Dometic

Smart Touch Cabin Control Installation & Operations Manual

Smart Touch Cabin Control
(shown in optional white bezel)

Dometic Corporation
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Table of Contents

INTRODUCTION

The Smart Touch Control is a microcontroller-based unit designed for use with direct expansion, reverse-cycle air conditioning systems.

READ THIS MANUAL BEFORE PROCEEDING

Read this manual completely before you proceed with the installation and operation of the Smart Touch. If you have questions or require assistance with your Smart Touch control, contact the Dometic Marine Service Department at +1 954-973-2477.

The Smart Touch is covered under existing Marine Air Systems Warranty Policy. Incorrect installation, neglect and system abuse are not covered under Marine Air Systems warranty policy.

FEATURES

STANDARD

- User-friendly touchscreen display requires no manual for basic operation.
- 5-volt logic and microcontroller located in the display.
- Automatic and three programmable manual fan speeds.
- 21 programmable parameters for custom installations.
- Moisture Mode for controlling relative humidity.
- De-icing cycle to prevent evaporator coil icing.
- Programmable compressor staging delays.
- Universal 220/115-230 volt, 50/60 Hz AC power supply.
- Nonvolatile memory retains settings without batteries.
- Programmable display-brightness control.
- Programmable failsafe modes.
- Fits Vimar® Eikon and Eikon EVO switch bezels.

OPTIONAL

- Outside air temperature sensor.
- Alternate air temperature sensor.
- Pump Sentry water sensor.
- Electric heating control capabilities.
- CAN-bus network capability.
- Air Filter Cleaning or Replacement Timer.
- Low-Voltage Monitor.

This manual provides all necessary information for proper installation and operation of the Smart Touch Display. Poor installation and misunderstood operating parameters will result in unsatisfactory performance and possible failure.

DESCRIPTION OF CONTROL

See Figures 1, 2 to identify Home and Main screen displays.

Figure 1: Smart Touch Home Screen

Smart Touch Home Screen Display Layout

1. Temperature Indicator icon (Inside, set point, outside, and water temperatures)
2. Up icon - Raise temperature set point
3. Down icon - Lower temperature set point
4. Main Screen icon
5. Power icon

Figure 2: Smart Touch Main Screen
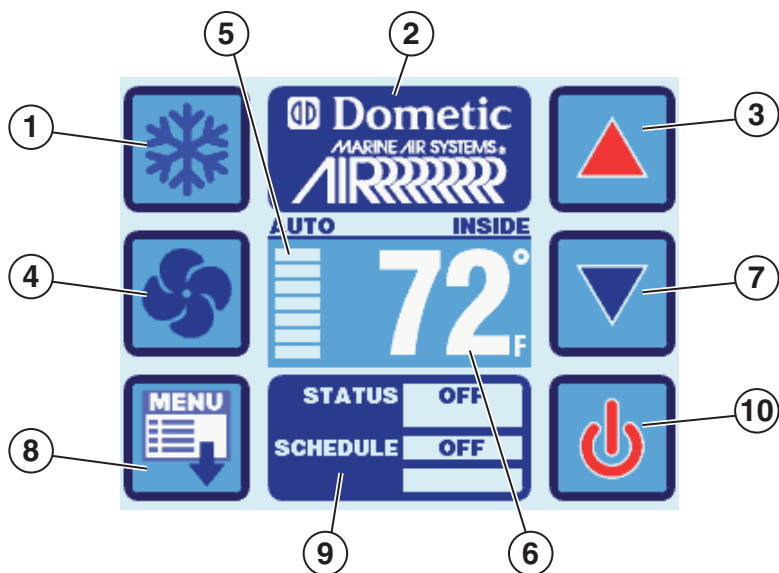
Smart Touch Main Screen Display Layout

1. Mode Selection icon	6. Temperature Indicator (Inside, Set Point, Outside, and Water)
2. Home Screen icon	7. Down icon - Lower temperature set point
3. Up icon - Raise temperature set point	8. Menu icon
4. Fan Mode Selection icon	9. Status & Schedule icon
5. Fan Mode Indicator (Auto, high, medium, low)	10. Power icon

IMPORTANT PROGRAMMING NOTES TO INSTALLER AND END USER

1. If your air conditioning unit is Cool only (if it does not have a reversing valve), then you MUST select Cool Only Mode. DO NOT select Automatic Mode for a Cool Only unit. If Automatic Mode is selected and the thermostat calls for heat, the compressor will run. Since there is no reversing valve, the air conditioning unit will supply cool air when heating is desired. Cool Only units do not heat. See "Modes of Operation" on page 8 for more information on how to set the proper operating mode.

2. If your air conditioning unit has a Shaded-Pole (SP) fan motor instead of a Split-Capacitor (SC) High-Velocity (HV) fan motor, you MUST program "SP" into General Setting 8, "Fan Motor Type", before operating the equipment. The SP units are recognizable by an overhanging blower motor. (The SC motor of an HV unit is inside the blower, and the unit has "VTD" or "HV" in the model number.) **Only reprogram this General Setting if you do NOT have an HV blower.**

NOTICE
The system's air sensor is located in the control's display panel; therefore the display MUST be located on an interior wall at eye level. It must NOT be located in direct sunlight or inside a cabinet. If these conditions cannot be met, you must purchase the Optional Remote Air Sensor and install it in the return-air stream.

NOTE: Do not staple any sensor cables when mounting.

MEMORY

When the Smart Touch losses power, the operating parameters are retained for up to 2 years. When power is restored, the control resumes operating as last programmed. The Smart Touch has a battery backup. If the battery backup is removed, only time and date settings will be lost.

NORMAL HEATING OR COOLING CYCLE

In **Automatic Mode**, heating and cooling are supplied as required. If cooling is required, the system will start a cooling cycle when the cabin temperature exceeds the set point by 2°F (1.1°C) and will continue to cool until the temperature equals the set point. (See "General Setting, Set Point Temperature Differential", on page 12 for instructions on how to reduce this variation to 1°F [0.55°C].) The cabin temperature must drop below the set point by at least 4°F (2.2°C) in order for the system to switch from cooling to heating. Similarly, if heating is required, the system will start a heating cycle when the cabin temperature is below the set point by 2°F (1.1°C) and will continue to heat until the temperature equals the set point. The cabin temperature must exceed the set point by at least 4°F (2.2°C) in order for the system to switch from heating to cooling. If you select **Cool Mode**, only cooling is supplied. If you select **Heat Mode**, only heating is supplied. The cabin temperature in either mode is maintained within 2°F (1.1°C) of set point by default. (See "General Setting, Set Point Temperature Differential", on page 12 for instructions on how to reduce this variation to 1°F [0.55°C].) When the heating or cooling set point is satisfied, the compressor cycles off and the fan returns to low speed. The fan speed remains constant if Manual Fan Speed is selected. For more information on this feature, see "Modes of Operation" on page 8.

(For CW systems only)
When cooling or heating is required, the water valve will not open unless the water temperature is adequate. You can view the water temperature by pressing the Temperature indicator icon until the Water temperature is displayed. The fan remains in low speed until the adequate water temperature is available. Heat will be supplied when no heating is available only if the Optional Electric heater has been installed and programmed.

Adequate cooling or heating water temperature is defined by the Water Temperature Differential setting, under CW Control Parameters. Its factory default is set at 15°F (8.3°C) differential from the ambient air temperature.

REVERSING VALVE OPERATION (FOR DX SYSTEMS ONLY)

The position of the reversing valve determines if the system is in Cool Mode or Heat Mode. In addition, the reversing valve is programmed to toggle in these situations:

• When the system is running and heating or cooling is required, the reversing valve toggles to the opposite mode to reduce the starting surge of the compressor.
• When a cooling or heating cycle is called for and if the system has been off for less than 75 seconds.
• When a cycle is interrupted from the display panel by pressing the Power icon or changing the set point.

Unnecessary valve toggling is limited to reduce reversing valve noise. You can totally eliminate valve toggling by programming the minimum compressor staging delay to 75 seconds or greater (see "DX Operational Setting Compressor Start Delay" on page 13 for more information). Power-On Reset, which occurs when the system is powered up, always initiates a valve toggle.

INSTALLING THE DISPLAY PANEL

CHOOSING THE LOCATION

Figure 3: Smart Touch Display Front Panel
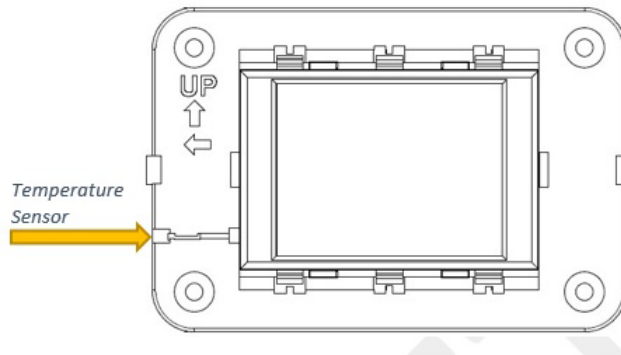
Before mounting the control panel, consider the location. The display panel's built-in air sensor provides excellent room-air temperature sensing when properly located and installed. For air sensor location see Figure 3. Mount the display panel on an inside wall, slightly higher than mid-height of the cabin, in a location with freely circulating air where it can best sense average temperature. Its distance from the air conditioner must be within the 15 ft (4.5 m) length of the display cable (custom lengths available).

Do not mount the display in direct sunlight, near any heat-producing appliances or in a bulkhead where temperatures radiating from behind the panel may affect performance. **Do not mount the display in the supply-air stream.** Do not mount the display above or below a supply-air or return-air grille. Do not mount the display behind a door, in a corner, under a stairwell or any place where there is no freely circulating air. If you cannot mount the display in a suitable location for accurately sensing room temperature, install the optional remote air sensor.

MOUNTING THE DISPLAY

1. Make the cut-out for the display panel. Cut-out size is 2.900" (7.36 cm) wide by 2.165" (5.50 cm) high.

2. Plug one end of the display cable (8-pin connector) into the upper-right socket on the circuit board in the electric box and the other end into the back of the display panel.

Figure 4: Smart Touch Display Mounting Dimensions

Recommended Mounting Dimmensions
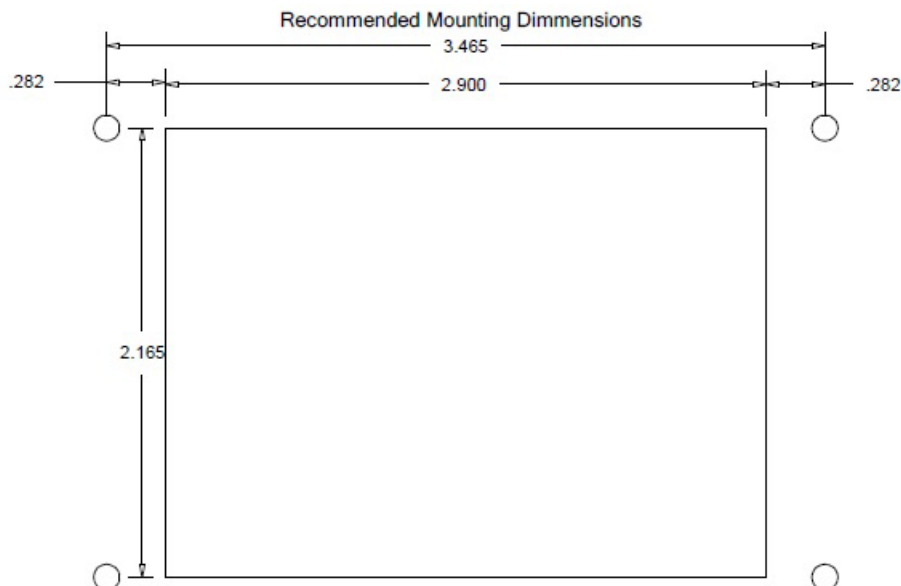
(Drawing not to scale – not a template)

3. Secure the display panel to the bulkhead using the four screws provided.
   Do not use a screw gun and do not overtighten screws when mounting, because either method may damage the display.

