Fueltec Systems LLC PO Box 487 Granite Falls, NC 28630
828-212-1141 www.fueltecsystems.com

SPECIFICATION MODEL CF8.0-PCB SKU 100135 v_1.2 2019

Automatic Fuel Polishing Systems with Pre-Filters

1) Design: One diesel storage tank system

- Complete factory-assembled automatic particulate filtration, water separation and removal system to maintain the purity of No. 2 fuel oil held in extended storage. The system shall circulate the oil from the storage tank, through the system, removing water and particulate matter, then returning the clean dry fuel back to the storage tank.

- The System shall exceed diesel engine manufacturer's cleanliness target of ISO 18/16/13. Water removal to less than 100 PPM

- The system shall separate free and emulsified water from diesel fuel with a military type micro-glass coalescer/filter and hydrophobic water separator within a stainless steel top loading housing. Water absorbing filter media is not required.

- System shall have a PCB controller that schedules system operation with alarms and sensors that automatically indicate filter conditions, presents of water in trap, and fluid leak. System includes Modbus networking kit.

- Industrial electric control panel shall be Underwriters Laboratory 508A and CE Listed

- System shall be installed with supply and return piping that is exclusive to the system and independent of any other piping to or from the storage tank(s). System supply piping shall extend to contact the storage tank bottom and be designed to maintain contact with the storage tank bottom to extract even small droplets of water.

2) The filtration system shall consist of but not limited to the following components:

a) Welded rain tight aluminum equipment enclosure. 36"x48"x14" (1219x1219x356 mm)

b) Five stage filtration and water removal

i) First stage pre-filters three micron, treated cellulose, dual spin-on. (Zinga LE-03 or equal)

ii) Second, third, and forth stage filter/coalescer within a stainless steel housing:

a. treated cellulose
b. micro-glass
c. hydrophilic cloth wrap.

ii) Fifth stage water separator Teflon coated stainless steel

c) Fuel circulation pump bronze 8 GPM w/pressure relief 115/230V 1PH 50/60Hz

d) Stainless steel housing shall be fitted with an aluminum top cover sealed with o-ring and swing bolts. A separated water trap, one gallon capacity w/ pressurized drain for waste water disposal.

e) Valves: supply and return valves shall be 1" ball type and 1" check valves, drain ½" ball valve

f) Sensors:

i) Vacuum sensor transmits condition of first stage filter to PCB

ii) Pressure sensor transmits condition of filter/coalesce to PCB

iii) Water sensor transmits high & low water levels in water trap

g) Electrical:

i) Industrial Control Panel Underwriters Laboratory UL-508A and CE listed

ii) Power required: 115AC 1PH 50/60 Hz 20A

iii)Electrical Enclosure NEMA 4X

iv) Voltage: high 115AC, low 24DC

h) Controller: PCB

i) Operation: on 6 hours then off 18 hours

ii) Alarms:

(1) High water in trap

(2) High vacuum (service primary filter)

(3) High pressure (service final filters)

(4) Fluid in system sump

(5) No fluid flow

i) System Options:

i) Housing heat blanket for sub-freezing installations

ii) Mounting post with welded base plate

iii) Tank flange kit w/ 1" telescopic fuel pickup

iv) Modbus network kit

v) Fueltec Tech. on-site 8 hrs. for inspection and startup

vi) Tank cleaning and fuel polishing on existing fuel tank prior to system install.

Recommended Installation Requirements: Summary/ Applicability… This specification defines the requirements and procedures for the installation of Fueltec's automatic fuel polishing system for diesel fuel storage tanks. It covers requirements for safety, equipment, filters, separators, fluid velocities, flow rates, Tank Owners scheduling and coordination, de-watering system operation, disposal of contaminants, disposal of filters, disposal of petroleum contact water, sampling, and testing.

Safety… Prior to any on-site equipment installation or de-watering activities, the following safety procedures shall be accomplished in all fueling areas accessed under this specification section:

1. Verification of proper grounding throughout system, coordination with the Tank Owners Fire and Safety Office and Fuels personnel.

2 Installer shall provided spill pads and fire extinguishers capable of extinguishing a fuel fire.

3. Ensure that all radios/devices at all Class I, Division 1 areas are intrinsically safe.

4. All personal within 25 feet of the de-watering operation shall use hard hats and eye protection.

5. All personal shall use safety fall prevention devices as prescribed by law when working above ground level.

Tank Bottom Sample… As a prerequisite to fuel tank de-watering system installation, The installer shall obtain samples from the fuel tank bottom with the approved sampling device. One inch or more of water or other contaminants within the tank at the time of sampling will require the removal of water prior to the installation of a de-watering system. Sludge buildup on tank bottom of more than one quarter inch (1/4”) will require removal before system is installed. Sludge removal not included in this Specification.
Sub-freezing Conditions… Installation in areas subject to temperatures less than 32 degrees F. or 0 degrees C. may require heated and insulated storage tanks, piping, valves, and enclosures which is not in the scope of this specification.

Fuel… The fuel tanks that are to be connected to the de-watering system shall have all fuel tank intake and discharge valves closed before the installation is started by tank owner. Fuel level in tank shall be less than 7/8 full.

Utilities… The tank owner shall connect electrical service to the de-watering system. Electrical service shall be 115 volt ac 60Hz 20 amp. with ground fault protection.

Bonding… The fuel tanks shall have low impedance grounding and bonding to the electrical distribution system as per NEC.

Installation… Installation shall meet or exceed all applicable federal, state and local requirements, referenced standards and conform to codes and ordinances of authorities having jurisdiction. All installation shall be in accordance with manufacturer’s published recommendations. The installer shall be responsible for any permits that may be required.

Testing… Field Piping Test: Provide test gauge and pipe connection for pneumatic testing of field installed piping. Pneumatically test system at 20 psi for one hour, then soap all joints and check for leaks. Retest until there are no leaks and system is proven tight. System Test each tank circuit after electrical connection.

System Startup… Prime supply and return lines from fuel tank to system fuel pump. (do not run pump dry) Consult Manual to setup system .

Training… Fueltec will provide an operating manual with procedures, and wiring diagrams for each System. Optional On-site training and system startup by Fueltec personal is available when system is completely installed. (Training at Fueltec's North Carolina facility no charge) Fuel tanks must be filled and systems installation be completed and primed by others prior to training.

Specifications are subject to change without notice.

Fueltec Systems LLC
P.O. Box 487 Granite Falls, NC 28630-0487
Tel: 828-212-1141