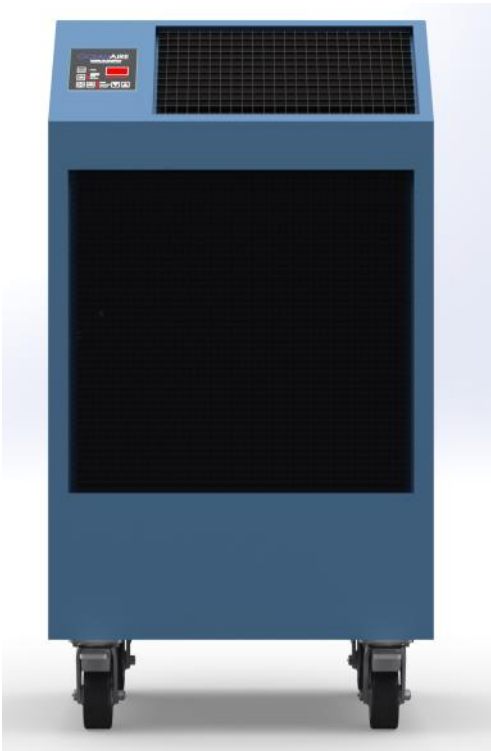


OWC series

Deluxe Portable Water-Cooled Cooler

ENGINEERING, INSTALLATION AND SERVICE MANUAL



Cooling done Right!

OCEANAIRE-INC.COM

1731 Wall Street, Suite 100

Phone: (847) 583-0311

Mount Prospect, IL 60056

Fax: (847) 583-0312

TABLE OF CONTENTS

	PAGE
GENERAL INFORMATION	1
PRODUCT DATA AND SPECIFICATIONS	2
UNIT DESCRIPTION	
Standard Features.....	3
Applications.....	4
Electrical Configuration.....	5
Use of Extension Cords.....	6
Unit Interior.....	7
Installation Instructions/Start Up Procedure.....	8
Accessories.....	9-12
HK-Series Hose Kits.....	13
Hose Kit Installation Instructions.....	14
SERVICE	
Thermostat/Controller Operation.....	15-17
Water Valve Adjustment.....	18
Troubleshooting Guide.....	19
Replacement Parts Procedure.....	20
Preventive Maintenance.....	21
DIAGRAMS	
Piping Schematic.....	22
Three Phase Monitor.....	23
Wiring Configurations.....	24-27
WARRANTY	28
TECH NOTES	29
END USER INFORMATION	Back Page

FORWARD

This manual provides the user with basic details for the installation and operation of the Oceanaire OWC's spot coolers. It is recommended to read and fully understand the instructions outlined within this manual, before operating the unit.

As with all commercial air conditioning equipment, it is recommended to have the OWC 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 OWC unit when contacting the factory.

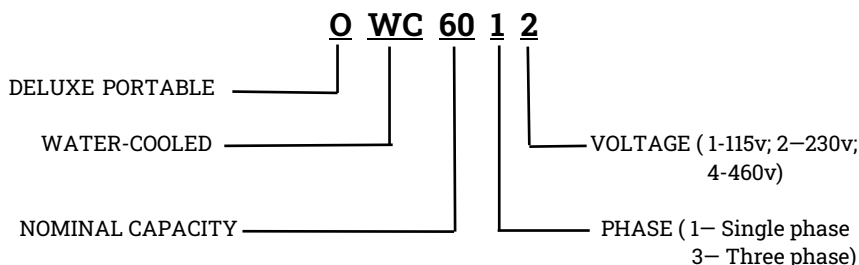
GENERAL INFORMATION

The OceanAire OWC model is a portable water-cooled air conditioner designed for permanent or temporary spot cooling applications. The entire air conditioning unit has been built in an attractive sheet metal cabinet, equipped with heavy-duty casters for mobility. All OWC models come with a 10-foot power cord for electrical connection and added mobility in service. These spot-coolers are designed to direct air to specific areas or objects through a discharge grille located on the upper-front of the unit.

The OWC is a self-contained unit with the entire cooling system (blower assembly, electrical, refrigerant, and water side components), neatly arranged in a gray and blue polyester powder coated metal cabinet. When connected to the proper source of electrical power, the OWC is controlled by a solid-state electronic device, with numerous options of temperature and airflow controls that will provide the desired level of comfort and cooling.

A wide variety of accessories and factory installed options are available for the OWC, allowing for improved performance and versatility.

NOMENCLATURE



CAPACITY RATING

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

OWC

MODEL: OWC	1811	2412	3612	3632	3634	6012	6032	6034
COOLING CAPACITY	18,000	23,950	36,100			60,100		
VOLTAGE (V/Phase) at 60Hz	115	208-230/1		208-230/3		460/3	208-230/1	208-230/3
AMPS	11.3	9.9	12	9.3	4.7	23.7	16.5	6.3
TOTAL WATTS	1300	2100	2700			5000		
IN-RUSH CURRENT (AMPS)	69	55	100	80	48	165	149	75
PLUG TYPE	5-15P LCDI	6-20P LCDI	6-20P LCDI	L15-20P	L16-20P	6-30P LCDI	L15-30P	L16-20P
EER	13.8	11.4	13.4			12		
COMPRESSOR	ROTARY		SCROLL			SCROLL		
COMPRESSOR HP	1.5	2	3			5		
COMPRESSOR LRA	63	48	83	77	35	158	137	62
EVAP CFM - HIGH	600	810	1200			1950		
EVAP MOTOR HP	1/8	1/3	1/3			1		
CONDENSER WATER FLOW								
AT 60°F WATER IN (GPM)	1.1	1.55	2.2			3.8		
AT 85°F WATER IN (GPM)	4.5	6	9			15		
WATER LINE CONNECTIONS								
WATER IN - Black label	3/8"		5/8"			5/8"		
WATER OUT - Red label	3/8"		5/8"			5/8"		
DRAIN - Yellow label	3/8"		3/8"			3/8"		
R-410A CHARGE (oz.)	18	20	24			52		
HEIGHT (in.)	45.7		50.9			53.2		
WIDTH (in.)	21.5		28.2			28.1		
DEPTH (in.)	16.0		21.5			29.1		
NET WEIGHT (lb.)	155	170	275		310	375		410

