

A4 Adaptomode® Series Pressure Regulators

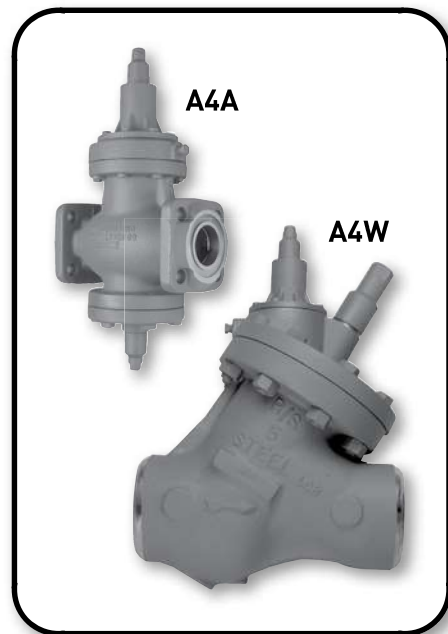
The A4 family of regulators includes valves that control inlet, outlet or differential pressure. Each regulator is available with an assortment of additional variations which enable one regulator to perform several functions. The most common arrangements are shown on the following pages 6 - 7.

Specifications

Body: 20mm -100mm (3/4" - 4") Gray Iron (ASTM A126 Class B)
 125mm - 200mm (5" - 8") Cast Steel (A-352 GR, LCB)
 Temperature Range: 20mm -100mm (3/4" - 4") -45°C - 105°C (-50°F - 220°F)
 125mm - 200mm (5" - 8") -50°C - 105°C (-60°F - 220°F)
 Maximum Rated Pressure (MRP) 27.6 barg (400 psig)
 Maximum Operating Pressure Difference (S Features Only) 20.7 bard (300 psid)

DIN Specifications

Body: 20mm - 100mm (3/4" - 4") Ductile Iron (DIN GGG 40.3)
 Temperature Range: 20mm -100mm (3/4" - 4") -45°C - 105°C (-50°F - 220°F)
 Maximum Rated Pressure (MRP) 28 barg (406 psig)
 Maximum Operating Pressure Difference (S Features Only) 20.7 bard (300 psid)



General Information

Port Size		Reduced Capacity Plugs	Type	Flow Coefficient		Connections Available			
mm	inch			Kv	Cv	FPT	SW, WN	ODS	WN (DN)
20	3/4	50% 17%	A4A	6.2	7.2	3/4", 1", 1 1/4"	3/4", 1", 1 1/4"	7/8", 1 1/8", 1 3/8"	20, 25, 32
			A4A	3.1	3.6				
			A4A	1.0	1.2				
25	1	①	A4A	8.6	10	3/4", 1", 1 1/4"	3/4", 1", 1 1/4"	7/8", 1 1/8", 1 3/8"	20, 25, 32
32	1 1/4	35%	A4A	15	18	1 1/4", 1 1/2"	1 1/4", 1 1/2"	1 5/8"	32
			A4A	5.2	6.1				
40	1 5/8	35%	A4A	29	33	1 1/2", 2"	1 1/2", 2"	2 1/8", 2 5/8"	38, 50
			A4A	10	12				
50	2	②	A4A	42	50	1 1/2", 2"	1 1/2", 2"	2 1/8", 2 5/8"	38, 50
65	2 1/2	35%	A4A	60	70	—	2 1/2", 3"	2 5/8", 3 1/8"	65, 75
			A4A	21	25				
75	3	35%	A4A	86	100	—	3"	3 1/8", 3 5/8"	75
			A4A	30	35				
100	4	35%	A4A	130	150	—	4"	4 1/8"	100
			A4A	38	44				
125	5	STD	A4W	170	200	—	5" WN only	—	—
150	6	STD	A4W	310	360	—	6" WN only	—	—
200	8	STD	A4W	470	550	—	8" WN only	—	—

Standard connection styles: FPT for 20mm - 50mm (3/4" - 2"); SW for 65mm - 100mm (2 1/2" - 4").
 Standard size and style will be furnished unless specified otherwise.

- ① All 20mm (3/4") plugs also fit in 25mm (1") valves.
- ② All 40mm (1 5/8") plugs also fit in 50mm (2") valves.

A4 regulators with variations are factory assembled and tested.

A4 Adaptomode® Series Pressure Regulators



A4A
Basic Inlet



A4AO
Outlet Pressure Regulator



A4AL
Differential Pressure Regulator



A4AZ
Inlet Pressure Regulator
with Modudapter®



A4AK
Re-seating Relief
Regulator



A4AP
Pneumatically
Compensated Regulator



A4AB
Inlet Pressure Regulator
with Wide Opening Feature



A4AS
Inlet Pressure Regulator
with Electric Shut-Off Feature



A4AD
Dual Inlet Pressure
Regulator



A4AM
Electrically Compensated
Inlet Pressure Regulator



A4AJS
Electronic Pilot Operated
Regulator with Electric
Shut-Off Feature

A4 Adaptomode® Series Pressure Regulators

Application Guide

There are many possible combinations of A4 regulator variations. The electric shut-off (S), electric wide-opening (B) and dual pressure (D) variations are often combined with each other. Or they may be used in combination with the compensated (M, P, 3P and T), outlet pressure (O) or differential pressure (L) regulators. Remote configurations of most variations are available using the A4R regulator separate from pilot controls.

The A4A Series flanged body regulators are available with 20mm - 100mm ($\frac{3}{4}$ " - 4") ports.

The A4W Series weld end body regulators are available with 125mm - 200mm (5" - 8") ports.

Variation	Type Suffix	Type	Function	Operation	Typical Applications
Basic Regulator	—	A4A A4W	Control inlet pressure	Operates at present inlet pressure. Can be field adjusted. Opens on rising inlet pressure.	1. Evaporator pressure control 2. Condenser pressure control 3. Any inlet pressure control
Electric Shut-Off	S	A4AS A4WS	Control inlet pressure or shut off regulator	Regulates when electrically energized; closed when not energized.	1. Open for temperature control 2. Closed for defrosting
Electric Wide Opening	B	A4AB A4WB	Control inlet pressure or wide open regulator	Regulates when not electrically energized; wide open when energized.	1. Wide open for maximum cooling 2. Regulating for defrost 3. Regulating for temperature control.
Dual Pressure	D	A4AD A4WD	Dual pressure control	Regulates at lower pressure when electrically energized; at higher pressure when not energized.	1. Higher pressure for defrost 2. Higher pressure for temperature control. 3. Internal pressure relief.
Re-seating Relief	K	A4AK	Re-seating relief regulator	Open wide above set point. Repeatedly re-seats after operation.	1. Defrost relief 2. Non-atmospheric relief 3. High to low relief
Outlet Pressure Regulator	O	A4AO A4WOE	Control outlet pressure	Regulates at preset outlet pressure. Can be field adjusted. Opens on a drop in outlet pressure.	1. Crankcase pressure regulation 2. Hot gas bypass; booster loading 3. Receiver pressure control
Differential Pressure Regulator	L	A4AL	Control pressure difference across regulator	Regulates pressure difference at or below a pre-set amount.	1. Liquid pump relief regulator 2. Reduce liquid or vapor line pressure
Electrically Compensated	M	A4AM A4WM	Motor changes pressure set-point	Potentiometer or solid state type thermostat readjusts set-point to match evaporator temperature to a varying load.	1. Precise control of process cooling 2. Liquid chillers 3. For load change compensation
Pneumatically Compensated	P 3P	A4AP A4WP A4A3P A4W3P	Air pressure changes set-point (1:1 ratio); A4A3P for 3:1 ratio	Pneumatic thermostat readjusts set-point to match evaporator temperature to a varying load.	1. Precise control of process cooling 2. Liquid chillers 3. For load change compensation
Electronic Pilot Operated	J	A4AJ	Electronic signal controls regulator opening	Pilot position is proportional to electronic signal.	1. Precise control 2. Liquid chiller 3. System with load change
Externally Equalized	E	A4AE A4AOE A4AOES	Control at external pressure sensed remote from valve	Same as standard regulator except controlled pressure is sensed away from regulator.	1. Low Pressure drop (A4AE) 2. Hot gas bypass (A4AOE)
Main regulator for Remote Pilot	R	A4AR A4WR	Main regulator is controlled by separate pilots	Main regulator modulates, closes or opens in response to remote pilots.	1. Simple inventory of regulator and pilots 2. Convenient placement of pilots 3. Unusual pilots or circuits
Basic Regulator Assembly	Z	A4AZ	Complete regulator assembly to which modules can be added.	Can be built into most of the A4A variation regulators. Has a Modudapter® and two Moduplates®.	Versatile unit for inventory along with Adaptomode Modules sold separately.

