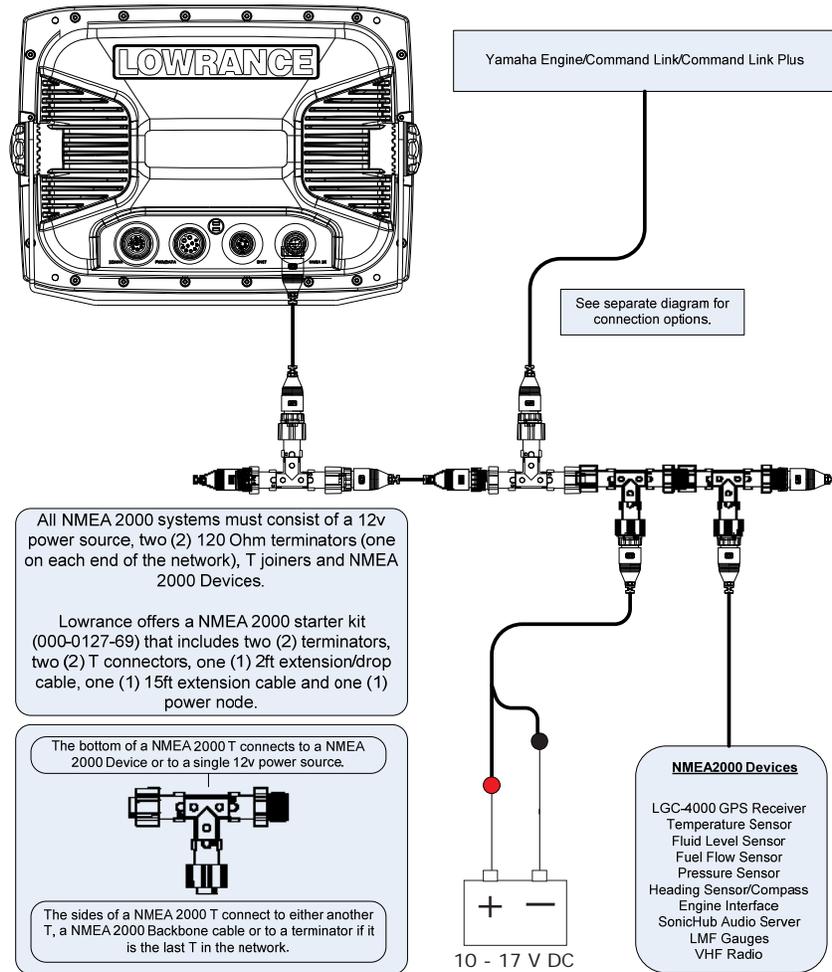# Yamaha Engine NMEA2000 Connection

Many Yamaha outboard engines have the ability to output engine data to a NMEA 2000 network. This output from the engine can be displayed on a NMEA 2000 compatible Navico Multi-Function Display such as the Lowrance HDS, Lowrance LMF-200 and 400 gauges, the Simrad NSS/NSE/NSO or the B&G Zeus. The vessel must be equipped with and existing or new NMEA 2000 network as pictured below.

Yamaha Engine/Command Link/Command Link Plus

See separate diagram for connection options.

All NMEA 2000 systems must consist of a 12v power source, two (2) 120 Ohm terminators (one on each end of the network), T joiners and NMEA 2000 Devices.

Lowrance offers a NMEA 2000 starter kit (000-0127-69) that includes two (2) terminators, two (2) T connectors, one (1) 2ft extension/drop cable, one (1) 15ft extension cable and one (1) power node.

The bottom of a NMEA 2000 T connects to a NMEA 2000 Device or to a single 12v power source.

The sides of a NMEA 2000 T connect to either another T, a NMEA 2000 Backbone cable or to a terminator if it is the last T in the network.

10 - 17 V DC

NMEA2000 Devices

LGC-4000 GPS Receiver
Temperature Sensor
Fluid Level Sensor
Fuel Flow Sensor
Pressure Sensor
Heading Sensor/Compass
Engine Interface
SonicHub Audio Server
LMF Gauges
VHF Radio

Yamaha	4-stroke 50-250†	2-stroke HDPI 150-350††	Command Link Plus Systems
RPM	✔	✔	✔
Alternator Voltage	✔	✔	✔
Engine Hours	✔	✔	✔
Engine Temperature*	✔	✔	✔
Fuel Pressure	✔	✔	
Fuel Rate	✔	✔	✔
Oil Pressure	✔	✔	✔
Trim *	✔	✔	✔
Water Pressure	✔	✔	✔
Warnings			✔
Boat Speed			✔
Water Depth			✔
Surface Water Temperature			✔

* 2006 and newer models. Digital trim must be connected by a Yamaha dealer. †F50, T50, F60, T60, F75,F90, F115, LF115, F150, LF150, F200, LF200, F225, F225, F250, LF250.
††Z150, LZ150, VZ150, Z175, Z200, LZ200, VZ225, Z250, LZ250, VZ250, Z300, LZ300, VZ300.