OWCSPECS02012024

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

- QA **Cooling capacity** is total BTUH at 80°DB/67°WB return air, High fan speed, with 85°EWT and 95°LWT (4.5 GPM)
- QA Time delay fuses/circuit breakers are recommended
- QA EER is determined at High fan speed
- QA CFM with free discharge
- QA Amps and Watts at 115/208/460 volts
- QA Hose colors

Water in—black label
Water out—red label
Drain—yellow label



COOLING AMBIENT OPERATING RANGE 65° to 105°
NOT APPROVED FOR OUTDOOR USE



OWC18 series
OWC24 series



OWC36 series
OWC60 series

STANDARD FEATURES

CABINET

The OWC cabinet is constructed of 18 gauge steel with a gray and blue polyester powder coated finish that will compliment any decor. The entire cabinet is insulated with sound-absorbing insulation for cool, quiet comfort. All units come equipped with swivel casters for portability and convenient set-up.

DELUXE ELECTRONIC CONTROLLER

The OWC is equipped with a deluxe electronic controller. When proper power is connected to the unit, the thermostat will control the unit to cool a space to the desired temperature. The thermostat is also capable of controlling the fan to operate automatically (when needed) or continuously. To protect the compressor from short-cycling, there is a built-in time delay in the thermostat. In the event of a power outage, all thermostat settings are saved, and the unit will re-start automatically.

FAN SPEED CONTROL

The deluxe electronic controller is capable of setting the fan speed for manual or automatic. In manual setting, the fan speed can be programmed to any of the six fan speed levels, from (1) Low to (6) High. In auto setting, the unit will determine the best fan speed based on the inside temperature and selected SETPOINT.

CONDITION ALARM—CON

The LED thermostat of the unit will display the fault "CON" which indicates a condition that needs to be addressed.

CONDENSATE PUMP... Failed/Restricted drain tube/routed incorrectly

WATER SUPPLY..... Turned off/Interrupted flow

EITHER CONDITION WILL DISABLE THE COMPRESSOR

CONDENSATE PUMP

Each OWC unit comes equipped with an Automatic Condensate Pump that removes the condensate. The pump discharges through a check valve located on top of the condensate pump assembly. The vinyl tubing exits through a 3/8" male flare fitting, located in the recessed area of the unit. The pump has capabilities up to a 20' lift, to handle almost any installation requirement. If a failure occurs with the operation of the pump circuit, the **Normally Closed overflow switch** will open, and the fault "CON" will display in the window. When the failure has been corrected, or the condensate line blockage/kink has been resolved, the fault will be dropped from the screen, and the unit will restart.

HIGH PRESSURE SAFETY SWITCH

Located in the recessed area of the OWC unit is a manual reset high pressure switch. It is used for the protection of the compressor, in the event that the condenser water supply is turned off. If the internal pressure exceeds the limit setting, the switch cycles off the compressor, while the evaporator fan continues to operate. Once the water interruption has been corrected, turn the unit off, **RESET THE RED BUTTON** by pushing down on the rubber boot in the recessed area of the unit, listening for the click, and restart the unit.

FILTERS

The OWC unit is equipped with a washable filter at the air intake. An electrostatic mesh air filter is located behind the evaporator return air grille to filter the air before it is cooled, keeping the coil free from dust build-up. The filter can be easily removed and cleaned.

POWER CORD

The OWC unit is equipped with a 10 foot power cord for convenience.

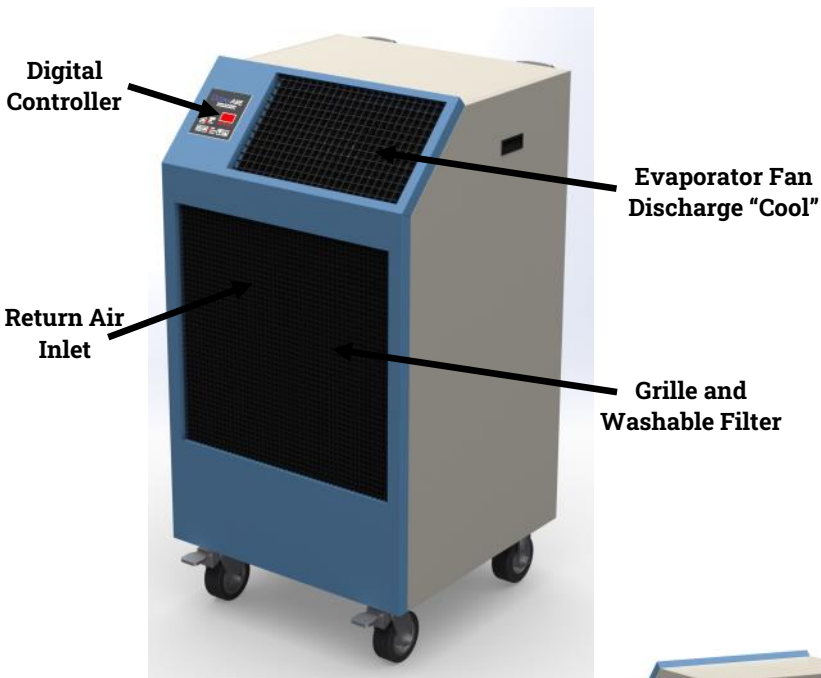
APPLICATIONS

SPOT COOLER

The OWC 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 not viable. Cool air is discharged from the units grille and is directed where it is needed. A nozzle kit can be used to improve the velocity.

ROOM AIR CONDITIONER

One feature of the OWC is it operates as a room air conditioner because water is used as the means for heat rejection. The major advantage of water-cooled air conditioning is the convenience of connecting water hoses, or lines, as compared to the installation of condenser air ducts used for air-cooled portables. A variety of hose kit lengths are available that can be used for connecting to a water supply and drain, while providing portability within the conditioned space.



**OWC36/60
Hose Kit Cubby**



ELECTRICAL CONFIGURATION







All OWC Series units are equipped with a standard 10-foot long service cord with plug configurations and receptacle requirements as shown in this chart. Size 18, 24 and 36 single phase units are equipped 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 OWC models.

