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Fusion Application Form Standard Configuration

Contact Name: _____ Operator Name: _____
Phone: _____ Fax: _____ Address: _____
Email: _____ Vessel Name: _____

In order to insure that the correct system components are supplied and the DAU is configured to meet your needs, this application form must be completed and supplied to FTI at the time of order placement. If you have any system or configuration questions, please contact FTI, we will be happy to help you. Our goal is to supply a fuel management system that exceeds your expectations.

Propulsion System Type

Mechanical drive Electrical drive

Propulsion Engine Information

Propulsion Engine Make(s) & Model(s): _____
Number of Propulsion Engines: _____ 100% Power Rating: _____ HP kW
Fuel Piping Diameter: _____ inches mm Supply Line Pressure: _____ PSI Pa
Maximum Supply Flow Rate: _____ GPH Minimum Supply Flow Rate: _____ GPH
Maximum Return Flow Rate: _____ GPH Minimum Return Flow Rate: _____ GPH
Supply Fuel Temperature Max: _____ °F Nom: _____ °F Min: _____ °F
Return Fuel Temperature Max: _____ °F Nom: _____ °F Min: _____ °F
Engine Room Ambient Temperature Max: _____ °F Nom: _____ °F Min: _____ °F
Number of Teeth on Flywheel: _____

Generator Engine Information

Generator Engine Make(s) & Model(s): _____

Number of Generator Engines: _____ 100% Power Rating: _____ HP kW
 Fuel Piping Diameter: _____ inches mm Supply Line Pressure: _____ PSI Pa
 Maximum Supply Flow Rate: _____ GPH Minimum Supply Flow Rate: _____ GPH
 Maximum Return Flow Rate: _____ GPH Minimum Return Flow Rate: _____ GPH
 Supply Fuel Temperature Max: _____ °F Nom: _____ °F Min: _____ °F
 Return Fuel Temperature Max: _____ °F Nom: _____ °F Min: _____ °F
 Engine Room Ambient Temperature Max: _____ °F Nom: _____ °F Min: _____ °F
 Note: Generator output in mechanical drive vessels is only reported as fuel burned.

Diesel Electric Information

Analog Input Scaling Information

Analog Input 0 Type

Generator Power (kW)

Analog Input 0 Scaling Details

4-20 mA

4 mA: _____ min: _____ 20 mA: _____ max: _____

Analog Input 1 Type

Generator Power (kW)

Analog Input 1 Scaling Details

4-20 mA

4 mA: _____ min: _____ 20 mA: _____ max: _____

Analog Input 2 Type

Generator Power (kW)

Analog Input 2 Scaling Details

4-20 mA

4 mA: _____ min: _____ 20 mA: _____ max: _____

Analog Input 3 Type

Generator Power (kW)

Analog Input 3 Scaling Details

4-20 mA

4 mA: _____ min: _____ 20 mA: _____ max: _____

Diesel electric vessels will monitor an analog output from the generators to calculate efficiency based on fuel volume burned per kW Hr and volume per distance traveled.

Fuel Information

Fuel: Diesel #2 MGO Other (please specify) _____

Electrical Power Information

Power Available: 115 Vac 220 Vac

Global Positioning System (GPS) Information

Is a GPS available in the pilothouse with a serial NMEA 0183 signal to connect to the Fusion DAU?

Yes

No

Data Acquisition Unit Information

How would you like to mount your DAU in the pilothouse?

Panel Mount

Vertical Bulkhead (Wall) Mount Bracket



Horizontal Bulkhead (Ceiling) Mount Bracket
29 in. tall, extendable to 49 in.



Display Units:

Display Units of Measure: English GPH/Knots: Metric LPH/Knots

Two Mechanical Propulsion Engine Configuration:

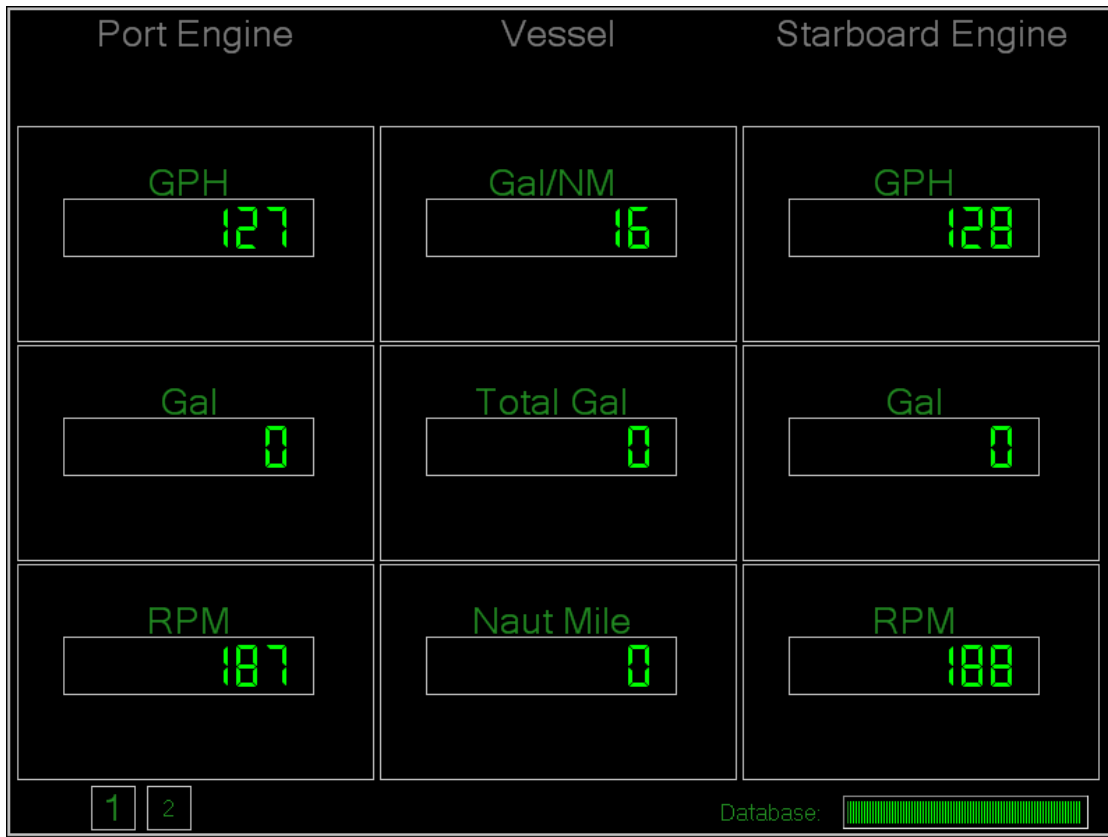
The dual engine configuration consists of two mechanical drive propulsion engines outfitted with a supply and return flow meter as well as one RPM sensor on each engine.

