

FILTER DRIERS

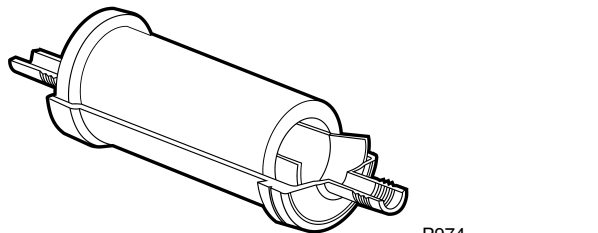
ALCO ADK BLOCK STYLE LIQUID LINE FILTER DRIERS

APPLICATION

- Economy solid core liquid line filter-drier ideal for use with CFC and HCFC refrigerants

FEATURES

- Solid copper fittings
 - Shock resistant steel shell construction
 - High moisture and acid removal capacity
 - Corrosion resistant epoxy powder paint finish
- 
- P974



P974

SPECIFICATIONS

- | | | | |
|---|--------------|----------|--|
| • Desiccant Blend: Activated Alumina with Molecular Sieve | | | |
| • Filtration: | 40 microns | | |
| • Maximum Working Pressure: | Sizes: 03-16 | 600 psig | |
| | .30-75 | 500 psig | |
| • UL File Number: | SA 3124 | | |
| • CSA File Number: | LR100624 | | |
| | LR32462 | | |

NOMENCLATURE

Example: ADK 08 3 S

ADK	08	3	S
Series	Unit Size (in cu. in.)	Connection Size (in 1/8")	S = ODF Connections (omit for SAE)

ORDERING INFORMATION FOR ADK

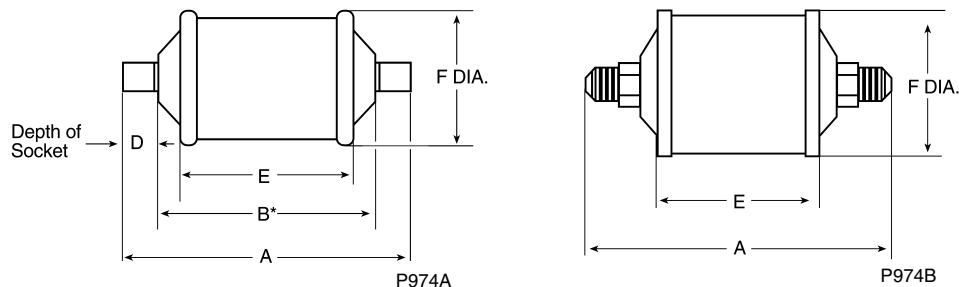
PCN*	PART NUMBER	CONNECTION SIZE	DIMENSIONS					SHIP WT (lb)
			A	B	D	E	F†	
059874	ADK-032	1/4 SAE	4-3/8	—	—	2-9/16	1-5/8	1/2
052451	ADK-032S	1/4 ODF	3-7/8	3-1/8	3/8			
063909	ADK-032SVCAP	1/4 ODF - CAP OUT	—	—	—			
023157	ADK-033	3/8 SAE	4-11/16	—	—	3	2-5/8	3/4
053172	ADK-033S	3/8 ODF	4-1/16	3-3/16	7/16			
060125	ADK-052	1/4 SAE	4-13/16	—	—			
060126	ADK-052S	1/4 ODF	4-7/16	3-11/16	3/8			
060127	ADK-053	3/8 SAE	5-1/8	—	—	3-13/16	2-5/8	1-1/4
060128	ADK-053S	3/8 ODF	4-1/2	3-5/8	7/16			
060129	ADK-082	1/4 SAE	5-5/8	—	—			
060130	ADK-082S	1/4 ODF	5-1/4	4-1/2	3/8			
060131	ADK-083	3/8 SAE	5-15/16	—	—			
060132	ADK-083S	3/8 ODF	5-5/16	4-7/16	7/16			
060133	ADK-084	1/2 SAE	6-3/16	—	—			
060134	ADK-084S	1/2 ODF	5-3/8	4-3/8	1/2			
059838	ADK-16 2 S	1/4 ODF	6-7/16	5-1/4	7/16	4-5/8	2-5/8	2
059820	ADK-162	1/4 SAE	6-7/16	—	—			
059839	ADK-163	3/8 SAE	6-3/4	—	—			
060795	ADK-163S	3/8 ODF	6-1/8	5-1/4	7/16			
059840	ADK-164	1/2 SAE	6-15/16	—	—			
059841	ADK-164S	1/2 ODF	6-3/16	5-3/16	1/2			
059842	ADK-165	5/8 SAE	7-7/16	—	—			
059843	ADK-165S	5/8 ODF	6-3/8	5-1/8	5/8			
062855	ADK-16 4 FD	1/2	6-3/16	5-3/16	1/2	7-1/2	3-1/16	3-3/4
060172	ADK-303	3/8 SAE	9-5/8	—	—			
058507	ADK-303S	5/8 ODF	9	8-1/8	7/16			
060173	ADK-304	1/2 SAE	9-7/8	—	—			
060176	ADK-304S	1/2 ODF	9-1/8	8-1/8	1/2			
060174	ADK-305	5/8 SAE	10-5/16	—	—			
060177	ADK-305S	5/8 ODF	9-5/16	8-1/16	5/8			
060178	ADK-307S	7/8 ODF	9-7/8	8-3/8	3/4			
060179	ADK-309S	1-1/8 ODF	10-3/16	8-3/8	1-5/16	7-5/8	3-11/16	4-3/4
060182	ADK-413	3/8 SAE	9-3/4	—	—			
060183	ADK-414	1/2 SAE	10	—	—			
060185	ADK-414S	1/2 ODF	9-1/4	8-1/4	1/2			
060184	ADK-415	5/8 SAE	10-7/16	—	—			
060186	ADK-415S	5/8 ODF	9-7/16	8-3/16	5/8			
060187	ADK-417S	7/8 ODF	10	8-1/2	3/4			
060188	ADK-419S	1-1/8 ODF	10-5/16	8-1/2	1-5/16	13-1/16	3-11/16	7-1/2
060190	ADK-757S	7/8 ODF	15-7/16	13-15/16	3/4			
060191	ADK-759S	1-1/8 ODF	15-3/4	13-7/8	1-5/16			

†Does not include weld bead.

FILTER DRIERS

ALCO ADK BLOCK STYLE LIQUID LINE FILTER DRIERS (cont)

DIMENSIONAL DATA



CAPACITY TABLE

PART NO.	CONNECTIONS	FLOW CAPACITY TONS @ 1 psi ΔP (For kW, multiply tons by 3.5)* ††							WATER CAPACITY† DROPS OF WATER**													
									R-12		R-134a		R-22		R-407C		R-410A		R-404A/507		R-502	
		R-12	R-134a	R-22	R-410A	R-407C	R-404A/507	R-502	75° F	125° F	75° F	125° F	75° F	125° F	75° F	125° F	75° F	125° F	75° F	125° F		
ADK 03 2	1/4 SAE	1.6	1.9	2.1	2.1	2.0	1.4	1.3	64	46	44	37	34	31	31	21	27	17	47	37	43	34
ADK 03 2 S	1/4 ODF	1.9	2.3	2.5	2.5	2.4	1.7	1.6														
ADK 03 3	3/8 SAE	2.2	2.7	2.9	2.9	2.9	2.0	1.9														
ADK 03 3 S	3/8 ODF	2.5	3.0	3.3	3.3	3.2	2.2	2.1	130	81	68	50	58	38	47	26	44	23	73	48	73	49
ADK 05 2	1/4 SAE	1.6	2.0	2.2	2.2	2.1	1.4	1.4														
ADK 05 2 S	1/4 ODF	2.4	2.9	3.1	3.1	3.1	2.1	2.0														
ADK 05 3	3/8 SAE	3.0	3.7	4.0	4.0	3.9	2.7	2.6	188	117	101	76	87	57	68	39	63	34	109	73	105	71
ADK 05 3 S	3/8 ODF	3.7	4.5	4.9	4.9	4.8	3.3	3.2														
ADK 08 2	1/4 SAE	1.6	2.0	2.2	2.2	2.1	1.4	1.4														
ADK 08 2 S	1/4 ODF	2.5	3.1	3.4	3.4	3.3	2.2	2.2	295	204	169	140	151	117	134	86	115	67	180	143	193	145
ADK 08 3	3/8 SAE	3.5	4.3	4.7	4.7	4.6	3.1	3.0														
ADK 08 3 S	3/8 ODF	3.4	4.2	4.6	4.6	4.5	3.0	3.0														
ADK 08 4	1/2 SAE	5.5	6.7	7.3	7.3	7.1	4.9	4.7	615	444	359	278	314	218	309	212	—	—	385	272	427	335
ADK 08 4 S	1/2 ODF	5.7	7.0	7.6	7.6	7.4	5.1	4.9														
ADK 16 2	1/4 SAE	1.6	2.0	2.2	2.2	2.1	1.4	1.4														
ADK 16 3	1/4 SAE	3.6	4.4	4.8	4.8	4.7	3.2	3.1	728	480	502	391	440	309	302	186	—	—	537	387	445	322
ADK 16 3 S	1/4 ODF	4.0	4.9	5.3	5.3	5.2	3.6	3.5														
ADK 16 4	1/2 SAE	6.8	8.3	9.0	9.0	8.8	6.0	5.8														
ADK 16 4 S	1/2 ODF	7.1	8.6	9.3	9.3	9.1	6.2	6.1	1369	899	940	730	823	576	562	343	—	—	1008	719	833	600
ADK 16 5	5/8 SAE	9.7	11.8	12.8	12.8	12.5	8.6	8.3														
ADK 16 5 S	5/8 ODF	10.7	13.1	14.2	14.2	13.9	9.5	9.2														
ADK 16 7 S	7/8 ODF	13.1	16.0	17.3	17.3	17.0	11.6	11.3	728	480	502	391	440	309	302	186	—	—	537	387	445	322
ADK 30 3	3/8 SAE	3.9	4.7	5.1	—	5.0	3.4	3.3														
ADK 30 4	1/2 SAE	7.1	8.6	9.3	—	9.1	6.2	6.1														
ADK 30 4 S	1/2 ODF	7.2	8.8	9.5	—	9.4	6.4	6.2	615	444	359	278	314	218	309	212	—	—	385	272	427	335
ADK 30 5	5/8 SAE	11.3	13.8	15.0	—	14.7	10.0	9.7														
ADK 30 5 S	5/8 ODF	11.9	14.5	15.7	—	15.4	10.5	10.2														
ADK 30 6 S	3/4 ODF	13.0	15.8	17.1	—	16.8	11.5	11.1	728	480	502	391	440	309	302	186	—	—	537	387	445	322
ADK 30 7 S	7/8 ODF	14.3	17.4	18.9	—	18.5	12.6	12.3														
ADK 30 9 S	1-1/8 ODF	20.4	24.9	27.0	—	26.5	18.0	17.5														
ADK 41 3	3/8 SAE	3.9	4.7	5.1	—	5.0	3.4	3.3	728	480	502	391	440	309	302	186	—	—	537	387	445	322
ADK 41 4	1/2 SAE	8.0	9.8	10.6	—	10.4	7.1	6.9														
ADK 41 4 S	1/2 ODF	8.8	10.7	11.6	—	11.4	7.8	7.5														
ADK 41 5	5/8 SAE	12.8	15.6	16.9	—	16.6	11.3	11.0	1369	899	940	730	823	576	562	343	—	—	1008	719	833	600
ADK 41 5 S	5/8 ODF	13.5	16.5	17.9	—	17.5	12.0	11.6														
ADK 41 7 S	7/8 ODF	16.6	20.3	22.0	—	21.6	14.7	14.3														
ADK 41 9 S	1-1/8 ODF	20.7	25.2	27.3	—	26.8	18.3	17.7	1369	899	940	730	823	576	562	343	—	—	1008	719	833	600
ADK 75 7 S	7/8 ODF	28.0	34.2	37.1	—	36.3	24.8	24.1														
ADK 75 9 S	1-1/8 ODF	30.6	37.3	40.4	—	39.6	27.0	26.3														

*All ratings in accordance with ARI Standard 710-86. 86° F liquid refrigerant temperature

5° F saturated vapor temperature

3.1 lbs./min./ton for R-134a

2.9 lbs./min./ton for R-22 and R-407C

4.0 lbs./min./ton for R-404A/507 and R-12

4.4 lbs./min./ton for R-502

2.7 lbs./min./ton for R-410A

†Water Capacities are based on: Equilibrium Point Dryness (EPD) of:

50 parts per million for R-134a, R404-A/507, R-410A and R-407C

60 parts per million for R-22

15 parts per million for R-12

30 parts per million for R-502

**20 drops of water = 1 gram = 1 cc.

††For 2 PSI ΔP, Multiply values by 1.4.

FILTER DRIERS

ALCO ADK BLOCK STYLE LIQUID LINE FILTER DRIERS (cont)

LIQUID REFRIGERANT HOLDING CAPACITY — OUNCES

UNIT SIZE	R-12		R-134a		R-22		R-407C		R-410A		R-404A/507		R-502	
	75° F	125° F	75° F	125° F	75° F	125° F	75° F	125° F	75° F	125° F	75° F	125° F	75° F	125° F
03	2.4	2.2	2.2	2.0	2.2	2.0	2.1	1.9	2.0	1.7	1.9	1.7	2.2	2.0
05	5.9	6.0	5.5	5.5	5.4	5.4	5.2	5.0	4.8	4.5	4.7	4.5	5.5	5.4
08	8.0	7.4	7.4	6.7	7.3	6.6	7.0	6.2	6.5	5.5	6.4	5.5	7.5	6.6
16	14.5	12.5	13.4	11.4	13.2	11.2	12.6	10.4	11.7	9.4	11.6	9.3	13.5	11.2
30	21.8	19.9	20.1	18.1	19.8	17.8	18.9	16.6	17.4	14.9	17.4	14.7	20.2	17.7
41	29.3	26.8	26.9	24.4	26.6	23.9	25.4	22.3	23.7	20.0	23.3	19.7	27.2	23.8
75	52.8	48.3	48.6	43.9	48.0	43.1	45.8	40.2	42.8	36.0	42.1	35.6	49.1	43.0

NOTE: R-410A — Although Emerson recommends the EK drier for R-410A applications, the ADK filter-drier is UL listed for 680 psig maximum working pressure for all sizes.

FILTER DRIERS

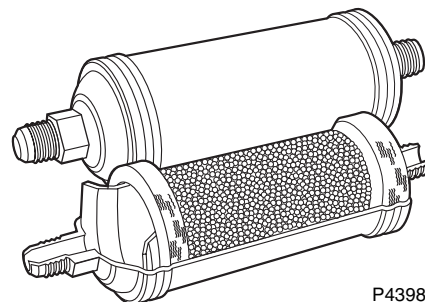
ALCO UDK ULTRA-DRY KLEANER LIQUID LINE FILTER DRIER

FEATURES

- Solid copper connections.
- Ultra high moisture capacity.
- Meets or exceeds all compressor manufacturer desiccant standards.
- Corrosion resistant epoxy powder paint finish.

SPECIFICATIONS

- Desiccant Blend: 75% molecular sieve and 25% activated alumina.
- Filtration 40 microns
- Maximum Working Pressure: Sizes: 03-16 600 psig
..... 30-75 500 psig
- UL File Number: SA 3124
- CSA File Number: LR100624
..... LR32462



P4398

NOMENCLATURE

UDK	08	3	S
Series	Unit Size (in cu. in.)	Connection Size (in 1/8")	S = ODF Connection (omit for SAE)

Above example: UDK 08 3 S

UDK CAPACITY TABLES

PART NO.	CONNECTIONS	FLOW CAPACITY TONS @ 1 psi ΔP (For kW, multiply tons by 3.5)							WATER CAPACITY DROPS OF WATER															
									R-12		R-134a		R-22		R-407C		R-410A		R-404A/507		R-502			
		R-12	R-134a	R-22	R-410A	R-407C	R-404A/507	R-502	75° F	125° F	75° F	125° F	75° F	125° F	75° F	125° F	75° F	125° F	75° F	125° F	75° F	125° F	75° F	125° F
UK 08 3	3/8 SAE	3.5	4.3	4.7	4.7	4.6	3.1	3.0	366	320	305	281	284	258	241	187	160	143	316	298	327	290		
UK 08 3 S	3/8 ODF	3.4	4.2	4.6	4.6	4.5	3.0	3.0																
UK 08 4 S	1/2 ODF	5.7	7.0	7.6	7.6	7.4	5.1	4.9																
UK 16 3 S	1/4 ODF	4.0	4.9	5.3	5.3	5.2	3.6	3.5	483	427	432	396	401	363	306	233	197	174	450	422	436	390		
UK 16 4	1/2 SAE	6.8	8.3	9.0	9.0	8.8	6.0	5.8																
UK 30 3	3/8 SAE	3.9	4.7	5.1	—	5.0	3.4	3.3																
UK 30 5 S	5/8 ODF	11.9	14.5	15.7	—	15.4	10.5	10.2	996	864	860	809	818	744	673	522	—	—	912	859	882	778		

NOTE: There are a limited number of the above filter driers available. Once they are gone, these parts will be unavailable.

FILTER DRIERS

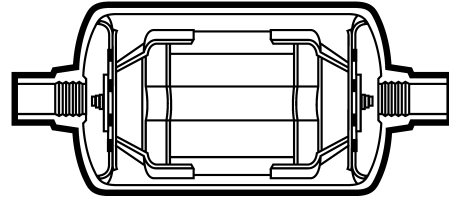
ALCO BFK LIQUID LINE BI-DIRECTIONAL HEAT PUMP FILTER DRIER

APPLICATION

- Bi-directional liquid line filter drier for heat pump applications.
- For use with CFC, HCFC, HFC refrigerants.

SPECIFICATIONS

- Desiccant blend — 75% molecular sieve and 25% activated alumina (Bead)
- Filtration 40 microns
- Maximum Working Pressure: Sizes: 05-16 600 psig
 30 500 psig
- UL File Number: SA 3124
- CSA File Number LR100624
 LR32462



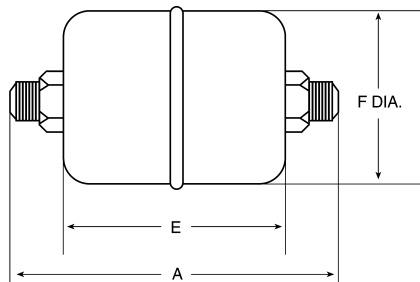
P988

NOMENCLATURE

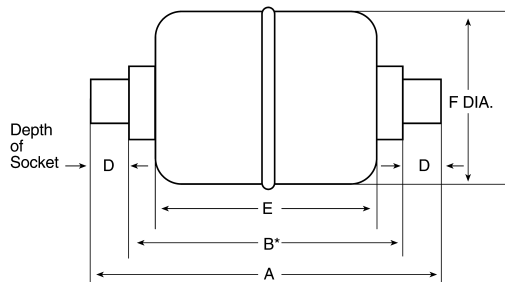
Example: BFK 16 5 S

BFK	16	5	S
Series	Unit Size (in cu. in.)	Connection Size (in 1/8")	S = ODF Connection (omit for SAE)

DIMENSIONAL DATA



P988A



P988B

ORDERING INFORMATION

PCN*	PART NO.	CONNECTION SIZE (in.) & STYLE	DIMENSIONS (in Inches)					SHIP WT. (lb)
			A	B	C	D	E	
062300	BFK-052	1/4 SAE	4.82	3.00		2.62		1
062425	BFK-052S	1/4 ODF	4.44		3.69		.38	
062254	BFK-053	3/8 SAE	5.13					
062255	BFK-053S	3/8 ODF	4.48		3.67		.40	
043321	BFK-083	3/8 SAE	5.94	3.82		2.62		1
043323	BFK-083S	3/8 ODF	5.29		4.48		.40	
043325	BFK-084	1/2 SAE	6.16					
043327	BFK-084S	1/2 ODF	5.38		4.38		.50	
043728	BFK-085	5/8 SAE	6.62					
043730	BFK-085S	5/8 ODF	5.60		4.35		.63	
043330	BFK-163	3/8 SAE	6.74	4.61		2-5/8		2
064411	EBF 163	3/8 SAE	6-3/4	4-5/8	—		—	
043333	BFK-163S	3/8 ODF	6.08	4.61	5.28		.40	
064412	EBF 163S	3/8 ODF	6-1/8	4-5/8	5-1/4		7/16	
043335	BFK-164	1/2 SAE	6.96	4.61				
064413	EBF 164	1/2 SAE	6-15/16	4-5/8	—	3.15	—	3.75
043337	BFK-164S	1/2 ODF	6.17	4.61	5.17		.50	
064414	EBF 164S	1/2 ODF	6-3/16	4-5/8	5-3/16		1/2	
043732	BFK-165	5/8 SAE	7.41	4.61				
043734	BFK-165S	5/8 ODF	6.39	4.61	5.14		.63	
064415	EBF 165S	5/8 ODF	6-3/8	4-5/8	5-1/8		5/8	
063076	BFK-303	3/8 SAE	9.63	7.50				
063077	BFK-303S	3/8 ODF	8.97		8.17		.40	
063078	BFK-304	1/2 SAE	9.84					
063079	BFK-304S	1/2 ODF	9.02		8.02		.50	
063080	BFK 305	5/8 SAE	10.31					
063081	BFK 305S	5/8 ODF	9.31		8.18		.63	
063083	BFK 306S	3/4 ODF	9.72		8.59		.63	
063084	BFK 307S	7/8 ODF	9.91		8.41		.75	
063451	BFK 309S	1-1/8 ODF	10.22		8.41		.91	

Standard Product Offering. *Product Code Number.

FILTER DRIERS

ALCO BFK LIQUID LINE BI-DIRECTIONAL HEAT PUMP FILTER DRIER (cont)

BFK CAPACITY TABLE

PART NO.	CONNECTIONS	FLOW CAPACITY TONS @ 1 psi $\Delta P^* \dagger\dagger$ (For kW, Multiply Tons By 3.5)			WATER CAPACITY DROPS OF WATER $\dagger$ **					
					R-22		R-407C		R-410A	
		R-22	R-410A	R-407C	75° F	125° F	75° F	125° F	75° F	125° F
BFK 05 2	1/4 SAE	1.6	1.6	1.6	73	66	58	42	39	35
BFK 05 2 S	1/4 ODF	2.2	2.2	2.2						
BFK 05 3	3/8 SAE	3.0	3.0	2.9						
BFK 05 3 S	3/8 ODF	4.0	4.0	3.9						
BFK 08 3	3/8 SAE	4.5	4.5	4.4	159	144	106	79	85	75
BFK 08 3 S	3/8 ODF	5.1	5.1	5.0						
BFK 08 4	1/2 SAE	6.4	6.4	6.3						
BFK 08 4 S	1/2 ODF	6.7	6.7	6.6						
BFK 08 5	5/8 SAE	7.8	7.8	7.7	323	294	237	179	178	160
BFK 08 5 S	5/8 ODF	8.1	8.1	7.9						
BFK 16 3	3/8 SAE	4.6	4.6	4.5						
BFK 16 3 S	3/8 ODF	5.2	5.2	5.1						
BFK 16 4	1/2 SAE	7.7	7.7	7.6	585	532	452	345	—	—
BFK 16 4 S	1/2 ODF	8.1	8.1	7.9						
BFK 16 5	5/8 SAE	8.3	8.3	8.1						
BFK 16 5 S	5/8 ODF	8.7	8.7	8.5						
BFK 30 3	3/8 SAE	4.6	—	4.5						
BFK 30 3 S	3/8 ODF	5.8	—	5.7						
BFK 30 4	1/2 SAE	7.6	—	7.5						
BFK 30 4 S	1/2 ODF	9.7	—	9.5						
BFK 30 5	5/8 SAE	10.3	—	10.1						
BFK 30 5 S	5/8 ODF	14.2	—	13.9						
BFK 30 6 S	3/4 ODF	16.0	—	15.7						
BFK 30 7 S	7/8 ODF	16.7	—	16.4						

* All ratings in accordance with ARI Standard 710-86. 86° F liquid refrigerant temperature

5° F saturated vapor temperature

3.1 lbs./min./ton for R-134a

2.9 lbs./min./ton for R-22 and R-407C

4.0 lbs./min./ton for R-404A/507 and R-12

4.4 lbs./min./ton for R-502

2.7 lbs./min./ton for R-410A

†Water Capacities are based on: Equilibrium Point Dryness (EPD) of:

50 parts per million for R-134a, R404-A/507, R-410A and R-407C

60 parts per million for R-22

15 parts per million for R-12

30 parts per million for R-502

**20 drops of water = 1 gram = 1 cc.

††For 2 PSI ΔP , Multiply values by 1.4.

LIQUID REFRIGERANT HOLDING CAPACITY (oz)

UNIT SIZE	R-22		R-407C		R-410A	
	75° F	125° F	75° F	125° F	75° F	125° F
05	4.6	4.2	4.4	3.9	4.1	3.5
08	7.7	6.9	7.3	6.4	6.9	5.8
16	14.2	12.7	13.5	11.8	12.6	10.6
30	21.0	18.7	20.0	17.4	—	—

NOTE: R-410A — The BFK filter-drier is UL listed for 680 psig maximum working pressure for all sizes.

FILTER DRIERS

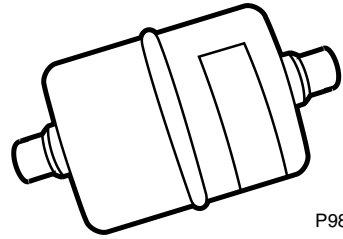
ALCO BOK-HH LIQUID LINE BURNOUT FILTER DRIERS

APPLICATION

- Alco's BOK-HH incorporates an HH blended solid core for the effective clean-up of systems following a severe burnout.
- Liquid line filter drier for burnout clean-up and wax removal.

SPECIFICATIONS

- Filtration 40 microns
- Maximum Working Pressure: Sizes: 08-16 600 psig
30-41 500 psig
- UL File Number: SA 3124
- CSA File Number: LR100624
LR32462



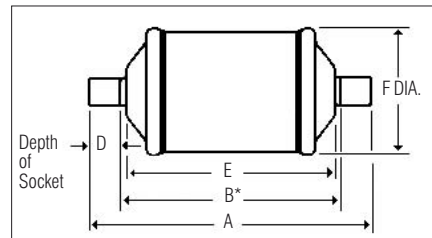
P981

NOMENCLATURE

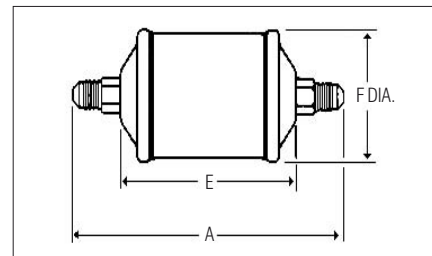
BOK	30	5	S	HH
Series	Unit Size (in cu. in.)	Connection Size (in 1/8")	S = ODF Connection (omit for SAE)	Charcoal Blend

Above example: BOK 30 5 S-HH

DIMENSIONAL DATA



* Indicates lay-in length



P981A.pdf

SELECTION AND ORERING INFORMATION FOR BOK

PCN*	PART NUMBER	CONNECTION SIZE	DIMENSIONS					SHIP WT. (LBS)
			A	B	D	E	F†	
060223	BOK-082-HH	1/4 SAE	5-5/8	—	—	3-15/16	2-15/16	1
060224	BOK-083-HH	3/8 SAE	5-15/16	—	—			
060240	BOK-162-HH	1/4 SAE	6-7/16	—	—			
060241	BOK-163-HH	3/8 SAE	6-3/4	—	—	4-5/8	2-7/8	2
060242	BOK-163S-HH	3/8 ODF	6-1/8	5-1/4	7/16			
060228	BOK-164-HH	1/2 SAE	6-15/16	—	—			
060229	BOK-164S-HH	1/2 ODF	6-3/16	5-3/16	1/2	7-1/2	3-1/16	3-3/4
060230	BOK-165-HH	5/8 SAE	7-7/16	—	—			
060231	BOK-165S-HH	5/8 ODF	6-3/8	5-1/8	5/8			
060232	BOK-303-HH	3/8 SAE	9-5/8	—	—	7-5/8	3-11/16	4-3/4
060233	BOK-304-HH	1/2 SAE	9-7/8	—	—			
060234	BOK-304S-HH	1/2 ODF	9-1/8	8-1/8	1/2			
060235	BOK-305-HH	5/8 SAE	10-5/16	—	—	7-5/8	3-11/16	4-3/4
060236	BOK-305S-HH	5/8 ODF	9-5/16	8-1/16	5/8			
060237	BOK-414-HH	1/2 SAE	10	—	—			
060238	BOK-415-HH	5/8 SAE	9-1/4	8-1/4	1/2	7-5/8	3-11/16	4-3/4
064593	BOK-415S-HH	5/8 ODF	9-1/4	8-1/4	1/2			
064239	BOK-417S-HH	7/8 ODF	10-7/16	—	—			

Standard Product Offering.

*Product Code Number.

†Does not include weld bead.

FILTER DRIERS

ALCO BOK-HH LIQUID LINE BURNOUT FILTER DRIERS (cont)

BOK-HH CAPACITY TABLES

PART NO.	CONNECTIONS	FLOW CAPACITY TONS @ 1 psi ΔP (For kW, multiply tons by 3.5)							WATER CAPACITY DROPS OF WATER													
									R-12		R-134a		R-22		R-407C		R-410A		R-404A/507		R-502	
		R-12	R-134a	R-22	R-410A	R-407C	R-404A/507	R-502	75° F	125° F	75° F	125° F	75° F	125° F	75° F	125° F	75° F	125° F	75° F	125° F		
BOK 08 2-HH	1/4 SAE	1.2	1.5	1.6	1.6	1.6	1.1	1.0	180	118	88	71	78	59	74	45	66	38	98	71	109	79
BOK 08 3-HH	3/8 SAE	3.2	3.9	4.2	4.2	4.1	2.8	2.7														
BOK 16 2-HH	1/4 SAE	1.2	1.5	1.6	1.6	1.6	1.1	1.0														
BOK 16 3-HH	3/8 SAE	3.6	4.3	4.7	4.7	4.6	3.1	3.1														
BOK 16 3 S-HH	3/8 ODF	4.8	5.8	6.3	6.3	6.2	4.2	4.1	209	143	171	141	153	117	91	56	77	41	182	141	135	100
BOK 16 4-HH	1/4 SAE	7.0	8.6	9.3	9.3	9.1	6.2	6.0														
BOK 16 4 S-HH	1/4 ODF	8.4	10.2	11.1	11.1	10.9	7.4	7.2														
BOK 16 5-HH	5/8 SAE	10.5	12.8	13.9	13.9	13.6	9.3	9.0														
BOK 16 5 S-HH	5/8 ODF	10.5	12.8	13.9	13.9	13.6	9.3	9.0	552	367	300	245	267	204	234	146	—	—	318	247	342	249
BOK 30 3-HH	3/8 SAE	3.6	4.3	4.7	—	4.6	3.1	3.1														
BOK 30 4-HH	1/2 SAE	8.1	9.9	10.7	—	10.5	7.2	7.0														
BOK 30 4 S-HH	1/2 ODF	8.9	10.8	11.7	—	11.5	7.8	7.6														
BOK 30 5-HH	5/8 SAE	11.1	13.5	14.6	—	14.3	9.8	9.5	623	410	427	344	379	282	256	155	—	—	454	342	380	274
BOK 30 5 S-HH	5/8 ODF	12.0	14.6	15.8	—	15.5	10.6	10.3														
BOK 41 4-HH	1/4 SAE	8.4	10.2	11.1	—	10.9	7.4	7.2														
BOK 41 5-HH	5/8 SAE	13.4	16.3	17.7	—	17.4	11.8	11.5														
BOK 41 7 S-HH	7/8 ODF	16.3	19.8	21.5	—	21.1	14.4	14.0														

*All ratings in accordance with ARI Standard 710-86. 86° F liquid refrigerant temperature

5° F saturated vapor temperature

3.1 lbs./min./ton for R-134a

2.9 lbs./min./ton for R-22 and R-407C

4.0 lbs./min./ton for R-404A/507 and R-12

4.4 lbs./min./ton for R-502

2.7 lbs./min./ton for R-410A

†Water Capacities are based on: Equilibrium Point Dryness (EPD) of:

50 parts per million for R-134a, R404-A/507, R-410A and R-407C

60 parts per million for R-22

15 parts per million for R-12

30 parts per million for R-502

**20 drops of water = 1 gram = 1 cc.

††For 2 PSI ΔP, Multiply values by 1.4.