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

UNIT/MODEL	PLUG CONFIGURATION	RECEPTACLE
<u>115 VOLT</u> OWC1811	 15A-125 VOLT NEMA 5-15P	NEMA 5-15R
<u>208-230 VOLT SINGLE PHASE</u> OWC2412 OWC3612	 20A-250 VOLT NEMA 6-20P	NEMA 6-20R
<u>208-230 VOLT SINGLE PHASE</u> OWC6012	 30A-250 VOLT NEMA 6-30P	NEMA 6-30R
<u>208-230 VOLT 3-PHASE</u> OWC3632	 20A-250 VOLT NEMA L15-20P	NEMA L15-20R
<u>208-230 VOLT 3-PHASE</u> OWC6032	 30A-250 VOLT NEMA L15-30P	NEMA L15-30R
<u>460 VOLT 3-PHASE</u> OWC3634 OWC6034	 20A-460 VOLT NEMA L16-20P	NEMA L16-20R

USE OF EXTENSION CORDS

CAUTION

FOR MODEL OWC1811 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 MODELS OWC2412 and OWC3612 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 OWC6012 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 OWC3632 AN EXTENSION CORD CAN BE USED PROVIDED IT IS RATED AT LEAST 20 AMPS @ 250 VOLTS, 3 PHASE

FOR MODEL OWC6032 AN EXTENSION CORD CAN BE USED PROVIDED IT IS RATED AT LEAST 30 AMPS @ 250 VOLTS, 3 PHASE

FOR MODELS OWC3634 AND OWC6034 AN EXTENSION CORD CAN BE USED PROVIDED IT IS RATED AT LEAST 20 AMPS @ 600 VOLTS, 3 PHASE

SPECIAL NOTICE—THREE PHASE OPERATION

Models OWC3632, OWC3634, OWC6032 and OWC6034

All three-phase OWC models are equipped with a three-phase monitor for added compressor protection. The phase monitor, located in the control box, has 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 the manual.

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

OWC INTERIOR

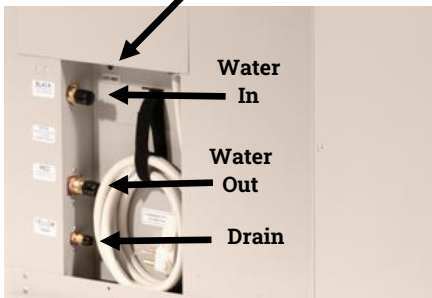


Compressor

Evaporator Coil

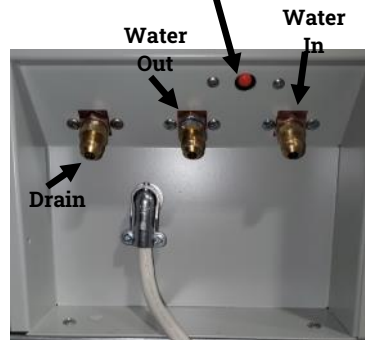
Condensate Pump

High Pressure Switch Reset Button



Cubby for the Hose Kit (OWC36/60)

High Pressure Switch Reset Button



**Cubby for the Hose Kit
(OWC18/24)**

INSTALLATION INSTRUCTIONS

RECEIVING—INSPECTION

Upon receiving your 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**.

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. Connect power cord. Power up unit via thermostat, and check for proper operation. Refer to Thermostat Operation for more details.

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 the proper NEMA receptacle, refer to "Electrical service plug configuration". When using an extension cord, use the proper gauge cord, and check cord voltage at 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.

OWC Optional ACCESSORIES

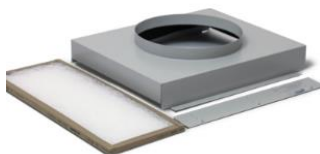
NOZZLE KIT

2NK-2	(2 X 6-Inch)	OWC18, 24
2NK-3	(2 X 8-Inch)	OWC36, 60



EVAPORATOR RETURN AIR PLENUM

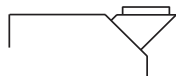
2DEP-12	(12-Inch Round)	OWC18, 24
DEP-16	(16-Inch Round)	OWC36, 60



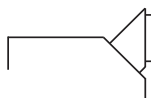
DISCHARGE DUCT ADAPTER

2DDA-10	(10-Inch Round)	OWC18, 24
2DDA-16	(16-Inch Round)	OWC36, 60

The 2DDA is a field installed duct adapter that allows for round duct to be connected to the supply (discharge) of the unit. The insulated adapter is designed to install onto the unit without the use of tools, and is equipped with a round sheet metal flange for the connection of round flexible duct. The Duct Adapter is designed such that it can be installed in a vertical or horizontal orientation.



VERTICAL
DISCHARGE



HORIZONTAL
DISCHARGE

NOTE: When installing the 2DDA, ensure that there is sufficient space and room for the duct to install with a minimum number of bends. Fan speeds need to be set to the highest setting possible, in manual mode.

*Flexible duct can be ordered, or is field supplied.

OWC 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.

2NK-2 for models OWC18 and OWC24 with (2) 6-inch diameter nozzles with an approximate compressed length of 22 inches. The approximate extended length is 32 inches.

2NK-3 for model OWC36 and OWC60, with (2) 8-inch diameter nozzles with an approximate compressed length of 20 inches. The extended length is approximately 29 inches.

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



OWC ACCESSORIES

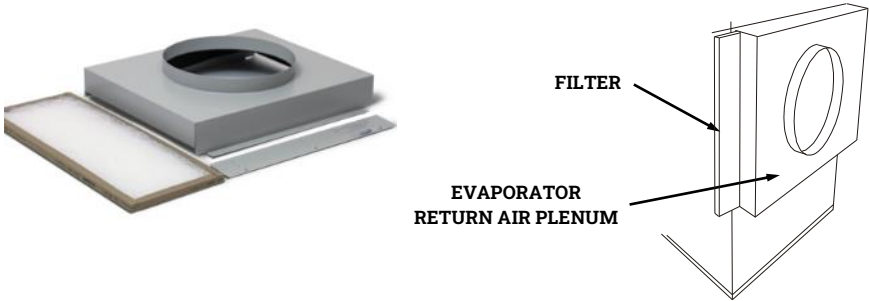
EVAPORATOR RETURN AIR PLENUM

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 plenums allow 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 cooling 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

2DEP-12 for OWC18 and OWC24 transitions the return opening to a 12-inch round duct.

