4000	3/8"·1/2"	70	262.5	112	70	70.5	50	54	54	8.5	10.5	70	2.3	52.5	73	300
AW4000-06	3/4"	75	267	114	70	70.5	50	54	56	8.5	10.5	70	2.3	52.5	73	304
AW5000	3/4"·1"	90	338	116	90	75.5	49.2	54	62	8.5	10.5	70	2.3	52.5	90	-

FRL

AC/BC

AFC/BFC

AFR/BFR

AF/BF

AR/BR

AL/BL

SR

SDR

AC

AW

AF

AR

AL

F3

F2

F1

F

R

L

USFRL

USFR/L

USFR

USF

USR

USL

QSL

QTY

QIU

QTYH

QSLH

QFRH

AFF

AF(Big)

AL(Big)

AR(Big)

AD402

AH402

AD-5

IR

ITV

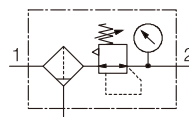
ACR

F804

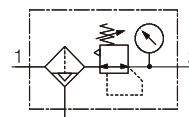
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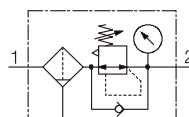
Symbol



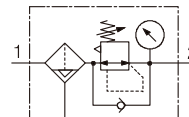
F1...-MICRO/MINI/MIDI
Manual rotary condensate drain,
with pressure gauge



Semi or fully automatic condensate drain,
with pressure gauge



F1...-MAXI
Manual rotary condensate drain,
with pressure gauge



Fully automatic condensate drain,
with pressure gauge

Ordering code

F	1		5M	7	MINI	H	E
Series	Function code	Port size	Grade of filtration	Working pressure	Size	Condensate drain	Shell material
F F Series	Filter & regulator	1/8"	Blank 40µm	Blank 12bar	MICRO	Blank Turned manually	Blank Zinc
		1/4"	5M 5µm	7 7bar	MINI	H Semi-automatic	E Alu.
		3/8"			MIDI	A Fully automatic	
		1/2"			MAXI		
		3/4"					
		1"					

Installation and use

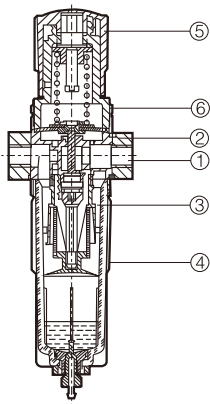
Filter and pressure regulator combine a single unit, and cleans the compressed air of fluid oil, condensation and dirt particles. For special application, the standard 40µm filter element may easily be replaced by a 5µm filter element.

The R maintain inputting operating pressure constantly despite fluctuation in line pressure and the amount of air consumed.

Specification

Size		MICRO					MINI			MIDI				MAXI		
Pneumatic connection		M5	M7	1/8"	QS4	QS6	1/8"	1/4"	3/8"	1/4"	3/8"	1/2"	3/4"	1/2"	3/4"	1"
Operating medium		Compressed air														
Design		Filter regulator, with/without pressure gauge														
Type of mounting		Via accessories														
		In-line installation														
Assembly position		Vertical ±5°														
Regulator lock		Rotary knob with lock														
		–					Rotary knob with lock									
Grade of filtration (µm)		5					5 (or) 40								0.4	
Max. hysteresis (bar)		0.3					0.2									
Pressure regulation range (bar)		0.5...7					0.5...7									
							0.5...12									
Pressure indication		Via pressure gauge														
		M5 Prepared					1/8" Prepared			1/4" Prepared				1/4" Prepared		
Max. condensate volume (cm³)		3					22			43				80		
Input pressure (bar)																
Condensate drain	Turned manually	1...10					2...16									
	Semi-automatic	1...10					-									
	Fully automatic	-					2...12									

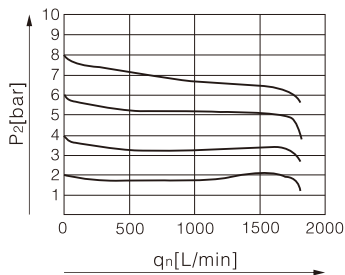
Inner structure



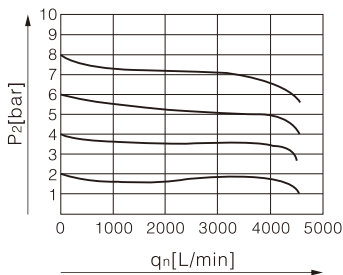
No.	Item	Material
1	Casting	Die-casting zinc alloy
2	Connecting plate	Die-casting aluminum alloy
3	Filter bowl	Polycarbonate
4	Protecting cover	Aluminum
5	Adjustable knob	POM
6	Knurled nut	Aluminum
	Seal	NBR

