



Department of Environmental Protection

2600 Blair Stone Road ♦ Tallahassee, Florida 32399-2400

DEP Form: 62-762.901(9)
Form Title: Storage Tank Equipment
Registration Form
Effective Date: July 2019
Incorporated in Rule 62-762.851, F.A.C.

Storage Tank System Equipment Registration Form

Fill out completely

General Information

Company Name:	Morrison Bros. Co.	Contact Name:	Jerry Schollmeyer
Company Address:	570 East 7th Street	City, State:	Dubuque, Iowa
E-mail:	jschollmeyer@morbros.com	Zip:	52001
Product Name:	Leak Indicator/Overfill Indicator	Contact Number:	800-553-4840
Model Number(s):	724 & 724O Series	Product Type:	AST
Rule(s) citation that registration is being requested within Chapter 62-761 (UST), and/or 62-762 (AST), F.A.C.:	62-762(AST)		

Write a brief description of equipment registration request including product limitations:

The 724 Leak indicator provides a visual indication if a primary tank leaks into the interstitial space. The 724 has a full range of adjustment up to 168" and installs into a minimum diameter of a 2 inch schedule 80 pipe. The 724O provides a visual indication when a liquid level reaches a preset high point in and aboveground tank. The 724O installs into a minimum of a 2 inch female threaded opening and has a maximum adjustment of 40 Inches from the tank top.

Information Checklist (Choose Yes, No, or N/A - Not Applicable):

	Yes	No	N/A
1. Third-party Certification by a Nationally Recognized Testing Laboratory? (Required)	☒	☐	☐
2. Documentation of third-party evaluation that the equipment meets DEP Rules?	☒	☐	☐
3. Documents included about the qualifications of the Nationally Recognized Testing Laboratory?	☒	☐	☐
4. Technical information and drawings included?	☒	☐	☐
5. Installation instructions included?	☒	☐	☐
6. Annual Operability Testing Requirements (Rules 62-761.500, 62-762.501, & 62-762.502 F.A.C.)?	☒	☐	☐
7. Integrity Testing Requirements (Rules 62-761.700, 62-762.701, & 62-762.702, F.A.C.)?	☒	☐	☐
8. Compatible with fuel blends containing >10% ethanol or >20% biodiesel?	☒	☐	☐
9. Has the product been approved or registered in other countries or states? (If so provide list)	☐	☒	☐
10. Any requirements for company-certified installers or trainers?	☐	☒	☐
11. Was this product(s) previously approved or registered by the Department? If yes, EQ- _____	☐	☒	☐
12. Any changes or modifications to the equipment since the last submittal to DEP?	☐	☒	☐

Document Information: Provide supporting documents indicated as "Yes" above including this form via email to Tanknotify@floridadep.gov, or documents can be sent to FDEP, Division of Waste Management, 2600 Blair Stone Road, MS 4560, Tallahassee, FL 32399.

Write a brief description of equipment installation and performance in the U.S.:

The 724 float is supplied with sufficient cable to meet installation requirements for all tanks within the product scope. The installer measures the correct distance from the tank top or riser and adjusts and trims the cable to length with the supplied wrench. Once the cable is adjusted, the indicator may be threaded into place after applying the appropriate amount of pipe sealant

Equipment Registration Certification:

To the best of my knowledge and belief, all information submitted on this form is true, accurate and complete.

Gerald Schollmeyer, Sales Manager
Printed Name and Title

Signature (right click to sign)

3.18.2020
Date

For Department Use Only:

Date Application Received: 3/18/2020

Application complete:

Yes: ☒ No: ☐

EQ- 929

Date of complete or incomplete letter sent: 3/18/2020

Date Equipment Requires Renewal: 3/18/2025

Storage tank system equipment requires renewal every 5 years in accordance with subsection 62-762.851(2), F.A.C.

724 Interstitial Leak Indicator

Installation & Maintenance Instructions

The 724 is a fully mechanical, visual leak indicator for new and existing aboveground storage tanks. The unit can be set to accommodate a tank height between 6 inches and 14 feet by adjusting the cable length to the float device using a 7/64" hex driver. The unit attaches to a 2" female threaded pipe.



Failure to follow any or all of the warnings and instructions in this document could result in a hazardous liquid spill, which could result in property damage, environmental contamination, fire, explosion, serious injury or death.

