



MLD+ MECHANICAL LEAK DETECTORS

FE Petro™ brand MLD+ mechanical leak detectors provide precise leak detection for standard fuel and biofuel applications on 4" submersible turbine pumps (STPs). This lineup of advanced mechanical leak detectors features reliable line leak detection capabilities and maximum product flow rates. The MLD+ features a compact, yet rugged design to reduce installation height and provide accurate, hassle-free operation.

Highlights

- Two models to meet the needs of your standard fuel applications include the MLD+G (blue cover, copper vent tubing) for gasoline with up to 10% Ethanol and the MLD+D (gold cover, copper vent tubing) for diesel with up to 5% biodiesel.
- Two models to meet the needs of your biofuel applications include the MLD+AG (blue cover, stainless vent tubing) for gasoline with up to 85% Ethanol and the MLD+BD (gold cover, stainless vent tubing) for diesel with up to 20% biodiesel or 100% biodiesel.
- Piston style construction with reduced volume allows the MLD+ to react quickly and provide more accurate leak detection capabilities.
- A specialized metering pin unique to only the MLD+ provides precision leak detection for any type of pipework system including flexible, rigid or a combination of the two.
- Burnished piston chamber provides smooth operation and long service life.
- Color coded covers easily identify the model to the application (gold for diesel and blue for gas).
- Opens completely to allow maximum product flow during fueling operation and remains open with discharge pressure as low as 1 PSI (0.07 bar).
- Compatible with FE Petro™ brand STPs, as well as competitive STPs and line leak detector housings.

Specifications

- All models are capable of detecting line leaks equivalent to 3 gph at 10 psi (11.4 lph @ 0.70 bar) when installed properly with the appropriate fuels - all models will signal detection of leaks by restricting product delivery to less than 3 gpm (11.4 lpm) and taking more than 4 seconds to open
- All models will remain in the open position during product delivery to manifold, with discharge pressures as low as 1 psi (0.07 bar) - all models will reset to "tripped" when line pressure delay is below 3 psi (0.21 bar) with pump off
- Detects leaks up to 10 feet (3 meters) above the point of installation
- Max. liquid viscosity of 70 SSU at 60 °F (15 °C)
- Gasoline models (blue cover, MLD+G and MLD+AG) are also listed for fuel mixtures containing 20% MTBE, 20% ETBE or 17% TAME with gasoline as well as diesel fuels, fuel oils, kerosene, Avgas and jet fuels.
- Diesel models (gold cover, MLD+D and MLD+BD) are also listed for kerosene applications

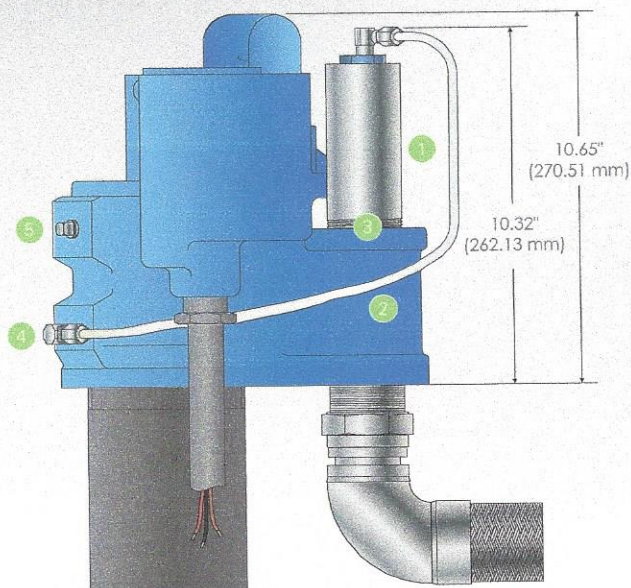
Approvals/Certifications

- cULus listed.
- Third party certified to comply with US EPA requirements 280.41 (B) and 280.44 (A) for continuous monitoring of pressurized piping.
- Consult factory for other applicable approvals.