LIQUID REFRIGERANT HOLDING CAPACITY (oz)

UNIT SIZE	R-12		R-134a		R-22		R-407C		R-410A		R-404A/507		R-502	
	75° F	125° F	75° F	125° F	75° F	125° F	75° F	125° F	75° F	125° F	75° F	125° F	75° F	125x°F
08	7.3	6.6	6.7	6.0	6.6	5.9	6.3	5.5	5.9	4.9	5.8	4.9	6.7	5.9
16	13.9	12.7	12.8	11.5	12.6	11.3	12.0	10.5	11.2	9.4	11.1	9.3	12.9	11.3
30	21.8	19.9	20.1	18.1	19.8	17.8	18.9	16.6	17.7	14.9	17.4	14.7	20.2	17.7
41	29.3	26.8	26.9	24.4	26.6	23.9	25.4	22.3	23.7	20.0	23.3	19.7	27.2	23.8

FILTER DRIERS

ALCO ALF LIQUID FILTER DRIER

APPLICATION

- Liquid line filter.
- Recovery, recycle and reclaim filter.

FEATURES

- Filtering media that maximizes removal of finer particles.
- Corrosion resistant epoxy powder paint finish.

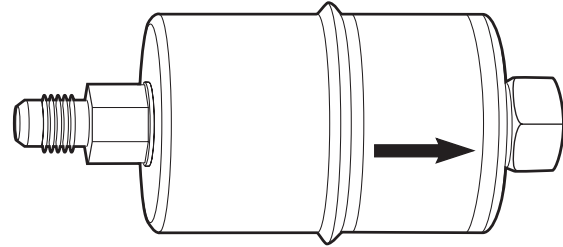
SPECIFICATIONS

- Filtration 40 microns
- Maximum Working Pressure: 500 psig
- UL File Number: SA 3124
- CSA File Number: LR100624
LR32462

NOMENCLATURE

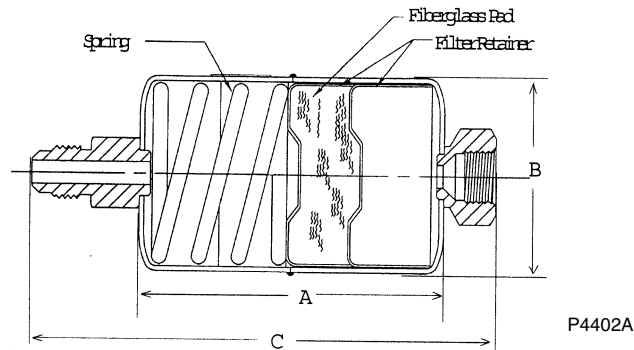
Example: ALF 03 3 S

ALF	03	3	S
Series	Unit Size	Connection Size Inlet: (in 1/8")	S = ODF Connection Style Omit for SAE (Male In-Male Out) MF = Male SAE In - Female SAE Out FM = Female SAE In - Male SAE Out



P4402

DIMENSIONAL DATA (ALF-032-MF Pictured)



P4402A

RECOVERY, RECYCLE AND RECLAIM REFRIGERANT FLOW CAPACITY (lb/min. liquid)

R-134a	R-22	R-404A/R-507
7.6	8.0	8.0

SELECTION AND ORDERING INFORMATION FOR ALF

PCN*	PART NO.	DIMENSIONS			
		Connection Size	A	B†	C
058500	ALF-032	1/4 SAE	2-9/16	1-5/8	4-3/8
056618	ALF-032S	1/4 ODF	2-9/16	1-5/8	3-7/8
057193	ALF-032MF	1/4 SAE Male In 1/4 SAE Female Out	2-9/16	1-5/8	4
057873	ALF-032FM	1/4 SAE Female In 1/4 SAE Male Out	2-9/16	1-5/8	4
057140	ALF-033S	3/8 ODF	2-9/16	1-5/8	4
056645	ALF-034S	1/2 ODF	2-9/16	1-5/8	4-1/8
064777	ALF-052	1/4 SAE	3	2-5/8	4-7/8
064778	ALF-052MF	1/4 SAE Male In 1/4 SAE Female Out	3	2-5/8	4-3/8

Standard Product Offering.

*Product Code Number.

†Does not include weld bead.

FILTER DRIERS

ALCO CU SPUN COPPER LIQUID LINE SERVICE DRIER

APPLICATION

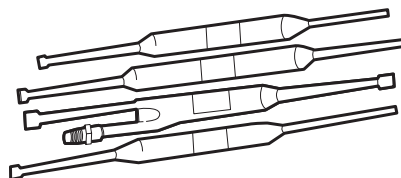
- Spun copper service drier for all refrigerants

FEATURES

- 100% XH-9 beaded molecular sieve for maximum water capacity in HFC refrigerants
- Recommended for use in original equipment or replacement residential, air-conditioning or refrigeration equipment
- 100 micron filtration
- Extended ends
- Available in individual and three packs

SPECIFICATIONS

- Maximum Working Pressure: 500 psig
- UL/CUL file number: SA 7175



P4654

PART NO.	PRODUCT DESCRIPTION	PARKER EQUIVALENT	CONNECTIONS		LENGTH IN INCHES	OUTER DIAMETER
			Inlet	Outlet		
CU-80	Standard Drier	MMS-80/100	1/4"	1/4"	7-3/8"	3/4"
CU-619	Access Valve	619	1/4"	Cap	8-7/8"	3/4"
CU-620	Access Valve	620	5/16"	Cap	9-1/2"	1"
CU-621	Double Inlet	621	5/16"	Cap	9"	1"
CU-200	Stepped Fittings	MMS-200	5/16", 3/8"	5/16", 3/8"	10-1/2"	1"
CU-319	Capillary Outlet	319	5/16"	Cap	9-3/4"	1-3/16"

SPUN COPPER FILTER-DRIER CAPACITY TABLES IN TONS AND ORDERING INFORMATION

PART NO.	PCN*	PART NO.	3-PACK PCN*	PRODUCT DESCRIPTION	WATER CAPACITY‡ DROPS OF WATER† **											
					R-12		R-134a		R-22		R-407C		R-404A/507		R-502	
					75°F	125°F	75°F	125°F	75°F	125°F	75°F	125°F	75°F	125°F	75°F	125°F
CU-80	064023	CU-80-3	064028	Standard Drier	25	23	23	21	23	20	19	14	23	21	24	21
CU-619	064026	CU-619-3	064031	Access Valve	25	3	23	21	23	20	19	14	23	21	24	21
CU-620	064027	CU-620-3	064032	Access Valve	51	46	46	42	46	40	37	29	46	42	47	42
CU-621	064119	CU-621-3	064120	Double Inlet	51	46	46	42	46	40	37	29	46	42	47	42
CU-200	064024	CU-200-3	064029	Stepped Fittings	51	46	46	42	46	40	37	29	46	42	47	42
CU-319	064025	CU-319-3	064030	Capillary Outlet	64	57	58	53	58	50	47	36	69	63	59	53

Standard Product Offering.

*Product Code Number

†All ratings in accordance with ARI Standard 710-86. 86°F liquid refrigerant temperature

5°F saturated vapor temperature

3.1 lbs./min./ton for R-134a

2.9 lbs./min./ton for R-22 and R-407C

4.0 lbs./min./ton for R-404A/507 and R-12

4.4 lbs./min./ton for R-502

2.7 lbs./min./ton for R-410A

‡For 2 PSI ΔP, Multiply values by 1.4

**20 drops of water = 1 gram = 1 cc

SPUN COPPER CAPACITIES @ 1 PSIG ΔP

DRIER DESCRIPTION	TONNAGE R-12/R-134a	TONNAGE R-22
CU-80	1/3	1/2
CU-619	1/3	1/2
CU-620	1	2
CU-621	1	2
CU-200	3/4	1
CU-319	1	2

FILTER DRIERS

ALCO CU SPUN COPPER LIQUID LINE FILTER DRIER

APPLICATION

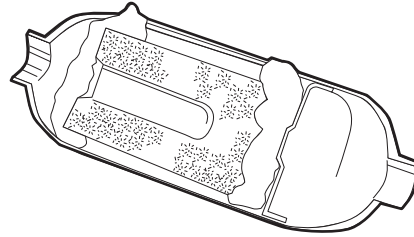
- Large capacity spun copper solid core driers for superior corrosion resistance in ocean going vessels and coastal applications

FEATURES

- All copper construction
- 100% molecular sieve solid core drier
- Corrosion resistant
- For use with CFC, HCFC and HFC refrigerants

NOMENCLATURE

CU	1 6	3	S
Series	Unit Size	Connection Size in 1/8"	ODF



P4655

SPECIFICATIONS

- Maximum Working Pressure: 500 psig
- Filtration: 40 microns
- UL/CUL file number: SA 7175

CU CAPACITY TABLES AND ORDERING INFORMATION

PCN*	PART NO.	CONNEC- TIONS	FLOW CAPACITY TONS @ 1 psi ΔP † ** (For kW, multiply tons by 3.5)							WATER CAPACITY‡ DROPS OF WATER††											
										R-12		R-134a		R-22		R-407C		R-404A/507		R-502	
			R-12	R-134a	R-22	R-407C	R-404A/ 507	R-502	75°F	125°F	75°F	125°F	75°F	125°F	75°F	125°F	75°F	125°F	75°F	125°F	
064388	CU 03 2 S	1/4 ODF	1.4	1.7	1.8	1.8	1.2	1.2	96	87	93	87	87	81	72	57	96	93	90	81	
064389	CU 03 3 S	3/8 ODF	2.1	2.6	2.8	2.7	1.9	1.8													
064390	CU 05 2 S	1/4 ODF	1.5	1.8	2.0	2.0	1.3	1.3	112	101	108	101	101	93	82	63	112	108	104	93	
064391	CU 05 3 S	3/8 ODF	2.1	2.6	2.8	2.7	1.9	1.8													
064392	CU 08 2 S	1/4 ODF	1.6	1.9	2.1	2.1	1.4	1.4	212	191	205	191	191	177	156	122	212	205	198	177	
064393	CU 08 3 S	3/8 ODF	2.9	3.5	3.8	3.7	2.5	2.5													
064394	CU 08 4 S	1/2 ODF	3.5	4.2	4.6	4.5	3.1	3.0	287	257	277	257	257	237	207	158	287	277	267	237	
064395	CU 16 3 S	3/8 ODF	3.3	4.0	4.3	4.2	2.9	2.8													
064396	CU 16 4 S	1/2 ODF	3.9	4.7	5.1	5.0	3.4	3.3													
064397	CU 16 5 S	5/8 ODF	4.4	5.4	5.8	5.7	3.9	3.8													

Standard Product Offering.

*Product Code Number

†All ratings in accordance with ARI Standard 710-86. 86°F liquid refrigerant temperature

5°F saturated vapor temperature

3.1 lbs./min./ton for R-134a

2.9 lbs./min./ton for R-22 and R-407C

4.0 lbs./min./ton for R-404A/507 and R-12

4.4 lbs./min./ton for R-502

‡Water Capacities are based on:

Equilibrium Point Dryness (EPD) of:

50 parts per million for R-134a, R404-A/507, R-410A and R-407C

60 parts per million for R-22

15 parts per million for R-12

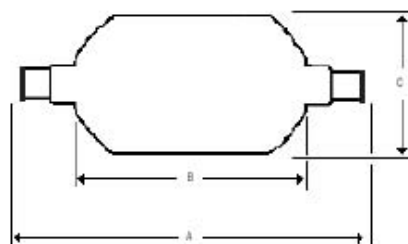
30 parts per million for R-502

**For 2 PSI ΔP, Multiply values by 1.4

††20 drops of water = 1 gram = 1 cc

DIMENSIONAL DATA

MODEL	OVERALL LENGTH A	LAY-IN DIMENSION B	DIAMETER C
CU 03	3-15/16"	3-1/4"	1-5/8"
CU 05	5-3/16"	4-1/2"	1-5/8"
CU 08	6-1/16"	5-3/8"	2-1/8"
CU 16	6-5/8"	6"	2-1/8"



P4655A

TAKE-APART SHELLS

ALCO STAS STEEL TAKE-APART FILTER DRIER

APPLICATION

- Replaceable core filter-drier for CFC, HCFC and HFC refrigerants for use in large commercial air conditioning and refrigeration systems.

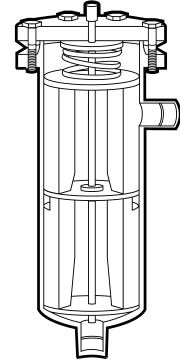
FEATURES

- Unique internal hardware for easy installation
- Full flow fittings for low pressure drop
- Corrosion resistant epoxy powder paint finish
- Sturdy steel shells for long life durability
- Solid copper fittings
- 100 mesh outlet screen

NOMENCLATURE/SELECTION

STAS	48	9	T
System	Unit Size	Connection Size	System Service
Protector Series	(in cu. in.)	(in 1/8")	T = Liquid Line Service SV = Suction Line Service

Above example: STAS 48 9 T



P982

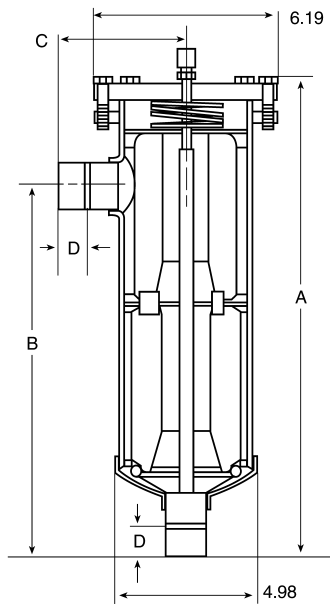
SPECIFICATIONS

- Filtration recommendation: 40 microns
- Maximum working pressure: 500 PSIG T
. 400 PSI SV
- UL File Number: SA 3124
- CSA File Number: LR100624
. LR32462
- Bolt torque: 25 ft-lbs

OPTIONS

- Order Blocks and Filters Separately. See Block and Filter Catalog Page for ordering information.

DIMENSIONAL DATA



P982A

STAS MODELS ARE SHIPPED WITHOUT FILTER CORES OR FILTER-DRIER BLOCKS

ORDERING INFORMATION FOR STAS

PCN	PART NO.	CONNECTION SIZE & TYPE	NUMBER OF BLOCKS	DESICCANT VOLUME (cu. in.)	DIMENSIONS			
					A	B	C	D
053001	STAS485T	5/8 ODF	1	4.8	9-15/32	6	3-25/32	5/8
053003	STAS487T	7/8 ODF			9-11/16	6-1/4	3-3/4	25/32
053005	STAS489T	1-1/8 ODF			9-3/4	6-5/16	3-27/32	15/16
053007	STAS4811T	1-3/8 ODF			9-27/32	6-7/16	3-31/32	15/16
053043	STAS4813S-V†	1-5/8 ODF			9-7/8	6-1/2	4-1/32	1-1/8
053044	STAS4817S-V†	2-1/8 ODF			10-1/16	6-9/16	4-9/16	1-11/32
053045	STAS4821S-V†	2-5/8 ODF	2	9.6	10-7/16	7-1/32	4-3/4	1-1/2
053010	STAS967T	7/8 ODF			15-3/16	11-23/32	3-3/4	25/32
053012	STAS969T	1-1/8 ODF			15-7/32	11-25/32	3-27/32	15/16
053014	STAS9611T	1-3/8 ODF			15-5/16	11-29/32	3-31/32	1-1/32
053017	STAS9613T	1-5/8 ODF			15-3/8	11-31/32	4-1/32	1-1/18
053047	STAS9617S-V†	2-1/8 ODF			15-9/16	12-1/32	4-9/16	1-11/32
053048	STAS9621S-V†	2-5/8 ODF	3	14.4	15-15/16	12-1/2	4-3/4	1-1/2
059739	STAS9625S-V†	3-1/8 ODF			15-11/16	10-5/16	4-5/8	1-3/4
053020	STAS1449T	1-1/8 ODF			21-1/4	17-3/8	3-27/32	15/16
053022	STAS14411T	1-3/8 ODF			21-11/32	17-17/32	3-31/32	1-1/32
053024	STAS14413T	1-5/8 ODF			21-3/8	17-19/32	4-1/32	1-1/8
053025	STAS14417T	2-1/8 ODF			21-9/16	17-5/8	4-9/16	1-11/32
053028	STAS19211T	1-3/8 ODF	4	19.2	26-29/32	23	3-31/32	1-1/32
053030	STAS19213T	1-5/8 ODF			26-15/16	23-1/6	4-1/32	1-1/8
053031	STAS19217T	2-1/8 ODF			27-1/8	23-1/8	4-9/16	1-11/32
056213	STAS-1927/5T	7/8 x 5/8	4	192	26-1/2	6	3-11/16	7/8 x 5/8
053938	STAS-4811SV	1-3/8 ODF	1	48	9-27/32	6-7/16	3-31/32	15/16
053375	STAS-4813T	1-5/8 ODF	1	48	9-7/8	6-1/2	4-1/32	1-1/8
053018	STAS-9617T	2-1/8 ODF	2	96	15-9/16	12-1/32	4-9/16	1-11/32
060159	STAS-9617S-V†	2-1/8 ODF	2	96	15-9/16	12-1/32	4-9/16	1-11/32

Standard Product Offering.

*Product Code Number.

†“SV” style includes stainless steel bolts and access valve.

NOTE: “T” style can be used for suction by removing pipe plug and installing X-11562-2.

TAKE-APART SHELLS

ALCO STAS STEEL TAKE-APART FILTER DRIER (cont)

LIQUID LINE FILTER DRIER RATINGS

PART NO.	CONNECTIONS	LIQUID FLOW CAPACITY TONS @ 1 psi ΔP* † ‡					
		R-12	R-134a	R-22	R-407C	R-404A/507	R-502
STAS 485T	5/8 ODF	15	19	21	20	14	13
STAS 487T	7/8 ODF	28	35	38	37	25	24
STAS 489T	1-1/8 ODF	40	48	53	51	35	34
STAS 4811T	1-3/8 ODF	46	56	61	59	40	39
STAS 967T	7/8 ODF	31	37	41	40	27	26
STAS 969T	1-1/8 ODF	47	58	63	61	42	40
STAS 9611T	1-3/8 ODF	59	72	79	77	52	51
STAS 9613T	1-5/8 ODF	64	78	85	83	56	55
STAS 1449T	1-1/8 ODF	46	56	61	59	40	39
STAS 14411T	1-3/8 ODF	66	81	88	86	58	57
STAS 14413T	1-5/8 ODF	73	89	97	95	64	63
STAS 14417T	2-1/8 ODF	84	103	112	109	74	72
STAS 19211T	1-3/8 ODF	71	86	94	92	62	61
STAS 19213T	1-5/8 ODF	77	95	103	101	68	66
STAS 19217T	2-1/8 ODF	87	106	115	112	76	74
STAS4813T	1-5/8 ODF	64	78	85	83	56	55

*All ratings in accordance with ARI Standard 710-86. 86°F liquid refrigerant temperature
 5° F saturated vapor temperature
 3.1 lbs./min./ton for R-134a
 2.9 lbs./min./ton for R-22 and R-407C
 4.0 lbs./min./ton for R-404A/507 and R-12
 4.4 lbs./min./ton for R-502

†For 2 PSI ΔP, Multiply values by 1.4.

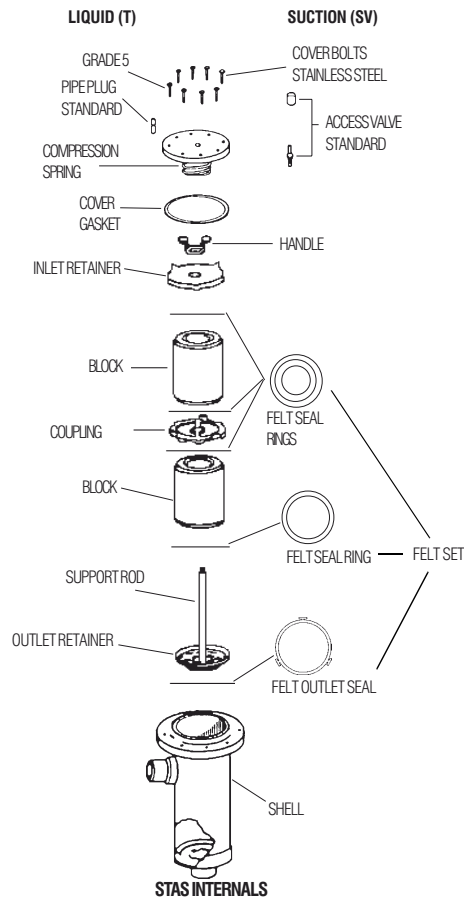
‡For kW, multiply by 3.5.

REPLACEMENT PARTS FOR STAS

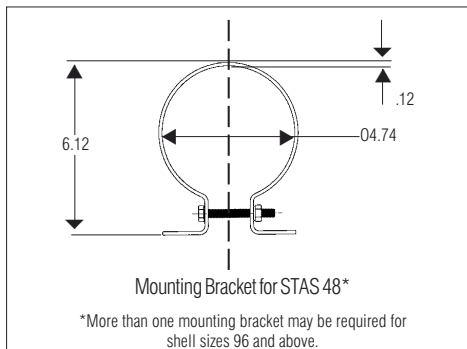
FLANGE COVER ASSEMBLY	PART NUMBER	PCN*
ALL STAS DRIERS - INCLUDE FLANGE COVER, COMPRESSION SPRING AND PIPE PLUG	X12176-3	054046
SHELL STRAINER ASSEMBLY		
STAS-48	X27458-1	060274
STAS-96	X27458-2	060275
STAS-144	X27458-3	060276
STAS-192	X 27458-4	060277
MISCELLANEOUS PARTS		
COVER BOLTS (Stainless Steel-suction Line Service)	X25787-7	053121
ACCESS VALVE (V Option)	X11562-2	037409
COVER GASKET (INCLUDES FELT SET)	X11983-1	027453
HANDLE	26446-1	053812
INLET RETAINER	26447-1	053813
SPRING	26439-1	060258
FELT SET (3 block set)	27394-1	060278
GASKET SET	X11983-2	027454
MOUNTING BRACKET	X28747-1	061715

Standard Product Offering.

*Product Code Number.



P982B.pdf



P982C.pdf

TAKE-APART SHELLS

ALCO ADKS LIQUID AND SUCTION LINE FILTER DRIER

APPLICATION

- Replaceable core filter-drier for CFC, HCFC and HFC refrigerants for very large commercial air conditioning and refrigeration systems

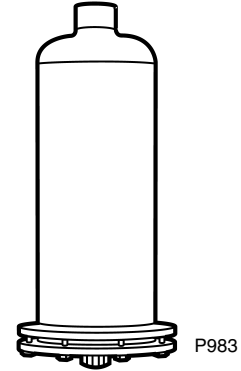
FEATURES

- Full flow fittings for low pressure drop
- Corrosion resistant epoxy powder paint finish
- Sturdy steel shells for long life durability

NOMENCLATURE/SELECTION

ADKS	300	13	T
System Protector Series	Unit Size (in cu. in.)	Connection Size (in 1/8")	System Service T = Liquid Line SV = Suction Line

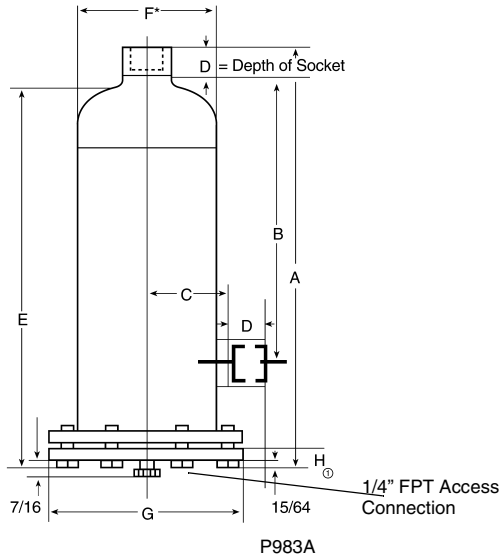
Above example: ADKS 300 13 T



SPECIFICATIONS

- Maximum working pressure: 500 PSIG
- UL File Number: SA 3124
- CSA File Number: LR100624
- Filtration (with block): 40 micron
- Bolt torque: 25 ft-lbs

DIMENSIONAL DATA



ADKS CAPACITY TABLES (IN TONS)

PCN*	PART NO.	UNIT SIZE	CONNECTION SIZE & TYPE	FLOW CAPACITY† TONS @ 1 PSI Δ P		
				R-134a	R-22	R-404A/R-507
026570	ADKS30013T	300	1-5/8 ODF	49.1	75.5	49.1
037978	ADKS30017T		2-1/8 ODF	95.4	91.5	59.5
032105	ADKS40017T	400	2-1/8 ODF	101.7	97.5	63.4
037570	ADKS40021T		2-5/8 ODF	114.8	110.0	71.5

Standard Product Offering.

*Product Code Number.

†All ratings in accordance with ARI standard 710-86

86° F Liquid Refrigerant Temperature

5° F saturated temperature

4.0 lbs./min./ton for R-134a

2.9 lbs./min./ton for R-22

4.4 lbs./min./ton for R-404A/R-507

PART NO.	CONNECTION SIZE & TYPE	DIMENSIONS								SHIP WEIGHT (lbs)
		A	B	C	D	E	F ¹	G	H ²	
ADKS30013T	1-5/8 ODF	25-1/2	19-15/32	4-3/16	1-1/8	23-3/16	6	7-9/16	22-1/4	39
ADKS30017T	2-1/8 ODF	25-19/32	19	3-25/32	1-22/32					
ADKS40017T	2-1/8 ODF	32-3/32	25-1/2	3-25/32	1-21/32	29-31/32			28-7/8	46
ADKS40021T	2-5/8 ODF	33-1/8	26-23/32	4-13/16	1-15/32					

¹Does not include weld bead.

²"H" Dimension is the clearance required to change the internal hardware assembly.

T = 1/4 in. FPT access connection.

TAKE-APART SHELLS

ALCO ADKS LIQUID AND SUCTION LINE FILTER DRIER (cont)

ADKS CAPACITY TABLES (in tons)

Liquid Line for Replaceable Block Type ADKS Filter Driers

PART NO.	CONNECTIONS	FLOW CAPACITY IN TONS @ 1 psi ΔP ^{1 2}					
		R-12	R-134a	R-22	R-407C	R-404A/507	R-502
ADKS 30013T	1-5/8 ODF	57	70	76	74	50	49
ADKS 30017T	2-1/8 ODF	69	84	92	90	61	59
ADKS 40017T	2-1/8 ODF	73	89	97	95	64	63
ADKS 40021T	2-5/8 ODF	83	101	110	107	73	71

¹All ratings in accordance with ARI Standard 710-86. 86° F liquid refrigerant temperature

5° F saturated vapor temperature

3.1 lbs./min./ton for R-134a

2.9 lbs./min./ton for R-22 and R-407C

4.0 lbs./min./ton for R-404A/507 and R-12

4.4 lbs./min./ton for R-502

²For 2 PSI ΔP , Multiply values by 1.4.

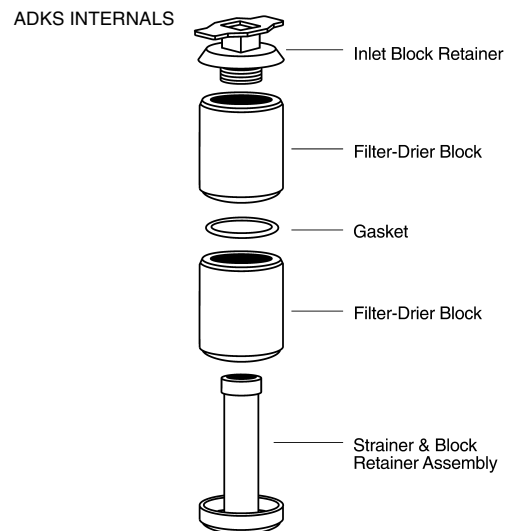
REPLACEMENT PARTS FOR ADKS

FLANGE COVER	PART NO.	PCN*
ADKS-300,ADKS-400	X12176-2	027467
SHELL STRAINER ASSEMBLY	PART NO.	PCN*
ADKS-300	X10574-5	039967
ADKS-400	X10574-6	038315

Standard Product Offering.

*Product Code Number.

NOTE: ADKS models are shipped without filter cores or filter-drier blocks.



P984

TAKE-APART SHELLS

ALCO BLOCKS AND CORES

APPLICATION

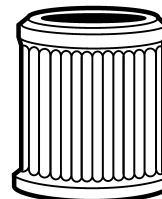
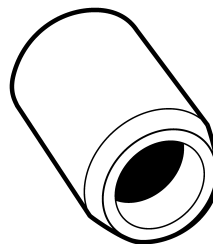
- Universal replacement cores for use in our shells and all other take-apart type filter-drier shells.

FEATURES

- Water capacities to suit specific system conditions
- Exceptional acid capacities for normal system protection, or to effectively clean-up following a compressor burnout
- Wax removal capabilities, if desired, for R-22 or R-502 low temperature applications, or for complete clean-up following a compressor burnout (W Series)
- Physical dimensions and gasket sets that permit interchangeability with competitive products

NOMENCLATURE/SELECTION

H	48	100	42
Series	Cubic Inch	Cubic Inch	Cubic Inch



P985

SPECIFICATIONS

- Interchangeable with competitive products.

NOTE: Blocks are suitable for use with R-11 but filters are not suitable.

ORDERING INFORMATION AND CAPACITY TABLES

PCN*	PART NO.††	RECOMMENDED REFRIGERANT TYPE	FUNCTION	WATER CAPACITY† DROPS OF WATER**											
				R-12		R-134a		R-22		R-407C		R-404A/507		R-502	
				75 F	125 F	75 F	125 F	75 F	125 F	75 F	125 F	75 F	125 F	75 F	125 F
056662	D-42	CFC, HCFC	HIGH ACID REMOVAL	782	515	493	384	432	303	320	196	528	378	473	339
056661	H-42	CFC, HCFC	HIGH ACID AND WATER REMOVAL	933	681	686	576	617	491	478	333	724	587	656	519
056835	W-42-HH	ALL	BURNOUT CLEANUP	612	388	333	253	288	195	231	132	359	248	354	245
059541	D-48	CFC, HCFC	HIGH ACID REMOVAL	810	453	415	340	363	254	225	95	457	343	388	225
059542	H-48	CFC, HCFC	HIGH ACID AND WATER REMOVAL	1020	688	676	538	597	436	445	285	721	535	643	475
061235	W-48-HH	CFC, HCFC, HFC	BURNOUT CLEANUP	772	488	387	294	335	226	290	165	417	289	444	306
061617	UK-48	CFC, HCFC, HFC	UNIVERSAL REPLACEMENT	1579	1319	1272	1168	1181	1072	1033	786	1319	1241	1332	1150
062549	HX-48	CFC, HCFC, HFC	ULTRA HIGH WATER CAPACITY	1936	1757	1710	1600	1600	1491	1459	1161	1765	1710	1817	1638
089338	H-100	CFC, HCFC	HIGH ACID AND WATER REMOVAL	1958	1225	1112	834	962	673	726	418	1199	839	1109	758
062424	UK-100	CFC, HCFC, HFC	UNIVERSAL REPLACEMENT	3204	2740	2769	2550	2574	2345	2182	1682	2868	2710	2787	2437
043582	W-100-HH	CFC, HCFC, HFC	BURNOUT CLEANUP	1668	1054	1077	812	938	621	629	363	1162	792	960	663
089559	F-48	CFC, HCFC, HFC	FILTER (SUCTION ONLY)	—	—	—	—	—	—	—	—	—	—	—	—
047664	F-48R	CFC, HCFC, HFC	FILTER (SUCTION ONLY) REVERSE FLOW	—	—	—	—	—	—	—	—	—	—	—	—
095762	F-100	CFC, HCFC, HFC	FILTER (SUCTION ONLY)	—	—	—	—	—	—	—	—	—	—	—	—
061237	RH-48	CFC, HCFC	HIGH WATER	1020	688	676	538	597	436	445	285	721	535	643	475
061238	RW-48	CFC, HCFC	BURN OUT	772	488	387	294	335	226	290	165	417	289	444	306

Standard Product Offering.

*Product Code Number.

†Water Capacities are based on: Equilibrium Point Dryness (EPD) of:
50 parts per million for R-134a, R404-A/507, R-410A and R-407C
60 parts per million for R-22
15 parts per million for R-12
30 parts per million for R-502

**20 drops of water = 1 gram = 1 cc.

††D-42, H-42 and R-42 include one neoprene composite lid gasket and one core gasket. All other cores include a universal neoprene composite gasket kit which includes 2 sizes of replacement lid gaskets, and gaskets for the top and bottom of the core or filter.

