polar mate by GRUNERT

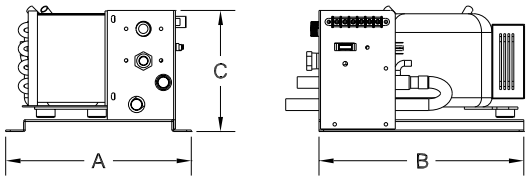
Arctic and Antarctic Models
AC & DC Voltages

Product Description

The ***Polar Mate*** from Grunert, provides 12 or 24 VDC, or 115 VAC marine refrigeration in a compact system. Components are specifically designed to fit in restricted areas aboard any vessel. Two models feature air or air/water cooled condensers for maximum versatility. Air cooled units are used when thru-hull fittings are not desired or when the vessel is hauled. Air/Water-cooled units also offer water cooling for increased efficiencies and redundant flexibility. Evaporator assemblies are available in both small and large capacities with custom configurations upon request.

The ***Polar Mate*** is ideal for small boxes or day sailing applications. For design assistance, contact your local Dealer or the Customer Support Team at Taylor Made Environmental.

Polar Mate condensing units can be installed in any convenient location and are practically unaffected by vibration or moisture. All units meet or exceed applicable ABYC and U.S. Coast Guard regulations, CE Directives, and general Air Conditioning and Refrigeration Industry (ARI) standards.



Features

Polar Mate
- Each unit is equipped with LeakView, an ultraviolet dye system which enables small leaks to be located visually with a UV light.
- New, larger capacity Danfoss® compressor. *(DC Only)*
- Built-in fuse for component protection. *(DC Only)*
- Smaller, easier to use quick connects.
- Receiver for installation and run reliability.

Complete Kit
- Unit can be shelf mounted or bulkhead mounted with additional bulkhead mount kit.
- Two sizes of evaporators can be configured for custom applications.
- Horizontal evaporators are supplied with a door assembly and horizontal ice cube trays.
- Vertical evaporators are supplied with extruded aluminum vertical ice cube trays.
- 15' refrigeration line set with "quick connect" fittings provided with each system.

High Quality Components
- Hermetically sealed compressor for quiet, efficient operation.
- Water cooled condensers are constructed of spiral fluted cupronickel encased in a copper shell providing maximum heat transfer and high corrosion resistance to seawater flow.

Environmental Considerations
- All units have quick connect fittings and are pre-charged with refrigerant for ease of installation.
- Utilizes "ozone friendly" refrigerant R-134A.

Quality Assurance
- Each unit is assembled with a charge of nitrogen to ensure that scale does not form during soldering.
- Every unit is leak checked, test run and shipped pre-charged with refrigerant.
- Charge Guard® protection provides sealed access ports to ensure system integrity during handling and installation.

Specifications

Model	Arctic Air Cooled	Antarctic Air/Water Cooled	Antarctic-AC Air/Water Cooled	Evap I	Evap II
Model Number	**PMEA08/12VDC**	**PMEAW08/12VDC**	**PMEAW05**		
Voltage [1]	12/24 (DC)	12/24 (DC)	115/60/1 (AC)	---------	---------
Refrigerant	R-134A	R-134A	R-134A	R-134A	R-134A
Charge (oz/g)	6/170.1	6.5/184.3	8/226.8	0.5/14.2	0.5/14.2
Capacity (BTU/H) [2]	433	538	582	---------	---------
Capacity (BTU/H) [3]	246	325	336	---------	---------
Max Watts [2]	65.4	68.5	212.8	---------	---------
Max Watts [3]	47.6	55.0	196.7	---------	---------
Max Amps [2]	5.45/2.7	5.71/2.9	1.85	---------	---------
Max Amps [3]	3.97/2	4.58/2.3	1.71	---------	---------
Compressor					
Capacity (HP)	1/12	1/12	1/20	---------	---------
Power (Watts)	63	54	37.3	---------	---------
RLA					
Compressor	5.3/2.7	4.5/2.3	1.58	----------	----------
Fan [4]	0.2	0.2	0.27	----------	----------
Pump	n/a	1.0/0.5	0.92	----------	----------
Cut Out Voltage	10.4/22.8	10.4/22.8	n/a	----------	----------
Cut In Voltage	11.7/24.2	11.7/24.2	n/a	----------	----------
Maximum Fuse [5]	15/7.5	15/7.5	15	----------	----------
Dimensions (in/*cm*)					
A	10.25/26	10.25/26	11/28	10.5/26.7	15.5/39.4
B	11.0/28	11.0/28	12.5/31.8	6/15.2	6/15.2
C	6.75/17.1	6.75/17.1	7.5/19	11/27.9	11/27.9
Weight (lb/kg)					
Net	14.8/6.7	15.6/7.1	22.0/10.0	6.0/2.7	7.0/3.2
Ship	24.8/11.3	25.6/11.6	25.0/11.3	9.0/4.1	10.0/4.5

[1] Voltage range is: 12V=10.4-17.0 & 24V=22.8-31.5. Does not apply to 115VAC model.
[2] Air cooled capacities at 20°F (-6.7°C) evaporator temperature and 120°F (48.9°C) condensing temperature. Water cooled capacities at 20°F (-6.7°C) evaporator temperature 100°F (37.8°C) condensing temperature.
[3] Air cooled capacities at 0°F (-17.8°C) evaporator temperature, 120°F (48.9°C) condensing temperature. Water cooled capacities at 0°F (-17.8°C) evaporator temperature, 100°F (37.8°C) condensing temperature.
[4] Power to the fan is regulated to 12V regardless of 12V or 24V power input, except for 115VAC model.
[5] For wire size, ampacity, etc., refer to ABYC Standards, Section E8 & E9.