This configuration consists of

- 1) Qty 1 - Data Acquisition Unit (DAU) Standard configuration; p/n 11-67965-103
- 2) Qty 1 - DAU ceiling mount; p/n 39-69209-101
- 3) Qty 1 - FADS software licence; p/n 69-68063-103
- 4) Qty 4 - Fusion flow meter
- 5) Qty 4 - Fusion flow meter RS485 transmitter; p/n 01-67952-101
- 6) Qty 2 - Engine RPM sensor with RS485 transmitter; p/n 01-67053-101
- 7) Qty 1 - Engine room junction box; p/n 74-67951-101
- 8) Qty 1 - Power supply; p/n 14-67950-101
- 9) Qty 1 - Reel armored cable; 19-68143-102
- 10) Qty 1 - Reel non-armored cable; p/n 19-68144-102

Main screen displayed information:

- 1) Port engine net fuel burn rate.
- 2) Port engine total fuel burned.
- 3) Port engine RPM.
- 4) Starboard engine net fuel burn rate.
- 5) Starboard engine total fuel burned.
- 6) Starboard engine RPM.
- 7) Vessel efficiency in fuel used per distance traveled. (port and starboard engines)
- 8) Vessel total fuel burned. (port and starboard engines)
- 9) Vessel distance traveled.



**Two Mechanical Propulsion Engine / Two Auxiliary Power Generator Configuration:
(Flow meter sensor set for each generator)**

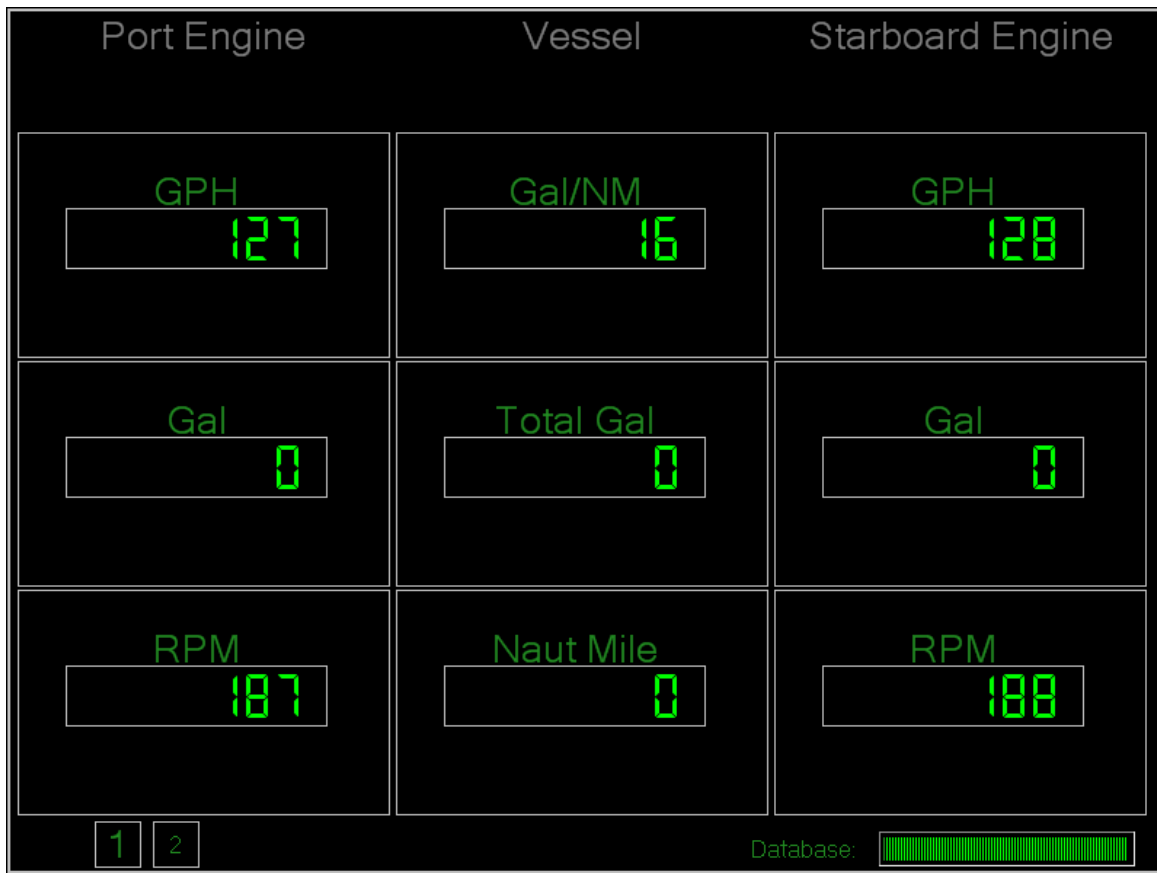
The dual engine configuration consists of two mechanical drive propulsion engines outfitted with a supply and return flow meter as well as one RPM sensor on each engine. The auxiliary power generators will have supply and return flow meters, and no RPM sensors. Output from the generators will be net burn rate in GPH or LPH.

