

Monitoring: Marine

Marine vessels use engines and generators for propulsion and power generation. Monico has standard configurations for the most common marine applications, but can monitor a variety of protocols and auxiliary equipment as well.

While Caterpillar® is the leading supplier of main propulsion, gensets, and auxiliary engines for tugboats, crew boats, offshore supply boats, anchor handling boats and research vessels, there is a large number of additional manufacturers in the market. The Monico CDL Gateway® is compatible with CAT®'s older ADEM II ECM's, the more common ADEM III ECM's and the newer ADEM IV ECM's used in the newer C-series engines. The vast majority of these engines installed or refitted are electronic with the exception of the 3600 series of diesel propulsion engines. These engines were only converted to electronic controls in early 2008 with the introduction of the C280 series. Our J1939 Gateway™ is widely used to monitor other manufacturers, such as MTU, that comply with the J1939 Standard.

The Monico Gateway is used extensively in the marine markets with heavy installed base on offshore crew and supply boats. Most of the generators are controlled by Woodward controllers, so they do not have EMCP style GSCs. Genset data is brought in via the dedicated port, which leaves (2) RS-232 ports, (1) RS-485 port, and (1) Ethernet port for gathering data from other system components such as switchgear or Woodward controllers. Each serial port can communicate via one protocol independently, either master or slave. The Ethernet port can communicate via four protocols simultaneously.

In marine communication applications, grounding is particularly important. In most cases, the negative of the engine battery is grounded to the hull which is effective. However, there are times when ship builders choose to isolate the engines from the hull, which causes communications issues. In these cases, we use an isolated repeater to isolate our Gateways from the engine and reduce the chance of ground loops. An added benefit of the isolated repeater is the ability to remotely mount the Gateway up to several thousand feet from the engine. Monico commonly installs color touch screen HMI's in the wheelhouse for a single common engine monitoring interface which provides space efficiency in crowded environments.

Most of these types of vessels have automated control systems with PLC's. So, the Gateway acts as a data concentrator for engines, generators, thrusters, auxiliary engines, switchgear and other controllers. We then provide usable data to the PLC-based control/alarm system and for display on the HMI's in the wheel house. Our Gateways are compatible with Siemens, GE Fanuc, Allen Bradley, and Omron PLCs without need for additional modules or drivers. HMIS are also used as a stand-alone display system.

If a PLC-based control/alarm system does not exist, then a Gateway PLUS and HMI can be used to provide a stand-alone monitoring system.