

### Dynamic Fuel Weigher

**Introduction:** The FMS-Dynamic fuel Consumption Meter is a technical development of the existing gravimetric fuel measurement system manufactured by CP Engineering, to enable continuous and dynamic fuel flow and density measurement.

It utilises two measuring techniques to determine and confirm the fuel consumption of the engine. The two techniques are a gravimetric fuel measurement system and a Coriolis flow meter. The two measurement systems are linked together to attain the various benefits that each system can offer. They can also be used to verify each other's performance and operation for calibration purposes.

The gravimetric fuel measurement system is connected to the engine's feed and return lines. The coriolis meter is connected to the supply port of the gravimetric fuel measurement system to measure the amount of 'make up' fuel required to maintain the mass of fuel in the measurement tank at 500grams, approximately half full. A rotary control valve allows fuel to pass through the coriolis meter into the measurement tank at the required rate to maintain this mass at 500grams. Any variation of the mass in the holding tank above or below 500grams is corrected with the measurement from the coriolis meter.

The system has a safety solenoid valve to stop fuel flow into the unit, and vent line overfill protection system.

The system provides all the existing features of the standard gravimetric fuel measurement system, such as bubble separation from returned fuel, together with continuous flow operation and measurement and fuel density readings.

The heat exchangers fitted to the supply, feed and return lines can be connected to the FCU-1000, CP's Fuel Conditioning Unit, this will supply a controlled process loop of water to condition the fuel in the system at three points, hence maintaining the correct temperatures for reproducibility of tests or to meet relevant standards. The FCU-1000 is available separately.

#### Benefits and Features

- High accuracy measurement
- 2 sizes available 100 kg/hr and 200 kg/hr
- Continuous fuel measurement capability
- Two measuring techniques allows cross referencing for calibration
- Fuel density measurement
- Bubble separation on return line type fuel systems
- Stainless Steel wetted parts for reference and special fuels
- Fuel temperature conditioning option
- Compact process unit allows positioning close to engine
- PID control