OceanAire

PROVIDING A BETTER CLIMATE ANYWHERE.

2OACH SERIES

Portable Air-Cooled Heat Pump

ENGINEERING, INSTALLATION AND SERVICE MANUAL

HEATING & COOLING

Cooling and Heating done Right!

c UL us

OCEANAIRE

MADE IN THE UNITED STATES OF AMERICA

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FORWARD

This manual provides the user with basic details for the installation and operation of the OceanAire 20ACH heat pump. It is recommended to read and fully understand the instructions outlined within this manual, before operating the 20ACH unit.

As with all commercial air conditioning equipment, it is recommended to have the 20ACH sized and installed by a licensed specifying engineer and contractor, in accordance with all local and state codes. The length of service received can be extended by following the installation and preventive maintenance instructions.

NOTICE

In our ongoing process of continuous improvement, the items and procedures described in this manual are subject to change without notice. Please note model and serial number of the 20ACH unit before contacting the factory.

GENERAL INFORMATION

The OceanAire 2OACH is a portable air-cooled heat pump designed for permanent or temporary spot cooling or heating applications. The entire unit has been built in a premium sheet metal cabinet, equipped with heavy-duty casters for mobility. All 2OACH models come standard with a 10-foot power cord for electrical connection and added mobility in service. These units direct heated/cooled air to specific areas or objects through a discharge grille located on the upper-front of the unit, while rejecting cooled/heated air from the top of the unit. The 2OACH models range in capacities from 12,000 BTU/HR to 60,000 BTU/HR to satisfy most space cooling or heating requirements.

The 2OACH is a self-contained unit with the entire system (evaporator and condenser blower assemblies, electrical and refrigeration components), neatly arranged in a gray and blue polyester powder coated metal cabinet. When connected to the proper source of electrical power, the 2OACH is controlled by a solid-state electronic controller, with numerous options of temperature and airflow controls that will provide the desired level of comfort when cooling or heating.

A wide variety of accessories and factory installed options are available for the 2OACH units allowing for improved performance and added versatility.

NOMENCLATURE

2 O AC H 60 1 2

- 2nd GENERATION
- DELUXE PORTABLE
- PORTABLE AIR COOLED
- HEAT PUMP
- NOMINAL CAPACITY
- PHASE (1 or 3)
- VOLTAGE
  - 1—115V
  - 2—208-230V
  - 4—460V

CAPACITY RATING

12.....12,000 BTU/HR
18.....18,000 BTU/HR
24.....24,000 BTU/HR
36.....36,000 BTU/HR
60.....60,000 BTU/HR

NOT APPROVED FOR OUTDOOR USE

WARRANTY

ALL OCEANAIRE PRODUCTS ARE COVERED BY THE OCEANAIRE LIMITED WARRANTY
1 YEAR ON THE FULL PRODUCT
PLUS, 4 ADDITIONAL YEARS FOR THE COMPRESSOR
(Restrictions Apply)

WARRANTY CARD

It is important that the warranty card be filled out completely and returned to the factory within fourteen (14) days of installation of the unit in order to receive the benefits of the warranty.

SPECIFICATIONS 2OACH

MODEL: 2OACH	1211	1811	2412	3612	3632	3634	6012	6032	6034
COOLING CAPACITY	11,800	16,800	24,020	36,050			60,100		
HEATING CAPACITY	11,000	15,000	22,000	32,500			53,500		
VOLTAGE (V/Phase) at 60Hz	115/1		208-230/1		208-230/3	460/3	208-230/1	208-230/3	460/3
AMPS	10.4	14.1	14.9	19.6	17.2	8.7	32	20.4	14.8
TOTAL WATTS	1180	1670	2700	3620			6000		
IN-RUSH AMPS	60	75	68	113	93	60	178	162	87
PLUG TYPE	5-15P LCDI	5-20P LCDI	6-20P LCDI	6-30P LCDI	L15-30P	L16-20P	6-50P	L15-30P	L16-20P
EER	10.0		8.9	10.0					
COMPRESSOR	ROTARY	ROTARY	ROTARY	SCROLL			SCROLL		
COMPRESSOR HP	1	1.5	2	3	3	3	5	5	5
COMPRESSOR LRA	50	63	48	83	77	35	158	137	52
EVAPORATOR CFM - HIGH	400	600	810	1200			1950		
EVAPORATOR MOTOR HP	1/8		1/3				1		
CONDENSER CFM	580	930	1010	1390			2200		
CONDENSER MOTOR HP	1/8		1/3	1					
CONDENSATE TANK	5 Gallon - STANDARD (Pump Optional)						Pump - STANDARD (20 ft. Lift)		
R-410A CHARGE (oz.)	18	40	37	66			80		
HEIGHT (in.)	38.8	46.8		52.7			54.3		
WIDTH (in.)	20.0	24.0		28.2			28.1		
DEPTH (in.)	26.8	31.4		37			41.0		
NET WEIGHT (lb.)	180	260		365		380	485		520

2OACHSPECS10012021

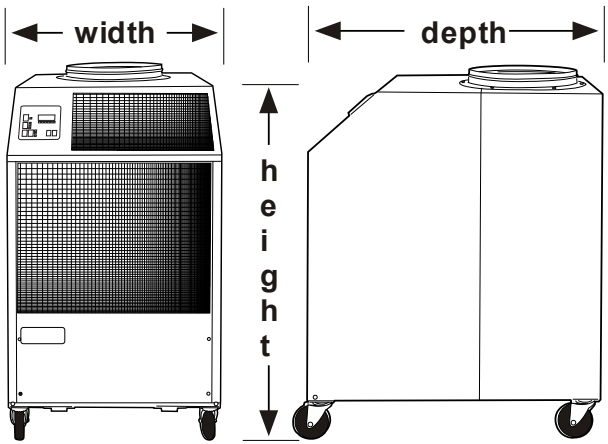
SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

- **Cooling Capacity** is total BTUH at 80°DB/67°WB return air, 95°F Outdoor at high fan speed
- **Heating Capacity** is total BTUH at 70°DB/60°WB indoor, 47°DB/43°WB Outdoor
- Dedicated Circuit and Time Delay fuses/circuit breakers are recommended
- EER is determined at high fan speed, with condenser discharge air ducted into another area
- CFM with free discharge
- Amps & Watts at 115/208/460 volts

COOLING AMBIENT **OPERATING RANGE 65° TO 105°**

HEATING AMBIENT **OPERATING RANGE 40° TO 85°**

NOT APPROVED FOR OUTDOOR



MADE IN THE UNITED STATES OF AMERICA

HEATING & COOLING

STANDARD FEATURES

CABINET

The 20ACH Series heat pump has a cabinet that is constructed of 18 gauge steel with a polyester powder coated finish that will compliment any decor. The cool blue front compliments any surrounding space, and is insulated with sound-absorbing insulation for cool, quiet comfort. All units come equipped with handles and premium swivel casters for portability and convenient set-up.

DELUXE ELECTRONIC CONTROLLER

Each 20ACH unit is equipped with a deluxe electronic controller. When power is connected to the unit, the thermostat will control the unit to cool/heat a space to the desired temperature. The thermostat is also capable of controlling the fan to operate automatically when needed, or continuously.

One additional feature of the Deluxe Electronic Controller is that it will display a condition alarm **"CON"**. **"CON"** displays when a condensate alarm, or a high pressure reset condition has been met. To protect the compressor from short-cycling, there is a built-in time delay. In the event of a power outage, all thermostat settings are saved, and the unit will re-start automatically.

FAN SPEED CONTROL

One of the features of the electronic controller is that the unit supply fan can be controlled either automatically or manually. In AUTO mode, the indoor blower will adjust air flow automatically for added comfort and performance. Or, if desired, the controller can be set to MANUAL fan mode, and the indoor blower will run continuously at one of six levels of fan speed.

CONDENSATE TANK/PUMP

20ACH units come equipped with a means for handling the condensate generated during the cooling/heating process. All units, **except the 5-ton models,** come equipped with a condensate tank. The tank can be easily removed from the unit and emptied as needed.

The 20ACH60 models come equipped with an automatic condensate pump. The pump comes with a 20 foot long vinyl hose that allows for the removal of the condensate water to a drain. The automatic pump is capable of a 20ft vertical lift, to handle almost any installation requirement.

FILTERS

All 20ACH units are equipped with washable filters at the air intakes. Electrostatic mesh air filters located behind the evaporator return air grille serve to filter the air before it is cooled/heated, and behind the condenser return air grille to prevent dust build-up. Both filters can be easily removed and cleaned.

HIGH PRESSURE SAFETY SWITCH

Located on the back of the 20ACH unit is a manual re-set high pressure switch, used for the protection of the compressor. If the condensing pressure exceeds the limit setting, the switch will cycle the compressor off, while the evaporator fan remains running. The display will indicate the default setting **"CON"**. The compressor can then be re-started, once the condensing pressure has equalized, by depressing the **"RESET"** button.

POWER CORDS

All 20ACH units come standard with a power cord for a convenient connection. All models, except for the 3-phase units and 5-ton units, are equipped with LCDI for added safety features.

APPLICATIONS

COOLING MODE—SPOT COOLER

The 2OACH can be used in an open environment to cool specific objects or "spots". Spot Cooling is a convenient and economical way to provide air conditioning, where cooling the entire space is impractical. Cool air is discharged from the unit and is directed where it is needed. Nozzle kits can be used for directional cooling.

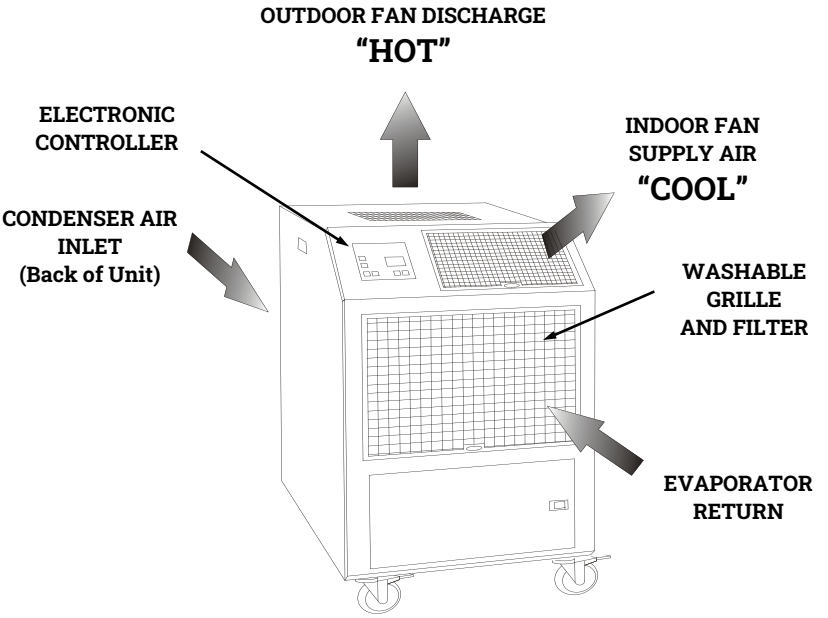
AREA COOLER

When the 2OACH is installed in an open area, the condenser exhaust duct directs the warm air away from the space, allowing the evaporator air to cool the specific area.

