**User's manual – LCD wall pad controller for IZY, UB and BB marine air conditioners**

***1. PREFACE***

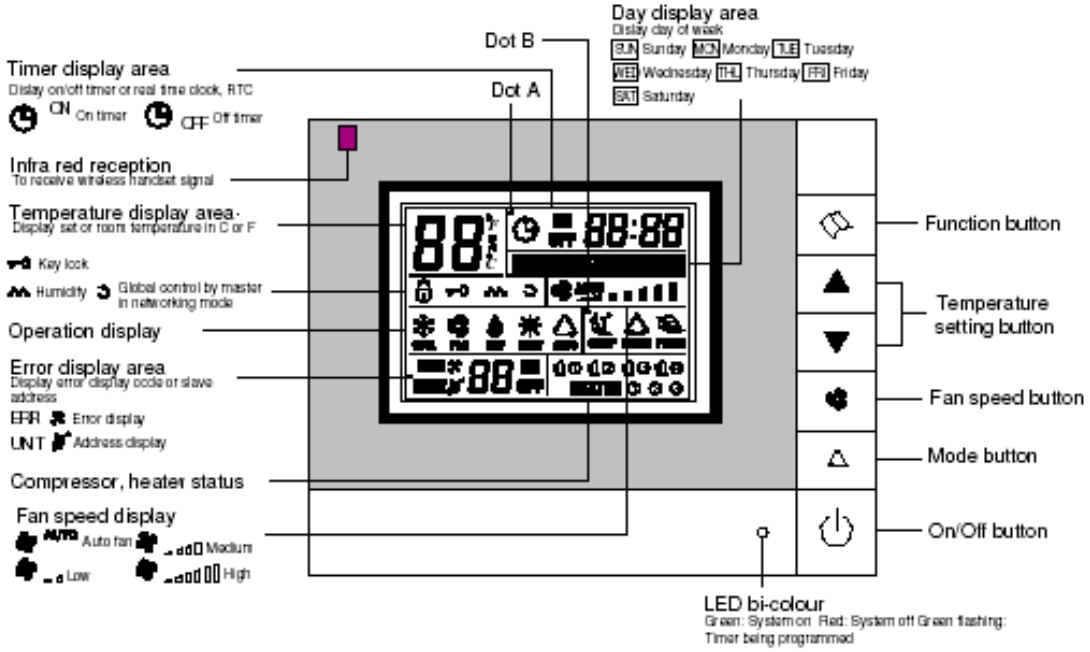
This manual provides useful information on the LCD wall pad remote controller used for Thermowell boat air conditioning units.
Please read carefully this manual before operation and preserve it in a safe place for further consulting.

***2. CONTROL PANEL***

Control panel allows to set all function parameters related to the operation of the air conditioner and particularly:

- Setting operation mode
- Showing set parameters (temperature, fan , etc.)

Control panel shows as follows.




***3. OPERATION INSTRUCTIONS***

3.1. On/Off

- Press  to start or stop the air conditioner.
- LED turns to green colour if system is on and red colour if system is off. If there is timer setting, LED flashes with green colour.

3.2. Temperature setting

- Press  or  to decrease or increase the set temperature. When any of these buttons is pressed, temperature display area will flash with the old temperature setting for 4 seconds. Should there be no further key press it will then return to room temperature display.
- Press  and  together for 5 seconds will change the temperature setting from C to F. Valid temperature set range is 16C~30C or 60F~85F.
- Temperature setting is bypass in Fan mode.

3.3. Mode setting

Press  button to change the operation mode as follow:
Cool → dry → fan → heat → auto cool/heat

3.4. Fan speed setting

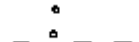
- Press  button to change the fan speed: Auto → Low → Medium → High. Auto fan setting is bypass in Fan mode. Fan speed setting is bypass in dry mode.
- Fan speed setting is not allowed for single speed model.

3.5. Clock and day setting

- Press  key to select function governed by sub-menu dot A and it flashes.

- Press  to change the day setting from Sunday to Saturday.
- Press  or  to change the real time clock [RTC] setting and symbol  lights up. RTC setting can be changed after hold down  or  for 5 seconds.
- Holding down the button will change the setting in a faster speed.
- System will exit this mode automatically 6 seconds after last key press.

3.6. On and off timer setting

- Press  key to activate function governed by sub-menu dot A and it flashes.
- Press  to select either on timer or off timer is currently required to program.
- ON symbol and day of week flashing if on timer is selected.
- OFF symbol and day of week flashing if off timer is selected
- Press  to change the day on or off timer setting required from Sunday to Saturday.
- If on timer for this day is empty, timer display area shows  , otherwise the on or off timer setting will be shown.
- Press  or  button to change the on or off timer setting. Holding down the button will change the setting in a faster speed.
- Press  key to cancel the current on or off timer selected and the timer display area shows  .
-  lights up indicating if there is timer being programmed and the corresponding ON or OFF will also lights up.
- Should there be no further key press, system will exit from on or off timer programming mode 6 seconds later.

