

Air FRL Specifications



Interchangeable with SMC—NAC Series FRL											
Filter-Regulator-Lubricator (AC)		Stacking Filter-Regulator-Lubricator (AC)		Filter-Regulator (AW)		Regulator (AR)		Filters (AF)		Lubricators (AL)	
Model	Air Flow Rate* SCFM (LPM)	Model	Air Flow Rate* SCFM (LPM)	Model	Air Flow Rate* SCFM (LPM)	Model	Air Flow Rate* SCFM (LPM)	Model	Air Flow Rate* SCFM (LPM)	Model	Air Flow Rate* SCFM (LPM)
AC 1000-00	3 (90)	AC 1010-00	3 (90)	AW 1000-00	3 (90)	AR 1000-00	4 (100)	AF 1000-00	4 (110)	AL 1000-00	3 (90)
AC 2000-XX	18 (500)	AC 2010-XX	18 (500)	AW 2000-XX	19 (550)	AR 2000-XX	19 (550)	AF 2000-XX	26 (760)	AL 2000-XX	28 (800)
AC 3000-XX	70 (2000)	AC 3010-XX	60 (1700)	AW 3000-XX	70 (2000)	AR 3000-XX	88 (2500)	AF 3000-XX	70 (2000)	AL 3000-XX	60 (1700)
AC 4000-XX	140 (4000)	AC 4010-XX	105 (3000)	AW 4000-XX	140 (4000)	AR 4000-XX	210 (6000)	AF 4000-XX	140 (4000)	AL 4000-XX	180 (5000)
AC 4000-06	160 (4500)	AC 4010-06	105 (3000)	AW 4000-06	160 (4500)	AR 4000-06	210 (6000)	AF 4000-06	210 (6000)	AL 4000-06	220 (6300)
AC 5000-XX	180 (5000)	AC 5010-XX	140 (4000)	AW 5000-XX	195 (5500)	AR 5000-XX	280 (8000)	AF 5000-XX	245 (7000)	AL 5000-XX	245 (7000)

