



## Model FTI-5A

Single Tank

Engineering Specifications

Automated Diesel Fuel Maintenance System

Single Diesel Fuel Tank up to 15,000 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 1 micron 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: 5 GPM, spur gear, mechanical seal, positive displacement, pressure relief valve.
- b. Motor: 1/2 HP, 1725 RPM, 115/208-240V AC @ 7.4/3.2 Amps, 1 Phase, 50/60Hz, TEFC.

### 3. Filtration Process

- a. Stage 1: Strainer, 100 mesh (spin on filter)
- b. Stage 2: 10 micron, particulate removal (spin on filter)
- c. Stage 3: 3 micron particulate removal (spin on filter)
- d. Stage 4: Final filter, 1 micron particulate removal. (element type)
- e. Stage 5: Water coalescer and separator to 5 PPM. (element type)

### 4. Filter Replacement Kit: FRK-5A (Kit includes filters listed below.)(Not included with system)

- a. FL-30-100M – Strainer, 100 mesh, spin-on, 2 ea.
- b. FL-30-10N – 10 micron, spin-on, 2 ea.
- c. FL-30-03N – 3 micron, spin-on, 2 ea.
- d. FL-FBO-60327 – 1 micron / water separator, 2 ea.

### 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. Dry contact general alarms: One set of dry contacts provided. (Normally open for all alarms)
- i. Siemens basic touch screen display.





- j. PLC shall monitor items 1-9
- k. Alarm conditions 1-9 shall be indicated by an audible horn.
- l. Visual alarm descriptions for items 1-9 shall be shown on the touch screen.
  - i. Strainer plugged (Vacuum switch gauge)
  - ii. 10 Micron filter plugged (Differential pressure switch gauge)
  - iii. 3 Micron filter plugged. (Differential pressure switch gauge)
  - iv. Water level in separator bowl at maximum. (Water detected)
  - v. Leak in cabinet. (Leak detected)
  - vi. Motor overload. (Motor/Pump issue)
  - vii. System pressure. (Pressure switch gauge)
  - viii. 1 Micron filter plugged (Differential pressure switch gauge)
  - ix. Loss of prime (Low set point on pressure switch gauge)
- m. Signal device (audible alarm):120/230V AC, Slow pulse, 80 to 95 Db.
- n. Controller shall be programmable to time delay the following 6 operations:
  - i. Vacuum / Strainer plugged (Vacuum switch gauge)
  - ii. 1, 3 and 10 micron filter plugged (Differential pressure switch gauge)(one alarm delay for 1, 3 and 10 micron)
  - iii. Water level in bowl at maximum. (Water detected)
  - iv. Leak in Cabinet. (Leak detected)
  - v. Low Flow. (Loss of prime)
  - vi. System pressure (Pressure switch gauge)
- o. One dry contact to turn off FTI system when generator starts.
- p. One dry contact to stop FTI system for any reason.
- q. One dry contact for leak detector alarm.
- r. One dry contact for motor running.
- s. **Connection for on Solenoid Valve.**

## 6. Enclosure

- a. Cabinet shall have 2 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 and designed for rack or wall mounting.
- d. Cabinet size: 40”W x 43 ¼”H x 14”D.
- e. Leak detection: Provided in cabinet.
- f. System weight: 350 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. Leak Detector

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

## 9. 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. Inlet Connection = 1.0" NPT.
- f. Outlet Connection = 1.0" NPT

**10. Installation Precautions:**

- a. Model FTI-5A Single Tank 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-5A system in the middle.
- c. FTI will not be responsible for any damage due to excessive line pressure caused by thermal expansion.

**Model FTI-5A Single Tank System as Manufactured by  
Fuel Technologies International**

