



Insight  Onsite

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SMARTPUMP Sample Specification

Engineer's specifications for a storage tank fill box with automatic overflow prevention and automatic fill shutoff.

1.0 Fuel Filling System

1.1 Provide a grade level fuel transfer pumping system with spill containment; overflow prevention and automatic fill shutoff. The SMARTPUMP shall be used for filling fuel oil storage tanks. The SMARTPUMP is for use with class II, flammable liquids, those having a flash point greater than 100 degrees F: fuel oil, diesel fuel, and kerosene.

1.2 The SMARTPUMP shall be supplied installed outdoors upon a concrete pad at a location as specified elsewhere.

The SMARTPUMP shall transfer fuel from a gravity tanker truck to storage tanks via the pump system on-board the unit, as described below. The SMARTPUMP shall permit full draining of the truck delivery hose upon completion of fuel delivery.

1.3 The SMARTPUMP shall include the following fittings and features:

- Steel, weatherproof, lockable containment box for truck connection, with hinged door finished in gray industrial powder coat.
- External, stainless steel ground stud for attachment of delivery truck ground cable
- 4" quick disconnect coupling for attachment of user's delivery hose
- Inlet shutoff manual valve
- 7gallon spill containment sump with drain to pump inlet
- Outlet check valve
- Outlet shutoff manual valve
- 3" threaded fitting for attachment of outlet pipe to tank.

1.4 The SMARTPUMP shall include a motor driven high capacity fuel transfer pump as follows:

- Pump: 300 GPM at 55 foot of head, 3600 RPM, cast iron, bronze fitted, carbon-ceramic / BUNA-N mechanical shaft seal
- Motor: Totally enclosed, fan cooled, rigid base, 3600 RPM, 5 HP, (208/230/460) VAC, 3-phase

1.5 The SMARTPUMP shall include a PLC and 3" HMI controlled system with overflow alarm and shutoff system as described below. The system shall require an external source of AC power, 208/230/460, 3-phase.

The control system shall include:

- TYPE 3R rainproof, lockable enclosure with hinged door
- 4-20mA Level transmitter for installation in the storage tank
- Leak sensor floatswitch for installation in the storage tank's interstitial space
- Level display reading in Percent and Gallons
- High visibility notification on HMI: 90% level
- High visibility red alarm banner on HMI: 95% level
- 90 dB audible alarm horn activated at 90%, 95% and on storage tank leak
- Control power ON/OFF switch
- Fill Start/Stop controlled via HMI
- Automatic pump stop at 90% level



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- Override circuit and 30 second timer to permit override of 90% shutoff to allow pump-out of delivery hose or spill containment. 95%, and leak lockout cannot be overridden.
 - Leak sensor alarm circuit input which
 - Indicators for:
 - Power available
 - Tank leak
 - Transfer pump motor starter with overload relay
 - Control power transformer for 120 VAC operation of controls
 - Control power fuses -Remote alarm contacts:
 - Summary Tank High
 - Summary Leak
 - Selected tank Full
 - Modbus via 485
- 1.6 The SMARTPUMP system shall be supplied with manufacturer's warranty.
- 1.7 The services of a factory-authorized or factory based, field service technician to provide start-up services, including inspection, calibration and first operation are available for the SMARTPUMP.
- 1.8 System shall be a Simplex SMARTPUMP, Model "SP-4" as described above. To be supplied by Simplex, Inc, 5300 Rising Moon Rd., Springfield, IL 62711. 217-483-1600.