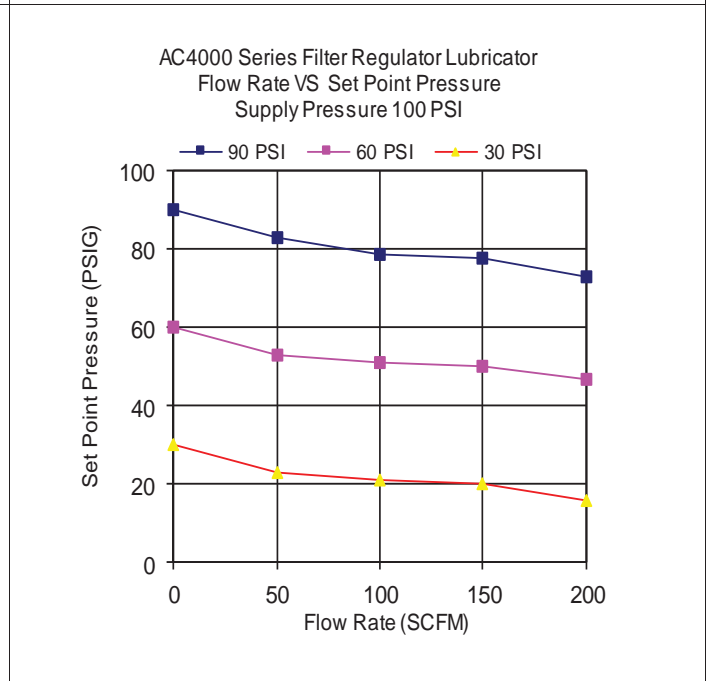
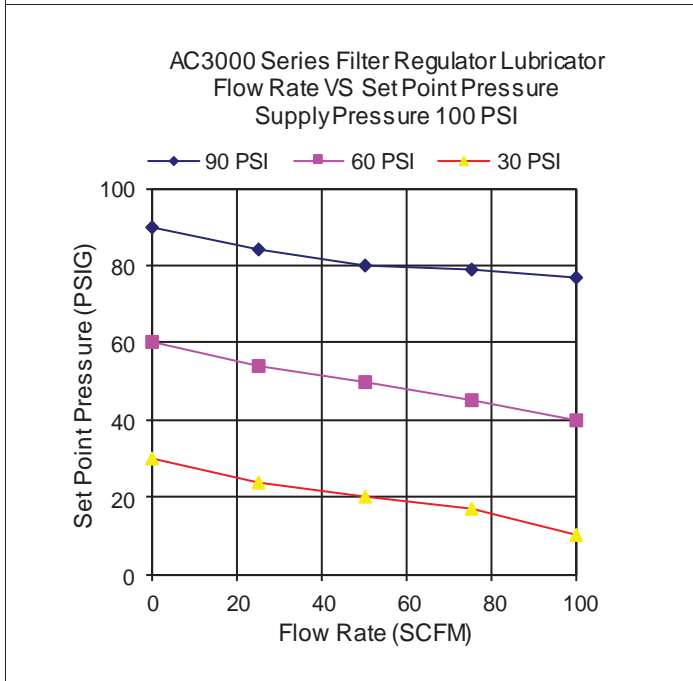
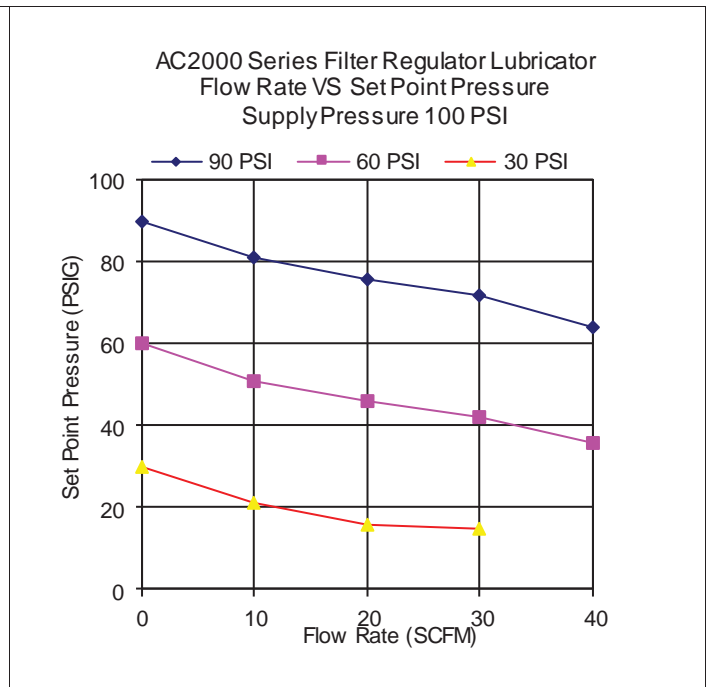
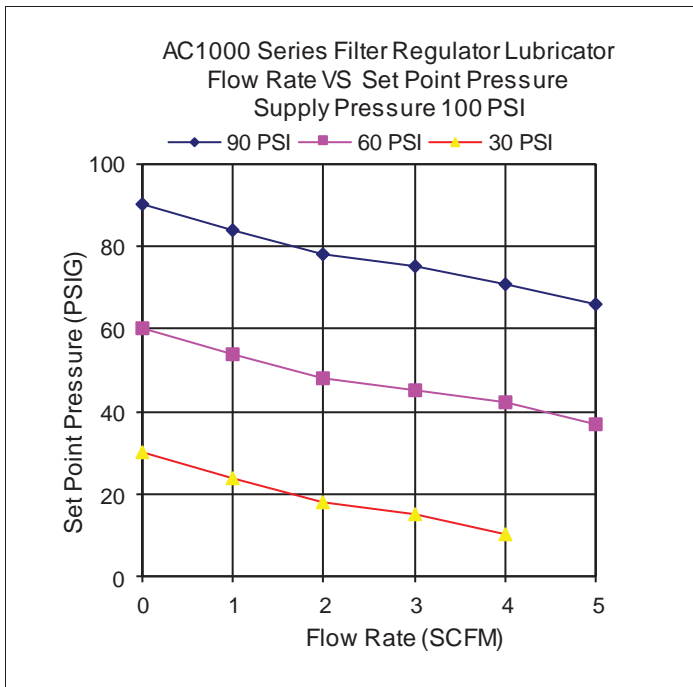
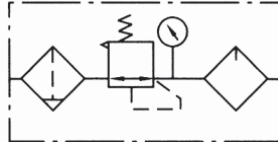
*Measured with Supply Air Pressure @100PSI and Set Point Pressure @75PSI