TAKE-APART SHELLS

ALCO BTAS BRASS TAKE-A-PART SUCTION LINE FILTER DRIER

- Full flow fittings for low pressure drop
- Corrosion free brass body

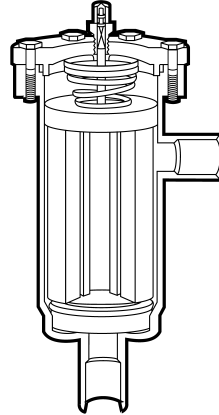
NOMENCLATURE/SELECTION

BTAS	3	11	SV
System	Unit Size	Connection Size	Suction Line
Protector Series		(in 1/8")	Service

Above example: BTAS 3 11 SV

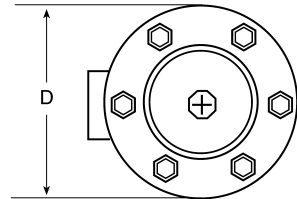
Filtration recommendation: 40 microns

Maximum working pressure: 400 PSIG

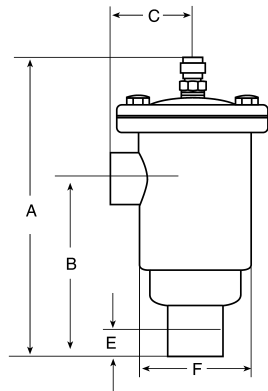


P987

DIMENSIONAL DATA



P987A



P987B

PCN*	PART NO.	CONNECTION SIZE	NOMINAL SHELL SIZE (in.)	DIMENSIONS						SHIP WT (lbs)
				A	B	C	D	E	F	
049462	BTAS 27SV	7/8 ODF	2	9-3/4	6-21/32	2-3/16	3-3/4	.750	2-23/32	6-1/2
049465	BTAS 39SV	1-1/8 ODF	3	10-5/16	6-13/16	3-5/16	4-5/8	.910	3-15/32	10-1/4
049466	BTAS 311SV	1-3/8 ODF		11-1/16	6-15/16	3-7/16		.970		10-1/2
049467	BTAS 313SV	1-5/8 ODF		11-1/4	7-1/8	3-5/8		1.090		11
049468	BTAS 317SV	2-1/8 ODF		11-1/2	7-3/8	3-7/8		1.340		11-1/2
064169	BTAS 411SV	1-3/8 ODF	4	11-27/32	7-5/8	3-15/16	5-3/4	.970	4-15/32	16-1/4
049470	BTAS 413SV	1-5/8 ODF		12-1/32	7-13/16	4-1/8		1.090		16-3/4
049471	BTAS 417SV	2-1/8 ODF		12-9/32	8-1/16	4-3/8		1.340		17-1/2
049472	BTAS 421SV	2-5/8 ODF		12-13/32	8-3/16	4-15/16		1.470		18
049473	BTAS 517SV	2-1/8 ODF	5	13-7/16	8-13/32	4-3/16	7-3/32	1.340	5-9/16	28-3/4
049474	BTAS 521SV	2-5/8 ODF		13-9/16	8-15/32	4-15/16		1.470		29
049475	BTAS 525SV	3-1/8 ODF		13-1/4	8-5/32	4-5/8		1.660		29-1/4

Standard Product Offering.

*Product Code Number.

TYPE A-F REPLACEABLE FILTER CORES

PCN*	FILTER CORE	FOR SHELL NO.	CORE O.D. (in.)	CORE LENGTH (in.)	FILTER AREA (sq. in.)	WEIGHT (lbs)
049479	A2F	BTAS - 2	1-29/32	6-3/8	66	1/3
049480	A3F	BTAS - 3	2-3/4	6-7/8	115	1/2
049481	A4F	BTAS - 4	3-3/4	7-1/2	189	7/8
049482	A5F	BTAS - 5	4-5/16	8-1/2	270	1

Standard Product Offering.

*Product Code Number.

TYPE A-F-D REPLACEABLE FILTER-DRIER CARTRIDGES

PCN*	FILTER-DRIER CARTRIDGE	FOR SHELL NO.	CARTRIDGE O.D. (in.)	CARTRIDGE LENGTH (in.)	DESICCANT VOLUME (cu. in.)	WEIGHT (lbs)
049483	A2FD	BTAS - 2	1-29/32	6-3/8	4.2	1/2
049484	A3FD	BTAS - 3	2-3/4	6-7/8	13.3	7/8
049485	A4FD	BTAS - 4	3-3/4	7-1/2	26.0	1-1/2
049486	A5FD	BTAS - 5	4-5/16	8-1/2	36.5	2

Filter-drier cartridge filter area is the same as the corresponding filter core model.

Standard Product Offering.

*Product Code Number.

TAKE-APART SHELLS

ALCO BTAS BRASS TAKE-A-PART SUCTION LINE FILTER DRIER (cont)

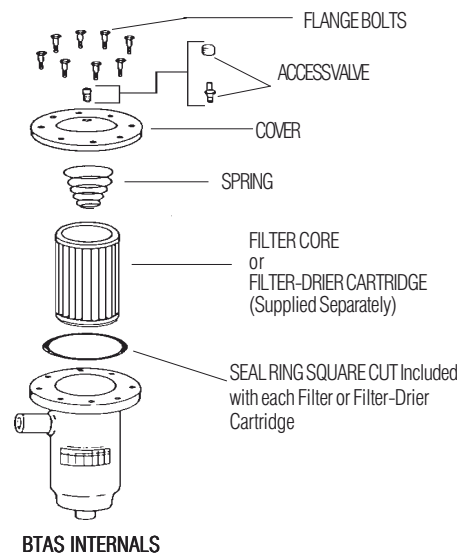
REPLACEMENT PARTS FOR BTAS

MISCELLANEOUS PARTS	PART NO.	PCN*
Flange Bolts BTAS-5	X25787-5	049744
Access Valve	X11562-2	037409
Seal Ring BTAS-2	PS23380-2	053580
Seal Ring BTAS-3	PS23380-3	053581
Seal Ring BTAS-4	PS23380-4	053582
Seal Ring BTAS-5	PS23380-5	053583

Standard Product Offering.

*Product Code Number.

NOTE: BTAS models are shipped without filter cartridge or filter-drier cartridge.



P987C.pdf

FILTER DRIERS

ALCO ASD PLUS SUCTION LINE FILTER DRIER

APPLICATION

- ASD is a premium suction line filter-drier that incorporates beaded desiccant plus a filter
- Premium suction line filter drier for moisture, acid and contaminant removal
- For use with CFC, HCFC and HFC refrigerants

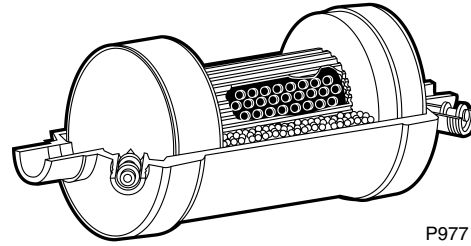
FEATURES

- Rugged steel shells for shock resistance
- Low pressure drop - full flow fittings
- Dual access valves
- Solid copper sweat connections
- Corrosion resistant epoxy powder paint finish

NOMENCLATURE/SELECTION

ASD	35	S	5	VV
Series	Unit Size (in cu. in.)	S = ODF Connections F = SAE	Connection Size (in 1/8")	Suction Line Service

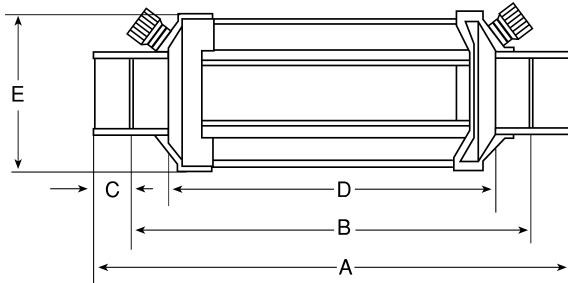
Above example: ASD 35 S 5 VV



SPECIFICATIONS

- Filtration: 40 microns
- Maximum working pressure: 500 PSIG
- UL File Number: SA 3124
- CSA File Number: LR100624
LR32462

DIMENSIONAL DATA



P977A

ORDERING INFORMATION FOR ASD

PCN*	PART NO.	CONNECTION SIZE	DIMENSIONS					SHIP WT. LBS
			A	B	C	D	E†	
056352	ASD 28F3	3/8 SAE	5-19/32	—	7/16	4-1/8	3-11/16	2
049168	ASD 28S3-VV	3/8 ODF	5-19/32	4-23/32	7/16	4 1/8		
049169	ASD 28S4-VV	1/2 ODF	5-11/16	4-11/16	1/2	4 3/4		2-1/2
049170	ASD 35F5-VV	5/8 SAE	7-9/16	—	—	4 3/4		
049171	ASD 35S5-VV	5/8 ODF	6-17/32	5-9/32	5/8	5 9/16		3
049172	ASD 45S6-VV	3/4 ODF	7-3/4	6-1/2	5/8	6 1/8		
049173	ASD 45S7-VV	7/8 ODF	7-15/16	6-7/16	3/4	8 1/4		3-1/2
049174	ASD 50S9-VV	1-1/8 ODF	8-27/32	7-1/32	29/32	8 1/4		
049175	ASD 75S11-VV	1-3/8 ODF	12-1/4	10-5/16	31/32			5
049176	ASD 75S13-VV	1-5/8 ODF	12-5/32	9-29/32	1-1/8			

Standard Product Offering.

*Product Code Number.

†Does not include weld bead.

FILTER DRIERS

ALCO SFD SUCTION LINE FILTER DRIER

APPLICATION

- The standard compacted bead suction filter-drier for use after a burnout or when major work has been performed.
- Suction line filter drier for moisture, acid and contaminant removal.
- For use with CFC, HCFC, and HFC refrigerants.

FEATURES

- Solid copper fittings
 - Dual access valves
 - Rugged steel shells for shock resistance
 - Corrosion resistant epoxy powder paint finish
 - Low pressure drop - full flow fittings
- Filtration recommendation: 40 microns
Maximum working pressure: 400 psig

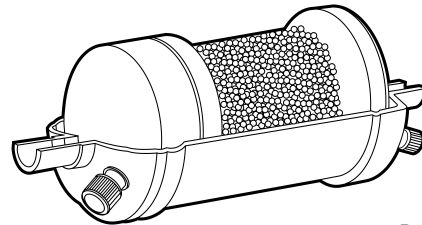
SPECIFICATIONS

- Filtration: 40 microns
- Maximum working pressure: 400 PSIG
- UL File Number: SA 3124
- CSA File Number: LR100624
LR32462

NOMENCLATURE/SELECTION

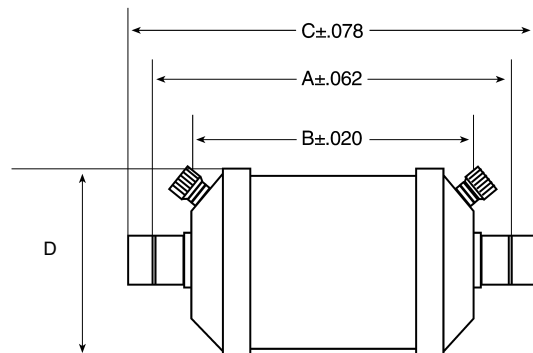
SFD	13	S	5	VV
Series	Unit Size (in cu. in.)	S = ODF Connections F = SAE	Connection Size (in 1/8")	Suction Line Service

Above example: SFD 13 S 5 -VV



P978

DIMENSIONAL DATA



P978A

ORDERING INFORMATION FOR SFD

PCN	PART NO.	CONNECTION SIZE	DIMENSIONS				SHIP WEIGHT (lbs)
			A	B	C	D	
064042	SFD 08FS-VV	3/8 SAE	N/A	3-3/8	5-1/2	3-1/8	2
064044	SFD 08S3-VV	3/8 ODF	5-5/16		6-3/16		
064043	SFD 08F4-VV	1/2 SAE	N/A		5-3/4		
064045	SFD 08S4-VV	1/2 ODF	3-15/16		5		
064046	SFD 08S5-VV	5/8 ODF	3-29/32		5-5/32		
064047	SFD 08S6-VV	3/4 ODF	4-5/16		5-9/16		
060244	SFD 13F3-VV	3/8 SAE	—	3-3/8	5-1/2	3-11/16	
060245	SFD 13S3-VV	3/8 ODF	3-31/32		4-27/32		
060246	SFD 13F4-VV	1/2 SAE	—		5-3/4		
060247	SFD 13S4-VV	1/2 ODF	3-15/16		4-15/16		
060248	SFD 13F5-VV	5/8 SAE	—		6-1/8		
060249	SFD 13S5-VV	5/8 ODF	3-29/32		5-5/32		
060250	SFD 13S6-VV	3/4 ODF	4	5-1/8	5-1/4	3	
060262	SFD 13S7-VV	7/8 ODF	4-1/4		5-3/4		
056505	SFD 27S6-VV	3/4 ODF	5-3/4		7		
060251	SFD 27S7-VV	7/8 ODF	6		7-1/2		
060252	SFD 27S9-VV	1-1/8 ODF	5-13/16		7-5/8		
060253	SFD 54S11-VV	1-3/8 ODF	10-5/16		12-1/4		4-1/2
056504	SFD 54S13-VV	1-5/8 ODF	9-29/32	12-5/32			

Standard Product Offering.

*Product Code Number.

FILTER DRIERS

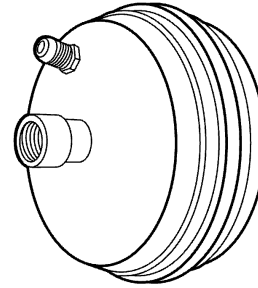
ALCO CSFD COMPACT SUCTION LINE FILTER DRIER

APPLICATION

- The CSFD has a compact 14 cubic inch, solid block desiccant core design that is perfect for short lay-ins.
- Compact suction line filter drier for moisture, acid and contaminant removal.
- For use with CFC, HCFC and HFC refrigerants.

FEATURES

- Dual access valves
- High acid removal
- Solid copper ODF fittings
- Corrosion resistant epoxy powder paint finish



P2019

SPECIFICATIONS

Maximum working pressure: 500 psig
 UL file number: SA 3124
 CSA file number: LR 100624
 Filtration: 40 micron

NOMENCLATURE

CSFD	14	S	4	VV
Series	Unit Size	S = ODF Connection	Connection Size (in 1/8")	Dual Access Valve

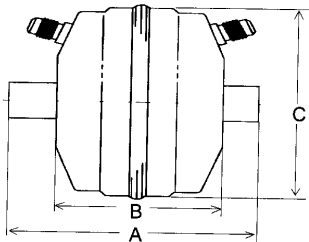
Above example: CSFD 14S4- VV

PCN	PART NO.	CONNECTION TYPE (in.)	DIMENSIONS (in.)		
			A	B	C
062231	CSFD-14S4-W	1/2 SOLDER	4-1/4	2-3/4	4-5/8
062232	CSFD-14S5-W	5/8 SOLDER	4-1/2		
062233	CSFD-14S6-W	3/4 SOLDER	4-3/8		
062234	CSFD-14S7-W	7/8 SOLDER	4-9/16		
062235	CSFD-14S4-W	1-1/8 SOLDER	4-7/8		

Standard Product Offering.

*Product Code Number.

DIMENSIONAL DATA



CSFD CAPACITY TABLES IN TONS

PART NO.	FLOW CAPACITY* IN TONS REFRIGERANT													
	R-134a				R-22					R-404A/R-507				
	EVAPORATOR TEMPERATURE °F													
	40	20	0	−20	40	20	0	−20	−40	40	20	0	−20	−40
	2	1.5	1	.05	3	2	1.5	1	0.5	3	2	1.5	1	0.5
CSFD14S4-VV	1.3	0.9	0.5	0.3	2.0	1.3	0.9	0.6	0.3	1.3	0.8	0.5	0.3	0.2
CSFD14S5-VV	2.3	1.5	0.9	0.5	3.6	2.4	1.6	1.0	0.5	2.6	1.7	1.1	0.7	0.3
CSFD14S6-VV	3.1	2.1	1.3	0.7	4.9	3.2	2.2	1.4	0.7	3.6	2.3	1.5	0.9	0.5
CSFD14S7-VV	3.3	2.0	1.4	0.7	5.2	3.4	2.3	1.5	0.8	3.6	2.3	1.5	0.9	0.5
CSFD14S9-VV†	4.5	3.0	1.8	1.0	7.0	4.6	3.1	2.0	1.0	4.9	3.1	2.0	1.3	0.7

*All ratings in accordance with ARI standard 730-86.

†400 Maximum Working Pressure.

FILTER DRIERS

ALCO ASK-HH SUCTION LINE FILTER DRIER

All Alco filter driers are specifically designed to protect the refrigerant system from liquid and solid contaminants. They incorporate a desiccant specially formulated and blended for maximum moisture, and include advanced materials to remove acid and contaminants.

APPLICATION

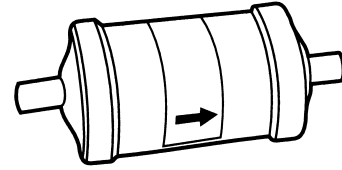
- ASK utilizes a solid core with an HH blend to maximize acid, moisture and wax removal
- Suction line filter drier for moisture, acid and contaminant removal
- For use with CFC, HCFC and HFC refrigerants

FEATURES

- Dual access valves
- Corrosion resistant epoxy powder paint finish
- Charcoal blend for soluble contaminant and wax removal
- Solid copper fittings

SPECIFICATIONS:

Maximum working pressure: 500 psi
 UL file number: SA 3124
 CSA file number: LR 100624
 LR 32462
 Filtration: 40 micron



P353

NOMENCLATURE

ASK	16	5	S	VV	HH
Series	Unit Size (in cu in.)	Connection Size (in 1/8")	S = ODF Connection	Dual Access Valves	Charcoal Blend

Above example: ASK 305S-V

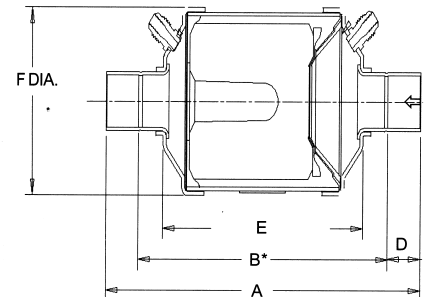
DIMENSIONAL DATA

PCN*	PART NO.	CONNECTION SIZE & STYLE	DIMENSIONS					SHIP WEIGHT (lbs)
			A	B	D	E	F†	
056508	ASK 165S-VV-HH	5/8 ODF	6-3/8	5-1/8	5/8	4-5/8	2-7/8	2
056509	ASK 166S-VV-HH	3/8 ODF	6-3/4	5-1/2	3/8			
056510	ASK 167S-VV-HH	7/8 ODF	6-15/16	5-7/16	3/4			
056511	ASK 306S-VV-HH	3/4 ODF	9-11/16	8-9/16	5/8	7-1/2	3-1/16	3-3/4
056512	ASK 307S-VV-HH	7/8 ODF	9-7/8	8-3/8	3/4			
056513	ASK 309S-VV-HH	1-1/8 ODF	10-3/16	8-3/8	15/16			

Standard Product Offering.

*Product Code Number

†Dimension does not include weld bead.



*B Indicates Laying Length.

FILTER DRIERS

ALCO ASF PLUS SUCTION LNE FILTER (FILTERS ONLY)

APPLICATION

- ASF suction line filters are specifically designed to protect the compressor from dirt and all solid contaminants
- Suction line filter for removing solid contaminants

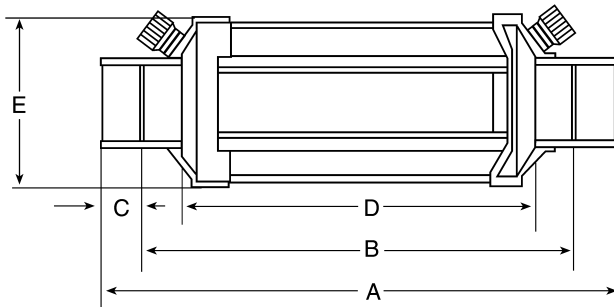
FEATURES

- Dual access valves
- Solid copper fittings - easy to sweat in
- Corrosion resistant epoxy powder paint finish

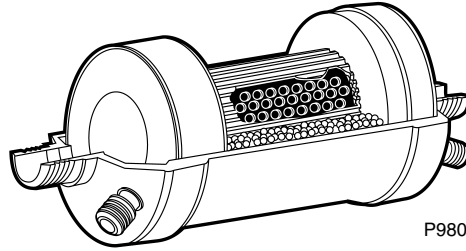
SPECIFICATIONS

Filtration recommendation: 40 microns
 Maximum working pressure: 500 psig
 UL file number: SA 3124
 CSA file number: LR 100624
 LR 32462

DIMENSIONAL DATA



P980



P980

NOMENCLATURE

ASF	35	S	5	VV
Series	Unit Size (in cu. in.)	S = ODF Connection F = SAE	Connection Size (in 1/8")	Suction Line Service

Above example: ASF 35 S 5 -VV

ORDERING INFORMATION FOR ASF

PCN*	PART NO.	CONNECTION SIZE	DIMENSIONS					SHIPPING WEIGHT (lbs.)
			A	B	C	D	E	
062961	ASF 11S4	1/2 ODF	4-3/8	3-3/8	1/2	2-7/8	2-5/8	1-1/2
062962	ASF 11S5	5/8 ODF	4-5/8	3-3/8	5/8	2-7/8	2-5/8	1-1/2
062963	ASF 28S7	7/8 ODF	6-1/2	5	3/4	4-1/8	2-5/8	2
062964	ASF 28S9	1-1/8 ODF	7-13/32	5-39/64	29/32	4-1/8	2-5/8	2
049177	ASF 28S3-VV	3/8 ODF	5-19/32	4-23/32	7/16	4-1/8	2-5/8	2
049178	ASF 28S4-VV	1/2 ODF	5-11/16	4-11/16	1/2	4-1/8	2-5/8	2
049179	ASF 35F5-VV	5/8 SAE	7-9/16	—	—	4-3/4	3-11/16	2-1/2
049180	ASF 35S5-VV	5/8 ODF	6-17/32	5-9/32	5/8	4-3/4	3-11/16	2-1/2
059999	ASF 45F3-VV	3/8 SAE	7-11/16	—	—	5-9/16	3-11/16	3
049181	ASF 45S6-VV	3/4 ODF	7-3/4	6-1/2	5/8	5-9/16	3-11/16	3
049182	ASF 45S7-VV	7/8 ODF	7-15/16	6-7/16	3/4	5-9/16	3-11/16	3
049183	ASF 50S9-VV	1-1/8 ODF	8-27/32	7-1/32	29/32	6-1/8	5	3-1/2
063113	ASF 64S17-V	2-1/8 ODF	11-3/4	9-1/16	1-5/16	7-5/8	5	3-1/2
063115	ASF 64S21-V	2-5/8 ODF	13	10	1-1/2	7-7/8	5	3-1/2
049184	ASF 75S11-VV	1-3/8 ODF	12-1/4	10-5/16	31/32	8-1/4	5	5
049185	ASF 75S13-VV	1-5/8 ODF	12-5/32	9-29/32	1-1/8	8-1/4	5	5

Standard Product Offering.

*Product Code Number

BLOCKS & FILTER CORES

ALCO UNIVERSAL CORE/FILTER CROSS REFERENCE

CUBIC INCH	APPLICATION	SPORLAN	PARKER	ALCO
42 Core	Standard	RC-4267		D42
	High Moisture			H42
	Burnout			W42
48 Core	Standard	RC-4864	PCK-48	D48
	High Moisture	RCW-4864	PCX-48	H48
	Super Moisture		Z-48	HX48
	Burnout	RC-4864-HH	PCK-48HH	W48
	Copeland Approved POE Block			UK48
	Reclaim/Recycle Standard			RD48*
	Reclaim/Recycle High Moisture			RH48*
	Reclaim/Recycle Burnout			RW48*
48 Filter	Standard	RPE-48BD	PFE-48BF	F48
	Reverse Flow	RPE-48BD	PFE-48BF	F48R
100 Core	High Moisture	RC-10098	PCK-100	H100
	Burnout	RC-10098-HH		W100
100 Filter	Standard	RPE-100		F100

*For use on reclaim machines only.

BRASS SHELL CORE/FILTER CROSS REFERENCE

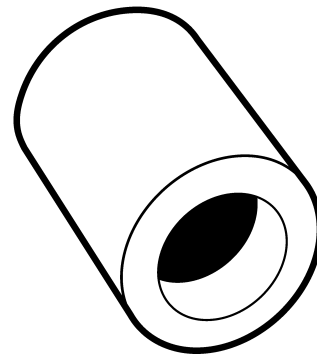
DIAMETER	APPLICATION	SUPERIOR	ALCO
2	Filter	F25A	A2F
3	Filter	F35A	A3F
4	Filter	F45A	A4F
5	Filter	F55A	A5F
2	Filter / Drier	DF25A	A2FD
3	Filter / Drier	DF35A	A3FD
4	Filter / Drier	DF45A	A4FD
5	Filter / Drier	DF55A	A5FD

- 100% molecular sieve provides up to three times the moisture holding capacity of traditional high capacity cores
- Compatible with additives in POE lubricants

NOMENCLATURE/SELECTION

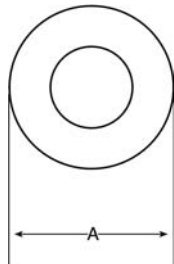
HX	48
Type	Size
Above example: HX 48	

DIMENSION		
MODEL	A	B
HX48	3.66	5.50

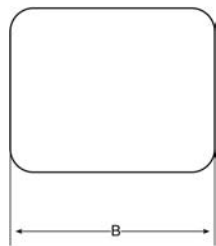


P986

DIMENSIONAL DATA



P986A



P986B

WATER CAPACITY TABLES IN DROPS

PART NO.	DESCRIPTION	WATER CAPACITY IN DROPS REFRIGERANT						
		R-134a		R-22		R-404A/R-507		
		DROPS @ PPM						
		60 PPM		60 PPM		50 PPM		
		EVAPORATOR TEMPERATURE (°F)						
		75°	125°	75°	125°	45°	75°	125°
HX48	Extra High Capacity	1565	1486	1373	1202	1522	1416	1240

DAMPENER/MUFFLER

APD PULSATION DAMPENER/MUFFLER

APPLICATION

The noise characteristics of some refrigeration and air conditioning systems are unpredictable. Different line sizes, operating pressures, piping configurations and the compressor and unit mounting all contribute to noise generated by the system. Occasionally these conditions will result in undesirable sound and vibration. Gas pulsation and resonant frequencies encountered in a particular system may warrant the use of an APD discharge line muffler which may greatly reduce unwanted noise and vibration.

The purpose of the muffler is to reduce the gas pulsation in the discharge line. APD's are available with or without internal baffles. The APD's internal baffles act as a restrictor to further increase the pressure drop thus creating an even flow of gas and reducing noise.

As a general rule, smaller mufflers with a greater pressure drop are usually more effective at dampening pulsations, while larger mufflers are more effective at lowering the overall level of compressor discharge noise. Many times, with problem applications, trial and error may be the only guide.

The table lists sizes within the recommended capacity range. The size suggested will normally smooth out pulsations and reduce noise. It should be noted that the performance of a given muffler can only be determined by an actual test under normal operating conditions.

The APD should be installed on the discharge line as close to the compressor as possible for maximum benefit.

FEATURES

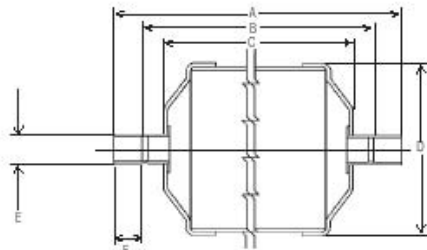
- Compact size
- Full flow fittings
- Solid copper fittings
- Corrosion-resistant finish
- Rugged steel shells for shock resistance

NOMENCLATURE

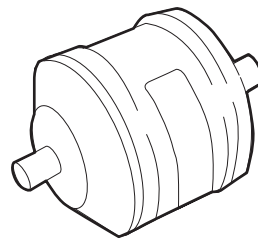
Example: APD 053 SB

APD	05	3	S	B
Pulsation Dampener	Cubic Inches	Fitting Size in 1/8"	ODF Fittings	With Baffles (omit for standard)

DIMENSIONAL DATA



P4656A



P4656

SPECIFICATIONS

- Maximum working pressure: 05-16 600 psig
30-75 500 psig
- Operating range: -40°F to +200°F
- UL listed File No.: SA 5760
- CSA certified File No.: LR32462

FLOW CAPACITY

FITTING SIZE	TONS
1/4	1 - 5
3/8	5 - 10
1/2	10 - 20
5/8	15 - 25
7/8	25 - 35
1-1/8	35+

ORDERING INFORMATION

PCN*	DESCRIPTION	A	B	C	D	E	F
061862	APD 1R	6	5	4-15/32	3-1/64	1/2	1/2
049651	APD054 S-B	4-9/16	3-9/16	3	2-5/8	1/2	1/2
059144	APD 163 S	6-1/4	5-3/8	4-3/4	2-5/8	3/8	3/8
049623	APD 163 S-B	6-1/4	5-3/8	4-3/4	2-5/8	3/8	3/8
060119	APD 165 S-B	6-9/16	5-5/16	4-3/4	2-5/8	5/8	5/8
056989	APD 309 S	10-1/4	8-7/16	7-1/2	3-1/8	1-1/8	7/8

Standard Product Offering.

*Product Code Number

CHECK VALVES

ACK CHECK VALVES

APPLICATION

- Normally Closed Magnetic Check Valve
- Prevents Reversed Refrigerant Flow in Liquid Lines
Compressor Discharge Lines

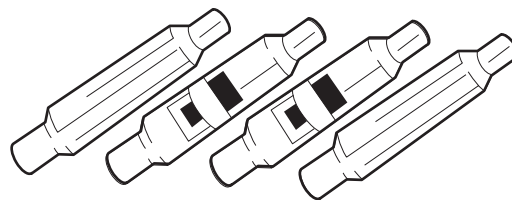
FEATURES

- Copper Connection Sizes 1/4" through 2-5/8"
- Hermetic Spun Copper Design
- Near Zero Internal Leak Rate
- Magnetic Checking Action
- Built-In 30 Mesh Stainless Steel Strainer
- Can Be Installed In Any Position
- UL/CUL Approved (File # SA 5312)

NOMENCLATURE

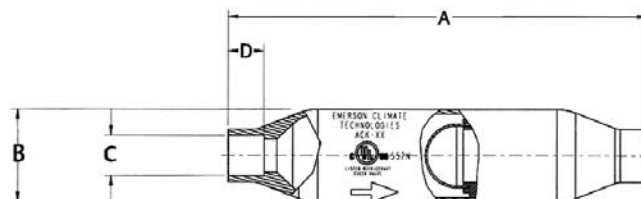
EXAMPLE: A CK -4

A	C K	4
Series	Check Valve	Copper ODF Connection Size (in 1/16")



P4567

DIMENSIONAL DATA



P4567A.pdf

ORDERING INFORMATION

PCN*	PART NO.	CONNECTION SIZE	A (in.)	B (in.)	C (in.)	D (in.)	OPENING PRESSURE oz./sq.in.	OPENING PRESSURE (psig)	MWP (psig)	BURST PRESSURE (psig)	LEAK RATE CIM @ 60 psi	NOMINAL TONS R-22 SUCTION 40°F @ 1 psi	NOMINAL TONS R-22 LIQUID 40°F @ 1 psi	C _v
064985	ACK-4	1/4 ODF	4	7/8	.254 ± .002	0.19	1.2	0.8	800	4000	0.015	0.4	2.6	0.9
064986	ACK-6	3/8 ODF			.379 ± .002	0.40	1.3	0.08				0.6	3.1	1.0
064987	ACK-8	1/2 ODF	5	1-1/8	.504 ± .002	0.31	3.5	0.22	640	3400	0.034	1.2	9.4	3.1
064988	ACK-10	5/8 ODF			.629 ± .002	0.50						1.4	13	3.6
064989	ACK-12	3/4 ODF	7	1-5/8	.754 ± .002	0.63	3.8	0.24	560	2800	0.074	3.3	27	8.0
064990	ACK-14	7/8 ODF			.879 ± .003	0.42						3.7	29	9.2
064991	ACK-18	1-1/8 ODF	8-3/8	2-1/8	1.130 ± .003	0.94	6.8	0.43	400	2000	0.122	6.0	51	15.4
064992	ACK-22	1-3/8 ODF	9-3/8	2-5/8	1.380 ± .003	1.04	10.2	0.64	440	2200	0.172	9.5	79	23.8
064993	ACK-26	1-5/8 ODF	10-1/2	3-1/8	1.630 ± .003	1.07	11.4	0.71	420	2100	0.272	17.0	102	24.2
064994	ACK-34	2-1/8 ODF	12	3-5/8	2.130 ± .003	1.34	18.1	1.13	400	2000	0.386	30.0	213	38.7
064995	ACK-42	2-5/8 ODF	13	4-1/8	2.630 ± .003	1.50	23.0	1.44	380	1900	0.512	50.0	375	71.7

Standard Product Offering.