4. When the display is securely mounted, mount the bezel over the display frame until it snaps into place.

Figure 5: Smart Touch Display Top View Mounting Dimensions
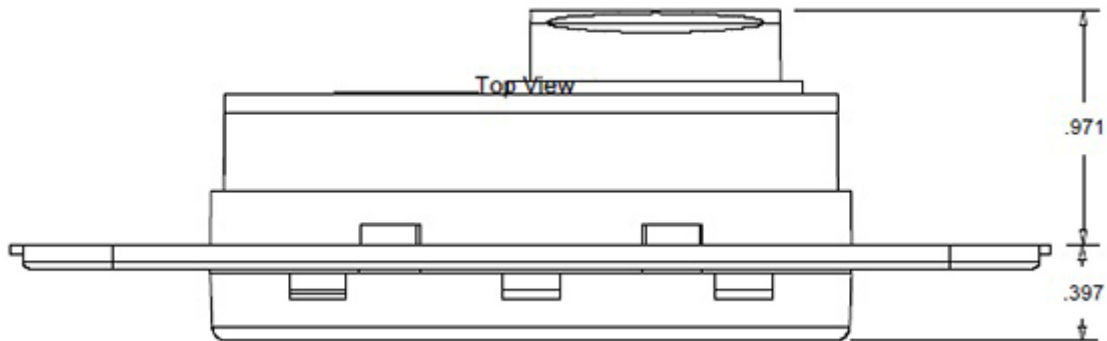
MOUNTING THE OPTIONAL SENSORS

REMOTE AIR SENSOR

Install the optional remote air sensor if the display cannot be mounted in a proper location for accurately sensing room temperature. Installing the remote air sensor overrides the display's built-in sensor. The standard cable length for the remote air sensor is 7 ft (2.1 m).

1. Mount the remote air sensor in the return-air stream behind the opening of the return-air grille.

2. Plug its cable (6-pin connector) into the "ALT AIR" socket #J4 in the upper-left corner of the circuit board.

OUTSIDE AIR TEMPERATURE SENSOR

Install the optional outside air temperature sensor to monitor the temperature outside the cabin. Outside air sensor cables are available in various lengths.

1. Mount the sensor outside but not in direct sunlight.

2. Plug its cable into the "OAT" socket #J3.

SERVICE SENSOR (FOR DX SYSTEMS ONLY)

Install the optional condenser coil temperature sensor into the "SERVICE/H2O" socket #J5. Use of this sensor must be enabled by going to DX Operational Setting and then Pump Sentry feature.

WATER INLET SENSOR (FOR CW SYSTEMS ONLY)

When using the AH-Elite with a chilled-water air handler, plug the water-inlet sensor cable into the "SERVICE/H2O" socket #J5. Attach the sensor to the chilled-water inlet on the air handler. Ensure that the sensor makes good contact with the copper pipe. DO NOT attach to rubber hose.

BATTERY BACKUP

BATTERY BACKUP OPERATION

The battery backup will last over 2 years of "powered-off time". This means that if the Smart Touch is plugged into a control that is powered up, the battery is not being drained. Only when the AC power to the control board is powered off is the battery being drained in the Smart Touch itself.

When the battery dies, is removed, or replaced, the only information that is lost is the date and time. No other information is lost. Also the screen lock PIN will be reset to its default ("1234") when the battery gets removed or dies. This is done in case the locking PIN is forgotten and the display gets locked. All other programming parameters, calibrations, program scheduler settings, etc., are retained in flash memory forever, and do not use the battery power at all.

When the battery dies, there will be no visible indication on the display during normal power up. What will happen is that upon a subsequent (AC) power down and power up, the user will immediately be prompted to set the date/time setting. This is their indication that the battery needs replacement. Note that if the battery were dead and the date/time were set correctly during a given AC power up, as long as the display has AC power, it would retain the correct date/time indefinitely. The next time AC power is removed, the date/time would again be lost and be prompted for upon the next AC power up. When the fresh battery gets installed, the next AC power up will also immediately prompt for the date/time setting.

BATTERY BACKUP SPECIFICATIONS

The battery backup is included from factory with the Smart Touch display
Battery voltage: 3 V
Battery type: CR 2032

BATTERY BACKUP INSTALLATION/REPLACEMENT

Figure 6: Top View of Smart Touch Display
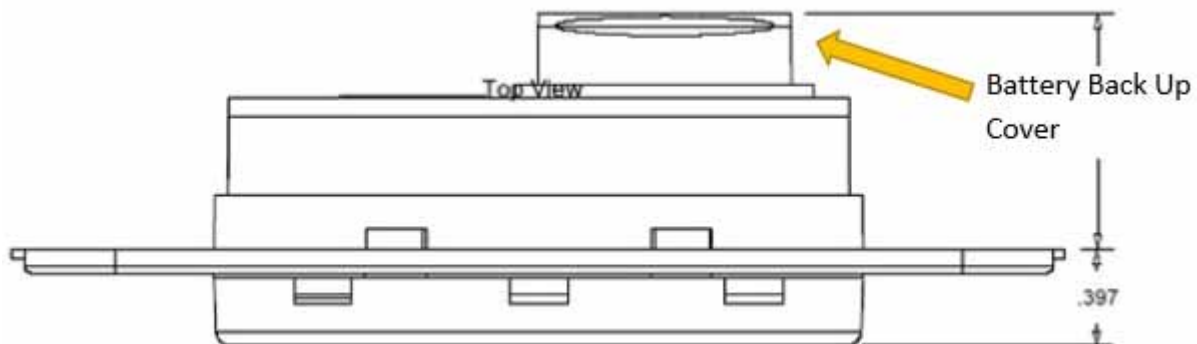
1. Turn off unit.
2. Unmount display from wall or panel.
3. Disconnect RJ 45 plug from the back of the display.
4. Detach battery compartment cover from the back of the display.
5. To install a new battery:
   a. Insert battery in battery compartment, with positive battery sign facing south or opposite to where the RJ 45 jack is.
   b. Once inserted, make sure metal lock is holding the battery in.
6. To remove or replace an old battery, pull down metal lock and at the same time pull out the battery.

OPERATION

OPERATOR CONTROLS AND DISPLAY PANEL

HOME SCREEN ICON FUNCTIONS

Figure 7: Smart Touch Home Screen Icon Functions
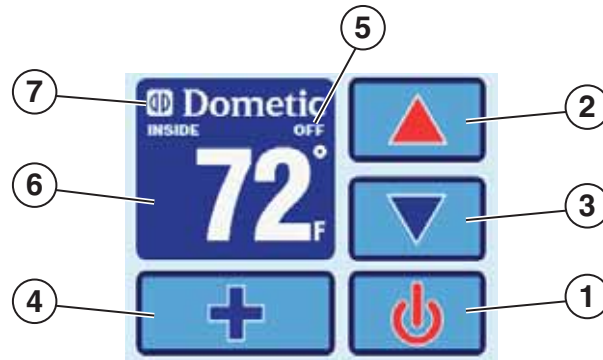
1. **Power On/Off Icon** - Press and release to toggle between the On and Off Modes.
2. **Up Icon** - Press and release to display the set point. Press and release the Up icon as many times as desired to increase the set point. Set point increases one degree each time the icon is pressed.
3. **Down Icon** - Press and release to display the set point. Press and release the Down icon as many times as desired to decrease the set point.
4. **More Icon** - Press and release to change display to Main Screen.
5. **Status Icon** - Shows the system status. (OFF, PENDING, ACTIVE, STANDBY, FAULT)
6. **Temperature Indicator Icon** - Press and release to select from Set point(s), Inside, Outside, or Service/Water temperatures
7. **Force Sleep Mode Icon** - Press and release to force sleep mode to initiate immediately, if enabled (i.e. Sleep Delay not equal to OFF)

MAIN SCREEN ICON FUNCTIONS

Figure 8: Smart Touch Main Screen Icon Functions
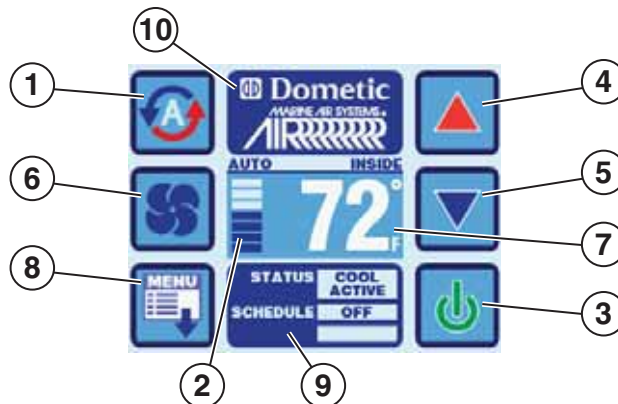
1. **Mode Icon Indicator** - The Mode icon indicates the current mode active. Press and release to select one of the four operating modes. Continue to press and release the Mode Icon until the desired operating mode is reached. The mode icons (Auto, Cool, Heat, or Moisture) light to indicate which mode is selected. It shows 4 different icons depending on the mode:
    • **Auto Mode Icon Indicator** - The Auto Mode icon is shown when the system is in Automatic Mode, which switches to cooling or heating as required to satisfy the temperature set point.
    • **Cool Mode Indicator** - The Cool Mode icon is shown when the cool-only mode is selected or when the unit is in an Automatic Mode cooling cycle.

- • **Heat Mode Indicator** - The Heat Mode icon is shown when the heat-only mode is selected or when the unit is in an Automatic Mode heating cycle.
- • **Moisture Mode Indicator** - The Moisture Mode icon is shown when the Moisture Mode is selected. This mode controls humidity during periods when the vessel is unoccupied.

2. **Fan Mode Indicator** - Auto or Manual Indicator icon shows when Automatic fan speed or either of the three Manual speeds are selected.

3. **Power Icon** - Press and release to toggle between the On and Off Modes.

4. **Up Icon** - Press and release to display the set point. Press and release the Up icon as many times as desired to increase the set point. Set point increases one degree each time the icon is pressed.

5. **Down Icon** - Press and release to display the set point. Press and release the Down icon as many times as desired to decrease the set point.

6. **Fan Icon** - Fan-speed operation is automatic, allowing fan speed to decrease as set-point temperature is approached in the Cool Mode. The fan operates at low speed when set point is satisfied. Normally the automatic fan speed operation is reversed in the Heating Mode; however, you can program the fan to operate the same as in the Cooling Mode. Press the Fan icon to select manual fan speeds if you want to override automatic operation. You can program the fan to run only during a cool or heat cycle; otherwise the fan runs constantly. Press and release to advance from Auto Fan to Manual Fan. Press and release the Fan Icon to advance the manual fan speeds, from low to high. Press and release again to return to the Automatic Fan mode. The selected Fan Mode is indicated by the Fan Indicator icon. You can change the fan operating mode from Continuous to Cycled by going to Main Menu, Control Parameters, General Settings, and then Fan Operate Mode.

7. **Temperature Set Point Indicator Icon** - Press and release to select from Set point(s), Inside, Outside, or Service/ Water temperatures

8. **Main Menu Icon** - Press the Menu icon to show the Main Menu page.

9. **Status/Schedule Icon** - Press the Status/Schedule icon to view any fault occurring in the system.

10. **Dometic/Date/Time Icon** - This shows the date and time if enabled. To enable it, press Menu, Date/Time Menu, and then Date/Time Display.

MODES OF OPERATION

OFF MODE
When the control is in Off Mode, all control outputs are turned off. All settings are saved in nonvolatile memory.

ON MODE
When the control is in On Mode, power is supplied to the appropriate outputs and the display indicates the current state of operation. The operating and program parameters resume based on those last stored when the unit was operating.

AUTOMATIC MODE
When Automatic Mode is selected, the system provides both heating and cooling as required. The **Auto** Mode icon is shown. Cabin temperature in a given mode is maintained within 2°F (1.1°C) of set point by default. (See "General Settings, Set Point Temperature Differential" on page 12 for instructions on how to reduce this variation to 1°F [0.55°C].) If the system was most recently cooling, the cabin temperature must drop below the set point by at least 4°F (2.2°C) in order for the system to switch from cooling to heating. Similarly, if the system was most recently heating, the cabin temperature must exceed the set point by at least 4°F (2.2°C) in order for the system to switch from heating to cooling. This behavior prevents small temperature overshoots from causing the system to switch between heating and cooling when it is not necessary.

COOL MODE
When Cool Mode is selected, the Cooling mode icon is shown and only the cooling system operates as required. If the ambient temperature drops below the set point, the system will not automatically switch to the Heat Mode.

HEAT MODE
When Heat Mode is selected, the Heating mode icon is shown and only the heating system operates as required. If the ambient temperature rises above the set point, the system will not automatically switch to the Cool Mode.

MOISTURE MODE

Use Moisture Mode to help control humidity while you are away from the boat or away from a particular cabin. While the control is in the On Mode, press the Mode icon until the Moisture Mode icon is shown. Once Moisture Mode is enabled, the fan circulates the air for 30 minutes. During this time, the air temperature is sampled and entered into memory. After 30 minutes, a cooling cycle starts and continues until the temperature is lowered 2°F (1.1°C) or until the cooling cycle runs a maximum of one hour.