Installation



WARNINGS

- **Fire Hazard** – Death or serious injury could result from spilled liquids.
- Install only on shop fabricated atmospheric tanks built and tested in accordance to industry standards such as UL142, NFPA 30 & 30A, and API 650.
- Install in accordance with all applicable local, state, and federal laws.
- 724 Interstitial Leak Indicator **must** be properly sized and selected for each specific tank application.
- For your safety, it is important to follow local, state, federal and/or OSHA rules that apply to working inside, above, or around the storage tank and piping area. Use all personal protective equipment required for working in the specific environment.
- Tanks could be under pressure. Vapors could be expelled from tank vents, piping, valves or fittings while performing installation. Vapors could catch fire or cause an explosion. **Avoid** sparks, open flame, or hot tools when working on vents.

Steps

1. Verify contents of box. You should have received: installation instructions, indicator, and a float with cable. Inspect leak indicator for shipping damage. Make sure indicator rod moves freely in body. Do not use if damage is found.
2. Check openings for foreign matter such as packaging material. Remove any that is found.
 - **CAUTION:** Riser pipe and bung opening must be free of burrs. Sharp edges may damage cable.
3. To determine approximate cable set point, lower float assembly and cable into riser pipe until the float touches bottom.
 - Use a measuring tape to double check pipe depth and ensure it is free of existing debris.
4. Mark the top of bung or riser pipe on cable.
5. Measure 17/16" down from location in step #4 and place a mark on cable. (This will be the approximate set point.)
6. Loosen set screw at the bottom of 724 rod and then slide cable through the perpendicular hole in the rod till you reach the marked set point from step #5 and loop through once more.
7. Gently tighten set screw and dry fit assembly into pipe and ensure red indicator is at equal or slightly below level with top of blue band on glass.
8. Remove assembly and make any needed adjustments.
9. Tighten the cable set screw securely once the cable is the correct length. **CAUTION:** Failure to tighten the cable set screw securely could result in the float and cable falling into the tank and the leak indicator not working.
10. Trim the excess cable no less than one foot from the cable set screw. This will provide extra cable if future adjustment is necessary. The extra cable may hang down in the tank. This will not affect the operation of the unit.
11. Slide the float unit down through the riser pipe.
12. Apply pipe sealant to threads and secure the indicator unit to the riser pipe. (Note: When attaching the indicator unit to the riser pipe, make sure no thread sealant contaminates the rod.)
13. Hand tighten leak indicator on to riser pipe and ensure red indicator is below blue band. **WARNING: DO NOT TIGHTEN USING GLASS.** Using a wrench, finish securing leak indicator.
14. With indicator in place, the red should not show above the blue.



Failure to follow any or all of the warnings and instructions in this document could result in a hazardous liquid spill, which could result in property damage, environmental contamination, fire, explosion, serious injury or death.

Maintenance

Monthly inspection, and immediate inspection during freezing conditions, by someone familiar with the proper operation of the storage tank.



WARNINGS

- **Fire Hazard** – Death or serious injury could result from spilled liquids.
- Install only on shop fabricated atmospheric tanks built and tested in accordance to industry standards such as UL142, NFPA 30 & 30A, and API 650.
- Install in accordance with all applicable local, state, and federal laws.
- 724 Interstitial Leak Indicator **must** be properly sized and selected for each specific tank application.
- For your safety, it is important to follow local, state, federal and/or OSHA rules that apply to working inside, above, or around the storage tank and piping area. Use all personal protective equipment required for working in the specific environment.
- Tanks could be under pressure. Vapors could be expelled from tank vents, piping, valves or fittings while performing installation. Vapors could catch fire or cause an explosion. **Avoid** sparks, open flame, or hot tools when working on vents.

Steps

1. Carefully remove indicator unit from the riser pipe.
2. Move cable up and down to make sure the rod moves freely.

During maintenance procedure inspect all indicator components and surfaces for damage, corrosion or excessive wear. If any is found, replace the unit.



Failure to follow any or all of the warnings or instructions in this document could result in a hazardous product spill, which could result in property damage, environmental contamination, fire explosion, serious injury or death.



Model 724 Leak Indicator/724 Overfill Indicator

NEW PRODUCT ANNOUNCEMENT

Application

The Leak Indicator is designed to detect leaks in the interstitial space of an aboveground storage tank. The Overfill Indicator provides a high level visual signal indicating that the aboveground storage tank is almost full.