Model Series	Port Size	Port Size (Pressure Gauge)	Regulating Range	Max. Operating Pressure	Operating Temperature	Filtration	Bowl Material	Bowl Guard	Body Material	Construction/Regulator	Seals	Filter Drain	Service
1000-00	10-32 (M5)	1/16 Rc (PT)	7 - 100 PSI	150 PSI (9.9 kgf/cm ²)	40 - 140°F (5 - 60°C)	5 Micron Filter (Option); 25 Micron (Standard Sintered Brass Filter)	Polycarbonate (standard) or Aluminum Metal (Option)	N/A	Die-Casting Aluminum	Relieving Type	NBR	Semi-Auto Differential Drain	For Air Only
1010-00		N/A											
2000-XX	1/8 or 1/4 NPT	1/8 NPT	7 - 125 PSI (0.5 - 8.5 kgf/cm ²)	150 PSI (9.9 kgf/cm ²)	40 - 140°F (5 - 60°C)	5 Micron Filter (Option); 25 Micron (Standard Sintered Brass Filter)	Polycarbonate (standard) or Aluminum Metal (Option)	Steel Bowl Guard	Die-Casting Aluminum	Relieving Type	NBR	Semi-Auto Differential Drain (Standard) or Automatic Drain	For Air Only
2010-XX		1/8 NPT											
3000-XX	1/4 or 3/8 NPT	1/8 NPT	7 - 125 PSI (0.5 - 8.5 kgf/cm ²)	150 PSI (9.9 kgf/cm ²)	40 - 140°F (5 - 60°C)	5 Micron Filter (Option); 25 Micron (Standard Sintered Brass Filter)	Polycarbonate (standard) or Aluminum Metal (Option)	Steel Bowl Guard	Die-Casting Aluminum	Relieving Type	NBR	Semi-Auto Differential Drain (Standard) or Automatic Drain	For Air Only
3010-XX		1/8 NPT											
4000-XX	3/8 or 1/2 NPT	1/4 NPT	7 - 125 PSI (0.5 - 8.5 kgf/cm ²)	150 PSI (9.9 kgf/cm ²)	40 - 140°F (5 - 60°C)	5 Micron Filter (Option); 25 Micron (Standard Sintered Brass Filter)	Polycarbonate (standard) or Aluminum Metal (Option)	Steel Bowl Guard	Die-Casting Aluminum	Relieving Type	NBR	Semi-Auto Differential Drain (Standard) or Automatic Drain	For Air Only
4010-XX		1/4 NPT											
4000-06	3/4 NPT	1/4 NPT	7 - 125 PSI (0.5 - 8.5 kgf/cm ²)	150 PSI (9.9 kgf/cm ²)	40 - 140°F (5 - 60°C)	5 Micron Filter (Option); 25 Micron (Standard Sintered Brass Filter)	Polycarbonate (standard) or Aluminum Metal (Option)	Steel Bowl Guard	Die-Casting Aluminum	Relieving Type	NBR	Semi-Auto Differential Drain (Standard) or Automatic Drain	For Air Only
4010-06		1/4 NPT											
5000-XX	3/4 or 1 NPT	1/4 NPT	7 - 125 PSI (0.5 - 8.5 kgf/cm ²)	150 PSI (9.9 kgf/cm ²)	40 - 140°F (5 - 60°C)	5 Micron Filter (Option); 25 Micron (Standard Sintered Brass Filter)	Polycarbonate (standard) or Aluminum Metal (Option)	Steel Bowl Guard	Die-Casting Aluminum	Relieving Type	NBR	Semi-Auto Differential Drain (Standard) or Automatic Drain	For Air Only
5010-XX		1/4 NPT											

