

DIGITAL / MECHANICAL TEMPERATURE CONTROLS

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Digital Electronic Temperature Control	16E09	76
Refrigeration Temperature Control	1609 / 1687	77
Manual Reset Freeze Protection Control	201 / 16A60	78

DEMAND DEFROST / BLOWER TIME DELAY RELAY

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FILTER DRIERS

81 – 84

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Bi-Directional Heat Pump Driers	96-TBF	84

REFRIGERATION CONTROLS INDEXED BY RANGE

Range Max.	Range Min.	Differential Max.	Differential Min.	Model	Electrical Rating *	Element	Capillary Length	Switch Action	Page Number
50°F	-20°F	25°F	3°F	1609-90	HH2C	Remote Bulb	8 feet	Close on Rise	77
50°F	-20°F	Manual Reset	Manual Reset	16A60-9	HH	Remote Bulb	10 feet	Close on Rise	78
90°F	-30°F	40°F	3.5°F	1609-101	FGH	Remote Bulb	5 feet	Close on Rise	77
90°F	-30°F	40°F	3.5°F	1609-103	FGH	Remote Bulb	10 feet	Close on Rise	77
90°F	-30°F	40°F	3.5°F	1609-104	FGH	Remote Bulb	20 feet	Close on Rise	77
90°F	-30°F	40°F	3.5°F	1609-105	FGH	Remote Bulb	5 feet	Close on Rise	77
90°F	-30°F	40°F	4.5°F	1687-9	SPDT	Remote Bulb	8 feet	SPDT	77
90°F	-30°F	20°F	3°F	201-20	FGH	Self Contained		Close on Rise	78
90°F	20°F	20°F	3°F	201-8	FGH	Self Contained		Close on Rise	78
200°F	-40°F	30°F	1°F	16E09-101	See Catalog page 76	Remote Bulb	7.5 feet extendable to 400 feet	SPDT	76

* See page 416 for full electrical ratings

U.S. Models only



16E09-101

COOLING /
REFRIGERATION

DIGITAL ELECTRONIC TEMPERATURE CONTROL

Superior Temperature Control and Accuracy for Both Refrigeration and Heating Applications.

FEATURES

- Multiple Input Voltages (24/120/208/240 volts).
- No common wire required (electrical load must be greater than 2.5 amps and uninterrupted).
- Electronic temperature accuracy/digital display.
- Alarm output (with selectable delay - up to 99 minutes).
- Adjustable anti-short cycle delay.
- Setpoint locking function.
- Reduces inventory - replaces most competitive mechanical and electronic refrigeration controls.
- Multiple sensor option can be used with 1 or 4 sensors.

SPECIFICATIONS

Electrical Rating (Contacts):

*Voltage	120 VAC	208VAC	240 VAC
*Full Load Amps	16 Amps	9.2 Amps	8 Amps
*Locked Rotor Amps.	96 Amps	55.2 Amps	48 Amps
*Non-inductive Amps	16 Amps	16 Amps	16 Amps
*Horsepower.	1 HP	1 HP	1 HP
*24 VAC	100 VA, 30 VAC Max. (Class 2)		
*Pilot Duty.	125 VA, 24 to 240 VAC		
*Minimum Load.	1 Amp @ 24 VAC		
Alarm Relay (N.O. Contacts)	1 Amp (5 to 24 volts AC or DC)		
Setpoint Range.	-40° to 220°F (-40° to 104° C)		
Differential Range.	1° to 30°F (1° to 30° C)		
Operating Temperature.	-29°F to 140°F (-34° to 60°C)		
Storage Temperature	-40°F to 185° (-40° to 85°F)		
Operating Humidity.	0 to 95% Relative Humidity, Non-Condensing		
Maximum Dew Point.	85°F (29°C)		
Switch Action	SPDT		
NCT sensor, with a cable length of 7.5 can be extended up to 400 feet by splicing and adding cable wire (22 AWG or larger diameter) as needed.			
Can be connected to an existing PTC (positive temperature coefficient) sensor.			
Finish	Grey		
Cover and Case	NEMA 1 enclosure		
Flammability Rating	UL94VO		
Dimension.	6 ³ / ₄ " H x 3"W x 2 ⁹ / ₁₆ D"		
* For use on single phase circuits only			