ROOM AIR CONDITIONER

When ducted properly, the 2OACH can be used as a room air conditioner to cool an enclosed space. Using the condenser return air plenum, additional ceiling kit, and other accessories, the 2OACH can then operate as a room air conditioner with the condenser air isolated from the conditioned space.

2OACH—COOLING MODE OPERATION / DESCRIPTION



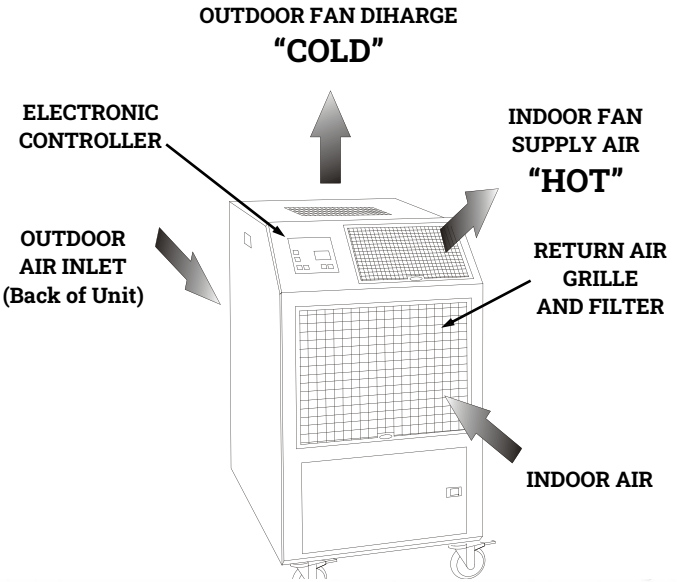
2OACH—COOLING MODE

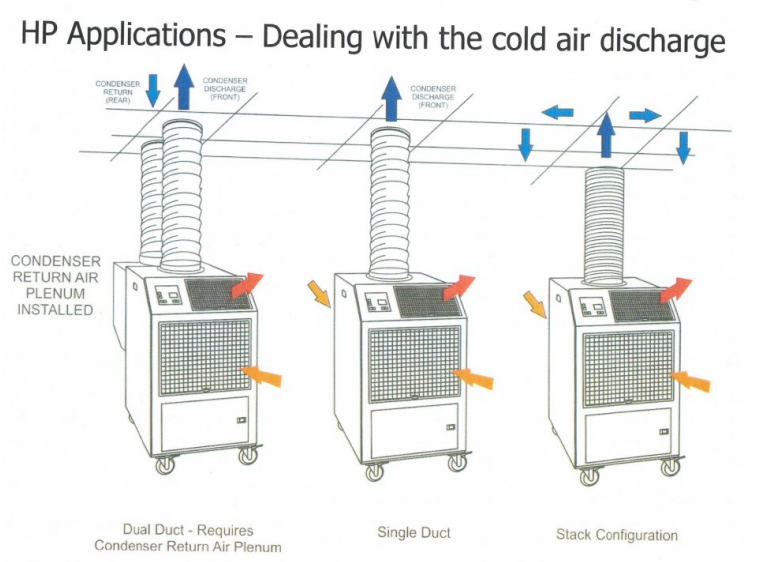
APPLICATIONS

HEATING MODE—HEAT PUMP

In HEAT mode, The 20ACH can be used in an open environment to provide heat to a specific area or "spots". The 20ACH is a heat pump, and the supply air will feel warm, but not extremely hot to the touch. Nozzle kits can be used for directional heating.

20ACH—HEATING MODE OPERATION / DESCRIPTION





ELECTRICAL CONFIGURATION

SERVICE CORD

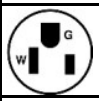
All 2OACH-Series units are equipped with a standard 10-foot long service cord with plug configurations and receptacle requirements as shown in this chart. 2OACH1211, 2OACH1811, 2OACH2412 and 2OACH3612 units come with **LCDI** (Leakage Current Detection & Interruption) devices that serve as a means of electrical protection.

CAUTION

DO NOT USE THE LCDI AS AN ON/OFF SWITCH FOR THE UNIT

All 3-phase models are equipped with locking plugs for added connection reliability. Refer to the chart below for plug and receptacle details for all 2OACH models.

A DAMAGED POWER SUPPLY CORD MUST BE REPLACED WITH A NEW POWER SUPPLY CORD AND NOT REPAIRED

UNIT/MODEL	PLUG CONFIGURATION	RECEPTACLE
115 VOLT 2OACH1211	 15A-125 VOLT NEMA 5-15P	NEMA 5-15R
115 VOLT 2OACH1811	20A-125 VOLT NEMA 5-20P	NEMA 5-20R
208-230 VOLT SINGLE PHASE 2OACH2412	20A-250 VOLT NEMA 6-20P	NEMA 6-20R
208-230 VOLT SINGLE PHASE 2OACH3612	30A-250 VOLT NEMA 6-30P	NEMA 6-30R
208-230 VOLT SINGLE PHASE 2OACH6012	50A-250 VOLT NEMA 6-50P	NEMA 6-50R
208-230 VOLT 3-PHASE 2OACH3632 2OACH6032	30A-250 VOLT NEMA L15-	NEMA L15-30R
460 VOLT 3-PHASE 2OACH3634 2OACH6034	20A-460 VOLT NEMA L16-20P	NEMA L16-20R

USE OF EXTENSION CORDS

CAUTION

FOR MODEL 2OACH1211 AN EXTENSION CORD CAN BE USED, PROVIDED IT IS RATED AT LEAST 15 AMPS @ 115 VOLTS WITH GROUNDING-TYPE ATTACHMENT PLUG AND GROUNDING TYPE CONNECTOR (LOAD FITTING)

FOR MODEL 2OACH1811 AN EXTENSION CORD CAN BE USED, PROVIDED IT IS RATED AT LEAST 20 AMPS @ 115 VOLTS WITH GROUNDING-TYPE ATTACHMENT PLUG AND GROUNDING TYPE CONNECTOR (LOAD FITTING)

FOR MODEL 2OACH2412 AN EXTENSION CORD CAN BE USED, PROVIDED IT IS RATED AT LEAST 20 AMPS @ 250 VOLTS WITH GROUNDING-TYPE ATTACHMENT PLUG AND GROUNDING TYPE CONNECTOR (LOAD FITTING)

FOR MODEL 2OACH3612 AN EXTENSION CORD CAN BE USED, PROVIDED IT IS RATED AT LEAST 30 AMPS @ 250 VOLTS WITH GROUNDING-TYPE ATTACHMENT PLUG AND GROUNDING TYPE CONNECTOR (LOAD FITTING)

FOR MODEL 2OACH6012 AN EXTENSION CORD CAN BE USED, PROVIDED IT IS RATED AT LEAST 50 AMPS @ 250 VOLTS WITH GROUNDING-TYPE ATTACHMENT PLUG AND GROUNDING TYPE CONNECTOR (LOAD FITTING)

FOR MODELS 2OACH3632 AND 2OACH6032 AN EXTENSION CORD CAN BE USED, PROVIDED IT IS RATED AT LEAST 30 AMPS @ 250 VOLTS, 3 PHASE

FOR MODELS 2OACH3634 AND 2OACH6034 AN EXTENSION CORD CAN BE USED, PROVIDED IT IS RATED AT LEAST 20 AMPS @ 600 VOLTS, 3 PHASE

SPECIAL NOTICE—THREE PHASE OPERATION

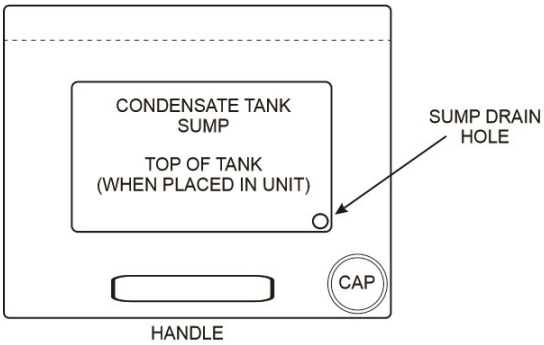
Models 2OACH3632, 2OACH3634, 2OACH6032 and 2OACH6034

All three-phase 2OACH models are equipped with a three-phase monitor for added compressor protection. The phase monitor, located in the control box, has a multi-color LED that reports status. The monitor protects the compressor from reverse operation, phase loss, and low voltage situations. Further description of the three-phase monitor is located in the electrical section of this manual.

NOTICE - DO NOT OPERATE ANY THREE-PHASE UNIT WHILE BYPASSING THE MONITOR. ***THIS WILL VOID THE WARRANTY.***

CONDENSATE

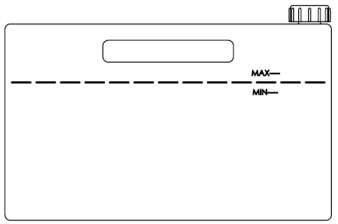
For Models 20ACH1211, 20ACH1811, 20ACH24 and 20ACH36, a 5-gallon polyethylene tank is provided to collect condensate. The tank is located in the lower front section of the unit, and can be accessed though the condensate tank door. When the high water level is reached, a cut-out switch will AUTOMATICALLY cycle off the compressor/condenser fan.

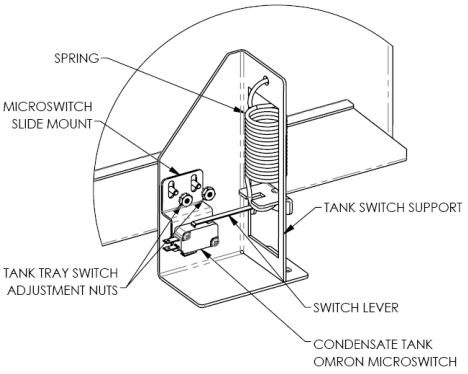


ADJUSTMENT INSTRUCTIONS

DISCONNECT POWER TO UNIT

1. REMOVE LEFT SIDE PANEL OF UNIT.
2. LOCATE CONDENSATE TANK TRAY SWITCH.
3. LOOSEN TANK TRAY SWITCH ADJUSTMENT NUTS (2X).
4. POSITION MICROSWITCH SLIDE MOUNT TO ENGAGE WATER LEVEL AT DESIRED LOCATION.
5. THEN, TIGHTEN BOTH ADJUSTMENT NUTS.
6. REPLACE LEFT SIDE PANEL.