Four hours after the temperature is satisfied or the cooling cycle times out, this cycle repeats. Moisture Mode will also prevent your boat or a particular cabin from dropping below a minimum temperature as a means to prevent the contents from freezing. When the temperature drops low, eliminating moisture may become less of a concern and maintaining some minimum temperature may become more important. After the 30-minute fan circulation, if the temperature is at or above the factory default setting of 50°F (10°C), a cooling cycle is started and runs as described above. However, if the temperature is below 50°F (10°C), a heating cycle will be started instead. The heating cycle will continue until the temperature reaches 50°F (10°C) or until the heating cycle runs a maximum of one hour. Four hours after the temperature is satisfied or the cooling/heating cycle times out, the entire cycle repeats, each time determining whether cooling or heating is required. See "General Settings, Humidity Mode Minimum Temperature" on page 12 for more information on how to adjust the 50°F (10°C) factory default to a different temperature that may better suit your particular requirements. The adjustment range is 40°F (4.4°C) to 75°F (23.9°C). NOTE for DX systems only: On systems configured with reverse-cycle heat, the Moisture Mode heat cycle will not be allowed to run when the ambient temperature is below 40°F (4.4°C). This is necessary to protect the condenser coil from freezing. Systems configured with electric heat will be allowed to run the Moisture Mode heat cycle regardless of the room temperature.

FAN MODES

Automatic Fan Mode

Smart Touch has three automatic fan speeds available: High, Medium and Low. Automatic Fan Mode allows the Smart Touch to determine the required fan speed based on temperature differential. This permits a balance between the most efficient temperature control and slower, quieter fan speeds. To select Automatic Fan Mode, press and release the Fan icon until the word "Auto" above the fan speed graph is shown.

Manual Fan Mode

There are three manual fan speeds available: High, Medium and Low. Manual Fan Mode allows you to select and maintain a desired fan speed. When a Manual Fan speed has been selected, the speed is indicated by the Fan Speed bar graph. The bar level will increase as the speed is increased by the user. Press and release the Fan icon until the desired speed is reached.

Fan-Only Mode

Use the Fan-Only Mode to operate the fan for air circulation when no cooling or heating is desired. From the Off Mode press and release the Fan icon to start Low fan speed. Press and release again to select Medium fan speed. Press and release a third time to select High fan speed. Press and release a fourth time to turn off the fan or place it in Auto mode. Turning on the control will revert the fan to the Automatic Mode or the last selected manual fan setting.

NOTICE
For DX systems only: If your air conditioning unit is Cool only (if it does not have a reversing valve) then Cool Mode MUST be selected. DO NOT set to Automatic Mode for a Cool-Only unit. If Automatic Mode is selected and the thermostat calls for heat, the compressor will run. Since there is no reversing valve, the air conditioning unit will supply cool air when heating is desired. Cool-Only units do not heat.

MAIN MENU

Use the Main Menu settings to adjust operating parameters for your particular needs. Main Menu is also used to fine-tune the system for the most efficient operation within an installation. (Variables such as ducting, sensor location, and system layout affect system operation.) The control has factory default settings stored in permanent memory that can be recalled. For this see Main Menu, Control Parameters, and then Recall Defaults. Reprogrammed new settings can be saved as Memorized settings and can be recalled and saved at any time. See "Main Menu, Control Parameters, Memorize Settings, and Recall Memorized" on page 15 for details.

Main Menu Screens Layout

Figure 9: Smart Touch Main Menu Screen Layout
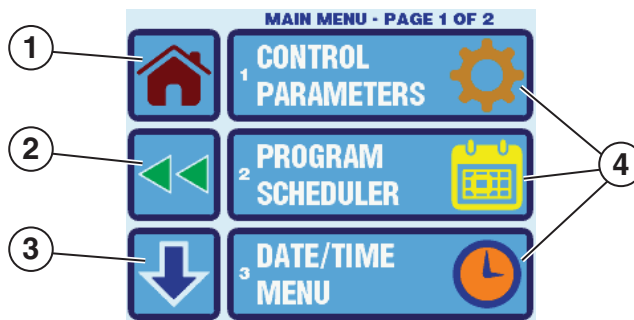
1. **Home Icon** - Press this icon at any time to return to the Home Screen

2. **Back Icon** - Press this icon to return to the previous screen

3. **Scroll Down Icon** - Press this icon to go to the next set of settings

4. **Main Menu Selection Options** - Press any icon to modify the selected option

General Settings Screen Icon Layout

Figure 10: Smart Touch General Settings Screen Icon Layout

1. **Home Icon** - Press this icon at any time to return to the Home Screen

2. **Back Icon** - Press this icon to return to the previous screen

3. **Up Icon** - Press the icon to increase the setting

4. **Down Icon** - Press the icon to decrease the setting

5. **Save Icon** - Press this icon save the desired setting changes

CONTROL PARAMETERS

General Settings

Figure 11: Smart Touch General Settings Page 1 of 7

To access the General Settings, go to Main Menu, Control Parameters, and the General Settings.

1. **High Fan Speed Values** for the upper fan-speed limit range from 35 to 95. Set a higher number to increase the fan speed or a lower number to slow the fan speed.

2. **Medium Fan Speed Values** for the upper fan-speed limit range from 35 to 95. Set a higher number to increase the fan speed or a lower number to slow the fan speed.

3. **Low Fan Speed Values** for the lower fan-speed limit range from 32 to 85. Set a higher number to increase the fan speed or a lower number to slow the fan speed.

4. **Inside Temp Calibration** This setting calibrates the ambient sensor within a range of ±10°F. Adjust this parameter to display the correct room temperature reading. Note that setting increments are in °F even when the control is set to display °C.

Figure 12: Smart Touch General Settings Page 2 of 7

5. **Temperature Units (°F/°C/Auto)** The default setting is °F. Select °C for Celsius. (Celsius readings are displayed in tenths, for example 22.2°). Auto corresponds to "automatic by line frequency", where 60 Hz automatically sets the unit to Fahrenheit or °F, and 50 Hz automatically sets the unit to Celsius or °C.

6. **Reversed Fan Speed in Heat** Reverse Automatic Fan Speeds during Heating allows the user to automatically reverse the fan speed during Heat Mode. This is to improve heat output in cooler climates. The fan will speed up as the set point is approached. Lowering the fan speed when the cabin is cold increases head pressure and helps raise supply temperature. Increasing the fan speed as the set point is approached also reduces unnecessary high-pressure faults. The fan switches to low speed when the set point is satisfied and the compressor cycles off. The fan can be programmed to operate the same as in cooling by selecting the Off option, which represents normal fan operation during reverse-cycle heating.

7. **Electric Heat Option (On=use electric heat, Off=use reverse-cycle heat)** Reversing valve toggle (energizing of reversing valve output) will not occur prior to compressor start-ups if electric heat is on. The valve output and Electric heat relay (for legacy PPIO boards) will both be energized when DX electric heat is called for. For CW systems, On=use electric heat and/or hydronic heat, Off=use only hydronic heat. The compressor output will be energized when CW electric heat is called for. Units not equipped with reverse-cycle heat may have an electric heater added. Set to "On" for the electric heat option or "Off" to disable. When programmed for electric heat, both the electric-heater relay and the valve relay are energized. *This change supports newer circuit board revisions without the electric-heater relay. Therefore, circuit boards that do not have electric-heater relays require a display with software revision A15 or newer to properly energize the valve relay. Also, since the valve-relay output only supports a maximum of 15 amps at 115V AC or 10 amps at 230V AC (circuit boards revision F and newer) of resistive load, when installing an optional electric heater that exceeds this load, it is necessary to install an additional contactor that is rated to handle the full load of the electric heater. Please consult with Dometic Customer Service or with an authorized service technician for assistance.*

8. **Fan Motor Type** The Split Capacitor default setting is correct for air conditioning units with high-velocity blowers. Only change the setting to Shaded Pole if your unit has a Shaded Pole fan motor, recognizable by a blower-motor overhang. (The Split Capacitor motor of a high-velocity unit is inside the blower, and the unit has "VTD" or "HV" in the model number.)

9. **Filter Hours Setting** Reminder for air filter cleaning or replacement is determined by the number of hours of fan operation. Filter Hours Setting can be set as a reminder to clean or replace the unit's air filter. Select the number of operating hours until the filter reminder appears. Parameter choices are between 100 hours and 2500 hours. Dometic recommends that you check the air filter at least every 500 hours of operation. The default setting is off. Once set, the timer keeps track of the total amount of run hours that the fan accumulates. Once the timer setting is reached, flashes briefly on the status icon until it is cleared. Display of the room temperature continues and the normal operation of the system is not affected. The reminder can only be cleared and the timer reset via General Setting, and then Filter Hours Setting.

Figure 13: Smart Touch General Settings Page 3 of 7

10. **Filter Hours Reset** The Filter Hour Reset setting shows the number of filter reminder hours accumulated and allows clearing via a CLR icon. This parameter displays the current elapsed time in hours since the timer was started or reset. To clear the reminder, press the CLR icon. This resets the value to 0 and restarts the timer.

11. **CAN Bus Unit ID** This parameter selection icon is grayed out whenever the Smart Touch is not plugged into a Passport I/O board with the CAN bus daughterboard option. In other words, this parameter displays only when CAN-bus network capability is available and the Smart Touch is plugged into a networked Passport I/O power and logic board. This parameter does not display when the Smart Touch is plugged into a standard board. Each control on the same CAN-bus network must be assigned a unique Unit ID (0 -255). For example, the control that is set to 5 will respond to commands with a destination address of 5.

Figure 14: Smart Touch General Settings Page 4 of 7

12. **CAN Bus Group ID** This parameter selection icon is grayed out whenever the Smart Touch is not plugged into a Passport I/O board with the CAN bus daughterboard option. In other words, this parameter displays only when CAN-bus network capability is available and the Smart Touch is plugged into a networked Passport I/O power and logic board. This parameter does not display when the Smart Touch is plugged into a standard board. Assign the address for the control's CAN-bus network group (0 - 255). This number should be unique and different than any CAN-bus Unit ID. For example, all controls that are set to 100 will respond to commands with a destination address of 100 (in addition to responding to commands that target their individual Unit IDs).

13. **Voltmeter Calibration** This parameter allows adjustment of the line voltage reading as measured by the Smart Touch. This setting displays the voltage being read by the power and logic circuit board. It displays a live reading of the voltage and can be manipulated by pressing the Up or Down icons. Calibrating this parameter provides a more accurate voltage level when calculating low voltage. Use a reliable voltmeter as a reference when adjusting this parameter.

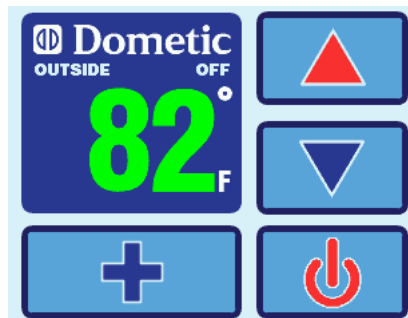**Figure 15: Smart Touch General Settings Page 5 of 7**

14. **Set Point Temperature Differential** This parameter is the temperature differential in Fahrenheit for all modes of operation: Automatic, Cool, or Heat. Refer to "Modes of Operation" on page 8 for more information on how this parameter affects these modes. By default, this parameter setting is 2°F (1.1°C). It can be set to either 1°F (0.55°C) or 2°F (1.1°C). Setting this parameter to 1°F (0.55°C) will result in the control maintaining the room temperature closer to the desired set point. However, this may result in more frequent shorter-duration cooling or heating cycles. In most cases, the factory default of 2°F (1.1°C) is adequate for maintaining a comfortable temperature variation around the desired set point. If you desire less variation in temperature, set this parameter to 1°F (0.55°C).

15. **Humidity Mode Min Temp** This parameter is the minimum room temperature in Fahrenheit for which Moisture Mode will run a cooling cycle to remove moisture from the air. If the room temperature is below this parameter setting, Moisture Mode will run a heating cycle instead. By default, this parameter is set to 50°F (10°C), and it can be adjusted between 40°F (4.4°C) to 75°F (23.9°C). Please refer to the description of "Moisture Mode" on page 9 for more information on how Moisture Mode functions and utilizes this parameter.

Figure 16: Smart Touch Outside Temperature Indicator

16. **Auto Fan Speed Temp Differential** This setting sets the incremental differential (with cumulative steps) between the ambient temperature and the set point temperature at which the fan speed will increment to the next speed. Note that there is 1°F hysteresis in the auto fan speed differential to prevent the speed from changing if the room temperature changes by a fractional degree causing speed fluctuations. Also General Settings *Reversed Fan Speeds in Heat*, and *Set Point Temperature Differential*, both have an effect on the operation of the auto fan speed.