* For use on single phase circuits only

Model Number	Range	Differential	Switch Action
16E09-101	-40° to 220°F	1° to 30°F	SPDT

PARTS AND ACCESSORIES

See end of this section for additional parts and accessories

- F89-0286 — Immersion well
- F136-0114 — Replacement 7.5-ft NTC remote sensor
- F145-0650 — Immersion well heat transfer compound

TECHNICAL HELP

Wiring and Operation See pages 217-221





1609-101

REFRIGERATION TEMPERATURE CONTROL

Provide Positive Control of Refrigeration Applications Where Remote Control is Desired

FEATURES

- Hydraulic action element.
- Dustproof steel case with top and bottom knockouts.
- Temperature dial graduated in °F and °C and can be adjusted through cover.
- High electrical ratings allow operation of most equipment without use of relays or motor starters.
- Model 1609-90 — For use in zoning systems where all thermostats control a common compressor & a separate solenoid refrigerant valve in each zone.

SPECIFICATIONS

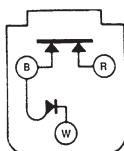
Dimensions	5 ³ / ₈ " H + 2 ⁵ / ₁₆ " W x 2 ⁹ / ₁₆ " D
Finish	Grey
Bulb Mounting	Clamp included with all models except 1609-90
Agency	U.L. listed and C.S.A. approved

PARTS AND ACCESSORIES

- F89-0027 Refrigeration Well
- F55-0088 Packing Nut

Model Number	Range	Differential	Capillary Length	Bulb Size	Switch Action	Full Electrical Rating	Motor Rating (Full Load)	
							120 VAC	240 VAC
1609-90	-20 to +50°F (-29 to +10°C)	Adj. 3 to 25°F (2 to 14°C)	8 ft.	5 ¹ / ₄ " x ³ / ₈ "	Close on Rise	HH2C see page 416	7.4A	3.7A
1609-101	-30 to +90°F (-34 to +32°C)	Adj. 3.5 to 40°F (2 to 22°C)	5 ft.	5 ¹ / ₄ " x ³ / ₈ "	Close on Rise	FGH see page 416	16.0A	8.0A
1609-103	-30 to +90°F (-34 to +32°C)	Adj. 3.5 to 40°F (2 to 22°C)	10 ft.	5 ¹ / ₄ " x ³ / ₈ "	Close on Rise	FGH see page 416	16.0A	8.0A
1609-104	-30 to +90°F (-34 to +32°C)	Adj. 3.5 to 40°F (2 to 22°C)	20 ft.	5 ¹ / ₄ " x ³ / ₈ "	Close on Rise	FGH see page 416	16.0A	8.0A
1609-105 ①	-30 to +90°F (-34 to +32°C)	Adj. 3.5 to 40°F (2 to 22°C)	5 ft.	5 ¹ / ₄ " x ³ / ₈ "	Close on Rise	FGH see page 416	16.0A	8.0A
1687-9	-30 to +90°F (-34 to +32°C)	Adj. 4.5 to 40°F (2.5 to 22°C)	8 ft.	5 ¹ / ₄ " x ³ / ₈ "	SPDT	SPDT see page 416	7.4A	3.7A

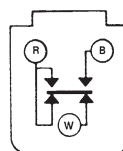
① Knob adjustment



HH2C Contact Structure
HH2C Rated Controls

Switch Action

Double pole, single throw.
B terminal is common.
B-R and B-W contacts both close on a rise of temperature.