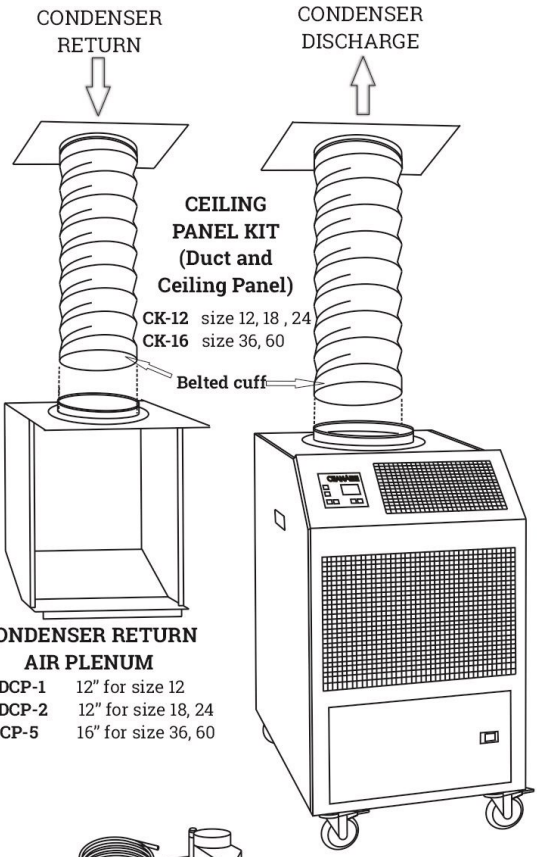




TANK TRAY SWITCH ASSEMBLY
"NEW STYLE"

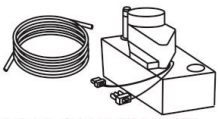
2OACH Optional ACCESSORIES

NOTE - IT IS IMPORTANT TO SPECIFY MODEL NUMBER AND SERIAL NUMBER WHEN ORDERING ACCESSORIES



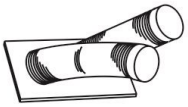
CONDENSER RETURN AIR PLENUM

2DCP-1	12" for size 12
2DCP-2	12" for size 18, 24
DCP-5	16" for size 36, 60



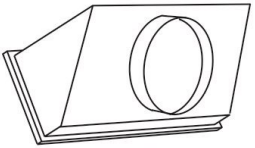
UNIVERSAL CONDENSATE PUMP KIT
for Unattended Operation

UPK-115	115V for size 12, 18
UPK-230	230V for size 24, 36



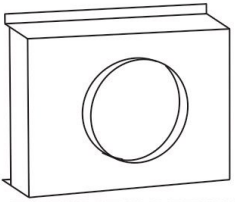
NOZZLE KIT
for Directional Cooling/Heating

2NK-1	2 x 4" for size 12
2NK-2	2 X 6" for size 18, 24
2NK-3	2 X 8" for size 36, 60



DISCHARGE DUCT ADAPTER
for Extended Single Duct Length

2DDA-6	6" for size 12
2DDA-10	10" for size 18, 24
2DDA-16	16" for size 36, 60



EVAPORATOR RETURN AIR PLENUM

DEP-10	10" for size 12
2DEP-12	12" for size 18, 24
DEP-16	16" for size 36, 60

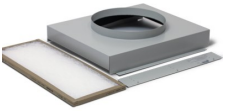
20ACH Optional ACCESSORIES

NOZZLE KIT

2NK-1	(2 X 4-Inch)	20ACH12
2NK-2	(2 X 6-Inch)	20ACH18, 24
2NK-3	(2 X 8-Inch)	20ACH36, 60

EVAPORATOR RETURN AIR PLENUM

DEP-10	(10-Inch Round)	20ACH12
2DEP-12	(12-Inch Round)	20ACH18, 24
DEP-16	(16-Inch Round)	20ACH36, 60



DISCHARGE DUCT ADAPTER

2DDA-6	(6-Inch Round)	20ACH12
2DDA-10	(10-Inch Round)	20ACH18, 24
2DDA-16	(16-Inch Round)	20ACH36, 60

CONDENSATE PUMP KIT *

UPK-115	115V Models
UPK-230	230V Model

*Not Required on 20ACH60's

CEILING PANEL KIT

CK-12	Kit for 20ACH12, 18, 24
CK-16	Kit for 20ACH36, 60

CONDENSER RETURN AIR PLENUM

2DCP-1	(12-Inch Round)	20ACH12
2DCP-2	(12-inch Round)	20ACH18, 24

DCP-5	(16-Inch Round)	20ACH36, 60

ACCESSORIES

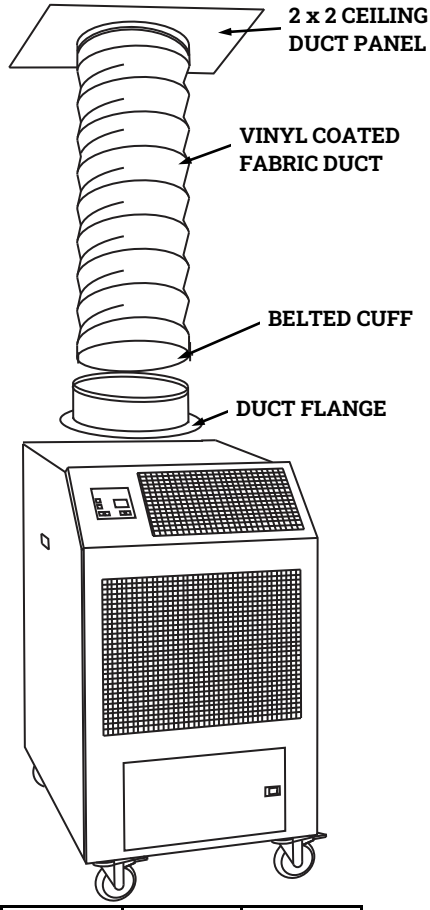
CEILING PANEL DUCT KIT

A ceiling panel kit is available for discharging the condenser air above a drop ceiling. The ceiling panel duct kits are furnished with a white vinyl coated flexible duct that allows for convenient installation. A 2ft X 2ft ceiling duct-panel is included to replace a 2ft X 2ft drop-ceiling panel where the connection is desired.

The **CK-12** is available for 2OACH12, 18, and 24. The ceiling panel kit consists of 8 feet of flexible duct, and a 2' X 2' lay in ceiling panel that attaches to the condenser air discharge opening on the top of the unit. The **CK-16** (for 3 and 5-ton units) consists of a ceiling duct-panel, and a 16 inch flexible duct.

***Note**—Drop ceiling spaces should be vented or large enough to handle the warm condenser air. Check local codes to insure compliance.*

If longer runs of duct are required, table below lists maximum duct run with no bends. For every 90° elbow, subtract 6 feet from the run.



Ceiling Kit Model	Flexible Duct Diameter X Length	Fits 2OACH12	Fits 2OACH18	Fits 2OACH24	Fits 2OACH36	Fits 2OACH60
CK-12	12 inch X 8 feet	✓	✓	✓	No	No
CK-16	16 Inch X 8 feet	No	No	No	✓	✓
Maximum Equivalent Feet (approx)		25	50	60	70	80
(ESP)		(.20)	(.25)	(.25)	(.25)	(.50)

ACCESSORIES

DISCHARGE AIR NOZZLE KIT ASSEMBLY

The optional discharge nozzle kits are used to direct the conditioned air to a specific target area. By concentrating the airflow, the nozzles increase the air velocity towards production lines to cool personnel and/or equipment. In server rooms, the nozzles can be used to direct the airflow through the rack to remove the hot air from the area of the equipment.

Nozzle Kit

2NK-1 for model 2OACH12, (2) 4-inch diameter nozzles with an approximate compressed length of 15 inches. The Approximate extended length is 21".

2NK-2 for models 2OACH18, 2OACH24 (2) 6-inch diameter nozzles with an approximate compressed length of 22 inches. The approximate extended length is 32 inches.

The nozzle kits come pre-assembled with the nozzles secured to a mounting plate and with edge guards. By removing the discharge grille, you can insert the nozzle kit into the opening without the use of tools.

CONDENSATE PUMP KIT

A plug-in condensate pump kit is available for applications where emptying the 5-gallon condensate tank is not practical. The pump kit consists of a condensate pump with mounting hardware and electrical connections, along with the tubing required for the drain and discharge of the condensate water.

The condensate pump provides for the automatic removal of condensate water during the cooling process. The pump is capable of pumping to a 20 foot height, allowing for the routing of the drain line above the drop-ceiling to a nearby drain. The pump is controlled by an internal float-switch/ check valve, which turns the pump on and off automatically. The pump is also equipped with a condensate over-flow safety switch that will shut down the unit compressor when the pump is not working properly.

PARTS LIST

- **Condensate Pump with**
- **Mounting Hardware/Screws**
- **Drain hose**
- **Tubing**
- **Wiring Harness**
- **Low Voltage Jumper**
- **Hose Clamps**

Kit	**Voltage**
UPK-115	**115V**
UPK-230	**208/230V**

Replacement Pump Only	
057-020R	**115V**
057-021R	**230V**

ACCESSORIES

CONDENSER RETURN AIR PLENUM

Condenser return air plenums are available for installations where it is required to duct air to the inlet of the condenser. The plenum easily fits into place on the back of the unit, and is provided with a flange for connecting 12-inch or 16-inch flexible ducting. A condenser return air plenum can substantially reduce air noise and allow the unit to operate without drawing condenser air from the conditioned space. Refer to the table below for configuration and application information.

NOTE — When installing the condenser return air plenum with a ceiling panel kit, allow for a minimum separation distance of 2 feet between the unit discharge duct and the return air duct. It is also recommended to direct the condenser discharge air away from the condenser return air duct.

2DCP-1, 2DCP-2

DCP-5

To estimate the "equivalent feet" of condenser duct, add the length of the condenser intake duct run and the length of the condenser discharge duct run, and add 6 equivalent feet per bend in the duct. Make sure that you do not exceed the rated E.S.P. to avoid shut down due to the high pressure switch cut-out.

