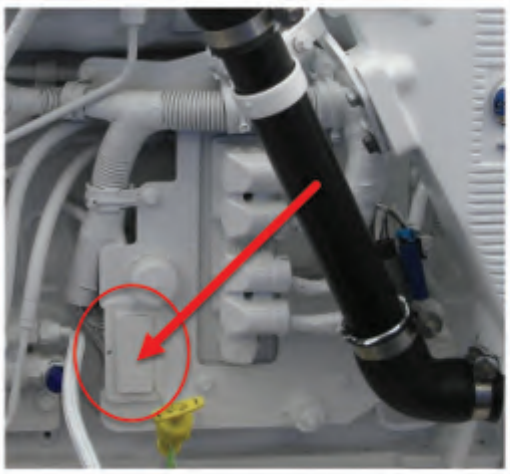
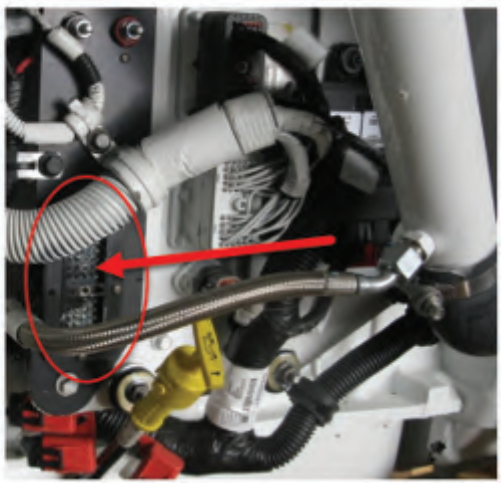
SMX SeaView J1939 Digital Display Kit

Thank you for purchasing the SMX SeaView Digital Display Kit from Seaboard Marine Inc. All of the contents included will allow you to fully monitor your engine parameters, faults, and external inputs in one compact digital screen. The complete system is comprised of a digital screen, engine to dash harnessing, and sometimes optionally available external input kits (i.e. Transmission, EGT, NMEA 2000).

Also included with your kit will be a small USB data drive that will be pre-loaded with your specific engine configuration parameters. If needed, you can load this configuration tool into the back of the display port to set the display back to it's original settings.





Engine Connection:

Connect the 40-pin end of the medusa harness to the engine vessel interface connection using a 4mm allen wrench.

SMX "Medusa" SmartCraft v2.X Engine Side Harness

SMX "Medusa" SmartCraft v1.0 Engine Side Harness

SMX Display Harness

Harness & Display Connections

Connect the medusa harness to the extension harness, at the dash connect the display harness and digital screen to the respective 12-pin connectors. Install the 3-pos key switch and you are ready to test the setup.