17. **Supply Air Temp Limit** Enabling this parameter has no effect unless General Setting *Electric Heat Option* is also enabled (set to "On"). Use of this parameter requires that the OAT sensor is placed in the supply air stream immediately downstream of the blower discharge. This setting is the maximum the supply air discharge temperature will allow. Heat mode will be shut down if the temperature of this sensor exceeds the programmed setpoint. Heat mode will be restored once a 10°F hysteresis has been satisfied. Heat mode will also be restored if power is cycled to the control and the OAT sensor temperature is less than the setting but still within the hysteresis. There is no fault indication when this condition occurs and no lock-out. The discharge temperature can be displayed by pressing the temperature icon until the temperature title shows Outside (same as viewing the Outside Air Temperature).

18. **DX/CW Mode Selection** Choosing "Set by Jumper" preserves the status of the Passport I/O operation where if the "Cut for Chill" jumper on the main PPIO board is not cut, the Smart Touch will operate in DX mode, and if the jumper is cut, the Smart Touch will operate in CW mode. The other choices for this parameter allow the jumper to be overridden, if desired.

**Figure 18: Smart Touch General
Settings Page 7 of 7**

19. **Inside Temp Sensor Selection** If the alternate air temperature sensor is plugged into the Passport I/O main board, it is used as the inside temperature, and if it is not plugged in, the built-in display temperature sensor is used for inside temperature. This parameter allows this behavior to be overridden if desired.

20. **Fan Operational Mode** The fan can be set to run continuously whenever the system is turned on, or it can be set to cycle on and off in conjunction with the cooling or heating cycles.

21. **Dual Temp Set Points** When Off, there is only one common set point, which is adjustable and used for both heating and cooling. When On, two separate set points are settable and used, one for cooling and one for heating.

DX Operational Settings

1. **Compressor Start Delay** The compressor staging delay is for installations where more than one system operates from the same power source. Setting different staging delays allows compressors to start at different times when power is interrupted. Stage the units at least 5 seconds apart. Minimum delay is 5 seconds and maximum is 135 seconds.

2. **Failsafe** To protect the equipment, certain fault conditions trigger a lockout: The control shuts down and will not restart until the fault is repaired. The lockout condition depends on a combination of the failsafe level you have programmed as well as the type of fault detected.
   There are 4 different Failsafe levels to choose from.

   a. **Faults Not Detected** - This level provides minimal failsafe protection and is not recommended. Only the "Air Sensor Failure" fault is detected and displayed. The control shuts down and will not restart until the fault is repaired. When the fault is repaired the control restarts after a 2-minute delay.

   b. **Faults Detected But Not Displayed** - This level provides the failsafe actions of **Faults Not Detected**, plus all other faults are detected but not displayed. The system shuts down for 2 minutes or until the fault is cleared, whichever is longer. The system restarts when the fault is cleared.

   c. **Faults Detected and Displayed** - This level provides the failsafe actions of the previous two levels, plus all faults are displayed. The system shuts down for 2 minutes or until the fault is cleared, whichever is longer. The system restarts when the fault is cleared.

   d. **Faults Detected and Displayed with Lockout** - This level provides the failsafe actions of previous 3 levels, plus the system will lockout after four consecutive High Pressure Fault, Low Pressure Fault, or High Water Temperature in Condenser Coil faults, and you can clear the lockout. The system shuts down for 2 minutes or until the fault is cleared, whichever is longer. To clear the lockout, press the Power icon once to Off Mode and press it again to On Mode.

3. **Low Voltage Monitor** The Smart Touch has a built-in voltmeter circuit that monitors the AC input voltage. Depending on whether the input power supply is 115V AC or 230V AC, this parameter can be set to "Off", 75-120V AC of 115V AC input power, or 175-240V AC of 230V AC input power. The factory default setting is Off. When this parameter is set to 75-120 or 175-240V AC, the Smart Touch checks the AC input voltage prior to each cooling or heating cycle and prevents the compressor from starting if the voltage is less than the one set. This provides extra protection for the compressor and components within the system during low voltage (brownout) conditions. If this low voltage condition occurs, the fault code *Low AC Voltage* appears in the Status icon in the Main display. The fault will continue until the AC input voltage rises above selected voltage value, at which time the *Low AC Voltage* fault code clears automatically and the cooling or heating cycle will commence. After the compressor is started, the low voltage monitor continues to check the AC input voltage. If it drops below the specified setting and remains below for 5 minutes, the system will shut down and the *Low AC Voltage* fault will be displayed. The system will remain shut down until the voltage goes back above the specified setting. Once the voltage is restored, after the normal fault recovery delay, the system will be restarted. As with all faults, system lockout (sustained shutdown) will occur after the fourth consecutive *Low AC Voltage* fault. See Fault Handling, History & Run Hours for further details on system lockout.

4. **De-Ice Cycle** The de-icing cycle prevents ice buildup on the evaporator coil during extended periods of cooling operation. Installation variables such as grille sizes, length of ducting, insulation, and ambient temperatures determine the run time required to achieve set point. Factors that substantially increase run time include operating the system with hatches and doors open and programming an unrealistic set point (e.g. 65°F/18.3°C). Such situations can cause the evaporator to form ice on warm humid days. De-icing is accomplished by closely monitoring the room air temperature in 10-minute intervals during a cooling cycle. Depending on the parameter value and the change in room temperature during these monitoring intervals, the control performs various actions to prevent ice from forming or to melt ice that has already formed. This is accomplished by short compressor shutdown periods combined with a one-speed increase in fan speed and by periodic Heat Mode cycles with the fan turned off. The parameter setting for the de-icing feature depends on whether you are using the optional alternate air-temperature sensor or the display's built-in room air-temperature sensor. Installation of an optional alternate air temperature sensor (located in the return air path) greatly increases the effectiveness of the de-icing feature, and this option should be considered whenever the display sensor cannot read the room temperature accurately.

   • **If using an optional alternate air temperature sensor**, set this parameter to *Enable with 5°F/3°C Sensor Differential* to turn the de-icing feature on, or to Off to disable.

   • **If using the display's built-in room air temperature sensor**, this feature has 2 selectable behavior modes. Both modes attempt to compensate for any temperature discrepancy the display sensor experiences. (Although discrepancy is not typical, installation variables such as where the display is placed inside the room – near an open door or in direct sunlight – can affect how accurately it reads the actual room temperature.) Set this parameter to or *Enable with 5°F/3°C Sensor Differential* to assume the display sensor may be reading the room temperature as much as 5°F (2.8°C) greater than the actual evaporator temperature (standard). For more extreme installations, set this parameter to *Enable with 7°F/4°C Sensor Differential* to assume the display sensor may be reading the room temperature as much as 7°F (3.9°C) greater than the actual evaporator temperature. The setting of the second option should only be used if the selection of the first option does not prevent evaporator ice from forming.

5. **Pump Sentry** Smart Touch can be equipped with an optional temperature sensor that is used to monitor the condenser coil temperature. The sensor is plugged into the "SERVICE/H20" sensor jack. The Pump Sentry setting can be programmed for a temperature between 100 and 150°F (37.8 and 65.6°C), depending on seawater temperature and the system type. (Note that setting increments are in °F even when the control is set to display °C.) Connect the water sensor to the condenser coil outlet and insulate it. When the coil temperature rises above the programmed value, the pump and compressor are shut down and "Pump Sentry Fault" flashes in the display.

6. **Pump Operate Mode** Cycle pump with Compressor to increase pump life and conserve electricity. The pump can be programmed to cycle on and off with the compressor. The pump can also be programmed to operate continuously whenever power is applied. To program the pump for continuous operation, set the setting to *Continuous*.

7. **Low Pressure Detection** When selecting "Set by Jumper", if the "Enable LP" jumper on the main PPIO board is not cut, the low pressure switch will be disabled, and if the jumper is cut the low pressure switch will be enabled. Choosing "Disabled (Use Caution)" will force the Smart Touch to ignore the low pressure switch, treating it as disabled even if the jumper is cut. This should only be done when advised by Dometic Customer Service. As with all faults, system lockout (sustained shutdown) will occur after the fourth consecutive Low Pressure fault.

CW Operational Settings

Figure 21: Smart Touch CW Settings Ambient Air to Water Temperature Differential

1. **Water Valve Force Open** This parameter opens the water valve to bleed air from the system. "On" forces the valve open for 4 hours while the Smart Touch control is turned off. If Cool mode is activated or if AC power is interrupted to the control's electric box during this 4-hour period, this valve override feature is canceled. You can return the valve to normal operation at any time by changing the setting back to "Off".

2. **Water Temp Differential** This parameter sets the temperature differential between ambient air temperature and hydronic water temperature that controls the water valve. For example, selecting 10°F opens the valve when water temperature is 10 degrees less than ambient in cooling mode and 10°F greater than ambient in the heating mode. Careful selection of the temperature differential can fully utilize the ship's heating and cooling resources. For example, while in cooling mode and using a 10 degree value, the valve will open to allow some cooling while the hydronic system is coming down to temperature. See the following figure for a graphical explanation of this parameter.

Memorize Settings

If you want new parameters to be the program defaults, adjust the parameters to the desired settings, and then go to Memorize Settings and press the Save icon. This memorizes the new settings as program defaults. To return to the factory default settings, refer to the Recall Factory Defaults listed.

Recall Memorized Settings

If you want to restore the last memorized default settings, then go to Recall Memorized and press the Save Icon. The memorized default settings are restored. To return to the factory default settings, refer to the Recall Factory Defaults listed.

Figure 23: Smart Touch Control Parameters Page 2 of 2

Recall Factory Default Settings

The system's default parameters may be changed by the installing dealer or end user. Once new values are entered and memorized, the factory defaults are overwritten and the new parameters become the default values. If you want to restore the original factory default parameters manually, then go to Recall Defaults and press the Save Icon.

NOTE: If you have any reason to contact Dometic about the system or programming the control, you must have the software identification number and air conditioning unit serial number available. The serial number may be found on the dataplate label.

NOTICE
If you have any programming problems or confusion occurs, reset the Memorized Default Settings and try again.

PROGRAM SCHEDULER

Program Scheduler allows the user to start and/or stop the A/C unit at specific time, day of the week, mode and temperature set point. To access the Program Scheduler, go to Main Menu, Program Scheduler, and select the setting to modify.

Figure 24: Smart Touch Program Scheduler Page 1 of 4

1. **Scheduler mode** As soon as the Program Scheduler is enabled, it will immediately start applying the programs as defined in the various day settings.

2. **Program:** Mon-Fri

3. **Program:** Sat-Sun

4. **Program:** Day of the Week (Seven different programs)

Figure 25: Smart Touch Program Scheduler Page 2 of 4

Each program has a mode, time, cooling set point, and heating set point (if dual set points are enabled). The Mode choices are Off, Cool, Heat, Auto, Dehumidify. If Dual Set Points is selected, the cooling set point is settable for Cool and Auto, and the heating set point is settable for Heat and Auto. Set points are not settable for Off or Dehumidify.

DATE/TIME MENU

Date/Time Menu allows the user to set the display time, its format, and optional display on Main Screen. To access the Date/Time Menu, go to Main Menu, and Date/Time Menu, and select the setting to modify.

Figure 27: Smart Touch Date and Time Settings

1. **Date/Time Display** Choose between On or Off to control the display of date/time on Main Screen only.

2. **Date/Time Format** Choose between Automatic by Line Freq (60Hz line frequency results in M/D/Y 12-hour format, and 50Hz line frequency results in D/M/Y 24-hour format), M/D/Y 12-hour, or D/M/Y 24-hour.

3. **Date/Time Settings** This setting allows date and time modification. Each date and time value are individually editable. The day of the week will automatically be calculated based upon the date.

SYSTEM MENU

System menu allows the user to modify system settings related to the display. For instance, the screen background, font, icon colors, screen saver configuration, and text editing are some of them. To modify any of the Display Settings, go to Menu and then System Menu.

Figure 28: Smart Touch Date and Time Settings

1. **Firmware Version** To access the control's software version (such as "A17"), go to Menu, System Menu, and then Firmware Version.

2. **Display Setup** The available Display Settings to modify are below. Press the Save icon after completing the desired modifications.
   a. Display Brightness
   b. Background Color
   c. Icon Text Color
   d. Icon Inside Color
   e. Icon Border Color
   f. Data Block & Title Colors

Figure 29: Smart Touch Display Editing Settings Page 1 of 14

3. **Sleep Mode Settings** The available Sleep Mode Settings to modify are below. Press the Save icon after completing the desired modification.

   a. **Sleep Mode Display** Allows the user to select among different options to show after the Sleep Mode Delay has ended (Standard Logo, Custom Logo, Custom Text, Blank Screen Backlight Off, Blank Screen Backlight On)

   b. **Sleep Mode Delay** Allows the user to select either Off, or 0 to 600 seconds of delay before showing the Sleep Mode Display configured. If Off is selected, the display will not go into Sleep Mode.

   c. **Sleep Mode Text Edit** Allows editing of the display text when the screen is in Sleep Mode. Text is edited using arrow icons for each character. Character choices are as follows: "ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789&'*@:,°=!-()%.+#?/". The total number of characters that will fit on the screen is a function of the font size, with an absolute maximum of 25.
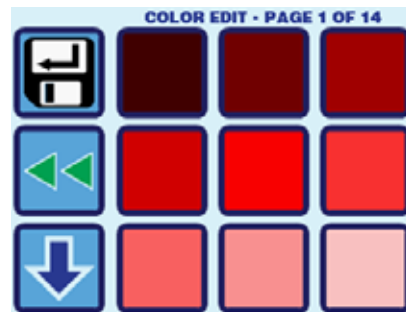
Figure 30: Smart Touch Sleep Mode Settings Page 1 of 2

   d. **Sleep Mode Text Color** Allows the text color during the Sleep Mode to be changed. There are 126 different colors to choose from.