SPDT Contact Structure
SPDT Rated Controls

Switch Action

R-B Open on Rise
R-W Close on Rise



201-8

REFRIGERATION TEMPERATURE CONTROLS FOR WALK IN BOXES

Designed for use in Garages, Factories, Warehouses and Similar Commercial and Industrial Installations

FEATURES

- Dust, moisture and vermin resistant heavy metal case.
- Handles inductive and non-inductive loads.
- No leveling required — Mounts in any position.
- Quick response to temperature changes.
- Nickel plated element.

SPECIFICATIONS

Dimensions. $5\frac{3}{8}$ "H + $2\frac{1}{2}$ " coil x $2\frac{5}{16}$ "W x $2\frac{9}{16}$ "D
 Finish Grey
 Agency U.L. listed and C.S.A. approved

Model Number	Range	Differential	Switch Action	Full Electrical Rating	Motor Rating (Full Load)		Resistive (Non-Inductive)	
					120 VAC	240 VAC	120 VAC	240 VAC
201-8	20 to 90°F (-6 to 32°C)	Adj. 3 to 20°F (2 to 11°C)	Close on Rise	FGH See page 416	16.0A	8.0A	25.0A	22.0A
201-20	-30 to 90°F (-34 to 32°C)	Adj. 3 to 20°F (2 to 11°C)	Close on Rise	FGH See page 416	16.0A	8.0A	25.0A	22.0A



16A60-9

MANUAL RESET FREEZE PROTECTION CONTROL

Designed to Shut Down Cooling Equipment Before Undesirably Low Temperatures are Reached

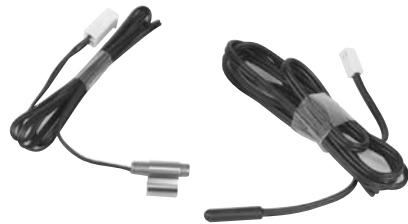
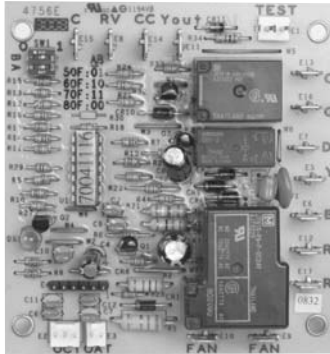
FEATURES

- Temperature dial graduated in °F and °C scales.
- Adjustable dial stop to limit minimum setting — Shipped at 36°F (2°C).
- Dustproof steel case with top and bottom knockouts.
- Hydraulic action element — Unaffected by vibration — No leveling required.
- Equipped with special $\frac{1}{2}$ " packing nut assembly.

SPECIFICATIONS

Dimensions. $5\frac{3}{8}$ "H x $2\frac{5}{16}$ "W x $2\frac{9}{16}$ "D
 Finish Grey
 Thread Size (packing nut) $\frac{1}{2}$ "NPT
 Agency U.L. listed and C.S.A. approved

Model Number	Range	Differential	Capillary Length	Bulb Size	Switch Action	Full Electrical Rating	Motor Rating (Full Load)	
							120 VAC	240 VAC
16A60-9	-30 to 50°F (-34 to 10°C)	Manual Reset	10 ft.	$5\frac{3}{4}$ " x $\frac{3}{8}$ "	Open on Fall	HH see page 416	7.4A	3.7A



47D Series
(coming soon)

47D SERIES DEMAND DEFROST CONTROL

Microprocessor-based controls designed to detect ice build-up on the outdoor coil in a heat pump system and defrost the coil by reversing the direction of refrigerant flow. Replaces Rheem models.

FEATURES

- Demand defrost algorithm “self-calibrates” to the heat pump system.
- Compressor contactor relay control for short-cycle protection, and noise reduction while reversing valve shifts.
- Dipswitch-selectable defrost termination temperature (50/60/70/80°F).
- Kits Include replaceable ambient and coil temperature sensors.
- LED diagnostic display.