These are the most common variations of the type A4 regulator. For other combinations, please consult factory.

A4 Adaptomode® Series Pressure Regulators

Moduadapter® (MD, SMD)

The special adapter to which the modular solenoid pilot, modular pressure pilot and Moduplate are bolted.

The Series Moduadapter (SMD) is used with special regulators such as A4ADS, A4ABDS, etc. and with all A4W regulators.

Furnished with bolts and gaskets. (Standard part of regulators with S, B, D and Z variations)

Port Sizes:

- MD25: 20mm - 25mm (3/4" - 1")
- MD32: 32mm (1 1/4")
- MD50: 40mm - 50mm (1 5/8" to 2")
- MD65: 65mm (2 1/2")
- MD75: 75mm (3")
- MD100: 100mm (4")
- SMD65: 20mm - 65mm (3/4" - 2 1/2") and 125mm - 200mm (5" - 8")
- SMD100: 75mm - 100mm (3" - 4")



A2D Modular Pressure Pilot

Adds dual (D) variation when combined with Modular Solenoid Pilot. Provides a second higher control pressure.

Furnished with bolts and O-rings. Mounts to Moduadapter®.

Port Sizes:

- Use A2D2 with 20mm - 25mm (3/4" - 1")
- Use A2D with 65mm - 200mm (2 1/2" - 8")
- Range A:** (standard)
0.35 barg - 10 barg (5 psig - 150 psig)
- Range D:**
5.2 barg - 19.3 barg (75 psig - 280 psig)



Outlet Regulator Kit (OR)

An auxiliary adapter which converts A4A inlet regulators to outlet regulators with OE variation.

Furnished with all internal parts, bolts and gaskets.

Port Sizes:

- OR50 for 20mm - 50mm (3/4" - 2")
- OR200 for 65mm - 200mm (2 1/2" - 8")



Pressure Bonnet Kit (PK)

Converts any A4, A4O or A2 Series regulator to 1:1 Pressure Compensation (P) variation. Standard in A range. Use with Type VC vacuum cartridge for V range.

Also available 3:1 pressure compensation (3P) variation. Furnished with 1/4" FPT bonnet connection for air or refrigerant pressure, bolts and gaskets. 3:1 kit includes above plus auxiliary adapter.

Same for all port sizes.

Type:

- PK1** for 1:1 ratio.
- PK3** for 3:1 ratio



Moduplate® (MP)

Provides blank off or cross-over of pilot circuit on Type A4S or Type A4B.

Attaches to Moduadapter. Same for all regulator sizes.

Furnished with bolts and three O-rings.



Motor Bonnet Kit (MB)

Converts to electric compensation (M) variation any A4 Series regulator. Standard in A range. Combine with VC vacuum cartridge for V range.

Furnished with bonnet, all internal parts, cam, bolts, gaskets, motor and transformer with 24 Volt secondary to operate motor. Same for all port sizes.



Vacuum Cartridge (VC)

A pilot seat with vacuum range cartridge. Will change A range A4, A2B or A2D to vacuum range:

500mm Hg - 8.3 barg (20" Hg - 120 psig)

Furnished with diaphragm and necessary gasket. Same for all regulator sizes.



A4 Adaptomode® Series Pressure Regulators

Pressure Setting Ranges

Code	Set Point Range	Approx. Pressure Change per Turn of Adjustment Screw	Factory Set Point (unless other wise specified)	Factory Set Point "T" (unless other wise specified)
A ①	0.35 - 10 barg (5 - 150 psig)	1.7 barg (25 psig)	2.8 barg (40 psig)	5.5 barg (80 psig)
V	500mm Hg - 8.3 barg (20 in Hg - 120 psig)	1.7 barg (25 psig)	1.0 barg (15 psig)	—
D	5.2 - 19.3 barg (75 - 280 psig)	3.7 barg (53 psig)	9.7 barg (140 psig)	9.7 barg (140 psig)

① Standard

For variations "K" and "BK", the set point is factory set and sealed. Standard set point for each range is shown in the table above. A custom setting may be specified.

Manual Opening and Pressure Adjusting Stem

Port Size		Manual Opening Stem		Pressure Adjusting Stem
mm	inch	Bypass Mode	Regulating Mode	
20 - 100	¾ - 4	Counter-Clockwise	Clockwise	In Increases Set Point
100 - 200	5 - 8	Clockwise	Counter-Clockwise	In Increases Set Point

Suction Capacities - A4

R-717 (KW)

Evap T (°C) P (barg)	Pressure Drop (bar)	20mm ②	25mm	32mm ③	40mm ③	50mm	65mm ③	75mm ③	100mm ③	125mm	150mm	200mm
10° 5.14	0.14	51	70	123	235	349	493	704	951	1409	2536	3874
	0.35	79	110	193	368	546	772	1103	1488	2205	3969	6064
	0.70	110	153	268	512	758	1072	1532	2068	3063	5514	8424
	1.40	150	208	364	694	1029	1455	2079	2807	4158	7485	11435
5° 4.14	0.14	46	64	113	215	319	451	644	869	1288	2319	3542
	0.35	72	101	176	336	498	704	1006	1359	2013	3623	5535
	0.70	100	139	244	465	689	975	1393	1880	2785	5014	7660
	1.40	135	187	327	625	926	1310	1871	2526	3742	6736	10291
0° 3.28	0.14	42	59	103	196	290	411	587	792	1174	2112	3227
	0.35	66	91	160	305	453	640	915	1235	1829	3292	5030
	0.70	91	126	220	421	623	882	1259	1700	2519	4534	6927
-5° 2.53	0.14	38	53	93	178	264	373	532	719	1065	1917	2928
	0.35	60	83	145	276	409	579	827	1117	1654	2978	4549
	0.70	81	113	198	378	560	792	1131	1527	2263	4073	6223
-10° 1.89	0.14	35	48	84	161	238	337	481	649	962	1731	2645
	0.35	54	74	130	249	368	521	744	1004	1488	2678	4092
	0.70	73	101	176	337	499	706	1008	1361	2017	3630	5546
-15° 1.35	0.14	31	43	76	144	214	303	432	584	865	1556	2378
	0.21	38	52	92	175	260	367	525	709	1050	1889	2887
	0.35	48	66	116	222	329	465	665	898	1330	2394	3657
-20° 0.89	0.035	14	20	34	66	97	137	196	265	392	706	1079
	0.14	28	39	68	129	191	271	386	522	773	1391	2126
	0.21	34	47	82	156	232	328	468	632	936	1685	2575
-25° 0.50	0.035 ①	13	18	31	58	87	123	175	236	350	630	963
	0.14	25	34	60	115	170	240	343	464	687	1236	1888
-30° 0.18	0.035 ①	11	16	27	52	77	109	155	210	311	559	854
	0.14	22	30	53	101	150	212	303	409	606	1090	1666
-35° -0.08	0.035 ①	10	14	24	46	68	96	137	185	274	493	753
	0.14	19	26	46	88	131	185	265	358	530	954	1457
-40° -0.30	0.035	8.6	12	21	40	59	84	120	162	240	432	660
	0.14	17	23	40	77	113	161	229	310	459	825	1261

Capacities for R717 are based on 30°C liquid. Capacities are maximum and have no reserve for excess loads. Capacities apply to any A4A or A4W regulator (or S4A and S4W) regardless of variation used.

Sub-cooled liquid: For each 5°C liquid is colder than base temperature, increase table valves 3% for R717.

① 0.034 bar pressure drop capacities apply only to regulators with LPD (low pressure drop) variation.