Features and Details

- 2" male NPT threads
- Float installs through a 2" female threaded opening, a schedule 40 riser, or a schedule 80 riser
- Highly visible indicator
- Durable construction
- Optional aluminum guard
- **724**...one model accomodates tanks up to 168"

Materials of Construction

- Body... Aluminum
- Window... Glass
- Float... Stainless steel
- Guard (optional)... Aluminum

Approvals

Third party approval (*pending*)

Item Number	Description	Minimum Length	Maximum Length	List Price
724---0200 AI	2" Leak indicator	6.50"	168"	\$89.00
724---1200 AI	2" Leak indicator with guard	6.50"	168"	\$107.00
724O--0200 AI	2" Overfill indicator	6.50"	40"	\$82.00
724O--1200 AI	2" Overfill indicator with guard	6.50"	40"	\$100.00

**Please consult Customer Service for BSP options.*



724 Leak Indicator
(in alarm state)



724 Leak Indicator
(in normal state)



724 Leak Indicator
(with guard)



724 Overfill Indicator

Available March 1st!



MORRISON BROS. CO.

570 E. 7th Street, P.O. Box 238 | Dubuque, IA 52004-0238
t. 563.583.5701 | 800.553.4840 | f. 563.583.5028

www.morbros.com

7240 Overfill Indicator

Installation & Maintenance Instructions

The 7240 is a fully mechanical, visual overfill indicator for new and existing aboveground storage tanks. The unit can be set to accommodate a tank height between 6 inches and 4 feet by adjusting the cable length to the float device using a 7/64" hex driver. The unit attaches to a 2" female threaded pipe.



Failure to follow any or all of the warnings and instructions in this document could result in a hazardous liquid spill, which could result in property damage, environmental contamination, fire, explosion, serious injury or death.

Installation



WARNINGS

- **Fire Hazard** – Death or serious injury could result from spilled liquids.
- Install only on shop fabricated atmospheric tanks built and tested in accordance to industry standards such as UL142, NFPA 30 & 30A, and API 650.
- Install in accordance with all applicable local, state, and federal laws.
- 7240 Overfill Indicator must be properly sized and selected for each specific tank application.
- For your safety, it is important to follow local, state, federal and/or OSHA rules that apply to working inside, above, or around the storage tank and piping area. Use all personal protective equipment required for working in the specific environment.
- Tanks could be under pressure. Vapors could be expelled from tank vents, piping, valves or fittings while performing installation. Vapors could catch fire or cause an explosion. **Avoid** sparks, open flame, or hot tools when working on vents.

Steps

1. Verify contents of box. You should have received: installation instructions, indicator, and a float with cable. Inspect overfill indicator for shipping damage. Make sure indicator rod moves freely in body. Do not use if damage is found.
2. Check openings for foreign matter such as packaging material. Remove any that is found.
 - **CAUTION:** Riser pipe and bung opening must be free of burrs. Sharp edges may damage cable.
3. To determine approximate cable set point; determine desired overfill fluid level height from top of riser pipe or bung.
 - Use a measuring tape to double check pipe depth and ensure it is free of existing debris.
4. Measure from bottom of float and mark the location on cable.
5. Measure 17/16" down from location in step #4 and place a mark on cable. (This will be the approximate set point.)
6. Loosen set screw at the bottom of 7240 rod and then slide cable through the perpendicular hole in the rod till you reach the marked set point from step #5 and loop through once more.
7. Gently tighten set screw and dry fit assembly into pipe and ensure red indicator is at equal or slightly below level with top of blue band on glass.
8. Remove assembly and make any needed adjustments.
9. Tighten the cable set screw securely once the cable is the correct length. **CAUTION:** Failure to tighten the cable set screw securely could result in the float and cable set screw falling into the tank and the overfill alarm not working.
10. Trim the excess cable no less than one foot from the cable clamp. This will provide extra cable if future adjustment is necessary. The extra cable may hang down in the tank. This will not affect the operation of the unit.
11. Slide the float unit down through the riser pipe.
12. Apply pipe sealant and secure the indicator unit to the riser pipe. (Note: When attaching the indicator unit to the riser pipe, make sure no thread sealant contaminates the rod.)
13. Hand tighten overfill indicator on to riser pipe and ensure red indicator is below blue band. **WARNING: DO NOT TIGHTEN USING GLASS.** Using a wrench, finish securing overfill indicator.
14. With indicator in place, the red should not show above the blue.