Specifications continued

Installation

- 1 MLD+
- 2 MLD+ vent tube
- 3 Line leak detector housing (2" NPT)
- 4 Tank port (vent tube must be connected here)
- 5 Syphon port



Ordering Information

Standard Fuel MLD+ Mechanical Leak Detectors

Model	Description
403168901	STP-MLD+G for gas, single pack (blue cover, copper vent tube, brass fittings)
403168903	STP-MLD+G for gas, three pack
403170901	STP-MLD+D for diesel, single pack (gold cover, copper vent tube, brass fittings)
403170903	STP-MLD+D for diesel, three pack
403172903	STP-MLD+D combo, three pack (contains two STP-MLD+G and one STP-MLD+D)

Biofuel MLD+ Mechanical Leak Detectors

Model	Description
403169901	STP-MLD+AG for alcohol-gas, single pack (blue cover, stainless steel tube and fittings)
403169903	STP-MLD+AG for alcohol-gas, three pack
403171901	STP-MLD+BD for biodiesel, single pack (gold cover, stainless steel tube and fittings)
403171903	STP-MLD+BD for biodiesel, three pack

Notes:

1. MLD+G are listed for compatibility with fuel mixtures containing up to 10% ethanol with gasoline, up to 5% biodiesel with diesel fuels, and 20% MTBE, 20% ETBE, or 17% TAME with gasoline.
2. MLD+D models are listed for compatibility with diesel fuels with up to 5% biodiesel and kerosene applications only.
3. MLD+AG models are listed for fuel mixtures containing up to 85% ethanol with gasoline and 20% MTBE, 20% ETBE, or 17% TAME with gasoline as well as diesel fuels, fuel oils, kerosene, Avgas and jet fuels.
4. MLD+BD models are listed for diesel with up to 20% biodiesel or 100% biodiesel and kerosene applications only.
5. All above models will only mount in the 2" NPT leak detector port of a 4" submersible turbine, including competitive models, or in a leak detector adapter tee (sold separately below).
6. MLD+ models are listed for use with rigid pipelines up to 165.1 gallon capacity, with flexible pipelines up to 109.8 gallon capacity, and with combination rigid/flexible pipelines up to 274.9 gallon capacity.

Ordering Information continued

MLD+ Mechanical Leak Detector Repair Parts & Accessories

Model	Description
400440101	Vent tube (for use with MLD+G and MLD+D)
400449901	Hardware pack (fittings and documentation for MLD+G and MLD+D)
403123001	Vent tube, stainless steel (for use with MLD+AG and MLD+BD)
400449904	Hardware pack (fittings and documentation for MLD+AG and MLD+BD)
400518001	Leak detector adapter tee

FE PETRO®

A Franklin Fueling Systems Brand

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4" SUBMERSIBLE PUMPS

Since hitting the market in 1988, FE PETRO® brand submersible pumps have developed a reputation as the standard in performance, quality and dependability with innovative features only available from Franklin Fueling Systems. It is, and always will be about filling cars faster. With best-in-class flow rates and backed by a long history of dependability, FE PETRO® pumps are responsible for delivering fuel to thousands of customers around the globe, day in and day out.

TECHNICAL ADVANTAGES

Variable Speed

With faster fill times during peak hours and power savings during non-peak hours, variable speed submersible pumping systems allow you to maximize profits with consistent flow rates while mitigating operating expenses.

MagShell®

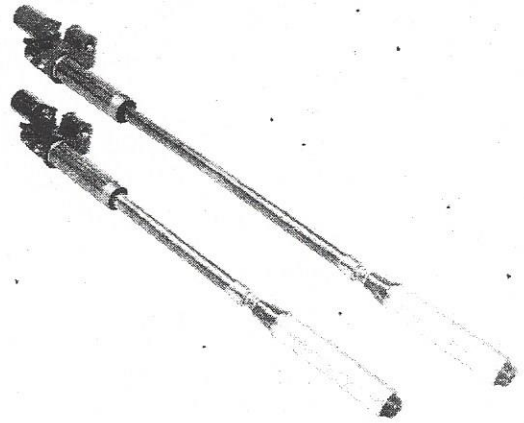
The patented stainless steel MagShell®, available on 2 Hp and 4 Hp pumps, is designed to maximize flow rate capabilities, potential throughput, and profits. By expanding the pump motor shell, the MagShell® increases the area for product flow by 45%.