② The 20mm regulator is available with throttling plug capacities equivalent to approximately 50% and 17% of the ratings in the tables.

③ The 32mm, 40mm, and 65mm - 100mm are available with throttling plug capacities equivalent to approximately 35% of the ratings in the tables.

Note: For liquid overfeed applications (nominal 2:1 to 5:1 ratio), add 20% to the evaporator load and select a regulator based on this increased load value.

Suction Capacities - A4

R-717 (TONS)

Evap T (°F) P (psig)	Pressure Drop (psi)	¾" ②	1"	1¼" ③	1⅝" ③	2"	2½" ③	3" ③	4"	5"	6"	8"
50° 74.5	2	14	20	35	66	98	139	199	268	398	716	1093
	5	22	31	54	104	154	218	311	420	622	1120	1712
	10	31	43	76	144	214	303	432	584	865	1557	2379
	20	42	59	103	196	291	411	588	793	1175	2115	3231
40° 58.6	2	13	18	31	60	89	126	180	243	360	648	990
	5	20	28	49	94	139	197	281	380	562	1012	1546
	10	28	39	68	130	193	272	389	525	778	1401	2140
	20	38	52	91	175	259	366	523	705	1045	1881	2874
30° 45.0	2	12	16	28	54	80	113	162	219	324	584	892
	5	18	25	44	84	125	177	253	341	505	909	1389
	10	25	35	61	116	172	243	348	469	695	1251	1912
20° 33.5	2	10	15	25	49	72	102	145	196	291	523	799
	5	16	23	39	75	112	158	226	305	451	812	1241
	10	22	31	54	103	152	216	308	416	616	1109	1694
10° 23.8	2	9.3	13	23	43	64	91	130	175	259	466	713
	5	14	20	35	67	99	140	200	270	400	720	1100
	10	19	27	47	90	134	189	270	364	540	972	1484
0° 15.7	2	8.3	11	20	38	57	80	115	155	229	413	631
	3	10	14	24	46	69	97	139	188	278	501	765
	5	13	18	31	59	87	123	176	237	352	633	967
-10° 9.0	0.5 ①	3.7	5.1	9.0	17	25	36	51	69	103	185	282
	2	7.3	10	18	34	50	71	101	136	202	363	555
	3	8.8	12	21	41	60	85	122	165	244	439	671
-20° 3.6	0.5 ①	3.2	4.5	7.9	15	22	32	45	61	90	162	248
	2	6.3	8.8	15	29	44	62	88	119	176	317	484
-30° 1.6 in Hg	0.5 ①	2.8	3.9	6.9	13	19	27	39	53	78	141	216
	2	5.5	7.6	13	25	38	53	76	103	152	274	418
-40° 8.8 in Hg	0.5 ①	2.4	3.4	5.9	11	17	24	34	46	68	122	186
	2	4.7	6.5	11	22	32	45	65	87	130	233	356

Capacities for R717 are based on 86°F liquid. Capacities are maximum and have no reserve for excess loads. Capacities apply to any A4A or A4W regulator (or S4A and S4W) regardless of variation used.

Sub-cooled liquid: For each 10°F liquid is colder than base temperature, increase table values 3% for R717.

① 0.5 psig pressure drop capacities apply only to regulators with LPD (low pressure drop) variation.

② The ¾" regulator is available with throttling plug capacities equivalent to approximately 50% and 17% of the ratings in the tables.

③ The 1¼", 1⅝", and 2½" - 4" regulators are available with throttling plug capacities equivalent to approximately 35% of the ratings in the tables.

Note: For liquid overfeed applications (nominal 2:1 to 5:1 ratio), add 20% to the evaporator load and select a regulator based on this increased load value.

Suction Capacities - A4

R-22 (KW)

Evap T (°C) P (bar)	Pressure Drop (bar)	20mm [Ⓜ]	25mm	32mm [Ⓜ]	40mm [Ⓜ]	50mm	65mm [Ⓜ]	75mm [Ⓜ]	100mm [Ⓜ]	125mm	150mm	200mm
10° 5.80	0.14 0.7	18 38	24 53	43 93	81 177	120 262	170 371	243 530	328 715	487 1060	876 1908	1338 2915
5° 4.83	0.14 0.7	16 35	22 48	39 85	74 162	110 239	156 339	223 484	301 653	446 967	803 1741	1227 2661
0° 3.97	0.14 0.7	15 32	20 44	36 77	68 147	101 218	143 308	204 440	275 593	408 879	734 1583	1121 2418
-5° 3.20	0.14 0.7	13 29	19 40	32 70	62 133	92 197	130 278	186 398	250 537	371 795	668 1431	1020 2186
-10° 2.53	0.14 0.7	12 26	17 36	29 63	56 119	83 177	118 250	168 357	227 482	337 715	606 1286	926 1965
-15° 1.95	0.14 0.7	11 23	15 32	27 56	51 106	75 158	106 223	152 319	205 430	304 638	547 1148	836 1754
-20° 1.44	0.14 0.35	10 15	14 21	24 37	46 70	68 104	96 147	137 210	185 284	273 421	492 758	752 1157
-25° 1.00	0.14 0.35	8.8 13	12 19	21 33	41 62	61 93	86 131	122 187	165 252	245 374	440 673	673 1029
-30° 0.63	0.035 [Ⓜ] 0.14	4.0 7.8	5.5 11	10 19	19 36	27 54	39 76	55 109	75 147	111 218	199 392	305 598
-35° 0.31	0.035 [Ⓜ] 0.14	3.5 6.9	4.9 10	8.6 17	16 32	24 48	34 67	49 96	66 130	98 192	177 346	271 529
-40° 0.04	0.035 [Ⓜ] 0.14	3.1 6.1	4.3 8.4	7.6 15	15 28	22 42	30 59	43 84	59 114	87 169	156 304	239 464

R-22 (TONS)

Evap T (°F) P (psig)	Pressure Drop (psi)	3/4" [Ⓜ]	1"	1 1/4" [Ⓜ]	1 5/8" [Ⓜ]	2"	2 1/2" [Ⓜ]	3" [Ⓜ]	4" [Ⓜ]	5"	6"	8"
50° 84.1	2 10	5.0 11	7.0 15	12 27	23 51	35 76	49 107	70 153	95 206	140 305	252 549	385 840
40° 68.6	2 10	4.6 10	6.4 14	11 24	21 46	31 68	45 97	64 138	86 186	127 276	229 497	350 759
30° 55.0	2 10	4.1 8.9	5.7 12	10 22	19 41	28 61	40 87	57 124	78 167	115 248	207 446	316 682
20° 43.1	2 10	3.7 8.0	5.2 11	9.1 19	17 37	26 55	36 77	52 111	70 149	104 221	186 398	285 609
10° 32.8	2 10	3.3 7.1	4.6 10	8.1 17	15 33	23 49	32 69	46 98	63 132	93 196	167 353	255 539
0° 24.0	2 5	3.0 4.6	4.1 6.4	7.2 11	14 21	20 32	29 45	41 64	56 86	83 128	149 230	227 351
-10° 16.5	2 5	2.6 4.0	3.7 5.6	6.4 10	12 19	18 28	26 39	37 56	49 76	73 112	132 202	201 309
-20° 10.2	0.5 [Ⓜ] 2	1.2 2.3	1.6 3.2	2.9 5.6	5.5 11	8.1 16	11 23	16 32	22 44	33 64	59 116	90 177
-30° 4.9	0.5 [Ⓜ] 2	1.0 2.0	1.4 2.8	2.5 4.9	4.8 9.4	7.1 14	10 20	14 28	19 38	29 56	52 101	79 155
-40° 0.6	0.5 [Ⓜ] 2	0.9 1.8	1.3 2.4	2.2 4.3	4.2 8.1	6.2 12.1	8.8 17	13 24	17 33	25 49	45 88	69 134

Capacities for R22 are based on 40°C (100°F) liquid and 5°C (10°F) superheat entering the regulator. Capacities are maximum and have no reserve for excess loads. Capacities apply to any A4A or A4W regulator (or S4A and S4W) regardless of variation used.