DEP-16 for OWC36 and OWC60 transitions the return opening to a 16-inch round duct.

NOTE—When a DEP/2DEP is installed, it is recommended to set the evaporator blower speed to high, in manual mode, to avoid evaporator coil freeze-up.



Plenum Kit Duct/Flange	OWC18	OWC24	OWC36	OWC60	FILTERS
2DEP-12 12 inch	✓	✓			(1) 16"x24"x1"
DEP-16 16 inch			✓	✓	(1) 22"x28"x1"
Maximum Equivalent Feet	50	60	70	80	
Est. External Static Pressure	(.25)	(.25)	(.25)	(.50)	

OWC 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 be installed for either vertical or horizontal ducting. The standard discharge grille is removed and the adapter is attached in the grille opening.

2DDA-10 for **OWC18** and **OWC24** converts the evaporator discharge to a 10-inch diameter round duct.

2DDA-16 for **OWC36** and **OWC60**, converts the evaporator discharge to a 16-inch round duct.

When used in conjunction with the evaporator return air plenum, the unit can provide closed-loop cooling to and from a given space without the influence of any outside air.

NOTE—When a 2-DDA is installed, it is recommended to set the evaporator blower speed to high, in manual mode, to avoid evaporator coil freeze-up.



Adapter Model	Round Duct Size	OWC18	OWC24	OWC36	OWC60
2DDA-10	10-inch	✓	✓		
2DDA-16	16-inch			✓	✓
Maximum Approx. Equivalent Feet		50	60	70	80
Maximum E.S.P		.25	.25	.25	.50

OWC ACCESSORIES

HK-Series Hose Kit

For: ALL WATER-COOLED MODELS (OWC)

All OceanAire hose kits are designed for use with OceanAire Portable Water-cooled Air conditioners to accommodate almost any installation requirement. The hose kit allows for the unit to be connected to a water source while providing a certain level of portability and ease of installation. Hose kits come in two sizes; 3/8-inch and 5/8-inch, and both sizes are available in three lengths; 10-foot, 25-foot and 40-foot.

The hose kit consists of three separate hoses; WATER IN, WATER OUT and DRAIN. The WATER-IN and WATER-OUT hoses are made of re-inforced PVC tubing and serve for the water supply and water return. The DRAIN is made of clear PVC and is used for the condensate pump discharge to a drain.

MAXIMUM WORKING PRESSURE FOR WATER LINES: 100 PSIG



HOSE KIT

FEATURE	WATER-IN HOSE WATER-OUT HOSE	CONDENSATE HOSE
Material	PVC with Polyester Braid	Clear PVC
Wall Thickness	3/8 ID, 0.219 Wall 5/8 ID, 0.266 Wall	3/8 ID, 0.063 Wall
Nominal OD	3/8 ID, 0.594 OD 5/8 ID, 0.891 OD	3/8 ID, 0.500 OD



SINK
ADAPTER

UNIT SIDE FITTINGS

TERMINATION FITTINGS

Hose Kit Model	For Use With OWC	WATER-IN	WATER-OUT	DRAIN	Hose Kit Length (ft)	WATER-IN	WATER-OUT	DRAIN
HK-1	18, 24	3/8 Female JIC Flare	3/8 Female JIC Flare	3/8 Female JIC Flare	10	3/4 Hose Connector*	No Fitting	No Fitting
HK-2	18, 24	3/8 Female JIC Flare	3/8 Female JIC Flare	3/8 Female JIC Flare	25	3/4 Hose Connector*	No Fitting	No Fitting
HK-5	18, 24	3/8 Female JIC Flare	3/8 Female JIC Flare	3/8 Female JIC Flare	40	3/4 Hose Connector*	No Fitting	No Fitting
HK-3	36, 60	5/8 Female JIC Flare	5/8 Female JIC Flare	3/8 Female JIC Flare	10	3/4 Hose Connector*	No Fitting	No Fitting
HK-4	36, 60	5/8 Female JIC Flare	5/8 Female JIC Flare	3/8 Female JIC Flare	25	3/4 Hose Connector*	No Fitting	No Fitting
HK-6	36, 60	5/8 Female JIC Flare	5/8 Female JIC Flare	3/8 Female JIC Flare	40	3/4 Hose Connector*	No Fitting	No Fitting

* All Hose Kits come with a 4-Way Sink Adapter Fitting

HK-Series Deluxe Hose Kit

INSTALLATION INSTRUCTIONS

1. Connect Hose Kit to unit, USING TWO WRENCHES. Use one wrench to secure the brass union on the unit, while using the other wrench to tighten the hose coupling to the union.

RECOMMENDED TIGHTENED: 1/4 TURN PAST "HAND-TIGHTENED"

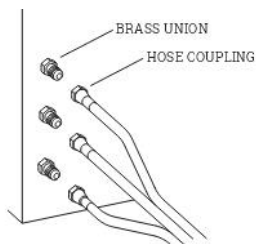
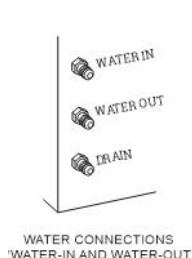
Connect according to hose and unit labels:

BLACK to WATER IN

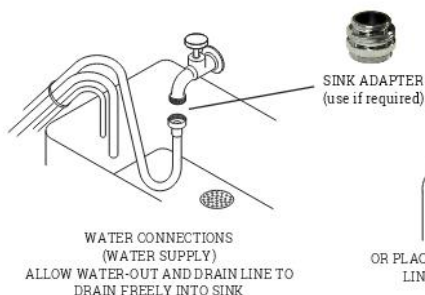
RED to WATER OUT

YELLOW to DRAIN

2. Connect WATER IN hose to water supply using hose connection, and sink adapter (if needed).
3. Install WATER OUT line in drain, allowing for free drain conditions with an air space around the tube.
4. Install DRAIN line in drain, allowing for free drain conditions.
5. Open water supply valve, and check for any water leaks in hose connections. Correct if necessary.