Standard flow rate chart

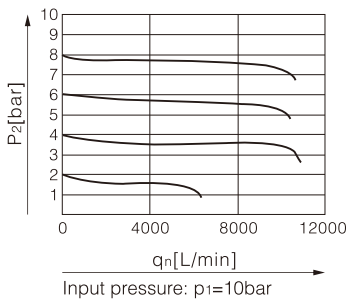
F1-1/4-MINI



F1-1/2-MIDI

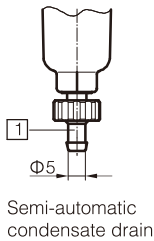
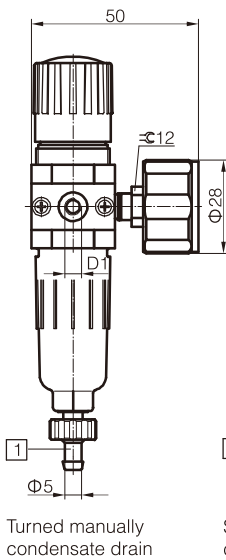
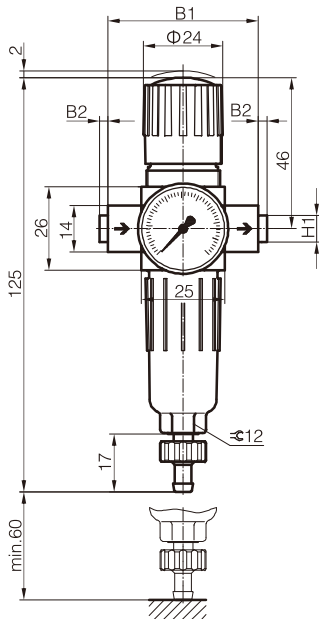


F1-1-MAXI



Dimensions

MICRO



1 Barbed fitting for plastic tubing type PCN-4

➔ Flow direction

Model	B1	B2	D1	H1
F1-M5...-MICRO(H)	25	-	M5	-
F1-M7...-MICRO(H)B			M7	
F1-1/8...-MICRO(H)	45	~2.5	1/8"	~8
F1-QS4...-MICRO(H)			QS4	
F1-QS6...-MICRO(H)			QS6	

FRL

AC/BC

AFC/BFC

AFR/BFR

AF/BF

AR/BR

AL/BL

SR

SDR

AC

AW

AF

AR

AL

F3

F2

F1

F

R

L

USFRL

USFR/L

USFR

USF

USR

USL

QSL

QTY

QIU

QTYH

QSLH

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AFF

AF(Big)

AL(Big)

AR(Big)