Figure 31: Smart Touch Download Logo Settings

   e. **Download Custom Logo** This option is normally grayed out unless the Smart Touch detects that the special programming cable is plugged into its 8-pin jack (i.e. it is not plugged into a Passport I/O or Unity Circuit board). There is a PC program called the "SmartTouch Downloader" that enables selection of a 24-bit bitmap file (BMP) and transmission to the Smart Touch. Instructions for this PC program are provided separately.

Figure 32: Smart Touch Sleep Mode Settings Page 2 of 2

4. **Display Lock** Allows to modify any of the Display Lock Settings. The available Display Lock Settings to modify are below.

Figure 34: Smart Touch Display Lock Invalid PIN Message

a. **Set Access Locked by Pin** Allows the user to set a security PIN to access the display based on the levels configured. When the icon is pressed, the configured PIN will be requested. Once the PIN is entered, access to all levels is allowed. The PIN entry will be required again if the system enters sleep mode and the level at which the PIN is required is accessed again. The PIN entry will also be required again if this level setting is changed or if the display is AC power cycled.

Figure 35: Smart Touch Display Enter Lock Pin

b. **Change Pin** Allows the user to change the configured access PIN. The current pin must be entered first. Factory default is "1234". If the PIN is forgotten, it can be restored to 1234 by powering off the control at the circuit breaker, removing the battery for 60 seconds, reinstalling, and repowering. This will reset the date and time to its factory default and will also reset the PIN to 1234. No other parameters or saved entries will be lost.

5. **Cleaning Mode** Allows screen wipe down for 30 secs with the backlight off and touch panel off. Screen and touch panel will automatically come back on in 30 seconds. Operation is not affected during this time. To turn off the display so it can be cleaned, go to Menu, System Menu, and press Cleaning Mode (30SEC). Press the Save icon after completing the modification.

TROUBLESHOOTING/COMMISSIONING

Figure 36: Smart Touch System Status Screen

1. **System Status** It displays live readings and status of all sensors, voltage, frequency, mode status, cycle fault count, etc.

2. **Help & Information** Allows the user to browse complete descriptions of each fault that can occur. It also allows the user to scan a QR code using a smartphone to access the Smart Touch website. The fault descriptions shown in this option are the same as the ones shown when a live fault help is requested from the Main Screen by pressing the hidden icon over the top of the Status text window.

a. **Fault Help Lookup**

    i.   **Air Sensor Fault Help**

    ii. **High Pressure Fault Help**

    iii. **Low Pressure Fault Help**

    iv. **Low AC Fault Help**

    v. **Pump Sentry Fault Help**

    vi. **Lost AC Fault Help**
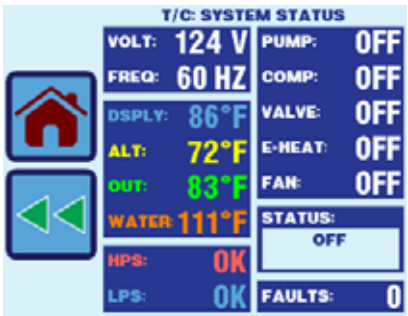
Figure 37: Smart Touch High Pressure Fault Help
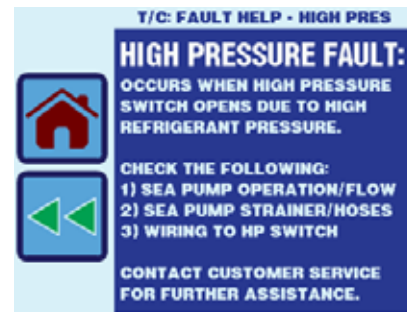
Figure 38: Smart Touch QR Code Link for More Help

b. **Link to Get More Help** Allows the user to scan a QR code to access the Smart Touch website to obtain more Smart Touch help.

Figure 39: Smart Touch Troubleshooting and Commissioning Page 1 of 1

3. **Commission Procedure** Provides instructions on how to commission a unit. It allows the user to have the main inputs and outputs of the unit tested, step by step. Steps vary depending on DX or CW. Successful completion will add an entry into the Fault History screen.

Fault Handling, History & Run Hours

To protect the equipment, certain fault conditions trigger a lockout: The control shuts down and will not restart until the fault is repaired. The lockout condition depends on a combination of the failsafe level programmed, as well as the type of fault detected. All of these options have a CLEAR icon. Pressing this icon clears the visible fault history, compressor run hours, and fan run hours. Pressing and holding the CLEAR icon for 10 seconds will bring back the lifetime fault history and run hours.

Figure 40: Smart Touch Fault & Hours Settings Page 1 of 1

One of the following fault codes displays when a fault is detected:

- **Air Sensor Failure** - Indicates air sensor failure.
- **Filter needs to be Cleaned or Replaced** - Indicates filter needs to be cleaned or replaced.
- **High Pressure Fault** - Indicates high refrigerant pressure. When in Heat Mode, it does not display and does not cause lockout.
- **Low AC Voltage** - Indicates low AC voltage.
- **Low Pressure Fault** - Indicates low refrigerant pressure. It has a 10-minute shutdown delay.
- **Pump Sentry Fault** - Indicates high water temperature in condensing coil.
- **Lost AC Fault** - Indicates loss of power.

Figure 41: Smart Touch Faults History Page 1 of 1

1. Fault History Allows the user to view the history of previously cleared faults and the current active faults.

NOTE: To view the cleared faults, hold CLR button 10 seconds.
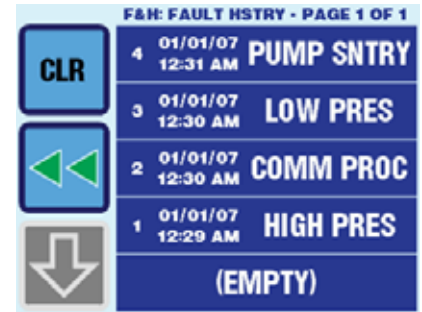
Figure 42: Smart Touch Compressor Run Hours View

2. Compressor Run Hours Allows the user to see the current amount of hours the compressor has run. The value can be cleared by pressing the CLR icon.

NOTE: To view the cleared faults, hold CLR button 10 seconds.

Figure 43: Smart Touch Fan Run Hours View

3. Fan Run Hours Allows the user to see the current amount of hours the fan has run. The value can be cleared by pressing the CLR icon.

NOTE: To view the cleared faults, hold CLR button 10 seconds.

When used with optional electric heat, the fan remains on for 4 minutes after the heater cycles off even if fan is set to cycled operation.

QUICK-START OPERATIONS CHECKLIST

1. Ensure seawater-intake ball valve (seacock) is open.
2. Make sure the control is powered OFF.
3. Turn on the air conditioner circuit breaker. If the seawater pump has its own circuit breaker, turn that on also.
4. Turn the control ON.
5. Press the Fan icon. Verify that the fan is running and that there is steady airflow out of the supply-air grille.
6. Select a temperature set point lower than the current cabin temperature. This starts the compressor and seawater pump.
7. Check for a steady solid stream of water from the overboard discharge.
8. Verify that there is steady airflow out of the supply-air grille.

If the unit does not appear to be operating properly, refer to the guidelines in "TROUBLESHOOTING" on page 27.

NOTICE
Do not turn the unit off and then immediately turn it back on. Allow at least 30 seconds for refrigerant pressure to equalize.

MAIN MENU PROGRAMMABLE PARAMETERS

Table 1: Main Menu – Programmable Parameters

Main Category Item	Sub Item 1	Sub Item 2	Sub Item 3	Range (min/max) or Choices	Factory Default
Control Parameters	Page 1 ↓				
	General Settings	Page 1 ↓			
		High Fan Speed	35	95	95
		Medium Fan Speed	32	85	61
		Low Fan Speed	30	75	50
		Page 2 ↓			
		Inside Temp Calibration	±50°F or ±25°C		0
		Temperature Units (°F/°C)	Auto/°F/°C		Auto
		Reversed Fan Speed in Heat	Off/On		On
		Page 3 ↓			
		Electric Heat Option	Off/On		Off
		Fan Motor Type	Shade-Pole/Split-Capacitor		Split-Capacitor
		Filter Hours Setting	Off/100-2500 Hours		Off
		Page 4 ↓			
		Filter Hours Reset	Clear only		n/a
		CAN Bus Unit ID	1	255	n/a
		CAN Bus Group ID	1	255	n/a
		Page 5 ↓			
		Voltmeter Calibration	70-140V AC or 170-260V AC		0 (none)
		Set Point Temp Differential	1 or 2°F / 0.5 or 1.0°C		2°F/1°C
		Humidity Mode Min Temp	40°F/5°C	75°F/25°C	50°F/10°C
		Page 6 ↓			
		Auto Fan Speed Temp Differential	1-3°F or 0.5-1.5°C		2°F/1°C
		Supply Air Temp Limit	Off/95-140°F or Off/35-60°C		Off
		DX/CW Mode Selection	Set by Jumper / DX Override / CW Override		Set by Jumper
		Page 7 ↓			
		Inside Temp Sensor Selection	Auto / Display / Alt. Air		Auto
		Fan Operational Mode	Continuous or Cycled		Continuous
		Dual Temp Set Points	Off/On		Off

Table 1: Main Menu – Programmable Parameters (continued)

Main Category Item	Sub Item 1	Sub Item 2	Sub Item 3	Range (min/max) or Choices	Factory Default
Control Parameters (continued)	DX Operational Settings	Page 1 ↓			
		Compressor Start Delay	5 sec	135 sec	15 sec
		Failsafe Level	Faults Not Detected / Faults Detected But Not Displayed / Faults Detected and Displayed / Faults Detected and Displayed with Lockout		Faults Detected and Displayed with Lockout
		Low-Voltage Monitor	Off/75-120V AC or Off/175-240V AC		Off
		Page 2 ↓			
		De-Ice Cycle	Disabled / Enabled with 5°F/3°C Sensor Differential / Enabled with 7°F/4°C Sensor Differential		Enabled with 5°F/3°C Sensor Differential
		Pump Sentry	Off/100-150°F or Off/40-65°C		Off
		Pump Operational Mode	Continuous or Cycled		Continuous
		Page 3 ↓			
		Low Pressure Detection	Set by Jumper / Disabled		Set by Jumper
	CW Operational Settings	Page 1 ↓			
		Water Valve Force Open	Off/On		Off
		Water Temp Differential	5°F/3°C	25°F/14°C	15°F/8°C
	Page 2 ↓				
	Memorize Settings				
	Recall Memorized Settings				
	Recall Factory Default Settings				

Table 2: Main Menu – Program Scheduler & Date Time Menu

Main Category Item	Sub Item 1	Sub Item 2	Sub Item 3	Range (min/max) or Choices	Factory Default
Program Scheduler	Page 1 ↓				
	Scheduler Mode Select		Off/On		Off
	Monday-Friday	Prgm 1 thru 4			6:00 AM (06:00)/Cool/72°F (22°C) 8:00 AM (08:00)/Cool/72°F (22°C) 4:00 PM (16:00)/Cool/72°F (22°C) 10:00 PM (22:00)/Cool/72°F (22°C)
	Saturday-Sunday	Prgm 1 thru 4			
	Page 2 ↓				
	Monday	Prgm 1 thru 4			
	Tuesday	Prgm 1 thru 4			
	Wednesday	Prgm 1 thru 4			
	Page 3 ↓				
	Thursday	Prgm 1 thru 4			
	Friday	Prgm 1 thru 4			
	Saturday	Prgm 1 thru 4			
	Page 4 ↓	Prgm 1 thru 4			
	Sunday	Prgm 1 thru 4			
Date/Time Menu	Page 1 ↓				
	Date/Time Display		Off/On		Off
	Date/Time Format		Automatic by Line Freq or D/M/Y 24-hour or M/D/Y 12-hour		Automatic by Line Freq
	Date/Time Settings				

