



**STATE OF WISCONSIN**  
Department of Agriculture, Trade  
and Consumer Protection

Approval# 2024006

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

## **Wisconsin ATCP 93 Material Approval**

**Equipment:** MagLink LX Automatic Tank Gauging (ATG) with continuous statistical leak detection (CSLD) and static leak detection, including DMP and 924B probes.

**Manufacturer:** Dover Fueling Solutions  
3814 Jarrett Way  
Austin, TX 78728

**Expiration of Approval:** December 31, 2027

### **SCOPE OF EVALUATION**

MagLink LX Automatic Tank Gauging (ATG) System manufactured by Dover Fueling Solutions, were evaluated as a means of monthly monitoring in accordance with **s. ATCP 93.510(3)(a)** and **93.515 (5)** of the Wisconsin Flammable and Combustible Liquids Code.

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The MagLink LX Automatic Tank Gauging (ATG) Systems manufactured by Dover Fueling Solutions, was evaluated as a means of monthly monitoring in accordance with **s. ATCP 93.510(3)(a)** and **93.515 (5)**.

The Dover Fueling Solutions MagLink LX Statistical Continuous Leak Detection (CSLD) system was evaluated as a means of continuous statistical leak detection for underground tanks in accordance with **s. ATCP 93.510(3)(a)** and **93.515 (5)**.

The Dover Fueling Solutions MagLink LX Electronic Line Leak Detector, was evaluated as a means of automatic line leak detection for rigid and flexible piping in accordance with **s. ATCP 93.510(4)** and **93.515 (8)**. The MagLink LX system was also evaluated for use in semi-rigid and hybrid systems containing rigid and flexible piping.

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**

The Dover Fueling Solutions MagLink LX ATG systems with or without CSLD may be used on tanks that contain gasoline, diesel, aviation fuel, #4 and #6 fuel oil, used oil, ethanol blends up through E100, biodiesel blends B6-B20 meeting ASTM D7467, Biodiesel B100 meeting D6751, and some solvents. Other liquids with a known coefficient of expansion and density may be tested after consultation with and approval from Dover Fueling Solutions.

The Dover Fueling Solutions MagLink LX Automatic Tank Gauging (ATG) System, consists of a console and probe combination that can be used as a monthly monitoring leak detection system in underground tanks. The ATG probe is a magnetostrictive probe that senses the liquid level. Each probe contains a water sensor for the purpose of detecting water ingress, with a density float for measuring product density and mass calculation.

The **MagLink LX** with either the 924B or DMP magnetostrictive probe **can perform only automatic tank gauging, not tightness testing, on tanks with a capacity up to 25,215-gallons.**

MagLink LX Automatic Tank Gauging (ATG) Systems with Continuous In-Tank Leak Detection System (CITLDS) consist of a console and probe combination (924B and DMP series) that can be used as a continuous monthly monitoring leak detection system in underground tanks. Up to four (4) tanks can be manifolded together, however, maximum tank capacity for single tanks is 25,215 gallons. Maximum monthly throughput is limited to 351,190 gallons. The minimum number of days to make a leak rate estimate is 8 eight days, with a maximum of 31 days to acquire it.

### MagLink LX Electronic Line Leak Detector (ELLD):

The MagLink LX used with Dover ELLD system may be used on rigid, semi-rigid, and flexible pipelines containing gasoline, diesel, #4 and #6 fuel oils, solvents, used oil, ethanol blends up to E100, biodiesel blends B6-B20 meeting ASTM D7467, and biodiesel B100 meeting ASTM D5751.

For 3.0 gph (hourly), 0.2 (monthly), and 0.1 gph (annual) leak test rate:

- Maximum of 124 gallons flexible or semi-rigid pipe.
- Maximum of 559 gallons for combination (flex, semi-rigid, rigid) pipelines with a maximum bulk modulus of 21,987 psi.

During initial setup, it is necessary to program the console by activating the consoles “learn” mode for the console to gather data on the pipeline with a Dover supplied leak orifice installed. Once the “learn” mode is finished, the system is ready to monitor the pipeline and will not need to be re-

programmed unless the line characteristics change.