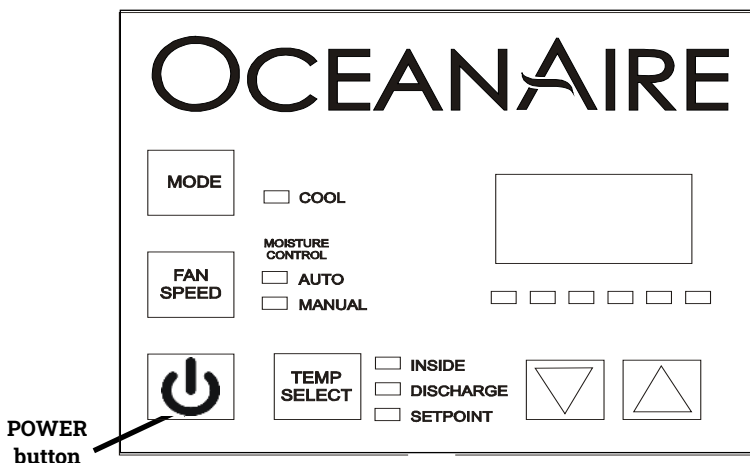


CAUTION
USE TWO WRENCHES WHEN
CONNECTING HOSE KIT TO AVOID
DAMAGING THE INTERNAL TUBING



DELUXE ELECTRONIC CONTROLLER

The OWC controller is equipped with many features for a more precise level of cooling and operation. With the addition of a remote sensor, the controller can sense temperatures in another space or in ductwork. Doing that, you override the temperature sensing bulb behind the evaporator grille.



OCEANAIRE DELUXE ELECTRONIC CONTROLLER

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

The systems controls temperature within +/- 2°

POWER—Turns the unit on/off when power is supplied

MODE - Selects the mode of operation between Cool and Moisture Control.

COOL - The system will operate in cooling 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 **MANUAL**. In **MANUAL** mode, pressing the **FAN SPEED** button will change fan speed from low (1) to high (6). 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 decrease.

TEMP SELECT— Allows the operator to view the controller temperatures

INSIDE— return air temperature, **DISCHARGE**—supply air temperature, **SET POINT** can be seen and adjusted, by pressing ▲ or ▼

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**"
(Select–**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

OWC PROGRAM SETTINGS

MODEL	CODE SETTINGS
OWC18	P1 = 75, P2 = 50
OWC24	P1 = 70, P2 = 50
OWC36	P1 = 85, P2 = 40
OWC60	P1 = 85, P2 = 45

NOTICE

**Program Parameters are NOT controller default values.
They are Oceanaire Factory Settings**


DISPLAY FAULTS

LAC..... Low AC line power or communication problem
between internal components.

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

CON..... Failed Condensate Pump/Over-Flow Alarm
High Pressure Cut-Out–Low/interrupted
condenser water supply. 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.
- 5) 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

WATER VALVE ADJUSTMENT

Each OCEANAIRE WATER-COOLED unit is equipped with an automatic water regulating valve to control the condenser water flow rate. The water valve will open when the unit is in the cooling mode and adjust the gallon per minute flow rate based on the entering water temperature (EWT).

The water valve operates independently from the water system, and regulates flow based on the systems refrigerant head pressure.

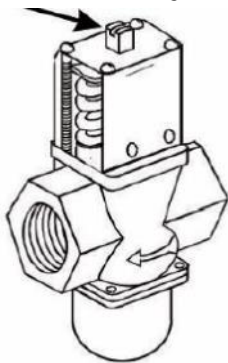
Under certain conditions, entering water temperatures can cause the valve to rapidly open and close, causing a "harmonic" pitch in the water supply line. In these cases, it is recommended that the water valve be adjusted.

1. Disconnect the unit power.
2. Remove water valve cover plate or back panel (depending on model) to locate the water valve.

The opening point pressure (also called the crack-open point) is the refrigeration pressure (at the valve sensing element) necessary to just lift the valve disc off the valve seat, allowing water to flow through the valve body.

3. At the top of the valve, there is a square shaped adjustment screw. Using a standard service wrench or flat blade screwdriver, adjust the valve using quarter turns, allowing the unit to operate 5 minutes after each new setting:
 - Turn the range adjustment screw CCW (closing the valve), which raises the high side pressure and raises the valve set point to open
 - Turn the range adjustment screw CW (opening the valve), which lowers the high side pressure and lowers the valve set point to open
4. Re-install valve cover plate or back panel when finished.

Regarding a field replacement water valve, the best practice is to close the valve, then turn the range adjustment screw (CW) to slowly open the valve, half-turns, to dial in the units exiting water temp between 100-105°F



DELUXE SERIES WATER 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

- *reset HP switch
- *COLD WATER SUPPLY is on
- *confirm each color hose (IN-OUT-DRAIN) installed properly
- *hoses routed properly-NO KINKS
- *check condensate level in pump reservoir (HI limit float tripped)
- *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 COOLING 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. Have meter available to confirm power across each pair, and each leg to ground

REPLACEMENT PARTS PROCEDURE

**IT IS RECOMMENDED THAT ALL OCEANAIRE UNITS
BE SERVICED BY A LICENSED TECHNICIAN**

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

A. FAN MOTOR

1. Remove cabinet 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.
3. **For all model sizes 12, 18, 24, and 36**, remove the screws securing motor and inlet-ring to blower housing (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)

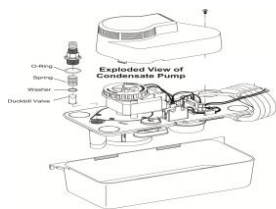
To replace cooling thermostat, remove left side panel to access controller assembly. Using a 5/16" nut driver, remove (2) nuts on threaded studs, unplug the display cable, and lift up to remove the controller. Plug display cable in the new controller, and secure in place.

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

1. Remove left side panel.
2. Remove brackets securing condensate pump in base 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 rear panel, or right 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.

PREVENTIVE MAINTENANCE

OWC is 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:

OFF SEASON STORAGE—WINTERIZATION

Before placing the unit into storage for the off-season, it is recommended to thoroughly clean the unit, and remove all water in the CONDENSER COIL, WATER LINES, DRAIN PAN and CONDENSATE PUMP to avoid damage to the unit from freezing water or contamination.

