FID Injector

Water-Fuel Emulsion for Marine Engines

The FID Injector uses controlled water dosing and mechanical homogenization to form a water-in-fuel emulsion before injection.



Key Benefits

- Fuel savings up to 2% on four-stroke engines and up to 3% on two-stroke engines*
- NO_x reduction up to 20%*
- Particulate matter reduction up to 90%*

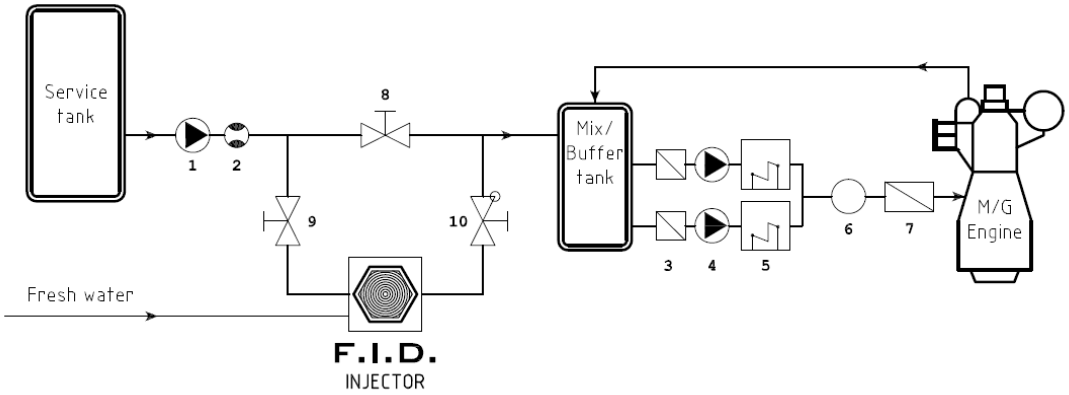
* IPCO Power reported figures for HFO applications. Results vary with engine, fuel, load and water dosing. Maximum reductions may occur under different operating conditions.

How It Works

High shear disperses water as fine droplets. During combustion, water vaporization lowers peak temperatures and can help reduce soot formation.

Installation Position

Typically installed between the booster feed pump and the mixing tank, with fuel-flow measurement and a separate fresh-water supply.



Typical installation upstream of the mixing tank

Technical Specifications

Technical Features

High-shear homogenizer with a hard-coated 7075-T6 aluminium housing, magnetic coupling, self-lubricating chamber and high-pressure water pump.

Capacity and Power

Model	Capacity (L/h)	Power (kW)
FID 045	4,500	15
FID 090	9,000	15
FID 120	12,000	15

Higher capacities are available on request.

General Specifications

Parameter	Specification
Maximum pressure	12 bar
Min. fuel temperature for HFO	90 °C
Power supply	400 / 440 / 460 / 690 V
Control panel	230 V at 50 Hz / 250 V at 60 Hz
Protection class	IP54
Connections	DN50 and SAE flanges (SAE counter flange supplied)
Frame finish	RAL 7016

Controls and Interfaces

Injector Plus uses Emerson Coriolis mass flow measurement and PLC control. Water addition is adjustable up to 20% according to engine, fuel and operating conditions.

Optional signals for standalone operation include ship ESD in/out, running and fault contacts, and water-in-fuel output.

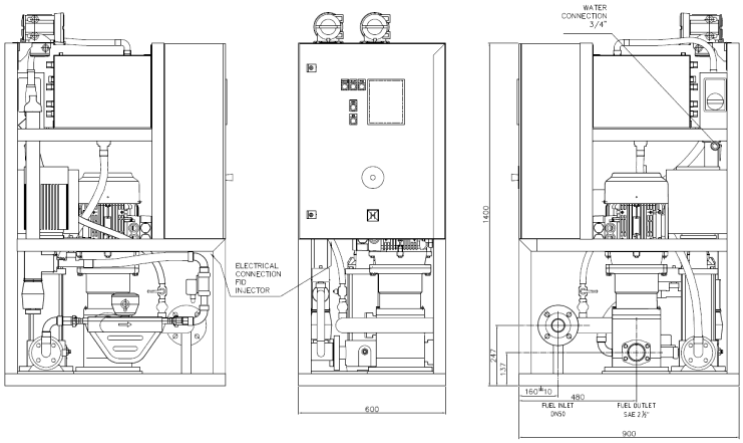
Fuel savings are assessed by comparing fuel mass at equivalent engine output, excluding added water and accounting for system power.

Outline Dimensions

FID Injector Unit

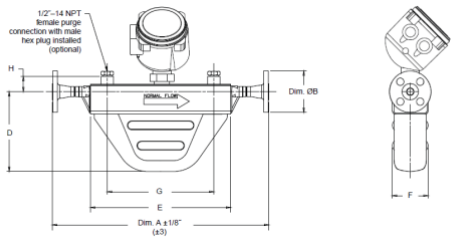
Footprint 600 × 900 mm (W × D) · Frame height 1,400 mm

Top connections extend above the frame.



Emerson F200 Fuel Flow Meter

Separate meter in the fuel line.



Dimensions (mm) · A 600 / B 165 / D 319 / E 454 / F 143 / G 356 / H 61