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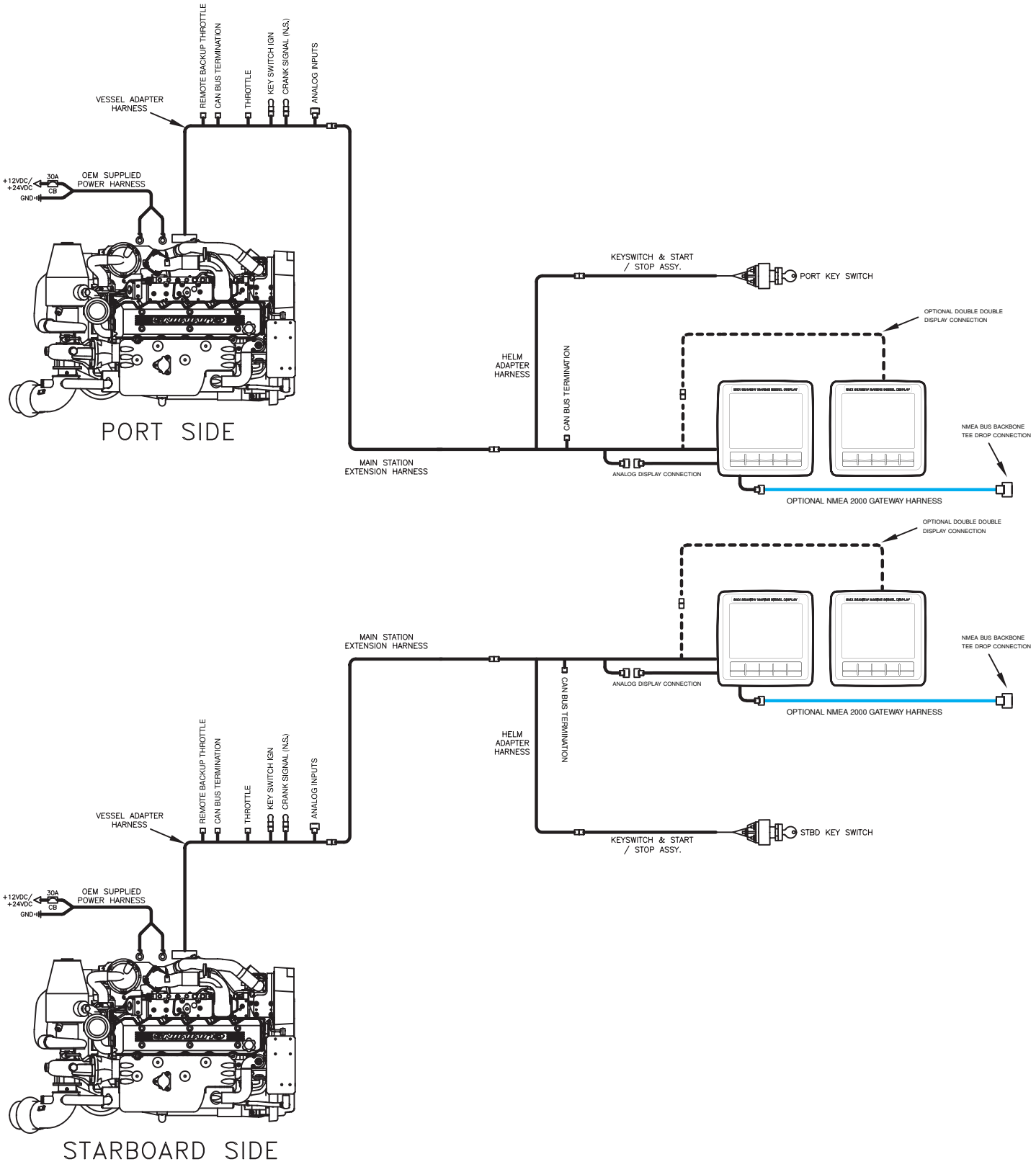
SMX System Architecture Overview
Dual Engine, Single Station Configuration



