SMXir Keypad/Display with Remote Control Shown

## Modulating System Controls

Each cooling unit in a modulating system requires its own separate control. There are two control options; the SMX II microprocessor control system or a 3-knob electromechanical switch assembly.

## SMX II Control System

The following components are required for each cooling unit: PLHMX-HV power/logic module, SMXir keypad/display, CXP connection cable, and a TSEP temperature sensor.

The power/logic module includes a 3 ft (.9m) wire harness to connect to the cooling unit junction box. The CXP cable, available in many different lengths, connects the SMXir keypad to the P/L module. The TSEP temperature sensor, also available in different lengths, plugs into the P/L module and the sensor bulb is installed in the return air path of the cooling unit.

The SMXir keypad/display has an attractive, compact housing and includes a mounting plate for easy surface-mount installation. A large, easy-to-read LED display shows cabin temperature, setpoint, programming prompts, and fault code warnings. Small LED's and backlit text indicate system status. Under a decorative hinged door is the familiar SMX 10-button arrangement with clearly labeled keys for single-keystroke operation. An optional infrared remote control is available that allows system adjustments to be made remotely.

Specifically designed for the marine environment, the SMXir features a plastic housing, sealed membrane keypad, and electronics that have an anticorrosion coating. Housings are available in black or white, and with either a 3/4 or full coverage doors.

Normal operation consists of simply turning the system on by pressing the COOL or HEAT buttons and adjusting the desired cabin temperature setpoint. Fan speed is automatically controlled (fan speed decreases as room temperature approaches setpoint) or can be set manually. Note that the modulating system is cooling only, and the cooling unit must have the optional electric heater to provide heat.

Many of the factory settings can be changed to allow the user to fine-tune the system to best match the boat and personal preferences. (See the chart on the back for a list of programmable functions.) A nonvolatile memory retains current operation mode and all programmable settings when power is turned off or lost, such as when changing from generator to dock power.

## 3-Knob Switch Assemblies

Two different switch assemblies are available for modulating systems. The MS5 is for units with electric heat, and the SA1 is for cooling only systems. Both have three rotary knob controls: mode, variable fan speed, and a thermostat. The thermostat has a 10 ft (3m) capillary tube that must be routed to the return airflow of the cooling unit. A 3 ft (.9m) wire harness and color-coded terminal strip is also included.

## SMX II Features

- Works with SMXir Keypad/Display
- Works with SMXir Remote
- Automatic/Manual Fan Speed Control
- Inside Temperature Display
- Auxiliary Heat Control
- Dehumidification (absent) Program
- Nonvolatile Memory
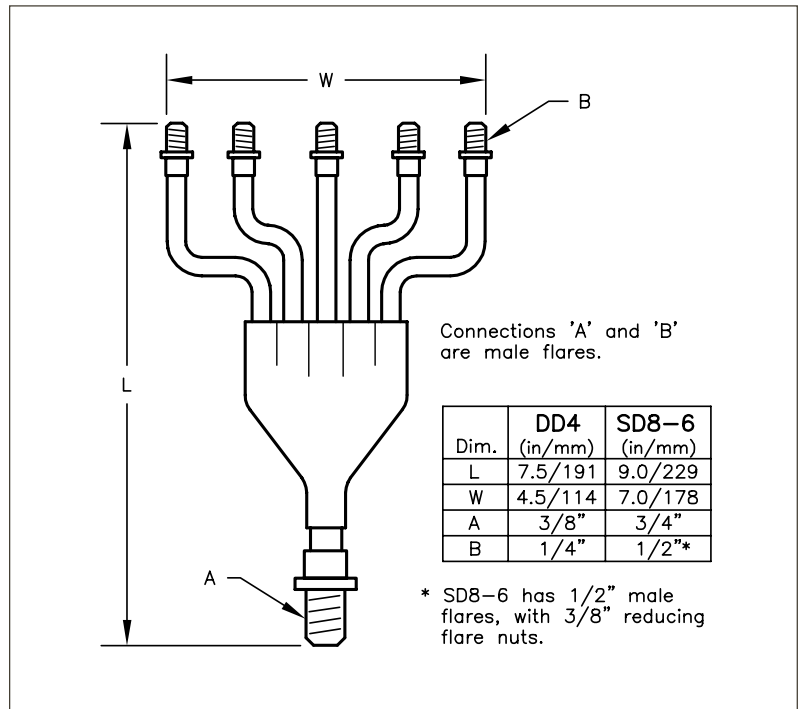- Fault Display
- Brightness Control

## SMX II Programmable Functions

- Factory Memory Reset
- Fahrenheit/Celsius Display
- High Fan Speed Adjustment
- Low Fan Speed Adjustment
- Setpoint Differential
- Fan Response Differential
- Continuous/Intermittent Fan
- Temperature Calibration
- Dehumidification Cycle

### Refrigerant Distributors

Cruisair offers 5-way distributors to split the condensing unit refrigerant lines to multiple cooling units. The use of these distributors can help provide equal refrigerant flow to each unit. To better accomplish this, the distributors should be located so that the tubing running to each cooling unit are close to equal in length. Depending on the installation, the installer may prefer to use multiple "Tee" fittings instead.

The **DD4** discharge distributor has a 3/8" male flare inlet connection, and five 1/4" male flare outlets. The **SD8-6** suction distributor has a 3/4" male flare inlet, with five 1/2" flare outlets. Flare nuts are provided, as are flare sealing caps so if less than five units are connected, the other ports do not need to be used. The flare nuts on the suction distributor are 3/8" reducing nuts, that will allow 3/8" copper tube to be connected to the 1/2" flare fittings. If a 1/2" tube is to be connected, a standard 1/2" flare nut will be required.



Connections 'A' and 'B' are male flares.

| Dim. | DD4 (in/mm) | SD8-6 (in/mm) |
|---|---|---|
| L | 7.5/191 | 9.0/229 |
| W | 4.5/114 | 7.0/178 |
| A | 3/8" | 3/4" |
| B | 1/4" | 1/2"* |

\* SD8-6 has 1/2" male flares, with 3/8" reducing flare nuts.

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