Sub-cooled liquid: For each 5°C/10°F liquid is colder than base temperature, increase table valves 4% for R22.

Ⓜ 0.034 bar (0.5 psig) pressure drop capacities apply only to regulators with LPD (low pressure drop) Variation.

Ⓜ 20mm (3/4") regulator is available with throttling plug capacities equivalent to approximately 50% and 17% of the ratings in the tables.

Ⓜ The 32mm (1 1/4"), 40mm (1 5/8"), and 65mm - 100mm (2 1/2" - 4") are available with throttling plug capacities equivalent to approximately 35% of the ratings in the tables.

Note: For liquid overfeed applications (nominal 2:1 to 5:1 ratio), add 20% to the evaporator load and select a regulator based on this increased load value.

Suction Capacities - A4

R-134a (KW)

Evap T (°C) P (barg)	Pressure Drop (bar)	20mm [ⓐ]	25mm	32mm [ⓑ]	40mm [ⓑ]	50mm	65mm [ⓑ]	75mm [ⓑ]	100mm [ⓑ]	125mm	150mm	200mm
10° 3.13	0.14 0.7	14 29	19 41	33 71	64 136	94 202	133 285	190 407	257 550	381 815	686 1466	1047 2240
5° 2.48	0.14 0.7	12 26	17 36	30 64	57 122	85 180	120 255	172 364	232 491	343 728	618 1310	944 2001
0° 1.91	0.14 0.7	11 23	15 32	27 56	51 108	76 160	108 226	154 323	208 436	308 645	555 1162	848 1775
-5° 1.42	0.14 0.7	10 20	14 28	24 50	46 95	68 140	96 198	138 284	186 383	275 567	496 1021	757 1560
-10° 0.99	0.14 0.7	8.8 18	12 25	21 43	41 82	61 122	86 172	122 246	165 332	245 492	441 886	674 1354
-15° 0.63	0.14 0.7	7.8 15	11 21	19 37	36 70	54 104	76 147	108 210	146 284	217 420	390 756	596 1155
-20° 0.31	0.14 0.35	6.9 10	10 14	17 25	32 48	47 70	67 100	95 142	129 192	190 285	343 512	524 783
-25° 0.05	0.14 0.35	6.0 8.8	8.3 12	15 21	28 41	41 60	58 85	83 122	112 164	166 243	299 438	457 670
-30° -0.17	0.035 [ⓐ] 0.14	2.7 5.2	3.7 7.2	6.5 13	12 24	18 36	26 50	37 72	50 97	75 144	134 259	205 395
-35° -0.35	0.035 [ⓐ] 0.14	2.3 4.4	3.2 6.1	5.7 11	11 21	16 30	23 43	32 61	44 83	65 123	116 221	178 338
-40° -0.50	0.035 [ⓐ] 0.14	2.0 3.7	2.8 5.2	4.9 9.1	9.3 17	14 26	19 36	28 52	38 70	56 104	100 187	153 285

R-134a (TONS)

Evap T (°F) P (psig)	Pressure Drop (psi)	3/4" [ⓐ]	1"	1 1/4" [ⓑ]	1 5/8" [ⓑ]	2"	2 1/2" [ⓑ]	3" [ⓑ]	4" [ⓑ]	5"	6"	8"
50° 45.4	2 10	4.0 8.5	5.5 12	10 21	18 39	27 58	39 83	55 118	74 159	110 236	198 424	303 648
40° 35.0	2 10	3.5 7.5	4.9 10	8.6 18	16 35	24 51	34 73	49 104	66 140	98 208	177 374	270 572
30° 26.1	2 10	3.1 6.5	4.4 9.1	7.6 16	15 30	22 45	30 64	44 91	59 123	87 182	157 327	239 500
20° 18.4	2 10	2.8 5.7	3.8 7.9	6.7 14	13 26	19 39	27 55	38 79	52 106	77 157	138 283	211 432
10° 11.9	2 10	2.4 4.8	3.4 6.7	5.9 12	11 22	17 33	24 47	34 67	45 90	67 134	121 241	185 368
0° 6.5	2 5	2.1 3.2	2.9 4.4	5.1 7.7	10 15	14 22	20 31	29 44	40 59	59 88	105 159	161 242
-10° 1.9	2 5	1.8 2.7	2.5 3.7	4.4 6.5	8.4 12	13 18	18 26	25 37	34 50	51 75	91 134	139 205
-20° 3.7 in Hg	0.5 [ⓐ] 2	0.8 1.6	1.1 2.2	2.0 3.8	3.7 7.2	5.5 11	7.8 15	11 22	15 29	22 43	40 78	61 119
-30° 9.8 in Hg	0.5 [ⓐ] 2	0.7 1.3	1.0 1.8	1.7 3.2	3.2 6.1	4.7 9.0	6.7 13	10 18	13 25	19 36	34 66	53 100
-40° 14.8 in Hg	0.5 [ⓐ] 2	0.6 1.1	0.8 1.5	1.4 2.6	2.7 5.0	4.0 7.5	5.7 11	8.1 15	11 20	16 30	29 54	44 83

Capacities for R134a are based on 40°C (100°F) liquid and 5°C (10°F) superheat entering the regulator. Capacities are maximum and have no reserve for excess loads. Capacities apply to any A4A or A4W regulator (or S4A and S4W) regardless of variation used.

Sub-cooled liquid: For each 5°C/10°F liquid is colder than base temperature, increase table values 4% for R134a.

ⓐ 0.034 bar (0.5 psig) pressure drop capacities apply only to regulators with LPD (low pressure drop) Variation.

ⓑ 20mm (3/4") regulator is available with throttling plug capacities equivalent to approximately 50% and 17% of the ratings in the tables.

ⓒ The 32mm (1 1/4"), 40mm (1 5/8"), and 65mm - 100mm (2 1/2" - 4") are available with throttling plug capacities equivalent to approximately 35% of the ratings in the tables.

Note: For liquid overfeed applications (nominal 2:1 to 5:1 ratio), add 20% to the evaporator load and select a regulator based on this increased load value.

Suction Capacities - A4

R-404a (KW)

Evap T (°C) P (barg)	Pressure Drop (bar)	20mm [Ⓜ]	25mm	32mm [Ⓜ]	40mm [Ⓜ]	50mm	65mm [Ⓜ]	75mm [Ⓜ]	100mm [Ⓜ]	125mm	150mm	200mm
10° 7.26	0.14 0.7	15 33	21 46	37 80	70 152	103 226	146 319	209 456	282 616	417 912	751 1641	1147 2508
5° 6.11	0.14 0.7	14 30	19 41	33 72	63 138	94 204	132 288	189 412	255 556	378 824	681 1483	1040 2265
0° 5.09	0.14 0.7	12 27	17 37	30 65	57 124	85 183	120 259	171 370	231 500	342 741	615 1334	939 2038
-5° 4.18	0.14 0.7	11 24	15 33	27 58	51 111	76 164	108 232	154 332	207 448	307 663	553 1194	845 1824
-10° 3.38	0.14 0.7	10 21	14 30	24 52	46 99	68 146	96 207	138 295	186 398	275 590	496 1063	757 1624
-15° 2.67	0.14 0.7	8.8 19	12 26	21 46	41 87	61 129	86 183	123 261	166 352	246 522	442 940	676 1436
-20° 2.06	0.14 0.35	7.9 12	11 17	19 30	36 56	54 84	76 118	109 169	147 228	218 338	393 608	600 928
-25° 1.52	0.14 0.35	6.9 11	10 15	17 26	32 50	48 73	67 104	96 148	130 200	193 297	347 534	530 816
-30° 1.06	0.035 [Ⓜ] 0.14	3.1 6.1	4.3 8.5	7.5 15	14 28	21 42	30 59	43 85	58 114	86 169	154 304	236 465
-35° 0.67	0.035 [Ⓜ] 0.14	2.7 5.3	3.8 7.4	6.6 13	13 25	19 37	26 52	38 74	51 100	75 147	135 265	206 406
-40° 0.34	0.035 [Ⓜ] 0.14	2.4 4.6	3.3 6.4	5.7 11	11 21	16 32	23 45	33 64	44 86	65 128	118 230	180 351