This configuration consists of

- 1) Qty 1 - Data Acquisition Unit (DAU) Standard configuration; p/n 11-67965-103
- 2) Qty 1 - DAU ceiling mount; p/n 39-69209-101
- 3) Qty 1 - FADS software licence; p/n 69-68063-103
- 4) Qty 8 - Fusion flow meter
- 5) Qty 8 - Fusion flow meter RS485 transmitter; p/n 01-67952-101
- 6) Qty 2 - Engine RPM sensor with RS485 transmitter; p/n 01-67053-101
- 7) Qty 1 - Engine room junction box; p/n 74-67951-102
- 8) Qty 1 - Power supply; p/n 14-67950-101
- 9) Qty 1 - Reel armored cable; 19-68143-102
- 10) Qty 1 - Reel non-armored cable; p/n 19-68144-102

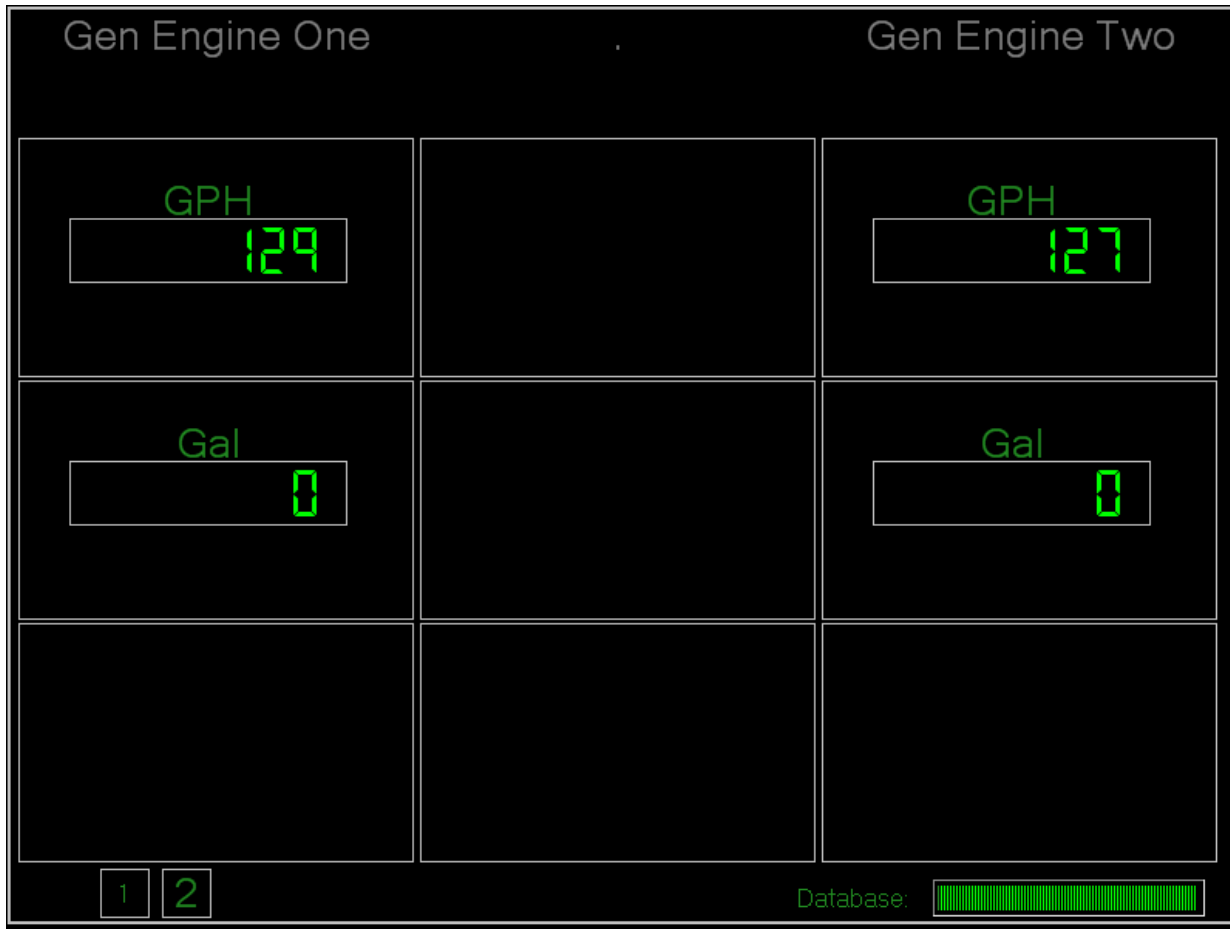
Main screen displayed information:

- 1) Port engine net fuel burn rate.
- 2) Port engine total fuel burned.
- 3) Port engine RPM.
- 4) Starboard engine net fuel burn rate.
- 5) Starboard engine total fuel burned.
- 6) Starboard engine RPM.
- 7) Vessel efficiency in fuel used per distance traveled. (port and starboard propulsion engines)
- 8) Vessel total fuel burned. (port and starboard propulsion engines, and generator one and two engines)
- 9) Vessel distance traveled.



Secondary screen displayed information:

- 1) Generator One engine net fuel burn rate.
- 2) Generator One engine total fuel burned.
- 3) Generator Two engine net fuel burn rate.
- 4) Generator Two engine total fuel burned.



Two Mechanical Propulsion Engine / Auxiliary Power Generator Configuration:

(Single flow meter sensor set for all generators)