Engine Connections: No Command Link

Connect to the 4-pin factory harness located under the engine cowling using the Navico (000-0120-37) engine interface cable. See your Yamaha dealer for exact engine connector location.

1) 000-0120-37 Adapter.   2) Adapter installed in cowling.   3) Yamaha 4-pin connector.   4) Completed connection.

Connecting to an Engine without Command-Link

If the Yamaha engine which is being connected to the NMEA 2000 network is not already connected to the Yamaha Command-Link system, then the Yamaha Engine Interface cable connects directly to the NMEA 2000 connector under the engine's cowling. The NMEA 2000 connector is located on the starboard side of the engine near the bottom of the cowling. It is a white, 4-pin connector, with only two wires connected, blue and white. This connector might have a water-proof plug installed from the factory, if so the plug must be removed before the Yamaha Engine Interface can be installed. Once this connection is made connect the Micro-C connector to the vessels NMEA2000 network as shown in the system diagram on page 1 of this document.
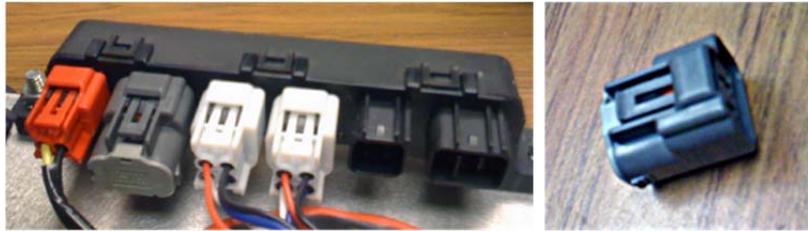
Engine Connections: Command Link

Connect to the Command Link bus using the Yamaha Command Link Gateway (MAR-GTWAY-ML-09).

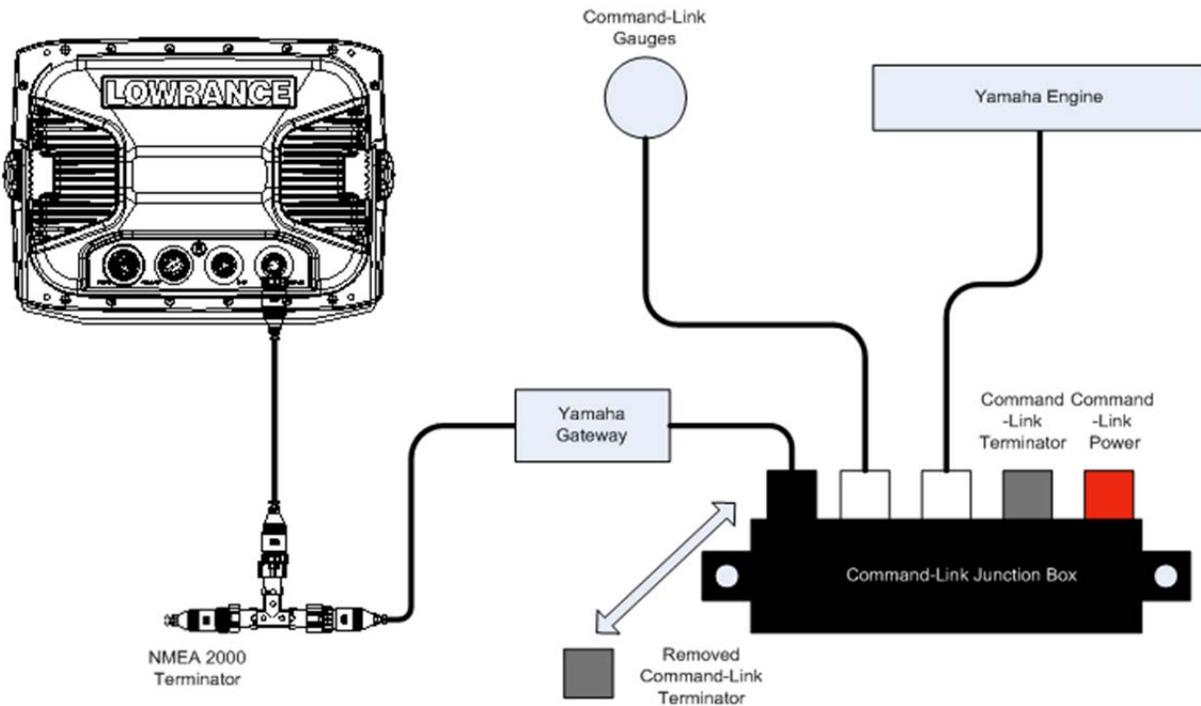1) MAR-GTWAY-ML-09   2)Yamaha Command-Link junction box (back).