Table 3: Main Menu – System Menu, Troubleshooting, Faults & History

Main Category Item	Sub Item 1	Sub Item 2	Sub Item 3	Range (min/max) or Choices	Factory Default
System Menu	Page 1 ↓				
	Firmware Version				
	Display Settings	Page 1 ↓			
		Display Brightness	5%	100%	100%
		Background Color	126 choices shown 9 at a time across 14 pages		Dometic Preferred Defaults
		Icon Text Color			
		Page 2 ↓			
		Icon Inside Color			
		Icon Border Color			
		Data Block & Title Colors			
	Sleep Mode Settings	Page 1 ↓			
		Sleep Mode Display	Standard Logo / Blank Screen Backlight On / Blank Screen Backlight Off / Custom Text / Custom Logo		Standard Logo
		Sleep Mode Delay	Off / 10-600 sec		60 sec
		Sleep Mode Text Edit	25 characters max with 3 different font sizes		"YOUR TEXT"
		Page 2 ↓			
		Sleep Mode Text Color	See choices above		Dometic Preferred Default
		Download Custom Logo			Blank display (black background)
	Page 2 ↓				
	Display Lock Mode	Set Access Locked by Pin	None (No Lock) / Control Parameters / All Menu Settings / Main Screen Home Screen		None (No Lock)
		Change PIN			1234
	Cleaning Mode				

Table 3: Main Menu – System Menu, Troubleshooting, Faults & History (continued)

Main Category Item	Sub Item 1	Sub Item 2	Sub Item 3	Range (min/max) or Choices	Factory Default
Troubleshooting/ Commissioning	Page 1 ↓				
	System Status Screen				
	Help & Information	Fault Help Lookup	Page 1 ↓		
			Air Sensor Fault Help		
			High Pressure Fault Help		
			Low Pressure Fault Help		
			Page 2 ↓		
			Low AC Fault Help		
			Pump Sentry Fault Help		
			Lost AC Fault Help		
		Link to Get More Help			
	Commission Procedure				
Fault History & Run Hours	Page 1 ↓				
	Fault History				Maximum of 500 entries (FIFO)
	Compressor Run Hours				Grayed out in DX mode
	Fan Run Hours				

TROUBLESHOOTING

GENERAL TROUBLESHOOTING

PROBLEM	POSSIBLE REASONS	SOLUTIONS
System will not start.	1. Air conditioner circuit breaker is off. 2. Digital control is not turned on. 3. Miswired at terminal strip. 4. Input-line voltage is insufficient. 5. Push-on connectors or butt splices became disconnected during installation.	1. Turn circuit breaker on at ship's panel. 2. Turn on the control. 3. Check wiring diagram; correct if necessary. 4. Check power source (shore/generator) for proper voltage. Check wiring and terminals for proper sizes and connections. Verify with a voltmeter that the power at the unit is the same as the power source. 5. Disconnect power supply and open electric box. Verify connections are tight.
Fan is not running.		Check "Digital-Controls Troubleshooting" on page 30.
No cooling or heating	1. Temperature set point is satisfied. 2. Obstructed seawater flow. 3. Seawater pump may be air-locked. 4. Loss of refrigerant gas. 5. Seawater temperature too high for cooling or too low for heating. 6. Fan coil is iced (in cooling). 7. Fan is not running. 8. Seawater plumbing is air-locked. 9. Digital control is programmed for Cool or Heat only, or mechanical-control thermostat is rotated too far toward either Cooler or Warmer setting.	1. Lower or raise set point. 2. Clean seawater strainer. Check for obstructions at speed scoop thru-hull inlet. Check for a good steady flow from the overboard discharge. 3. Remove hose from pump discharge to purge air from line. 4. Check air conditioning unit for refrigerant oil leakage; call service technician. 5. Seawater temperature will directly affect air conditioning unit's efficiency. This air conditioning unit can effectively cool your boat in water temperature up to 90°F (32.2°C) and heat (if reverse-cycle option is installed) in water temperatures as low as 40°F (4.4°C). 6. Check your specific control troubleshooting section. 7. Check your specific control troubleshooting section. 8. Ensure that seawater plumbing is installed per the guidelines in this manual. 9. See digital control manual for reprogramming.

PROBLEM	POSSIBLE REASONS	SOLUTIONS
No cooling or heating (continued)	10. (For CW systems only) Chilled-water loop is inadequately cooled or heated, chiller system is not in the proper mode of operation, or Electric Heater is disabled.	10. If the air handler system is equipped with water-temperature sensors, check the water temperature at the digital control. If the water temperature is not at least 15°F warmer (for heat mode) or cooler (for cool mode), the water valve will not open. See "CW Operational Settings" on page 15. If the air handler system is equipped with an electric heater, ensure that Option 7, **Electric Heat Option**, is enabled.
	11. High-pressure switch is open (in cooling) due to improper seawater flow.	11. Strainer or intake may be plugged. Seacock may be closed. Check seawater hose for kinks or collapses. Verify pump operation. Check pump circuit breaker if applicable.
	12. High-pressure switch is open (in heating) due to improper airflow.	12. Remove any obstructions in return air stream. Clean return air filter and grille. Check for crushed or restricted ducting. Ducting must be as straight, smooth and taut as possible.
	13. High-pressure switch is open (in heating) due to high seawater temperature.	13. System may cycle on high pressure if seawater temperature is above 55°F (12.8°C).
	14. Compressor's thermal overload is open due to either of the above reasons.	14. Compressor needs to cool down. Turn system off for a while (it may take up to three hours to reset thermal overload).
No heating	Unit is "cool only", or if reverse cycle, reversing valve may be stuck.	Tap reversing valve lightly with rubber mallet while unit is in heat mode. Call for service if that does not correct the problem.
Low airflow.	1. Airflow is blocked.	1. Remove any obstructions in return-air stream. Clean return-air filter and grille. Check for crushed or restricted ducting. Ducting must be as straight, smooth and taut as possible.
	2. Fan speed is set to Manual Low.	2. If the fan speed is set to Manual Low, press and release the Fan icon until the desired fan speed and airflow are reached. If automatic fan-speed control is desired, press and release the Fan icon until the fan speed indicator at the top of the fan speed graph shows AUTO.
	3. Fan coil is iced.	3. See "Fan coil is iced" on page 28.

PROBLEM	POSSIBLE REASONS	SOLUTIONS
Fan coil is iced.	1. Thermostat set point is too low. 2. Improper airflow. 3. Supply air is short-cycling. 4. Humidity level too high.	1. Raise set point. 2. Remove any obstructions in return air stream. Clean return air filter and grille. Check for crushed or restricted ducting. Ducting must be as straight, smooth and taut as possible. See "Digital Controls Troubleshooting" on page 30 for reprogramming options. 3. Redirect supply air so that is not blowing into the return air stream. Seal any air leaks on duct. 4. Close hatches and doors. When all else fails, switch air conditioning unit to heat until ice melts or use hair dryer to melt.
Water coil is iced in the Heating Mode.	Seawater temperature is below 40°F (4.4°C).	Shut down system to prevent damage to condenser. Allow coil to defrost.
System runs continuously.	1. Set point temperature is improperly set: too low for cooling or too high for heating. 2. Porthole or hatches open. 3. Seawater temperature too high for cooling or too low for heating. 4. Improper air sensor location.	1. Raise or lower set point. 2. Close all port holes and hatches. 3. Seawater temperature will directly affect the air conditioning unit's efficiency. This air conditioning unit can effectively cool your boat in water temperatures up to 90°F (32.2°C) and heat (if reverse cycle option is installed) in water as low as 40°F (4.4°C). 4. Check your specific control troubleshooting section.

DIGITAL CONTROLS TROUBLESHOOTING

See also "General Troubleshooting" on page 27.

PROBLEM	POSSIBLE REASONS	SOLUTIONS
Digital display panel is not shown.	The 8-pin display-cable plugs are not making contact (unplugged, dirty, bent, or broken pins).	With POWER OFF at the circuit breaker, remove connector and inspect. If damaged, replace connector or entire display cable.
Fan is not running or runs continuously.	Digital control is set for either fan cycling with compressor or continuous fan operation.	Under Control Parameters, General Settings, change the fan operation to cycled or continuous. Note: When configured for electric heat, after a heat cycle ends the fan will stay on for 4 minutes even if the fan is set to cycled operation.
Fan is not running but the compressor is.	Failed triac on circuit board.	Send for repair or call local service technician.
Fan runs continuously although it is set to cycle with compressor.	Failed triac on circuit board.	Send for repair or call local service technician.
No cooling or heating	1. Digital control programmed for heat or cool only. 2. "High Pressure Fault" or "Low Pressure Fault" is displayed. 3. (For CW systems only) Chilled-water loop is inadequately cooled or heated, chiller system is not in the proper mode of operation, or Electric Heater is disabled.	1. Press Mode icon to achieve desired mode. 2. See below. 3. If the air handler system is equipped with water-temperature sensors, check the water temperature at the digital control. If the water temperature is not at least 15°F warmer (for heat mode) or cooler (for cool mode), the water valve will not open. See "CW Operational Settings" on page 15. If the air handler system is equipped with an electric heater, ensure that Option 7, **Electric Heat Option**, is enabled.
No heat	Digital Control may be set to Electric Heat, not Reverse Cycle.	Reprogram Reverses Fan Speed in Heat under General Settings
Unit switches to heat while in Cool Mode.	De-icing feature enabled due to coil icing up.	Reprogram De-Ice Cycle under the DX settings.
Fan coil is iced.	Improper airflow.	See the General Troubleshooting section first, before reprogramming digital control. Reprogram De-Ice Cycle under the DX settings to enable de-icing. If de-icing cycle does not melt ice, switch air conditioning unit to heat until ice melts or use hair dryer to melt ice. If problem persists, reprogram Low Fan Speed Limit to 75 for maximum value.
System runs continuously.	Improper air sensor location.	Verify display head location with criteria found in the control manual. Install alternate air sensor if necessary.

PROBLEM	POSSIBLE REASONS	SOLUTIONS
"Air Sensor Failure" is displayed.	1. Indicates failed face plate air sensor, alternate air sensor or display cable. 2. Damaged jack/socket in display head or on circuit board.	1. Unplug alternate air sensor if installed or plug in alternate air sensor if not installed. Try another display cable. 2. Visually check to see that pins inside socket are not bent or corroded. Repair or replace display or circuit board if needed.
"Filter Reminder" is flashing	Filter needs cleaning or replacement.	Clean or replace filter, and reset "Filter Hours Reset".
"High Pressure Fault" is displayed.	1. High-pressure switch is open (in cooling) due to improper seawater flow. 2. High-pressure switch open (in heating) due to improper airflow.	1. Strainer or intake may be plugged. Seacock may be closed. Check seawater hose for kinks or collapses. Verify pump operation; check pump circuit breaker if applicable. 2. Remove obstructions in return air stream. Clean air filter and grille. Check for crushed or restricted ducting. Ducting must be as straight, smooth and taut as possible. If problem persists, reprogram Low Fan Speed Limit for maximum value. Set Low Fan Limit to 75, and set the reverse fan speeds during Heating Mode by changing the Reverses Fan Speed in Heat under General Settings or manually set fan speed to high.
"Low AC Voltage" is displayed.	1. Supply voltage is too low. 2. Voltage is improperly calibrated.	1. Verify power to unit with multimeter. 2. Verify that Voltage Calibration under General Settings matches voltage reading to unit with a multimeter. Adjust Voltage Calibration if necessary.
"Low Pressure Fault" is displayed.	1. Low-pressure switch is open due to low seawater and/or low return air temperatures. 2. Low pressure switch is open due to loss of refrigerant.	1. Try restarting the air conditioning unit. The optional low pressure switch has a 10 minute shutdown time delay that may be in effect. 2. Check air conditioning unit for refrigerant oil leakage; call service technician.
"Low Pressure Fault" is displayed.	1. Condenser coil is too hot. 2. Thermistor is damaged. 3. Damaged jack/socket on circuit board.	1. Verify that unit is getting water flow and that condenser is not fouled. 2. Unplug water sensor if installed. Try another if it is available. 3. Visually check to see that pins inside socket are not bent or corroded. Repair or replace circuit board if needed.

MAINTENANCE

SYSTEM COMPONENTS

REVERSING VALVE (FOR DX SYSTEMS ONLY)

Reverse-cycle (cooling and heating) units have a reversing valve that must be energized periodically to keep the internal parts moving freely. To do this, switch the air conditioner unit into Heat Mode for a few seconds once a month.

SEAWATER STRAINER (FOR DX SYSTEMS ONLY)

Ensure your pump receives adequate seawater flow by regularly cleaning the strainer basket. Periodically check the overboard discharge for a steady stream of water. Check seawater intake speed scoop for obstructions. Make sure hoses are not looped, kinked or crushed.

CONDENSER COIL (FOR DX SYSTEMS ONLY)

A marine-growth-fouled coil reduces efficiency, raising total system pressure and decreasing its ability to produce cold air.