R-404a (TONS)

Evap T (°F) P (psig)	Pressure Drop (psi)	3/4" [Ⓜ]	1"	1 1/4" [Ⓜ]	1 5/8" [Ⓜ]	2"	2 1/2" [Ⓜ]	3" [Ⓜ]	4" [Ⓜ]	5"	6"	8"
50° 105.3	2 10	4.4 10	6.1 13	11 23	20 45	30 66	43 93	61 133	82 180	122 267	220 480	335 733
40° 86.9	2 10	3.9 8.6	5.5 12	10 21	18 40	27 59	38 83	55 119	74 161	109 238	197 429	301 655
30° 70.7	2 10	3.5 7.6	4.9 11	8.6 19	16 35	24 52	34 74	49 106	66 143	98 212	176 381	269 583
20° 56.6	2 10	3.1 6.7	4.3 9.4	7.6 16	15 31	22 46	30 66	43 94	59 126	87 187	156 337	239 515
10° 44.3	2 10	2.8 5.9	3.8 8.2	6.7 14	13 27	19 41	27 58	38 82	52 111	77 164	138 296	211 452
0° 33.7	2 5	2.4 3.8	3.4 5.2	5.9 9.2	11 18	17 26	24 37	34 52	46 71	68 105	122 189	186 288
-10° 24.6	2 5	2.1 3.3	3.0 4.6	5.2 8.0	10 15	15 23	21 32	30 46	40 62	59 91	106 164	163 251
-20° 16.8	0.5 [Ⓜ] 2	0.9 1.8	1.3 2.6	2.3 4.5	4.3 8.6	6.4 13	9.1 18	13 26	18 35	26 51	47 92	72 141
-30° 10.3	0.5 [Ⓜ] 2	0.8 1.6	1.1 2.2	2.0 3.9	3.8 7.4	5.6 11	7.9 15	11 22	15 30	22 44	40 80	62 122
-40° 4.9	0.5 [Ⓜ] 2	0.7 1.4	1.0 1.9	1.7 3.3	3.2 6.3	4.8 9.3	6.8 13	10 19	13 25	19 38	35 68	53 104

Capacities for R404a are based on 40°C (100°F) liquid and 5°C (10°F) superheat entering the regulator. Capacities are maximum and have no reserve for excess loads. Capacities apply to any A4A or A4W regulator (or S4A and S4W) regardless of variation used.

Sub-cooled liquid: For each 5°C/10°F liquid is colder than base temperature, increase table valves 4% for R404a.

Ⓜ 0.034 bar (0.5 psig) pressure drop capacities apply only to regulators with LPD (low pressure drop) Variation.

Ⓜ 20mm (3/4") regulator is available with throttling plug capacities equivalent to approximately 50% and 17% of the ratings in the tables.

Ⓜ The 32mm (1 1/4"), 40mm (1 5/8"), and 65mm - 100mm (2 1/2" - 4") are available with throttling plug capacities equivalent to approximately 35% of the ratings in the tables.

Note: For liquid overfeed applications (nominal 2:1 to 5:1 ratio), add 20% to the evaporator load and select a regulator based on this increased load value.

Suction Capacities - A4

R-410a (KW)

Evap T (°C) P (barg)	Pressure Drop (bar)	20mm ⊙	25mm	32mm ⊙	40mm ⊙	50mm	65mm ⊙	75mm ⊙	100mm ⊙	125mm	150mm	200mm
10° 9.87	0.14 0.7	21 47	29 65	51 113	98 216	146 320	206 453	294 647	397 873	589 1293	1059 2328	1618 3557
5° 8.35	0.14 0.7	19 43	27 59	47 104	90 198	134 293	189 414	270 592	364 799	540 1183	972 2130	1484 3254
0° 6.99	0.14 0.7	18 39	25 54	43 94	82 180	122 267	173 377	247 539	333 728	493 1079	888 1941	1357 2966
-5° 5.79	0.14 0.7	16 35	22 49	39 86	75 163	111 242	157 343	225 489	303 661	450 979	809 1762	1236 2692
-10° 4.73	0.14 0.7	15 32	20 44	36 77	68 148	101 219	143 310	204 442	276 597	408 884	735 1592	1122 2432
-15° 3.80	0.14 0.7	13 29	18 40	32 70	62 133	91 197	129 278	185 397	249 536	369 795	664 1431	1015 2186
-20° 2.99	0.14 0.35	12 19	17 26	29 45	55 86	82 128	116 181	166 259	224 349	332 517	598 931	914 1422
-25° 2.29	0.14 0.35	11 17	15 23	26 40	50 77	74 114	104 162	149 231	201 312	298 462	536 831	819 1270
-30° 1.69	0.035 ⊙ 0.14	4.8 9.6	6.7 13	12 23	22 44	33 66	47 93	67 133	91 179	134 266	242 478	369 730
-35° 1.18	0.035 ⊙ 0.14	4.3 8.5	6.0 12	10.4 21	20 39	30 58	42 82	60 118	81 159	119 235	215 424	328 647
-40° 0.74	0.035 ⊙ 0.14	3.8 7.5	5.3 10.4	9.2 18	18 35	26 51	37 73	53 104	71 140	105 207	190 373	290 570

R-410a (TONS)

Evap T (°F) P (psig)	Pressure Drop (psi)	3/4" ⊙	1"	1 1/4" ⊙	1 5/8" ⊙	2"	2 1/2" ⊙	3" ⊙	4" ⊙	5"	6"	8"
50° 143.2	2 10	6.1 14	8.5 19	15 33	29 63	42 93	60 131	85 188	115 253	171 375	307 675	469 1032
40° 118.8	2 10	5.6 12	7.8 17	14 30	26 57	38 84	54 119	78 170	105 229	155 340	279 612	426 935
30° 97.4	2 10	5.1 11	7.0 15	12 27	23 51	35 76	49 107	70 153	95 207	140 307	253 552	386 843
20° 78.7	2 10	4.6 9.9	6.3 14	11 24	21 46	31 68	44 96	63 138	85 186	126 275	228 495	348 756
10° 62.4	2 10	4.1 8.8	5.7 12	9.9 21	19 41	28 61	40 86	57 123	77 166	113 245	204 441	312 674
0° 48.4	2 5	3.6 5.7	5.1 7.9	8.9 14	17 26	25 39	35 55	51 79	68 106	101 158	182 284	278 434
-10° 36.5	2 5	3.2 5.0	4.5 7.0	7.9 12	15 23	22 35	31 49	45 70	61 94	90 140	162 251	247 384
-20° 26.3	0.5 ⊙ 2	1.4 2.9	2.0 4.0	3.5 6.9	6.7 13	9.9 20	14 28	20 40	27 53	40 79	72 143	110 218
-30° 17.8	0.5 ⊙ 2	1.3 2.5	1.8 3.5	3.1 6.1	5.9 11.6	8.7 17	12 24	18 35	24 47	35 69	63 125	97 191
-40° 10.8	0.5 ⊙ 2	1.1 2.2	1.5 3.0	2.7 5.3	5.1 10.1	7.6 15	11 21	15 30	21 41	31 60	55 109	84 166

Capacities for R410a are based on 40°C (100°F) liquid and 5°C (10°F) superheat entering the regulator. Capacities are maximum and have no reserve for excess loads. Capacities apply to any A4A or A4W regulator (or S4A and S4W) regardless of variation used.

Sub-cooled liquid: For each 5°C/10°F liquid is colder than base temperature, increase table values 4% for R410a.

⊙ 0.034 bar (0.5 psig) pressure drop capacities apply only to regulators with LPD (low pressure drop) Variation.

⊙ 20mm (3/4") regulator is available with throttling plug capacities equivalent to approximately 50% and 17% of the ratings in the tables.

⊙ The 32mm (1 1/4"), 40mm (1 5/8"), and 65mm - 100mm (2 1/2" - 4") are available with throttling plug capacities equivalent to approximately 35% of the ratings in the tables.

Note: For liquid overfeed applications (nominal 2:1 to 5:1 ratio), add 20% to the evaporator load and select a regulator based on this increased load value.