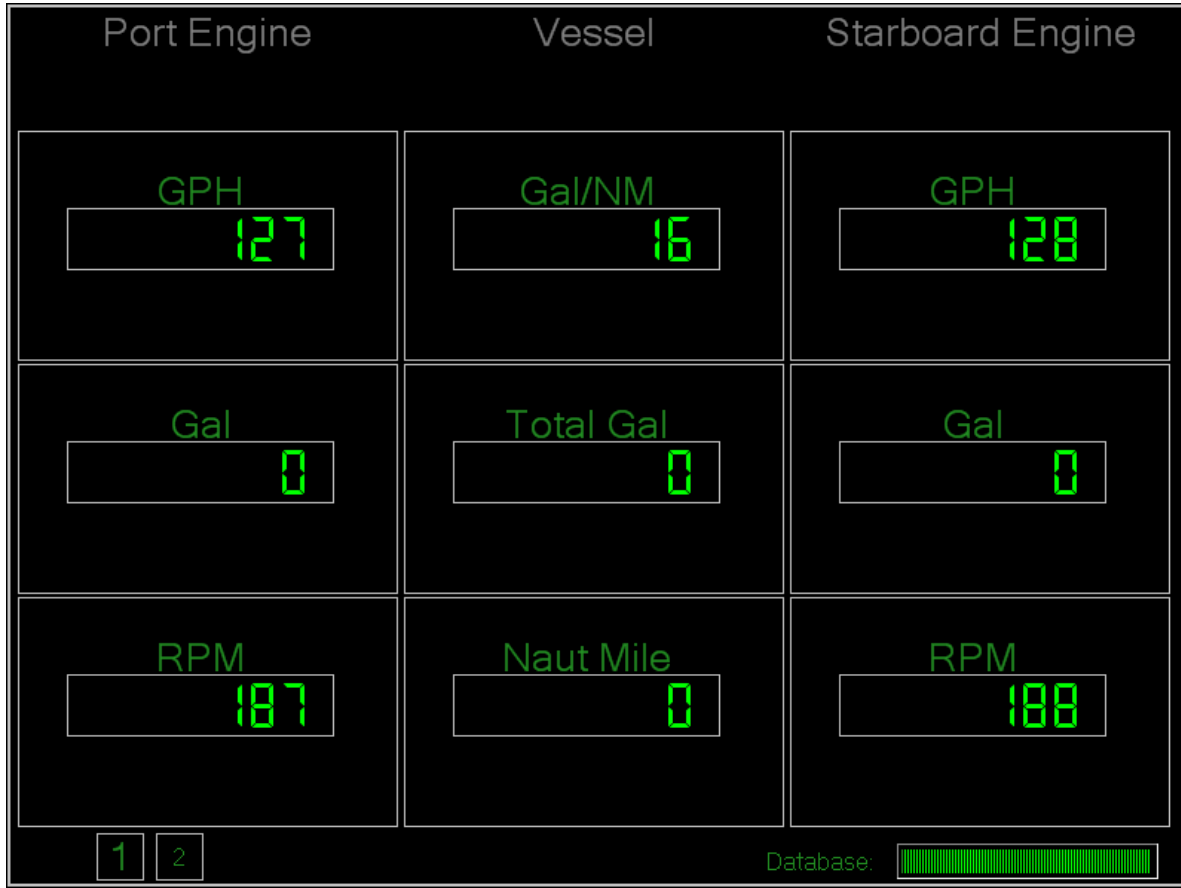
The dual engine configuration consists of two mechanical drive propulsion engines outfitted with a supply and return flow meter as well as one RPM sensor on each engine. The auxiliary power generators will have a single supply and return flow meter and no RPM sensors for power generation engines. Sensors will need to be mounted in a central fuel line prior to split for individual engines. Output from the generators will be net burn rate in GPH or LPH and total.

This configuration consists of

- 1) Qty 1 - Data Acquisition Unit (DAU) Standard configuration; p/n 11-67965-103
- 2) Qty 1 - DAU ceiling mount; p/n 39-69209-101
- 3) Qty 1 - FADS software licence; p/n 69-68063-103
- 4) Qty 6 - Fusion flow meter
- 5) Qty 6 - Fusion flow meter RS485 transmitter; p/n 01-67952-101
- 6) Qty 2 - Engine RPM sensor with RS485 transmitter; p/n 01-67053-101
- 7) Qty 1 - Engine room junction box; p/n 74-67951-101
- 8) Qty 1 - Power supply; p/n 14-67950-101
- 9) Qty 1 - Reel armored cable; 19-68143-102
- 10) Qty 1 - Reel non-armored cable; p/n 19-68144-102

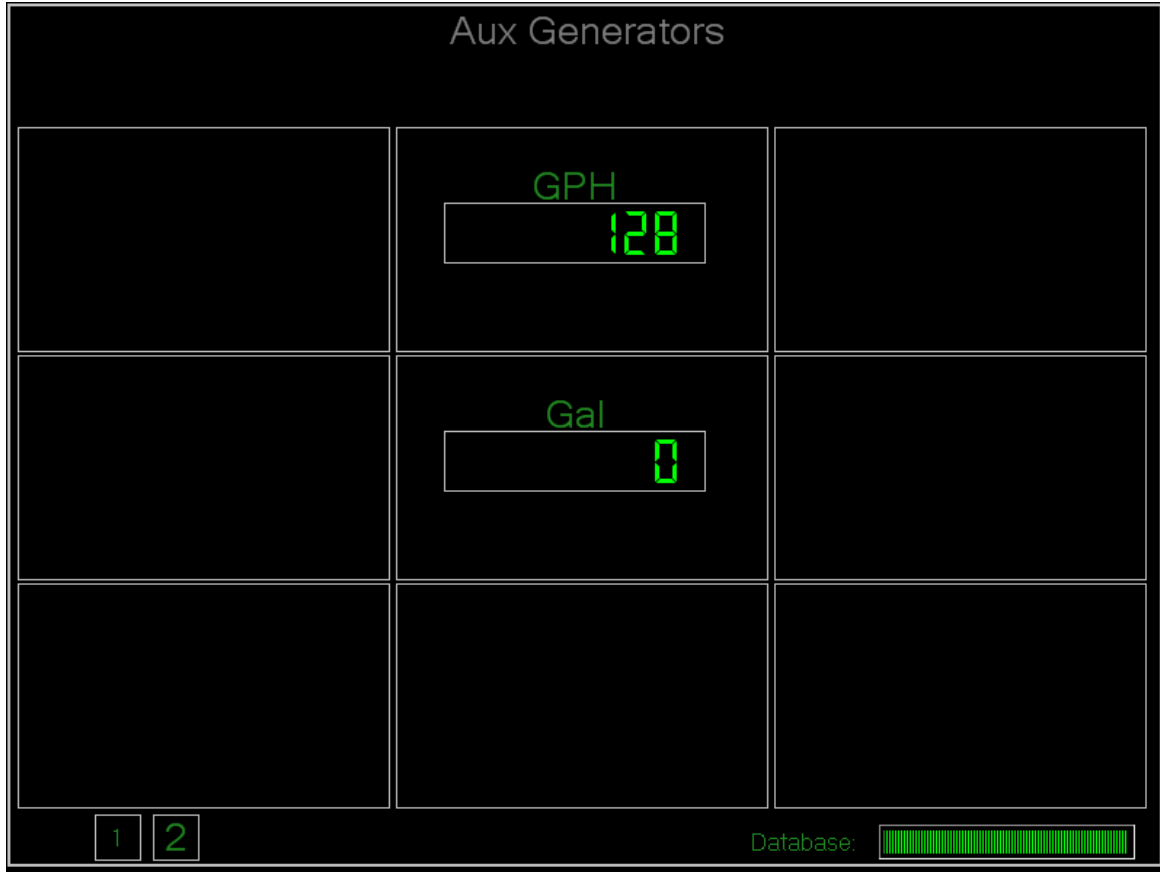
Main screen displayed information:

- 1) Port engine net fuel burn rate.
- 2) Port engine total fuel burned.
- 3) Port engine RPM.
- 4) Starboard engine net fuel burn rate.
- 5) Starboard engine total fuel burned.
- 6) Starboard engine RPM.
- 7) Vessel efficiency in fuel used per distance traveled. (port and starboard propulsion engines)
- 8) Vessel total fuel burned. (port and starboard propulsion engines, and generators)
- 9) Vessel distance traveled.



Secondary screen displayed information:

- 10) Generator/s net fuel burn rate. (combined generator data)
- 11) Generator/s total fuel burned. (combined generator data)



Two Diesel Electric Generator Engine Configuration:

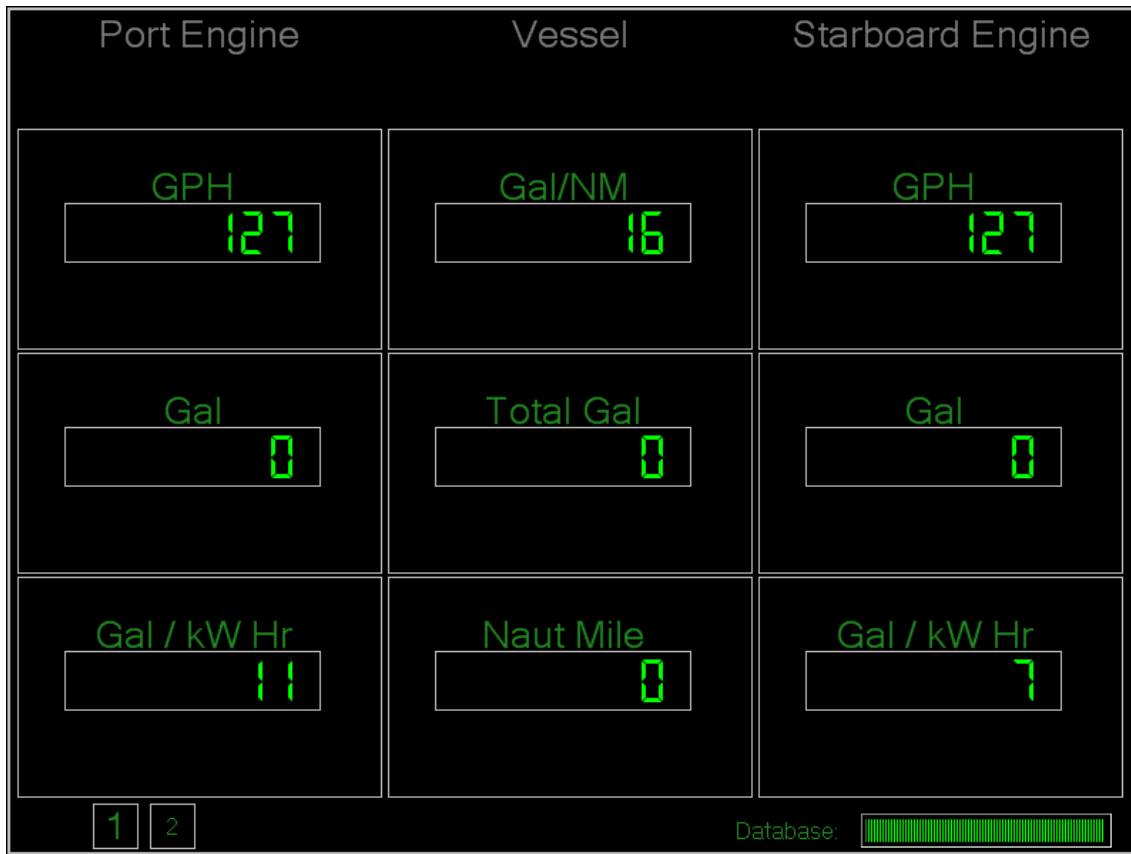
The diesel electric systems will consist of a supply and return flow meter for each engine as well as an analog to RS485 converter. The analog converter will allow a scaled analog signal representing the power produced by the generator to be captured and used for efficiency calculations in the DAU.

This configuration consists of

- 1) Qty 1 - Data Acquisition Unit (DAU) Standard configuration; p/n 11-67965-103
- 2) Qty 1 - DAU ceiling mount; p/n 39-69209-101
- 3) Qty 1 - FADS software licence; p/n 69-68063-103
- 4) Qty 4 - Fusion flow meter
- 5) Qty 4 - Fusion flow meter RS485 transmitter; p/n 01-67952-101
- 6) Qty 1 - Analog signal interface; p/n 01-69189-101
- 7) Qty 1 - Engine room junction box; p/n 74-67951-101
- 8) Qty 1 - Power supply; p/n 14-67950-101
- 9) Qty 1 - Reel armored cable; 19-68143-102
- 10) Qty 1 - Reel non-armored cable; p/n 19-68144-102

Main screen displayed information:

- 1) Port engine net fuel burn rate.
- 2) Port engine total fuel burned.
- 3) Port engine efficiency (fuel burn/kW Hr).
- 4) Starboard engine net fuel burn rate.
- 5) Starboard engine total fuel burned.
- 6) Starboard engine efficiency (fuel burn/kW Hr).
- 7) Vessel efficiency in fuel used per distance traveled. (port and starboard propulsion engines)
- 8) Vessel total fuel burned. (port and starboard propulsion engines)
- 9) Vessel distance traveled.