Biofuel Compatibility

FE PETRO® Alcohol-Gas (AG) and Advanced Protection (AP) pumps are UL listed with both UL79A (up to 85% Ethanol) and UL79B (up to 20% or 100% Biodiesel).

Variable Length

The patented telescoping pump shaft lets installers adjust the length of the pump onsite for the perfect fit.



Advanced Protection

Stop corrosion in its tracks. Special powder-coated, e-coated, and stainless steel components defend your pump in the tank and in the sump from accelerated corrosion.

Turbine Pump Interface

Remote enhanced pump monitoring and control including pump-in-water automation, clogged intake escalation, tank leveling, and tank priority.

Intake Filter Screen

Avoid system damage, pumping slowdowns, and reduce filter changes by keeping harmful tank debris, sediment, and corrosion from entering the pumping system with this factory-installed option.

FEATURE SELECTION

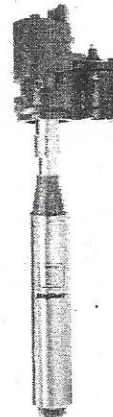
				
Variable Speed	✓	✓	✓	✓
Fixed Speed		✓	✓	✓
MagShell®	✓	✓		
Biofuel Compatibility	✓	✓	✓	✓
Variable Length	✓	✓	✓	✓
Fixed Length		✓	✓	✓
Advanced Protection	✓	✓	✓	✓
Turbine Pump Interface*	✓	✓	✓	✓
Intake Filter Screen	✓	✓	✓	✓

*Up to 85% Ethanol and up to 20% or 100% Biodiesel.

*Fixed speed models require a Guardian Series™ Single Phase Smart Controller (SPGC-220) to network with EVO™ Series Automatic Tank Gauges.

2 HP SUBMERSIBLE TURBINE PUMPS

With faster fill times during peak hours and power savings during non-peak hours, FE PETRO® 2 Hp variable speed submersible pumps deliver maximized profits while mitigating operating expenses. 2 Hp submersible pumps are also available in fixed speed models.



TECHNICAL ADVANTAGES

OPTIONAL FEATURES

Variable Speed

With faster fill times during peak hours and power savings during non-peak hours, variable speed submersible pumping systems allow you to maximize profits with consistent flow rates while mitigating operating expenses.

Biofuel Compatibility

FE PETRO® pumps are UL listed with both UL79A (up to 85% Ethanol) and UL79B (up to 20% or 100% Biodiesel).

Advanced Protection

Stop corrosion in its tracks. Special powder-coated, e-coated, and stainless steel components defend your pump in the tank and in the sump from accelerated corrosion.

STANDARD FEATURES

MagShell®

The patented stainless steel MagShell® is designed to maximize flow rate capabilities, potential throughput, and profits. By expanding the pump motor shell, the MagShell® increases the area for product flow by 45%.

Variable Length

The patented telescoping pump shaft lets installers adjust the length of the pump onsite for the perfect fit.

Active Air Eliminator

FE PETRO® STPs come standard with active air elimination, which eliminates air through the highest point in the pump head at all times when the pump is running, assuring air does not pass into discharge piping.

Safety and Ease of Maintenance

FE PETRO® STPs include a contractor electrical disconnect, which requires loosening only one bolt, allowing motor wiring to be disconnected without venting the dangerous tank vapors into the sump when servicing FE PETRO® submersible products.

Turbine Pump Interface

Remote enhanced pump monitoring and control including pump-in-water automation, clogged intake escalation, tank leveling, and tank priority.

Intake Filter Screen

Avoid system damage, pumping slowdowns, and reduce filter changes by keeping harmful tank debris, sediment, and corrosion from entering the pumping system with this factory-installed option.

Simple Servicing

If ever required, the pump can be easily removed from the tank by unthreading three bolts. There is no need to disconnect the syphon system or to remove the leak detector from the system to service the STP.