1. With the system turned off at the circuit breaker on the ship's panel, disconnect the inlet and outlet connections of the condenser coil.

2. Use chemical-resistant hoses (white PVC 5/8" I.D., etc.) to connect the inlet of the condenser coil to the outlet of a chemical resistant, submersible pump (P-500 pump, etc.) and let the hose connected to the coil outlet flow freely into the container mentioned below.

3. Place a strainer or piece of screen over the inlet of the pump and submerse the pump into a container filled with a 5% solution of muriatic or hydrochloric acid and fresh water or use a premixed over-the-counter solution. Use as large a container as possible to hold the solution (5-25 gal [19-95 liters]).

4. Power the pump and circulate the solution through the condenser coil for 15-45 minutes depending upon the size of the coils and the extent of the contamination. Visual inspection of the solution in the container should indicate when the contamination removal has stopped.

5. Circulate fresh water through the coil to flush any residual acid from the system.

6. Restart the system and check operational parameters to ensure thorough cleaning has taken place. Additional cleaning may be necessary with extreme contamination.

RETURN-AIR FILTER

Check the return-air filter about once a month and clean as necessary. To clean the filter, remove it from the unit, rinse with water, air dry and reinstall.

WINTERIZATION (FOR DX SYSTEMS ONLY)

There are several methods of winterization, some of which work better than others. Any method that causes the antifreeze solution to flow downward is the method of choice. By this means, the antifreeze solution displaces any trapped water and eliminates the possibility of it freezing in hidden areas.

Choose the method that works best for you. In the following methods, the first two use a 50/50 nonpolluting biodegradable antifreeze/water solution:

• Pump antifreeze solution into the overboard thru-hull fitting, and discharge through the intake thru-hull fitting.

• Use the seawater pump to pump antifreeze solution through the system and discharge through the overboard thru-hull fitting: Close seacock, remove hose from strainer discharge, raise hose above pump (so pump does not lose its prime) and pour in antifreeze solution. Pump solution through system. The strainer and hose to seacock need to be drained of water.

• Use pressurized air injected at the overboard discharge fitting to force system water through the seawater intake fitting, thus expelling any trapped water from the system.

⚠ **CAUTION**
Avoid spilling or splashing the solution. Follow all warnings and recommendations given by the manufacturer of any acids or premixed solutions.

NOTE: For the purpose of protecting the environment, dispose of any contaminated acid solutions in accordance with federal, state and/or local regulations.

SPECIFICATIONS

OPERATIONAL

Set Point Operating Range. . . . . 65°F to 85°F (18.3°C to 29.4°C)

Ambient Temperature Operating Range Displayed . . . . 5°F to 150°F (-15°C to 65.6°C)

Sensor Accuracy . . . . ± 2°F @ 77°F (±1.1°C @ 25°C)

Low Voltage Limit 115 Volt Units. . . . . .95V AC

Low Voltage Limit 220 Volt Units . . . . .195V AC

Low Voltage Processor Reset. . . . . .50V AC

Line Voltage . . . . 115 Through 240V AC

Frequency. . . . . .50 or 60 Hz

Fan Output . . . . 6 Amps @ 115V AC

Fan Output . . . . .6 Amps @ 230V AC

Valve Output . . . . 1/4 Amp @ 115/230V AC

For circuit boards **revision F and newer:**

Heater Output (using valve relay). . . . . 15 Amps @ 115V AC

Heater Output (using valve relay). . . . . 10 Amps @ 230 V

For circuit boards **revision E and older:**

Heater Output (using heater relay). . . . . .30 Amps @ 115V AC

Heater Output (using heater relay). . . . . 20 Amps @ 230 V

Pump Output . . . . 1/4 HP @ 115V AC

Pump Output . . . . 1/2 HP @ 230V AC

Compressor Output . . . . 1 HP @ 115V AC

Compressor Output . . . . .2 HP @ 230V AC

Minimum Operating Temperature. . . . . 0°F (-17.8°C)

Maximum Ambient Operating Temperature . . . . .180°F (82.2°C)

Maximum Rh Conditions. . . . . 99% Non Condensing

Power Consumption . . . . Less Than 5 Watts

DIMENSIONS

Display Panel . . . . 4.41" (112 mm) X 2.96" (76 mm)

Panel Cut Out. . . . . 3.31" (85 mm) X 2.19" (56 mm)

Bezel Size. . . . . 4.85" (124 mm) X 3.25" (83 mm)

CABLE LENGTHS

Display Cable Self Contained. . . . . .15 ft (4.6 m) Standard

Display Cable Central System . . . . .30 ft (9.1 m) Standard

Alternate Air Sensor (optional) . . . . .7 ft (2.1 m) Standard

Alternate Air Sensor Central System (optional) . . . . .30 ft (9.1 m) Standard

Outside Air Sensor (optional) . . . . .15 ft (4.6 m) Standard

All custom cable lengths supplied in standard 5' (1.5m) increments . . . . 75 ft (22.9 m) Maximum

SYSTEM INPUTS

Ambient or Inside Air Temperature. 1

High Refrigerant Pressure 1

Low Refrigerant Pressure (optional). 1

Alternate Inside Air Temperature Sensor (optional) 1

Outside Air Temperature Sensor (optional) 1

Pump Sentry Condenser Coil Sensor (optional). 1

OWNERS LIMITED WARRANTY

As hereinafter described, Dometic limits the duration of any implied warranty to the duration of the underlying express warranty and also disclaims any liability for consequential or incidental damages arising from any application, installation, use or malfunction of any warranted product.

SECTION I - WHAT'S COVERED

What does the Limited Warranty cover?

Products manufactured by Dometic Corporation (Dometic) are under limited warranty to be free from defects in workmanship or materials. This being under normal use and service, with the obligation of Dometic under this limited warranty, being limited to replacing or repairing any component(s) which shall disclose defects within the limits defined in **Section III**. Which upon examination by Dometic, shall appear to the satisfaction of Dometic to be defective or not up to specifications.

This Limited Warranty is made in lieu of all other express warranties, obligations, or liabilities on the part of Dometic. In addition, Dometic shall not be responsible for any incidental or consequential damages. In those instances in which a cash refund is made, such refund shall effect the cancellation of the contract of sale without reservation of rights on the part of the purchaser. **Such refund shall constitute full and final satisfaction of all claims which the purchaser has or may have against Dometic due to any actual or alleged breach of warranty, either express or implied, including, without limitation, any implied warranty or merchantability or fitness for a particular purpose.** Some states do not allow the exclusion or limitation of incidental or consequential damages so the above limitation may not apply to you.

The Dealer is not an agent for Dometic, except for the purpose of administering the above warranty to the extent herein provided. Dometic does not authorize the dealer or any other person to assume for Dometic any liability in connection with such warranty, or any liability or expense incurred in the replacement or repair of its products other than those expressly authorized herein. Dometic shall not be responsible for any liability or expense except as is specifically authorized and provided in this section.

Dometic reserves the right to improve its products, through changes in design or material without being obligated to incorporate such changes in products of prior manufacture. Dometic can make changes at any time in design, materials, or part of units of any one, model year, without obligation or liability to owners of units of the same year's model of prior manufacture.

This warranty gives you; the purchaser, specific legal rights, and you may also have other rights which vary from state to state. You also have implied warranty rights, including an implied warranty of merchantability, which means that your product must be fit for the ordinary purposes for which such goods are used. **The duration of any implied warranty rights is limited to the duration of the express warranty as found in Section III.** Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you.

SECTION II - WHAT'S NOT COVERED

What does this Limited Warranty not cover?

This Warranty Shall Not Apply to:

1. Failures resulting from improper installation or use contrary to instructions.
2. Failures resulting from abuse, misuse, accident, fire, or submergence.
3. Any part manufactured by Dometic, which shall have been altered so as to impair its original characteristics.
4. Any parts which fail as a result of misuse, improper application or improper installation.
5. Items not manufactured by Dometic, i.e., items, which are purchased from another manufacturer and supplied as received by Dometic without alteration or modification except as any part of a Dometic manufactured unit or component.
6. Components or parts used by or applied by the purchaser, as an integral part of products not manufactured by Dometic.
7. Labor resulting from difficult access to a Dometic product. The original installer or OEM is responsible for accessibility of unit.
8. Leaks due to improper installation of split systems and refrigeration systems, for example; packing glands, flare nuts, quick disconnects. The adjustment of the refrigerant charge on a split system should be charged to the original installer or OEM.
9. Freight Damage.
10. Pumps that have been run dry, are water damaged or have blown freeze plugs.
11. Pumps with cracked heads.
12. Pump seals are not covered.
13. UV light bulbs are not covered.

14. Liquid line filter dryers are not covered.

15. Blowers with water damage.

16. Logic boards with water damage.

17. Logic boards with blown MOV's (Power Surge)

18. Mis-programmed displays.

19. Display heads with water damage.

20. Dirty Condensers and/or Evaporators.

21. Failures due to improper winterization.

22. Unit damage as a result of improper return packaging.

23. Replacement of freon with substitute without authorization from factory.

24. Environmental and/or Recovery Fees.

25. Welding and Nitrogen Fees.

26. Travel costs are included in the hourly labor allowances and should not be billed as a separate item without preapproval form the factory.

Installation and application of Dometic components is not warranted by Dometic, because Dometic has no control or authority over the selection, location, application, or installation of these components.

SECTION III - COVERAGE PERIOD

What is the period of coverage?

(See **Table of Warranty Periods**)

All Dometic components bear a data plate on which there are model and serial numbers. The serial number is date coded. To determine whether or not any Dometic component is in warranty, proceed as follows:

1. Determine the manufacture date of the component from the serial number on the data plate. If you are not familiar with the date code, write or call the Dometic Customer Service Department to obtain the manufacture date. The hours of the Customer Service Department are 8:00 a.m. - 5:00 p.m. (USA, Eastern Standard Time Zone) Monday through Friday excluding holidays.

2. It is possible that there might exist a considerable time lag between the date a component is manufactured and the date it is put in service. In such instances, the date of manufacture could indicate that the item is out of warranty. However, based on the date the equipment is first put in service, the item may still be covered by the Dometic warranty as described in **Section I**. For proof of date put in service, Dometic will require a copy of the bill of sale of the Dometic equipment from the installer or new boat dealer to the original owner.

SECTION IV - GETTING SERVICE

How do you get service?

Please read the following Warranty Procedure:

If the failure of a Dometic component is determined to be covered under the Dometic warranty and the time in service is determined to be within the warranty time limit, the owner has the following three options:

1. Preferred option: Have a Dometic authorized Servicing Dealer, perform the work needed. The customer needs to call Dometic Customer Service Department for a recommendation as to the closest dealer. If the customer already knows an authorized servicing dealer, the dealer should be contacted directly.

2. Second option: If the customer contacts Dometic Service Department for a Servicing Dealer and Dometic has no one in that particular area, Dometic will authorize the use of a local service company and Dometic will work with the local company to assist in any way possible.

3. Third option: The customer may send his equipment back to the factory to have the repair work done. Dometic will make every effort to return the equipment to the customer within a three week time period. If the claim represents a legitimate warranty problem, Dometic will pay the freight both ways. Dometic prefers option one first, option two second, and option three only if one and two are not available.

The customer may contact the Dometic Service Departments at (804) 746-1313 (Virginia plant) or (954) 973-2477 (Florida plant) Monday through Friday, 8:00am - 5:00pm.

After hours (evenings and weekends) technical support is offered through Dometic's 24/7 Hotline at (888) 440-4494.

TABLE OF WARRANTY PERIODS

AIR CONDITIONING		
Important Notes:		

1. Warranty periods begin from the date of possession of the boat by the first owner if OEM installed or date of installation if dealer installed, but not to exceed three (3) years from date of production. The warranty is transferable and will carry the remainder of the original owner's warranty based on the original date of purchase or date of installation.
2. Proof of purchase or installation may be required to verify warranty coverage.
3. Any unit or replacement part installed due to a warranty failure carries the remainder of the original warranty. Warranty coverage does not start over from the repair/replacement date.
4. Warranty coverage shall not exceed three (3) years from the date of production.
5. These warranty periods are effective March 1, 2010.

MARINE AIR - Direct Expansion, Self-Contained, Split-Systems, and Modulating Systems

Product	Sale Type	Warranty Coverage
Vector Turbo Vector Compact Emerald Series Condensers and Evaporators	OEM or Dealer Installed with digital or mechanical controls.	2-Year Warranty 1st Year parts and labor, 2nd Year parts only. Not to exceed three (3) years from date of production. Pump warranty, see Pump section.