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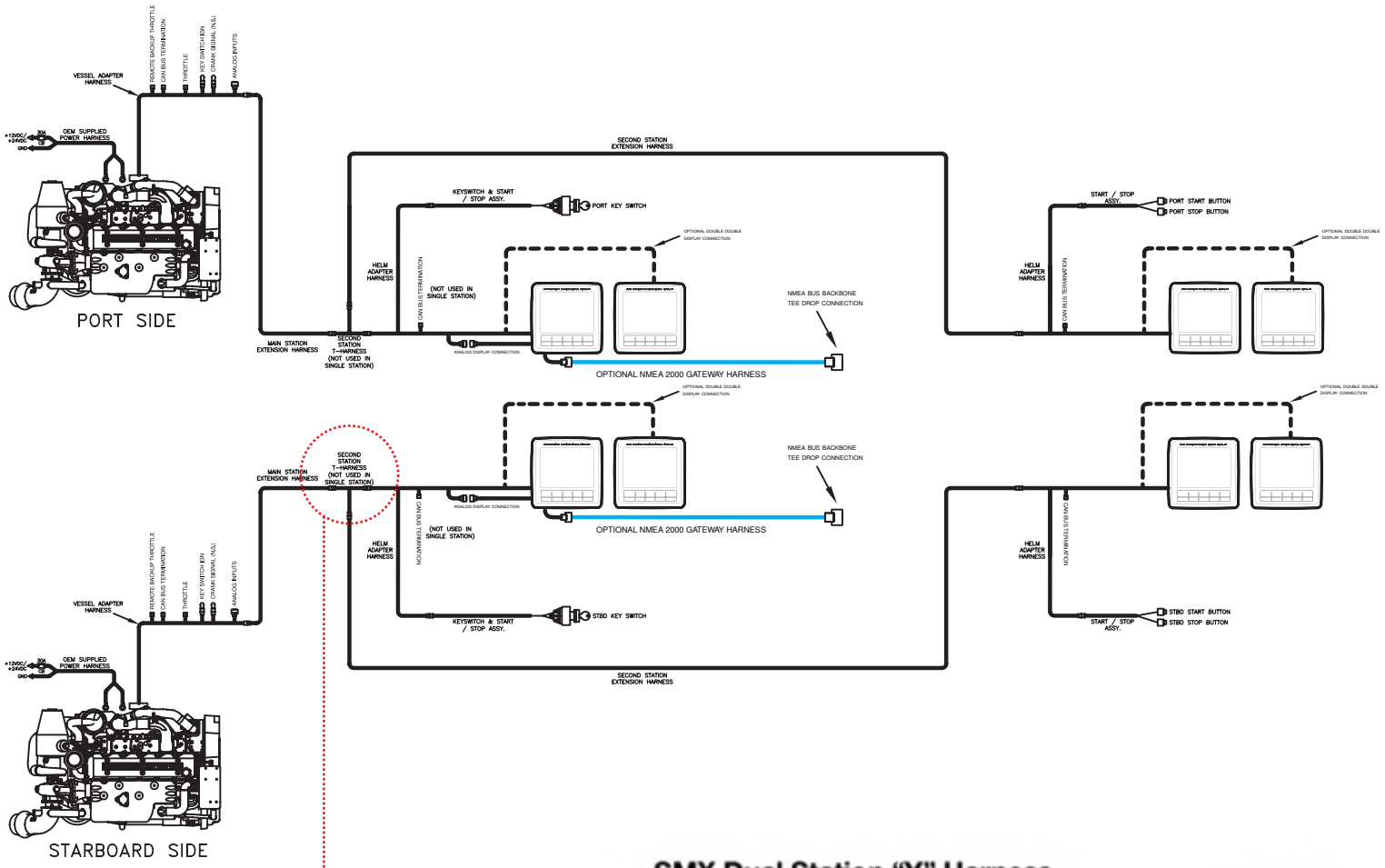
SMX System Architecture Overview
Dual Engine, Dual Station Configuration w/ Start/Stop at Upper Station



SMX Dual Station "Y" Harness

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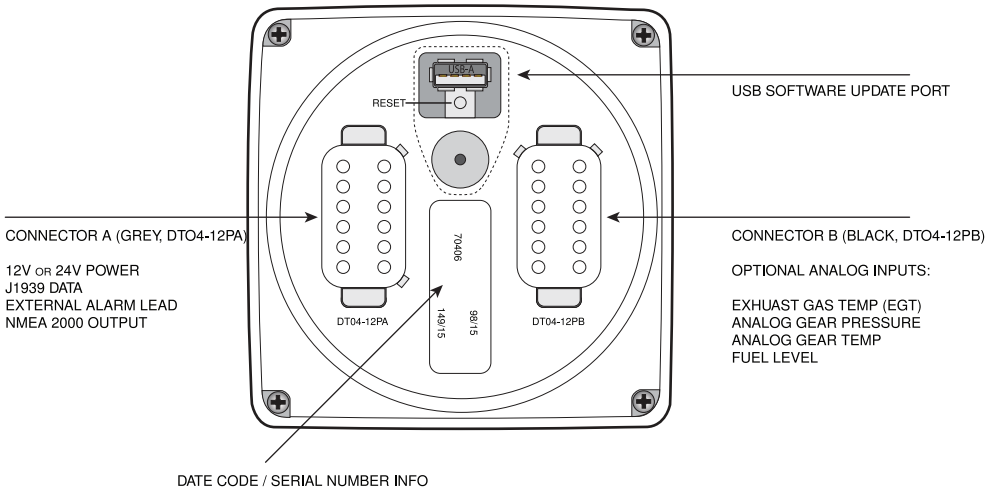
Getting to know the hardware (cont.):