Manual Pressure Relief

As a standard FE PETRO® feature, a vent screw is provided to bleed line pressure to zero when necessary. By turning this screw, product is diverted back to the tank, dropping line pressure to zero. This reduces fuel discharged into the sump manhole or dispenser pan during servicing, further protecting service technicians and the environment.

Outlast, Outperform with Franklin Electric Inside

FE PETRO® STPs are powered by the legendary Franklin Electric motor and built for long term performance. Franklin Electric-powered submersible pumps provide maximum uptime and a proven track record in the fueling industry that spans more than four decades. They feature best-in-class flow rates and a long history of dependability.

Quality Certification

Franklin Fueling Systems is an ISO 9001 Certified Manufacturer.

SPECIFICATIONS

General

- Variable speed models are available in variable lengths only.
- Fixed speed models are available in variable length and fixed length options.
- Check valve: 2½" diameter fluorocarbon seal constructed with cast aluminum body and steel backing washer.
- Pressure relief valve: available in four pressure relief settings, integral to check valve. Standard model relieves at 40 psi and resets above 35 psi.
- Syphon: venturi-type syphon primer supplied with every submersible. Syphon check valve and secondary syphon sold separately.
- Air eliminator: every submersible includes a tank return path with one-way check valve to provide active air elimination.
- Electrical disconnect: electrical yoke for positive contractor disconnect during service.

Variable Speed Pump Motor

- 2 Hp, variable speed, two-stage centrifugal type pump motor with integral, automatic, thermal overload protection.
- Max. pressure: selectable operating pressure on MagVFC™ between 24 psi and 42 psi deadhead.
- Available with MagShell® which results in 45% increased flow area around motor.

Fixed Speed Pump Motor

- 2 Hp fixed speed, 3450 rpm, multi-stage centrifugal type pump motor with integral, automatic, thermal overload protection.
- Standard pressure (M200, two-stage) model, max. pressure = 36 psi.
- High pressure (HM200, three-stage) model, max. pressure = 45 psi.
- Available with MagShell™ for 45% increased flow area around motor.

Approvals

- cULus listed.
- Consult factory for applicable approvals.

Liquid Compatibility

- Max. liquid viscosity: 70 SSU at 60 °F (15 °C).
- STP variable speed models are UL and cUL listed for fuel mixtures containing up to 10% ethanol, and 20% MTBE, 20% ETBE or 17% TAME with gasoline.
- STPAG (AG compatible) models are UL listed for fuel mixtures containing diesel fuel with up to 20% Biodiesel, 100% Biodiesel, up to 85% ethanol with gasoline, and 20% MTBE, 20% ETBE or 17% TAME with gasoline.
- All variable speed (non-AG) models can also be used with diesel fuels, fuel oils, kerosene, Avgas and jet fuels in a non-gelled pourable state.
- 2 Hp fixed speed models can also be used with diesel fuels, fuel oils, kerosene, Avgas and jet fuels in a non-gelled pourable state.
- All wetted elastomers are made of a high grade, fluorocarbon compound.

Variable Speed Power Requirements

- Variable speed pumps can only be controlled by a MagVFC™ variable frequency controller.
- VS2 models can operate with single- or three-phase incoming power supply to the MagVFC™.
- Incoming power supply to the MagVFC™ can be 200-250 VAC, 50 or 60 Hz.
- MagVFC™ outputs a three-phase, variable frequency signal, valid for FE PETRO® variable speed pumps only.
- MagVFC™ max. line draw: 20 Amps.
- Max motor draw: 7 Amps.

Fixed Speed Power Requirements

- 2 Hp fixed speed models require single-phase, 208-230 VAC, 60 Hz incoming power.
- 2 Hp fixed speed models incorporate a starting and running capacitor, with internal bleed resistor, rated 370 Volt, 40 microfarad.
- STP-SCI single-phase Smart Controllers and STP-CBS single-phase control boxes are available for 2 hp pump control.
- Max. motor draw: 12 Amps.