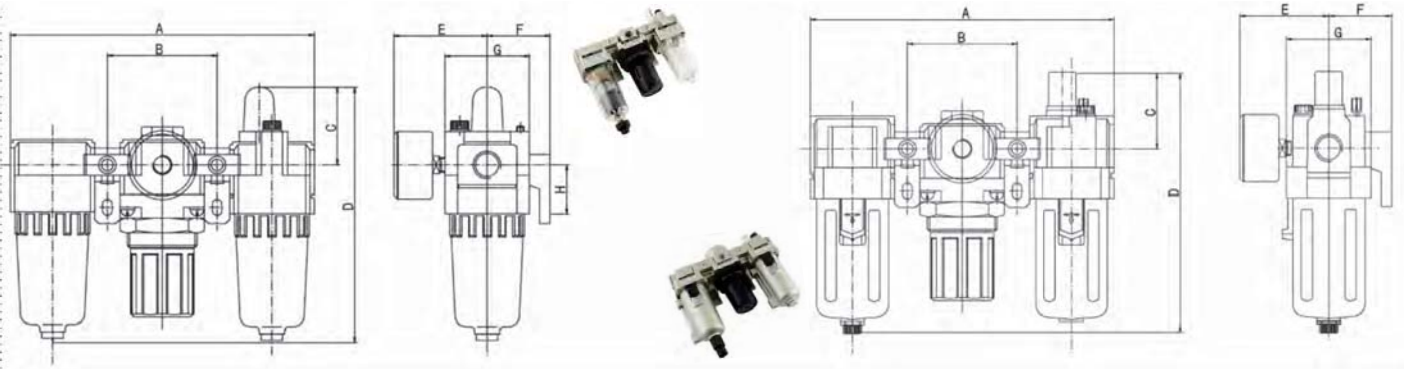
These FRL components are of modular design with joiner clamps. The joiner clamps allow easy connection and disconnection of FRL components for simple installation and maintenance.

Filter Regulator Lubricator Selection:

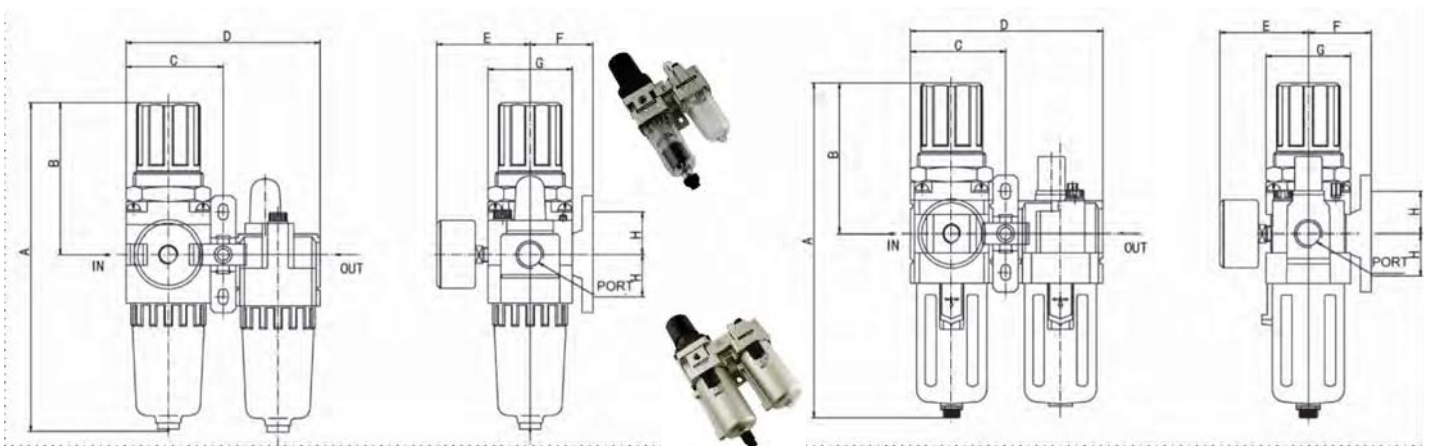
1. Determine flow rate requirements.
2. Determine required set point pressure and allowable pressure drop.
3. Locate the FRL graph with set point pressure that provides the flow rate with acceptable pressure drop.



Air Filter-Regulator-Lubricator Dimensions



Model	Flow Rate (lpm/scfm)	Port	Gauge Port	A (mm/in)	B (mm/in)	C (mm/in)	D (mm/in)	E (mm/in)	F (mm/in)	G (mm/in)	H (mm/in)	Bracket	Weight (kg/lb)	Gauge
AC1000-00	90	10-32 (M5)	1/16 Rc	91	33	25.5	84.5	26	25	25	20	Y10L	0.26	GE-1-160-00
	3			3.58	1.30	1.00	3.33	1.02	0.98	0.98	0.79		0.57	
AC2000-01	500	1/8 NPT	1/8 NPT	140	50	38	125	56.8	30	40	24	Y20L	0.74	GE-1 1/2-160-01
AC2000-02	18	1/4 NPT		5.51	1.97	1.50	4.92	2.24	1.18	1.57	0.94		1.63	
AC3000-02	2000	1/4 NPT	1/8 NPT	181	64	38	156.5	60.8	41	53	35	Y30L	1.18	GE-1 1/2-160-01
AC3000-03	70	3/8 NPT		7.13	2.52	1.50	6.16	2.39	1.69	2.09	1.38		2.60	
AC4000-03	4000	3/8 NPT	1/4 NPT	238	84	41	191.5	65.5	50	70	40	Y40L	2.14	GE-2-160-02
AC4000-04	140	1/2 NPT		9.37	3.31	1.61	7.54	2.58	1.97	2.76	1.57		4.71	
AC4000-06	4500	3/4 NPT	1/4 NPT	253	89	41	193	69.5	50	70	40	Y50L	2.47	GE-2-160-02
	160			9.96	3.50	1.61	7.60	2.74	1.97	2.76	1.57		5.43	
AC5000-06	5000	3/4 NPT	1/4 NPT	300	105	48	271.5	75.5	69.8	90	50	Y60L	3.82	GE-2-160-02
AC5000-10	180	1 NPT		11.81	4.13	1.89	10.69	2.97	2.75	3.54	1.97		8.40	