Installation Guidelines

When choosing the proper model ***Polar Mate,*** primary consideration should be given to calculated BTU loads and available power supply. Any special requirements (box capacity, air condenser exhaust, wiring sizes, etc.) should be determined prior to installation.

The location of the ***Polar Mate*** condensing unit should be dry and accessible for service. The location of the air cooled unit should provide for proper air flow through the condenser to avoid overheating the system. If the air/water cooled unit is used, the condenser must be connected as described in the following paragraph. The unit should be installed with the fasteners provided and secured in an upright position to a horizontal (shelf) or vertical (bulkhead) surface sufficient to support the weight and torsion load from the vessel's movement. Bulkhead mounting requires an additional kit.

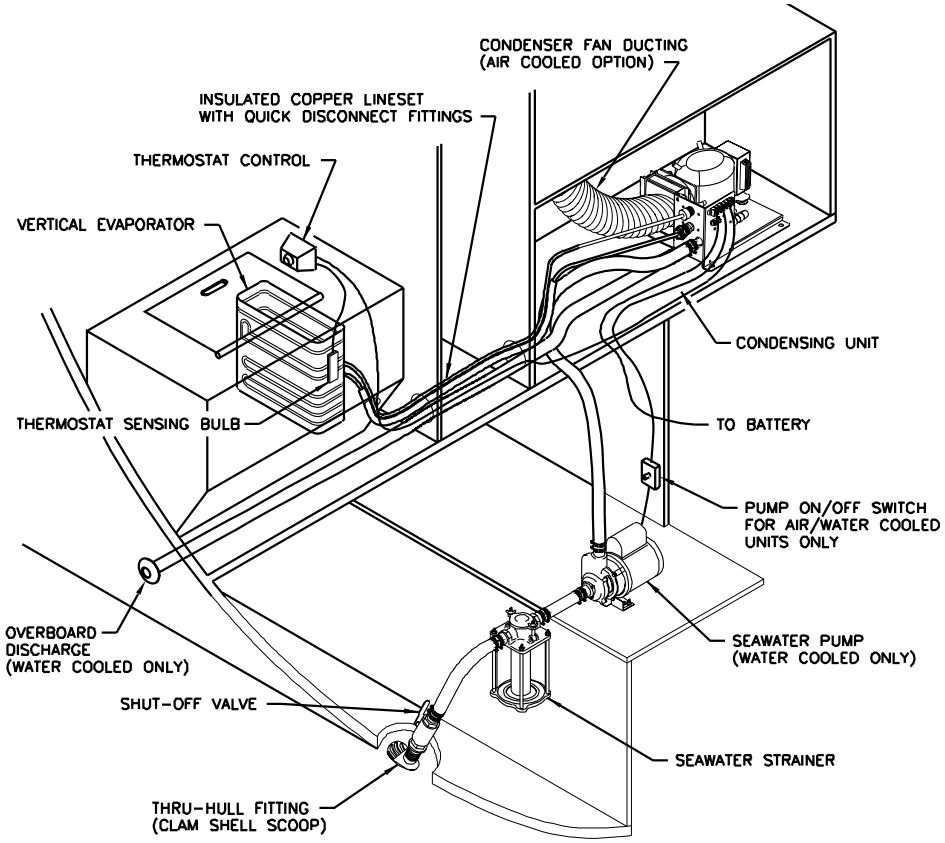
The seawater pump must be mounted so that it is always at least one foot below the water line regardless of which tack the vessel is on. The pump head may be rotated horizontally or vertically; however the discharge must always be above the inlet. The pump head should be rotated toward the direction of water flow. **Install the seawater speed scoop intake as far below the water line and as close to the keel as possible in any application, but especially on a sail boat, to keep the intake in the water so that air does not get into the system when the boat heels over.** The speed scoop intake must face forward and not be shared with any other pump. A sea cock (shut off valve) must be installed directly on the speed scoop outlet. A seawater strainer is mandatory between the sea cock and pump. The sea water system should be installed with an upward incline from the speed scoop & sea cock, through the strainer, to the inlet of the pump and then up to the inlet of the condenser coil. Use only reinforced marine grade hose. All hose connections shall use double/reversed stainless steel hose clamps. Seal all thru-hull fittings with a marine sealant designed for underwater use.

The refrigeration lines connecting the evaporator unit to the condensing unit are constructed of refrigeration grade, dehydrated copper, insulated, precharged and fitted with quick disconnect style fittings for easy installation. Any excess refrigerant lines should be coiled in a horizontal plane.

Thermostats are to be located and properly secured in the box(es) or on bulkheads with sensing bulbs properly secured into the mounting plates on the evaporator.

Circuit breakers and wire gauges must be sized according to ABYC marine design standards. Only stranded tinned copper wire should be used. All equipment must be properly grounded.

In keeping with regulations set forth by the EPA, only certified technicians should perform service on, or make adjustments to, the refrigerant circuit.



In the interest of product improvement, Taylor Made Environmental's specifications and design as outlined herein are subject to change without prior notice.

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