AD402

AH402

AD-5

IR

ITV

ACR

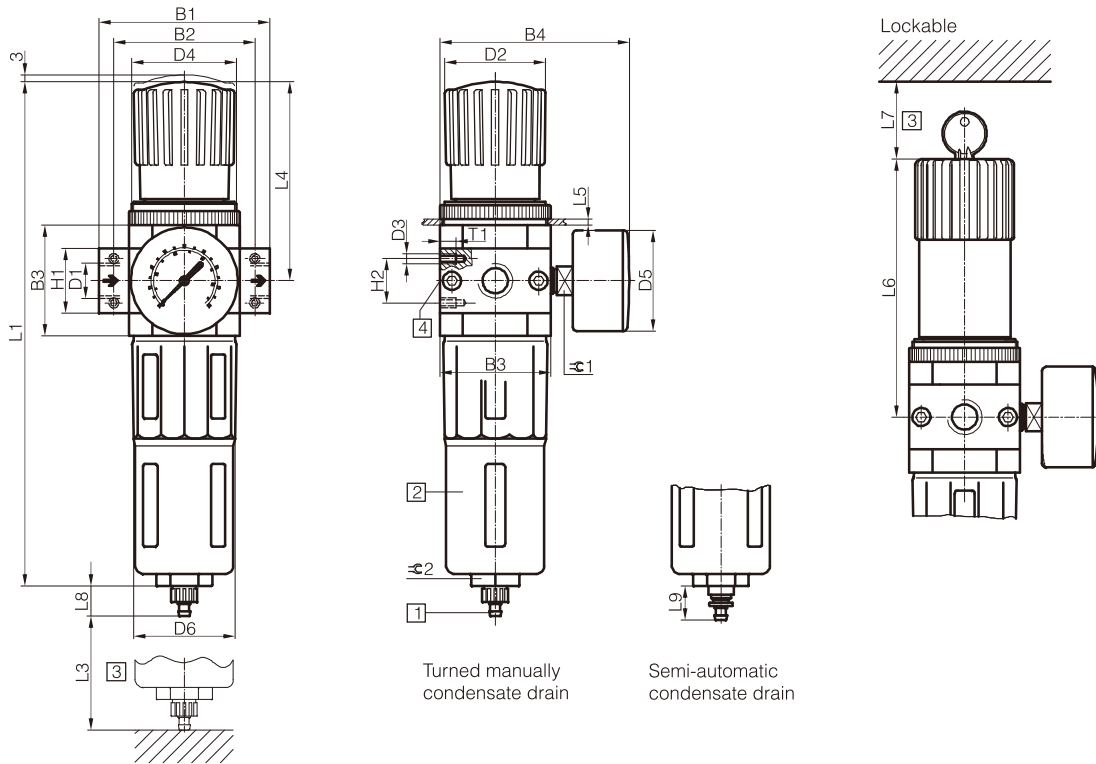
F804

PG

FRL

AC/BC
AFC/BFC
AFR/BFR
AF/BF
AR/BR
AL/BL
SR
SDR
AC
AW
AF
AR
AL
F3
F2
F1
F
R
L
USFRL
USFR/L
USFR
USF
USR
USL
QSL
QTY
QIU
QTYH
QSLH
QFRH
AFF
AF(Big)
AL(Big)
AR(Big)
AD402
AH402
AD-5
IR
ITV
ACR
F804
PG

MINI/MIDI/MAXI



[1] Barbed fitting for plastic tubing type PCN-4

[3] Installation dimensions

➔ Flow direction

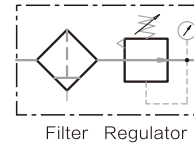
[2] Metal bowl guard

[4] Second pressure gauge connection

Model	B1	B2	B3	B4	D1	D2Φ	D3	D4	D5Φ	D6Φ	H1	H2	L1	L3	L4	L5 max.	L6	L7	L8	L9	T1	↺1	↺2
MINI																							
F1-1/8-D-MINI	64	52	40	76	1/8"	31	M4	M36×1.5	41	38	20	11	193	60	68	3	98	60	15	19	7	14	22
F1-1/4-D-MINI					1/4"																		
F1-3/8-D-MINI	70				3/8"																		
MIDI																							
F1-1/4-D-MIDI	85	70	55	95	1/4"	50	M5	M52×1.5	50	52	32	22	250	80	99	5	130	60	15	19	8	14	24
F1-3/8-D-MIDI					3/8"																		
F1-1/2-D-MIDI					1/2"																		
F1-3/4-D-MIDI					3/4"																		
MAXI																							
F1-1/2-D-MAXL	96	80	66	107	1/2"	31	M5	M36×1.5	50	65	32	22	252	90	82	4	111	60	15	19	8	14	24
F1-1/2-D-DI-MAXL					49			M52×1.5					275		105		135						
F1-3/4-D-MAXL					3/4"	31		M36×1.5					252		82		111						
F1-3/4-D-DI-MAXL					49			M52×1.5					275		105		135						
F1-1-D-MAXL	116	91			1"	31		M36×1.5			40		252		82		111						
F1-1-D-DI-MAXL					49			M52×1.5					275		105		135						

Note: This product conforms with ISO 1179-1 standard and the ISO 228-1 standard.

Symbol



Product feature

1. For high pressure use, corrosion and chemical resistance.
2. Good performance for outdoor facility.
3. Suitable for semi-conductor industry.
4. The product effectively removes water and particle.
5. Accurate and sensitive pressure setting.

Ordering code

USFR	B	-	02	N	C	H	W
Model	Pressure		Port size	Thread	Filtration	Drain	Bowl viewer
USFR	Blank		02 1/4"	Blank G	Blank 5µm	Blank Semi-auto drain	Blank W/O Viewer
			03 3/8"	N NPT	C 40µm	H Manual drain	W Viewer (for 3/4", 1") (See *Remark below)
			04 1/2"	R Rc		D Auto drain (Working pressure: 0.5~9.9 kgf/cm²)	
			06 3/4"				
			08 1"				

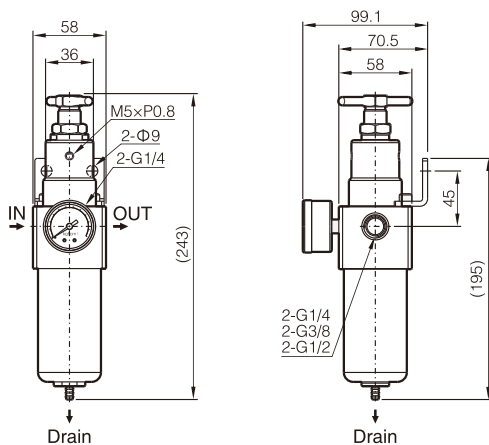
* Remark: Only for USFRB (0.5~12kgf/cm²).
* Spring: USFRB = SUS303
USFR = Alloy steel

