



STATE OF WISCONSIN
Department of Agriculture,
Trade and Consumer Protection

Approval # 20230015
(Replaces 20190016)

Bureau of Weights and Measures
Storage Tank Regulation
P.O. Box 7837
Madison, WI 53707-7837

Wisconsin ATCP 93 Material Approval

Equipment: STP-MLD Series (D, E, HC, HCD) and STP-MLD+ (D, G, AG, BD) Series Pipeline Leak Detectors

Manufacturer: Franklin Fueling Systems
3760 Marsh Road
Madison, WI 53718

Expiration of Approval: December 31, 2026

SCOPE OF EVALUATION

The STP-MLD and STP-MLD+ series of line leak detectors manufactured by Franklin Fueling Systems were evaluated for use as automatic line leak detectors for hourly monitoring in accordance with **ss. ATCP 93.130 and ATCP 93.515(8)(b)** of the Wisconsin Administrative Flammable and Combustible Liquids Code.

This evaluation summary is condensed to provide the specific installation, application, and operational parameters necessary to maintain the subject systems in compliance with the Wisconsin Administrative Code – ATCP 93.

DESCRIPTION AND USE

STP-MLD Series

The STP-MLD series leak detectors are mechanical devices that incorporate a poppet valve and metering pin. When the pump is activated, fuel is metered into the line to raise the pressure. If the pressure rises above 12-19 psi, the poppet valve opens and full flow into the line occurs. If the pressure fails to rise above 12-19 psi, fuel flow in the line is restricted to approximately 2 gal/ min.

The STP-MLD series uses a preset threshold and a single test to determine pipeline leakage. The system declares a leak if the preset leak detection threshold of 3 gallons per hour at 10 psi is exceeded.

The standard configuration is used for rigid and flexible pipelines carrying gasoline, diesel, aviation fuel, or alcohol blends (0-10% ethanol).

The "D" configuration is used for rigid pipelines carrying diesel and kerosene only.

The "E" configuration is used on flexible piping.

The "HC" configuration is used for high capacity pumps with rigid pipelines carrying gasoline, diesel, aviation fuel, and alcohol blends (0 to 10% methanol and ethanol).

The "HCD" configuration is used for high capacity pumps with rigid pipelines carrying diesel, and kerosene only.

STP-MLD+ Series

The STP-MLD+ series leak detector are mechanical devices that incorporate a poppet valve and metering pin. When the pump is activated, fuel is metered into the line to raise the pressure. If the pressure rises above 12-19 psi, the poppet valve opens and full flow into the line occurs. If the pressure fails to rise above 12-19 psi, fuel flow in the line is restricted to approximately 2 gal/ min.

The STP-MLD series uses a preset threshold and a single test to determine pipeline leakage. The system declares a leak if the preset leak detection threshold of 3 gallons per hour at 10 psi is exceeded.

The "+D" configuration is used for flexible, rigid, and hybrid pipelines containing diesel fuel and kerosene only.

The "+G" configuration is used for flexible, rigid, and hybrid pipelines containing gasoline, diesel, aviation fuel, or alcohol blends (0-10% ethanol).

The "+AG" configuration is used for flexible, rigid, and hybrid pipelines containing gasoline, diesel, aviation fuel, or alcohol blends (0-85% ethanol).

The "+BD" configuration is used for flexible, rigid, and hybrid pipelines containing diesel, kerosene, or diesel blends (0-20% Bio-Diesel), or 100% Bio-Diesel.

TESTS AND RESULTS

All five variations of the STP-MLD and all four variations of the STP-MLD+ Line Leak Detectors are certified as capable of detecting a three-gallon per hour leak with a probability of detection of greater than 95 percent and a probability of false alarm of less than 5 percent. They are also UL Listed.

LIMITATIONS / CONDITIONS OF APPROVAL

General

- All monitoring equipment shall be installed, calibrated, operated, and maintained in accordance with the manufacturer instructions, and certified every 12 months for operability, proper operating condition, and proper calibration by inducing a physical line leak. The individual performing the test must be qualified by the equipment manufacturer. Records of sampling, testing, or monitoring shall be maintained in accordance with **ATCP 93.500(9)**.
- The manufacturer shall submit for a revision to this Wisconsin Material Approval application if any of the functional performance capabilities of this equipment are revised.
- The system may be used with trapped vapor present in the line.
- The safe maximum operating pressure for this system is 50 psi.
- There is no required waiting time between a product delivery and the use of this leak detection equipment.
- Maximum static head pressure without affecting operation is 10' for the standard configurations and 12' for the HC configurations from mechanical Line detector to dispensing point.
- **Mechanical line leak detectors cannot be installed in the same line as an electronic line leak detector.**

- Critical performance parameters for the **STP-MLD Line Leak Detector**:

Parameter	Value
Total maximum allowable volume of product in any rigid test pipeline	129 gallons or less
Total maximum allowable volume of product in any flexible test pipeline	101 gallons or less

- Critical performance parameters for the **STP-MLD-D Line Leak Detector**:

Parameter	Value
Total maximum allowable volume of product in any rigid test pipeline	341 gallons or less

- Critical performance parameters for the **STP-MLD-E Line Leak Detector**:

Parameter	Value
Minimum Bulk Modulus	1,280 psi
Total maximum allowable volume of product in any flexible test pipeline	49.6 gallons or less

- Critical performance parameters for the **STP-MLD-HC Line Leak Detector**:

Parameter	Value
Total maximum allowable volume of product in any rigid test pipeline	492 gallons or less
Total maximum allowable volume of product in any flexible test pipeline	95 gallons or less
Total maximum allowable volume of product in any Hybrid (rigid/flexible) test pipeline	492 gallons or less with the flexible portion less than 95 gallons

- Critical performance parameters for the **STP-MLD-HCD Line Leak Detector**:

Parameter	Value
Total maximum allowable volume of product in any rigid test pipeline	492 gallons or less
Total maximum allowable volume of product in any flexible test pipeline	95 gallons or less
Total maximum allowable volume of product in any Hybrid (rigid/flexible) test pipeline	492 gallons or less with the flexible portion less than 95 gallons

- Critical performance parameters for the **STP-MLD+ Line Leak Detectors**:


Parameter	Value
Total maximum allowable volume of product in any rigid test pipeline	275 gallons or less
Total maximum allowable volume of product in any flexible test pipeline	110 gallons or less
Total maximum allowable volume of product in any Hybrid (rigid/flexible) test pipeline	275 gallons or less with the flexible portion less than 110 gallons

This approval will be valid through December 31, 2026, unless manufacturing modifications are made to the product or a re-examination is deemed necessary by the department. The Wisconsin Material Approval Number must be provided when plans that include this product are submitted for review.


DISCLAIMER

The Department is in no way endorsing or advertising this product. This approval addresses only the specified applications for the product and does not waive any code requirement unless specified in this document.

Effective Date: October 5, 2023

Reviewed by:  Date: 10/5/2023

Erik Otterson
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 Storage Tank Regulation
 Bureau of Weights and Measures

Approved by:  Date: 10/5/2023

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