Plenum Kit	Duct Flange	2OACH12	2OACH18	2OACH24	2OACH36	2OACH60
2DCP-1	12-inch	✓				
2DCP-2	12-inch		✓	✓		
DCP-5	16-Inch				✓	✓
Maximum Approximate Equivalent Feet		25	50	60	70	80
Estimated External Static Pressure		(.20)	(.25)	(.25)	(.25)	(.50)

ACCESSORIES

EVAPORATOR RETURN AIR PLENUM

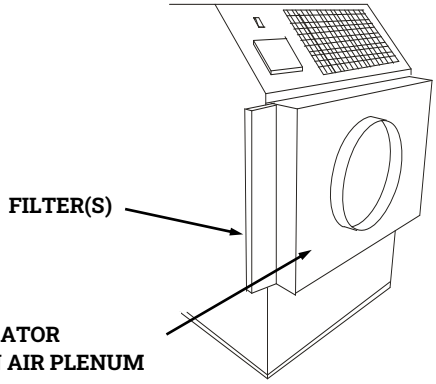
Evaporator return air plenums are available for installations where it is required to duct air to the inlet of the evaporator. The evaporator return air plenum allows the user to connect round duct (flexible or rigid) to the return air intake to reduce air noise and increase the number of options for solving difficult application problems. The plenum attaches to the front of the unit, replacing the return air grille. Refer to the table below for configuration and application information.

DEP-10 for 2OACH12 transitions the return air opening to a 10-inch round duct.

2DEP-12 for 2OACH18 & 2OACH24 transitions the return opening to a 12-inch round duct.

DEP-16 for 2OACH36, 60 transitions the return opening to a 16-inch round duct.

NOTE—When an evaporator return air plenum is installed, it is recommended to set the evaporator blower speed to high, to avoid coil freeze-up.



Plenum Kit Duct/Flange	2OACH12	2OACH18	2OACH24	2OACH36	2OACH60	FILTERS
DEP-10 10 inch	✓					(1) 10"x 20"x 1"
2DEP-12 12 inch		✓	✓			(1) 16"x 24"x 1"
DEP-16 16 inch				✓	✓	(1) 10"x 30"x 1" (1) 12"x 30"x 1"
Maximum Equivalent Feet	25	50	60	70	80	
Est. External Static Pressure	(.20)	(.25)	(.25)	(.25)	(.50)	

ACCESSORIES

DISCHARGE DUCT ADAPTER

Discharge duct adapters are available for applications where ducted evaporator discharge is required. The adapters can be easily installed on the unit without fasteners, and can be used for either vertical or horizontal ducting. The standard discharge grille is removed and the 2DDA is attached in the grille opening.

2DDA-6 for model 2OACH12, converts the evaporator discharge to a 6-inch diameter round duct.

2DDA-10 for models 2OACH18 and 2OACH24, converts the evaporator discharge to a 10-inch diameter round duct.

2DDA-16 for models 2OACH36 AND 2OACH60, converts the evaporator discharge to a 16-inch round duct.

When used in conjunction with the evaporator return air plenum, the unit can pro-

Adapter Model	Round Duct Size	2OACH12	2OACH18	2OACH24	2OACH36	2OACH60
2DDA-6	6-inch	✓				
2DDA-10	10-inch		✓	✓		
2DDA-16	16-inch				✓	✓
Maximum Approx. Equivalent Feet		25	50	60	70	80
Maximum E.S.P		.15	.25	.25	.25	.50

INSTALLATION INSTRUCTIONS

RECEIVING—INSPECTION

Upon receiving your 20ACH unit, inspect the packaging for any damage. All units are shipped on a skid, and packaged in a triple-wall carton for added protection.

BEFORE INSTALLING

Check the unit for any damage. All OceanAire products are thoroughly inspected at the factory and carefully packaged. If any damage is evident, contact OceanAire ***IMMEDIATELY.***

ELECTRICAL REQUIREMENTS

Check the nameplate located on the back of the unit to confirm the proper power is available for the unit. **Refer to "Specifications"** section for voltage and amperage requirements. For proper NEMA receptacles, refer to "Electrical service plug configuration". When using extension cords, use the proper gauge cord, and check cord voltage to the unit.

TIME DELAY FUSES/CIRCUIT BREAKERS ARE RECOMMENDED

WARNING—OPERATING THE UNIT ON IMPROPER VOLTAGE WILL VOID THE WARRANTY

ACCESSORIES

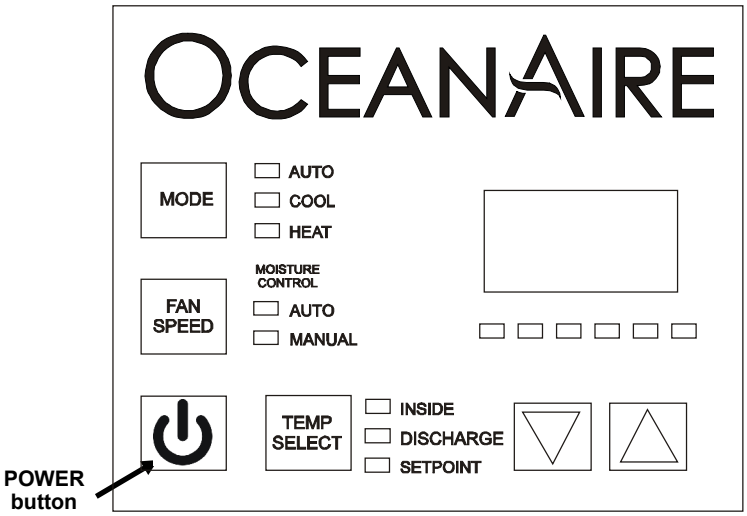
Verify that all accessories are correct for the model, and are installed in accordance with all instructions.

START-UP

Install the unit in accordance with all local and state building codes, and install all accessories. Allow for a clearance around the unit for future maintenance and/or service. Level unit and lock casters, when available. Connect power and test the LCDI on the power cord (if available). Power up unit, via thermostat and check for proper operation. Refer to Thermostat Operation for more details.

DELUXE ELECTRONIC CONTROLLER

The 2OACH controller is equipped with many features for a more precise level of comfort and operation. Additionally, the controller can be removed from the unit and installed for remote operation, if needed (accessory parts may be required).



OCEANAIRE DELUXE ELECTRONIC CONTROLLER

When power is connected, the controller will display "888" momentarily, and will then disappear. Press the **POWER** button, then press the **TEMP SELECT** button until the **SET POINT** is displayed. Adjust the **SET POINT** to the desired temperature, and the unit will heat/cool as programmed.

The systems controls temperature within +/- 2°

POWER ⏻ - Turns the unit on/off when power is supplied

MODE - Select the mode of operation from
AUTO...COOL....HEAT....MOISTURE CONTROL.

AUTO - The controller will heat or cool as required. **HEAT or COOL** will display accordingly. A 4° differential is needed to change between cooling and heating modes.

COOL - The system will operate in **cooling mode, only**.

HEAT - The system will operate in **heating mode, only.**

MOISTURE CONTROL - The system operates in the cooling mode to reduce humidity within the conditioned space. Every 4 hours, the fan is started, circulating the air, and the air temperature is recorded by the controller. The cooling cycle is started for one hour, or until the room temperature drops 2°, which ever comes first. This cycle repeats every four hours.

FAN SPEED—The operator can select between **AUTO or MANUAL** fan speed control. Pressing the **FAN SPEED** button will switch speed from **AUTO to MANU**AL. In **MANUAL** mode, pressing the **FAN SPEED** button will change fan speed from low to high. In **AUTO** mode, the fan speed is controlled automatically. In cooling mode, the controller automatically adjusts the fan speed to high, and as the inside temperature approaches the set point, the fan speed will reduce. In heat mode, the fan speed adjusts from low to high as the temperature reaches the set point

TEMP SELECT—Allows the operator to view the controller temperatures

CONTROLLER PROGRAMMING MENU

1) Make sure the unit ⏻ has power.

2) Press the power button **"OFF".**

3) Press the following buttons in sequence **"S-U-D-S"**

(**S**elect—**U**p arrow — **D**own arrow — **S**elect)

4) The display will begin flashing P1 and a number. *If there is no display, repeat the sequence, making sure the unit has power, but is turned OFF.*

5) To adjust any program feature, press the **ARROW UP** ⬆ or **ARROW DOWN** ⬇ button until the desired value is displayed.

6) Use the "**MODE**" button to scroll through the programmable settings P1 through P16.

7) If no buttons are pressed, the display will then return to the "**OFF**" position after about 50 seconds.

PROGRAM SETTINGS

P1—High Fan Speed Limit Setting. 56 - 85
P2—Low Fan Speed Limit Setting, 30 - 55
P4—Temperature Sensor Calibration, +/- 10°
P10— Temperature Display, °F or °C
P13—Supply Fan Operation, Cycling or Continuous

P1, P2 - To adjust fan speed settings, P1 represents the high fan speed parameter, while P2 represents the low fan speed parameter. When using nozzle kits, discharge duct adapters and evaporator
plenums, setting P1 to 85 will help to avoid freeze ups.
P4 - Adjust the P4 setting to match the actual INSIDE room temperature, if needed.
P10 - Use this parameter to display temperatures in the desired units.
P13 - To cycle the evaporator fan with the compressor, access code P-13. Press the up or down button to switch to "**CYC**", which means cycle the fan with the compressor. The factory default setting is "**CON**", which means continuous fan operation.

8) Press **POWER**—you should see an alphanumeric code.
Press **POWER** and the unit will start at the new settings.

2OACH PROGRAM SETTINGS

MODEL	CODE SETTINGS
2OACH12	P1 = 65, P2 = 45
2OACH18	P1 = 75, P2 = 50
2OACH24	P1 = 70, P2 = 50
2OACH36	P1 = 85, P2 = 40
2OACH60	P1 = 85, P2 = 45

NOTICE

Program Parameters are NOT controller default values. They are OceanAire Factory Settings

DISPLAY FAULTS

LAC..... **Low AC line power**

AAA or - - - ..... **Failed Air Sensor (unit will not run)**

CON..... **Empty Condensate Bucket—Units with a bucket**
Condensate Pump Over-Flow Alarm—Units with pump
High Pressure Cut-Out—Restricted Air Flow
correct problem, and re-set unit at HP RESET

TO CHECK THE NUMBER OF HOURS ON THE UNIT

1) Disconnect unit power, and reconnect unit power.

2) When "888" appears in display, push and release the arrow down button

3) The first set of numbers displayed reads thousands of hours:
02 = 2000, 04 = 4000 hours, 00 means less than 1000 hours.

4) The second set of numbers read hours directly:
58 = 58 hours. 742 = 742 hours.

6) Add the 2 number sets together to get total hours.
03 and 486 = 3486 hours. 01 and 59 = 1059 hours.