3) Yamaha Command-Link junction box (front).   4) Command-Link terminator removed.

Connecting to an Engine with Command-Link

Yamaha's Command-Link is an engine and gauge network system based on NMEA 2000. This system connects to the engine through the same NMEA 2000 connector under the cowling as shown above. The Command-Link system does not use discrete T connectors, but large junction boxes in order to connected devices.

To connect Navico NMEA 2000 devices to a Yamaha Command-Link System, the Yamaha Engine Gateway Cable, (MAR-GTWAY-ML-09) pictured above, will be used to extend the backbone of the network by changing it from the Yamaha connector system to the standard NMEA 2000 connector system. The Command-Link terminator must be removed from the junction box that will be used to connect the Yamaha Engine Interface Gateway and an NMEA 2000 terminator (female) will be used to terminate the end of the NMEA 2000 network, as shown below.

Command-Link Gauges

Yamaha Engine

Command -Link Terminator

Command -Link Power

Yamaha Gateway

Command-Link Junction Box

NMEA 2000 Terminator

Removed Command-Link Terminator

Engine Connections: Command Link Plus

Connect to the Command-Link Plus network using the 6-pin Command-Link Plus Gateway cable MAR-GTWAY-KT-00.
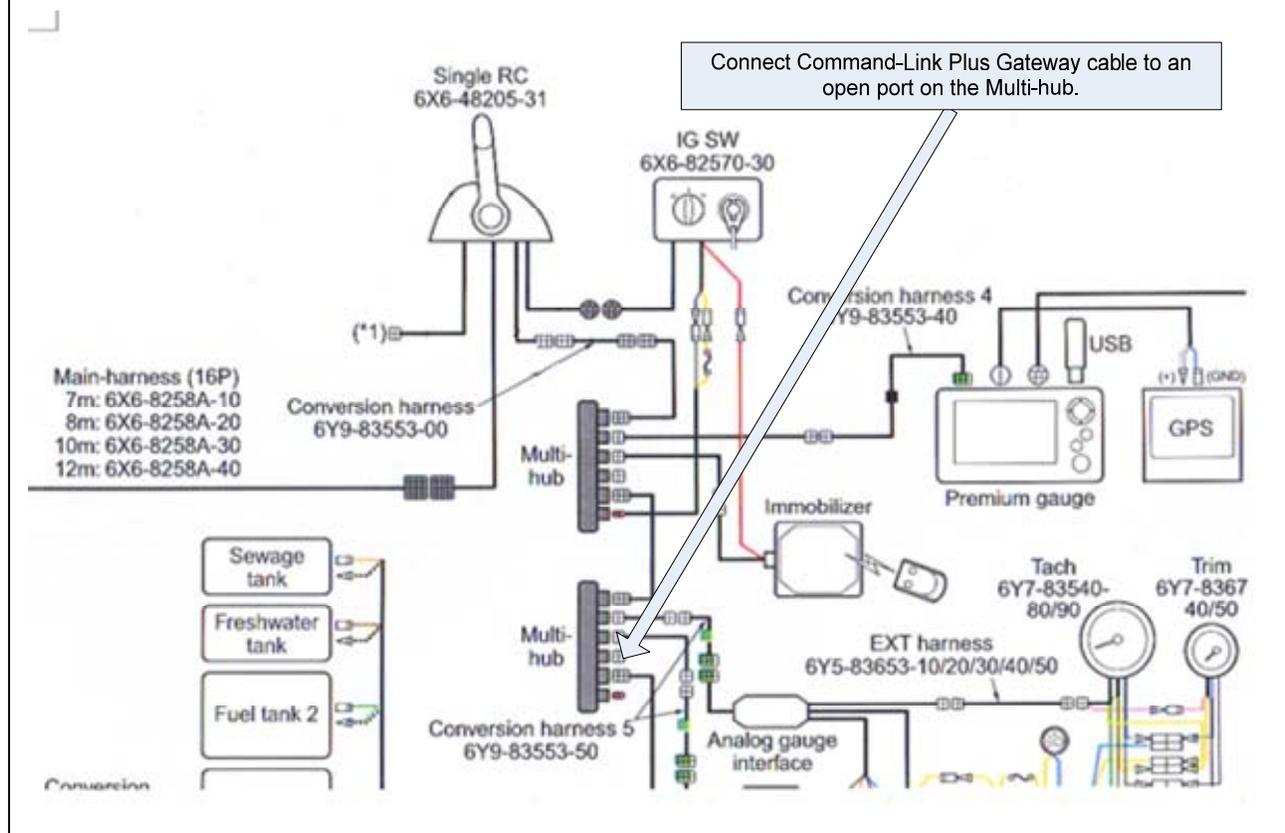

Command-Link Plus Gateway MAR-GTWAY-KT-00

Yamaha Command Link Plus

Yamaha introduced the Command Link Plus system in 2009 with their new 4.2L F225/250/300 "Offshore" series of motors and the redesigned 5.3L F350 motor.