Failure to follow any or all of the warnings and instructions in this document could result in a hazardous liquid spill, which could result in property damage, environmental contamination, fire, explosion, serious injury or death.

Maintenance

Monthly inspection, and immediate inspection during freezing conditions, by someone familiar with the proper operation of the storage tank.



WARNINGS

- **Fire Hazard** – Death or serious injury could result from spilled liquids.
- Install only on shop fabricated atmospheric tanks built and tested in accordance to industry standards such as UL142, NFPA 30 & 30A, and API 650.
- Install in accordance with all applicable local, state, and federal laws.
- 724O Overfill Indicator must be properly sized and selected for each specific tank application.
- For your safety, it is important to follow local, state, federal and/or OSHA rules that apply to working inside, above, or around the storage tank and piping area. Use all personal protective equipment required for working in the specific environment.
- Tanks could be under pressure. Vapors could be expelled from tank vents, piping, valves or fittings while performing installation. Vapors could catch fire or cause an explosion. **Avoid** sparks, open flame, or hot tools when working on vents.

Steps

1. Carefully remove indicator unit from the riser pipe.
2. Move cable up and down to make sure the rod moves freely.

During maintenance procedure inspect all indicator components and surfaces for damage, corrosion or excessive wear. If any is found, replace the unit.



Failure to follow any or all of the warnings or instructions in this document could result in a hazardous product spill, which could result in property damage, environmental contamination, fire explosion, serious injury or death.



Model 724 Leak Indicator/724 Overfill Indicator

SPECIFICATION SHEET

Application

The Leak Indicator is designed to detect leaks in the interstitial space of an aboveground storage tank. The Overfill Indicator provides a high level visual signal indicating that the aboveground storage tank is almost full.

Features and Details

- 2" male NPT threads
- Float installs through a 2" female threaded opening, a schedule 40 riser, or a schedule 80 riser
- Highly visible indicator
- Durable construction
- Optional aluminum guard
- **724**...one model accomodates tanks up to 168"

Materials of Construction

- Body... Aluminum
- Window... Glass
- Float... Stainless steel
- Guard (optional)... Aluminum

Approvals

Third party approval (*pending*)

Item Number	Description	Minimum Length	Maximum Length
724---0200 AI	2" Leak indicator	6.50"	168"
724---1200 AI	2" Leak indicator with guard	6.50"	168"
724O--0200 AI	2" Overfill indicator	6.50"	40"
724O--1200 AI	2" Overfill indicator with guard	6.50"	40"

**Please consult Customer Service for BSP options.*



724 Leak Indicator
(in alarm state)



724 Leak Indicator
(in normal state)



724 Leak Indicator
(with guard)



724 Overfill Indicator

Available March 1st!



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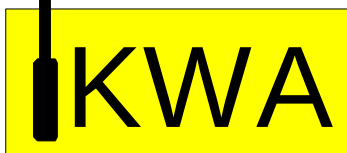
Evaluation of the Morrison Bros. Co. 724 Leak Indicator and 724O Overfill Indicator

Final Report Version 2

PREPARED FOR:
Morrison Bros. Co.

February 26, 2020

Ken Wilcox Associates, Inc.
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Voice (816) 443-2494, Fax (816) 443-2495
E-mail cwilcox@kwaleak.com, Web <http://www.kwaleak.com>



Evaluation of the Morrison Bros. Co. 724 Leak Indicator and 724O Overfill Indicator

Final Report Version 2

**PREPARED FOR:
Morrison Bros. Co.
570 East 7th Street
Dubuque, IA 52001**

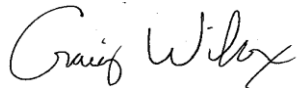
February 26, 2020

Preface

This report presents the results of an independent third-party evaluation of the Morison Bros. Co. 724O Overfill Indicator Float Sensor and 724 Leak Indicator. The evaluation was conducted by Ken Wilcox Associates, Inc. using procedures described in section 4.5.1, "Liquid Phase Sensor Test Procedures", of the 2019 revised standard protocol "Standard Test Procedures For Evaluating Release Detection Methods: Volumetric And Non- volumetric Tank Tightness Testing", May 2019. The official results of this evaluation are contained in Attachment A of this report on the EPA Results forms. All work was conducted by Ken Wilcox Associates, Inc. at the Fuels Management Research Center in Grain Valley, Missouri.

