

## Diesel Fuel Measurement Unit / Instrumentation

The Diesel Fuel Measurement Unit (FMU) accurately measures the weight of diesel fuel (not for use with gasoline) in a beaker and calculates the rate of fuel consumption by continuously analyzing the weight of the beaker as the engine draws and returns fuel. The beaker is self-filling and will automatically maintain the minimum and maximum amounts of diesel fuel in the beaker. All units include a Heat Exchanger to cool the return diesel fuel and maintain a beaker temperature of 100°F (38°C).

In Engine Test Cells the Diesel FMU may eliminate the need for a Day Tank. Dyne Systems' DynPro<sub>2</sub> Data Acquisition and Control System is required for operation.

### Features

#### Fuel Shutoff Valve

Used to close the fuel line to the engine when the emergency stop button is activated through the DynPro<sub>2</sub> Data Acquisition and Control System.

#### Head Pressure Isolation Unit

Depending on the installation, the fuel supply is typically the vehicle fuel tank, or a facility fuel storage tank. If a facility storage tank is used, it is recommended that a valve be placed between the fuel source and the measurement system. The Head Pressure Isolation Unit is a check valve system that aids in the filling and emptying of the breaker in the Diesel FMU. The unit is required when the fuel storage elevation is above the fuel measurement system beaker.

#### Unit Mobility

The FMU come standard with 4 caster wheels for easy mobility, however, the wheels can be removed to make the unit stationary.



1,000 hp (7,46 kW) Diesel FMU

#### Prime Pump (Optional)

The Diesel FMU can be equipped with a prime pump that can prime the engine with fuel. After the breaker is filled with diesel fuel, the prime pump, which is mounted within the unit, pumps fuel to the engine to start the engine.

Prime Pump features include:

- Delivers up to 30 psi (2.1 bar) working pressure
- Built-in pressure switch automatically starts and stops pump instantaneously when fuel line prime pressure changes
- Maximum flow 0.9 gpm (4 lpm)

#### Hydrometer Kit for API (Optional)

187 mm, NIST Standards Hydrometer for API

- API Range: 19 to 41
- Temp Range: 20 to 130°F (-6.6 to 54.4°C)

Graduated Cylinder, 250mL, Clear  
Portable Tool Box

## Specifications

Units	Fuel Measurement Unit Models	
	1,000	4,250
Capacities - hp (kW)	1,000 (746)	4,250 (3,169)
Burn rate capacity - gpm (lpm)	1.66 (6.3)	7.05 (27)
Burn rate capacity - lb/hr (kg/hr)	700 (318)	2,975 (1,349)
Total fuel flow - gpm (lpm)	5.81 (22)	24.67 (95)
Total fuel flow - lb/h (kg/hr)	2,450 (1,100)	10,413 (4,725)
Fuel pressure drop - psi (kPa)	0.4 (2.8)	0.9 (6.2)
Fuel supply temperature - °F (°C)	100 (38)	100 (38)
Supply fuel pipe diameter - in. (mm)	5/8 (16)	1 (25)
Return fuel pipe diameter - in. (mm)	1/2 (13)	1 (25)
Make-up fuel pipe diameter - in. (mm)	1 (25)	1 (25)
Water flow - gpm (lpm)	6.51 (25)	28.36 (107)
Water supply pressure - psi (kPa)	40 (276)	40 (276)
Water supply and return pipe diameters - in. (mm)	1 (25)	1 (25)
Amp requirements - 110 w/230 v	20/15	20/15
Fuel flow accuracy	±1%	±1%
Fuel density accuracy	0.1° API	0.1° API
Fuel temperature accuracy	±2°	±1°
Voltage	115 or 230	115 or 230
Shut off valve	Yes	Yes
Prime pump	Optional	Optional
Head pressure isolation	Yes	Yes
Casters	Yes	Yes
<b>Fuel Hose Interconnect Kit (Optional Accessory)</b>		
4 Hoses - in. (mm)	1 (25)	1 (25)
Hose Ends - NPT on one end, JIC on other end - in. (mm)	1 (25)	1 (25)

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Dyne Systems is a division of Taylor Dynamometer  
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