DRAINING THE CONDENSER COIL, AND INTERIOR WATER LINES

To drain the condenser coil, detach the WATER IN and WATER OUT lines. Using a Shop-Vac or similar device, vacuum the WATER OUT line and start the unit. The water valve will open, allowing you to vacuum the water out of the condenser coil. Eventually, the High Pressure Cut-Out will shut down the compressor. Wait 15 minutes, depress the HI-PRESSURE RESET and repeat this process until ALL of the water is out of the system. When completed, depress the HIGH PRESSURE RESET one final time to make sure that it is reset.

DRAINING THE HOSE KIT

To drain the hose kit, disconnect all hoses, and allow the hoses to gravity drain.

EVACUATING THE CONDENSATE PUMP

Using a Shop-Vac or similar device, vacuum all water out of the condensate pump reservoir. Condensate pumps come standard on all OWC 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 assembly and check for obstructions. Clean as needed.
4. Clean the reservoir 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 inhibit flow.

CLEANING THE UNIT

Wash evaporator coil and allow the unit to dry completely.

BLOWER MOTOR

The evaporator motor on all units have permanently lubricated bearings. No oiling is Necessary.

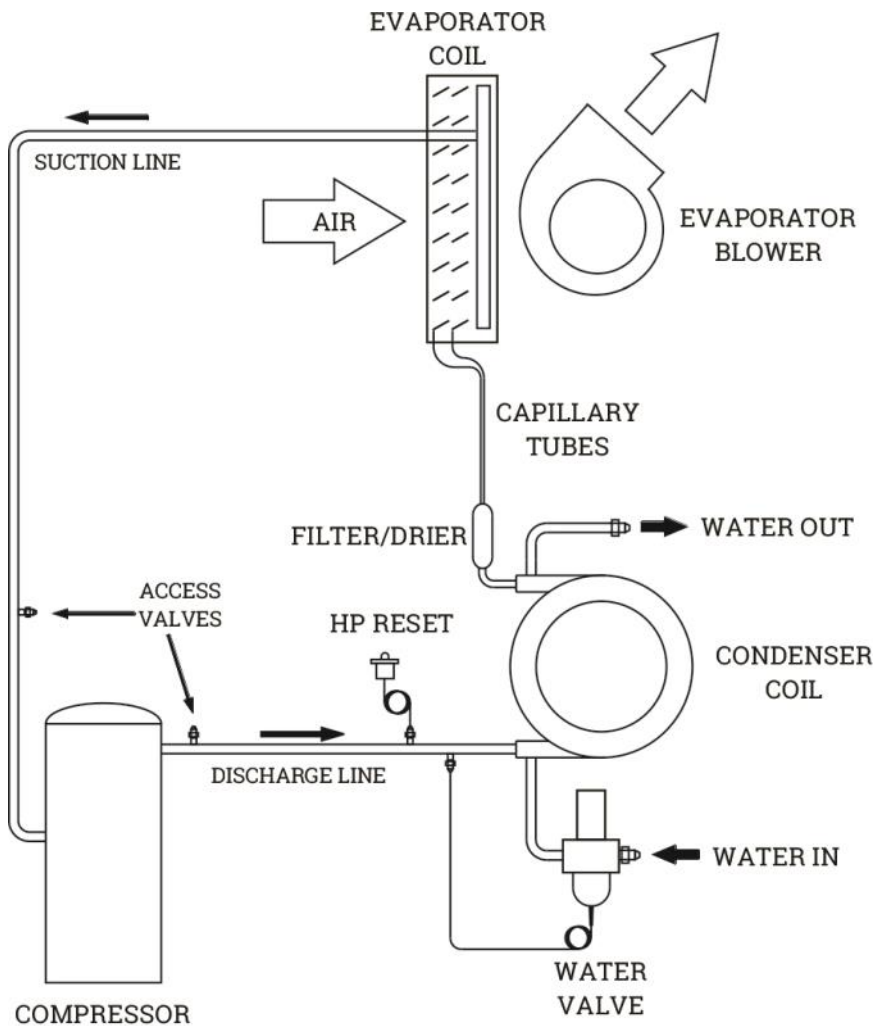
FILTER

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 filter must be washed periodically as needed by placing it in a dishwasher or soaking in a solution of warm water and detergent for 10 minutes. Then rinsing clean with hot water and shaking excess moisture from filter.

GENERAL

Oceanaire products are NOT approved for outdoor use. Therefore, off-season storage should be indoor, protected from weather conditions. *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.*

PIPING SCHEMATIC



PIPING SCHEMATIC
Water-Cooled Spot Cooler

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

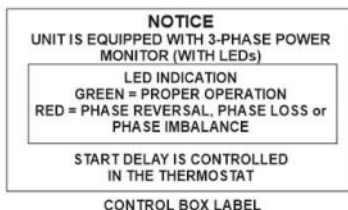
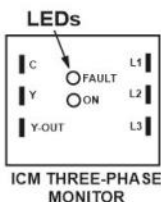
ICM401 - Standard Series

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.



THREE PHASE MONITOR - SSAC - For Service/Replacement Market

025-045 (208/230v)

025-046 (460 v)

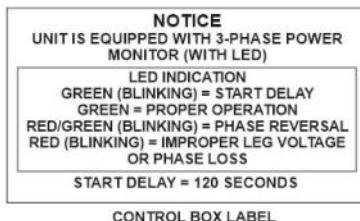
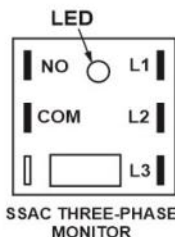
GREEN-BLINKING - Start delay, up to 120 sec.