TOTAL HOURS REPRESENTS COMPRESSOR "RUN" TIME

REPLACEMENT PARTS PROCEDURE

IT IS RECOMMENDED THAT ALL OCEANAIRE UNITS
BE SERVICED BY A QUALFIED AIR CONDITIONING SERVICE TECHNICIAN

WARNING—TO AVOID INJURY, DISCONNECT UNIT POWER PRIOR TO SERVICING

A. FAN MOTORS

1. Remove cabinet's left-side panel (when looking at the front of the unit).
2. Evaporator fan motor—disconnect evaporator motor wires from evaporator fan capacitor and power module. Condenser fan motor—disconnect condenser motor wires from condenser fan capacitor and power module.
3. ***For all model sizes 12, 18, 24, and 36***, remove the screws securing motors and inlet-ring to blower housings (all screws are external and visible), and remove blower wheel-motor assembly. Remove the blower wheel set screw and disassemble the blower wheel from the motor shaft and remove the motor.

   For model size 60—loosen blower wheel shaft set screw, and remove the screws securing the motor mount to the blower housing and remove motor and mount. Remove the motor from the motor mount.
4. Install the new motor, reversing the removal procedure.

B. ELECTRONIC CONTROLLER (THERMOSTAT)

To remove the heat/cool display, remove the cabinet's left-side panel (from front). Locate the two nuts securing the display to the front panel. Unplug the display cable and remove display. Install new display and secure. Plug in display cable.

C. POWER MODULE

To remove the power module, remove the rear control box cover. Disconnect wires (one at a time), and re-attach each wire, while holding replacement module in other hand. Once all wires have been reconnected in accordance with the wiring diagram, install new power module.

D. CONDENSATE PUMP (ON ALL 5-TON UNITS, OR ON UNITS WHERE THE CONDENSATE PUMP KIT HAS BEEN INSTALLED)

1. Remove side panel.
2. Remove brackets securing condensate pump in base pan, or condensate tank tray pan
3. Disconnect pump wire leads at Molex connectors. Remove retainer clamp and tubing.
4. Replace pump, install by reversing procedure.

E. HIGH PRESSURE SAFETY SWITCH

1. Remove cabinets right side panel, or right rear side panel of Model 60.
2. Remove flare nut that secures capillary to the refrigeration system high pressure side. A schrader valve is located in the discharge port which allows removal without losing the refrigerant charge.
3. Remove two screws that secure high pressure switch.
4. Pin Connectors:
   a. If existing switch has 2 pin connector, remove old switch and plug n' play new switch.
   b. If existing switch does not have 2-pin connector, connect female harness and splice on blue leads with control circuit wires..
5. Install new High Pressure Switch, and reverse steps in order to complete the procedure.

To gain access to compressor and compressor run capacitor, remove left hand side panel.

DELUXE SERIES AIR COOLED TROUBLESHOOTING TIPS

techsupport@oceanaire-inc.com
(847) 583-0311

NO DISPLAY

*check power @ wall outlet
*check LCDI reset on cord end (if equipped)
*re-seat display cable's RJ connector on backside of controller
*re-seat other end of display cable in power module (pcb) display port
*confirm red LED is lit on power module

CON FAULT ON DISPLAY

*empty condensate tank (if equipped)
*check condensate level in pump reservoir (if equipped) HI limit float tripped
*reset HP switch (if click is felt, confirm what caused failure) i.e. dirty cond. filter, failed cond. motor, air restriction in exhaust ducting)
*re-seat 2-pin orange connector in power module
*confirm all RJ connectors are seated properly

NO COOLING

*set-point lower than inside ambient temperature
*red dot lit on digital display (call for cooling)
*confirm compressor is running (hear hum/feel vibration)
*electrical circuit has required ampacity available (unit pulling LRA)

NO HEATING

*set-point higher than inside ambient temperature
*red dot lit on digital display (call for heating)
*confirm compressor is running (hear hum/feel vibration)
electrical circuit has required ampacity available (unit pulling LRA)

DOES THE UNIT COOL BUT NOT HEAT

*tap on the reversing valve body while cycling through the cooling/heating AUTO mode

NO COOLING NO HEATING

*COMPRESSOR RUNNING (possible refrigerant leak)

ADDITIONAL NOTES ON 3 PHASE UNITS…

*phase monitor solid red/red-green flashing will cause compressor to be locked out, resulting in fan only operation. Reverse any 2 leads in take-off plug or wall disconnect panel (DO NOT REVERSE ANY LEADS IN UNITS ELECTRICAL BOX)
*confirm correct incoming power is balanced across all (3) legs

GENERATOR APPLICATIONS…be very careful with incoming power at unit.Please have meter available to confirm power across each pair, and each leg to ground

PREVENTIVE MAINTENANCE

2OACH Heat Pumps are designed to last a long time and to give maximum performance and reliability with minimum maintenance. To prolong the life of the unit, regular maintenance must be performed as specified below:

BLOWER MOTORS

The motors on all units have permanently lubricated bearings. No oiling is necessary

FILTERS

A clogged filter will cause the unit to operate at greatly reduced efficiencies. We recommend that the filter be inspected on a regular basis **every six weeks or less,** depending on the environment. The evaporator filter is located behind the return air grille and can be easily removed and cleaned. The condenser filter is located on the backside of the unit. The filters must be washed periodically as needed by placing them in a dishwasher or soaking them in a solution of warm water and detergent for 10 minutes. Then rinsing them clean with hot water and shaking excess moisture from filter.

CONDENSATE PUMP

Condensate pumps come standard on all Size 60 models, and may be installed as options on size 12, 18, 24 and 36 models. When servicing pump follow these steps;

1. Make certain that the unit is disconnected from the power source before attempting to service or remove any component.

2. Be sure the floats move freely. Clean as necessary.

3. Remove the pump housing and check for obstructions.

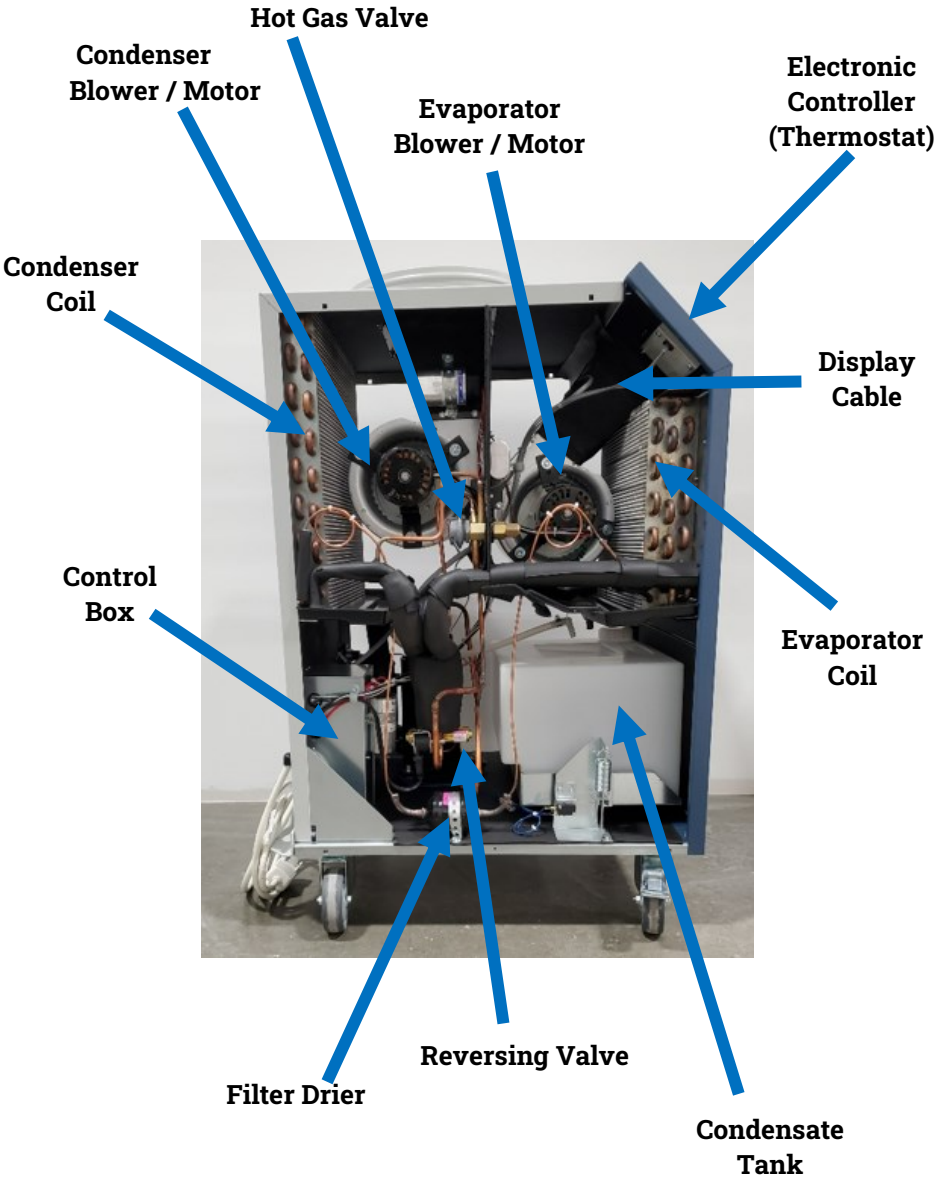
4. Clean the housing with warm water and mild soap when mineral deposits are visible.

5. Check the inlet and outlet piping. Clean as necessary. Be sure there are no kinks in the lines that would restrict flow.