**Four Diesel Electric Generator Engine Configuration:
(Flow meter sensor set for each generator)**

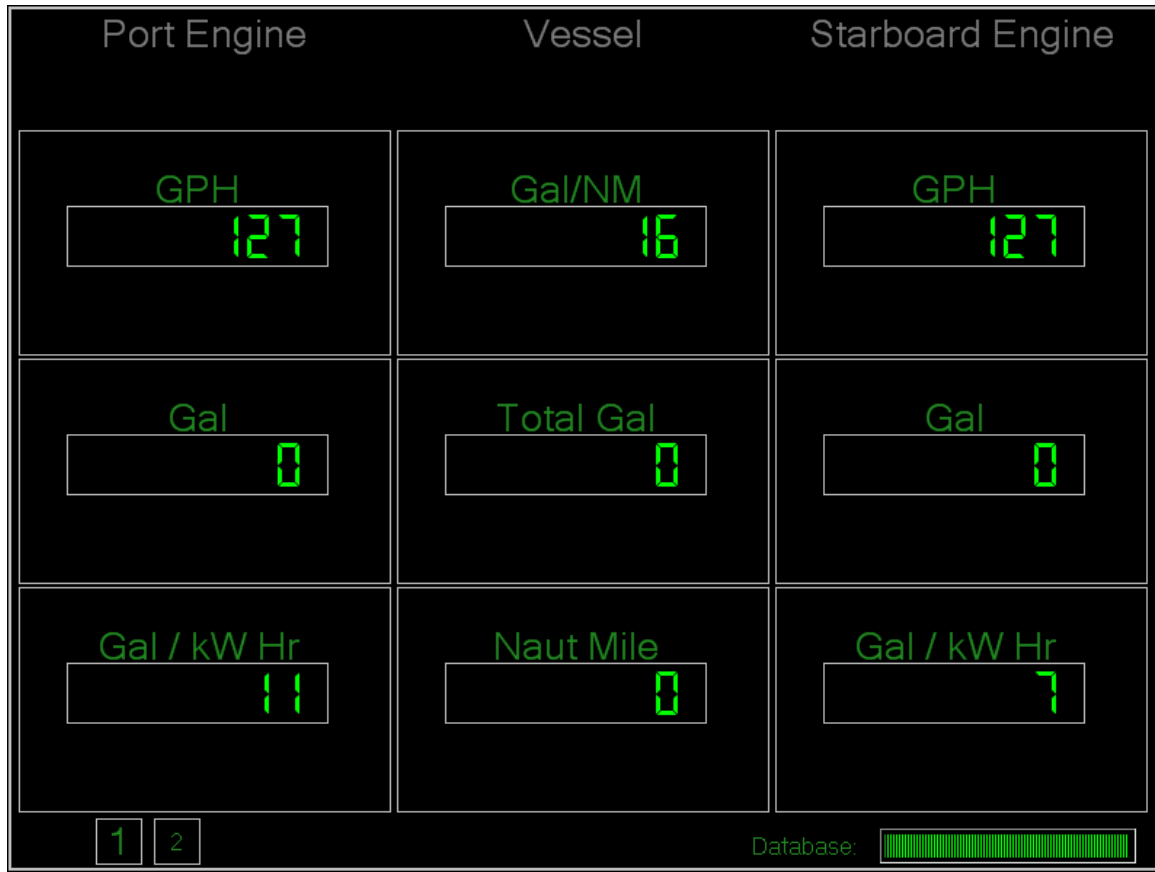
The diesel electric systems will consist of a supply and return flow meter for each engine as well as an analog to RS485 converter. The analog converter will allow a scaled analog signal representing the power produced by the propulsion generators to be captured and used for efficiency calculations in the DAU.

The single engine configuration consists of

- 1) Qty 1 - Data Acquisition Unit (DAU) Standard configuration; p/n 11-67965-103
- 2) Qty 1 - DAU ceiling mount; p/n 39-69209-101
- 3) Qty 1 - FADS software licence; p/n 69-68063-103
- 4) Qty 8 - Fusion flow meter
- 5) Qty 8 - Fusion flow meter RS485 transmitter; p/n 01-67952-101
- 6) Qty 1 - Analog signal interface; p/n 01-69189-101
- 7) Qty 1 - Engine room junction box; p/n 74-67951-102
- 8) Qty 1 - Power supply; p/n 14-67950-101
- 9) Qty 1 - Reel armored cable; 19-68143-102
- 10) Qty 1 - Reel non-armored cable; p/n 19-68144-102