*Product Code Number

CROSS REFERENCE (IDENTICAL LAY-IN)

EMERSON	A-1 COMPONENTS	SUPERIOR
ACK-4	MS-4	900M-4S
ACK-6	MS-6	900M-6S
ACK-8	MS-8	900M-8S
ACK-10	MS-10	900M-10S
ACK-12	MS-12	900M-12S
ACK-14	MS-14	900M-14S
ACK-18	MS-18	N/A
ACK-22	MS-22	N/A
ACK-26	MS-26	N/A
ACK-34	MS-34	N/A
ACK-42	MS-42	N/A

MOISTURE LIQUID INDICATORS

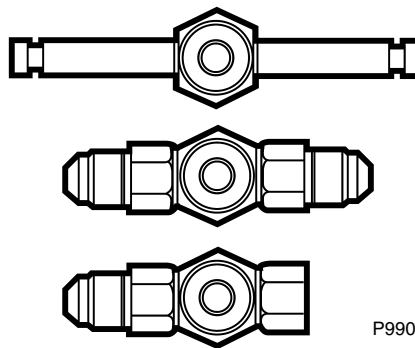
ALCO ALM LIQUID MOISTURE INDICATOR

- Hermetically sealed to eliminate the potential of external leakage
- SAE versions feature all brass body
- Intended for use on all CFC, HCFC, and HFC refrigerants
- Color calibrated and easily read

NOMENCLATURE/SELECTION

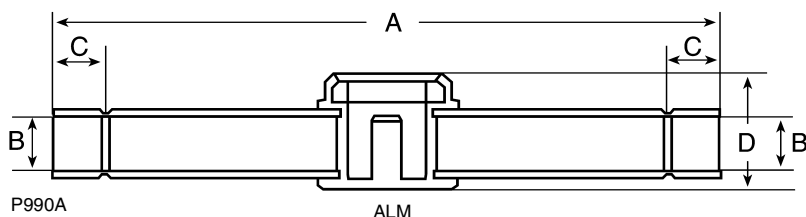
ALM	1	TT	4
Liquid Moisture Indicator Series	Design Series 1 = Standard	Connection Style TT = ODF	Connection Size (in 1/8")
	Connection	Extended Ends	

Above example: AMI 1 TT 4



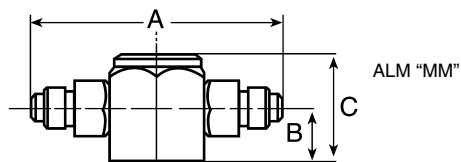
P990

DIMENSIONAL DATA

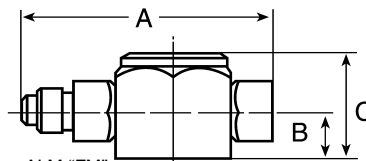


P990A

ALM



ALM "MM"



ALM "FM"

NOTE: ALM Liquid Moisture Indicator series superceded by HMI liquid Moisture Indicator series. Limited quantities available.

TYPE	CONNECTION	A	B	C	D
ALM1MM2	1/4 SAE (Male x Male)	3-3/32	1/2	1-1/8	
ALM1MM4	1/2 SAE (Male x Male)	3-17/32	1/2	1-1/8	
ALM1MM5	5/8 SAE (Male x Male)	4-1/16	1/2	1-1/8	
ALM1FM2	1/4 SAE (Female x Male)	2-17/32	1/2	1-1/8	
ALM1FM3	3/8 SAE (Female x Male)	2-11/16	1/2	1-1/8	
ALM1FM4	1/2 SAE (Female x Male)	2-3/4	1/2	1-1/8	
ALM1TT2	1/4 x 1/4 ODF	4-61/64	1/4	5/16	1-1/8
ALM1TT3	3/8 x 3/8 ODF	4-61/64	3/8	5/16	1-1/8
ALM1TT4	1/2 x 1/2 ODF	4-63/64	1/2	3/8	1-1/8
ALM1TT5	5/8 x 5/8 ODF	4-27/32	5/8	1/2	1-1/8
ALM1TT7	7/8 x 7/8 ODF	6-9/32	7/8	3/4	1-1/8

NOTE: All ALM's are 1-1/8 hex.

MOISTURE CONTENT PPM								
REFRIGERANT	R-134a			R-22			R-404a/R-507	
°F	75	100	125	75	100	125	75	100
Green Dry	100	130	175	100	140	175	75	90
Chartreuse Caution	100/150	130/160	175/220	100/150	140/200	175/220	75/110	90/120
Yellow Wet	150	160	220	150	200	220	110	120

MOISTURE LIQUID INDICATORS

HMI — HERMETIC MOISTURE INDICATORS

APPLICATION

- The HMI was designed to provide an accurate method of determining the moisture content of a system's refrigerant
- Unique 3% high accuracy moisture indicator for CFC, HCFC and HFC refrigerants, including R410A

FEATURES

- Fully Hermetic Design
- 3% relative humidity indication compared to 10% paper indicators
- Single indicator for all common refrigerants
- Accurate color calibration at low ppm levels and higher temperatures
- Wide angle viewing/high visibility window for ease of monitoring
- All brass corrosion resistant body
- Solid copper fittings

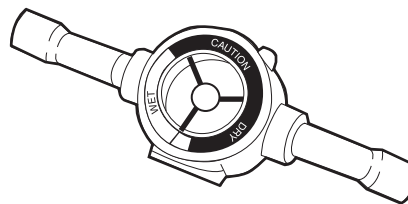
SPECIFICATIONS

- 3% relative humidity sensitivity
- Maximum Working Pressure: 680 psig
- UL File Number: SA 4876
- CSA File Number: LR 32462

NOMENCLATURE

Example: HMI 1 TT 4

HMI	1	TT	4
Hermetic Moisture Indicator	Series	Connection Style TT - Sweat x Sweat	Connection Size (in 1/8")



P4657

ORDERING INFORMATION FOR HMI

PCN*	PART NO.	SERIES	CONNECTION SIZE (in.)
065391	HMI-1MM2	Male Flare x Male Flare	1/4
065392	HMI-1MM3		3/8
065393	HMI-1MM4		1/2
065394	HMI-1MM5		5/8
065395	HMI-1MM6		3/4
065405	HMI-1TT2	Sweat x Sweat (ODF)	1/4
065406	HMI-1TT3		3/8
065407	HMI-1TT4		1/2
065408	HMI-1TT5		5/8
065409	HMI-1TT6		3/4
065410	HMI-1TT7		7/8
065411	HMI-1TT9		1-1/8
065396	HMI-1FM2	Female Flare x Male Flare	1/4
065397	HMI-1FM3		3/8
065398	HMI-1FM4		1/2
065399	HMI-1MU2	Male Flare x Female Flare Swivel Nut	1/4
065400	HMI-1MU3		3/8
065401	HMI-1MU4		1/2
065402	HMI-1MU5		5/8
065403	HMI-1FU3	Female Flare x Female Flare Swivel Nut	3/8
065404	HMI-1FU4		1/2
065412	HMI-1UU3	Swivel Nut x Swivel Nut	3/8
065413	HMI-1UU4		1/2
065414	HMI-1UU5		5/8

Standard Product Offering.

*Product Code Number

MOISTURE CONTENT COLOR CODE (PPM H₂O)

INDICATION	DRY (Dark Blue)			CAUTION (Purple)			WET (Salmon)		
	75°F	100°F	125°F	75°F	100°F	125°F	75°F	100°F	125°F
R-12	1.4	2.5	4	5	9	15	25	43	70
R-134A	20	35	60	35	55	85	130	160	190
R-22	25	35	50	40	65	90	145	205	290
R-407C	26	40	64	42	68	109	150	230	370
R-410A	30	55	75	50	85	120	165	290	420
R-404A/507	15	25	45	33	50	80	120	150	180
R-502	2.6	5	8	10	18	30	50	90	150

MOISTURE LIQUID INDICATORS

ALCO AMI MOISTURE-LIQUID INDICATORS

APPLICATION

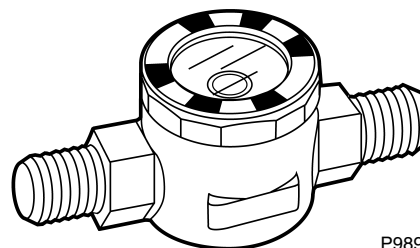
- Alco's AMI was designed to provide an accurate method of determining the moisture content of a systems' refrigerant.
- Premium Patented 3% High Accuracy Moisture Indicator for CFC, HCFC, and HFC refrigerants including R-410A.
- AMI-2 Series for OEM T-Drill applications (through 1-1/8" sizes).

FEATURES

- 3% relative humidity indication compared to 10% paper indicators.
- Single indicator for all common refrigerants.
- Accurate color calibration at low ppm levels and higher temperatures.
- Wide angle viewing/high visibility window for ease of monitoring.
- All brass corrosion resistant body.
- Solid copper fittings.

SPECIFICATIONS

- 3% relative humidity sensitivity.
- Maximum working pressure: 600 psig
- UL file number: SA 4876
- CSA file number: LR 32462



NOMENCLATURE

Example: AMI 1SS4

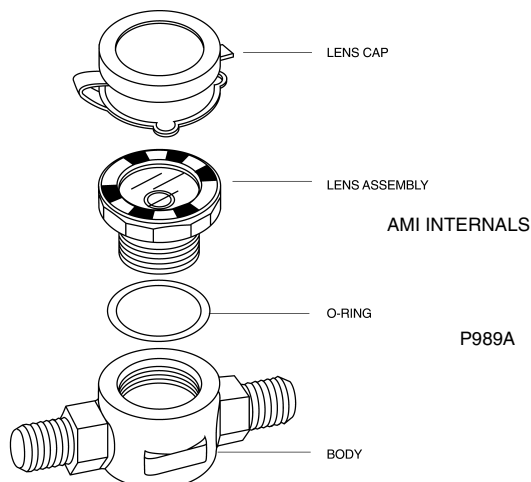
AMI	1	SS	4
Moisture Liquid Indicator Series	Design Series 1 = standard connection 2 = bushing style	Connection Style SS - Sweat x Sweat	Connection Size (in 1/8")

REPLACEMENT PARTS FOR AMI

PCN*	PART	NUMBER
021371	Lens Cap	12740-1
020877	"O" Ring	PS1525-2
027511	Lens Assembly Kit (Consists of lens assembly, lens cap and "O" ring)	X12978-1

Standard Product Offering

*Product Code Number.



ORDERING INFORMATION FOR AMI

PCN*	PART NO.	SERIES	CONNECTION SIZE (in.)
048803	AMI-1MM2	Male Flare x Male Flare	1/4
048804	AMI-1MM3		3/8
048805	AMI-1MM4		1/2
048806	AMI-1MM5		5/8
048811	AMI-1SS2		1/4
048812	AMI-1SS3	Sweat x Sweat (OD Female)	3/8
048813	AMI-1SS4		1/2
048814	AMI-1SS5		5/8
048815	AMI-1SS7		7/8
048816	AMI-1SS9		1-1/8
047298	AMI-1TT2 EXTENDED ENDS		1/4
042771	AMI-1TT3 EXTENDED ENDS		3/8
022302	AMI-1TT4 EXTENDED ENDS		1/2
031136	AMI-1TT5 EXTENDED ENDS		5/8
031357	AMI-1TT7 EXTENDED ENDS†		7/8
031578	AMI-1TT9 EXTENDED ENDS†		1-1/8
048800	AMI-1FM2	Female Flare x Male Flare	1/4
048801	AMI-FM3		3/8
048802	AMI-FM4		1/2
048807	AMI-1MU2	Male Flare x Female Flare Swivel Nut	1/4
048808	AMI-1MU3		3/8
048809	AMI-1MU4		1/2
048810	AMI-1MU5		5/8
048817	AMI-1FU3	Female Flare x Female Flare Swivel Nut	3/8
048818	AMI-1FU4		1/2
048819	AMI-1SU2	Sweat x Female Flare Swivel Nut	1/4
048820	AMI-1SU3		3/8
048821	AMI-1SU4		1/2
048822	AMI-1SU5		5/8
046647	AMI-1UU3	Swivel Nut x Swivel Nut	3/8
046648	AMI-1UU4		1/2
046649	AMI-1UU5		5/8

Standard Product Offering

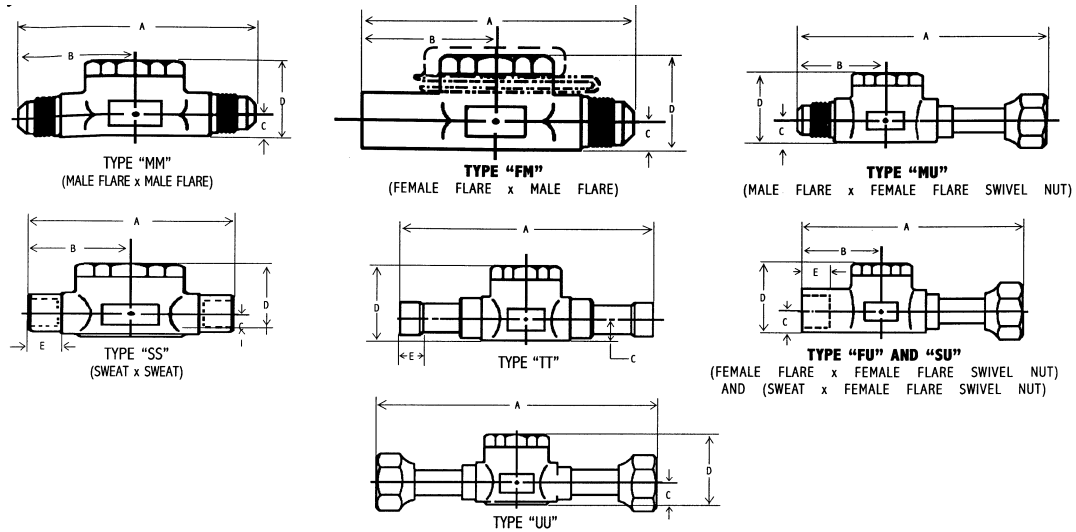
*Product Code Number.

†500 PSIG MWP

MOISTURE LIQUID INDICATORS

ALCO AMI MOISTURE-LIQUID INDICATORS

DIMENSIONAL DATA



P989B

Specifications

PART NO.	CONNECTION SIZE (in.)	A (in.)	B (in.)	C (in.)	D (in.)	E (in.)
AMI-1MM2	1/4 SAE	3-1/8	1-9/16	11/32	1-3/16	—
AMI-1MM3	3/8 SAE	3-3/8	1-11/16			
AMI-1MM4	1/2 SAE	3-5/8	1-13/16			
AMI-1MM5	5/8 SAE	3-7/8	1-15/16	15/32	1-7/16	—
AMI-1FM2	1/4 SAE	2-3/4	1-3/16			
AMI-1FM3	3/8 SAE	3	1-5/16			
AMI-1FM4	1/2 SAE	3-7/32	1-13/32	15/32	1-7/16	—
AMI-1MU2	1/4 SAE	3-29/32	1-9/16			
AMI-1MU3	3/8 SAE	4-3/8	1-11/16			
AMI-1MU4	1/2 SAE	4-23/32	1-13/16	15/32	1-7/16	—
AMI-1MU5	5/8 SAE	5-3/32	1-15/16			
AMI-1FU3	3/8 SAE	4	1-5/16			
AMI-1FU4	1/2 SAE	4-5/16	1-13/32	15/32	1-7/16	—
AMI-1SS2	1/4 ODF	2-1/4	1-1/8			
AMI-1SS3	3/8 ODF					
AMI-1SS4	1/2 ODF					
AMI-1SS5	5/8 ODF	2-5/8	1-5/16	15/32	1-7/16	3/8
AMI-1SS7	7/8 ODF					1/2
AMI-1SS9	1-1/8 ODF					3/4
AMI-1SU2	1/4 ODF x 1/4 SAE	3-15/32	1-1/8	11/32	1-3/16	5/16
AMI-1SU3	3/8 ODF x 3/8 SAE	3-9/16	1-1/8	11/32	1-3/16	5/16
AMI-1SU4	1/2 ODF x 1/2 SAE	4-3/32	1-5/16	15/32	1-7/16	3/8
AMI-1SU5	5/8 ODF x 5/8 SAE	4-7/32				1/2
AMI-1TT2	1/4 ODF	4-57/64		11/32	1-3/16	5/16
AMI-1TT3	3/8 ODF					
AMI-1TT4	1/2 ODF					
AMI-1TT5	5/8 ODF	4-29/32		15/32	1-7/16	3/8
AMI-1TT7	7/8 ODF	6-23/64				1/2
AMI-1TT9	1-1/8 ODF	6-19/64				3/4
AMI-1UU3	3/8 x 3/8 Flare Swivel	4-7/8		11/32	1-3/16	7/8
AMI-1UU4	1/2 x 1/2 Flare Swivel	5-9/16				
AMI-1UU5	5/8 x 5/8 Flare Swivel	6-1/64				

MOISTURE LIQUID INDICATORS

ALCO AMI MOISTURE-LIQUID INDICATORS

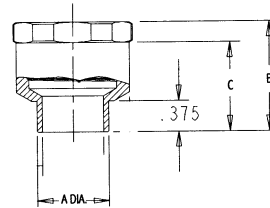
AMI-2 SERIES DIMENSIONS

ROUGHING IN DIMENSIONS

SPECIFICATIONS (in.)					
PCN*	TYPE NUMBER	CONNECTION SIZE	A DIA.	B	C
064857	AMI-255	5/8 ODM	.63	1.41	1.16
064167	AMI-257	7/8 ODM	.875	1.34	1.09
064168	AMI-259	1-1/8 ODM	1.13	1.25	1.00

Standard Product Offering.

*Product Code Number.

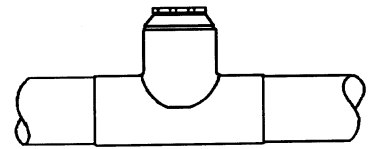
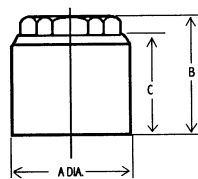


P989C

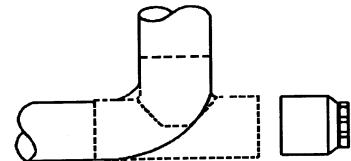
ROUGHING IN DIMENSIONS

SPECIFICATIONS (in.)					
PCN*	TYPE NUMBER	CONNECTION SIZE	A DIA.	B	C
022203	AMI-2511	1-3/8 ODM	1-3/8	1-9/16	1-5/16
028388	AMI-2513	1-5/8 ODM	1-5/8	1-11/16	1-7/16
031219	AMI-2517	2-1/8 ODM	2-1/8	1-15/16	1-11/16

*Product Code Number.



AMI - 2 AND TEE
STRAIGHT THRU CONFIGURATION



AMI - 2 AND TEE
REPLACING AN ELBOW

P989D

SUCTION ACCUMULATORS

A-AS SUCTION ACCUMULATORS

APPLICATION

- Emerson Climate Technologies' A-AS suction line accumulators are available for systems through 28.5 tons nominal capacity
- Suction line accumulator for CFC, HCFC, HFC refrigerants

FEATURES

- Designed to operate in a range of +40°F to -40°F evaporator temperature
- Fusible plug on larger diameter units
- Solid copper fittings
- Corrosion resistant epoxy powder paint finish
- Inlet deflector that blends refrigerant flow to prevent internal splashing and aid in the collection of refrigerant oil in the bottom connection of the accumulator

NOMENCLATURE

A	AS	3	12	5
Series	Accumulator Suction	Diameter (in inches)	Height (in inches)	Fitting Size in 1/8"
Above Example: A-AS 3 12 5				

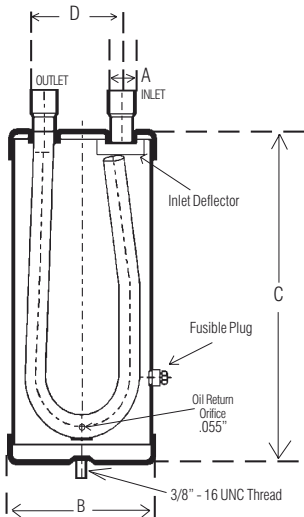


P4658

SPECIFICATIONS

- Maximum working pressure:
3-4 in. Diameter: 300 psig
5-6 in. Diameter: 575 psig
- UL file number: SA 7973
- CSA file number: LR 100624
- Fusible Plug 430°F

DIMENSIONAL DATA



P4658A.pdf

ORDERING INFORMATION FOR A-AS

PCN*	PART NUMBER	A FITTING SIZE NOMINAL	UNIT WEIGHT (LBS.)	B DIAMETER IN INCHES	C HEIGHT IN INCHES	D FITTING SEPARATION (IN.)	TONS R-22 (+40°F)	HOLDING CAPACITY (LBS.) 5 0% FULL	
								40°F LIQUID R22/R134a	40°F LIQUID R404A/R507
ALC-060819	A-AS 3 84†	1/2	2.0	3	8	1.63	2	1.5	1.5
ALC-060963	A-AS 3 105†	5/8	2.4	3	10	1.63	3	2	2
ALC-060812	A-AS 3 125†	5/8	2.9	3	12	1.63	3	3	2.5
ALC-060813	A-AS 3 126†	3/4	2.9	3	12	1.63	4	3	2.5
ALC-060964	A-AS 3 145†	5/8	3.3	3	15	1.63	3	3.5	3
ALC-060965	A-AS 3 146†	3/4	3.3	3	14	1.63	4	3.5	2.75
ALC-060967	A-AS 4 64	1/2	2.8	4	6	2.5	2	2.5	2
ALC-060821	A-AS 4 65	5/8	2.8	4	6	2.5	3	2.5	2
ALC-060966	A-AS 4 105	5/8	4.6	4	10	2.5	3	4	3.5
ALC-060820	A-AS 4 106	3/4	4.6	4	10	2.5	4	4	3.5
ALC-060824	A-AS 5 96	3/4	5.1	5	9	2.75	4	6	5.5
ALC-060818	A-AS 5 97	7/8	5.1	5	9	2.75	7.3	6	5.5
ALC-060822	A-AS 5 126	3/4	6.6	5	12	2.75	4	8	7.5
ALC-060823	A-AS 5 127	7/8	6.6	5	12	2.75	7.3	8	7.5
ALC-060814	A-AS 5 137	7/8	7.1	5	13	2.75	7.3	8.5	8
ALC-060815	A-AS 5 139	1-1/8	7.1	5	13	2.75	11.8	8.5	8
ALC-060817	A-AS 5 179	1-1/8	8.4	5	17	2.75	11.8	12	10
ALC-060816	A-AS 5 1711	1-3/8	8.4	5	17	2.75	18.8	12	10
ALC-060825	A-AS 6 117	7/8	10.0	6	11	2.94	7.3	10	9
ALC-060826	A-AS 6 137	7/8	11.7	6	13	2.94	7.3	12	11
ALC-060968	A-AS 6 139	1-1/8	11.7	6	13	2.94	11.8	12	11
ALC-060827	A-AS 6 1411	1-3/8	12.1	6	14	2.94	18.8	15	12
ALC-060969	A-AS 6 1713	1-5/8	15.4	6	17	2.94	28.5	16	15
ALC-060828	A-AS 6 2013	1-5/8	18.1	6	20	2.94	28.5	20	16
ALC-060970	A-AS 6 2513	1-5/8	22.6	6	25	2.94	28.5	25	20

Standard Product Offering.

*Product Code Number.

†Not supplied with a fusible plug.

SUCTION ACCUMULATORS

A-AS SUCTION ACCUMULATORS (cont)

ACCUMULATOR CAPACITY TABLES IN TONS OF REFRIGERATION

PCN*	MODEL NO.	R-134a					R-404A/R-507				
		-40°F	-20°F	0°F	+20°F	+40°F	-40°F	-20°F	0°F	+20°F	+40°F
ALC-060819	A-AS 3 84	.2	.3	0.6	0.8	1.2	.2	.4	0.8	1.0	1.3
ALC-060963	A-AS 3 105	.3	.5	0.8	1.2	1.7	.4	.6	1.2	1.6	2.0
ALC-060812	A-AS 3 125	.3	.5	0.8	1.2	1.7	.4	.6	1.2	1.6	2.0
ALC-060813	A-AS 3 126	.4	.6	1.0	1.6	2.3	.4	.7	1.5	2.0	2.6
ALC-060964	A-AS 3 145	.3	.5	0.8	1.2	1.7	.4	.6	1.2	1.6	2.0
ALC-060965	A-AS 3 146	.4	.6	1.0	1.6	2.3	.4	.7	1.5	2.0	2.6
ALC-060967	A-AS 4 64	.2	.3	0.6	0.8	1.2	.2	.4	0.8	1.0	1.3
ALC-060821	A-AS 4 65	.3	.5	0.8	1.2	1.7	.4	.6	1.2	1.6	2.0
ALC-060966	A-AS 4 105	.3	.5	0.8	1.2	1.7	.4	.6	1.2	1.6	2.0
ALC-060820	A-AS 4 106	.4	.6	1.0	1.6	2.3	.4	.7	1.5	2.0	2.6
ALC-060824	A-AS 5 96	.4	.6	1.0	1.6	2.3	.4	.7	1.5	2.0	2.6
ALC-060818	A-AS 5 97	.7	1.1	1.8	2.8	4.0	.8	1.3	2.7	3.6	4.6
ALC-060822	A-AS 5 126	.4	.6	1.0	1.6	2.3	.4	.7	1.5	2.0	2.6
ALC-060823	A-AS 5 127	.7	1.1	1.8	2.8	4.0	.8	1.3	2.7	3.6	4.6
ALC-060814	A-AS 5 137	.7	1.1	1.8	2.8	4.0	.8	1.3	2.7	3.6	4.6
ALC-060815	A-AS 5 139	1.3	2.0	3.1	5.0	7.2	1.4	2.1	4.4	5.9	7.6
ALC-060817	A-AS 5 179	1.9	3.0	3.1	5.0	7.2	1.4	2.1	4.4	5.9	7.6
ALC-060816	A-AS 5 1711	1.9	3.0	4.6	7.3	10.7	2.2	3.4	7.2	9.6	12.2
ALC-060825	A-AS 6 117	.7	1.1	1.8	2.8	4.0	.8	1.3	2.7	3.6	4.6
ALC-060826	A-AS 6 137	.7	1.1	1.8	2.8	4.0	.8	1.3	2.7	3.6	4.6
ALC-060968	A-AS 6 139	1.3	2.0	3.1	5.0	7.2	1.4	2.1	4.4	5.9	7.6
ALC-060827	A-AS 6 1411	1.9	3.0	4.6	7.3	10.7	2.2	3.4	7.2	9.6	12.2
ALC-060969	A-AS 6 1713	3.0	4.8	7.3	11.7	17.0	3.3	5.1	10.7	14.2	18.2
ALC-060828	A-AS 6 2013	3.0	4.8	7.3	11.7	17.0	3.3	5.1	10.7	14.2	18.2
ALC-060970	A-AS 6 2513	3.0	4.8	7.3	11.7	17.0	3.3	5.1	10.7	14.2	18.2

	MODEL NO.	R-22					R-502				
		-40°F	-20°F	0°F	+20°F	+40°F	-40°F	-20°F	0°F	+20°F	+40°F
ALC-060819	A-AS 3 84	.4	.6	0.9	1.4	2.0	.3	.5	0.8	1.3	1.8
ALC-060963	A-AS 3 105	.5	.8	1.4	2.1	3.0	.5	.8	1.2	1.9	2.7
ALC-060812	A-AS 3 125	.5	.8	1.4	2.1	3.0	.5	.8	1.2	1.9	2.7
ALC-060813	A-AS 3 126	.72	1.1	1.8	2.8	4.0	.6	1.0	1.6	2.5	3.5
ALC-060964	A-AS 3 145	.5	.8	1.4	2.1	3.0	.6	.8	1.2	1.9	2.7
ALC-060965	A-AS 3 146	.72	1.1	1.8	2.8	4.0	.6	1.0	1.6	2.5	3.5
ALC-060967	A-AS 4 64	.4	.6	0.9	1.4	2.0	.3	.5	0.8	1.3	1.8
ALC-060821	A-AS 4 65	.5	.8	1.4	2.1	3.0	.5	.8	1.2	1.9	2.7
ALC-060966	A-AS 4 105	.5	.8	1.4	2.1	3.0	.5	.8	1.2	1.9	2.7
ALC-060820	A-AS 4 106	.72	1.1	1.8	2.8	4.0	.6	1.0	1.6	2.5	3.5
ALC-060824	A-AS 5 96	.72	1.1	1.8	2.8	4.0	.6	1.0	1.6	2.5	3.5
ALC-060818	A-AS 5 97	1.3	2.0	3.3	5.1	7.3	1.1	1.7	2.8	4.3	6.2
ALC-060822	A-AS 5 126	.72	1.1	1.8	2.8	4.0	.6	1.0	1.6	2.5	3.5
ALC-060823	A-AS 5 127	1.3	2.0	3.3	5.1	7.3	1.1	1.7	2.8	4.3	6.2
ALC-060814	A-AS 5 137	1.3	2.0	3.3	5.1	7.3	1.1	1.7	2.8	4.3	6.2
ALC-060815	A-AS 5 139	2.1	3.3	5.3	8.3	11.8	1.9	2.9	4.6	7.1	10.2
ALC-060817	A-AS 5 179	2.1	3.3	5.3	8.3	11.8	1.9	2.9	4.6	7.1	10.2
ALC-060816	A-AS 5 1711	3.4	5.3	8.5	13.2	18.8	3.0	4.6	7.4	11.6	16.5
ALC-060825	A-AS 6 117	1.3	2.0	3.3	5.1	7.3	1.1	1.7	2.8	4.3	6.2
ALC-060826	A-AS 6 137	1.3	2.0	3.3	5.1	7.3	1.1	1.7	2.8	4.3	6.2
ALC-060968	A-AS 6 139	2.1	3.3	5.3	8.3	11.8	1.9	2.9	4.6	7.1	10.2
ALC-060827	A-AS 6 1411	3.4	5.3	8.5	13.2	18.8	3.0	4.6	7.4	11.6	16.5
ALC-060969	A-AS 6 1713	5.1	8.0	12.8	20.0	28.5	4.4	6.9	11.0	17.2	24.5
ALC-060828	A-AS 6 2013	5.1	8.0	12.8	20.0	28.5	4.4	6.9	11.0	17.2	24.5
ALC-060970	A-AS 6 2513			12.8	20.8	28.5	4.4	6.9	11.0	17.2	24.5

The maximum capacity in tons recommended is based on a pressure drop through the accumulator equivalent to 1.0°F.

NOTE:

1. The minimum capacity in tons must be no less than 15% of the recommended capacity in order to ensure a positive return of oil.
2. All of the data is based on tons of refrigeration and is not related to horsepower.
3. **Minimum evaporator temperature of -40°F. Minimum temperature of the suction gas through the accumulator is 12°F.** For operation under conditions that are not within the recommended range, please contact Emerson Climate Technologies Flow Controls' Applications Department before proceeding with the installation.