Model	Flow Rate (lpm/scfm)	Port	Gauge Port	A (mm/in)	B (mm/in)	C (mm/in)	D (mm/in)	E (mm/in)	F (mm/in)	G (mm/in)	H (mm/in)	Bracket	Weight (kg/lb)	Gauge
AC1010-00	90	10-32 (M5)	1/16 Rc	109.5	50.5	29	58	26	25	25	20	Y10T	0.22	GE-1-160-00
	3			4.31	1.99	1.14	2.28	1.02	0.98	0.98	0.79		0.48	
AC2010-01	500	1/8 NPT	1/8 NPT	164.5	78	45	90	56.8	30	40	24	Y20T	0.66	GE-1 1/2-160-01
AC2010-02	18	1/4 NPT		6.48	3.07	1.77	3.54	2.24	1.18	1.57	0.94		1.45	
AC3010-02	1700	1/4 NPT	1/8 NPT	211	92.5	58.5	117	60.8	41	53	35	Y30T	0.98	GE-1 1/2-160-01
AC3010-03	60	3/8 NPT		8.31	3.64	2.30	4.61	2.39	1.61	2.09	1.38		2.16	
AC4010-03	3000	3/8 NPT	1/4 NPT	262	112	77	154	65.5	50	70	40	Y40T	1.93	GE-2-160-02
AC4010-04	105	1/2 NPT		10.31	4.41	3.03	6.06	2.58	1.97	2.76	1.57		4.25	
AC4010-06	3000	3/4 NPT	1/4 NPT	267	114	82	164	69.5	50	70	40	Y50T	1.99	GE-2-160-02
	105			10.51	4.49	3.23	6.46	2.74	1.97	2.76	1.57		4.38	
AC5010-06	4000	3/4 NPT	1/4 NPT	338	116	97.5	195	75.5	69.8	90	50	Y60T	3.2	GE-2-160-02
AC5010-10	140	1 NPT		13.31	4.57	3.84	7.68	2.97	2.75	3.54	1.97		7.04	



FRL Numbering System



Model	
A Series	
Filter-Regulator-Lubricator	AC
Stacking Filter-Regulator-Lubricator	AC
Filter	AF
Lubricator	AL
Regulator	AR
Stacking Filter-Regulator	AW
Relieving Shut-off/Lockout Valve	VHS

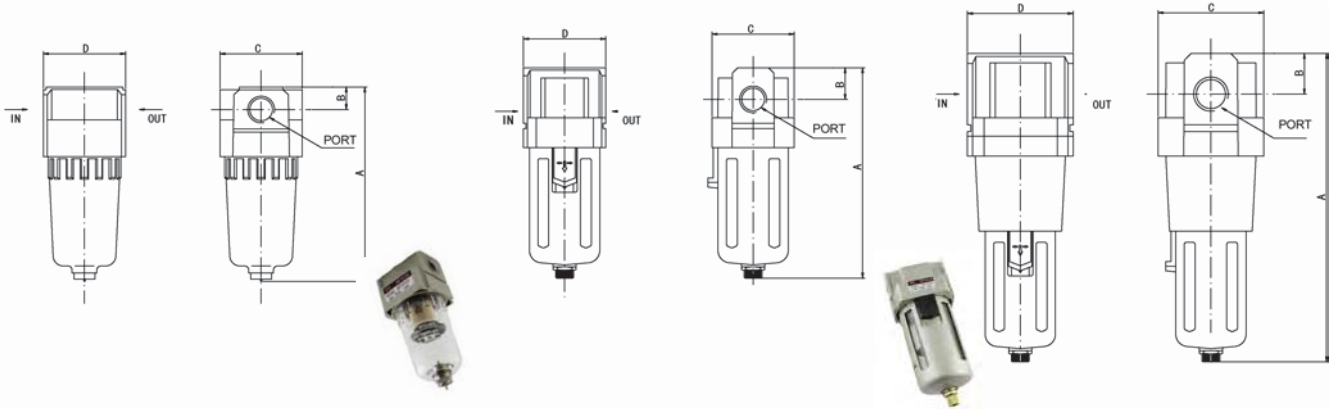
Body Size	
A Series	
AC / AF / AL / AR / AW / VHS	1000
	2000
	3000
	4000
	5000
AC— Stacking Filter- Regulator- Lubricator	1010
	2010
	3010
	4010
	5010

