



2010 ELECTRONIC MONITORING PROGRAM GHLCMP OPERATING SPECIFICATIONS

This document provides the minimum operating specifications and vessel preparations required to have a properly operating Electronic Monitoring (EM) system on your vessel.

Our technicians will work with you to meet these requirements; however, our staff are specifically instructed **not** to make vessel modifications. This includes tasks such as drilling holes for wiring, dismantling hydraulics, and tapping into electrical power sources other than an existing circuit set up specifically for an EM system.

If you have questions or concerns please contact us at 1-888-383-4535.

1. POWER

Minimum Power Requirements:

The minimum power requirements listed below must be in place on your vessel to enable you to achieve 100% data collection as required by your license conditions.

Archipelago may not provide service for an EM system on a vessel that does not meet these minimum requirements. Archipelago will not take responsibility for the proper operation of this equipment unless these power requirements are met.

- Sufficient power must be continuously supplied (**24hr/day**) to the EM system from haul out to data retrieval.
- Minimum 10 amps at 12.0 to 16.0 volts DC delivered through appropriate wire gauge and clean connections. We recommend operating the system on 12-volt power whenever possible.
- Minimum 600 watts at 115 volts AC, 60 cycle (inverter). To ensure AC power stability, generator supplied power must be conditioned by an Uninterruptible Power Supply (UPS).
- Power must be delivered through a 20-amp fused or breaker equipped circuit.
- **In no case should the engine starting battery supply the EM system power.**
- In DC or inverter based EM power delivery, with the engine running, the alternator charging output must be sufficient to keep the EM system battery fully charged, under continuous EM system operation, at all vessel speeds and under all vessel electrical loads.

12-volt hook-up specifications:

- **The wiring must have a 20-amp fuse at the power bus connection.** It is important to have power wires fused as close to the battery as possible so if there

is a short circuit anywhere in the wiring the fuse will blow. This minimizes the chance of melting or fire due to a short circuit.

- **The minimum wire gauge for 12-volt power is 14 AWG.**
- The wiring supplied must meet the minimum standards listed below:

12-VOLT WIRING SPECIFICATIONS

Wire Gauge	Distance to Power Source (Maximum Cable Length)
14 AWG	20 ft. (6.1 meters)
12 AWG	31 ft. (9.7 meters)

Safety Recommendation:

- Vessels should have an auxiliary 12-volt power source that is electrically isolated from the engine starting battery. The auxiliary battery (or battery bank) should be a quality component, deep cycle, rated to at least 60 Amp-Hours.
- A battery isolator should be installed between the engine alternator, the starting battery and the auxiliary battery. The isolator allows a single output alternator to separately charge the two batteries with priority on the engine starting battery.
- The vessel alternator must be of sufficient output to handle the charging requirements for the two batteries. This type of 12- volt power delivery will ensure that the vessel engine and charging system can always be started.

Power Draw:

- The amperage requirements at 12 volts DC range from 6 + amps during fishing (longline hauling) operations to less than 3 amps when not fishing and only 20 milliamps during sleep cycles.
- When operated on 12-volt power the EM system utilizes a "smart" power supply that puts the system to "sleep" when the engine is off and the battery voltage has dropped below charging level. The power supply will "awaken" the EM system when the engine restarts and the battery is back to charging voltage.
- To protect the vessel battery the power supply also has an 11-volt "dead battery" mode that shuts the system down completely until the battery returns to charging level. The power supply is also equipped with a WatchDog circuit that will re-boot the EM system to clear a system lock-up.

2. CONTROL BOX

- Choose a cool, clean, well-ventilated, dry location inside the vessel cabin; consider proximity to the power source, routing requirements for sensor wires and ease of service.
- The EM system control box houses computer circuitry.

- It measures 8” by 8” by 13” (width/height/depth).

3. WIRES

- Several wires connect the control box to the components on deck.
- Come up with a plan for wire routing between the control box and the components listed below.
- Make a minimum 1-inch watertight hole (e.g. gooseneck fitting) to pass wires from outside to inside the cabin.
- Wire runs should be made in locations that protect them from damage and where they present neither a trip nor handhold hazard.
- Whenever wire runs are vulnerable to damage they should be run through appropriate conduit.

4. GPS

- The EM system includes a dedicated GPS receiver that collects positional information.
- To minimize the chance of interference, choose a location on the cabin top or mast 6 feet from other electronics (e.g., vessel GPS, broadcast antennae, radar etc.).
- Ideally, the GPS should be installed on a different plane than all other electronics.

5. DRUM SENSOR

- The EM system includes a rotation or drum sensor to help determine fishing activity.
- Choose a location on the winch frame where the sensor will stay free from damage, keeping in mind the safe routing of wires.

6. HYDRAULIC SENSOR

- The EM system includes an electronic hydraulic pressure transducer to help determine fishing activity.
- Determine the supply (high pressure) side of the hydraulic system to provide access for sensor.
- The vessel operator is responsible for supplying and installing the hydraulic fittings necessary to accommodate the pressure transducer.
- Access to the pressure line must be through a ¼” **National Pipe Thread (NPT) female gauge port**; use an existing gauge port or attach a “T” fitting to the hydraulic line in a location free from damage by fishing deck activities (e.g., engine room, hydraulic manifold at cabin wall). Close the fitting with a ¼” NPT plug until the sensor is available for install.

7. CAMERAS

- Typically, a two-camera system is used with cameras mounted to cover all catch and discard areas

- Confirm with our Technicians that you have appropriate camera mounting locations to view all catch
- If you do not have natural mountings locations you may need to fabricate requirements.
- The stabilizer poles must be lowered during all fishing to provide the cameras with an appropriate view. Image recording is activated only during setting and hauling.
- The stabilizers have to be lowered at dockside during the install process to allow for final adjustment of camera aim and focus.
- If you plan to fish at night the minimum lighting requirement ensure the deck, stern ramp and aft of the vessel are well illuminated.
- Ensure the lens domes of the cameras are cleaned with a clean, wet, soft cloth as necessary to ensure the views are useable.

8. KEYBOARD AND MONITOR

- Both a keyboard and monitor are required to interface with the EM system.
- A keyboard and monitor allows you to monitor the functionality of the EM system while you are fishing, but also allows you to run your own independent Function Test.
- If you do have an EM system problem at sea the monitor and keyboard will help you to troubleshoot and solve problems.

9. RECOMENDATIONS

- Inspect the entire EM system periodically to ensure that all components are securely mounted and free from damage.
- Before leaving port the operator must ensure that the system is powered and fully operational by running a Functionality Test.
- While actively fishing, frequently monitor the system via the video monitor. Refer to the plasticized “Quick Reference Guide” for details on what should be visible on the monitor to indicate a properly operating system.
- It is also highly recommended that the operator run a system function test on a daily basis. Each time a function test is run the system creates a permanent record in the data with the details of the test, including clips of the video imagery captured during the test. This is an excellent way to ensure yourself that the system is operational and to show due diligence in monitoring the operation of the system. The “Quick Reference Guide” also documents how to run this function test.