**Tests are performed at operating pressure mechanical line leak detectors cannot be installed in the same line as the electronic line leak detector.**

## **TESTS AND RESULTS**

Testing of the Dover Fueling Solutions MagLink LX for monthly monitoring testing was conducted in accordance with the EPA Automatic Tank Gauging Systems protocol. When using leak declaration thresholds of 0.05 gph and 0.10 gph, the probabilities of detection of a leak of 0.10 and 0.20 gph, respectively, were certified to within the 95-5 ranges required by the EPA protocols.

### Liquid Level Probe

Testing of the 924B and DMP magnetostrictive probes were conducted using the Probe Comparison Protocol which has been accepted by the National Work Group on Leak Detection Evaluations. Based on the calculations, there is no statistical difference at the 5% level between the 924B and the DMP probes.

### Automatic Tank Gauging Method

Test Period:

- Minimum collection time of 2 Hours for leak rate of 0.2 gph
- Minimum collection time of 4 hours for leak rate of 0.1 gph

Waiting Period:

- Minimum or 8 hours between delivery and testing for leak rate of 2.0 gph
- Minimum or 12 hours between delivery and testing for leak rate of 0.1 gph

<b>Parameter</b>	<b>Value</b>
Maximum Tank Size	<b>Up to 20,650 gallons</b>
Software Version	<b>N/A</b>
Minimum Tank Level	<b>14% for 0.2 gph and 15% for 0.1 gph</b>

### Continuous In-Tank Leak Detection Method

<b>Parameter</b>	<b>Value</b>
Maximum Tank Size	<b>Up to 25,215 gallons</b>
Maximum Number of Manifolded Tanks	<b>4</b>
Software Version	<b>N/A</b>
Minimum Tank Level	<b>14%</b>
Maximum Monthly Throughput	<b>351,190 gallons</b>

### Electronic Line Leak Detector

Testing of the MagLink LX ELLD for hourly, monthly, and annual pipeline testing was conducted in accordance with either the EPA Pressurized Pipeline Leak Detection Systems protocol (rigid piping) or a modified version of same protocol adapted for flexible piping. When using leak declaration thresholds of 1.5 gph, 0.10 gph, and 0.05 gph, the probabilities of detection for a leak of 3.0, 0.20 and 0.10 gph, respectively, were certified to within the 95-5 ranges required by the EPA protocols.

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<b>Parameter</b>	<b>Value</b>
Total maximum allowable volume of product volume of product in semi-rigid test pipeline	<b>124 gallons</b>
Total maximum allowable volume of product volume of product in combination (flex, semi-rigid, rigid) test pipeline	<b>559 gallons</b>
Bulk Modulus	<b>21,987 psi</b>

- When installing the MagLinkLX electronic line leak detection system, a third party precision tightness test shall be performed prior to beginning the auto-learn process. The precision tightness test results shall be included with the line leak detection form TR-WM-133 (formerly ERS-9LD) submittal to the Department.
- An annual test of the operation of the leak detector shall be conducted in accordance with the manufacturer requirements for testing to the recognized leak thresholds by inducing a physical line leak as required by **s. ATCP 93.515(8)(d)**. The individual performing the test must be qualified by the equipment manufacturer.

## **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. Records of sampling, testing, or monitoring shall be maintained in accordance with **s. 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. This would include, but not be limited to changes in software, hardware, or methodology.
- While 3<sup>rd</sup> party testing does determine a required minimum tank level, EPA leak detection regulations require testing of the portion of the tank system which routinely contains product. Consistent testing at low levels could allow a leak to remain undetected.
- During leak testing, a minimum level of product in tank shall be maintained so as to ensure testing of the portion of the tank and/or piping that routinely contains product, regardless of testing system capability. For instance, if product levels are routinely maintained at 60%, but the leak detection system is capable of testing at 15% product level, then testing shall be performed at 60% levels.
- Automatic tank gauges shall be programmed to provide an audible and visual alarm in the event of a tank test fail, periodic monthly tank test not performed within a 30-day interval, or tank interstitial sensor actuation. Silencing of the alarm shall require manual operator action.
- Electronic line leak detection shall be programmed to provide an audible and visual alarm in addition to providing shut-down of the submersible pump in the event of a line test fail. The ELLD shall also be programmed to provide an audible and visual alarm in the event a periodic monthly line test was not performed within a 30-day interval. Silencing of either alarm shall require manual operator action.

This approval will be valid through December 31, 2027, 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: 7/2/24

Reviewed by:  Date: 7/2/2024

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