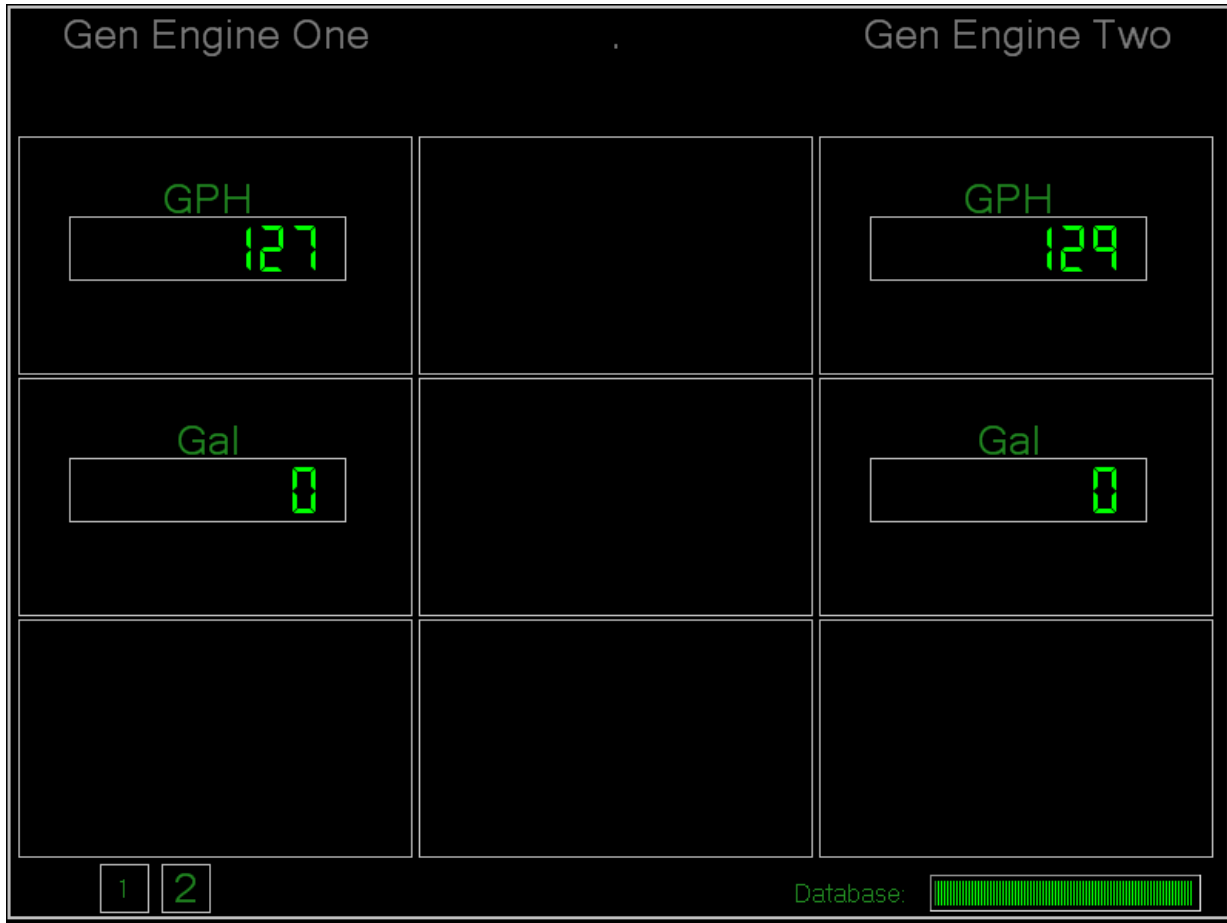
Main screen displayed information:

- 1) Port engine net fuel burn rate.
- 2) Port engine total fuel burned.
- 3) Port engine efficiency (fuel burn/kW Hr).
- 4) Starboard engine net fuel burn rate.
- 5) Starboard engine total fuel burned.
- 6) Starboard engine efficiency (fuel burn/kW Hr).
- 7) Vessel efficiency in fuel used per distance traveled. (port and starboard propulsion engines)
- 8) Vessel total fuel burned. (port and starboard propulsion engines, and generator one and two engines)
- 9) Vessel distance traveled.



Secondary screen displayed information:

- 1) Generator One engine net fuel burn rate.
- 2) Generator One engine total fuel burned.
- 3) Generator Two engine net fuel burn rate.
- 4) Generator Two engine total fuel burned.



Four Diesel Electric Generator Engine Configuration:
(Single flow meter sensor set for all auxiliary power generators)

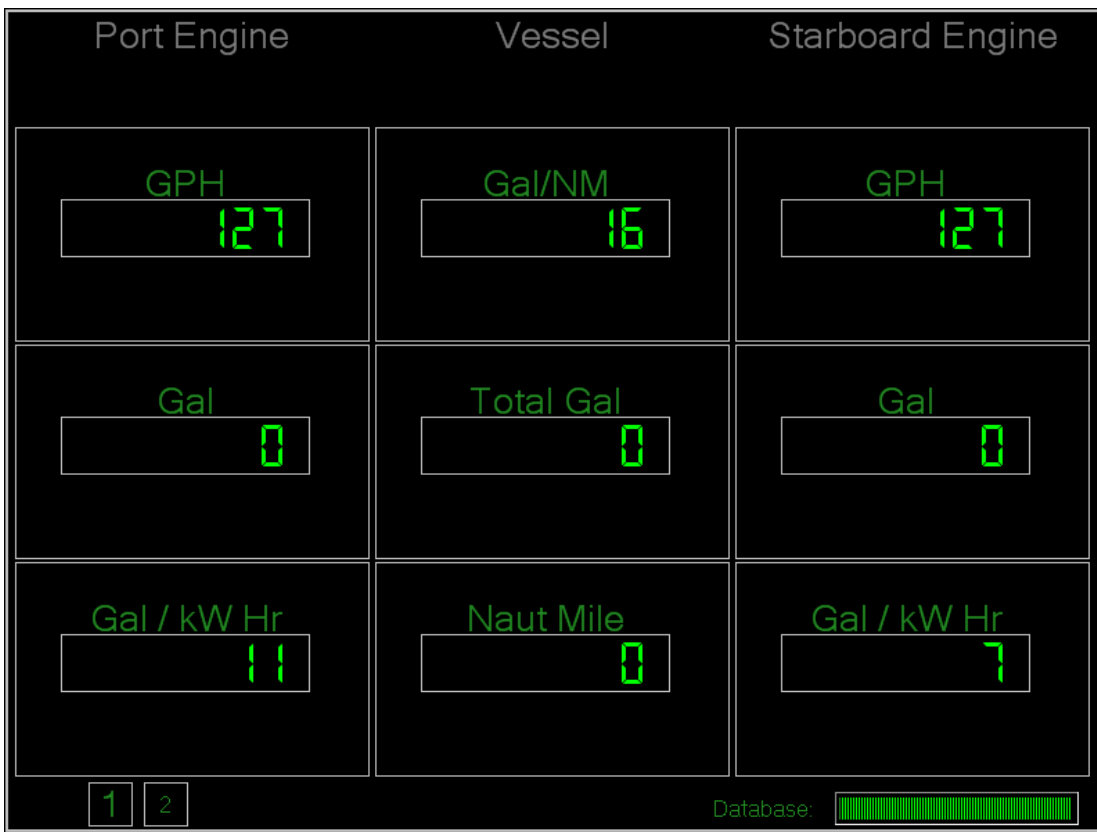
The diesel electric systems will consist of a supply and return flow meter for each propulsion engine as well as an analog to RS485 converter. The analog converter will allow a scaled analog signal representing the power produced by the propulsion generators to be captured and used for efficiency calculations in the DAU. The auxiliary power generators will have a single set of flow meter sensors to measure net fuel usage of all generators. Sensors will need to be mounted in a central fuel line prior to split for individual engines. Output from the generators will be net burn rate in GPH or LPH and total.