OIL RESERVOIRS

AOR OIL RESERVOIRS

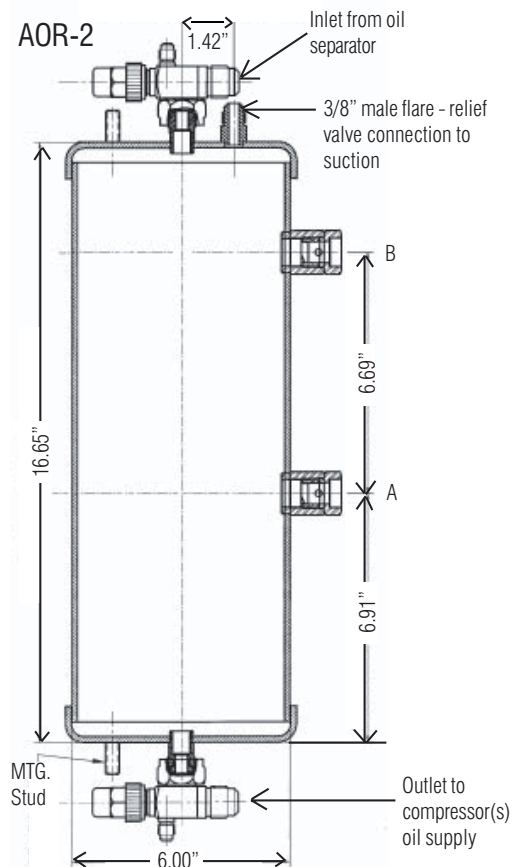
APPLICATION

- The Oil Reservoir is a holding vessel for stand-by oil necessary for the operation of commercial refrigeration systems
- Direct replacements of popular competitive models

FEATURES

- Two sight glasses with floating ball indicators - 2 gallon model
- Three sight glasses with floating ball indicators - 4 gallon model
- 3/8-in. flare rotolock valves on top and bottom
- Corrosion resistant epoxy powder paint finish
- Standard mounting stud 1/2 x 14 TPI

DIMENSIONAL DATA



P4658X.pdf

SPECIFICATIONS

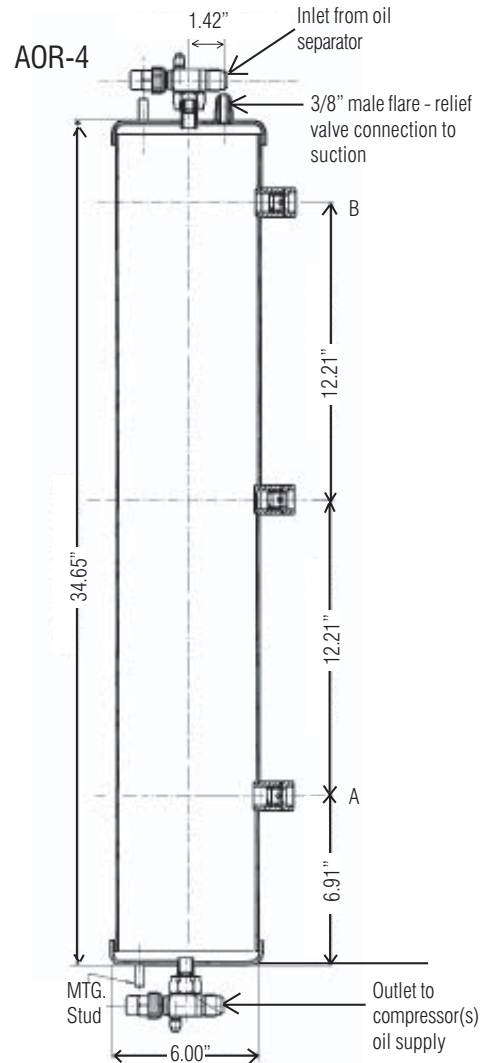
- Maximum working pressure: 450 psig
- UL/CUL file #: SA8547

ORDERING INFORMATION

PCN*	PRODUCT DESCRIPTION	TOTAL VOLUME GALLONS	'A' LEVEL VOLUME (gals)	'B' LEVEL VOLUME (gals)	LENGTH IN INCHES
ALC-064950	AOR-2	2	3/4	1-2/3	20
ALC-065283	AOR-3.5	3.0	2/3	2-2/3	34
ALC-064951	AOR-4	4	1-1/2	3-3/4	38

Standard Product Offering.

*Product Code Number.



P4658Y.pdf

OIL LEVEL REGULATORS

W-OLC MECHANICAL OIL LEVEL REGULATORS

APPLICATION

- Controls the oil level in the compressor crankcase with a float operated valve
- Keeps the oil level at the compressor manufacturer's recommended level
- Direct replacement of popular competitive models

FEATURES

- Corrosion resistant epoxy powder paint finish
- 1/4 level sight glass (Carrier)
- 1/2 level sight glass (Copeland)

SPECIFICATIONS

- Maximum Working Pressure: 450 psig
- UL file number: SA8547
- Max. OPD 90 psi

ORDERING INFORMATION

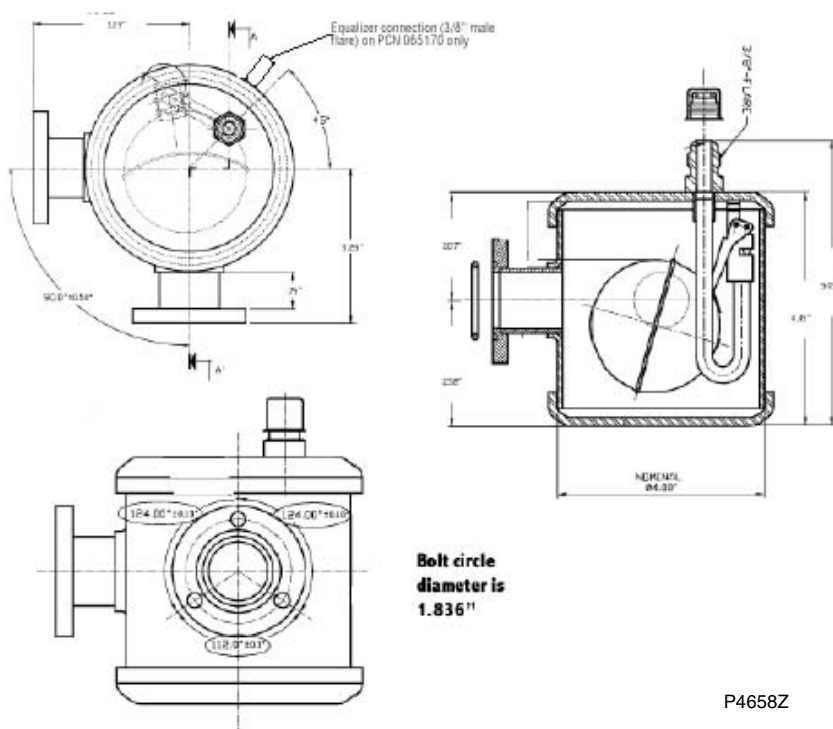
PCN*	Product Description
ALC-064953	W-OLC-2 (1/2 Sight Glass)
ALC-064954	W-OLC-4 (1/4 Sight Glass)
ALC-065170	W-OLC-2-4 (Adjustable) 1/4 to 1/2 Level†

Standard Product Offering.

*Product Code Number.

†This model has a 3/8 in. equalizer connection.

DIMENSIONAL DATA



OMB

APPLICATION

- Compressor crankcase oil level protective control
- For Copeland ZF, ZB, ZR and ZS refrigeration scroll compressors
- Recommended for Copeland, Carlyle, Bitzer and other semi-hermetic compressors

FEATURES

- Self-contained unit with oil level sensor and integral solenoid to manage oil level supply
- Reverse Hall-effect sensor for precise measurement of oil level and protection from sensor magnetic debris contamination
- Alarm and status indication by LEDs
- SPDT output contact for compressor shutdown and alarming
- Easy installation by sightglass replacement
- Adapters suitable for various types of scroll compressors (not required for reciprocating compressors)
- Signal generated by gravity based float - not prone to errors from foaming like optical sensors
- Debris retention magnet for reliable operation
- UL Recognized
- Fluorescent floating ball
- Integral sight glass

NOMENCLATURE

Example: OMB-JB1 ASC 2 24 50/60

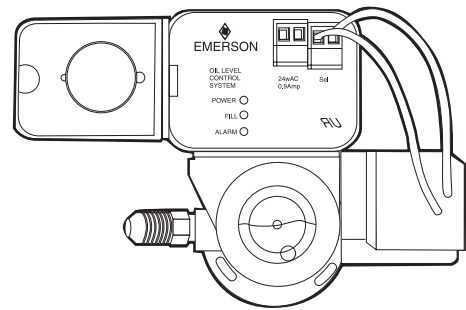
OMB	JB1	ASC2 24 50/60 Hz
Oil Management Control	JB1 - Junction Box MO1 - Stress Relief Connector	Solenoid Coil Model Number, Voltage, Frequency (included)

ORDERING INFORMATION FOR OMB

PCN*	DESCRIPTION
	OIL MANAGEMENT CONTROL
065365	OMB-JB1 ASC 2 24/50-60 - STD
065366	OMB-MO1 ASC 2 24/50-60 - STD
	ADAPTERS (TO ATTACH OMB TO SCROLL COMPRESSOR FOR NEW INSTALLATIONS ONLY)
065667	OMB-ACB ADAPTER (Copeland Scroll ZR)
065668	OMB-ACA ADAPTER (Copeland Scroll ZF, ZS, ZB)
	SERVICE PARTS
048638	Inlet Flare Screen
020877	Sight Glass O-Ring
064812	Mounting O-Rings (3 pieces)

Standard Product Offering.

*Product Code Number.

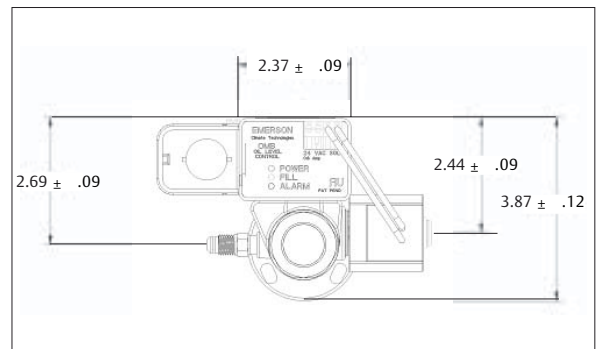


P4659

SPECIFICATIONS

- Max. Working Pressure: 500 psig
- Solenoid MOPD: 350 psi
- Supply Voltage: 24 V AC, 50/60 Hz
- Solenoid Coil: ASC2 24 V AC, 50/60 Hz
- Current Consumption: 0.6A
- Time delay for Low Level Signalling: 5-10 seconds
- Time Delay After Setpoint Recovery: 5-10 seconds
- Alarm Delay Time: 120 seconds
- Alarm Switch: SPDT
- Alarm Contact Rating: . 10A @ 125; 5A @ 220 V AC 50/60
- Refrigerant Compatibility: HFC, HCFC, CFC
- Oil Temperature: 180°F Max.
- Storage & Transport Temperature: 140°F Max.
- Operating Ambient Temperature: 120°F Max.
- Oil Supply Fitting: 1/4" Male SAE
- UL File Number: MP604

DIMENSIONAL DATA



**Unit must be mounted horizontally
for correct operation.**

P4659A.pdf

OIL SEPARATORS

A-W & A-F OIL SEPARATORS

APPLICATION

- Multiple compressor racks for supermarkets and air conditioning
- Systems with long refrigerant lines
- Systems with inherent oil return problems
- Ultra-low temperature systems
- For use with HCFCs, HFCs and their lubricants

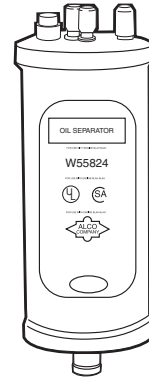
FEATURES

- Hermetic welded or accessible bolted flange construction
- Solid copper connections
- Corrosion resistant paint

NOMENCLATURE

Example: A W 5582 4

A	W	5582	4
Series	W = Welded F = Flanged	Competitive Cross Reference	Connection Size (in 1/8")



P4660

SPECIFICATIONS

- Maximum working pressure: 450 psig
- U.L listed (file #5168)
- C.S.A.Listed (LR100624)

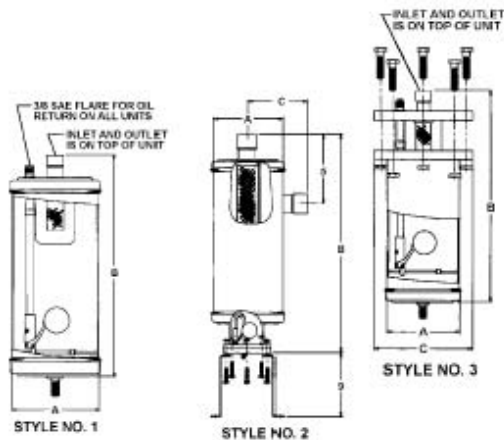
ORDERING INFORMATION AND CAPACITY TABLE

MODEL NO.				R12				R22/R407C				R502				R134a				R-404A/R-507			
				-40 F/C		40F (14C)		-40F/C		40F (14C)		-40F/C		40F (14C)		-40F/C		40F (14C)		-40F/C		40F (14C)	
FLANGED	PCN*	SEALED	PCN*	Tons	kW	Tons	kW	Tons	kW	Tons	kW	Tons	k	Tons	kW	Tons	kW	Tons	kW	Tons	kW	Tons	kW
A-F 58824		A-W 55824	060933	1	3.54	1.5	5.31	1.5	5.31	2	7.08	1.5	5.31	2	7.08	1	3.54	1.75	6.2	1.5	5.31	2	7.
A-F 58855	060878	A-W 55855	060934	3	10.62	4	14.2	4.5	15.9	5.5	19.5	4.75	16.8	5.75	20.36	3.25	11.5	4.5	15.9	4	14.16	5.5	19.
A-F 58877		A-W 55877	060931	4.5	15.93	5.5	19.5	7	24.8	8	28.3	7.5	26.6	8.5	30.09	4.75	16.8	6.5	23	6.5	23.01	8.5	30.
A-F 58889	060759	A-W 55889	060974	6	21.24	7.5	26.6	9	31.9	11	37.2	9.5	33.6	11.5	40.71	6.5	23	8.5	30.1	8.5	30.09	11	38.
A-F 589011	060760	A-W 559011	060930	7.5	26.55	10	35.4	11.5	40.7	14	47.8	12	42.5	14.5	51.33	8	28.3	11.5	40.7	10.5	37.17	14	49.
A-F 589213		A-W 559213	060975	9	31.86	11.5	40.7	14	49.6	18	62	16	56.6	17.5	61.95	9.5	33.6	13.25	46.9	14	49.56	17	60.
—	—	A-W 569011	060978	9	31.69	12	42.25	13	45.77	14	49.8	15	52.8	20	70.4	9.5	33.4	13.7	48.2	11	38.7	19	66.
A-F 579213	060875	A-W 569213	060979	11	38.94	14	49.6	16	56.6	18	63.7	20	70.8	24	84.96	11.8	41.6	16	56.6	17.5	61.95	23	81
A-F 579417	060876	A-W 569417	060980	17	60.18	22	77.9	25	88.5	30	106	30	106	35	123.9	18	63.7	25.25	89.4	26	92.04	34	121

Standard Product Offering.

*Product Code Number.

DIMENSIONAL DATA



SEALED UNITS: A-W

MODEL NO.	STYLE NO.	CONNECTION SIZE	DIMENSIONS (inches)	
			A	B
A-W 55824	1	1/2 ODF	4.00	10.75
A-W 55855	1	5/8 ODF	4.00	14.25
A-W 55877	1	7/8 ODF	4.00	17.75
A-W 55889	1	1-1/8 ODF	4.00	21.00
A-W 559011	1	1-3/8 ODF	4.00	21.25
A-W 569011	1	1-3/8 ODF	6.00	15.75
A-W 569213	1	1-5/8 ODF	6.00	19.00
A-W 569417	1	2-1/8 ODF	6.00	19.50

FLANGED UNITS: A-F

MODEL NO.	STYLE NO.	CONNECTION SIZE	DIMENSIONS		
			A	B	C
A-F 58824	3	1/2 ODF	4.00	10.25	5.50
A-F 58855	3	5/8 ODF	4.00	14.25	5.50
A-F 58877	3	7/8 ODF	4.00	17.75	5.50
A-F 58889	3	1-1/8 ODF	4.00	21.00	5.50
A-F 589011	3	1-3/8 ODF	4.00	21.25	5.50
A-F 589213	3	1-5/8 ODF	4.00	21.63	5.50
A-F 579213	2	1-5/8 ODF	6.00	20.25	4.25
A-F 579417	2	2-1/8 ODF	6.00	20.31	4.50

P4660A

OIL SEPARATORS

HIGH EFFICIENCY CENTRIFUGAL OIL SEPARATOR

APPLICATION

- Internal oil collection screen
- Hermetic welded or accessible bolted flange construction
- Solid copper connections
- Corrosion resistant paint
- High efficiency (95%) centrifugal separation

FEATURES

- Multiple compressor racks for supermarkets and air conditioning
- Systems with long refrigerant lines
- Systems with inherent oil return problems
- Ultra-low temperature systems
- For use with HCFCs, HFCs and their lubricants

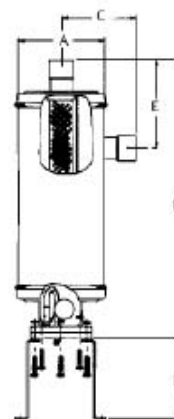
SPECIFICATIONS

- Maximum working pressure: 450 psig
- U.L listed (file #5168)
- C.S.A. Listed (LR100624)

NOMENCLATURE

Example: A-F C 8 24 17 17

A	F	C	8	24	17	17
Series	F = Flanged W = Welded	Centrifugal	Diameter in Inches	Length in Inches	Inlet Connection in 1/8"	Outlet Connection in 1/8"



P4660X

DIMENSIONAL DATA

MODEL NO.	CONNECTION SIZE (in.)	DIMENSIONS				
		A	B	C	D	E
A-FC 6221313	1-5/8 ODF	6	17	4-1/2	5	4
A-FC 8241717	2-1/8 ODF	8	19	5-3/8	5	6-13/16

ORDERING INFORMATION AND CAPACITY TABLE

MODEL NO.		R-12				R-22/R-407C				R-502				R-134a				R-404A/R-507				AC&R CROSS REFERENCE
Flanged	PCN	-40° F/C		40°F (14°C)		-40° F/C		40°F (14°C)		-40° F/C		40°F (14°C)		-40° F/C		40°F (14°C)		-40° F/C		40°F (14°C)		
		Tons	Kw	Tons	Kw	Tons	Kw	Tons	Kw	Tons	Kw	Tons	Kw	Tons	Kw	Tons	Kw	Tons	Kw	Tons	Kw	
A-FC 6221313	ALC-065362	10	35	12	42	16	57	18	64	15.5	55	20	71	11	39	13	46	15	53	19	67	S-5292
A-FC 8241717	ALC-065276	20	71	25	88	35	124	39	138	32	113	42	157	22	78	27	95	31	110	41	145	S-5202

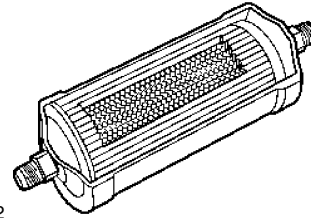
OIL FILTERS

ALCO AOFD 553 OIL FILTER DRIER

ALCO's AOFD is designed specifically for refrigerant systems that use POE oil. POE oil is hygroscopic in nature, which means that it attracts and absorbs water. Moisture in a closed system can produce acid and will harm the compressor. ALCO's AOFD protects compressors by removing moisture and trapping contaminants.

FEATURES

- Designed to clean and dry POE Oil
- 3/8" male flare connections for easy replacement
- Large filter surface area to provide maximum filtration
- Contains 100% molecular sieve XH-9 Desiccant for moisture removal
- Designed to operate at a very low pressure drop
- 10 micron filtration for optimum oil cleaning

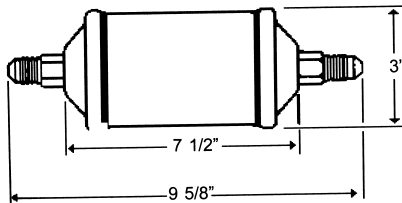


P2022

AOFD WATER CAPACITY TABLE

REFRIGERANT TYPE	DROPS @ 125° F
R-22	497
R-134a	518
R-404A	518
R-407C	435

DIMENSIONAL DATA



ORDERING INFORMATION FOR AOFD FILTER DRIER

PCN	DESCRIPTION
062829	AOFD 553 OIL FILTER DRIER

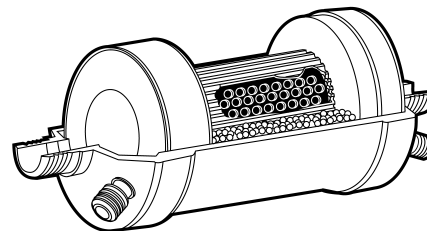
OIL FILTER ASF 45 F 3-VV

FEATURES

- Specifically designed to protect the compressor from dirt and all solid contaminants
- Full flow fittings minimizes pressure drop
- Dual access valves
- 3/8" SAE connections for easy installation on oil lines
- Filtration to 10 microns for maximum compressor protection
- Corrosion resistant epoxy powder paint finish

SPECIFICATIONS

Maximum working pressure: 500 psig
UL file number: SA 3124
CSA file number: LR 32462



P980

ORDERING INFORMATION FOR ASF

PCN	DESCRIPTION
059999	ASF 45 F 3-VV

OIL FILTERS

AOF HIGH EFFICIENCY OIL FILTER

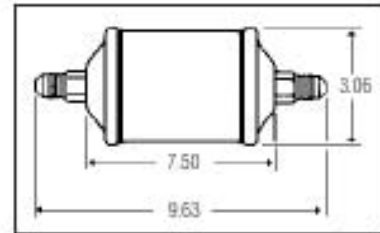
HIGHLY RECOMMENDED
FOR SCROLL COMPRESSORS!

APPLICATION

- Specifically designed to protect the compressor from dirt and all solid contaminants including metallic magnetic particles

FEATURES

- Corrosion resistant epoxy powder paint finish
- 3/8" SAE connections for easy installation on oil lines
- 98% efficient to 4 micron particles
- Compatible with all oils



P4660Y

SPECIFICATIONS

- Maximum working pressure: 500 psig
- UL/CUL: SA 3124

ORDERING INFORMATION

PCN*	DESCRIPTION
ALC-064952	AOF 303

*Product Code Number.

AOF HIGH EFFICIENCY TAKE-APART OIL FILTER

APPLICATION

- Specifically designed to protect the compressor from dirt and all solid contaminants including metallic magnetic particles

FEATURES

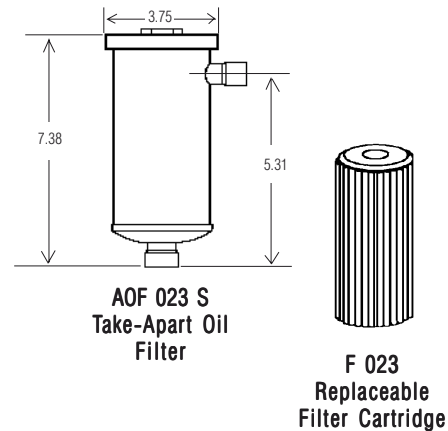
- Compatible with all oils
- Solid copper fittings
- Quick change filter cartridge
- Corrosion resistant epoxy paint finish
- 98% efficient to 4 micron particles
- 3/8 ODF connections

ORDERING INFORMATION

PCN*	DESCRIPTION
ALC-062784	AOF 023S
ALC-064799	F023 Cartridge

Standard Product Offering.

*Product Code Number.



P4660Z.pdf

SPECIFICATIONS

- Maximum working pressure: 500 psig
- UL/CUL: SA7175

TEST KIT

UNIVERSAL ACID TEST KIT

**FOR USE WITH
BOTH MINERAL AND
POE OILS!**

ORDERING INFORMATION

PCN*	DESCRIPTION
064427	AA Kit Universal

Standard Product Offering.

*Product Code Number.

APPLICATION

The Universal Acid Alert Test Kit provides a positive indication of whether the acid level of the refrigeration oil is safe or unsafe.

FEATURES

- Quick and easy test kit
- Universal acid test kit for use with all refrigeration lubricants
- By changing the percentage of oil sample taken, the acid number of the oil can be accurately determined
- Phase separation of the chemicals in the kit provide a positive color change regardless of the color and condition of the oil



P1400

PRESSURE REGULATORS

EMERSON PRESSURE REGULATOR QUICK SELECT

APPLICATION		FEATURE	MODEL	RANGE (IN PSIG)
UPSTREAM PRESSURE	EVAPORATOR REGULATOR	Stepper Motor Actuated, Direct Drive	ESR	ANY
		Direct Acting, Adjustable	IPR	0-100
		Brass Body, High Pressure Pilot Actuated, Suction Stop Solenoid	EPRB(S)	0-110
DOWNSTREAM PRESSURE	CRANKCASE REGULATOR	Direct Acting, Adjustable	OPR	0-130
HO T GAS BYPASS†		Stepper Motor Actuated, Direct Drive	ESR	ANY
		Direct Acting, Adjustable, 1-1/2 tons and below (R-22)	ACP(E)	0-80
		Direct Acting, Adjustable, 1/2 to 4 tons (R-22)	EGR(E)	0-80
		Direct Acting, Adjustable, 4 to 8 tons (R-22)	DGR(E)	0-80
		Direct Acting, Adjustable, Take-A-Part Construction, 1/2 to 7 tons (R-22)	CPH(E)	0-80
HEAD PRESSURE CONTROL		Stepper Motor Actuated, Direct Drive	ESR	ANY
		3-Way, Non Adjustable	HP(C)	95-255
STEPPER MOTOR	DIAGNOSTIC TOOL	Handheld, Simple to Use, Operates All Stepper Products	MTB-1	—

†Tons of bypass capacity for sizing (not full-open capacity)

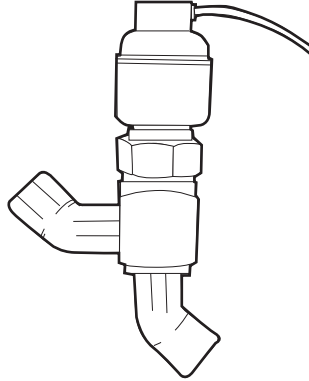
STEPPER REGULATOR

ALCO ESR ELECTRONIC STEPPER REGULATOR

The ESR is a direct driven suction regulator that uses a linear actuating bi-polar stepper motor to move the piston. The stepper motor is actuated by a voltage pulse to energize each of the motor phases and move the piston in discrete .001 inch increments. In individual cases, the ESR, along with appropriate control electronics, provides state-of-the-art temperature control within less than $\pm 1^\circ \text{F}$ of the desired setpoint temperature. The ESR is compatible with many control electronics widely available in the market today. Applications for the ESR include case control, line-up and rack mounted control, as well as transportation applications on refrigerated trucks, trailers and containers.

FEATURES

- No external sealing o-rings.
- Connections
 - 7/8 ODF (ESR 12)
 - 1-3/8 ODF (ESR 20)
- Removable external connector.
- Excellent repeatability.
- Corrosion resistant design.
- Solenoid tight shut-off.



P4661

SPECIFICATIONS

Operating temperatures:

- Ambient: -40°F to 150°F
- Refrigerant: -40°F to 140°F

Maximum working pressure: 500 psi

Linear actuating bi-polar stepper motor

Direct drive with no hysteresis

Two motors available

Step rate: 50 ± 10 steps per second

- 12 VDC
- 24 VDC

Steps full travel:

- 500 steps (ESR 12)
- 800 steps (ESR 20) of rated voltage

Voltage tolerance: $+10\%$ and -15%

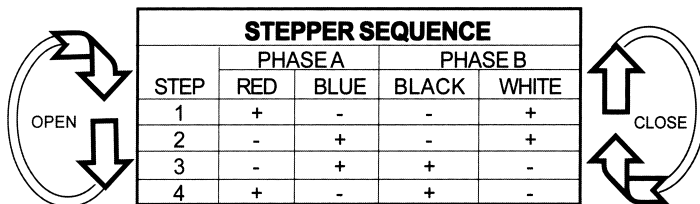
.001 inch of linear travel per step

Resistance (each phase): 29 ohms

$\pm 10\%$ (12 V) or 116 ohms $\pm 10\%$ (24 V)

NOMENCLATURE

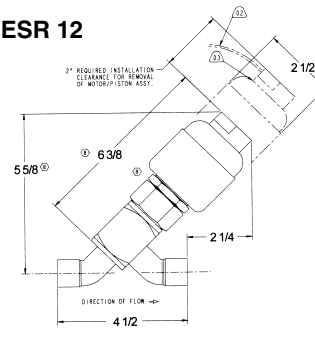
ESR	12120	T	7/11	12/24 V	NC
ELECTRIC STEPPER REGULATOR	POINT DIAMETER IN 1/16" INCREMENTS ESR-12 = 3/4" DIA. ESR-20 = 1-1/4" DIA.	CONNECTION T = ODF	CONNECTION SIZE IN 1/8" INCREMENTS 7 = 7/8" 11 = 1-3/8"	12 VOLT/ 24 VOLT BIPOLAR STEPPER MOTOR	NO EXTERNAL CONNECTOR



pg595E

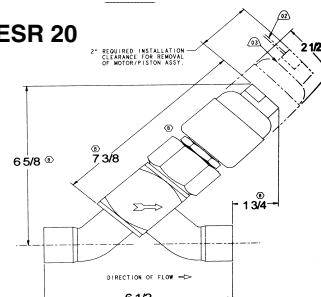
ESR DIMENSIONAL DATA

ESR 12



pg595B

ESR 20



pg595C

MTB-1 HAND-HELD STEPPER DRIVER

Alco Controls provides a hand-held stepper driver to allow the user to verify the Alco ESR (or ESV) responds properly to known driver commands. Compact and easy to use, the MTB-1 and a common multi-meter are the only tools required to completely troubleshoot any Alco electronically driven product.

STEPPER REGULATOR

ALCO ESR ELECTRONIC STEPPER REGULATOR (cont)

NOMINAL ESR CAPACITY IN TONS (kW)

VALVE	R134a	R22	R507/R404A
ESR-12	5.3 (18.3)	5.8 (20.1)	5.7 (19.9)
ESR-20	10.3 (35.7)	13.4 (46.3)	11.0 (38.3)

VALVE	R12	R407C	R502
ESR-12	4.8 (17.0)	7.9 (28.0)	7.8 (27.6)
ESR-20	9.5 (33.6)	15.1 (53.5)	15.1 (53.5)

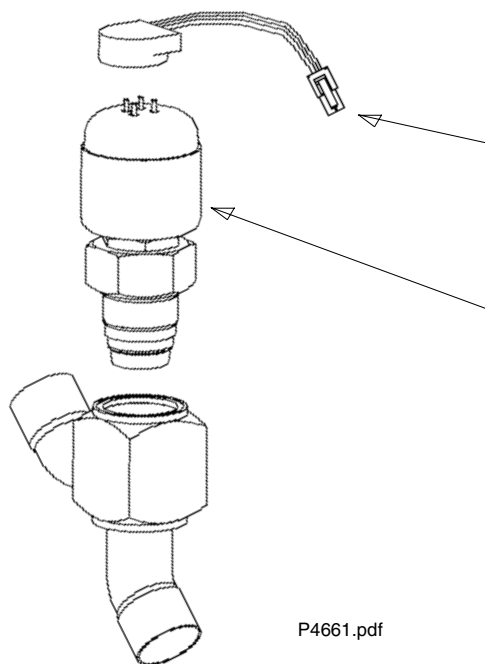
All capacities shown are at 40°F Evaporator Temperature and 2 psi pressure drop across the ESR, with the ESR full open 800 steps. For capacities at other evaporator temperatures and pressure drops, see extended capacity tables. Contact applications engineering for sizing and selection of ESRs in hot gas or head pressure control applications.

ORDERING INFORMATION FOR ESR

PCN*	DESCRIPTION
064773	ESR 12 T 7 S/T 12V NC
064774	ESR 12 T 7 S/T 24V NC
062566	ESR 20 T 11 S/T 12V NC
062750	ESR 20 T 11 S/T 24V NC
064858	ESR 12 T 7 ANG 12V NC
064859	ESR 12 T 7 ANG 24V NC
064860	ESR 20 T 11 ANG 12V NC
064861	ESR 20 T 11 ANG 24V NC
062093	ESR EXTERNAL MOLDED CONNECTOR 5'
062094	ESR EXTERNAL MOLDED CONNECTOR 22'

Standard Product Offering.

*Product Code Number.



ESR REPLACEMENT PARTS
EXPLODED VIEW

EXTERNAL CONNECTOR

PCN*	DESCRIPTION
062093	EXTERNAL CONNECTOR, 4-WIRE, 5 FT. (Part #: 28963-1)
062094	EXTERNAL CONNECTOR, 4-WIRE, 22 FT. (Part #: 28963-2)

VALVELESS BODY

PCN*	DESCRIPTION
064771	ESR-12 VLB 12V NC
064772	ESR-12 VLB 24V NC
064556	ESR-20 VLB 12V NC
064641	ESR-20 VLB 24V NC

Standard Product Offering.

*Product Code Number.

P4661.pdf

UPSTREAM REGULATOR

IPR INLET PRESSURE UPSTREAM REGULATOR

IPR Upstream Evaporator Pressure Regulators accurately maintain a predetermined minimum evaporator inlet pressure, regardless of sudden load or suction pressure changes. These valves operate from an inlet pressure signal, opening on a rise in pressure above the valve set point and closing at any inlet-pressure below the setpoint. The IPR is a hermetic valve supplied with a pressure tap in the inlet connection as standard.