Suction Capacities - A4

R-507a (KW)

Evap T (°C) P (bar)	Pressure Drop (bar)	20mm [Ⓢ]	25mm	32mm [Ⓢ]	40mm [Ⓢ]	50mm	65mm [Ⓢ]	75mm [Ⓢ]	100mm [Ⓢ]	125mm	150mm	200mm
10° 7.45	0.14 0.7	15 33	21 45	36 79	69 151	102 223	144 316	206 451	279 609	413 903	743 1625	1135 2483
5° 6.28	0.14 0.7	13 29	19 41	33 71	62 136	93 202	131 285	187 408	252 550	374 815	673 1467	1028 2242
0° 5.23	0.14 0.7	12 26	17 37	30 64	56 122	84 181	118 257	169 366	228 495	338 733	608 1319	928 2016
-5° 4.30	0.14 0.7	11 24	15 33	27 57	51 110	75 162	106 230	152 328	205 443	304 656	547 1180	835 1804
-10° 3.48	0.14 0.7	10 21	14 29	24 51	45 97	67 144	95 204	136 292	184 394	272 584	489 1050	748 1605
-15° 2.76	0.14 0.7	8.7 19	12 26	21 45	40 86	60 128	85 181	121 258	164 348	242 516	436 929	667 1419
-20° 2.13	0.14 0.35	7.7 12	11 17	19 29	36 56	53 82	75 117	108 167	145 225	215 333	387 600	592 916
-25° 1.59	0.14 0.35	6.8 11	9.5 15	17 26	32 49	47 72	66 102	95 146	128 197	190 293	342 527	522 805
-30° 1.12	0.035 [Ⓢ] 0.14	3.0 6.0	4.2 8.3	7.4 15	14 28	21 41	30 58	42 83	57 112	84 167	152 300	232 458
-35° 0.71	0.035 [Ⓢ] 0.14	2.7 5.2	3.7 7.3	6.5 13	12 24	18 36	26 51	37 73	50 98	74 145	133 261	203 399
-40° 0.37	0.035 [Ⓢ] 0.14	2.3 4.5	3.2 6.3	5.6 11	11 21	16 31	22 44	32 63	43 85	64 125	115 226	176 345

R-507a (TONS)

Evap T (°F) P (psig)	Pressure Drop (psi)	¾" [Ⓢ]	1"	1¼" [Ⓢ]	1½" [Ⓢ]	2"	2½" [Ⓢ]	3" [Ⓢ]	4" [Ⓢ]	5"	6"	8"
50° 108.0	2 10	4.3 10	6.0 13	11 23	20 44	30 65	42 93	60 132	82 178	121 264	217 476	332 727
40° 89.2	2 10	3.9 8.5	5.4 12	9.5 21	18 39	27 58	38 83	54 118	73 159	108 236	195 425	298 649
30° 72.7	2 10	3.5 7.6	4.8 10	8.5 18	16 35	24 52	34 73	48 105	65 142	97 210	174 378	266 577
20° 58.3	2 10	3.1 6.7	4.3 9.3	7.5 16.2	14 31	21 46	30 65	43 93	58 125	86 185	155 334	236 510
10° 45.7	2 10	2.7 5.9	3.8 8.1	6.6 14	13 27	19 40	27 57	38 81	51 110	76 163	137 293	209 447
0° 34.8	2 5	2.4 3.7	3.3 5.2	5.8 9.1	11 17	17 26	23 36	33 52	45 70	67 104	120 186	184 285
-10° 25.5	2 5	2.1 3.2	2.9 4.5	5.1 7.9	10 15	14 22	20 32	29 45	39 61	58 90	105 162	160 248
-20° 17.6	0.5 [Ⓢ] 2	0.9 1.8	1.3 2.5	2.2 4.4	4.3 8.4	6.3 13	9.0 18	13 25	17 34	26 51	46 91	71 139
-30° 11.0	0.5 [Ⓢ] 2	0.8 1.6	1.1 2.2	1.9 3.8	3.7 7.3	5.5 11	7.8 15	11 22	15 29	22 44	40 78	61 120
-40° 5.4	0.5 [Ⓢ] 2	0.7 1.3	0.9 1.9	1.7 3.3	3.2 6.2	4.7 9.2	6.6 13	9.5 19	13 25	19 37	34 67	52 102

Capacities for R507a are based on 40°C (100°F) liquid and 5°C (10°F) superheat entering the regulator. Capacities are maximum and have no reserve for excess loads. Capacities apply to any A4A or A4W regulator (or S4A and S4W) regardless of variation used.

Sub-cooled liquid: For each 5°C/10°F liquid is colder than base temperature, increase table valves 4% for R507a.

Ⓢ 0.034 bar (0.5 psig) pressure drop capacities apply only to regulators with LPD (low pressure drop) Variation.

Ⓢ 20mm (¾") regulator is available with throttling plug capacities equivalent to approximately 50% and 17% of the ratings in the tables.

Ⓢ The 32mm (1¼"), 40mm (1½"), and 65mm - 100mm (2½" - 4") are available with throttling plug capacities equivalent to approximately 35% of the ratings in the tables.

Note: For liquid overfeed applications (nominal 2:1 to 5:1 ratio), add 20% to the evaporator load and select a regulator based on this increased load value.

Liquid Capacities - A4 (typical application: screw compressor oil feed control)

R-717 (KG/MIN & M³/HR)

Liquid Temp (°C)	Press. Drop (bar)	20mm ①		25mm		32mm ②		40mm ②		50mm		65mm ②		75mm ②		100mm ②	
		kg/min	m ³ /hr	kg/min	m ³ /hr	kg/min	m ³ /hr	kg/min	m ³ /hr	kg/min	m ³ /hr	kg/min	m ³ /hr	kg/min	m ³ /hr	kg/min	m ³ /hr
5°	0.69	68	68	95	95	165	165	314	314	466	466	658	658	941	941	1271	1271
-20°		70	70	97	97	169	169	323	323	478	478	676	676	966	966	1304	1304
-40°		71	71	99	99	172	172	329	329	487	487	688	688	984	984	1328	1328
5°	1.03	83	83	116	116	202	202	385	385	571	571	806	806	1152	1152	1556	1556
-20°		86	86	119	119	207	207	395	395	586	586	828	828	1183	1183	1597	1597
-40°		87	87	121	121	211	211	402	402	597	597	843	843	1205	1205	1627	1627
5°	1.38	96	96	134	134	233	233	445	445	659	659	931	931	1331	1331	1797	1797
-20°		99	99	137	137	239	239	456	456	676	676	956	956	1366	1366	1844	1844
-40°		101	101	140	140	244	244	465	465	689	689	973	973	1391	1391	1879	1879

R-717 (LB/MIN & GPM)

Liquid Temp (°F)	Press. Drop (psi)	¾" ①		1"		1¼" ②		1½" ②		2"		2½" ②		3" ②		4" ②	
		lb/min	gpm	lb/min	gpm	lb/min	gpm	lb/min	gpm	lb/min	gpm	lb/min	gpm	lb/min	gpm	lb/min	gpm
40°	10	151	29	210	40	367	70	701	133	1038	197	1468	278	2098	397	2832	537
0°		155	28	215	39	376	68	717	130	1063	192	1503	272	2146	388	2898	524
-40°		158	27	219	38	383	67	732	127	1085	188	1534	266	2191	380	2958	514
40°	15	185	35	257	49	450	85	858	163	1272	241	1798	341	2569	487	3468	657
0°		189	34	263	48	460	83	878	159	1301	235	1840	333	2629	476	3549	642
-40°		193	34	268	47	470	82	896	156	1328	231	1879	326	2684	466	3623	629
40°	20	214	40	297	56	519	98	991	188	1468	278	2077	393	2966	562	4005	759
0°		219	40	304	55	531	96	1014	183	1503	272	2125	384	3036	549	4098	741
-40°		223	39	310	54	542	94	1035	180	1534	266	2169	377	3099	538	4183	726

R-22 (KG/MIN & M³/HR)