SPECIFICATIONS

Electrical Ratings [$@ 77^{\circ}\text{F}$ (25°C)]:

Rated Voltage	24 VAC
Rated Voltage Range	18-30 VAC
Max. Power Consumption @ 24 VAC	4.08 VA
Nominal Frequency	50/60 Hz

Relay Load Ratings:

Compressor Contactor Relay (CC, only used in 47D40-801)	20 VA in rush, 6 VA holding
Reversing Valve Relay (RV)	24 VA
Auxiliary Heat Relay (D)	1 Amp. 0.6 P.F.
Operating Temperature Range	-40° to 150°F (-40° to 65°C)
Humidity Range	5% to 95% relative humidity (non-condensing)

Timing Specifications @ 60Hz*	Nom.	Units
Defrost Lockout Time	34	Mins
Maximum Defrost Time	15	Mins.
Maximum Frosting Time	6	Hrs.
Short Cycle Lockout Time	5	Mins.
Noise Abatement Time	5	Sec.

NOTE: 50Hz Timings are 20% longer

PARTS AND ACCESSORIES

- F67-8206 — Ambient and Coil Sensor kit (48" lengths)

Model Number	Hi/Lo Pressure Switch Inputs	Outdoor Fan Relay	Mounting	Dimensions
47D40-801	No	PSC 1-speed	Metal Standoffs	3.375" x 3.625"
47D43-811	Yes	PSC or ECM, 1-speed	Plastic Standoffs	3.5" x 5.5"

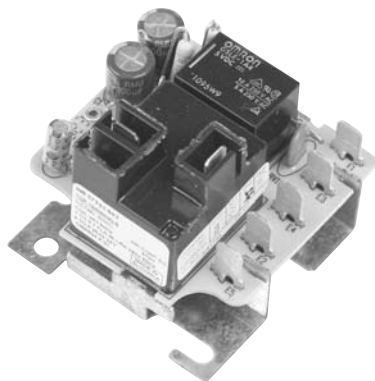
CROSS REFERENCE

47D40-801 Replaces:

47-21517-16	47-102685-03
47-21517-17	47-102684-01
47-21517-18	47-102684-03
47-21517-23	47-102684-83
47-21517-24	DDL-013102-1RH
47-21517-11	DDL-017002-2RH
47-21517-14	DDL-017102-1RH
47-21517-13	DDL-017702-1RH
47-21517-82	DDL-117702-3RH
47-21517-88	DDL-013002-0RH
47-102685-01	DDL-013002-1RH

47D43-811 Replaces:

47D43-111	47-102685-05	47-102684-04
47D43-111	47-102685-02	47-102684-07
47D43-111 02	47-21517-22	47-102684-08
47D43-101	47-21517-92	DDL-122131-2RH
47-102685-04	47-102684-02	DDL-122131-2RH
47-102685-84	--	--



57T01-843

57T01-843 BLOWER TIME DELAY RELAY

The 57T01-843 Time Delay Relay is for use in air handlers installed in compressor-run air conditioning and heat pump systems to delay the blower shut-off after the compressor has shut off. Replaces Trane part numbers D155079P01 and RLY 2807.

FEATURES

- Allows residual cooled air to be blown into the controlled space, increasing the efficiency of the system in cooling.
- Depending on electrical hookup in a heat pump system, delay of blower shut-off could also occur in heating.

SPECIFICATIONS

Electrical Ratings:

Model Number	Contact Ratings: Power Pole (Amperes per pole)-	
		208/240/277 VAC
57T01-843	Full Load	7
	Locked Rotor	36
	Resistive	15
	U.L. Approved Horsepower	³ / ₄ HP

Pilot Duty Pole 3 VA at 24 VAC (Minimum)
 25 V at 24 VAC (Maximum)
 Input Voltage. 24 VAC nominal
 Total Power Consumption. 0.5 VA (relay de-energized)
 4.0 VA (relay energized)



96-TD

96-TD LIQUID LINE FILTER-DRIERS

Filter-Driers Designed to Offer Complete Protection to Your Refrigerant System. The 96-TD Series Removes Moisture, Acid and Foreign Materials to Protect the Compressor, Solenoid Valves, Expansion Valves, Capillary Tubes and Other Close Tolerance Parts of Your Refrigeration System

FEATURES

- Solid block desiccant core: a composite of molecular sieve and activated alumina.
- Provides high moisture, organic and inorganic acid removal.
- For use with HCFCs, CFCs and the lubricants that go with them.
- Nickel plated SAE flare and solid copper ODF fittings.
- Corrosion resistant paint.