GREEN - Proper Operation

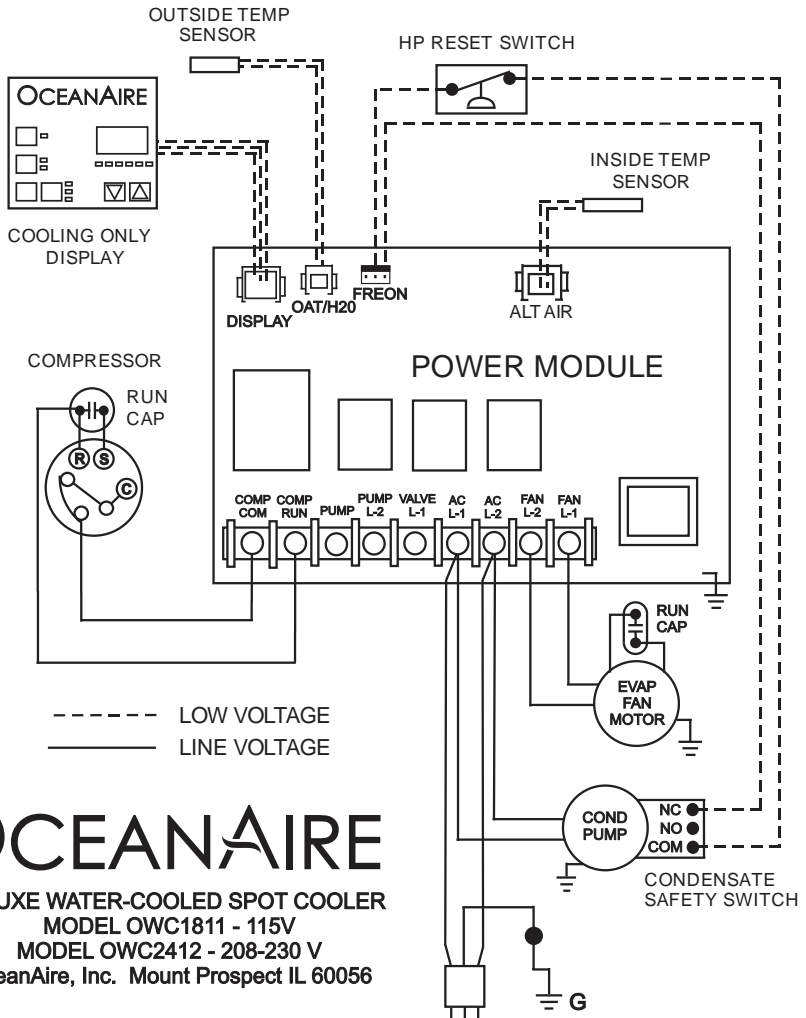
RED/GREEN-BLINKING - signals reverse phase rotation. Switch any two of the power leads for the unit, NOT THE MONITOR LEADS, and re-start.



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.