This report was prepared by Craig D. Wilcox, Ken Wilcox Associates, Inc. Technical questions regarding this evaluation should be directed to Morrison Bros. Co. at (563) 583-5701.

KEN WILCOX ASSOCIATES, INC



Craig D. Wilcox, President
February 26, 2020

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1.0 Background

The federal Environmental Protection Agency (EPA) has provided a series of documents, which describe the procedures that are to be used to verify that leak detection equipment meets the performance requirements of the Federal Register. The requirements for evaluating liquid level sensors are described in section 4.5.1, “Liquid Phase Sensor Test Procedures”, of the 2019 revised standard protocol “Standard Test Procedures For Evaluating Release Detection Methods: Volumetric And Non-volumetric Tank Tightness Testing”, May 2019. The evaluation procedures following during the evaluation and described in this report meet those requirements.

2.0 Description of the Equipment

Morrison Bros. Co. 724 Leak Indicator

The Morrison Bros. Co. 724 Leak Indicator is a fully mechanical, visual leak indicator for new and existing above ground storage tanks that contain an interstice. The 724 Leak Indicator consists of a spring loaded red leak indicator that can be viewed inside of a sight glass as well as an adjustable cable that attaches to a fuel float. The 724 Leak Indicator can be set to accommodate different installation depths inside the tank interstice by adjusting the cable length to the float device using a 7/64" hex driver. The adjustment range of the cable is between 6" and 168" which allows for the installer to set the float at the desired depth near the bottom of the tank interstice. The unit attaches to a 2" threaded pipe.

Morrison Bros. Co. 724O Overfill Indicator

The Morrison Bros. Co. 724O Overfill Indicator is a fully mechanical, visual overfill indicator for new and existing above ground storage tanks. The 724O consists of a spring loaded red overfill indicator that can be viewed inside of a sight glass as well as an adjustable cable that attaches to a fuel float. The 724O can be set to accommodate different installation heights above the top of the tank by adjusting the cable length to the float device using a 7/64" hex driver. The adjustment range of the cable is between 6" and 48" which allows for the installer to set the threshold for the overfill indicator to the necessary height to indicate the fuel level in the tank has reached its maximum desired fill level. The unit attaches to a 2" threaded pipe.

Comparison between 724 Leak Indicator and 724O Overfill Indicator

The 724 Leak Indicator and 724O Overfill Indicator share the same components and are identical with the one exception being the type of alarm as indicated by the label on each sensor. The difference is, for the 724O sensor, the alarm label shows "Overfill Indicator" and for the 724, the alarm label shows "Leak Indicator". Considering this, the performance results presented in this evaluation report are applicable for both the 724 Leak Indicator and 724O Overfill Indicator. For the purposes of this evaluation, only the 724 Leak Indicator was used to obtain the performance results. For the ease of reading, only the 724 will be referred in section 3.0 and 4.0 when describing the evaluation procedures and results.

3.0 Evaluation Procedures

Test Apparatus

The evaluation of this system was designed to determine if the 724 Leak Indicator and 724O Overfill Indicator operates as described by the vendor. The 724 was mounted in a test container in which water, E85, unleaded gasoline and diesel fuel was added.

Threshold Determination

A peristaltic pump was used to add or remove the liquid from the test cylinder containing the float portion of the 724 Leak Indicator. The liquid level for the alarm threshold for both the leak and overfill sensor was measured with a dial micrometer once the visual indicator was first exposed inside of the 724 Leak Indicator sight glass. This procedure was repeated a total of 10 times for each sensor for water, E85, unleaded gasoline and diesel fuel.

Detection Time

The time required for the sensor to respond to product levels beyond the sensor's threshold is the sensor's detection time. The average time to alarm for the ten tests conducted for each product type is reported as the detection time. In the case of the 724 Leak Indicator, which contains a visual overfill indicator, the time to alarm is immediate.

Fall Times

The time required for the sensor to stop responding once the product level has been lowered within the sensor's threshold is the sensor's fall time. The average fall time for the ten tests conducted for each product type is reported as the fall time. In the case of the 724 Leak Indicator, which contain a visual overfill indicator, the fall time for the alarm is immediate.

Specificity

The specificity defines the different products that liquid level sensors will respond to. Most sensors will respond to any liquid once the sensor's threshold level has been exceeded unless the sensor has been designed otherwise. Although this sensor will respond to any liquid, the testing conducted for this evaluation determined the sensor's response to water, unleaded gasoline, E85 and diesel fuel.