SPECIFICATIONS

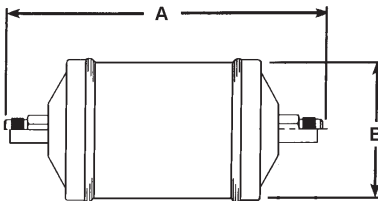
Maximum Working Pressure 500 psig
Minimum Burst Pressure 2500 psig
Agency UL / CUL file number SA11002

INSTALLATION NOTE: The 96-TD liquid line filter-drier may be installed in any position. Best results are achieved when located as close as possible to the inlet of the expansion device. If using a liquid line solenoid or moisture indicator, locate the filter-drier upstream. This will provide protection to the solenoid valve and allow the moisture indicator to measure the drier effectiveness. Install the drier in as cold a location as possible in the direction of the flow arrow on the unit.

SELECTION NOTE: Given the proper liquid line size and connection type, the correct drier may be selected using the charts below. Choosing a unit size with sufficient water capacity to reduce moisture content of the system to a safe level should be considered.

SELECTION

**96-TD Series
Dimensional Drawing**



- ① 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

Model Number	Connection	Flow Capacity in Tons Refrigerant ¹ @ psi (For kW, Multiply Tons By 3.5) ²			
		R-134a	R-22	R-410A	R-404A/R507
96-TD032	1/4 SAE	1.7	1.9	1.9	1.2
96-TD032S	1/4 ODF	2.1	2.2	2.2	1.5
96-TD052	1/4 SAE	1.8	2.0	2.0	1.3
96-TD052S	1/4 ODF	2.6	2.8	2.9	1.9
96-TD053S	3/8 ODF	4.1	4.4	4.5	2.9
96-TD082S	1/4 ODF	2.8	3.0	3.1	2.0
96-TD083S	3/8 ODF	3.8	4.1	4.2	2.7
96-TD163	3/8 SAE	4.0	4.3	4.4	2.9
96-TD163S	3/8 ODF	4.4	4.8	4.9	3.2
96-TD164S	1/2 ODF	7.7	8.4	8.6	5.6
96-TD165S	5/8 ODF	11.8	12.8	13.1	8.5
96-TD303S	3/8 ODF	5.7	6.1	6.2	4.1
96-TD304S	1/2 ODF	7.9	8.6	8.8	5.7
96-TD305S	5/8 ODF	13.1	14.1	14.4	9.5

¹ All Ratings in accordance with ARI standard 710-04 liquid refrigerant Temperature
5°F Saturated vapor temperature