Tube OD	
10-32 (M5)	00
1/8 NPT	01
1/4 NPT	02
3/8 NPT	03
1/2 NPT	04
3/4 NPT	06
1 NPT	10

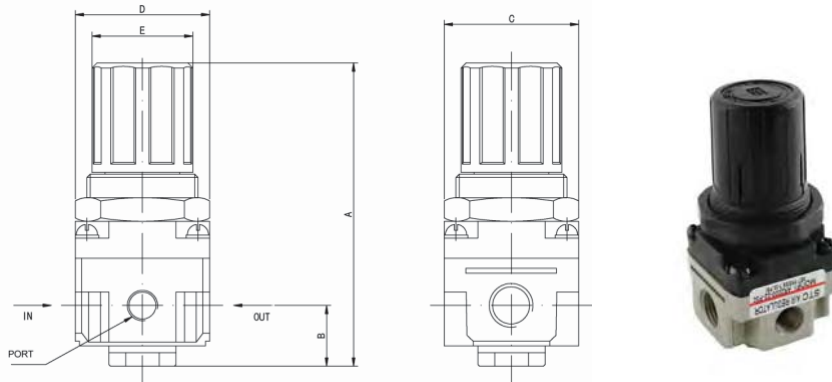
Options	
Automatic Drain	D
Drain Cock (with manual shut off valve)	DC
Metal Bowl (with sight glass)	M
30PSI Regulating Range	P30
60PSI Regulating Range	P60
5 Micron Filter	F5
Without	N
Bracket	B
Pressure Gauge	G

- | Standard Features |
|---|
| <ul style="list-style-type: none"> • Polycarbonate Bowl (3000-5000 Series with Steel Bowl Shield) • 125 PSI Regulating Range • Semi-auto Differential Drain • 25 Micron Sintered Brass Filter |