Figure 1: SMX SeaView Console

Display Components



Setting up and managing kit options:

Transmission Add-ons (Gear Pressure / Gear Temperature):

Both gear pressure and temp add-ons are available. If you have selected one or both of these options, a compatible sending unit will be provided with the kit. Gear pressure is already part of the Cummins factory harnessing and uses the WHITE wire so no wiring will be provided. If gear TEMP has been selected, then a small 2-wire harness will be provided that will connect to the 2-pin factory harness on the ENGINE side (where the extension harness connects to the on-engine harness). Either sending unit will be FLOATING GROUND which means one terminal goes to battery NEG and the other is used for SIGNAL, the senders are NOT polarity sensitive.

NOTE: Do NOT ground the sending unit(s) to the engine block. Ground senders to the harness ground or direct to BAT (-).

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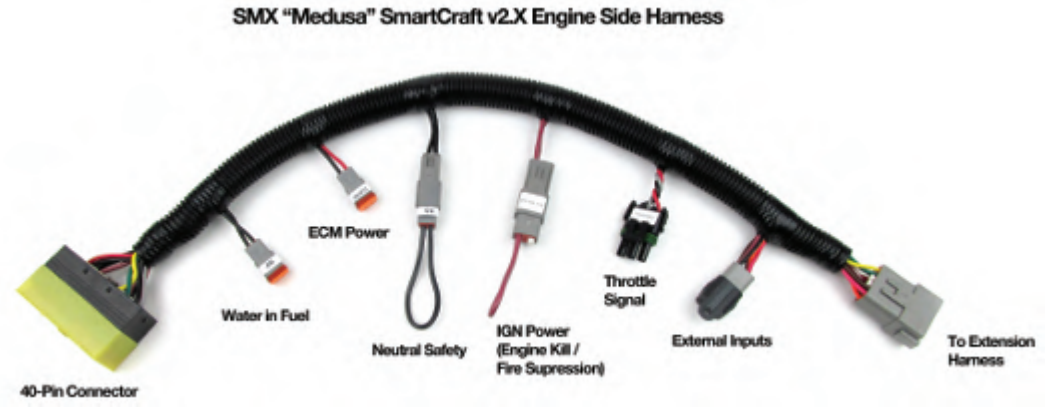
Understanding the Vessel Interface Harnessing

The most important harness from the kit will be the main “Medusa” harness that interfaces the engine. This harness serves multiple functions and is described in detail below:

40-Pin Connection: This connects to the engine VESSEL INTERFACE using a 4mm allen.
Backup Throttle: This connector is terminated to prevent alarms. If a backup throttle is used, connect it here.
J1939 Termination: This is the J1939 physical data bus terminator and must remain connected.
Throttle Signal: Connect the 3-pin throttle (ETC) input device here (i.e. ETC Manual Lever, Glendinning, ZF Mathers, etc.)
IGN Power: Removing power from this circuit will cause the engine to STOP. Typically used for Fireboy or Glendinning Enable.
Neutral Safety: Connect a neutral safety circuit here to interupt ENGINE START/CRANK.
External Inputs: If optional external inputs are ordered with your system, they will connect here.