3.1 lbs/min/ton R134a

2.9 lbs/min/ton R22 and R407C

4.0 lbs/min/ton R404A/507 and R-12

4.4 lbs/min/ton R502

2.7 lbs/min/ton R410A

² Example: 1.0 tons x 3.5 = 3.5 KW

CONNECTIONS, DIMENSIONS, FLOW CAPACITORS

Model Number	Connection	Dimension		Refrigeration Low Temperature & -Commercial Installations			Air Conditioning Field Replacement & Field Installations		Air Conditioning OEM Self Contained	
		A	B	R-134a	R-22	R-404A/R507	R-134a	R-22/R-407C/R-410A	R-134a	R-22/R-407C/R-410A
96-TD032	1/4 SAE	4.32	1.63	1/2	1/2	1/2	1	1 1/2	3/4	1
96-TD032S	1/4 ODF	3.76	1.63						3/4	3/4
96-TD052	1/4 SAE	4.88	2.50	1 1/2	2					
96-TD052S	1/4 ODF	4.33	2.50			1	1	3/4	1 1/2	2
96-TD053S	3/8 ODF	4.53	2.50	2	3	2	4	5	3	4
96-TD082S	1/4 ODF	5.24	2.50	3	5	3	4	5	4	7 1/2
96-TD083S	3/8 ODF	5.43	2.50				5	10	5	7 1/2
96-TD163	3/8 SAE	6.89	2.50				7 1/2	12	7 1/2	10
96-TD163S	3/8 ODF	6.22	2.50				4	6	4	5
96-TD164S	1/2 ODF	6.27	2.50	4	5	4	7 1/2	10	7 1/2	9
96-TD165S	5/8 ODF	6.54	2.50		7 1/2		10	15	10	14
96-TD303S	3/8 ODF	8.90	3.00	7 1/2	10	5	10	15	10	14
96-TD304S	1/2 ODF	8.94	3.00							
96-TD305S	5/8 ODF	9.21	3.00							

¹ All Ratings in accordance with ARI standard 710-04 liquid refrigerant Temperature
5°F Saturated vapor temperature

² Example: 1.0 tons x 3.5 = 3.5 KW

2.9 lbs/min/ton R22 and R407C
4.0 lbs/min/ton R404A/507 and R-12
3.1 lbs/min/ton R134A

4.4 lbs/min/ton R502
2.7 lbs/min/ton R410A



96-TS

96-TS SUCTION LINE DRIERS

Driers Designed to Clean Up Your Refrigerant System After a Compressor Burnout has Occurred. Removes Solid Contaminants and Harmful Acids that are Created During a Motor Burnout. Another Application: The 96-TS Installed as a Suction Line Filter-Drier in Remote Systems With Long Refrigerant Lines. The Filter-Drier Will Collect and Hold Any Dirt that is in the Evaporator or Suction Line at Start-Up

FEATURES

- Dual access valve on each end of the drier for accurate pressure drop readings across the drier.
- Solid block desiccant core effectively removes and holds a maximum amount of contaminants with minimal pressure drop.
- Provides high moisture, organic and inorganic acid removal.
- Binding material within the core protects the core from acid decomposition and allows the core to collect and hold the acids from a motor burnout.
- Inlet deflector spreads the refrigerant flow evenly across the molded core to provide full filtration capacity and to prevent erosion of the core.
- For use with HCFCs, CFCs and the lubricants that go with them.
- Nickel plated SAE flare and solid copper ODF fittings.
- Corrosion resistant paint.

SPECIFICATIONS

Maximum Working Pressure 500 psig
Minimum Burst Pressure 2500 psig
Agency UL/CUL file number SA11002

INSTALLATION NOTE: The 96-TS suction line filter-drier may be installed in any position in the suction line as close to the compressor as possible, ahead of the accumulator if there is one in the system.

In low temperature applications, the drier should be installed in a vertical position with the flow in a downward direction to prevent oil accumulation.

SELECTION NOTE: Given the proper suction line size, connection type and tonnage of the refrigerant system, the correct drier may be selected using the chart below.