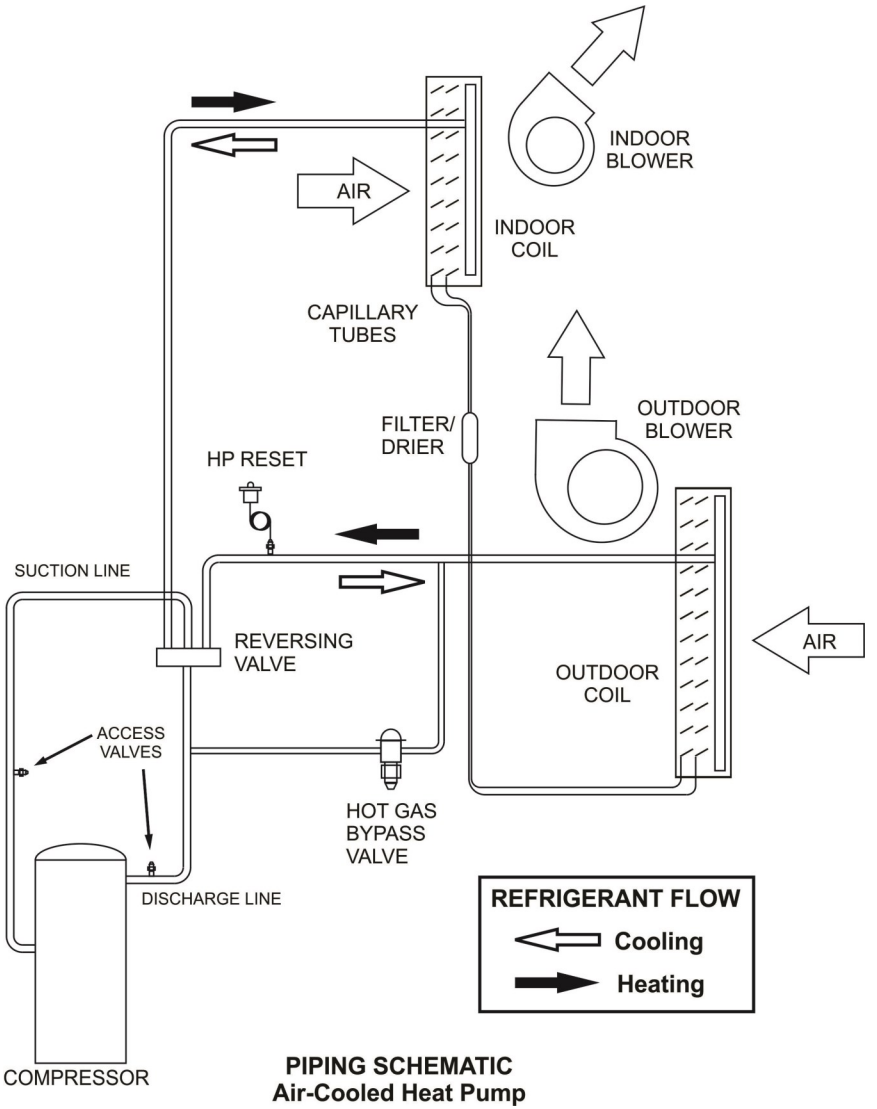
GENERAL

When necessary maintenance steps outlined above are followed, the air conditioner will provide long and reliable service. The refrigeration and electrical circuits of the system should only be serviced by a fully qualified service technician.

