

# Model FTI-1.5A



## Engineering Specifications with Modbus Automated Diesel Fuel Maintenance System Single Diesel Fuel Tank Up To 1,000 Gallons with Modbus

### 1. Description

- A. Diesel fuel storage tank shall be equipped with an **FM APPROVED**, and **NFPA EQUIPMENT COMPLIANT** automated fuel maintenance system.
- B. Filtration system shall remove particulates to 2 microns and water to 99.5% from stored diesel fuel.
- C. Fuel stabilizer shall be added to the diesel fuel in storage.
- D. Fuel biocide shall be added to the diesel fuel in storage.
- E. **Includes: Modbus RTU, RS485 Serial Communication's.**

### 2. Pump / Motor Ratings

- A. Pump: 1.5 GPM, spur gear, Viton seals, positive displacement, pressure relief valve.
- B. Motor: 1/3 HP, 115/208-240V AC @ 6/3 Amps, 1 Phase, 50/60 Hz, ODP.
- C. **Total Connected Load: 8 Amps**

### 3. Filtration Shall Consist of:

- A. Stage 1: Particulate removal to 2 microns.
- B. Stage 2: Water separation to 5PPM.

### 4. Filter Replacement PN: FL-R120S

### 5. Controller Specifications:

- A. Control panel shall be UL 508.
- B. Siemens 1200 PLC Series: UL/CSA/CE/FM approvals.
- C. Siemens 1241 RS 485 Modbus Module (**Modbus Module Included**)
- D. Motor contactor: UL/SA/CE approvals.
- E. Motor overload: UL/SA/CE approvals.
- F. Terminal block: 26 Amps, 18-12 AWG
- G. Lockable disconnect switch: UL/CE Approvals.
- H. One Dry contact general alarms: One set of dry contacts provided. (Normally open for all alarms)
- I. One Dry Contact for Leak Alarm
- J. One Dry Contact for Motor Running
- K. Siemens KTP400 Basic touch screen display.
- L. PLC shall monitor items 1-4.
- M. Alarm conditions 1-4 shall be indicated by an audible horn and pump shut off.
- N. Visual alarm descriptions for items 1-4 shall be shown on the touch screen.
  - 1. Filter plugged (High Vacuum)
  - 2. Water level in "See-Thru" bowl at maximum. (Water Detected)
  - 3. Leak in Cabinet. (Leak Detected)
  - 4. Motor overload. (Motor / Pump Issue)
- 5. Dry Contact for Leak Detection and Pump Running.**
- O. Controller shall be programmable to time delay the following three operations:
  - 1. High Vacuum Delay (Filter Plugged)
  - 2. Leak Alarm Delay (leak in cabinet)

3. Water Detect Delay (Water Full in Bowl)

**6. Enclosure**

- A. Cabinet shall have one lift off removable door.
- B. Cabinet shall be treated with “**Zinc Primer**” for corrosion resistance and “**Powder Coat**” finish.
- C. Cabinet shall be manufactured to “NEMA 3R” standards and designed for rack or wall mounting.
- D. Cabinet Size: 24” W x 24” H x 9” D.
- E. Leak detection: Provided in cabinet.
- F. System weight: 95 Lbs.
- G. Cardinal Powder Coat PN: T075-WH34 Semi-Gloss Vein White/Black
- H. Specify: Color: Red or White Powder Coat.

**7. Voltage Options**

- A. Choose one: (115V AC, 1 Phase, 50/60 Hz) (208-240V AC, 1 Phase, 50/60 Hz)

**8. Vacuum Switch Gauge**

- A. 30V DC, 3 Amp

**9. Leak Detector**

- A. 24V DC, N.O. (closes with liquid present)

**10. Plumbing**

- A. Supply line shall be installed at the sump, or low end of the fuel tank.
- B. Supply line shall be installed 1” from the bottom of the fuel tank, with a foot valve.
- C. Return line to be installed at the opposite end of the fuel tank.
- D. Caution should be taken not to exceed the 15 feet lift capability of the fuel circulation pump.
- I. Ball valves shall be installed (not included) at supply and return lines to isolate system for maintenance.
- J. Inlet Connection = 1/2” NPT.
- K. Outlet Connection = 1/2” NPT.

**11. Installation Precautions:**

MODEL FTI-1.5A HAS NO PROTECTION AGAINST THERMAL EXPANSION OF THE FUEL LINES. IF THE FUEL LINES ARE INSTALLED WITHOUT PRESSURE RELIEF, DAMAGE MAY OCCUR TO THE PUMP, MOTOR OR FILTER.

INSTALLER SHOULD PREVENT ANY CLOSED LOOP WITH THE FTI-1.5A SYSTEM IN THE MIDDLE.

FTI WILL NOT BE RESPONSIBLE FOR ANY DAMAGE DUE TO EXCESSIVE LINE PRESSURE CAUSED BY THERMAL EXPANSION

Model FTI-1.5A as Manufactured by

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# Fuel Technologies International