FEATURES

- Compact design permits minimal space requirements
- Install in vertical or horizontal line
- Supplied with strainer in the inlet connection
- Supplied with copper line connections for installation ease

OPTIONS

- 2 adjustment range options:
 - 0-50 psig (factory setting 30 psig) or
 - 30-100 psig (factory setting 60 psig)

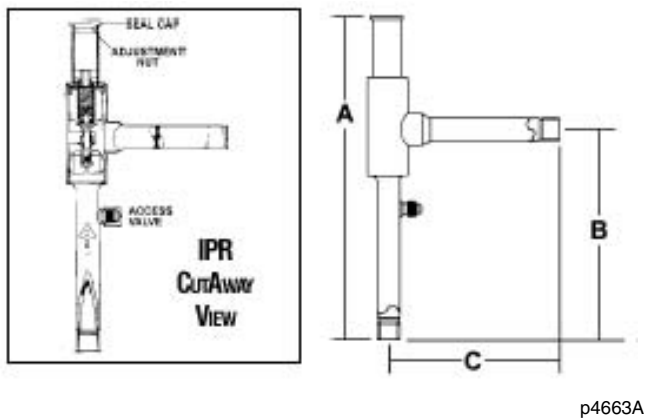
NOMINAL CAPACITY TABLE IN TONS (kW)

VALVE	R12	R134a	R22	R407C	R507/R404A	R502
IPR-6	0.8 (2.8)	.94 (3.2)	1.2 (4.1)	1.3 (4.7)	1.11 (3.8)	9.4 (3.3)
IPR-10	2.0 (7.1)	2.2 (7.8)	3.0 (10.6)	3.2 (11.3)	2.5 (8.9)	2.2 (7.8)

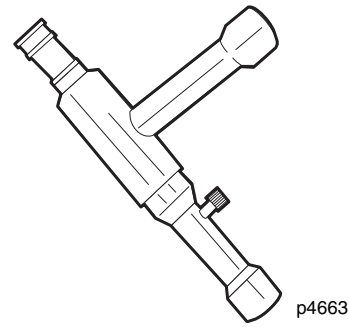
All capacities shown are at 40°F Evaporator Temperature and 2 psi pressure drop across the valve. For capacities at other evaporator temperatures and pressure drops, see extended capacity tables.

IPR DIMENSIONAL DATA

VALVE	A	B	C
IPR-6	9.75	6.38	5.25
IPR-10	11.19	6.5	6.69



DIMENSIONS SHOWN ARE IN INCHES.



SPECIFICATIONS

- Maximum working pressure: 400 psig
- UL file number SA5312, Guide SFJQ
- CSA file number LR44005

NOMENCLATURE

EXAMPLE: IPR-65/8ODF0-50 PSIG

IPR	6	5/8	ODF	0-50psig
Valve Series	Port Size (in 1/8")	Connection Size	Connction Type (SAE optional)	Adjustment Range

ORDERING INFORMATION

PCN*	PART NO.	ADJUSTMENT RANGE
049239	IPR - 6 (1/2 ODF)	0-50 PSIG
047901	IPR - 6 (1/2 SAE)	0-50 PSIG
059125	IPR - 6 (1/2 ODF)	30-100 PSIG
047902	IPR - 6 (1/2 SAE)	30-100 PSIG
047300	IPR - 6 (5/8 ODF)	0-50 PSIG
047904	IPR - 6 (5/8 SAE)	0-50 PSIG
047303	IPR - 6 (5/8 ODF)	30-100 PSIG
047903	IPR - 6 (5/8 SAE)	30-100 PSIG
047301	IPR - 6 (7/8 ODF)	0-50 PSIG
047304	IPR - 6 (7/8 ODF)	30-100 PSIG
047302	IPR - 6 (1-1/8 ODF)	0-50 PSIG
047305	IPR - 6 (1-1/8 ODF)	30-100 PSIG

PCN*	PART NO.	ADJUSTMENT RANGE
047306	IPR -10 (7/8 ODF)	0-50 PSIG
047309	IPR -10 (7/8 ODF)	30-100 PSIG
047307	IPR -10 (1-1/8 ODF)	0-50 PSIG
047310	IPR -10 (1-1/8 ODF)	30-100 PSIG
047308	IPR -10 (1-3/8 ODF)	0-50 PSIG
047311	IPR -10 (1-3/8 ODF)	30-100 PSIG

Standard Product Offering.

*Product Code Number.

UPSTREAM REGULATOR

ALCO EPRB(S) BRASS BODY UPSTREAM REGULATOR

This Evaporator Pressure Regulator is a new lightweight, energy-efficient pilot operated regulator. It is supplied with copper connections to allow easy installation into the system. The pilot operation is dependent upon high side system pressure which minimizes the pressure drop across the regulator. This regulator is of normally-open construction so that a manual operator is not required for system evacuation. A solenoid version having the suction stop is available as an option.

ALCO EPRB(S) series regulators are pilot operated and designed to maintain a predetermined minimum inlet pressure. They are available in a "S" version for gas defrost applications. For information on other refrigerant applications please contact ALCO's Applications Engineering Department.

Function: EPRB(S) without high side pilot pressure: OPEN
EPRB with high side pilot pressure: EPR
EPRBS with pilot pressure, solenoid de-energized: CLOSED
EPRBS with pilot pressure, solenoid energized: EPR

OPTIONS

- Pilot connection available in 1/4" SAE or ODF
- Available with suction stop feature using a take-apart solenoid for additional serviceability

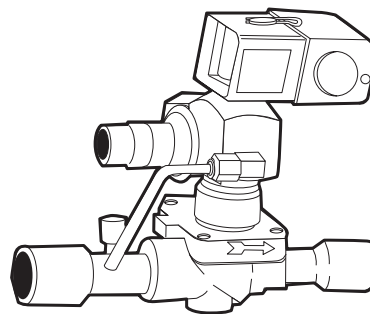
FEATURES

- Energy efficient as it uses high side pressure for pilot operation, which minimizes system pressure drop.
- Uses copper line connections allowing installation with phos-copper alloy, i.e.: no flux.
- Can be installed without disassembly.
- Has a wide adjustment range (0-110 psig).
- Easily disassembled to allow easy serviceability.
- May be installed in either a vertical or horizontal refrigeration line.
- Pressure tap on inlet connection.
- External leak tested to less than 1/10 oz. a year.
- Corrosion resistant to 1000 hour salt spray.
- Reduced discharge to suction bleed.

SPECIFICATIONS

Maximum Working Pressure: 450 psig (3100 KPa).
MOPD: 350 psi (2412 KPa) "S" version.
Maximum Temperature: 250° F (121° C).
System pressure differential needed for valve operation 25 lb.

"S" version for use with DMG, AMG or AMC coils only.



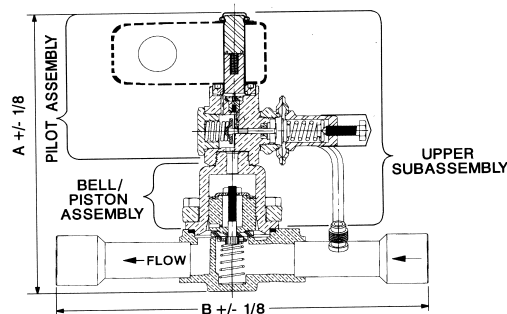
p4664

ORDERING INFORMATION & DIMENSIONAL DATA

PCN*	PART NO.	A	B
057907	EPRB 12 T 7 ODF PILOT 7/8 ODF VLC	6.88	8.50
057893	EPRB 12 T 7 SAE PILOT 7/8 ODF VLC		
057242	EPRB 12 T 9 ODF PILOT 1-1/8 ODF VLC		
057241	EPRB 12 T 9 SAE PILOT 1-1/8 ODF VLC	7.50	11.06
057248	EPRB 16 T 11 ODF PILOT 1-3/8 ODF VLC		
057244	EPRB 16 T 11 SAE PILOT 1-3/8 ODF VLC		
057251	EPRB 20 T 13 ODF PILOT 1-5/8 ODF VLC	8.25	12.38
057247	EPRB 20 T 13 SAE PILOT 1-5/8 ODF VLC		
057894	EPRBS 12 T 7 SAE PILOT 7/8 ODF VLC		
057243	EPRBS 12 T 9 SAE PILOT 1-1/8 ODF VLC	6.88	8.50
057245	EPRBS 12 T 9 ODF PILOT 1-1/8 ODF VLC		
057250	EPRBS 16 T 11 ODF PILOT 1-3/8 ODF VLC		
057246	EPRBS 16 T 11 SAE PILOT 1-3/8 ODF VLC	7.50	11.06
057249	EPRBS 20 T 13 SAE PILOT 1-5/8 ODF VLC		
057253	EPRBS 20 T 13 ODF PILOT 1-5/8 ODF VLC		

Standard Product Offering.

*Product Code Number.



pg593

DIMENSIONS SHOWN ARE IN INCHES.

UPSTREAM REGULATOR

ALCO EPRB(S) BRASS BODY UPSTREAM REGULATOR (cont)

EPRB(S) REPLACEMENT PARTS

When 1/4" ODF pilot repair kits are needed, the following repair kits should be ordered:

EPRB Pilot Assembly KR50071

EPRB(S) Pilot Assembly KR 50067

ODF PILOT ONLY		
VALVE SIZE	EPRB UPPER SUB-ASSEMBLY	EPRB(S) UPPER SUB-ASSEMBLY
12	KR 50068	KR 50072
16	KR 50069	KR 50073
20	KR 50070	KR 50074

SAE & ODF

SOLENOID ONLY	GASKETS
KR 50051	KR 50053

SAE PILOT ONLY

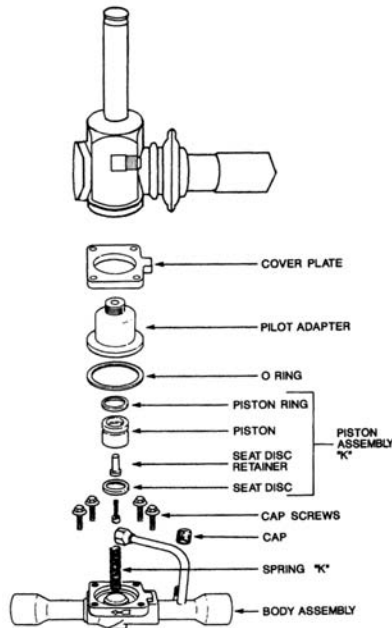
VALVE SIZE	BELL/PISTON	EPRB UPPER SUBASSEMBLY	EPRBS UPPER SUBASSEMBLY
12	KR50045	KR50048	KR50054
16	KR50046	KR50049	KR50055
20	KR50047	KR50050	KR50056

PILOT ASSEMBLY SAE ONLY

EPRB	EPRB(S)
KR 50052	KR 50044

NOTE: Both the Bell/Piston Assembly and the Upper Subassembly Kits contain the main body gasket and spring.

EPRB(S) EXPLODED VIEW



EPRB(S) REPLACEMENT PARTS

PILOT ASSEMBLY		
1/4" ODF PILOT	PART #	PCN*
EPRBS	KR-50067	058492
1/4" SAE PILOT	PART #	PCN*
EPRB	KR-50052	058026
EPRBS	KR-50044	058018

Consists of pilot assembly (EPRB) or pilot assembly with suction stop solenoid (EPRBS).

UPPER SUBASSEMBLY		
1/4" ODF PILOT	PART #	PCN*
EPRB-12	KR-50068	058493
EPRB-16	KR-50069	058494
EPRB-20	KR-50070	058495
EPRBS-12	KR-50072	058497
EPRBS-16	KR-50073	058498
EPRBS-20	KR-50074	058499
1/4" SAE PILOT	PART #	PCN*
EPRB-12	KR-50048	058022
EPRB-16	KR-50049	058023
EPRB-20	KR-50050	058024
EPRBS-12	KR-50054	058028
EPRBS-16	KR-50055	058029
EPRBS-20	KR-50056	058030

Consists of all parts except body assembly and cap.

BELL/PISTON ASSEMBLY		
VALVE	PART #	PCN*
EPRB(S)-12	KR-50045	058019
EPRB(S)-16	KR-50046	058020
EPRB(S)-20	KR-50047	058021

Consists of piston ring, piston, seat disc retainer, seat disc and bell.

GASKETS		
	PART #	PCN*
ALL EPRB	KR-50053	058027
ALL EPRBS		

Gaskets mate with EPRB and EPRBS with SAE or ODF pilot connections. Gaskets consist of Body O-ring and suction stop enclosing tube o-ring.

*Product Code Number.

NOMINAL CAPACITY TABLE IN TONS (kW)

VALVE	R12	R134a	R22	R07C	R507/R404A	R502
EPRB(S)-12	2.9 (10.3)	3.41 (11.8)	4.47 (15.5)	5.1 (18.1)	3.77 (13.1)	3.5 (12.4)
EPRB(S)-16	5.3 (18.8)	6.00 (20.8)	7.88 (27.3)	8.3 (29.4)	6.64 (23.0)	6.2 (22.1)
EPRB(S)-20	8.4 (29.7)	11.19 (38.8)	14.70 (51.0)	15.5 (54.9)	12.39 (43.0)	11.7 (41.2)

All capacities shown are at 40°F Evaporator Temperature and 2 psi pressure drop across the valve. For capacities at other evaporator temperatures and pressure drops, see extended capacity tables.

DOWNSTREAM REGULATOR

OPR OUTLET PRESSURE DOWNSTREAM REGULATOR

OPR Series Downstream Pressure Regulators accurately maintain a predetermined maximum outlet pressure. Designed to prevent compressor motor overload, the OPR is a hermetic valve supplied with a pressure tap in the inlet connection as standard.

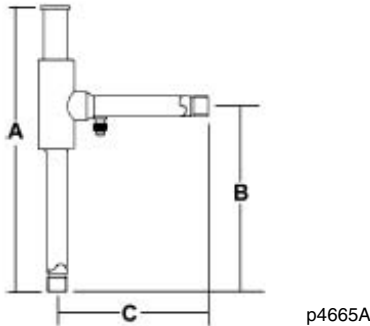
FEATURES

- Compact design permits minimal space requirements
- Install in vertical or horizontal line
- Supplied with strainer in the inlet connection
- Supplied with copper line connections for installation ease
- Maximum working pressure: 400 psig

OPTIONS

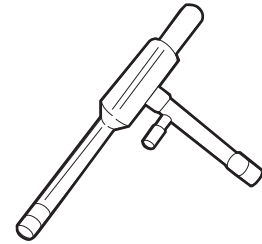
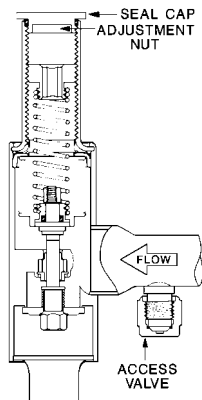
- 3 adjustment range options:
 - 0-60 psig (factory setting 30 psig)
 - 20-90 psig (factory setting 60 psig)
 - 50-130 psig (factory setting 90 psig)

DIMENSIONAL DATA



VALVE	A	B	C
OPR-6	9.75	6.38	5.25
OPR-10	11.19	6.50	5.69

DIMENSIONS SHOWN ARE IN INCHES.



SPECIFICATIONS

- Maximum working pressure: 400 psig
- UL file number SA5312, Guide SFJQ
- CSA file number LR44005

NOMENCLATURE EXAMPLE: OPR-65/8ODF0-60 PSIG

OPR	6	5/8	ODF	0-60psig
Valve Series	Port Size (in 1/8")	Connection Size	Connection Type SAE or ODF	Adjustment Range

ORDERING INFORMATION

PCN*	PART NO.	ADJUSTMENT RANGE
049241	OPR - 6 (1/2 ODF)	0-60 PSIG
054405	OPR - 6 (1/2 ODF)	20-90 PSIG
047907	OPR - 6 (1/2 SAE)	0-60 PSIG
054871	OPR - 6 (1/2 SAE)	20-90 PSIG
047314	OPR - 6 (1-1/8 ODF)	0-60 PSIG
047312	OPR - 6 (5/8 ODF)	0-60 PSIG
054406	OPR - 6 (5/8 ODF)	20-90 PSIG
049712	OPR - 6 (5/8 ODF)	50-130 PSIG
047908	OPR - 6 (5/8 SAE)	0-60 PSIG
047313	OPR - 6 (7/8 ODF)	0-60 PSIG
058172	OPR - 6 (7/8 ODF)	20-90 PSIG
047909	OPR - 6 (7/8 ODF)	50-130 PSIG
059223	OPR - 10 (1-1/8 ODF)	20-90 PSIG
049788	OPR - 10 (1-1/8 ODF)	50-130 PSIG
047316	OPR - 10 (1-1/8 ODF)	0-60 PSIG
049787	OPR - 10 (1-3/8 ODF)	50-130 PSIG
047318	OPR - 10 (1-3/8 ODF)	0-60 PSIG
047315	OPR - 10 (7/8 ODF)	0-60 PSIG
061786	OPR - 10 (7/8 ODF)	20-90 PSIG
049789	OPR - 10 (7/8 ODF)	50-130 PSIG

Standard Product Offering.

*Product Code Number.

HOT GAS REGULATOR

ACP(E) DIRECT ACTING, HOT GAS REGULATOR

ACP(E) series direct acting, hot gas bypass regulator is designed for small capacity systems.

FEATURES

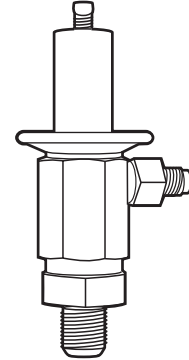
- Small, compact size adapts to any installation
- Friction-free floating design
- Covers multiple capacity ranges
- Fully adjustable from 0-80 psig (factory setting 40 psig)
- Wrench flats on inlets and outlets
- Can be used as a constant pressure automatic expansion valve

OPTIONS

- Angle or straight-thru style
- Internal or external equalizer
- SAE or ODF connections
- Available with fixed setting/non-adjustable

SPECIFICATIONS

- Safe working pressure: 450 psig
- Safe working temperature: 300°F
- UL file #SA5312, CSA file #LR44005



P2025

ORDERING INFORMATION

PCN*	PART NO.	PCN*	PART NO.
046838	ACP 1 IE 1/4 x 3/8-1/2 SAE ANG	049204	ACP 5 IE 3/8 X 3/8-1/2 SAE ANG
057233	ACP 1 IE 1/4 x 3/8 ODF S/T	047653	ACP 6 IE 1/4 x 3/8 SAE ANG
047680	ACP 1 IE 1/4 x 3/8 ODF ANG	047654	ACP 7 IE 3/8 x 1/2 ODF ANG
056240	ACP 1 IE 1/4S X 3/8 SAE ANG	047285	ACP 7 IE 3/8 x 3/8-1/2 SAE ANG
046839	ACP 2 IE 1/4 X 3/8 SAE ANG	047655	ACP 8 IE 3/8 x 1/2 ODF ANG
047651	ACP 2 IE 1/4 x 3/8 ODF ANG	047657	ACP 9 IE 3/8 X 1/2 ODF ANG
047283	ACP 3 IE 1/4 X 3/8 ODF ANG	057209	ACP 9 IE 3/8 X 3/8 ODF ANG
046840	ACP 3 IE 1/4 x 3/8 SAE ANG	057771	ACP 9 IE 1/2 x 5/8 ODF ANG
047105	ACP 4 IE 1/4 x 3/8 ODF ANG	052773	ACP 9 IE 1/4 X 3/8 ODF ANG
047101	ACP 4 IE 1/4 X 3/8 SAE ANG	047658	ACP 9 IE 3/8 x 3/8-1/2 SAE ANG
047284	ACP 5 IE 1/4 x 3/8 ODF ANG	047280	ACPE 1 SAE EE 1/4 x 3/8 SAE S/T
047332	ACP 5 IE 1/4 X 3/8 SAE ANG	047790	ACPE 7 SAE EE 3/8 x 1/2 ODF ANG
053374	ACP 5 IE 3/8 x 3/8 ODF ANG	048657	ACPE 9 SAE EE 3/8 x 1/2 ODF S/T
		058674	ACPE 9 SAE EE 1/2 x 5/8 ODF S/T

Standard Product Offering.

*Product Code Number.

NOMENCLATURE

EXAMPLE: ACPE 6 SAE 1/4 X 3/8 ODF ANG

ACP	E	6	SAEE	1/4	x	3/8	ODF	ANG
Valve Series	External Equalizer (optional)	Port Size (diameter)	External Equalizer Type	Inlet Connection Size		Outlet Connection Size	Connection Type ODF or SAE	Body Style ANG = Angle S/T = Straight-thru

NOMINAL CAPACITY TABLE IN TONS (kW)

VALVE	PORT DIA. (inches)	R-12	R-134a	R-22	R-407C	R-507/R-404A	R-502
ACP(E)-1	.047	0.05 (0.17)	0.07 (0.24)	0.09 (0.31)	0.09 (0.31)	0.09 (0.31)	0.08 (0.28)
ACP(E)-2	.059	0.07 (0.24)	0.09 (0.31)	0.12 (0.42)	0.12 (0.42)	0.11 (0.38)	0.11 (0.38)
ACP(E)-3	.101	0.12 (0.42)	0.16 (0.56)	0.22 (0.76)	0.22 (0.76)	0.20 (0.69)	0.20 (0.69)
ACP(E)-4	.113	0.18 (0.62)	0.23 (0.80)	0.32 (1.11)	0.32 (1.11)	0.28 (0.97)	0.29 (1.01)
ACP(E)-5	.125	0.28 (0.97)	0.37 (1.28)	0.50 (1.74)	0.50 (1.74)	0.45 (1.56)	0.45 (1.56)
ACP(E)-6	.140	0.38 (1.32)	0.50 (1.74)	0.69 (2.39)	0.69 (2.39)	0.60 (2.08)	0.63 (2.19)
ACP(E)-7	.169	0.55 (1.91)	0.71 (2.46)	0.98 (3.40)	0.98 (3.40)	0.90 (3.12)	0.89 (3.09)
ACP(E)-8	.196	0.65 (2.26)	0.84 (2.91)	1.20 (4.16)	1.20 (4.16)	1.00 (3.47)	1.00 (3.47)
ACP(E)-9	.228	0.75 (2.60)	0.98 (3.40)	1.40 (4.86)	1.40 (4.86)	1.20 (4.16)	1.20 (4.16)

All capacities shown are at 40°F Evaporator Temperature, 100°F Condensing Temperature, Valve Full Open, Compressor Discharge Temperature is 50°F higher than Isentropic Compression and 25°F Superheat at the compressor inlet.

The R-12, R-134a capacities sP = 80 psi (560 kPa)

The R-22, R-407C capacities sP = 125 psi (875 kPa)

The R-404A, R-507, R-502 capacities sP = 135 psi (945 kPa)

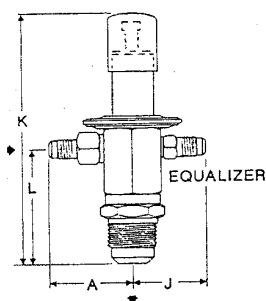
For conditions other than nominal conditions, multiply the nominal capacities shown in the above tables by the appropriate multiplier found in the extended capacity tables section.

AUTOMATIC VALVES

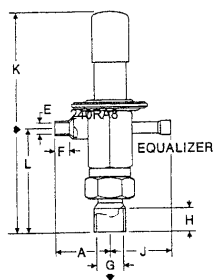
ALCO ACP(E) AUTOMATIC VALVE

ACP DIMENSIONAL DATA

ACP ANGLE

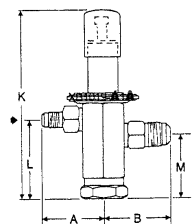


acp-a

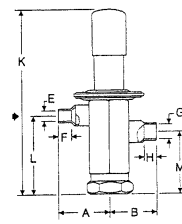


acp-b

ACP STRAIGHT-THRU



acp-c



acp-d

ACP ROUGH IN DIMENSION TABLE

ACP(E) VALVE TYPE	INLET	OUTLET	A	B	E DIA.	F MIN.	G DIA.	H MIN.	K	L
ANGLE SAE	1/4	3/8	1.50	—	—	—	—	—	4.50	2.13
	3/8	3/8 - 1/2	1.64							
	1/2		1.72							
	1/4	5/8	1.50							
	3/8		1.64						4.61	2.23
	1/2		1.72							
ANGLE ODF	1/4	3/8	1.25	—	.25	.32	.37	.32	4.55	2.17
	3/8	1/2	1.19		.37	.32	.50	.38		
	1/2	5/8	1.38		.50	.38	.62	.50		
	5/8		1.25		.62	.50				
	1/4		1.19		.25	.32				
	3/8		1.19		.37	.32				
	1/4	1/2	1.25		.25	.32	.50	.38	4.55	2.17
	1/2	7/8	1.19		.50	.38	.87	.75	5.11	2.73

ACP(E) VALVE TYPE	INLET	OUTLET	A	B	E DIA.	F MIN.	G DIA.	H MIN.	K	L	M
STRAIGHT-THRU SAE	1/4	3/8	1.50	1.64	—	—	—	—			
	3/8		1.64								
	1/2	1/2	1.72	1.72							
	1/4		1.50								
	3/8	5/8	1.64	1.98							
	1/2		1.72								
STRAIGHT-THRU ODF	1/4	3/8	1.25	1.19	.25	.32	.37	.32	4.25	1.88	1.48
	3/8	1/2	1.19		.37	.32		.50			
					1/2	.50	.38				
	5/8	1.38				.62	.50	.62			
			5/8	1.38	.25	.32					
			3/8	1.19	.37	.32					
	1/4	1/2	1.25	1.19	.25	.32	.50	.38			
	1/2	7/8	1.19	1.75	.50	.38	.87	.75			
	3/8				.37	.32	.87	.75			

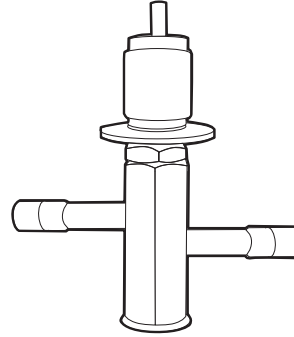
DIMENSIONS SHOWN ARE IN INCHES.

HOT GAS BYPASS REGULATOR

EGR(E) DIRECT ACTING HOT GAS BYPASS REGULATOR

EGRE Series Direct Acting Hot Gas Bypass Regulators are designed for use on light commercial systems. They provide precision system capacity balance at an economical price. The EGRE is an adjustable valve.

The adjustable EGR Regulators are supplied with a factory set point of 50 psig (point at which the regulator starts to open), which can be changed by adjustment. Capacity of these regulators is based on 6° gradient. Rated capacity will be attained when the suction pressure falls 6° below the corresponding set point saturation temperature. This lower temperature, at which the regulator is rated, is termed "178-180). When the suction pressure decreases below the set point, the regulator opens and allows discharge gas to be bypassed. The discharge gas may be bypassed into the evaporator or the suction line. When bypassed to the suction line, a liquid injection Thermo Valve must be installed to properly desuperheat the suction gas returning to the compressor.



P4666

CATALOG NUMBER	LINE CONNECTIONS		STANDARD EQUALIZER†	ADJUSTMENT RANGE	SHIPPING WEIGHT
	CODE	SIZE & STYLE			
EGRE-4†	S3	3/8 ODF	1/4 SAE or 1/4 ODF EXTERNAL	0-80 psig	2-1/2 lbs.
EGRE-6†	S4	1/2 ODF			
EGRE-8†	S5	5/8 ODF			

†Add connection code to complete catalog number.

Example: EGRE-4S4.

‡Internal equalized style available. To order, omit "E" from catalog number.

Example: EGR-4S3.

FEATURES

- Compact hermetic construction.
- Contoured power assembly for long life.
- ODF line connections.
- Balanced port design.

OPTIONS

- External or internal equalizer.
- Sizes available: 4 thru 8.

SPECIFICATIONS

- Safe working pressure: 440 psig
- Adjustment range: 0-80 psig (factory setting 50 psig)
- UL file number SA5312
- CSA file number LR44005

ORDERING INFORMATION

PCN*	PART NO.	PCN*	PART NO.
063167	EGR 4 S 3 A IE	063177	EGRE 4 S 5 B SAE EE
063168	EGR 4 S 4 A IE	063178	EGRE 4 S 5 C ODF EE
063169	EGR 4 S 5 A IE	063179	EGRE 6 S 3 B SAE EE
063170	EGR 6 S 3 A IE	063180	EGRE 6 S 3 C ODF EE
063171	EGR 6 S 4 A IE	063181	EGRE 6 S 4 B SAE EE
063172	EGR 6 S 5 A IE	062868	EGRE 6 S 4 C ODF EE
063173	EGR 8 S 4 A IE	062869	EGRE 6 S 5 B SAE EE
063174	EGR 8 S 5 A IE	062870	EGRE 6 S 5 C ODF EE
063175	EGRE 4 S 3 B SAE EE	062871	EGRE 8 S 4 B SAE EE
063176	EGRE 4 S 3 C ODF EE	063182	EGRE 8 S 4 C ODF EE
062866	EGRE 4 S 4 B SAE EE	063183	EGRE 8 S 5 B SAE EE
062867	EGRE 4 S 4 C ODF EE	062872	EGRE 8 S 5 C ODF EE

Standard Product Offering.

*Product Code Number.

NOMENCLATURE EXAMPLE: EGR E 6 S 4 B SAE EE

EGR	E	6	S	4	B	SAEEE
Valve Series	External Equalizer (omit for internal equalizer)	Size	Connection S = ODF connections	Connection (in 1/8")	External Equalizer Connection A = NONE, B = 1/4" SAE C = 1/4" ODF	External Equalizer Type

NOMINAL CAPACITY TABLE IN TONS (kW)

VALVE	R-12	R-134a	R-22	R-407C	R-507/R-404A	R-502
EGR(E)-4	1.6 (5.6)	1.8 (6.2)	2.9 (10.1)	2.9 (10.1)	2.8 (9.7)	2.6 (9.0)
EGR(E)-6	2.0 (6.9)	2.4 (8.3)	3.8 (13.2)	3.8 (13.2)	3.5 (12.1)	2.9 (10.1)
EGR(E)-8	3.6 (12.5)	4.2 (14.6)	6.7 (23.2)	6.7 (23.2)	6.3 (21.9)	5.9 (20.5)

All capacities shown are based on 40°F Evaporator Temperature, 100°F Condensing Temperature, Valve Full Open, Compressor Discharge Temperature is 50°F higher than Isentropic Compression and 25°F Superheat at the compressor inlet.

See EGRE Extended Capacity Tables before completing selection.

For conditions other than nominal conditions, multiply the nominal capacities shown in the above tables by the appropriate multiplier found in the extended capacity tables section.

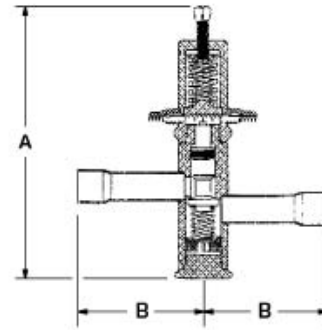
HOT GAS BYPASS REGULATOR

EGR(E) DIRECT ACTING HOT GAS BYPASS REGULATOR (cont)

EGR(E) DIMENSIONAL DATA

VALVE	CONNECTIONS	A	B
EGRE4,EGRE6	S3 3/8 ODF	5.63	1.75
	S4 1/2 ODF		1.75
	S5 5/8 ODF		2.13
EGRE8	S3 3/8 ODF	6.25	1.75
	S4 1/2 ODF		1.75
	S5 5/8 ODF		2.13

DIMENSIONS SHOWN ARE IN INCHES.



P466A6

HOT GAS BYPASS REGULATOR

DGR(E) DIRECT ACTING HOT GAS BYPASS REGULATOR

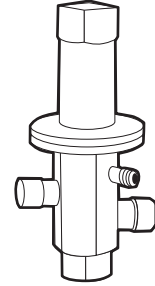
DGRE Series Direct Acting Hot Gas Bypass Regulators are designed for use on residential and light commercial systems. They provide precision system capacity balance at an economical price. The DGRE is an adjustable valve.

The adjustable DGR Regulators are supplied with a factory set point of 50 psig (point at which the regulator starts to open), which can be changed by adjustment. Capacity of these regulators is based on 6° gradient. Rated capacity will be attained when the suction pressure falls 6° below the corresponding set point saturation temperature. This lower temperature, at which the regulator is rated, is termed “evaporator temperature” in the selection tables.

When the suction pressure decreases below the set point, the regulator opens and allows discharge gas to be bypassed. The discharge gas may be bypassed into the evaporator or the suction line. When bypassed to the suction line, a liquid injection Thermo Valve must be installed to properly desuper heat the suction gas returning to the compressor.