Air Filter & Regulator Dimensions

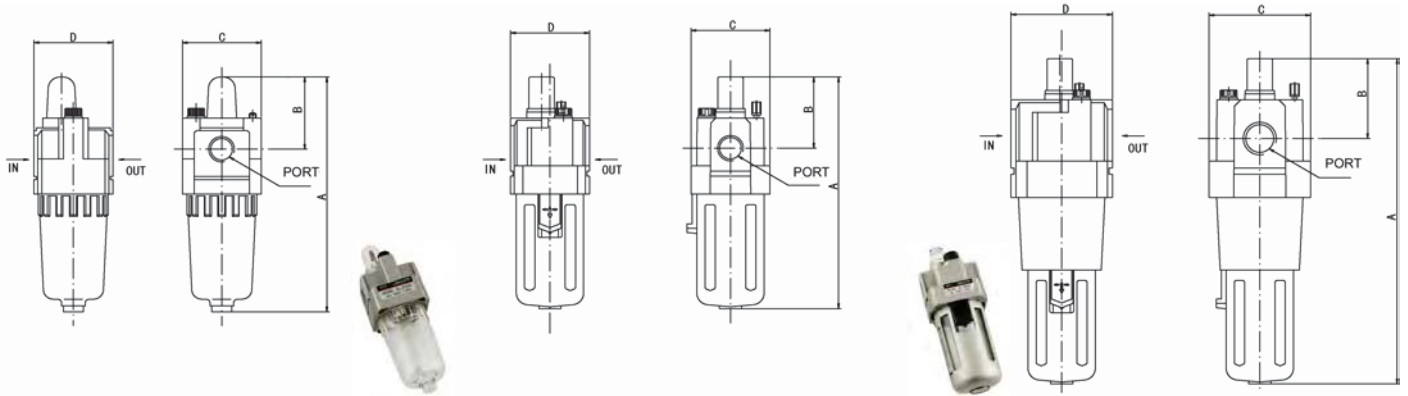


Model	Flow Rate (lpm/scfm)	Port	A (mm/in)	B (mm/in)	C (mm/in)	D (mm/in)	Bracket/Screw	Weight (kg/lb)
AF1000-00	110	10-32 (M5)	66	7	25		B140	0.07
	4		2.60	0.28	0.98	0.00		0.15
AF2000-01	750	1/8 NPT	97.5	11	40	40	B240/M4x8	0.19
AF2000-02	26	1/4 NPT	3.84	0.43	1.57	1.57		0.42
AF3000-02	2000	1/4 NPT	132.5	14	53	53	B340/M4x8	0.29
AF3000-03	70	3/8 NPT	5.22	0.55	2.09	2.09		0.64
AF4000-03	4000	3/8 NPT	168.5	18	70	70	B440/M5x10	0.55
AF4000-04	140	1/2 NPT	6.63	0.71	2.76	2.76		1.21
AF4000-06	6000	3/4 NPT	172.5	20	70	70	B540/M5x10	0.58
	210		6.79	0.79	2.76	2.76		1.28
AF5000-06	7000	3/4 NPT	247.5	24	90	90	B640/M6x10	1.08
AF5000-10	245	1 NPT	9.74	0.94	3.54	3.54		2.38