3.7. Cancel all timer setting

- In on or off timer programming mode, hold down  and  key for 5 seconds will cancel all the on or off timer being programmed.

3.8. Sleep setting

- Press  key to select function governed by sub-menu dot B and it flashes.
- Press  to activate or deactivate sleep setting. Sleep is bypass in Fan and Dry mode.
- Should there be no further key press, system will exit from this mode 6 seconds later.

3.9. Key lock

- In order to prevent unauthorized access to the system setting, a key lock function is provided to prevent mischief.
- Hold down  and  buttons for 3 seconds to activate the key lock function, key lock symbol  will light up. Repeat the same sequence to cancel key lock function.
- Only  button press is acknowledged.

3.10. Error code display

- Should there be any fault happen with the main board, the relevant error code will be shown on the error display area and symbol ERR  will light up.
- If there is multiple faults happen at the same time, the error code will be shown one after another.
- Depends on the model of main board, the error codes available are:

| COD. | DESCRIPTION | REASON | SOLUTION |
|---|---|---|---|
| **E1** | S1 probe broken or not properly connected (White Room) | • Broken circuit board<br>• False contact on connections<br>• Erroneous electrical connections<br>• Broken probe | • Check electrical connections<br>• Check electrical connections integrity<br>• Replace the probe |
| **E2** | S2 probe broken or not properly connected (Yellow Indoor) | • Erroneous electrical connections<br>• False contact on connections<br>• Broken probe | • Check electrical connections<br>• Check electrical connections integrity<br>• Replace the probe |
| **E3** | S3 probe broken or not properly connected (Red outdoor) | • Erroneous electrical connections<br>• False contact on connections<br>• Broken probe | • Check electrical connections<br>• Check electrical connections integrity<br>• Replace the probe |

| | | | |
|---|---|---|---|
| **E4** | **<u>In cooling mode</u>**:<br>Insufficient refrigerant charge | • Refrigerant gas leakage | • Check refrigerant leaks |
| **E5** | **<u>In cooling mode</u>**:<br>High temperatures on heat exchanger in cupronickel<br><br>**<u>In heating mode</u>**:<br>High temperature electric heater (only models with electrical resistance).<br>High temperature probe heat pumps or overloaded compressor) | Possible causes in cooling mode:<br>• Not working sea water pump. Closed or obstructed sea water circuit: closed valve and obstructed strainers or sea water inlet<br>• Excessive refrigerant charge<br>• Not working pump transformer<br>• Broken temperature probes<br><br>Possible causes in heating or heat pumps mode:<br>• Excessive refrigerant charge<br>• Defective temperature probes<br>• Fan not working or bad working<br>• Dirty air filter<br>• Obstructed outlet air grilles<br>• Fan not at maximum speed | • Replace the pump<br>• Check pump functioning<br>• Check sea water circuit<br>• Clean sea water strainer<br>• Check fan<br>• Clean air filter<br>• Check refrigerant charge<br>• Check pump and transformer electrical connections |
| **E6** | Low pressure failure | • Leakage of refrigerant<br>• Low pressure switch fault<br>• Defective electrical connections<br>• Defective probe | • Check the correct functioning of the low pressure switch<br>• Check for refrigerant leaks |
| **E7** | High pressure failure | Possible causes in cooling mode:<br>• Seawater pump not working<br>• Closed or obstructed sea water circuit: tap closed or filter and sea inlet obstructed<br>• Sea water temperature too high<br>• Excessive refrigerant charge<br>• Pump transformer not working<br>• High pressure switch failure<br>• Defective pressure switch electrical connections<br>• Defective circuit board<br><br>Possible causes in heating or heat pumps mode:<br>• Fan not working or bad working<br>• Obstructed outlet air grilles<br>• Fan not at maximum speed<br>• Excessive refrigerant charge<br>• High pressure switch failure<br>• Defective pressure switch electrical connections<br>• Defective circuit board | • Check pump operation<br>• Check the sea water circuit<br>• Clean the seawater filter<br>• Check refrigerant charge<br>• Check the correct functioning of the high pressure switch<br>• Clean air filter<br>• Check pump transformer<br>• Check connections |

<u>Operation</u>

- When starting in cooling mode:
  Ventilation immediately starts and the compressor operates 3 min later
- When starting in heating or heat pump mode:
  the compressor starts 3 min later and the ventilation starts when certain conditions are reached after the compressor operation in order to avoid cold air release in the ambient.
- In cooling mode, if the probe in battery detects a temperature of <-1, after 10 min the compressor and the pump switche off and the fan continues to work; when the temperature is >-1, the compressor starts again.

