



Model FTI-2.8

With Modbus

Engineering Specifications

Automated Diesel Fuel Maintenance System

Single Diesel Fuel Tank up to 5,000 Gallons

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 storage annually.
- e. **Includes: Modbus RTU, RS485 Serial Communications.**

2. Pump / Motor Ratings

- a. Pump: 2.8 GPM, spur gear, Viton seals, positive displacement, pressure relief valve.
- b. Motor: 1/3 HP, 115/208-240V AC @ 6/3 Amps, 1 Phase, 50/60Hz, TEFC.
- c. **Total Connected Load: 8 Amps**

3. Filtration Process

- a. Stage 1: Particulate removal to 2 microns.
- b. Stage 2: Water separation to 5PPM.

4. Filter Replacement PN: FL-S3207S

5. Controller Specifications

- a. Control panel shall be UL 508.
- b. Siemens 1200 Series PLC, UL/CSA/CE/FM approvals.
- c. Siemens CB1241 RS485 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 contact 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.
- n. Visual alarm descriptions for items 1-4 shall be shown on the touch screen.
 - i. Filter plugged (High Vacuum)
 - ii. Water level in "See-Thru" bowl at maximum. (Water Detected)





- iii. Leak in cabinet. (Leak Detected)
- iv. Motor overload. (Leak in Cabinet)
- v. Dry contact for leak detection and pump running.
- o. Controller shall be programmable to time delay the following three operations:
 - i. High vacuum delay (Filter Plugged)
 - ii. Leak fault delay (Leak in Cabinet)
 - iii. Water detect delay (Water Full in Bowl)

6. Enclosure

- a. Cabinet shall have one lift off removable doors.
- b. Cabinet shall be treated with “Zinc Primer” for corrosion resistance and “Powder Coat” finish.
- c. Cabinet shall be manufactured to “NEMA 3R” standards & 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-Glass Vein White/Black

7. Voltage Options

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

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 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 to the fuel circulation pump.
- e. Ball valves shall be installed (not included) at supply / return lines to isolate system for maint..
- f. Inlet Connection = 3/4” NPT.
- g. Outlet Connection = 3/4” NPT

11. Installation Precautions:

- a. Model FTI-2.8 w/ modbus has no protection against thermal expansion for the fuel lines. If the fuel lines are installed without pressure relief, damage may occur to the pump, motor or filters.
- b. Installer should prevent any closed loop with the FTI-2.8 system in the middle.
- c. FTI will not be responsible for any damage due to excessive line pressure caused by thermal expansion.

**Model FTI-2.8 w/ Modbus System as Manufactured by
Fuel Technologies International**