Specification

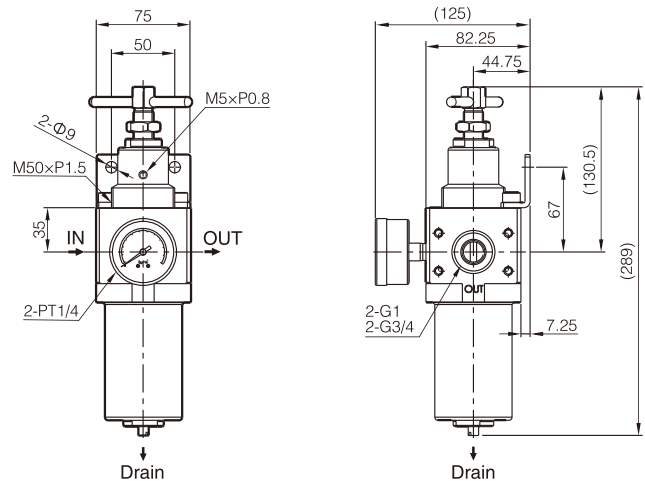
Model	USFR-02	USFR-03	USFR-04	USFR-06	USFR-08
Port size	1/4"	3/8"	1/2"	3/4"	1"
Fluid	Compressed air				
Regulator construction	Piston				
Body material	Stainless steel SUS316				
Bowl material	Stainless steel SUS316				
Pressure gauge material	Case: Stainless steel SUS304, Thread: Stainless steel SUS316				
Filtration/Element material	5μm (Standard) Stainless steel SUS316				
Operating pressure range	USFRB: 0.5~12 kgf/cm ² , USFR: 12~30 kgf/cm ²			USFRB: 0.5~12 kgf/cm ² , USFR: 12~28 kgf/cm ²	
Max. inlet pressure	60 kgf/cm ² (Bowl viewer: 15 kgf/cm ²)				
Max. flow rate l/min (ANR)	2200	2500	3800	B8500/17000	B8900/21000
Ambient temperature	-10℃~70℃				
Filter bowl capacity	110cc			200cc	
Standard drain	Semi-auto drain (Drains below 0.5kgf/cm ²)				
Net weight	2000g			4580g	
Accessories	Pressure gauge (0~20kg), Plug, Mounting bracket set				
Option	Pressure gauge (0~10kg), Pressure gauge (0~30kg)				

Dimensions

USFR-02, 03, 04

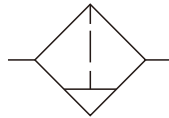


USFR-06, 08





Symbol



Specification

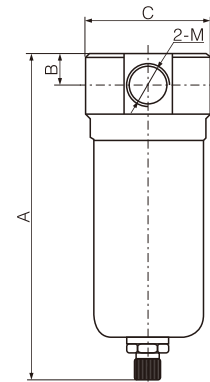
Model	QSLH-08	QSLH-10	QSLH-15	QSLH-20	QSLH-25
Operating fluid	Air or inert gas				
Pipe size	1/4"	3/8"	1/2"	3/4"	1"
Filter precision	20µm or 40µm				
Pressure range	0.15~4.0MPa				
Max. input pressure	4MPa				
Operating temperature	5~80°C				

Note: PT thread, G thread and NPT thread are available.

Ordering code

QSLH		□		15			
Model		Material		Port size			
QSLH	High pressure filter	Blank	Aluminium	08	1/4"	20	3/4"
		S	Stainless steel	10	3/8"	25	1"
				15	1/2"		

Dimensions

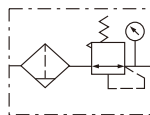


Bore	A	B	C	M
10	160	15	60	3/8"
15	160	15	60	1/2"
20	215	75	90	3/4"
25	215	75	90	1"

QFRH Series High Pressure Fitter & Regulator



Symbol



Specification

Model	QFRH-08	QFRH-10	QFRH-15	QFRH-20	QFRH-25
Operating fluid	Air or inert gas				
Pipe size	1/4"	3/8"	1/2"	3/4"	1"
Filter precision	20µm or 40µm				
Pressure range	0.05~3.5MPa				
Max. input pressure	4MPa				
Operating temperature	-25~+80°C				

Note: PT thread, G thread and NPT thread are available.

Ordering code

QFRH		-		□		-		15	
Model				Material				Port size	
QFRH	High pressure fitter & regulator	Blank	Aluminium	08	1/4"	20	3/4"		
		S	Stainless steel	10	3/8"	25	1"		
				15	1/2"				

Dimensions