3.11. Infra red signal reception

- The system is able to receive the infra-red wireless commands from LCD handset or non LCD handset.

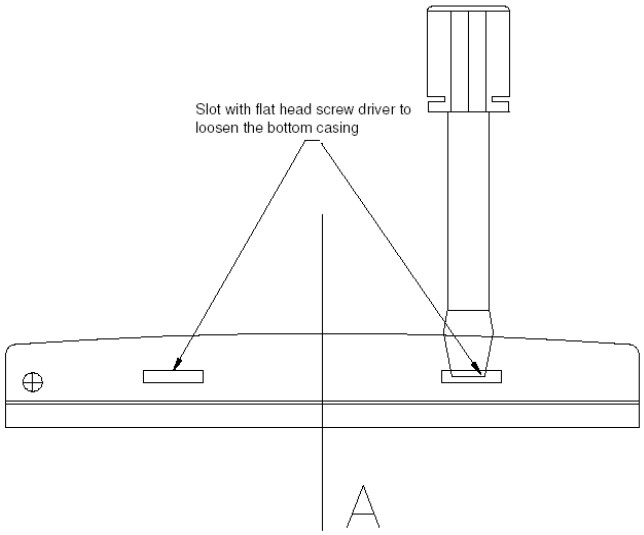
3.12. Buzzer
- Buzzer beeps in responding to valid button press or wireless signal reception.
- It beeps twice when the system is turned on, otherwise beeps once to all other valid acknowledgement

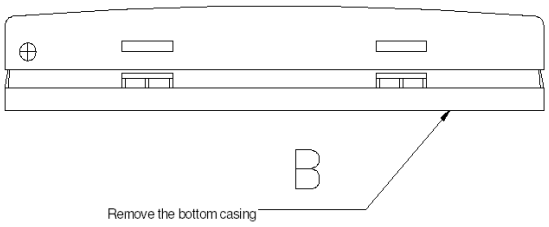
3.13. Backlight
- Back light colour changes according to the operating mode setting.

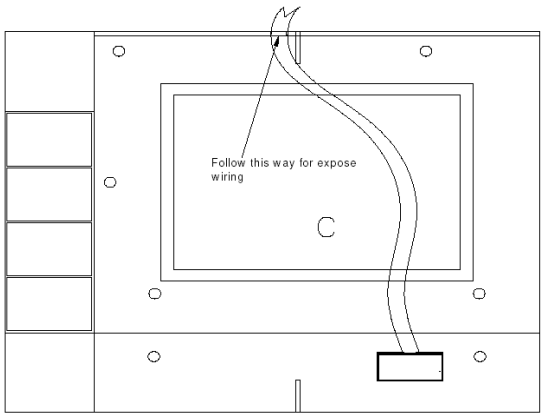
| **Operating Mode** | **Backlight Colour** |
|---|---|
| Cool | Blue |
| Fan | Yellow |
| Dry | Pink |
| Heat | Reddish orange |
| Auto | Light violet |

- The colour will change to red whenever there is system fault. Whenever the fault is cleared, backlight colour will return to original.
- If the unit is on, backlight will turn off 30 seconds after the last button press.
- If the unit is off, any button press will turn on the backlight and the screen display. The backlight will turn off 10 seconds after last button press.

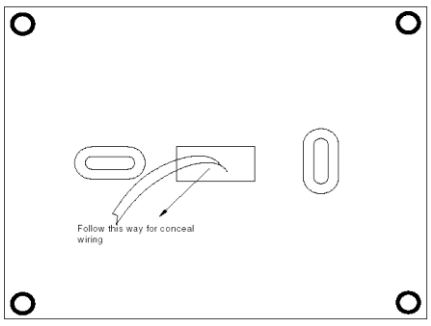
3.14. Battery
A battery is used to sustain the operation of the internal real time clock when the power supply is cut off.
The installation of the battery is shown as follow:




Back

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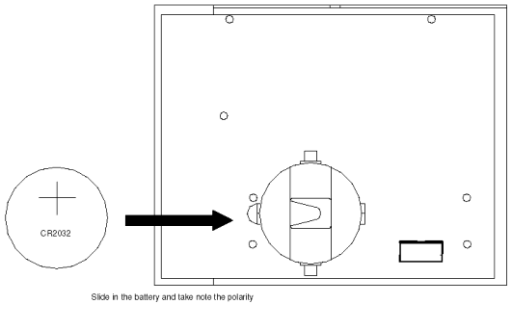


Battery Position