

CSI - GUIDE SPECIFICATION

Possible Sections:

Section 26 32 00 Packaged Generator Assemblies
Section 23 11 13 Facility-Fuel Oil Piping
Section 23 13 00 Facility Fuel-Storage Tanks
Section 23 10 00 Facility Fuel Systems
Other sections applicable

Automated Smart Fuel Filtration System

Model: SMART FPS-FX

- A. **Manufacturers:** Subject to compliance with requirements, provide product by the following:
1. AXI International
- B. **Description:** Stand alone, factory complete, automated programmable, fuel filtration and maintenance system shall be provided for each diesel fuel storage tank to optimize and maintain the condition of fuel stored in that tank. The system shall be capable of eliminating microbial contamination and removing water, sediment, and particulate to comply with ASTM D975 (Standard Specification for Diesel Fuel Oils).
1. **Assembly:** All system components shall be mounted on a powder-coated, corrosion resistant, aluminum back plate with spill tray monitored with leak detection sensor.
 2. **Mounting:** Provision for wall or rack mounting to be included.
 3. **Environment:** System shall be installed indoors, protected from the elements in climate controlled environment.
 4. **Dimensions:** Dimensions of mechanical assembly are not to exceed 20" x 17" x 7" (HxWxD).
 5. **Plumbing:** System shall be furnished with JIC male connector size 1/2" 37° #8 flare on both inlet and discharge. Plumbing shall be stainless steel fittings within fixture.
 6. **Installation:** System shall provide male JIC male connectors size 1/2" 37° #8 flare for customer plumbing connection. System shall be located as close as possible to designated fuel tank. The fuel oil supply and return lines to the system shall be independent and separate from other fuel lines with the supply line originating at the bottom of the tank in the deepest spot and the return line as far away as possible from the supply line in the tank.
 7. **Filtration/Water Separation:** 3 stage filtration/water separation process:
 - a. Stage 1: LG-X 500 Fuel Conditioner – to break down sediments and solids naturally forming in diesel fuel to submicron levels as well as preventing microbial contamination eliminating the need for toxic chemical biocides.
 - b. Stage 2: Centrifugal water and particulate separation
 - c. Stage 3: Coalescing water (99.9% water removal) and 30 micron particulate filter element – with water detection sensor and "push and turn" safety drain valve. Primary filter shall be equipped with liquid filled, stainless steel gauge.
 8. **Water Sensor:** Watect Model 550 microcontroller-based water sensor alarm module.

9. **Controls/Display Functions:** System control features, indicator lights and On/Off Auto selector switch shall be located on a descriptive control panel on the front of the controller for easy operator access. Additional alarm and system status information shall be displayed on the panel. System shall provide following control and display function:
 - a. Programmable Digital Timer Off, Manual, Auto function – Memory backup to retain program memory during power outages
 - b. On/Off System circuit breaker
 - c. Alarm Reset - push button
 - d. Power available indicator, Green light
 - e. High vacuum, high water, and leak detection, Red lights

10. **Electrical Enclosure/Controller:** All electrical control features shall be contained within an industrial control panel connected to the mechanical assembly. The controller shall monitor and display the following system alarm conditions:
 - a. Leak detection in drip tray (system shutdown)
 - b. High vacuum sensor (system shutdown)
 - c. High water sensor (system shutdown)

11. **Pump:** Positive displacement, spur type gear pump, direct coupled, nickel plated housing, with built in pressure relief bypass valve

12. **Motor:** 12V or 24V DC

- C. **Performance/Design Criteria:** Manufacturer must have a minimum of 10 years experience within industry. System shall be capable to turn complete tank volume over once a week with a required run time of no more than 48 hours for the total volume. Sufficient contaminant and water holding capacity should be ensured, which will vary with climate, tank layout, fuel delivery, refueling intervals, etc.

DISCLAIMER STATEMENT

This guide specification is intended for use by a qualified construction Specifier. The guide specification is not intended to be verbatim as a project specification without appropriate modifications for the specific use intended. The guide specification must be used and coordinated with the procedures of each design firm, and the particular requirements of a specific construction project.