The single engine configuration consists of

- 1) Qty 1 - Data Acquisition Unit (DAU) Standard configuration; p/n 11-67965-103
- 2) Qty 1 - DAU ceiling mount; p/n 39-69209-101
- 3) Qty 1 - FADS software licence; p/n 69-68063-103
- 4) Qty 6 - Fusion flow meter
- 5) Qty 6 - Fusion flow meter RS485 transmitter; p/n 01-67952-101
- 6) Qty 1 - Analog signal interface; p/n 01-69189-101
- 7) Qty 1 - Engine room junction box; p/n 74-67951-101
- 8) Qty 1 - Power supply; p/n 14-67950-101
- 9) Qty 1 - Reel armored cable; 19-68143-102
- 10) Qty 1 - Reel non-armored cable; p/n 19-68144-102

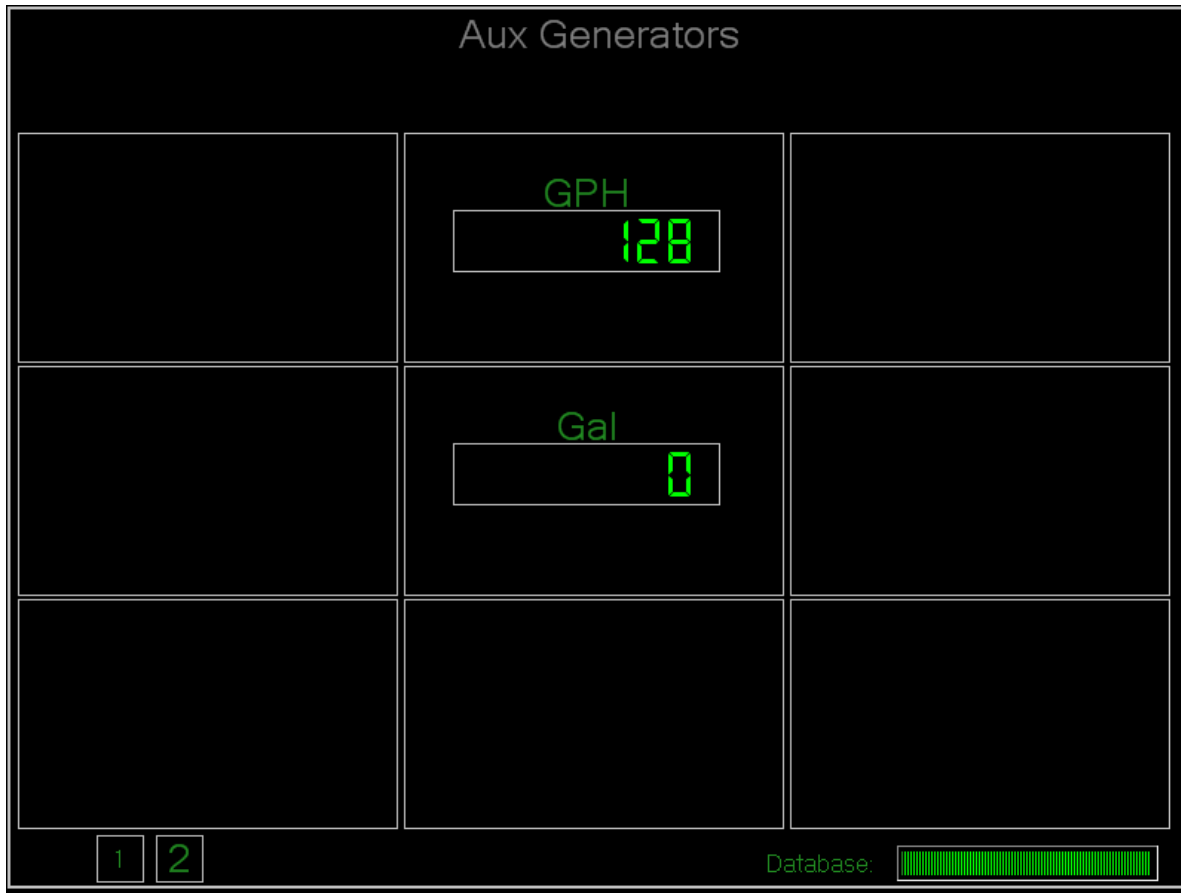
Main screen displayed information:

- 1) Port engine net fuel burn rate.
- 2) Port engine total fuel burned.
- 3) Port engine efficiency (fuel burn/kW Hr).
- 4) Starboard engine net fuel burn rate.
- 5) Starboard engine total fuel burned.
- 6) Starboard engine efficiency (fuel burn/kW Hr).
- 7) Vessel efficiency in fuel used per distance traveled. (port and starboard propulsion engines)
- 8) Vessel total fuel burned. (port and starboard propulsion engines, and generator engines)
- 9) Vessel distance traveled.



Secondary screen displayed information:

- 10) Generator/s net fuel burn rate. (combined generator data)
- 11) Generator/s total fuel burned. (combined generator data)



Thanks for your order!



FTI Flow Technology, Inc.
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