SELECTION: CONNECTIONS, DIMENSIONS, FLOW CAPACITIES^① IN REFRIGERANT TONS AT SELECTED EVAPORATOR TEMPERATURES

Model Number	Connection	Dimension	Flow Capacity in Tons Refrigerant¹ (For kW, Multiply Tons By 3.5)²																			
			R-134a					R-22					R-410A					R502				
			Evaporator Temperature (°F)					Evaporator Temperature (°F)					Evaporator Temperature (°F)					Evaporator Temperature (°F)				
			40	20	0	-20		40	20	0	-20	-40	40	20	0	-20	-40	40	20	0	-20	-40
			Pressure Drop (PSI)					Pressure Drop (PSI)					Pressure Drop (PSI)					Pressure Drop (PSI)				
A	B	2	1.5	1	0.5	3	2	1.5	1	0.5	3	2	1.5	1	0.5	3	2	1.5	1	0.5		
96-TS085S	5/8 ODF	5.74	2.5	2.4	1.6	1.0	0.5	3.8	2.5	1.7	1.1	0.6	3.9	2.6	1.7	1.1	0.6	2.5	1.6	1.1	0.7	0.4
96-TS164S	1/2 ODF	6.27	2.5	1.7	1.2	0.7	0.4	2.7	1.8	1.2	0.8	0.4	2.8	1.8	1.2	0.8	0.4	1.8	1.2	0.8	0.5	0.3
96-TS165S	5/8 ODF	6.54	2.5	2.2	1.5	0.9	0.5	3.4	2.2	1.5	1.0	0.5	3.5	2.2	1.5	1.0	0.5	2.2	1.4	1.0	0.6	0.3
96-TS166S	3/4 ODF	6.95	2.5	2.6	1.8	1.1	0.6	4.1	2.7	1.8	1.2	0.6	4.2	2.8	1.8	1.2	0.6	2.7	1.8	1.2	0.8	0.4
96-TS167S	7/8 ODF	7.13	2.5	2.6	1.8	1.1	0.6	4.1	2.7	1.8	1.2	0.6	4.2	2.8	1.8	1.2	0.6	2.7	1.8	1.2	0.8	0.4
96-TS306S	3/4 ODF	9.63	3.0	3.4	2.3	1.4	0.8	5.4	3.5	2.4	1.5	0.8	5.5	3.6	2.4	1.5	0.8	3.5	2.3	1.6	1.0	0.5
96-TS307S	7/8 ODF	9.80	3.0	3.8	2.5	1.6	0.8	5.9	3.9	2.6	1.7	0.9	6.0	4.0	2.6	1.7	0.9	3.8	2.5	1.7	1.1	0.6
96-TS309S	9/8 ODF	9.80	3.0	3.9	2.6	1.6	0.8	6.1	4.0	2.7	1.7	0.9	6.2	4.1	2.8	1.7	0.9	4.0	2.6	1.8	1.1	0.6

^① All Ratings in accordance with ARI standard 700-04

^② Example: 1.0 tons x 3.5 = 3.5 kW



96-TSC

96-TSC COMPACT SUCTION LINE DRIERS

96-TSC Suction Line Filter-Driers are Designed for Use in Air-Conditioning, Heat Pump, and Refrigeration Systems in Which the Available Space in the Suction Line is Limited. Especially Useful in Heat Pump Systems Where the Drier Must be Placed Between the Reversing Valve and the Compressor

FEATURES

- High organic and inorganic acid removal.
- Dual access valves.
- Solid block desiccant core.
- For use with HCFCs, CFCs and the lubricants that go with them.
- Solid copper ODF fittings.
- Corrosion resistant paint.

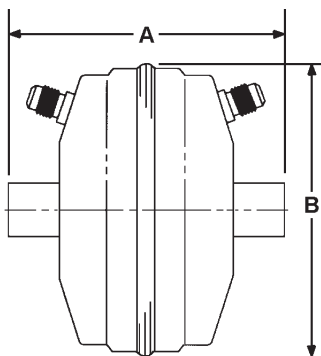
SPECIFICATIONS

Maximum working pressure 302 psig
Minimum burst pressure 1510 psig
Agency UL listed file number SA7175
CSA listed file number LR100624