Liquid Temp (°C)	Press. Drop (bar)	20mm ①		25mm		32mm ②		40mm ②		50mm		65mm ②		75mm ②		100mm ②	
		kg/min	m ³ /hr	kg/min	m ³ /hr	kg/min	m ³ /hr	kg/min	m ³ /hr	kg/min	m ³ /hr	kg/min	m ³ /hr	kg/min	m ³ /hr	kg/min	m ³ /hr
5°	0.69	96	4.6	134	6.3	233	11	445	21	659	31	932	44	1331	63	1798	85
-20°		100	4.4	138	6.2	241	11	459	20	681	30	961	43	1374	61	1855	83
-40°		102	4.3	141	6.0	246	10	469	20	696	30	983	42	1404	60	1896	81
5°	1.03	118	5.6	164	7.8	286	14	545	26	808	38	1142	54	1632	77	2204	104
-20°		122	5.4	169	7.5	295	13	562	25	833	37	1177	52	1683	75	2272	101
-40°		125	5.3	173	7.4	301	13	575	25	852	36	1204	51	1720	73	2323	99
5°	1.38	136	6.5	189	9.0	330	16	629	30	933	44	1317	63	1883	89	2543	121
-20°		141	6.3	195	8.7	340	15	649	29	962	43	1360	61	1943	87	2624	117
-40°		144	6.1	200	8.5	348	15	664	28	984	42	1390	59	1986	85	2682	114

R-22 (LB/MIN & GPM)

Liquid Temp (°F)	Press. Drop (psi)	¾" ①		1"		1¼" ②		1½" ②		2"		2½" ②		3" ②		4" ②	
		lb/min	gpm	lb/min	gpm	lb/min	gpm	lb/min	gpm	lb/min	gpm	lb/min	gpm	lb/min	gpm	lb/min	gpm
40°	10	214	20	297	28	519	49	991	94	1469	139	2078	197	2968	281	4007	379
0°		220	20	305	27	534	48	1020	91	1511	135	2137	191	3053	273	4121	369
-40°		225	19	313	27	547	47	1045	89	1549	132	2190	187	3128	266	4223	360
40°	15	262	25	364	34	636	60	1214	115	1799	170	2545	241	3635	344	4907	464
0°		269	24	374	33	654	59	1249	112	1851	166	2617	234	3739	334	5047	452
-40°		276	23	383	33	671	57	1280	109	1897	162	2682	228	3832	326	5173	441
40°	20	302	29	420	40	735	70	1402	133	2078	197	2938	278	4197	397	5667	536
0°		311	28	432	39	756	68	1442	129	2137	191	3022	270	4317	386	5828	521
-40°		319	27	442	38	774	66	1478	126	2190	187	3097	264	4424	377	5973	509

Capacities are based on -18°C (0°F) liquid ammonia and no flash gas.
 For evaporator temperatures between 4°C to -40°C (40°F to -40°F), capacities are within 5%.
 Correction factors for temperatures between -40°C (-40°F) and 30°C (86°F) are negligible.

- ① 20mm (¾") regulator is available with throttling plug capacities equivalent to approximately 50% and 17% of the ratings in the tables.
- ② The 32mm (1¼"), 40mm (1½"), and 65mm - 100mm (2½" - 4") are available with throttling plug capacities equivalent to approximately 35% of the ratings in the tables.

Liquid Capacities - A4 (typical application: screw compressor oil feed control)

R-134a (KG/MIN & M³/HR)

Liquid Temp (°C)	Press. Drop (bar)	20mm ①		25mm		32mm ②		40mm ②		50mm		65mm ②		75mm ②		100mm ②	
		kg/min	m ³ /hr	kg/min	m ³ /hr	kg/min	m ³ /hr	kg/min	m ³ /hr	kg/min	m ³ /hr	kg/min	m ³ /hr	kg/min	m ³ /hr	kg/min	m ³ /hr
5°	0.69	97	4.6	134	6.3	235	11	447	21	663	31	937	44	1339	63	1808	85
-20°		100	4.4	139	6.1	242	11	461	20	683	30	966	43	1380	61	1863	82
-40°		102	4.3	142	6.0	247	10	471	20	698	30	986	42	1410	60	1904	81
5°	1.03	119	5.6	165	7.7	287	13	548	26	813	38	1148	54	1641	77	2216	104
-20°		122	5.4	170	7.5	296	13	565	25	837	37	1183	52	1690	75	2282	101
-40°		125	5.3	173	7.3	303	13	577	24	855	36	1208	51	1727	73	2332	99
5°	1.38	137	6.4	190	8.9	332	16	632	30	938	44	1325	62	1893	89	2556	120
-20°		141	6.2	196	8.7	342	15	652	29	967	43	1366	60	1951	86	2635	116
-40°		144	6.1	200	8.5	349	15	666	28	988	42	1395	59	1994	84	2692	114

R-134a (LB/MIN & GPM)

Liquid Temp (°F)	Press. Drop (psi)	¾" ①		1"		1¼" ②		1½" ②		2"		2½" ②		3" ②		4" ②	
		lb/min	gpm	lb/min	gpm	lb/min	gpm	lb/min	gpm	lb/min	gpm	lb/min	gpm	lb/min	gpm	lb/min	gpm
40°	10	215	20	298	28	522	49	997	93	1477	138	2089	196	2984	279	4028	377
0°		221	20	307	27	537	48	1024	91	1518	135	2146	190	3066	272	4139	367
-40°		226	19	314	27	550	46	1049	89	1555	131	2198	186	3141	265	4240	358
40°	15	263	25	365	34	640	60	1221	114	1809	169	2558	240	3655	342	4934	462
0°		270	24	376	33	657	58	1254	111	1859	165	2629	233	3755	333	5070	450
-40°		277	23	385	33	673	57	1285	109	1904	161	2692	228	3846	325	5193	439
40°	20	304	28	422	40	739	69	1410	132	2089	196	2954	277	4220	395	5697	533
0°		312	28	434	38	759	67	1448	128	2146	190	3035	269	4336	384	5854	519
-40°		320	27	444	38	777	66	1483	125	2198	186	3109	263	4441	375	5996	507

R-404a (KG/MIN & M³/HR)

Liquid Temp (°C)	Press. Drop (bar)	20mm ①		25mm		32mm ②		40mm ②		50mm		65mm ②		75mm ②		100mm ②	
		kg/min	m ³ /hr	kg/min	m ³ /hr	kg/min	m ³ /hr	kg/min	m ³ /hr	kg/min	m ³ /hr	kg/min	m ³ /hr	kg/min	m ³ /hr	kg/min	m ³ /hr
5°	0.69	91	4.8	126	6.7	221	12	421	22	624	33	881	47	1259	67	1700	90
-20°		95	4.7	131	6.5	229	11	437	21	648	32	916	45	1309	64	1767	87
-40°		97	4.5	135	6.3	235	11	449	21	665	31	940	44	1343	63	1814	85
5°	1.03	112	5.9	155	8.2	270	14	515	27	764	41	1079	57	1542	82	2082	111
-20°		116	5.7	161	7.9	281	14	536	26	794	39	1122	55	1603	79	2165	106
-40°		119	5.6	165	7.7	288	13	550	26	815	38	1151	54	1645	77	2222	104
5°	1.38	129	6.8	179	9.5	312	17	595	32	882	47	1246	66	1780	94	2404	128
-20°		134	6.6	186	9.1	324	16	618	30	917	45	1295	64	1851	91	2499	123
-40°		138	6.4	191	8.9	333	16	635	30	941	44	1329	62	1900	89	2565	120

R-404a (LB/MIN & GPM)

Liquid Temp (°F)	Press. Drop (psi)	¾" ①		1"		1¼" ②		1½" ②		2"		2½" ②		3" ②		4" ②	
		lb/min	gpm	lb/min	gpm	lb/min	gpm	lb/min	gpm	lb/min	gpm	lb/min	gpm	lb/min	gpm	lb/min	gpm
40°	10	202	21	281	30	491	52	938	99	1390	147	1965	208	2807	297	3790	401
0°		209	21	291	29	509	50	971	96	1439	142	2034	201	2906	287	3924	387
-40°		215	20	299	28	524	49	999	93	1481	138	2095	195	2992	279	4039	376
40°	15	248	26	344	36	602	64	1148	121	1702	180	2407	255	3438	364	4642	491
0°		256	25	356	35	623	61	1189	117	1762	174	2492	246	3560	351	4805	474
-40°		264	25	366	34	641	60	1224	114	1814	169	2565	239	3665	341	4947	461
40°	20	286	30	397	42	695	73	1326	140	1965	208	2779	294	3970	420	5360	567
0°		296	29	411	41	719	71	1373	135	2035	201	2877	284	4110	406	5549	548
-40°		305	28	423	39	741	69	1413	132	2095	195	2962	276	4232	394	5713	532

Capacities are based on -18°C (0°F) liquid ammonia and no flash gas.