FEATURES

- Compact hermetic construction
- Contoured power assembly for long life



P4667

OPTIONS

- External or internal equalizer

SPECIFICATIONS

- Maximum working pressure: 440 psig
- Adjustment range: 0-80 psig (factory setting 50 psig)
- UL file number SA5312, CSA file number 44005

ORDERING INFORMATION FOR DGRE VALVES

PCN*	PART NO.
049640	DGRE 12 S 7 B SAE EE
029806	DGRE 12 S 7 C ODF EE
049861	DGRE 12 S 9 B SAE EE

Standard Product Offering.

*Product Code Number.

NOMENCLATURE EXAMPLE: DGR E 12 S 7 B SAE EE

DGR	E	12	S	7	B	SAEEE
Valve Series	External Equalizer (omit for internal equalizer)	Size	Connection S = ODF Connections	Connection (in 1/8")	EE Connection A = NONE, B = 1/4" SAE C = 1/4" ODF	External Equalizer Type

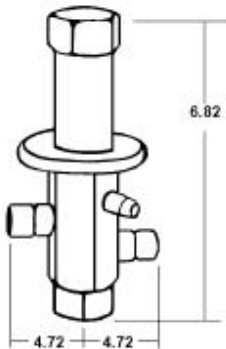
NOMINAL CAPACITY TABLE IN TONS (kW)

VALVE	R-12	R-134a	R-22	R-407C	R-507/R-404A	R-502
DGR(E)-12	8.3 (29.4)	9.7 (34.2)	15.4 (54.6)	15.4 (54.6)	14.5 (51.3)	13.6 (48.0)

All capacities shown are based on 40°F Evaporator Temperature, 100°F Condensing Temperature, Valve Full Open, Compressor Discharge Temperature is 50°F higher than Isentropic Compression and 25°F Superheat at the compressor inlet.

For conditions other than nominal conditions, multiply the nominal capacities shown in the above tables by the appropriate multiplier found in the extended capacity tables section.

DGRE DIMENSIONAL DATA



P4667A

DIMENSIONS SHOWN ARE IN INCHES.

HOT GAS BYPASS REGULATOR

CPH(E) DIRECT OPERATED HOT GAS BYPASS REGULATOR

CPHE Series Direct Operated Regulators are furnished with an adjustment range of 0 -80 psig. Other features include: Take-A-Part construction for service ease without removing the body flange from the line; stainless steel diaphragm; contoured power element; and the "U" gland packing material which eliminates stem friction and packing leaks. Vacuum service is possible by counterclockwise adjustment of the side-mounted adjusting screw. Chart below shows breakdown of parts by number and connection sizes.

A 1/4" SAE male flare external equalizer is standard. Types CPHE3 thru CPHE6 use a balanced double-ported cage assembly.

FEATURES

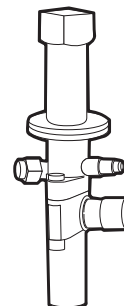
- SAE external equalizer standard

OPTIONS

- Sizes available: 1 thru 6
- ODF and ODF x ODM connections are available
- External air connection available for pneumatic compensation (add EAC prefix — example: EAC CPHE)

SPECIFICATIONS

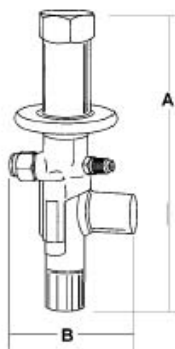
- Adjustment Range: 0-80 psig (factory setting 20 psig)



P4669

NOMENCLATURE EXAMPLE: CPH E 3 SAE 3/8X5/8 ODF ANG

CPH	E	3	SAEE	3/8	X	5/8	ODF	ANG
Valve Series	External Equalizer (omit on CPHE1 & 2 for internal equalizer)	Size	1/4" SAE male External Equalizer	Inlet Connection Size		Outlet Connection Size	Connection Type	Connection Style



P4669A

CPHE DIMENSIONAL DATA

VALVE	A	B
CPHE 1	6.81	2.75
CPHE 2	2.94	
CPHE 3	8.25	
CPHE 4	8.25	
CPHE 5	8.75	
CPHE 6	8.75	

The above dimensions are maximum height and width variations, dependent on flange selection.

DIMENSIONS SHOWN ARE IN INCHES.

NOMINAL CAPACITY TABLE IN TONS (kW)

VALVE	R-12	R-134a	R-22	R-407C	R-507/R-404A	R-502
CPHE 1	0.4 (1.4)	0.5 (1.7)	0.7 (2.5)	0.7 (2.5)	0.7 (2.4)	0.6 (2.2)
CPHE 2	0.7 (2.3)	0.8 (2.8)	1.2 (4.2)	1.2 (4.2)	1.2 (4.2)	1.0 (3.5)
CPHE 3	1.2 (4.2)	1.6 (5.6)	2.3 (8.0)	2.3 (8.0)	2.2 (7.6)	2.0 (6.9)
CPHE 4	3.0 (10.4)	3.8 (13.2)	5.5 (19.4)	5.5 (19.4)	5.3 (18.4)	4.8 (16.7)
CPHE 5	3.6 (12.5)	4.5 (15.6)	6.7 (23.2)	6.7 (23.2)	6.4 (22.2)	5.8 (20.1)
CPHE 6	4.6 (16.0)	5.8 (20.1)	8.5 (29.5)	8.5 (29.5)	8.2 (28.5)	7.4 (25.7)

All capacities shown are based on 40°F Evaporator Temperature, 100°F Condensing Temperature, Valve Full Open, Compressor Discharge Temperature is 50°F higher than Isentropic Compression and 25°F Superheat at the compressor inlet.

For conditions other than nominal conditions, multiply the nominal capacities shown in the above tables by the appropriate multiplier found in the extended capacity tables section.

See CPHE Extended Capacity Tables before completing selection.

ORDERING INFORMATION FOR CPHE VALVES

PCN*	PART NO.	PCN*	PART NO.
038828	CPHE 1 SAE EE 1/2 x 5/8 ODF ANG	087357	CPHE 3 SAE EE 7/8 ODF/1-1/8 ODM S/T
044015	CPHE 1 SAE EE 1/2 x 5/8 ODF S/T	081348	CPHE 4 SAE EE 7/8 ODF/1-1/8 ODM ANG
087912	CPHE 1 SAE EE 3/8 x 1/2 ODF ANG	044783	CPHE 4 SAE EE 7/8 ODF/1-1/8 ODM S/T
088025	CPHE 1 SAE EE 3/8 x 5/8 ODF ANG	038302	CPHE 5 ODF EE 7/8 ODF/1-1/8 ODM ANG
087274	CPHE 1 SAE EE 3/8 x 5/8 ODF S/T	045225	CPHE 5 SAE EE 7/8 ODF/1-1/8 ODM ANG
087774	CPHE 2 SAE EE 1/2 x 5/8 ODF ANG	037802	CPHE 5 SAE EE 7/8 ODF/1-1/8 ODM S/T
087887	CPHE 2 SAE EE 1/2 x 5/8 ODF S/T	064577	CPHE 6 ODF EE 1-1/8 x 1-1/8 ODM ANG
045398	CPHE 2 SAE EE 3/8 x 1/2 ODF ANG	038661	CPHE 6 ODF EE 1-1/8 x 1-1/8 ODM S/T
043853	CPHE 2 SAE EE 3/8 x 5/8 ODF ANG	028619	CPHE 6 SAE EE 1-1/8X1-1/8 ODM ANG
026286	CPHE 2 SAE EE 5/8 x 7/8 ODF ANG	038219	CPHE 6 SAE EE 1-1/8X1-1/8 ODM S/T
036903	CPHE 3 SAE EE 7/8 x 1-1/8 ODF ANG		

Standard Product Offering.

*Product Code Number.

HOT GAS BYPASS REGULATOR

CPHE REPLACEMENT PARTS AND EXPLODED VIEW

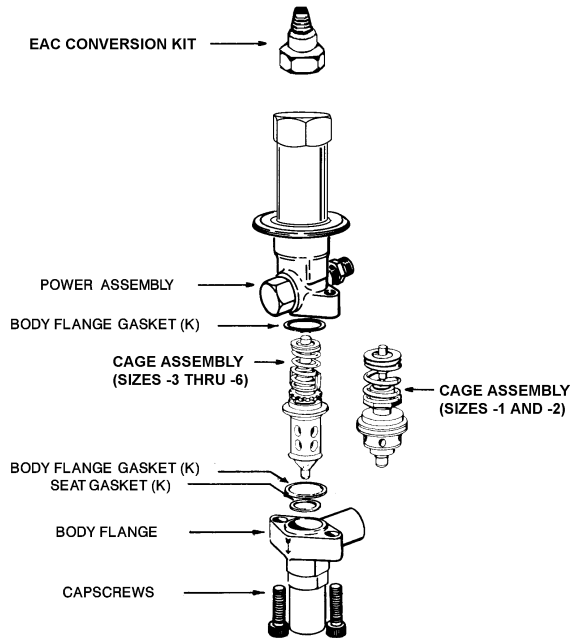
EAC CONVERSION KIT

KIT	PART#	PCN*
EAC CONVERSION	X10227-2	042475

Consists of gasket, 1/4 SAE fitting and seal cap.

CAGE

DESCRIPTION	SIZE	PCN
X-22440-B5B	1	037043
X-22440-B8B	2	037049
X-11873-B5B	3	089058
X-9117-B9B	4	029429
X-9166-B10B	5	070738
X-9144-B13B	6	021067



FLANGE

DESCRIPTION	CONNECTION	PCN
C-501-5	3/8 x 5/8 ODF ANG	065748
10331	7/8 ODF x 1-1/8 ODM ANG	029411
9153	7/8 ODF x 1-1/8 ODM ANG	027919
9761-3	3/8 x 5/8 ODF S/T	027771
10332	7/8 ODF x 1-1/8 ODM S/T	032988
9152	7/8 ODF x 1-1/8 ODM S/T	027918

POWER ASSEMBLY

VALVE	PART #	PCN*
CPHE 1, 2, 3	X7118-4	026296
CPHE 4, 5, 6	X7428-2	029055

Standard Product Offering.

*Product Code Number.

Consists of power assembly and body flange gasket.

P4669B.pdf

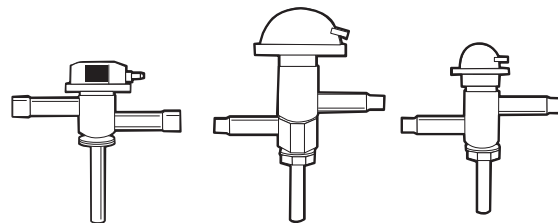
HEAD PRESSURE CONTROLS

HP/HPC HEADMASTER® HEAD PRESSURE CONTROLS

HeadMaster HP/HPC Series 3-Way Head Pressure Control Valves are controlled by the system discharge pressure. Adequate head-pressure, the system pressure imposed by the compressor, is necessary for optimum system performance. When ambient air temperature flowing thru air-cooled condensers is warm enough, there is no problem maintaining head pressure. However, when ambient temperature falls, there is a corresponding head pressure drop and a method of controlling this situation is necessary. The HP/HPC is designed specifically to maintain proper air-cooled condenser pressures during periods of low ambient conditions. The HP/HPC eliminates the need for special piping or multiple control valves. As a single unit, the HP/HPC simplifies piping and reduces installation costs.

FEATURES

- Accurate head pressure control, even at low ambient temperatures
- Precise control in maintaining optimum pressure
- Maintains liquid subcooling and prevents liquid line flash gas
- Eliminates the need for special piping or multiple control valves
- Superior operation at low ambients



P4670

OPTIONS

- ODF or SAE connections available — HP Series
- 3/8" or 1/2" ODF connections — HPC Series

SPECIFICATIONS

- Maximum working pressure: HP5,8 — 500 psig
HP14 — 440 psig
- Shipping weights: HP5 & HP8 = 2-1/2 lbs
HP14 = 5 lbs
- UL file #SA5312, CSA file #LR44005

NOMENCLATURE EXAMPLE: HP 8 T 4 180 1/2 x 1/2 x 1/2 ODF

HP	8	T	4	180	1/2	x	1/2	x	1/2	ODF
Valve Series HP or HPC	Size	Connection Style T = ODF F = SAE	Connection Size (in 1/8")	Condensing Pressure Set Point (for corresponding Condensing Temp. see P-T Chart)	Bypass Connection Size		Receiver Connection Size		Condenser Connection Size	Connection Type

ORDERING INFORMATION FOR HP/HPC VALVES

PCN*	PART NO.	CONNECTIONS
064188	HPC 2 T 4 -100	1/2 x 1/2 x 1/2 ODF
064189	HPC 2 T 4 -125	1/2 x 1/2 x 1/2 ODF
064190	HPC 2 T 4 -180	1/2 x 1/2 x 1/2 ODF
064191	HPC 3 T 4 -125	1/2 x 1/2 x 1/2 ODF
064192	HPC 3 T 4 -180	1/2 x 1/2 x 1/2 ODF
064177	HPC 5 T 3 -100	3/8 x 3/8 x 3/8 ODF
064179	HPC 5 T 3 -180	3/8 x 3/8 x 3/8 ODF
064175	HPC 5 T 3 -225	3/8 x 3/8 x 3/8 ODF
064180	HPC 5 T 4 -100	1/2 x 1/2 x 1/2 ODF
064181	HPC 5 T 4 -125	1/2 x 1/2 x 1/2 ODF
064183	HPC 5 T 4 -180	1/2 x 1/2 x 1/2 ODF
064184	HPC 5 T 4 -200	1/2 x 1/2 x 1/2 ODF
064228	HPC 5 T 4 -225	1/2 x 1/2 x 1/2 ODF
064185	HPC 5 T A -125	1/2 x 3/8 x 3/8 ODF
064187	HPC 5 T A -180	1/2 x 3/8 x 3/8 ODF
PCN*	PART NO.	CONNECTIONS
046094	HP 5 F 3-110	3/8 x 3/8 x 3/8 SAE
046093	HP 5 F 3-185	3/8 x 3/8 x 3/8 SAE
062239	HP 5 F 3-215	3/8 x 3/8 x 3/8 SAE
055130	HP 5 F 4-110	1/2 x 1/2 x 1/2 SAE
046091	HP 5 F 4-185	1/2 x 1/2 x 1/2 SAE
046090	HP 5 T 3-110	3/8 x 3/8 x 3/8 ODF
046088	HP 5 T 3-185	3/8 x 3/8 x 3/8 ODF
054173	HP 5 T 3-215	3/8 x 3/8 x 3/8 ODF
053377	HP 5 T 4-60	1/2 x 1/2 x 1/2 ODF
046087	HP 5 T 4-110	1/2 x 1/2 x 1/2 ODF
046086	HP 5 T 4-185	1/2 x 1/2 x 1/2 ODF
062240	HP 5 T 4-215	1/2 x 1/2 x 1/2 ODF

Standard Product Offering.

*Product Code Number.

ORDERING INFORMATION FOR HP/HPC VALVES

PCN*	PART NO.	CONNECTIONS
052979	HP 8 F 4-110	1/2 x 1/2 x 1/2 SAE
053200	HP 8 F 4-185	1/2 x 1/2 x 1/2 SAE
062241	HP 8 F 4-215	1/2 x 1/2 x 1/2 SAE
053062	HP 8 F 5-110	5/8 x 5/8 x 5/8 SAE
053283	HP 8 F 5-185	5/8 x 5/8 x 5/8 SAE
062242	HP 8 F 5-215	5/8 x 5/8 x 5/8 SAE
046209	HP 8 T 4-110	1/2 x 1/2 x 1/2 ODF
046509	HP 8 T 4-120	1/2 x 1/2 x 1/2 ODF
046208	HP 8 T 4-185	1/2 x 1/2 x 1/2 ODF
062243	HP 8 T 4-215	1/2 x 1/2 x 1/2 ODF
062027	HP 8 T 4-225	1/2 x 1/2 x 1/2 ODF
048377	HP 8 T 5-60	5/8 x 5/8 x 5/8 ODF
033862	HP 8 T 5-110	5/8 x 5/8 x 5/8 ODF
057239	HP 8 T 5-120	5/8 x 5/8 x 5/8 ODF
032407	HP 8 T 5-185	5/8 x 5/8 x 5/8 ODF
034246	HP 8 T 5-175	5/8 x 5/8 x 5/8 ODF
046535	HP 8 T 5-215	5/8 x 5/8 x 5/8 ODF
046389	HP 8 T 5-225	5/8 x 5/8 x 5/8 ODF
047768	HP 8 T 7-60	7/8 x 7/8 x 7/8 ODF
046207	HP 8 T 7-110	7/8 x 7/8 x 7/8 ODF
054023	HP 8 T 7-125	7/8 x 7/8 x 7/8 ODF
046928	HP 8 T 7-155	7/8 x 7/8 x 7/8 ODF
046206	HP 8 T 7-185	7/8 x 7/8 x 7/8 ODF
046498	HP 8 T 7-215	7/8 x 7/8 x 7/8 ODF
046632	HP 8 T 7-205	7/8 x 7/8 x 7/8 ODF
032210	HP 14 T 7-120	7/8 x 7/8 x 7/8 ODF
024935	HP 14 T 7-175	7/8 x 7/8 x 7/8 ODF
043405	HP 14 T 7-215	7/8 x 7/8 x 7/8 ODF
024405	HP 14 T 9-120	1-1/8 x 1-1/8 x 1-1/8 ODF
045927	HP 14 T 9-125	1-1/8 x 1-1/8 x 1-1/8 ODF
029805	HP 14 T 9-175	1-1/8 x 1-1/8 x 1-1/8 ODF
043406	HP 14 T 9-215	1-1/8 x 1-1/8 x 1-1/8 ODF
024380	HP 14 T11-120	1-3/8 x 1-3/8 x 1-3/8 ODF
024601	HP 14 T11-175	1-3/8 x 1-3/8 x 1-3/8 ODF
043407	HP 14 T11-215	1-3/8 x 1-3/8 x 1-3/8 ODF

HEAD PRESSURE CONTROLS

HP/HPC SIZING SELECTION

Consideration must be given to the system design requirements, such as: equivalent line length (vertical lift or unusual pressure drop), equipment location, etc., to determine if the minimum control range meets design requirements. There are numerous alternatives involving head pressure control applications worth considering. For engineering assistance, consult your field engineer or Technical Services Department.

NOTE: Be sure the HP valve is not required to operate at conditions exceeding the maximum working pressure.

NOTE: Not recommended for systems utilizing patented subcooling coils in conjunction with low head pressure systems or on systems where the condensate line bypasses the receiver in order to maintain subcooling effect in the liquid line.

TABLE 1 — NOMINAL CAPACITY TABLE IN TONS AND kW

REFRIGERANT	VALVE	PRESSURE DROP — psi (kPa)									
		1 (7)		2 (14)		3 (21)		4 (28)		5 (35)	
		TONS	kW	TONS	kW	TONS	kW	TONS	kW	TONS	kW
R-134a	HPC-2	1.0	3.5	1.4	4.9	1.8	6.2	2.0	6.9	2.3	8.0
	HPC-3	1.7	5.9	2.4	8.3	3.0	10.4	3.5	12.1	3.9	13.5
	HPC-5	2.2	7.8	3.2	11.0	3.9	13.5	4.5	15.5	5.0	17.4
	HP-5	2.0	6.9	2.9	10.1	3.6	12.5	4.1	14.2	4.6	16.0
	HP-8	5.5	19.1	7.8	27.1	9.6	33.3	11.0	38.2	12.4	43.0
	HP-14	14.0	48.6	19.8	68.7	24.2	84.0	28.3	98.2	31.7	110.0
R-22/ R-407C	HPC-2	1.1	3.8	1.6	5.6	1.9	6.6	2.2	7.6	2.5	8.7
	HPC-3	1.9	6.5	2.7	9.2	3.3	11.3	3.8	13.0	4.2	14.5
	HPC-5	2.4	8.4	3.4	11.9	4.2	14.6	4.9	16.9	5.4	18.8
	HP-5	2.2	7.6	3.2	11.1	3.9	13.5	4.5	15.6	5.0	17.4
	HP-8	6.0	20.8	8.5	29.5	10.5	36.4	12.0	41.6	13.5	46.8
	HP-14	14.7	51.0	20.8	72.2	25.6	88.8	29.7	103.1	33.8	117.3
R-404A/ R-507	HPC-2	0.7	2.4	1.0	3.5	1.3	4.5	1.5	5.2	1.7	5.9
	HPC-3	1.3	4.3	1.8	6.1	2.2	7.5	2.5	8.7	2.8	9.7
	HPC-5	1.6	5.6	2.3	7.9	2.8	9.8	3.3	11.3	3.6	12.6
	HP-5	1.5	5.2	2.1	7.3	2.6	9.0	3.0	10.4	3.3	11.5
	HP-8	3.9	13.5	5.5	19.1	6.7	23.2	7.8	27.1	8.7	30.2
	HP-14	10.1	35.0	14.3	49.6	17.6	61.1	20.5	71.1	23.0	79.8
R-12	HPC-2	0.9	3.0	1.2	4.3	1.5	5.2	1.7	6.0	1.9	6.7
	HPC-3	1.5	5.3	2.1	7.5	2.6	9.2	3.0	10.6	3.4	11.9
	HPC-5	1.8	6.4	2.5	9.0	3.1	11.0	3.6	12.7	4.0	14.2
	HP-5	1.7	6.0	2.4	8.5	3.0	10.6	3.4	12.0	3.8	13.5
	HP-8	4.6	16.3	6.5	23.0	8.0	28.3	9.2	32.6	10.3	36.5
	HP-14	11.7	41.4	16.5	58.4	20.2	71.5	23.6	83.5	26.4	93.5
R-502	HPC-2	0.7	2.6	1.0	3.7	1.3	4.5	1.5	5.2	1.6	5.8
	HPC-3	1.3	4.6	1.8	6.5	2.3	8.0	2.6	9.2	2.9	10.3
	HPC-5	1.6	5.7	2.3	8.0	2.8	9.8	3.2	11.3	3.6	12.7
	HP-5	1.5	5.3	2.1	7.4	2.6	9.2	3.0	10.6	3.3	11.7
	HP-8	3.9	13.8	5.5	19.5	6.7	23.7	7.8	27.6	8.7	30.8
	HP-14	10.1	35.8	14.3	50.6	17.6	62.3	20.5	72.6	23.0	81.4

All capacities shown are based on 40°F Evaporator Temperature and 100°F liquid.

TABLE 2 — MULTIPLIER FACTORS FOR CAPACITIES AT CONDITIONS OTHER THAN NOMINAL RATINGS

LIQUID TEMP. °F	EVAPORATOR TEMPERATURE °F														
	R-134a/R-12					R-22/R-407C					R-404A/R-507/R-502				
	40°	20°	0°	-20°	-40°	40°	20°	0°	-20°	-40°	40°	20°	0°	-20°	-40°
120°	0.87	0.82	0.78	0.71	0.69	0.89	0.86	0.84	0.82	0.78	0.84	0.79	0.74	0.69	0.63
100°	1.00	0.96	0.91	0.86	0.82	1.00	0.98	0.95	0.93	0.89	1.00	0.96	0.90	0.85	0.79
80°	1.13	1.08	1.04	0.99	0.95	1.12	1.09	1.06	1.03	1.00	1.14	1.09	1.04	0.99	0.93
60°	1.27	1.22	1.17	1.12	1.07	1.22	1.20	1.17	1.14	1.10	1.32	1.27	1.21	1.16	1.09
40°	—	1.34	1.29	1.24	1.19	—	1.30	1.27	1.24	1.21	—	1.42	1.37	1.31	1.26
20°	—	—	1.42	1.38	1.32	—	—	1.39	1.35	1.32	—	—	1.51	1.46	1.41

TEMPERATURE PRESSURE CONTROLS

EMERSON TEMPERATURE PRESSURE CONTROLS QUICK SELECT CHART

APPLICATION	FEATURE	TYPE
COMMERCIAL REFRIGERATION AIR CONDITIONING CONTROLS	Temperature Control, Adjustable Set Point and Differential	TS1
	Single Pressure Control, Adjustable Set Point and Differential	PS1
	Dual Pressure Control, Adjustable Set Point and Differential	PS2
	Differential Pressure Control	FD113
MINI-PRESSURE CONTROLS	Mini-Pressure Control	PS3
	Electronic Fan Speed Control	FS
INDUSTRIAL PRESSURE CONTROLS	Industrial Pressure Control	FF4
	Industrial Pressure Control, U.L. Approved	FF444

TEMPERATURE CONTROLS

TS1 SERIES TEMPERATURE CONTROLS

The TS1 Series is our range of adjustable thermostats for application in refrigeration and heat pump systems. In these systems, thermostats serve control and monitoring functions, such as space temperature control, high/low temperature alarming or defrost termination. By operating a set of electrical contacts, a temperature value is kept inside a certain limit.

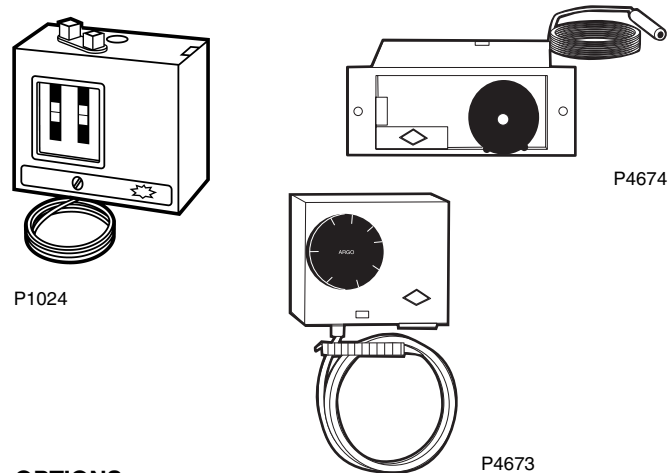
Several housing variants and sensors are provided in order to suit a control to a specific application.

FEATURES

- Adjustable temperatures and differentials
- Range and differential pointer in units °C and °F
- Range and differential individually lockable by wire seal
- Captive terminal and cover screws
- Manual toggle for system checkout and override
- Bellows heater for thermostats with vapour charge
- Room thermostats with insulation console
- Standard accessories include mounting brackets and knob with lockplate on all individually packed controls
- Non-ambient sensitive
- Heavy-duty SPDT switch allows handling of most loads directly without the use of relays

SPECIFICATIONS

- Ambient temperature ranges -50°C to $+70^{\circ}\text{C}$ (-58°F to 158°F)
- SPDT switch rated for 120VAC/240VAC at 24FLA and 144LRA
- Agency approvals include: UL/CUL file #E85974, VDE 0631/0660, TÜV, CE 73/23/EWG, CE 93/68/EWG



OPTIONS

- Housing variants for top and front operation
- Flush mounted version
- Vapor, liquid and cross-ambient charges
- Sensor shapes for various applications
- Versions with and without manual override
- Factory set to customer specification
- Different types of mounting brackets
- Sensor bulb wells and capillary tube holders
- Special approvals

TF115 REPLACEMENT

See following page for Old to New Cross Reference (TF115 to TS1)

NOMENCLATURE EXAMPLE TS1 B1E

TS1	B	1	E
Product Name	Housing Variant/function	Temperature Range	Sensor Type
TS1 = Adjustable thermostat TSA = Customer specials	A = Wall mount design, top adjustment B = Wall mount design, top adjustment, off-switch C = Frost monitor, auto reset D = Frost monitor, manual reset E = Wall mount design, front adjustment F = Wall mount design, front adjustment, off-switch G = Flush mount design, front adjustment H = Flush mount design, front adjustment, off-switch R = Wall mounting, top adjustment, manual reset X = Wall mount design, top adjustment Y = Frost monitor, manual reset	0 = $+40$ to $+68^{\circ}\text{F}$ ($+4.5$ to $+20^{\circ}\text{C}$) 1 = -50 to $+14^{\circ}\text{F}$ (-45 to -10°C) 2* = -22 to $+50^{\circ}\text{F}$ (-30 to $+10^{\circ}\text{C}$) -22 to $+59^{\circ}\text{F}$ (-30 to $+15^{\circ}\text{C}$) 3* = $+14$ to $+77^{\circ}\text{F}$ (-10 to $+25^{\circ}\text{C}$) $+14$ to $+95^{\circ}\text{F}$ (-10 to $+35^{\circ}\text{C}$) 4* = -13 to $+86^{\circ}\text{F}$ (-25 to $+30^{\circ}\text{C}$) -22 to $+95^{\circ}\text{F}$ (-30 to $+35^{\circ}\text{C}$) 5* = $+68$ to $+140^{\circ}\text{F}$ ($+20$ to $+60^{\circ}\text{C}$) $+77$ to $+167^{\circ}\text{F}$ ($+25$ to $+75^{\circ}\text{C}$) 6 = $+122$ to $+212^{\circ}\text{F}$ ($+50$ to $+100^{\circ}\text{C}$) 7 = $+32$ to $+50^{\circ}\text{F}$ (0 to $+10^{\circ}\text{C}$) 8 = $+194$ to $+284^{\circ}\text{F}$ ($+90$ to $+140^{\circ}\text{C}$) 9 = $+266$ to $+356^{\circ}\text{F}$ ($+130$ to $+180^{\circ}\text{C}$) NOTES Temp ranges 0-4: manual reset for falling temperature Temp ranges 5-9: manual reset for rising temperature *First line is range for controls with housing variant/function A, B, C, D, R, X or Y. Second temperature range applies to controls with housing variant/function E, F, G or H.	A = Vapor Charge, 2 m. capillary C = Liquid Charge, 2 m. bulb E = Vapor Charge, 0 m. coil F = Adsorption Charge, 2 m. bulb P = Vapor Charge, 2 m. capillary for housing variant A/B/E/F/G/H/R. 6 m. capillary for housing variant C/D/X/Y.

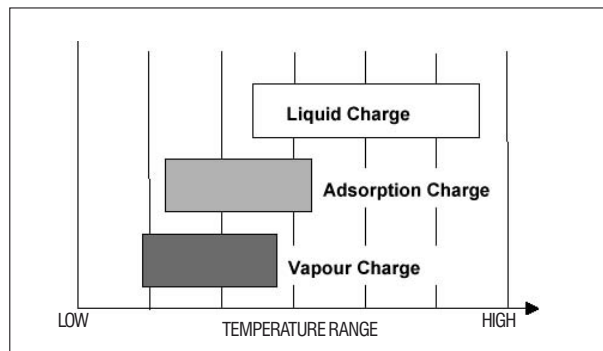
TEMPERATURE CONTROLS

TS1 SERIES TEMPERATURE CONTROLS (cont)

TEMPERATURE SENSING

TS1 thermostats sense temperature by means of a thermal system, consisting of temperature charge, bulb, capillary and bellows. The temperature charge changes its pressure based on the refrigerant temperature to be sensed. The sensor is the portion of the system which is in thermal contact with the refrigerant, the capillary connects the sensor with the bellows and the bellows contracts or expands depending on the pressure, causing the thermostat to operate the electrical contacts. An exception are capillary type of sensors, which do not have a bulb, instead, their capillary serves as the bulb directly. Charges and sensor types are matched to temperature ranges and other application specific characteristics.

TS1 thermostats come with one of three charge types: vapor charges, adsorption charges or liquid charges. The application temperature range covered by each charge type is shown in the chart below.



Vapor Charge — Sensor Type A, E, P

These sensing elements always sense from the coldest point on the capillary, coil, bulb or power element head. For proper operation it must be ensured that this coldest point is at the sensor portion which is exposed to the temperature to be sensed. The sensing location should be at least 4°F (2 K) colder than the other parts of the thermal system.

In order to avoid unwanted effects of heat transfer, e.g. from a cold wall, vapour charged thermostats come with an integrated bellows heater, which is rated for 230 V applications. For other applications the heater must be disabled, alternatively, a bellows heater with a different rating may be available.

In addition to the bellows heater, room thermostats are supplied with an insulation console for the same reason.

Sensor type 'A' is a coiled bulb sensor with two meter capillary, which may be used with or without a bulb well. Style 'E' is a coil sensor for space temperature sensing, and type 'P' is a capillary type of sensor which can be wrapped around a heat exchanger's surface in order to sense the coldest point on the heat exchanger for frost protection applications.

Vapor charges respond faster to temperature changes than adsorption and liquid charges.

Adsorption Charge — Sensor Type F

Adsorption charged sensor types operate on the basis of a temperature dependent adsorption material, which is located inside the bulb only. Therefore these sensor types always respond to temperature changes at the bulb only. This makes them suitable to applications where it is not always defined which part of the thermal system the coldest point is (cross ambient applications). An example for such applications is defrost control.

Adsorption charges are slower in response to temperature changes than vapour charges.

Liquid Charge — Sensor Type C

Liquid charge sensors of type 'C' always sense from the warmest point of the thermal system. This condition must always be ensured. The sensing location should always be warmer than 4°F (2 K) than other parts of the thermal system.