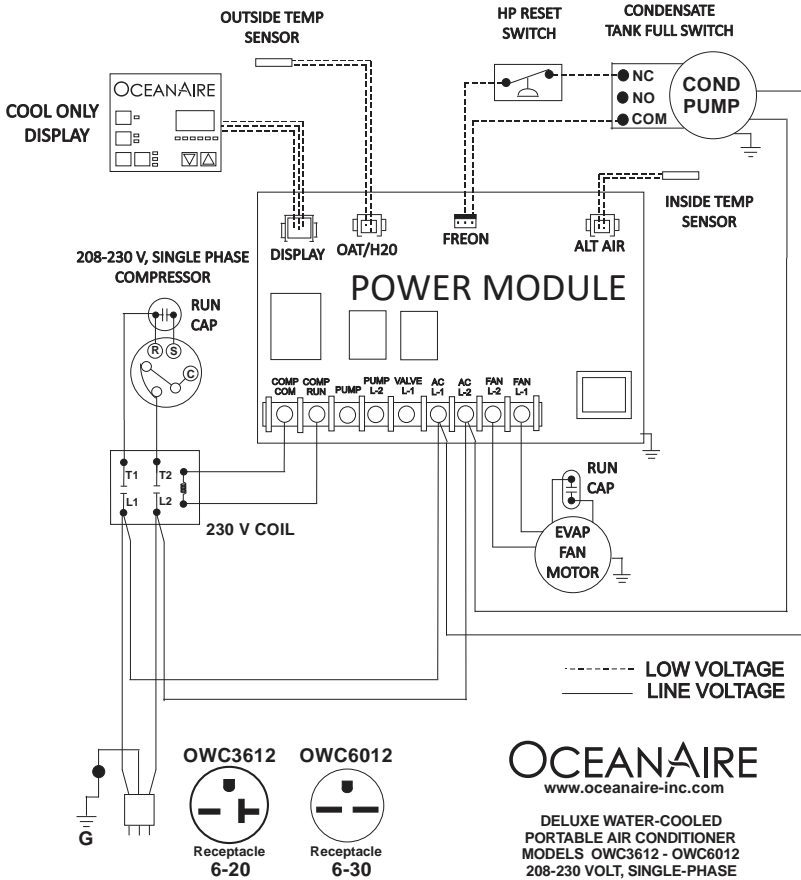


WIRING SCHEMATIC FOR OWC1811 and OWC2412



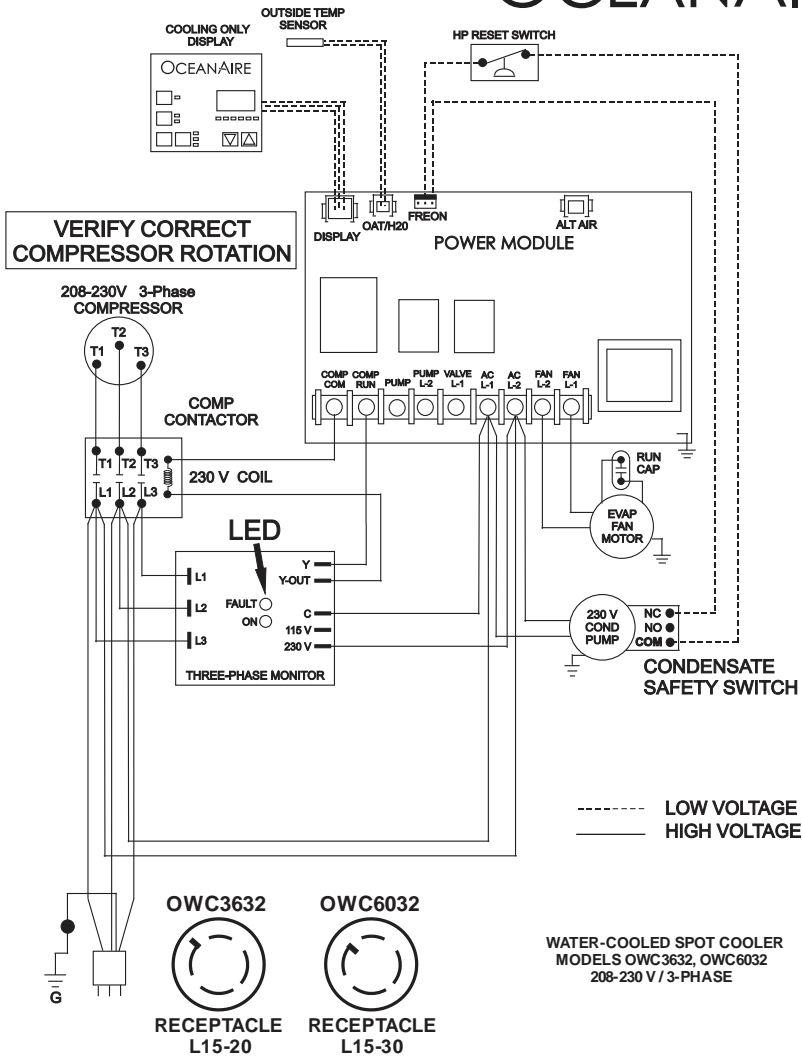
UNIT/MODEL	PLUG CONFIGURATION	RECEPTACLE
115 VOLT OWC1811	 15A-125 VOLT NEMA 5-15P	NEMA 5-15R
208-230 VOLT SINGLE PHASE OWC2412 OWC3612	 20A-250 VOLT NEMA 6-20P	NEMA 6-20R

WIRING SCHEMATIC FOR OWC3612 and OWC6012



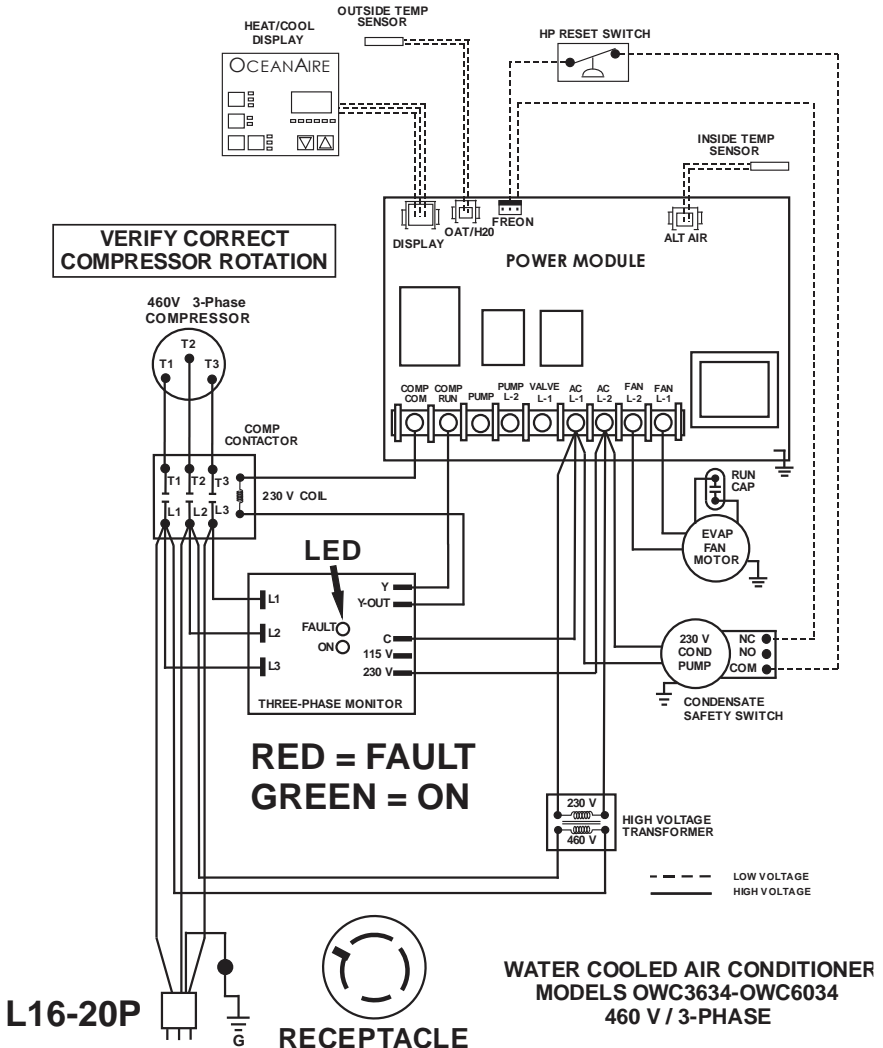
WIRING SCHEMATIC FOR OWC3632 and OWC6032

OCEANAIRE



WIRING SCHEMATIC FOR OWC3634 and OWC6034

OCEANAIRE



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 EXPRESSED OR IMPLIED, AND ALL SUCH OTHER WARRANTIES, INCLUDING WITHOUT LIMITATION IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, ARE HEREBY DISCLAIMED AND EXCLUDED FROM THIS LIMITED WARRANTY. IN NO EVENT SHALL THE MANUFACTURER BE LIABLE IN ANY WAY FOR ANY CONSEQUENTIAL, SPECIAL, OR INCIDENTAL DAMAGES OF ANY NATURE WHATSOEVER, OR FOR ANY AMOUNTS IN EXCESS OF THE SELLING PRICE OF THE PRODUCT OR ANY PARTS THEREOF FOUND TO BE DEFECTIVE. THIS LIMITED WARRANTY GIVES THE ORIGINAL OWNER OF THE PRODUCT SPECIFIC LEGAL RIGHTS. YOU MAY ALSO HAVE OTHER RIGHTS WHICH MAY VARY BY EACH JURISDICTION.

TECH NOTES

This image shows a single sheet of white paper with horizontal black ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

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



OCEANAIRE

oceanaire-inc.com



1731 Wall Street, Suite 100

Phone: (847) 583-0311

Mount Prospect, IL 60056

Fax: (847) 583-0312

052-004 EISM-OWC 02012024