20ACH INTERIOR VIEW

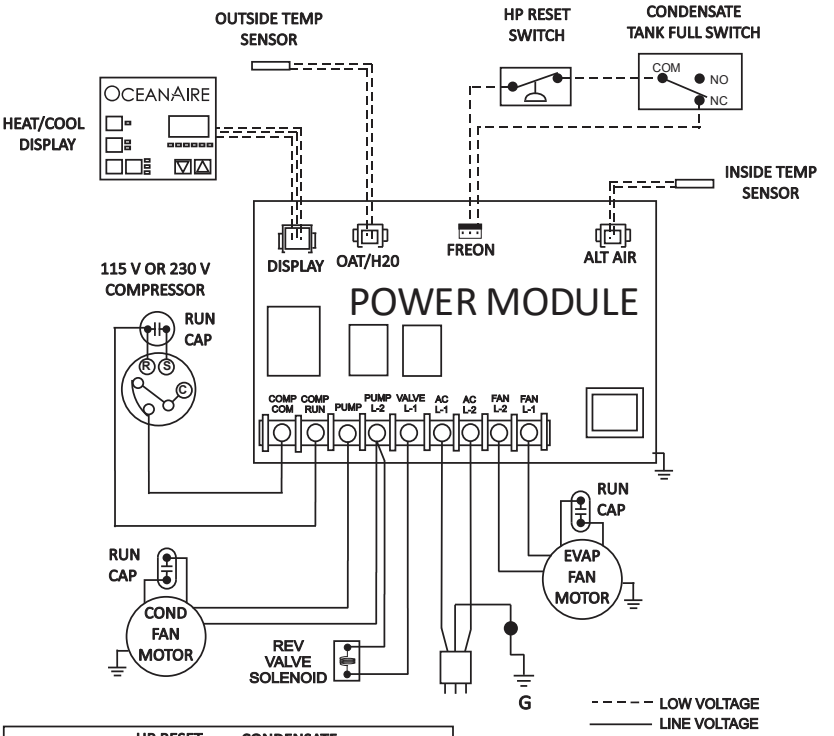


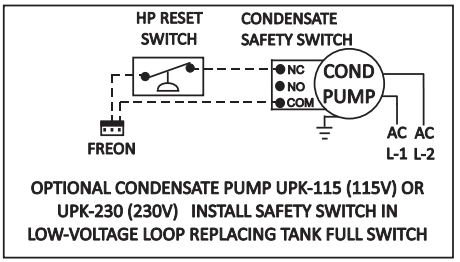
PIPING SCHEMATIC



PIPING SCHEMATIC
Air-Cooled Heat Pump

WIRING SCHEMATIC FOR 2OACH12, 18 and 24

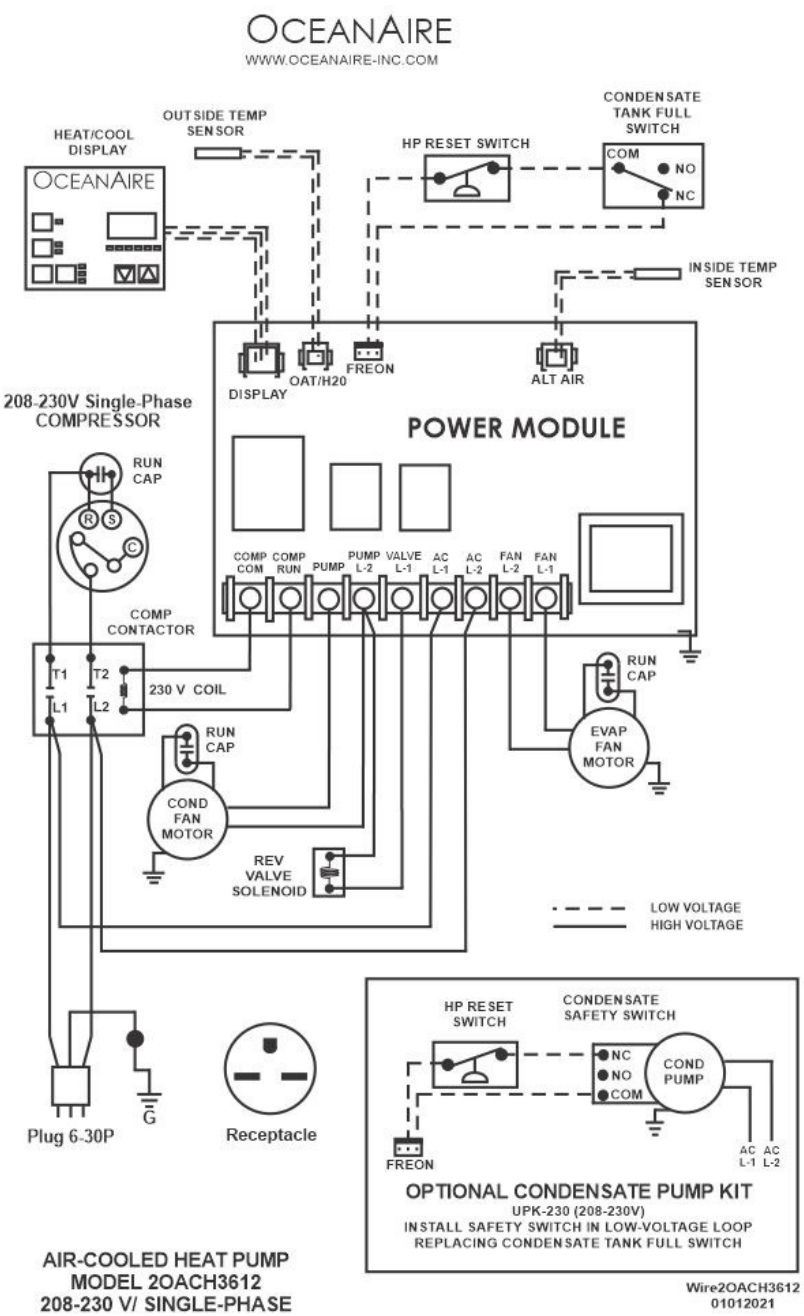




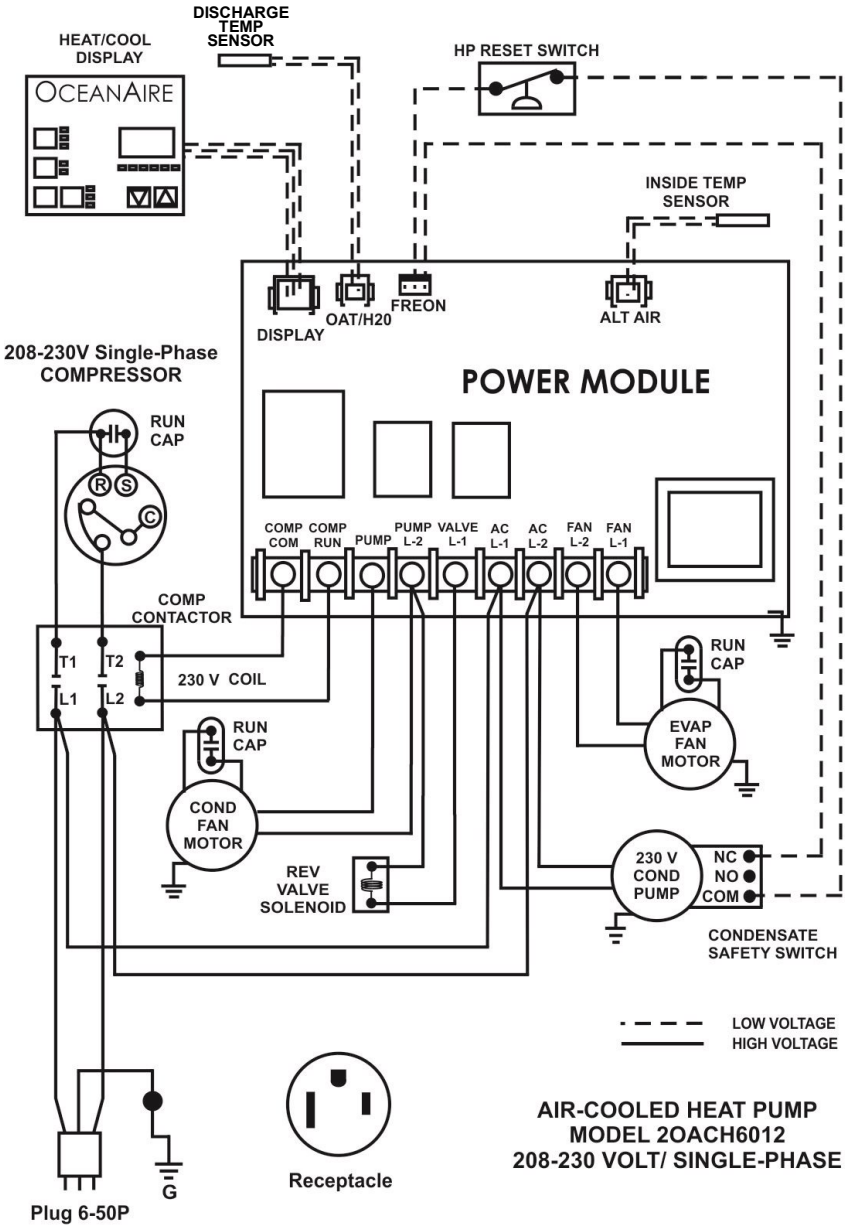
OCEANAIRE
www.oceanaire-inc.com

AIR-COOLED HEAT PUMP
MODELS 2OACH1211, 2OACH1811
115 VOLT / SINGLE-PHASE
2OACH2412
208-230 VOLT / SINGLE-PHASE

WIRING SCHEMATIC FOR 2OACH3612



WIRING SCHEMATIC FOR 2OACH6012



THREE PHASE MONITOR

Oceanaire Three-Phase units are be equipped with phase monitors for compressor motor protection. The Three-phase Monitor safeguards the compressor against phase reversal, phase imbalance and/or phase loss. The monitor is installed in the control box and is equipped with LEDs for diagnosis of electrical conditions (see diagrams below).

When power is connected and the unit is turned on at the thermostat, the thermostat start delay will commence. Once the thermostat start delay has timed out, the compressor will start. If the compressor does not start, remove the control box cover to observe the LEDs in the Phase Monitor. The LEDs will signal the following:

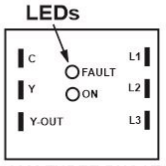
Three Phase Monitor - ICM401/ICM402

ICM401 - Standard Series **ICM402 - Deluxe Series**

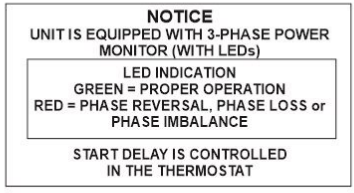
GREEN - ON (Proper Operation) The compressor contactor is energized.

RED - FAULT CONDITION Correct the issue with the incoming power and re-start the unit. The Phase Monitor will not allow the compressor to start until the power FAULT is corrected.

In the event of a power interruptions or changes, the Phase Monitor will change state accordingly and will remain in FAULT until the power condition is corrected.



ICM THREE-PHASE MONITOR



CONTROL BOX LABEL

THREE PHASE MONITOR - SSAC - For Service/Replacement Market

025-045 (208/230v) **025-046 (460 v)**

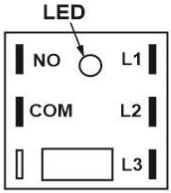
GREEN-BLINKING - Start delay, up to 120 sec.

GREEN - Proper Operation

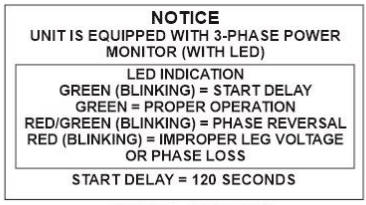
RED/GREEN-BLINKING - signals reverse phase rotation. Switch any two of the power leads for the unit, NOT THE MONITOR LEADS, and re-start.

RED-BLINKING - signals improper voltage and/or phase loss. Correct the power problem, then re-start the unit.

In the event of a power interruption, the unit will re-set to a start-up condition. The Phase Monitor will not allow the unit to start until power is corrected.