40-Pin Connection: This connects to the engine VESSEL INTERFACE using a 4mm allen.
ECM Power: Connect the provided ECM power harness DIRECT to the engine start battery (No switches or breakers in-line).
Water in Fuel: Connect the 2-pin water-in-fuel alarm circuit harness here.
Neutral Safety: Connect a neutral safety circuit here to interupt ENGINE START/CRANK.
IGN Power: Removing power from this circuit will cause the engine to STOP. Typically used for Fireboy or Glendinning Enable.
Throttle Signal: Connect the 3-pin throttle (ETC) input device here (i.e. ETC Manual Lever, Glendinning, ZF Mathers, etc.)
External Inputs: If optional external inputs are ordered with your system, they will connect here.

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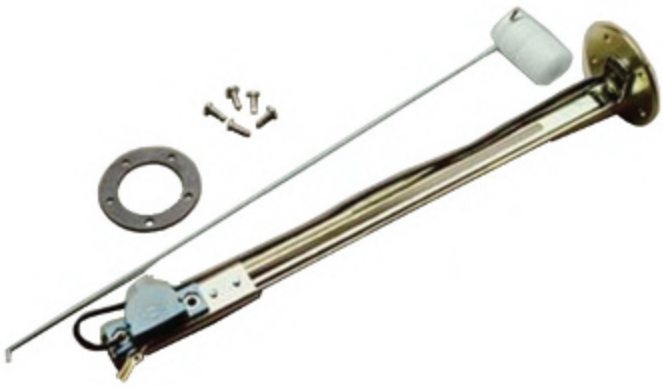
Exhaust Gas Temp (EGT / Pyro) Add-on:

If you have selected this option, you will receive 3 main components: 1) EGT Amplifier, 7 ft. of 18/2 lead wire, and a thermocouple. The lead wire can be extended up to 150’ with standard 18/2 red-yellow boat/safety wire. The thermocouple comes standard with an 1/8” NPT fitting but 1/4” NPT fittings are also available if needed.

EGT/Pyro is NOT a part of the Cummins factory harnessing but is already wired into the SeaView harness so no alternate wiring is necessary other than the 2 lead wires from the probe. Once the probe and leads wires are run from the engine to the display, connect the YELLOW and RED wires properly to the provided EGT Amplifier with the correct spade terminals.

Fuel Level Add-on:



Although we do not SELL this option, it is possible to incorporate a universal 240-33 ohm fuel level sensor into the digital display unit. The sending unit will have two wires, one wire must share the BAT (-) with the engine and the other lead will need to be run into the BLACK connector (B) into the back of the digital display. The physical PIN will need to be provisioned by Seaboard before it can be used.