For evaporator temperatures between 4°C to -40°C (40°F to -40°F), capacities are within 5%.

Correction factors for temperatures between -40°C (-40°F) and 30°C (86°F) are negligible.

① 20mm (¾") regulator is available with throttling plug capacities equivalent to approximately 50% and 17% of the ratings in the tables.

② The 32mm (1¼"), 40mm (1½"), and 65mm - 100mm (2½" - 4") are available with throttling plug capacities equivalent to approximately 35% of the ratings in the tables.

Liquid Capacities - A4 (typical application: screw compressor oil feed control)

R-410a (KG/MIN & M³/HR)

Liquid Temp (°C)	Press. Drop (bar)	20mm ①		25mm		32mm ②		40mm ②		50mm		65mm ②		75mm ②		100mm ②	
		kg/min	m ³ /hr	kg/min	m ³ /hr	kg/min	m ³ /hr	kg/min	m ³ /hr	kg/min	m ³ /hr	kg/min	m ³ /hr	kg/min	m ³ /hr	kg/min	m ³ /hr
5°	0.69	92	4.8	128	6.7	222	12	424	22	629	33	888	46	1269	66	1714	89
-20°		96	4.6	133	6.4	232	11	441	21	654	32	924	45	1321	64	1784	86
-40°		98	4.5	136	6.2	238	11	453	21	672	31	949	43	1357	62	1832	84
5°	1.03	113	5.9	156	8.2	272	14	519	27	770	40	1088	57	1555	81	2100	110
-20°		117	5.6	163	7.8	284	14	541	26	801	39	1132	55	1618	78	2185	105
-40°		120	5.5	167	7.6	291	13	555	25	823	38	1163	53	1662	76	2244	103
5°	1.38	130	6.8	180	9.4	315	16	600	31	889	46	1256	66	1795	94	2424	127
-20°		135	6.5	188	9.0	327	16	624	30	925	45	1307	63	1868	90	2523	122
-40°		139	6.4	193	8.8	336	15	641	29	950	43	1343	61	1919	88	2591	118

R-410a (LB/MIN & GPM)

Liquid Temp (°F)	Press. Drop (psi)	3/4" ①		1"		1 1/4" ②		1 3/8" ②		2"		2 1/2" ②		3" ②		4" ②	
		lb/min	gpm	lb/min	gpm	lb/min	gpm	lb/min	gpm	lb/min	gpm	lb/min	gpm	lb/min	gpm	lb/min	gpm
40°	10	204	21	283	29	495	52	946	98	1401	146	1982	206	2831	294	3822	398
0°		211	20	293	28	513	50	980	95	1452	141	2054	199	2934	284	3961	384
-40°		218	20	302	28	529	48	1009	92	1496	137	2116	193	3022	276	4080	372
40°	15	250	26	347	36	607	63	1158	120	1716	179	2427	252	3467	361	4681	487
0°		259	25	359	35	629	61	1200	116	1779	172	2515	244	3593	348	4851	470
-40°		267	24	370	34	648	59	1236	113	1832	167	2591	236	3702	338	4997	456
40°	20	288	30	400	42	701	73	1337	139	1982	206	2802	292	4003	416	5405	562
0°		299	29	415	40	726	70	1386	134	2054	199	2904	281	4149	402	5601	542
-40°		308	28	427	39	748	68	1428	130	2116	193	2992	273	4274	390	5770	527

R-507a (KG/MIN & M³/HR)

Liquid Temp (°C)	Press. Drop (bar)	20mm ①		25mm		32mm ②		40mm ②		50mm		65mm ②		75mm ②		100mm ②	
		kg/min	m ³ /hr	kg/min	m ³ /hr	kg/min	m ³ /hr	kg/min	m ³ /hr	kg/min	m ³ /hr	kg/min	m ³ /hr	kg/min	m ³ /hr	kg/min	m ³ /hr
5°	0.69	91	4.8	127	6.7	221	12	422	22	625	33	883	47	1262	67	1705	90
-20°		95	4.6	132	6.4	230	11	439	21	650	32	919	45	1313	64	1773	87
-40°		98	4.5	135	6.3	236	11	450	21	668	31	943	44	1348	62	1820	84
5°	1.03	112	5.9	155	8.2	271	14	516	27	766	40	1082	57	1546	82	2088	110
-20°		116	5.7	162	7.9	282	14	537	26	796	39	1125	55	1608	78	2171	106
-40°		120	5.5	166	7.7	289	13	551	26	818	38	1155	53	1651	76	2229	103
5°	1.38	129	6.8	179	9.5	313	17	596	31	884	47	1249	66	1785	94	2411	127
-20°		134	6.6	187	9.1	325	16	620	30	920	45	1299	63	1857	91	2507	122
-40°		138	6.4	191	8.9	334	15	637	29	944	44	1334	62	1906	88	2574	119

R-507a (LB/MIN & GPM)

Liquid Temp (°F)	Press. Drop (psi)	3/4" ①		1"		1 1/4" ②		1 3/8" ②		2"		2 1/2" ②		3" ②		4" ②	
		lb/min	gpm	lb/min	gpm	lb/min	gpm	lb/min	gpm	lb/min	gpm	lb/min	gpm	lb/min	gpm	lb/min	gpm
40°	10	203	21	281	30	493	52	940	99	1393	147	1970	207	2815	296	3800	400
0°		210	21	292	29	510	50	974	96	1443	142	2041	200	2915	286	3936	386
-40°		216	20	300	28	525	49	1003	93	1486	137	2102	194	3002	278	4053	375
40°	15	248	26	345	36	603	63	1151	121	1706	180	2413	254	3447	363	4654	490
0°		257	25	357	35	625	61	1193	117	1767	173	2499	245	3571	350	4820	473
-40°		265	24	368	34	643	60	1228	114	1820	168	2574	238	3677	340	4964	459
40°	20	287	30	398	42	697	73	1329	140	1970	207	2786	293	3980	419	5374	565
0°		297	29	412	40	722	71	1377	135	2041	200	2886	283	4123	404	5566	546
-40°		306	28	425	39	743	69	1418	131	2102	194	2972	275	4246	393	5732	530

Capacities are based on -18°C (0°F) liquid ammonia and no flash gas.
 For evaporator temperatures between 4°C to -40°C (40°F to -40°F), capacities are within 5%.
 Correction factors for temperatures between -40°C (-40°F) and 30°C (86°F) are negligible.

① 20mm (3/4") regulator is available with throttling plug capacities equivalent to approximately 50% and 17% of the ratings in the tables.
 ② The 32mm (1 1/4"), 40mm (1 3/8"), and 65mm - 100mm (2 1/2" - 4") are available with throttling plug capacities equivalent to approximately 35% of the ratings in the tables.

Oil Capacities - A4 (typical application: screw compressor oil feed control)

300 SSU Viscosity (M³/HR)

For 30°C to 50°C Oil ⊕			
Port Size (mm)	Pressure Drop		
	0.3 bar	0.7 bar	3.0 bar
20	3.9	5.4	12
25	5.4	7.5	17
32	9.3	13	30
40	18	25	57
50	27	36	84
65	39	52	120
75	54	75	170

300 SSU Viscosity (GPM)

For 85°F to 120°F Oil ⊕			
Port Size (inch)	Pressure Drop		
	5.0 psi	10 psi	50 psi
¾	17	24	54
1	24	33	74
1¼	41	58	130
1⅝	79	110	250
2	120	160	370
2½	170	230	520
3	240	330	750

⊕ Based on no foaming of oil through regulator.