Although the original Command Link System in natively compatible with NMEA 2000, the Command Link Plus System is not. To connect the Command Link Plus system to a NMEA 2000 network, the Yamaha Command Link Plus Gateway must be used. The Yamaha Command Link Plus Gateway is not the same as the Yamaha Command Link Gateway. The Command Link Plus Gateway is also only available from Yamaha, Yamaha part number MAR-GTWAY-KT-00. The Command Link Plus Gateway has a 6-pin Yamaha connector and the standard NMEA 2000 style connector.

If both the Command Link Plus and Command Link buses are utilized it is important to note that the two buses should **never be connected** to each other. This could result in damage to the Yamaha system.

Connection locations for Command-Link Plus.

Connect Command-Link Plus Gateway cable to an open port on the Multi-hub.

Digital Trim Connection

If the Yamaha engine was previously connected to an analog trim gauge, the trim information output by the engine onto the NMEA 2000 network will be inaccurate. To enable accurate Trim Data onto the NMEA 2000 network, an additional connection must be made under the cowling.
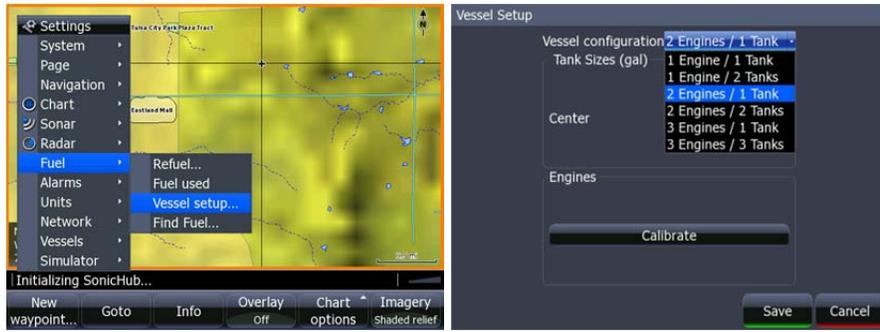
There are two single-wire connectors under the cowling, near the NMEA 2000 connector, that must be connected together to allow accurate NMEA 2000 trim information to be transmitted from the engine. Both connectors have a pink wire. See your Yamaha dealer for exact location.

MFD Setup

After the physical connections have been made the user can now setup the unit to display the engine data.

On HDS perform the following steps:
  1) Vessel Setup: Press the Menu key twice to access the system menu, select the Fuel menu then Vessel Setup…and press Enter.
     a. Change the Vessel Setup to match the Engine/Tank configuration of the vessel.

      i.

b. Set the Tank Size.

      i.

c. Select Save to retain these settings.

2) With the Engine powered on Confirm that it shows up in the NMEA 2000 device list.

a. Press the Menu key twice to access the system menu, select the Network menu then Device List and press Enter.

i. You should now see your engine listed along with any other NMEA 2000 devices that are connected to your network.

      1.

b. From the Device List you can highlight the Engine and press enter to see and the Data that is available from the Engine.

i. Scroll to the Data tab and press Enter.

3) Confirm that the data sources are set for the Engine.

a. Press the Menu key twice to access the system menu, select the Network menu then Data Sources and press Enter.

i. From here select Engine and press Enter.

ii. Auto Configure the Network. In most cases this will set the data sources to the correct location.

*If the engine instances are not set by Yamaha you will need to use Yamaha Command Link gauges to set them or have a Yamaha dealer set them.

1. You may also manually select the engine you wish to set (Port/Center/Starboard) and press Enter.
2. From here you can manually set the data source for all engine related information.

a.

   Data Source Selection

   GPS
   Vessel
   Sonar
   Weather
   Time
   Engine
      Center
         Fuel Pressure (Global)
         RPM (Global)
               Yamaha Engine [1190174.0] (Center)
         Trim (Global)
         Alternator (Global)
         Fuel Rate (Global)

   RPM   3450 rpm

   Select | Configure device | Rename | New | Close

4) Now Data overlays and the Info gauge screen can be set up.

   a. Reference the manual for your MFD to set overlays and edit the gauge screen.