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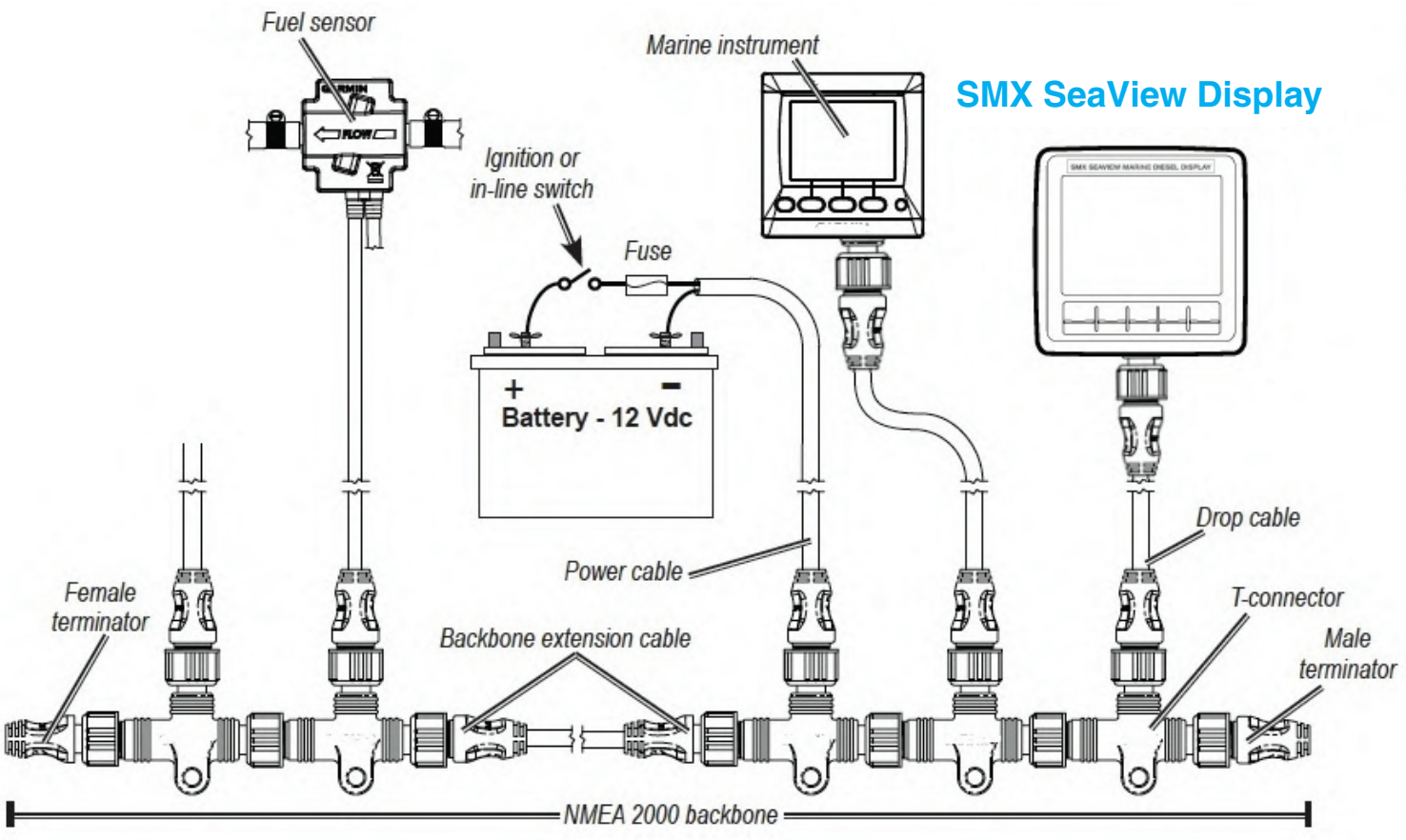
Installing and Configuring the NMEA harness (option):

If you have selected this option, a standard 5-pin NMEA 2000 communication will be provided pre-wired into the display. This harness will need to be connected into you existing NMEA backbone with a standard NMEA drop “T”. If you have a twin engine vessel, the displays will be pre-configured for PORT & STBD and will be marked accordingly. No modifications should be necessary on the display side, so once installed, you will need to setup, import, and configure the engine(s) on your NMEA 2000 compatible device network.

NOTE: If the device needs to be changed from or to PORT or STBD, enter the menu by holding down the far right button, then go to **SYSTEM CONFIG > ENGINE ID** and make the required change.

NMEA Network example:



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Common Functions & Frequently Asked Questions:

Access the Main Menu Functions

The main menu can be accessed by pressing and holding the far right button (key 5).

Reset Trip Information

First gain access to the main menu by pressing and holding the far right button (key 5). Then navigate to SYSTEM CONFIGURATION > TRIP RESET

Setup PORT & STBD Engine Data for NMEA 2000

First gain access to the main menu by pressing and holding the far right button (key 5). Then navigate to SYSTEM CONFIGURATION > ENGINE ID and set the PORT engine to PORT or SGL and the STBD engine to STARBOARD. This will force the engine data to flow to the NMEA bus properly as P&S engine data.

Updating the Display via USB

If you have a need to update the display software and/or configuration, this can be easily done with a standard off the shelf USB data drive. With the device powered on, insert the USB data drive into the back of the display. System software updates with prompt throughout the process. Configuration updates will flash the digital screen BLACK, then re-appear with a simple “beep”.