MARINE AIR - Chilled Water Systems

Product	Sale Type	Warranty Coverage
Chilled Water Systems	OEM or Dealer Installed with TWLC or latest series control.	2-Year Warranty 1st Year parts and labor, 2nd Year parts only. Not to exceed three (3) years from date of production. Pump warranty, see Pump section.
New Model sold as a replacement unit or partial retro-fit to an existing installation.	Installed with old controls or competitor's controls.	Parts and Labor: 90 days.

MARINE AIR- Chiller Refit Policy

Dometic chillers installed in conjunction with a control system other than a Cruisair or Marine Air control, or a control system that is outdated carries a 90-day warranty on defective material or workmanship from the date it is put into service. There will be no warranty coverage for operation failures such as control malfunctions, freeze failure and the like. Dometic's Customer Service and Applications departments will be glad to assist with recommendations on the installation, but Dometic will not be responsible for the controls.

MARINE AIR - Pumps, Compressors, Replacement Parts

Product	Sale Type	Warranty Coverage
Pumps	OEM or Dealer Installed with complete system.	1-Year warranty, parts and labor. **Wearable parts such as pump seals, brushes and plastic valves are not covered under warranty.**
	Dealer Installed and Aftermarket sales.	1-Year warranty, parts only. **Wearable parts such as pump seals, brushes and plastic valves are not covered under warranty.**
Compressors	Aftermarket sales	1-Year warranty, parts only
Replacement parts and components	Aftermarket sales	90-Day warranty, parts only

DOMETIC - Air Conditioning Accessories

Product	Sale Type	Warranty Coverage
In-Duct Breathe Easy Air Purifiers	Aftermarket sales	1-Year warranty, parts only **UV bulb is not covered under warranty.**
SmartStart Control	Aftermarket sales	1-Year warranty, parts only

DIAGRAMS

DX AND CW SYSTEMS

Figure 44: Sample Digital Control Wiring Diagram for DX Systems
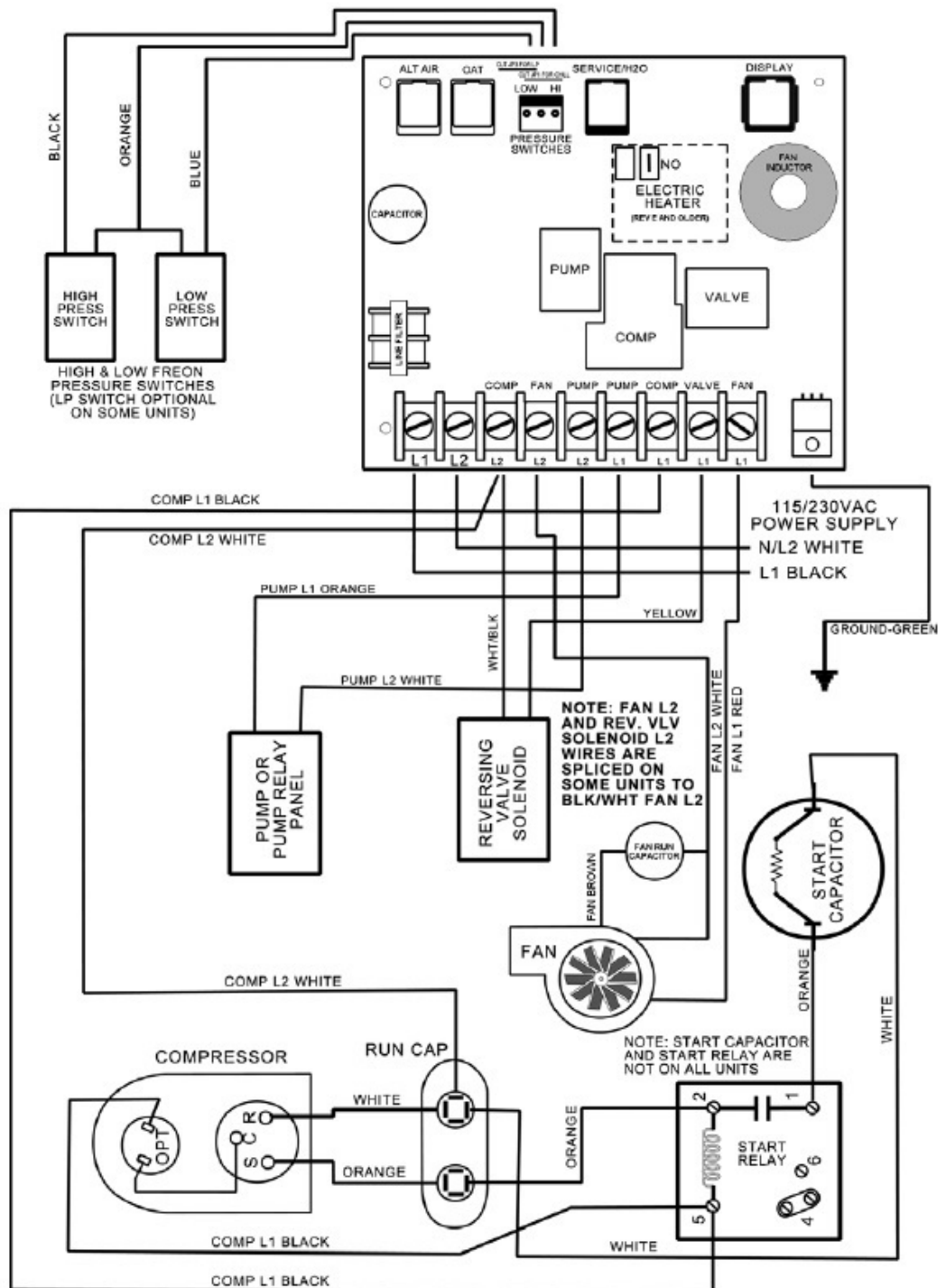
NOTICE
This is a sample diagram. Wire colors may vary. See unit's specific diagram located in electrical box or in air conditioning unit's installation manual. Turn power off before opening electrical box.

CW SYSTEMS

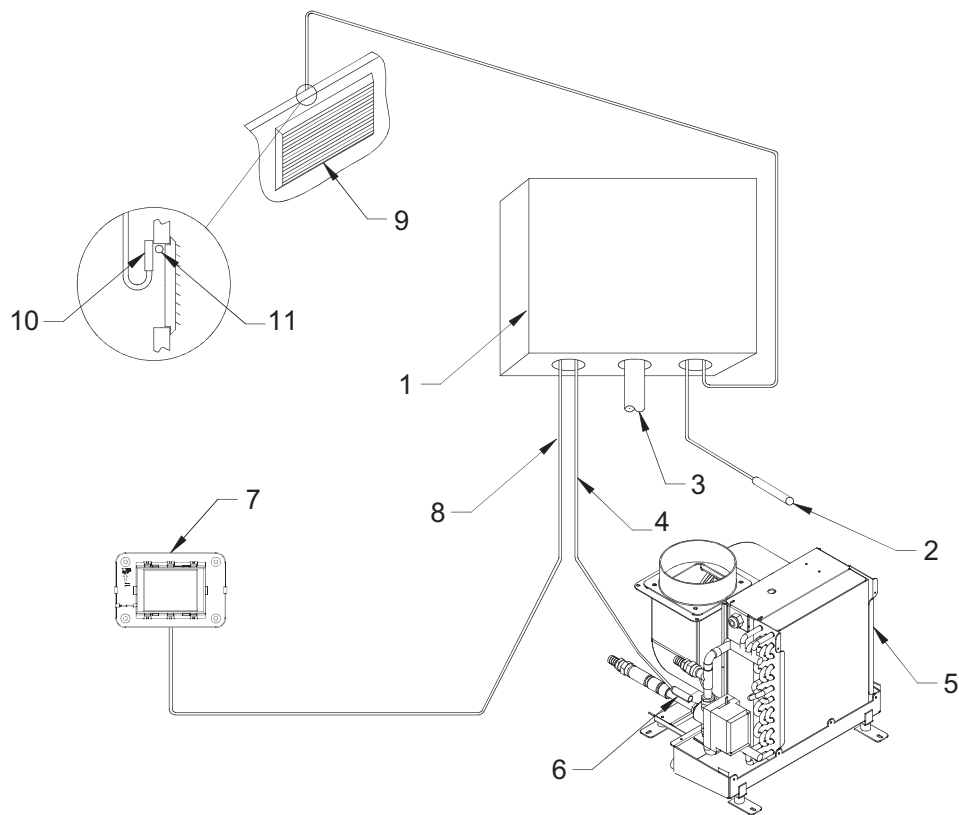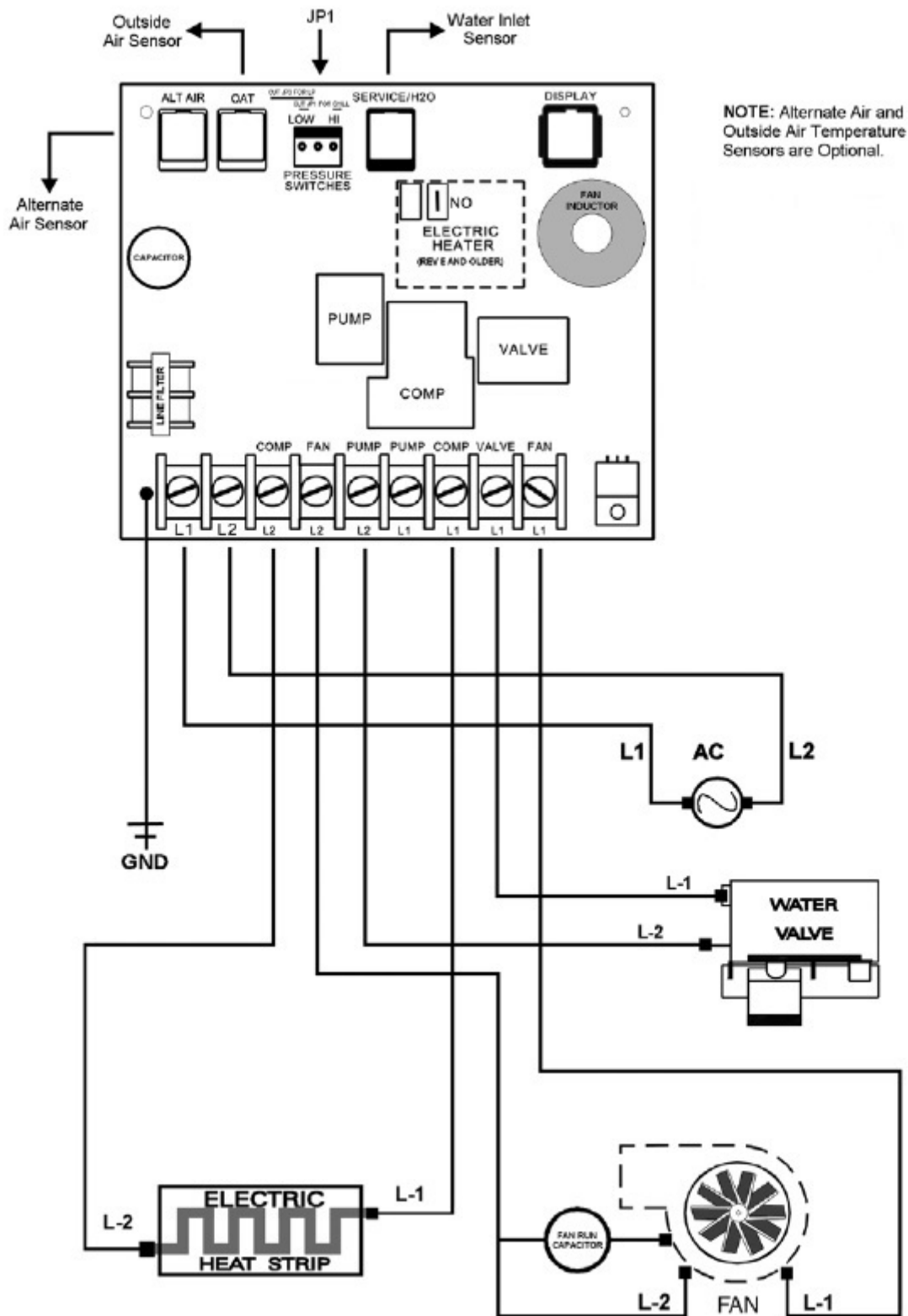**Figure 45: System Layout Example for Chilled Water Applications**

Table 4: Chilled Water Applications Diagram Legend

1	Electrical box	**6**	Water inlet sensor
2	Optional outside air sensor	**7**	Control display panel
3	AC wire harness	**8**	8-conductor shielded display cable
4	6-conductor shielded sensor cable	**9**	Return-air grille
5	Convector assembly	**10, 11**	Optional remote air sensor (your choice of 2 installation locations)

Figure 46: Sample Digital Control Wiring Diagram for CW Systems

Important: Jumper JP1 must be cut with this configuration.

NOTES

NOTES