HOUSING VARIANTS

TS1 controls can be delivered in three main housing variants, top operated, front operated and flush mounted. All three variants are available either with or without off-switch, which cuts off power supply to the thermostat in off position.

Top operated controls — Function/Housing Variant A,B,C,D,R,X,Y

Have adjustment spindles at the top and a display scale, indicating temperature setpoint and differential, at the front. A knob which may be permanently plugged onto one of the adjustment spindles comes with every control. Frost monitors and room thermostats are derivatives of top operated thermostats. They differ by their sensors and other features to suit their particular target applications.

Front operated controls — Function/Housing Variant E,F

Have an adjustment knob at the front for the temperature setpoint with an approximate scale imprinted on the knob. In order to adjust the temperature differential, the cover of the control must be removed.

Flush mounted controls — Function/Housing Variant G,H

Designed in a way that they can be integrated into a panel or housing, for example into display cases.

TEMPERATURE CONTROLS

TS1 SERIES TEMPERATURE CONTROLS

OLD TO NEW CROSS REFERENCE (TF115 TO TS1)				REPLACES THE COMPETITION					
OLD MODEL	OLD PCN	NEW MODEL	NEW PCN	RANCO	PENN	WHITE-RODGERS	HONEYWELL	DANFOSS	SAGINOMIYA
TF115-S2-AA10	097457	TS1-X2A 21/30	097926	010-1408, 010-1409 010-1410, 010-104		1609-90	T4031A1008		
TF115-S4-AF10	097458	TS1-X4F 32/41	097929	060-100 F25-107	A19ABC-24 A19ZBC-2	1609-101, 1609-102 1609-103	T6031A1029		
TF115-S2-AE00	097467	TS1-X2E 36/40	097932	010-1418, 016-594 010-1072	A19BBC-2	201-20	T6054A		
TF115-S3-AE00	097468	TS1-X3E 64/68	097935	010-301, 016-165	A19BAB-3, A19BAC-1	201-8	T6054B		
TF115-S1-AA10	097466	TS1-X1A -4/0	097940	010-1433		1609-100			
TF115-S0-AP20	097140	TS1-C0P 36/40	097882						
TF115-S0-DP20	097141	TS1-D0P 36	097885						
TF115-S2-AP06	097423	TS1-X2P		016-109				KP61 60L1100	BNS-C1030X
TF115-S4-AF06	097329	TS1-A4F 32/41		016-109				KP71 60L1113, KP71 60L1115 KP73 60L1117, KP73 60L1118 KP73 60L1140, KP73 60L1143 KP75 60L1120, KP75 60L1137	TNS-C1010XC TNS-C1034XC

ORDERING INFORMATION FOR TS1 TEMPERATURE CONTROLS

TYPE	PCN*	ADJUSTMENT RANGE		FACTORY SETTING °F (°C)	TEMPERATURE SENSOR	
		Upper Setpoint	Differ. Setpoint		Charge	Type
		°F (°C)	°F (°K)			
TOP OPERATED THERMOSTATS WITHOUT OFF-SWITCH (CAPILLARY TYPE SENSOR)						
TS1-X1A	097940	−49 TO 14 (−45...−10)	3 TO 29 (2 TO 16)	0/−4 (−18/−20)	VAPOR	6 FT. (2 m.) capillary
TS1-X2A	097926	−22 TO 59 (−30...+15)	3 TO 29 (2 TO 16)	30/21 (−1/−6)	VAPOR	6 FT. (2 m.) capillary
TS1-X4F	097929	−22 TO 95 (−30...+35)	5 TO 36 (3...20)	41/32 (+5/0)	ADSORPTION	6 FT. (2 m.) cap. & bulb
ROOM THERMOSTATS TOP OPERATED WITHOUT OFF-SWITCH (INCLUDES INSULATION CONSOLE AND COIL TYPE SENSOR)						
TS1-X2E	097932	−22 TO 59 (−30...+15)	3 TO 29 (2 TO 16)	39/35 (+4/+2)	VAPOR	Coil
TS1-X3E	097935	14 TO 95 (−10...+35)	3 TO 29 (2 TO 16)	68/64 (+20/+18)	VAPOR	Coil
FREEZE-STAT, TOP OPERATED WITHOUT OFF-SWITCH (CAPILLARY TYPE SENSOR)						
TS1-C0P	097882	40 TO 68 (+4.5...+20)	5 (3) fix	40/36 (4.5/+2)	VAPOR	20 FT. (6 m.) capillary
TS1-D0P	097885	40 TO 68 (+4.5...+20)	man. reset ca. 5 (3) fix	36 (+2)	VAPOR	20 FT. (6 m.) capillary

 Standard Product Offering.

*Product Code Number.

PRESSURE CONTROLS

ALCO PS1 SERIES SINGLE PRESSURE CONTROLS

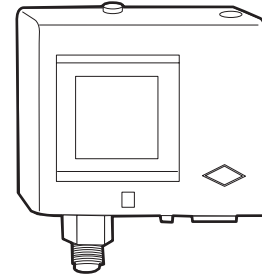
PS1 Single Pressure Controls are designed for use on high and low pressure applications in refrigeration and heat pump systems. By operating a set of electrical contacts, a pressure is kept inside a certain limit.

FEATURES

- Adjustable pressures and differentials.
- Narrow adjustable differential depending on model.
- Range and differential pointer in units bar and psig.
- Range and differential individually lockable by wire seal.
- High rated SPDT contacts for all versions.
- Captive terminal and cover screws.
- Manual toggle for system checkout and override.
- Factory installed wire bridge for reduced installation effort.

OPTIONS

- Different pressure connections.
- Automatic and manual reset versions.
- Factory set to customer specifications.
- Different types of mounting brackets.



P4675

SPECIFICATIONS

- SPDT switch rated for 120 VAC/240 VAC at 24 FLA and 144 LRA.
- Agency approvals include: UL/CUL file #E85974, VDE 0631/0660, TUV, CE 73/23/EWG, CE 93/68/EWG.
- Low pressure and high pressure versions available with TUV approval according to EN 12263 (supersedes DIN 32733) to meet requirements of DIN 8901 and EN378 (supersedes DIN 8975).

FF115 REPLACEMENT

NOMENCLATURE - EXAMPLE PS1-A5K

PS1	A	5	K
Product Name	Function	Pressure Range	Pressure Connector Type
PS1 = Adjustable single Pressure Control	A = Pressure control, automatic reset, internal range & differential adjustments	1 = 24" Hg to 42 psi (−0.75 to 3 bar)	A = 7/16" -20 UNF male for 1/4" SAE male flare
PSA = Customer specials	B = Pressure cut out, external manual reset, DIN/TUV approved, internal range and differential adjustments*, †	2 = 26" Hg to 21 psi (−0.8 to 1.5 bar)	C = R 1/4" stainless steel with steel bellows
	R = Pressure cut out, external manual reset, internal range and differential adjustments*, †	3 = 15" Hg to 100 psi (−0.5 to 7 bar)	F = 1/4-18 NPTF stainless steel with steel bellows
	S = Safety pressure cut out, internal manual reset, DIN/TUV approved, internal range & differential adjustments*, †	4 = 15 to 290 psi (1 to 20 bar)	K* = 7/16" -20 UNF flare nut with 1 meter (3 ft) cap tube
	U = Convertible from R to A	5 = 90 to 450 psi (6 to 31 bar)	L = 1/4" ODF solder with 1 meter (3 ft) cap tube
	W = Pressure control, automatic reset, DIN/TUV approved, internal range and differential adjustments		R = R 1/4"
	X = Pressure control, automatic reset, external range and differential adjustments		U = 6 mm ODF solder, 80 mm tube length
	Y = Pressure cut out, external manual reset, external range and differential adjustments		X = 1/4" ODF solder, 80 mm tube length
	*Function types B, R, S in combination with Pressure Range 1 or 3 have a low pressure manual reset function. (15 psi differential)		*Controls with housing variant X/Y have extended copper ends, without Schrader valve depressor. All other housing variants have schrader valve depressor and brass end fitting with copper gasket.
	†Function types B, R, S in combination with Pressure Range 4 or 5 have a high pressure manual reset function. (60 psi diff.)		

PRESSURE CONTROLS

ALCO PS1 SERIES SINGLE PRESSURE CONTROLS

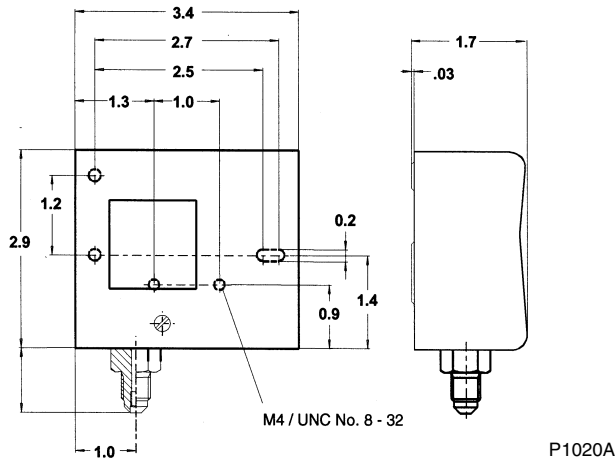
ORDERING INFORMATION FOR PS1 SINGLE PRESSURE CONTROLS

SINGLE PRESSURE CONTROL	PCN	ADJUSTMENT RANGE		FACTORY SETTING PSII	PRESSURE CONNECTION
		Upper Setpoint PSI	Diff. Setpoint psi		
Low Pressure Controls					
PS1-X1K	097898	24" Hg to 42" Hg	4 to 29	7/15	Capillary Nut
PS1-X1A	097894				7/16"-20 UNF, 1/4" SAE male
PS1-X3A	097914	15" Hg to 100" Hg	7 to 73	50/65	Capillary Nut
PS1-X3K	097904				
High Pressure Controls					
PS1-X4K	097901	15" Hg to 290" Hg	15 to 100	145/115	Capillary Nut
PS1-X5K	097908		29 to 217	230/290	
PS1-Y5A	097923	90" Hg to 450" Hg	Ext. Manual Reset	50	7/16"-20 UNF, 1/4" SAE male
PS1-Y5K	097911				Capillary Nut

Standard Product Offering.

*Product Code Number.

PS1 DIMENSIONAL DIAGRAM



DIMENSIONS SHOWN ARE IN INCHES.

OLD TO NEW CROSS REFERENCE (TF115 TO TS1)				REPLACES THE COMPETITION				
OLD MODEL	OLD PCN	NEW MODEL	NEW PCN	COPELAND*	RANCO	PENN	DANFOSS	SAGINOMIYA
FF115-S1-BAK	097450	PS1-X1K 7/15	097898	085-0098-21 985-CP1A-1K	O10-1402 O16-557	P70AB-12		
FF115-S4-BAK	097565	PS1-X4K 115/145	097901	085-0098-33	O10-2000 O16-593	P70AA-2		
FF115-S3-BAK	097451	PS1-X3K 50/65	097904	085-0098-00 985-CP1A3K	O10-1483 O11-3099 O16-527	P70AB-12 P70AB-2 P70CA-2		
FF115-S5-BAK	097452	PS1-X5K 230/290	097908	085-0098-08 985-CP1A-5K	O10-2054, O11-1711 O16-108, O20-7006	P70AA-118 P70CA-3		
FF115-S5-BRK	097453	PS1-Y5K 230/290	097911		O16-200	P70DA-1 P70KA-1		
FF115-S3-BAA	097459	PS1-X3A 50/65	097914	985-CP1A-3A	O10-1401, O10-1831 O11-1799, O16-106 O16-107	P170AB-12 P170AB-2	KP1 60-1101	SNS-C106X
FF115-S5-BAA	097460	PS1-X5A 140/280	097919	985-CP1A-5A	O10-1894, O11-1713 O16-503, O16-570 O16-106	P170AA-118 P170CA-3 P77AAA-9350 P77AAA-9370	KP5 60-1171	SNS-C130X SNS-C135X
FF115-S5-BRA	097462	PS1-Y5A 330/390	097923		O16-209, O16-106	P170DA-1 P77BEA-9350 P77BEA-9370	KP 60-1173	
		PS1-U5A 385		985-CP1U-5A				
		PS1-U5K 385		985-CP1U-5K				

*The Alco control may be used with bracket (PCN 097221) to allow placement of the Copeland control with the same mounting configuration.

PRESSURE CONTROLS

ALCO PS2 SERIES DUAL PRESSURE CONTROLS

PS2 Dual Pressure Controls are designed for use on high and low pressure applications in refrigeration and heat pump systems. By operating a set of electrical contacts, a pressure is kept inside certain limits.

FEATURES

- Adjustable pressures and differentials.
- Narrow adjustable differential depending on model.
- Range and differential pointer in units bar and psig.
- Range and differential individually lockable by wire seal.
- High rated SPDT contacts for all versions.
- Captive terminal and cover screws.
- Manual toggle for system checkout and override.
- Factory-installed wire bridge for reduced installation effort.

OPTIONS

- Different pressure connections.
- Automatic and manual reset versions.
- Factory set to customer specification.
- Different types of mounting brackets.

SPECIFICATIONS

- SPDT switch rated for 120 VAC/240 VAC at 24 FLA and 144 LRA.
- Agency approvals include: UL/CUL file #E85974, VDE 0631/0660, TÜV, CE 73/23/EWG, CE 93/68/EWG.
- Low pressure and high pressure versions available with TÜV approval according to DIN 32733 to meet requirements of DIN 8901 and DIN 8975.

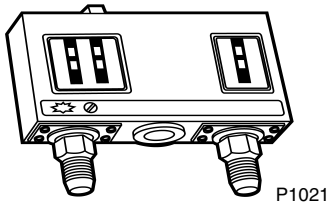
FF215 REPLACEMENT

NOMENCLATURE — Example PS2-G8A

PS2	G	8	A
Product Name	Function	Pressure Ranges	Pressure Connector Type
PS2 = Adjustable Dual Pressostat PSB = Customer Special Version	A = <i>Both sides</i> : Pressure controls, automatic reset, internal range and differential adjustments B = <i>Both sides</i> : Pressure cut out, external manual reset, DIN/TÜV approved, internal range and differential adjustments C = <i>Left side</i> : Pressure control, automatic reset, DIN/TÜV approved, internal range and differential adjustments. <i>Right side</i> : Safety cut out, external manual reset, DIN/TÜV approved, internal range and differential adjustments. G = <i>Left side</i> : Pressure control, automatic reset, DIN/TÜV approved, internal range and differential adjustments. <i>Right side</i> : Safety limiter, internal manual reset, DIN/TÜV approved, internal range and differential adjustments. L = <i>Left side</i> : Pressure control, automatic reset, internal range and differential adjustments. <i>Right side</i> : Pressure cut out, external manual reset, internal range and differential adjustments. M = <i>Left side</i> : Pressure control, automatic reset, internal range and differential adjustments. <i>Right side</i> : Convertible reset from R to A, internal range and differential adjustments. R = <i>Both sides</i> : Pressure cut out, external manual reset, internal range and differential adjustments. S = <i>Both sides</i> : Pressure safety cut out, internal manual reset, DIN/TÜV approved, internal range and differential adjustments. T = <i>Left side</i> : Pressure control, automatic reset, DIN/TÜV approved, internal range and differential adjustments. <i>Right side</i> : Safety limiter, internal manual reset, DIN/TÜV approved, internal range and differential adjustments. U = <i>Both sides</i> : Convertible from R to A. W = <i>Both sides</i> : Pressure control, automatic reset, TÜV approved, internal range and differential adjustments. X = <i>Both sides</i> : Pressure controls, automatic reset, external range and differential adjustments. Y = <i>Left side</i> : Pressure control, automatic reset, external range and differential adjustments. <i>Right side</i> : Convertible from external manual reset to automatic reset, external range and differential adjustments. Z = <i>Both sides</i> : Convertible from external manual reset to automatic reset, external range and differential adjustments. LOW PRESSURE MANUAL RESET: Cut outs with manual reset function and in combination with the low pressure side of Pressure Ranges 7 and 9 have a low pressure manual reset function (15 psi differential). HIGH PRESSURE MANUAL RESET: Cut outs with manual reset function and in combination with the high pressure side of Pressure Ranges 7 and 9 have a high pressure manual reset function (60 psi differential).	7 = Left side: 15" Hg to 100 psi (–0.5 to 7 bar) Right side: 90 to 450 psi (6 to 31 bar) 8 = Left side: 90 to 450 psi (6 to 31 bar) Right side: 90 to 450 psi (6 to 31 bar) 9 = Left side: 24" Hg to 45 psi (–0.75 to 3 bar) Right side: 90 to 450 psi (6 to 31 bar)	A = 7/16" -20 UNF male for 1/4" SAE flare fitting C = R 1/4" stainless steel with steel bellows F = 1/4" -18 NPTF stainless steel with steel bellows K* = 7/16" -20 UNF flare nut with 1 meter (3 ft) cap tube L = 1/4" ODM solder with 1 meter (3 ft) cap tube R = R 1/4" U = 6 mm ODF solder, 80 mm tube length X = 1/4" ODF solder, 80 mm tube length *Controls with housing variants X/Y/Z have extended copper ends, without schrader valve depressor and brass end fitting with copper gasket

PRESSURE CONTROLS

ALCO FF215 DUAL PRESSURE CONTROLS



ORDERING INFORMATION FOR PS2 DUAL PRESSURE CONTROLS

DUAL PRESSURE CONTROL	PCN	ADJUSTMENT RANGE				FACTORY SETTING		PRESSURE CONNECTION
		Upper Setpoint		Differential Setpoint				
		Left PSI	Right PSI	Left PSI	Right PSI	Left PSI	Right PSI	
Combined Pressure Limiter/Pressure Cut Out for Low Pressure/High Pressure Protection								
PS2-Y7A	097954	15" Hg to 100" Hg	90" Hg to 450" Hg	7 to 72	Convertible Auto/Manual Reset	50/65	290	7/16"-20 UNF
PS2-Y7K	097943							
PS2-Y9K	097950	24" Hg to 45" Hg		4 to 29		7/15		Capillary Nut

Standard Product Offering.

*Product Code Number.

OLD TO NEW CROSS REFERENCE (FF215 TO PS2)				REPLACES THE COMPETITION				
OLD MODEL	OLD PCN	NEW MODEL	NEW PCN	COPELAND†	RANCO	PENN	DANFOSS	SAGINOMIYA
FF215-S7-BAUK	097454	PS2-Y7K50/65* 230/290	097943	085-0098-02, 085-7000-00 985-CP2M-7K	012-1549 012-4834	P70LB-1,P70LB-6 P70MA-1,P70MA-18		
FF215-S9-BAUK	097455	PS2-Y9K7/15* 230/290	097950	085-0098-22, 085-0098-23	012-1502, 012-1506 012-1554, 012-4833	P70LB-1,P70LB-6 P70MA-1,P70MA-18		
FF215-S7-BAUA	097463	PS2-Y7A50/65* 230/290		985-CP2M-7A	012-1550	P170LB-1 P170MA-1		
FF215-S7-BAAA	097006	PS2-A7A50/65* 230/290			017-108	P78LCA-9300 P78LCA-9320	KP1560-1241 KP1560-1265	DNS-D304X,DNS-D306X DNS-D604X,DNS-D606X DNS-D706X
FF215-S7-BAAK	097261	PS2-X7K50/65* 230/290	097875					
FF215-S7-BAAL	097145	PS2-A7L50/65* 230/290						
FF215-S7-BARA	097034	PS2-L7A50/65*290			017-108	P78MCA-9300 P78MCA-9320	KP1560-1243 KP1560-1264	DNS-D304XM, DNS-D304XML DNS-D306XM, DNS-D306XML DNS-D604XM, DNS-D606XM DNS-D606XMM
FF215-S7-BARL	097344	PS2-L7L50/65*290						
FF215-S7-BAUL	097057	PS2-Y7L50/65*290						

†The control may be used with bracket (PCN 097221) to allow replacement of the Copeland control with the same mounting configuration.

PRESSURE CONTROLS

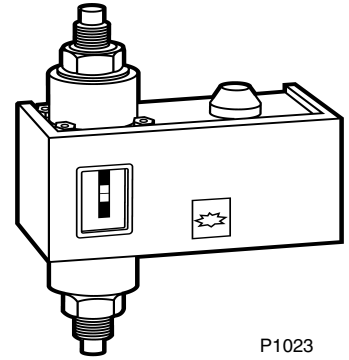
ALCO FD113-ZU(K) OIL PRESSURE SAFETY CONTROLS

The FD113 Oil Pressure Safety Control senses the effective oil pressure on pressure lubricate compressors. If inadequate oil pressure exists, a time delay is energized. If the oil pressure does not recover to safe levels within the time delay setting, the compressor is shut down. The time delay allows the compressor adequate time to establish oil pressure on start up and avoids nuisance shutdowns on pressure drop of short duration during the run cycle.

Maximum application flexibility is assured by providing an adjustable differential pressure switch which can be adjusted to the compressor's minimum required oil pressure needs and an adjustable electronic time delay which allows you to select the length of time the compressor runs below the minimum pressure before shutdown. The minimum pressure setting and time delay values specified by the compressor manufacturer should be used when installing the FD113 control.

FEATURES

- Pressure range adjustable from 4 to 65 PSID; Timer start pressure-timer stop pressure is 3 PSID above timer start pressure.
- A SPDT switch is used in the pressure portion of the control which allows the addition of a "safe light" if desired.
- Electronic timer is Timer-Adjustable from 20 to 150 seconds.
- Supply voltage - 24 to 240 Volt AC/DC. Timing unaffected by voltage or ambient temperature variations.
- A SPDT Manual Reset Switch is used in the Timer Module. Upon time-out, the compressor is stopped and an alarm circuit is energized. To restart the compressor and de-energize the alarm circuit, the reset button is pushed.
- A factory installed jumper allows the FD113 to be powered from a single power source. Should separate circuits be desired for the timer and "Lockout" switch, the jumper can be removed.



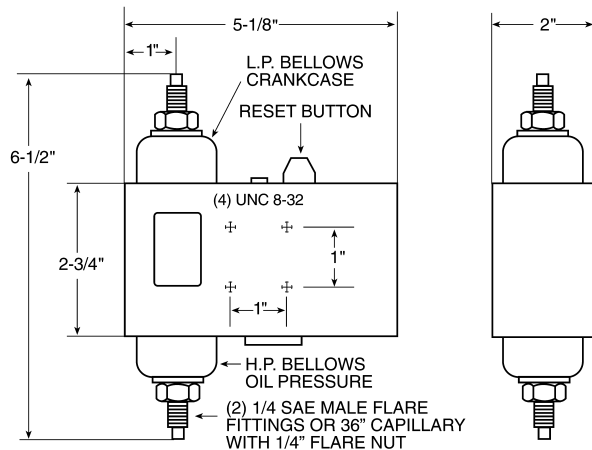
P1023

SPECIFICATIONS

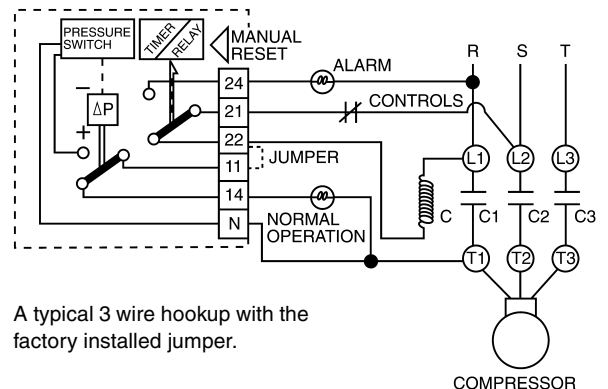
- Agency approvals include: UL/CUL file #E85974, VDE 0631/0660, TUV, CE 73/23/EWG, CE 93/68/EWG.

DIMENSIONS SHOWN ARE IN INCHES.

FD113 DIMENSIONAL DATA



P1023B



A typical 3 wire hookup with the factory installed jumper.

P1023A

ORDERING INFORMATION FOR FD113-ZU(K) OIL PRESSURE SAFETY CONTROLS

PART NO.	PCN	ADJUSTABLE PRESSURE RANGE	ADJUSTABLE TIME	SUPPLY VOLTAGE	PRESSURE CONNECTION	REPLACES		
						PENN	COPELAND	RANCO
TPC-FD-113-ZUK	097456	4-65 PSID	20 to 150 seconds	24 to 240V AC/DC	(2) 3/8" capillary with 1/4" flare nut	P45NCA-12 P45NCA-82 P28AA-1,-2 P28AA-17,-18 P28DA-1 P28GA-2 P28NA-5	085-0062-00	P30-5826 P30-3601 P30-3701 P30-3801
TPC-FD-113-ZU	097464				(2) 1/4" male flare*	P128AA-1,-2,-3 P145NCA-12,-82 P145NCB-12,-82		P30-5827

*For applications where the condensing unit/control is exposed to temperatures below 20° F, 1/4" lines are recommended.

MINI-PRESSURE CONTROLS

PS3 MINI-PRESSURE CONTROLS

The PS3 Mini-Pressure Control provides the ultimate in reliability and flexibility in a commercial grade mini-pressure control. A standard plug connectable design simplifies installation and service. The SPDT switch allows the addition of alarm circuits on high or low pressure applications. The PS3 makes your application and selection easy. Models with high temperature diaphragms and built-in pressure pulsation snubbers make the PS3 ideally suited for compressor head mounting high pressure limit control applications. Automatic or manual reset versions are available.

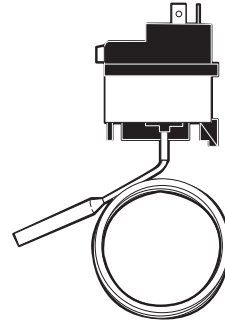
Pressure Ranges/Differential also make the PS3 controls ideally suited for condenser fan cycling applications. Field Trimable Low Pressure versions with standard or narrow differential switches make these controls ideally suited low pressure limit or back-up safety controls on electronically controlled systems. Numerous options, such as panel mount or capillary connections are available on high volume applications. Standard on all models are worldwide agency approvals.

TYPICAL APPLICATIONS

- High Pressure Limit/Alarm
- Condenser Fan Cycling
- Low Pressure Limit/Alarm
- Low Pressure Cycling (Back-Up)
- Defrost Termination/Fan Delay
- Rupture Guard Alarm

SPECIFICATIONS

- Worldwide Approvals: UL/CUL/VDE/TUV
- UL file #E85974



P4676

FEATURES

- Commercial Grade High/Low/Condenser Fan Cycling Pressure Controls for use on Refrigeration/AC Applications
- Mini-Size 2" x 1-1/2" x 2-3/4"
- Standard SPDT Switch Action
- Automatic or Manual Reset
- Models available with high temperature double diaphragm and built-in pressure pulsation snubber for directhead mount high pressure sensing/limit applications
- Plug Connectable with hub for 1/2" flexible conduit or Compression Fitting for cable
- Factory preset to customer's desired pressure specifications
- Selected Models Field "Trimable" to match application pressure requirements
- Precise, repeatable settings
- Narrow differential "Micro" switch available on low pressure models
- Panel Mount configurations with fitting or capillary available on special order
- Terminal Covers available for protecting individual wire connections when 1/4" QC's used on Panel Mount configurations

NOMENCLATURE — EXAMPLE PS3-AF1HNB

PS3	A	F	1	H	N	B
Product Name	Function	Mounting	Pressure Range	Electrical Connection	Contact Type	Pressure Connection
	A = Automatic Reset, High Pressure with Single Bronze Diaphragm Material W = Automatic Reset, High Pressure with safety cut-out with Double Bronze Diaphragm Material, DIN/TUV approved X = Automatic Reset, High Pressure with Double Nickel Beryllium Diaphragm Material (High Temp), DIN/TUV approved B = Manual Reset, High Pressure Safety Limiter with Double Bronze Diaphragm Material, DIN/TUV approved C = Manual Reset, High Pressure Safety Limiter with Double Nickel Beryllium Diaphragm Material (High Temp), DIN/TUV approved D = Manual Reset, Low Pressure with Single Bronze Diaphragm Material R = Manual Reset, High Pressure with Single Bronze Diaphragm Material S = Manual Reset (only with special reset tool), High Pressure Safety Limiter with Double Bronze Diaphragm Material, DIN/TUV approved T = Manual Reset (only with special reset tool), High Pressure Safety Limiter with Double Nickel Beryllium Diaphragm Material (High Temp), DIN/TUV approved	F = Free Standing Panel Mount P = Design with mounting flange	1 = 15" Hg to 90 psig (-0.6 to 6 bar) 3 = 2 to 230 psig (0.1 to 16 bar) 5 = 100 to 465 psig (6 to 32 bar)	H = Spade for DIN connector T = 1/4" x .032" Spade connections	N = Standard M = MicroSwitch G = MicroSwitch with Gold plated contacts O = Standard switch with Gold plated contacts	S = 1/4" SAE Female (7/16"-20 UNF) with Schrader valve depressor A = 1/4" SAE Male (7/16"-20 UNF) B = 1/4" SAE Female (7/16"-20 UNF) with Snubber orifice and Schrader valve depressor for High Temp/Pressure Application L = 1/4" ODM Solder with 36" capillary tube K = 1/4" SAE Female Flare Nut (7/16"-20 UNF) with 36" capillary tube

MINI-PRESSURE CONTROLS

PS3 MINI-PRESSURE CONTROLS (cont)

SPECIFICATIONS

Electrical Ratings — SPDT Switch

- Standard Switch — High/Low Pressure
 - Load Contact
 - 6 FLA — 36 LRA — 120/240 VAC
 - Pilot Duty: 240 VA @ 120
 - 480 VA @ 240 VAC
 - Back Contact
 - 0.5 Amp 120/240 VAC Pilot Duty
- Micro Switch — Low Pressure
 - 2.5 FLA — 15 LRA — 120/240 VAC
 - Pilot Duty: 120 VA @ 120
 - 240 VA @ 240 VAC
 - Back Contact
 - 0.5 Amp 120/240 VAC Pilot Duty

Ambient Temperature

Storage: -30° to +160°F
 Operating: -20° to +140°F

Protection

Protect from rain, direct sunlight and exterior damage.

Weight

Approximately 0.25 pound, depending upon configuration.

Compatibility

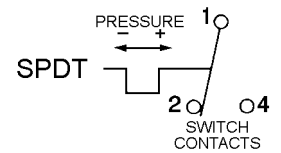
HFC, HCFC, CFC

Agency Approvals

UL/CUL/DIN/TUV, depending upon configuration.

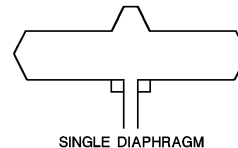
SWITCH ACTION

- SPDT Standard
 - 1 — 2 Open on Rise
Close on Fall
 - 1 — 4 Close on Rise
Open on Fall

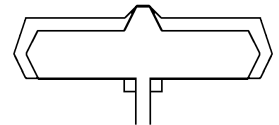


P4676A.pdf

CONSTRUCTION



SINGLE DIAPHRAGM



DOUBLE DIAPHRAGM

P4676B.pdf

- Low Pressure
 - Single Diaphragm
 - Maximum Media Temp. 150°F
- High Pressure
 - Double Diaphragm
 - Maximum Media Temp. 300°F
 - Internal Pressure Pulsation Snubber available for direct head mount.

NOTE: Single Diaphragm High Pressure Configurations are also available.

PS3 MINI-PRESSURE CONTROL SPECIFICATIONS SELECTION TABLE

PCN	Type and Description	High Event Range PSIG	Differential Range PSID	Settings	Reset	Pressure Connection	Electrical Connection	Electrical Ratings‡	Maximum Over Pressure	Mounting
	Low Pressure Controls									
097705	PS3-AF1 HMS†	15" to 90	4 Low/7 High	1.5/6	Auto	1/4" SAE Female with Valve Depressor	DIN Plug with 1/2" NPTF Hub for Flex Conduit Connection 36" Cable	2.5 FLA/15 LRA	360 PSIG	Free Standing Direct Mount
097735	PS3-AF1 HNS		9 Low/15 High	5/15				6 FLA/36 LRA		
097764	PS3-AF1 HNS			1-5/4.4						
PCN	High Pressure Control									
097147	PS3-AF5 HNS	100-465	9 Low/15 High	180/240	Auto	Same as above, plus Hi-Temp Double Diaphragm and Snubber	DIN Plug with 1/2" NPTF Hub for Flex Conduit Connection 36" Cable	6 FLA/36 LRA	360 PSIG	Free Standing Direct Mount
097805	PS3-XF5 HNB		45 Low/80 High	320/395					520 PSIG	
097835	PS3-CF5 HNB		Manual Reset	395	Manual					

Standard Product Offering.

*Product Code Number.

†Micro-Switch Construction.

‡All switches SPDT ratings stated are 1 side only 120/240 VAC. Opposite switch side — 1/2 amp pilot duty 120/240.