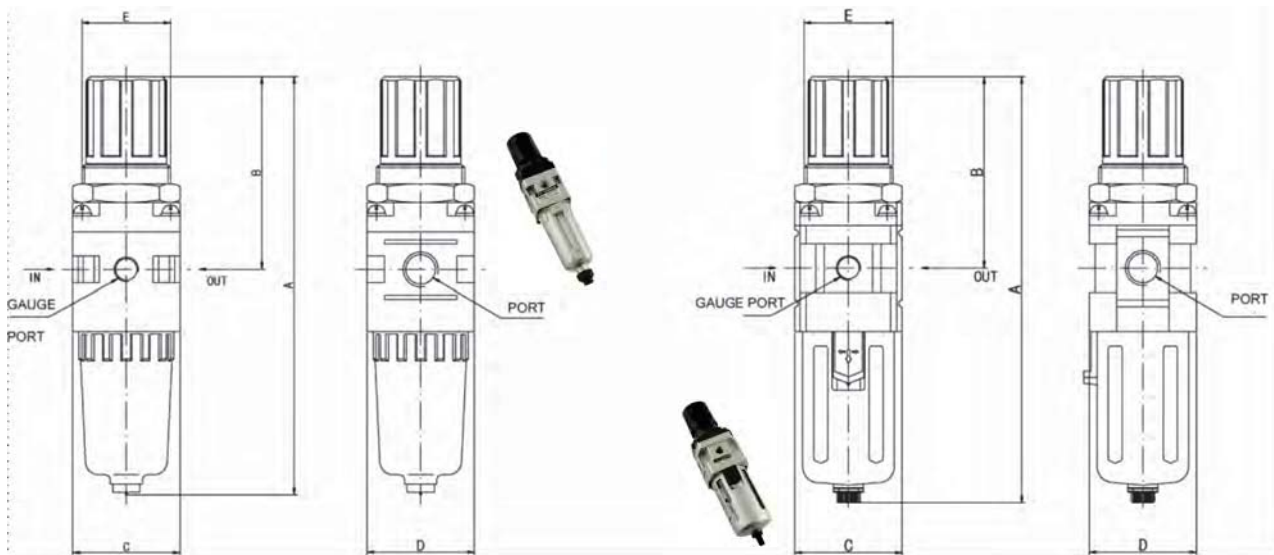


Model	Flow Rate (lpm/scfm)	Port	Gauge Port	A (mm/in)	B (mm/in)	C (mm/in)	D (mm/in)	E (mm/in)	Panel Cut Hole (mm/in)	Bracket	Weight (kg/lb)	Gauge
AR1000-00	100	10-32 (M5)	1/16 Rc	61.5	11	25	25	20	20.5	B120	0.08	GE-1-160-00
	4			2.42	0.43	0.98	0.98	0.79	0.81		0.18	
AR2000-01	550	1/8 NPT	1/8 NPT	95	17	40	40	34	33.5	B220	0.27	GE-1 1/2-160-01
AR2000-02	19	1/4 NPT		3.74	0.67	1.57	1.57	1.34	1.32		0.59	
AR2500-02	2000	1/4 NPT		102.5	25	48	53	34	33.5			
AR2500-03	70	3/8 NPT		4.04	0.98	18.9	2.09	1.34	1.32			
AR3000-02	2500	1/4 NPT	1/8 NPT	127.5	35	53	53	40	42.5	B320	0.41	GE-1 1/2-160-01
AR3000-03	88	3/8 NPT		5.02	1.38	2.09	2.09	1.57	1.67		0.90	
AR4000-03	6000	3/8 NPT	1/4 NPT	149.5	37.5	70	70	54	52.5	B420	0.84	GE-2-160-02
AR4000-04	210	1/2 NPT		5.89	1.48	2.76	2.76	2.13	2.07		1.85	
AR4000-06	6000	3/4 NPT	1/4 NPT	154	40.5	70	75	54	52.5	B420	0.84	GE-2-160-02
	210			6.06	1.59	2.76	2.95	2.13	2.07		1.85	
AR5000-06	8000	3/4 NPT	1/4 NPT	168	48	90	90	54	52.5	B420	1.19	GE-2-160-02
AR5000-10	280	1 NPT		6.61	1.89	3.54	3.54	2.13	2.07		2.62	

Air Lubricator & Filter-Regulator Dimensions



Model	Flow Rate (lpm/scfm)	Port	A (mm/in)	B (mm/in)	C (mm/in)	D (mm/in)	Bracket/Screw	Weight (kg/lb)
AL1000-00	95	10-32 (M5)	81.5	25.5	25		B140	0.07
	3		3.21	1.00	0.98			0.15
AL2000-01	800	1/8 NPT	122	38	40	40	B240/M4x8	0.22
AL2000-02	28	1/4 NPT	4.80	1.50	1.57	1.57		0.48
AL3000-02	1700	1/4 NPT	142	38	53	53	B340/M4x8	0.3
AL3000-03	60	3/8 NPT	5.59	1.50	2.09	2.09		0.66
AL4000-03	5000	3/8 NPT	177	41	70	70	B440/M5x10	0.56
AL4000-04	180	1/2 NPT	6.97	1.61	2.76	2.76		1.23
AL4000-06	6300	3/4 NPT	177	39	70	70	B540/M5x10	0.58
	220		6.97	1.54	2.76	2.76		1.28
AL5000-06	7000	3/4 NPT	254	45	90	90	B640/M6x10	1.08
AL5000-10	245	1 NPT	10.00	1.77	3.54	3.54		2.38



Model	Flow Rate (lpm/scfm)	Port	Gauge Port	A (mm/in)	B (mm/in)	C (mm/in)	D (mm/in)	E (mm/in)	Panel Cut Hole (mm/in)	Bracket	Weight (kg/lb)	Gauge
AW1000-00	90	10-32 (M5)	1/16 Rc	109.5	50.5	25	28	20	20.5	B120	0.09	GE-1-160-00
	3			4.31	1.99	0.98	1.10	1.10	0.81		0.20	
AW2000-01	550	1/8 NPT	1/8 NPT	164.5	78	40	40	34	33.5	B220	0.36	GE-1 1/2-160-01
AW2000-02	19	1/4 NPT		6.48	3.07	1.57	1.57	1.34	1.32		0.79	
AW3000-02	2000	1/4 NPT	1/8 NPT	211	92.5	53	53	40	33.5	B320	0.56	GE-1 1/2-160-01
AW3000-03	70	3/8 NPT		8.31	3.64	2.09	2.09	1.57	1.32		1.23	
AW4000-03	4000	3/8 NPT	1/4 NPT	262	112	70	70	54	42.5	B420	1.15	GE-2-160-02
AW4000-04	140	1/2 NPT		10.31	4.41	2.76	2.76	2.13	1.67		2.53	
AW4000-06	4500	3/4 NPT	1/4 NPT	267	114	70	75	54	42.5	B520	1.21	GE-2-160-02
	160			10.51	4.49	2.76	2.95	2.13	1.67		2.66	
AW5000-06	5500	3/4 NPT	1/4 NPT	338	116	90	90	54	42.5	B620	1.7	GE-2-160-02
AW5000-10	195	1 NPT		13.31	4.57	3.54	3.54	2.13	1.67		3.74	