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QUICK INSTALLATION GUIDE

Your Locomarine Mini Marine Computer is equipped with Intelligent Power Supply and it is important to read this instruction before you install your computer.

Before you start…

Please take a moment and read this manual before you install computer in your boat. Often times, rushing into installing the unit can result in serious damage to your computer and probably your boat's electrical system. The Locomarine Mini Marine Computer has several power connections that need to be installed in appropriately. When installing, **always double-check the polarity** of your wires with a voltmeter. **Avoid using the cigarette plug as a power source, often times the contacts are not capable of delivering high current to your PC**.

Power challenges in a marine PC

The 5V Standby Problem

One of most difficult tasks of operating a PC on a boat is power consumption while the computer is OFF. Even when your computer is OFF, it will still consume about 100mA on the 5V rail. All power supplies provide 5VSB (5V standby) so that the motherboard can issue at least a PSON signal. When the computer is in the suspend mode, it will consume even more power, because the RAM needs to be powered at all times. ***No matter how big your battery is, it will eventually drain your battery in a matter of days.*** The Locomarine Intelligent Power Supply is addressing these issues by cutting off the 5VSB rail after a pre-defined amount of time (60 sec). In the same time, Intelligent Power Supply constantly monitors the battery levels. When battery level drops below 11.2V for more than one minute, your computer will shut down and re-activate only when the input voltage is > 12V.

Engine Cranks, under-voltage and over-voltage situations

Another difficult task is maintaining stable 3.3V, 5V, 12V and -12V power to your PC. While boat batteries are rated at 12V, they actually provide voltages in between 7-11V (engine cranks etc.) or as high as 80 volts (load dump). Most of the times, your battery will stay at 13.5V (while engine is running or boat is connected to the shore) but extra precautions need to take place in order to prevent such situations. Locomarine Marine Computer can operate as low as 6V and as high as 24V while providing strict regulation on all rails along with input voltage clamping and reverse protection.

Mode of operation

1. When the power switch is OFF nothing happens. Power supply is waiting for ON signal (power consumption is less than 0.5 mA).
2. When power is ON power supply waits for 2-3 seconds then turns on the 5Vsb rail. After another second, power supply sends an "ON" signal tom motherboard. The motherboard will turn ON and computer should start booting.
3. When the power switch is on your computer will remain ON.
4. When the power switch is OFF power supply waits for 5 seconds and then it turns the motherboard OFF by sending a signal to the motherboard's ON/OFF switch. Your computer should turn off gracefully (standard shutdown procedure).
5. After shutdown, 5VSB will still be provided for another 45 seconds. In the event where the shutdown process is longer than 45 seconds (Operating System gets frozen, etc), power will be shut down hard (HARDOFF), turning off all power rails. During the HARDOFF procedure, the battery levels will be constantly monitored to prevent deep discharge situations.
6. If power switch is turned ON again, power supply will go to step 1.

Mode of operation

Minimum Input Operating voltage: 6V
Maximum input Operating voltage: 24V (clamping will occur at 25-27V)
Deep-Discharge shutdown threshold: 11.2V
Input current limit (fuse protected): 15A
Deep Sleep Current Consumption: < 0.5mA
Storage and operating temperature: -55 to +125 degrees Celsius (storage), -40 to +65C (operating)
MTBF: 150,000 hrs @ 50C, 96,000 hrs @65C

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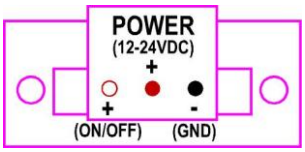
Power input connector

On the backside of your Locomarine Computer, you will find green 3 pin connector with two securing crews. Insert appropriate wires and tight it with screwdriver to avoid possible disconnections.

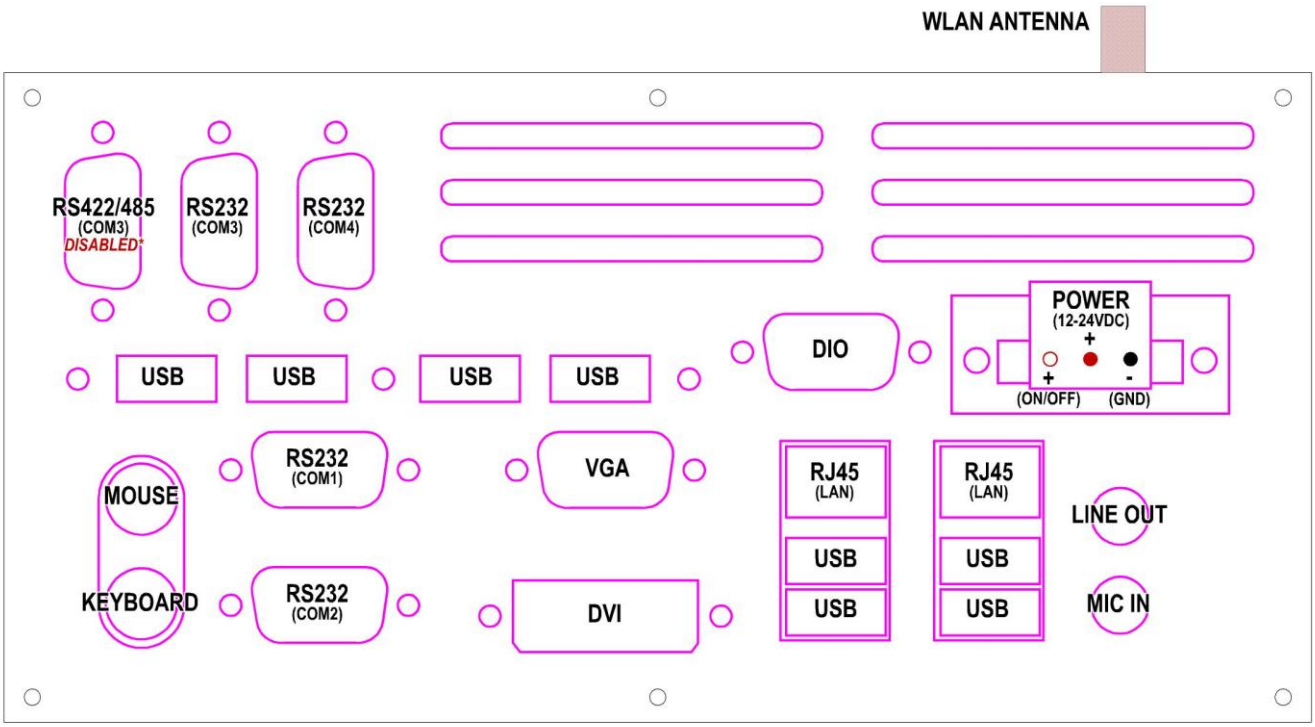


RED (center pin): Battery + (6-24V DC un-switched battery, positive)
WHITE (left pin): Any on/off switch (6-24V DC switched battery, positive. *Can test by connecting it to Battery +*)
BLACK (right pin): Battery - (negative)

Installation

We recommend that you install your computer away from any source of strong magnetic field (like loudspeakers). Locomarine Computer is not waterproof, but is protected with Locomarine NZBN chemical protection. Therefore, we recommend that you install computer on a position inside a vessel with low humidity and normal temperature. Locomarine Mini Marine Computer can be installed in both horizontal and vertical position.

Connection layout



**CAN BE ENABLED ON BOARD WITH JUMPER*
PLEASE REFER TO PDF MANUAL