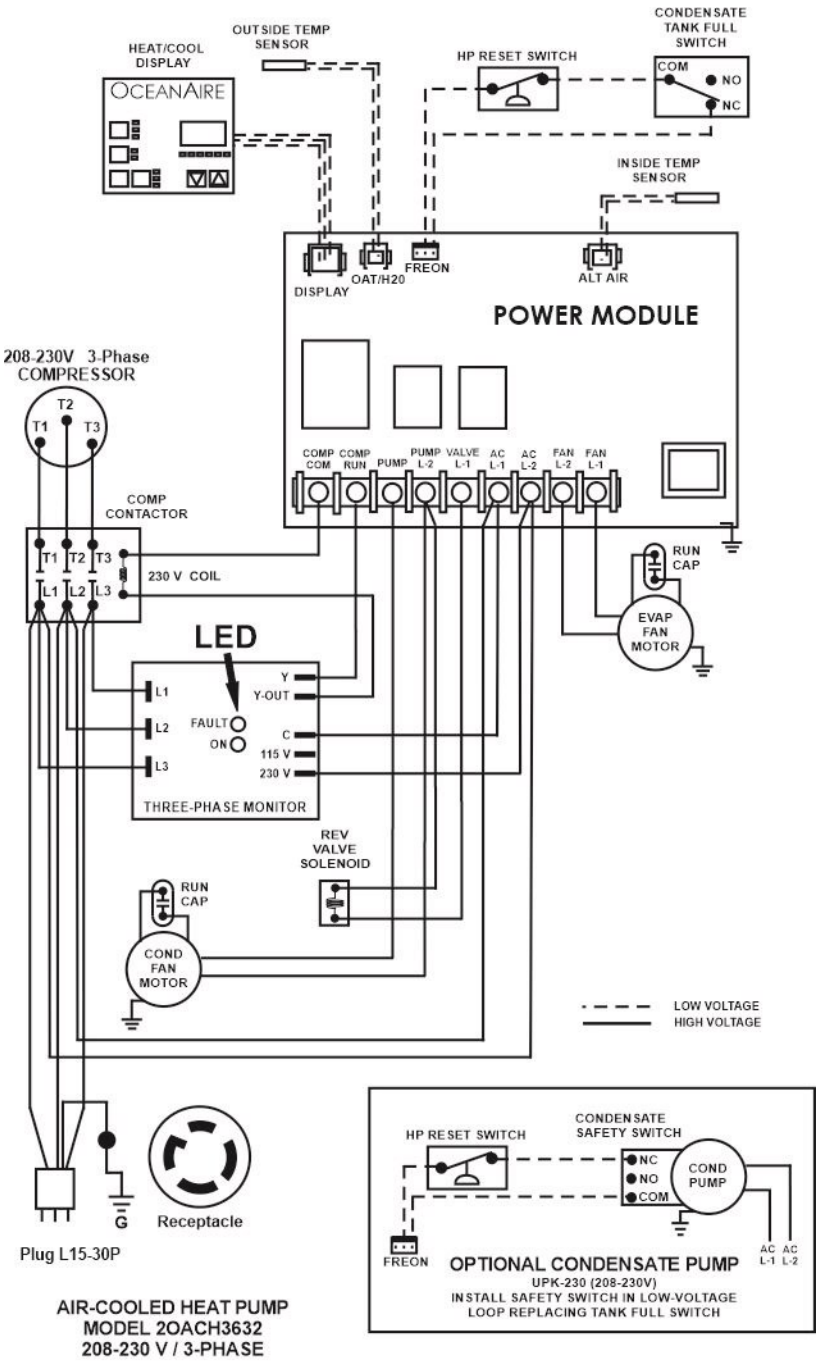


SSAC THREE-PHASE MONITOR



CONTROL BOX LABEL

WIRING SCHEMATIC FOR 2OACH3632

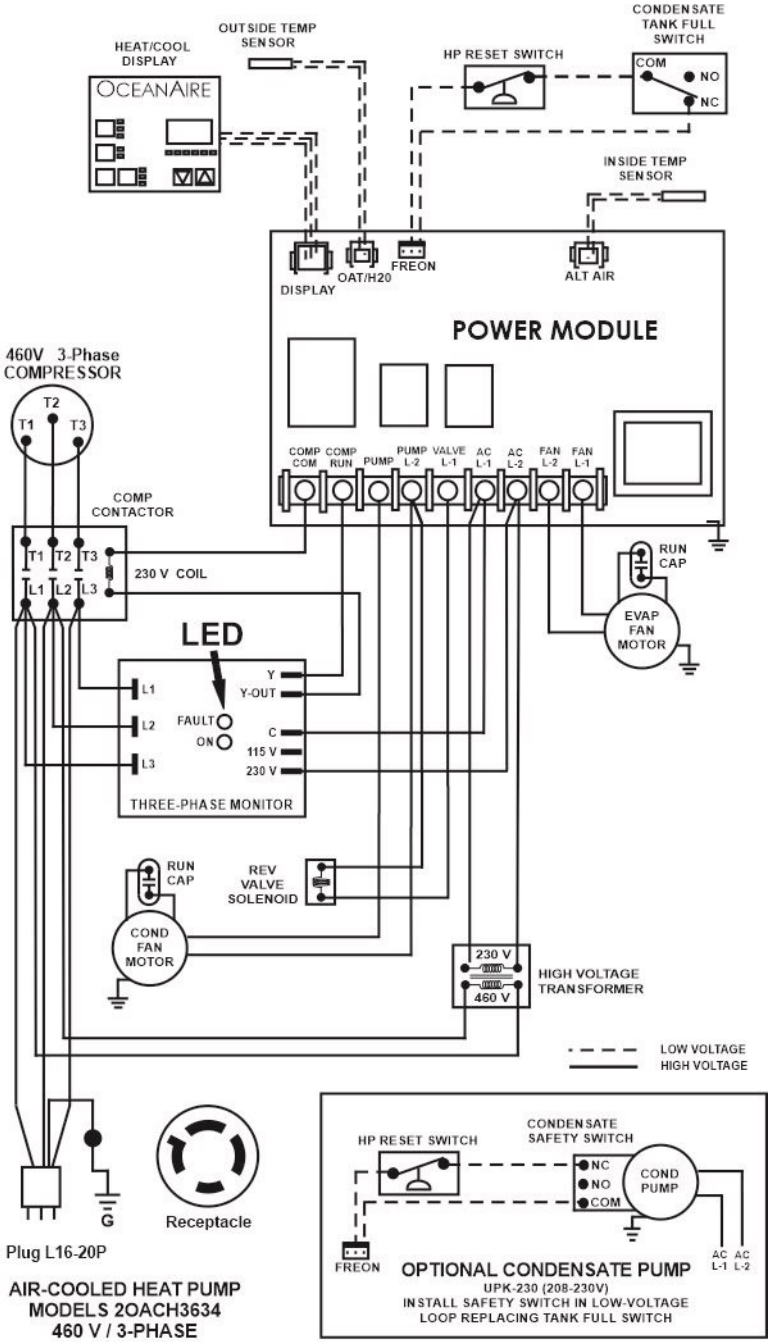


AIR-COOLED HEAT PUMP
MODEL 2OACH3632
208-230 V / 3-PHASE

VERIFY CORRECT COMPRESSOR ROTATION

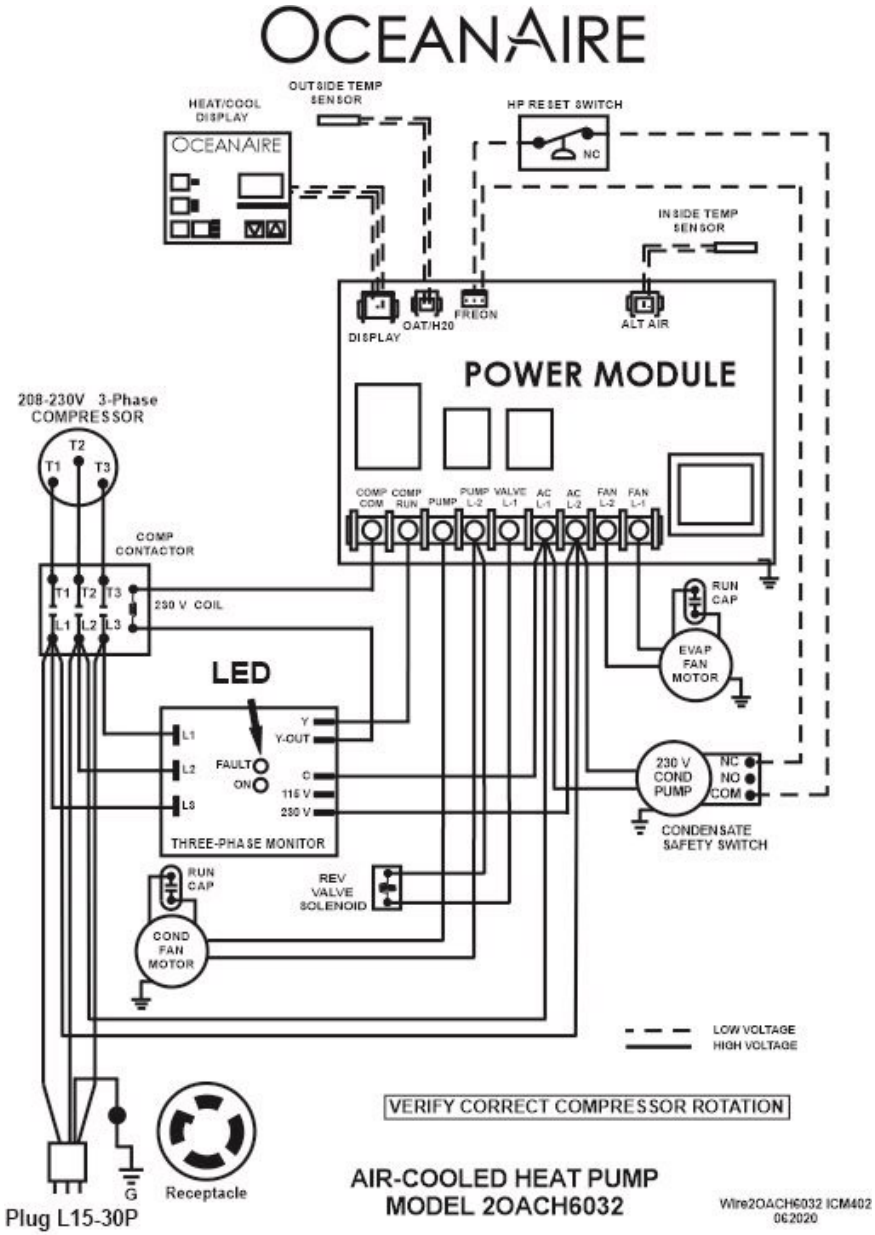
Wire2OACH3632 with ICM402
08012021

WIRING SCHEMATIC FOR 2OACH3634

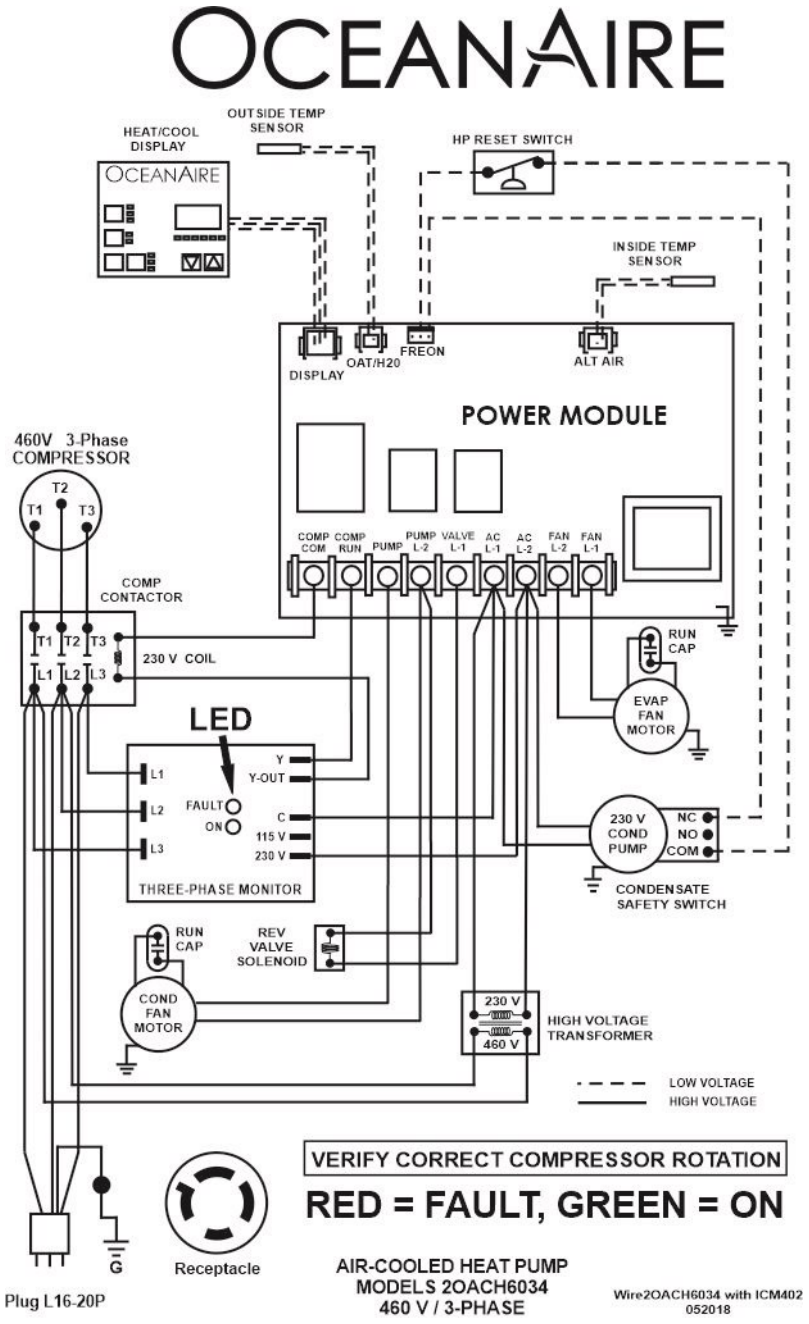


VERIFY CORRECT COMPRESSOR ROTATION

WIRING SCHEMATIC FOR 2OACH6032



WIRING SCHEMATIC FOR 2OACH6034



LIMITED WARRANTY

The Manufacturer (OceanAire, Inc.) warrants to the original owner that the Product will be free from defects in material or workmanship for a period not to exceed one (1) year from date of
installation. If upon examination by the Manufacturer, the Product is shown to have a defect in material or workmanship during the warranty period, the Manufacturer will repair or replace, at its option, that part of the Product which is shown to be defective.

The Manufacturer further warrants that the product's compressor-motor will be free from defects in materials and workmanship for five (5) years from the date of installation.

If upon examination by the Manufacturer the Product is shown to have a defect in materials or workmanship during the warranty period, the Manufacturer will repair or replace, at its option, that Part of the Product which is shown to be defective.

Compressor warranty shall be pro-rated for years 2 – 5 at the sole discretion of OceanAire.
Electrical parts such as relays, overloads, capacitors, etc., and the sealed refrigeration system (condenser and evaporator) are included in the one year limited warranty, but not with the five year limited warranty of the compressor.

This limited warranty does not apply to:

a) Product that has been subjected to misuse or neglect, has been accidentally or intentionally damaged, has not been installed, maintained or operated in accordance with the furnished written instructions, or has been altered or modified in any way.

b) Product that has been subjected to any abnormal power conditions such as loss of power, power surges, voltage irregularities such as brown-outs or phase loss on three-phase equipment).

c) any expenses, including labor or material, incurred during removal or reinstallation of the
Product.

d) any workmanship of the installer of the Product.

This limited warranty is conditional upon:

a) return to the Manufacturer, of the part of the Product thought to be defective. **Goods can only be returned with prior written approval from the Manufacturer. All returns must be freight
prepaid.**

b) determination in the reasonable opinion of the Manufacturer, that there exists a defective in material or workmanship.

Repair or replacement of any part under this Limited Warranty shall not extend the duration of the warranty with respect to such repaired or replaced part beyond the stated warranty period.

THIS LIMITED WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EITHER EX-

END USER INFORMATION

MODEL: _____

SERIAL NUMBER: _____

Date Purchased: _____

Purchased from: _____

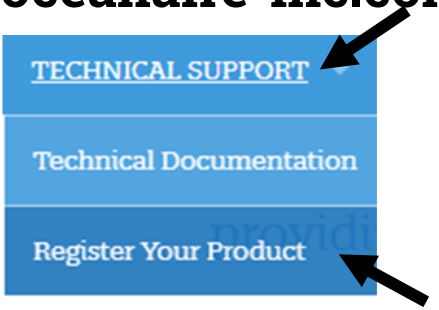
Date Installed: _____

For Technical Support or service parts, contact our

Keep Cool Team at 847-583-0311

In order to receive the benefits of our warranty, please register on-line at

www.oceanaire-inc.com



Cooling and Heating done Right!

MADE IN THE UNITED STATES OF AMERICA

OCEANAIRE

oceanaire-inc.com
1731 Wall Street, Suite 100 Mount Prospect, IL 60056
Phone: (847) 583-0311 Fax: (847) 583-0312