CONNECTIONS, DIMENSIONS, FLOW CAPACITIES[®] IN REFRIGERANT TONS AT SELECTED EVAPORATOR TEMPERATURES

Model Number	Connection	Dimension	Flow Capacity in Tons Refrigerant ¹ (For kW, Multiply Tons By 3.5) ²																			
			R-134a					R-22					R-410A					R502				
			Evaporator Temperature (°F)					Evaporator Temperature (°F)					Evaporator Temperature (°F)					Evaporator Temperature (°F)				
			40	20	0	-20		40	20	0	-20	-40	40	20	0	-20	-40	40	20	0	-20	-40
			Pressure Drop (PSI)					Pressure Drop (PSI)					Pressure Drop (PSI)					Pressure Drop (PSI)				
			2	1.5	1	0.5		3	2	1.5	1	0.5	3	2	1.5	1	0.5	3	2	1.5	1	0.5
96-TSC146S	5/8 ODF	4.49 4.57	2.3 1.5	0.9 0.5	0.5 0.3	0.2 0.1		3.6 2.5	2.4 1.0	0.5 0.3	0.2 0.1	0.1 0.05	3.7 2.4	1.6 1.0	0.5 0.3	0.2 0.1	0.1 0.05	2.6 1.7	1.1 0.7	0.7 0.3	0.3 0.1	0.1 0.05
96-TSC147S	1/2 ODF	4.55 4.57	3.3 2.2	1.4 0.7	0.7 0.4	0.3 0.1		5.2 3.4	2.3 1.5	0.8 0.4	0.4 0.2	0.2 0.1	5.3 3.5	2.3 1.5	0.8 0.4	0.4 0.2	0.2 0.1	3.6 2.3	1.5 0.9	0.9 0.5	0.5 0.3	0.3 0.1

¹ All Ratings in accordance with ARI standard 730-04
² Example: 1.0 tons x 3.5 = 3.5 KW

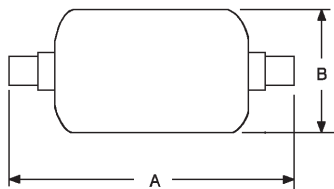
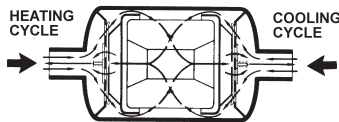


**96-TSC
Dimensional Drawing**



96-TBF

COOLING /
REFRIGERATION



**96-TBF Series
Dimensional Drawing**

96-TBF BI-DIRECTIONAL HEAT PUMP DRIERS

Bi-Directional Driers Designed to Provide Complete Protection to Your Heat Pump or Reverse Cycle System. This Compact Design Filters Contaminants, Removes Moisture & Acids During the Cooling & Heating Cycles During Winter and Summer. Internal Check Valves Prevent the Release of Collected Contaminants When the Heat Pump Cycles from the Heating to Cooling Modes

FEATURES

- Proven, nylon internal check valves.
- Solid block desiccant core: a composite of molecular sieve and activated alumina.
- Provides high moisture, organic and inorganic acid removal.
- The addition of charcoal to the desiccant core allows for the removal of wax that may occur at low evaporator temperatures.
- Solid copper ODF fittings.
- Corrosion resistant paint.

SPECIFICATIONS

Maximum Working Pressure	500 psig
Minimum Burst Pressure	2500 psig
Agency	U.L. file number SA7175 C.S.A. file number LR100624

INSTALLATION NOTE: The drier may be installed in any position in the reversing liquid line.

SELECTION NOTE: Given the proper liquid line size, connection type and tonnage of the refrigerant system, the correct drier may be selected using the chart below. Choosing a unit size with sufficient water capacity to reduce moisture content of the system to a safe level should be considered.

SELECTION: CONNECTIONS, DIMENSIONS, FLOW CAPACITIES

Model Number	Connection	Dimension		Flow Capacity in Tons Refrigerant ¹ (For kW, Multiply Tons By 3.5) ²		
				R-22	R-410A	R-407A
96-TBF163S	3/8 ODF	6.31	2.63	7.5	7.7	7.5
96-TBF164S	1/2 ODF	6.34	2.63	11.7	11.9	11.7
96-TBF165S	5/8 ODF	6.63	3.09	12.4	12.6	12.4

¹ All Ratings in accordance with ARI standard 710-04 liquid refrigerant Temperature 5°F Saturated vapor temperature

3.1 lbs/min/ton R134a

2.9 lbs/min/ton R22 and R407C

4.0 lbs/min/ton R404A/507 and R-12

4.4 lbs/min/ton R502

2.7 lbs/min/ton R410A

² Example: 1.0 tons x 3.5 = 3.5 KW