4.0 Test Results

The data and results for the 724O Overfill Indicator and 724 Leak Indicator are contained in Table 1.

Lower Detection Level (Threshold)

The sensor was only tested for its ability to detect liquid levels at the alarm levels.

Precision (Standard Deviation)

Ten replicates were conducted for the liquid level for the 724 Leak Indicator and an alarm was verified. The standard deviation was determined from these replicates.

Detection Time

The visual alarm was indicated immediately on the 724 Leak Indicator alarm indicator upon visual inspection after the threshold was exceeded. This will be true for any liquid in the reservoir.

Fall Time

The sensor stops indicating an overfill alarm immediately after the liquid level drops below the threshold of the visual overfill alarm indicator. This will be true for any liquid in the reservoir.

Specificity

This sensor will respond to any liquid that is compatible with the system in which it is installed. Water, unleaded gasoline, E85 and diesel fuel were used for this evaluation.

Time to Alarm under Operating Conditions

The time for the 724 Leak Indicator to alarm will depend on the size and geometry of the tank in which it is installed and the rate of the leak or delivery of fuel. The time to alarm can be calculated by dividing the volume necessary to reach the threshold by the fill or leak rate.

Table 1. Evaluation Results for the 724 Leak Indicator and 724O Overfill Indicator**Test Results for the Morrison Bros. 724 Leak Indicator and 724O Overfill Indicator**

Run #	Height at Alarm(inches)			
	Water	Diesel	Unleaded	E85
1	0.691	0.716	0.765	0.756
2	0.672	0.705	0.794	0.769
3	0.689	0.741	0.846	0.748
4	0.693	0.712	0.83	0.793
5	0.665	0.761	0.821	0.815
6	0.721	0.723	0.815	0.821
7	0.697	0.719	0.829	0.793
8	0.673	0.741	0.799	0.773
9	0.641	0.705	0.85	0.831
10	0.72	0.775	0.843	0.792

Mean	0.6862	0.7298	0.8192	0.7891
STDEV	0.0245	0.0240	0.0268	0.0278
Threshold	0.7639	0.8057	0.9040	0.8770

*Detection Time for any Liquid - immediate

*Fall Time for any Liquid – immediate

** “Height at Alarm” refers to the depth of the liquid measured from the bottom of the sensor at the time of the alarm.

Attachment A

Results Forms for the Morrison Bros. Co. Sensor

724 Leak Indicator and 724O Overfill Alarm Indicator

Results of U.S. EPA Alternative Evaluation

Liquid Level Sensor

This form documents the performance of the liquid level sensor described below. The evaluation was conducted by the equipment manufacturer or a consultant to the manufacturer according to the U.S. EPA's requirements for alternative protocols. The full evaluation report also includes a report describing the method, a description of the evaluation procedures, and a summary of the test data.

Tank owners using this system should keep this form on file to prove compliance with the federal regulations. Tank owners should check with state and local agencies to make sure this form satisfies their requirements.

Method Description

Name Morrison Bros. Co. Liquid Sensors

Version number(s) 724 Leak Indicator and 724O Overfill Indicator

Vendor Morrison Bros. Co.

(Name of Manufacturer)

570 East 7th Street

(Address)

Dubuque

(City)

IA

(State)

52001

(Zip Code)

(563) 583-5701

(Phone)

Evaluation Parameters

The sensor listed above was tested for the abilities to respond to liquids when the sensor is installed in underground storage tank applications. The following parameters were determined from this evaluation.

Threshold Levels – The liquid levels at which alarms are triggered.

Precision (standard deviation) - Agreement between multiple measurements of the same product level.

Detection Time - Amount of time the detector must be exposed to product before it responds.

Fall Time - Amount of time before the detector stops responding after being removed from the product.

Specificity - Types of products that the sensor will respond to.

Evaluation Results

Note: If the test data can be presented in a more appropriate manner, the evaluator may select to present the information below in a data table, which can be attached to these forms.

Morrison Bros. 724 and 724O Evaluation Results

Table 1. Results of the 724 and 724O with Water

Parameter	Data
Threshold Level (inches)	0.764
Precision - Standard Deviation (inches)	0.025
Detection Time (minute)	Immediate
Fall Time (minute)	Immediate

Table 2. Results of the 724 and 724O with Diesel

Parameter	Data
Threshold Level (inches)	0.806
Precision - Standard Deviation (inches)	0.024
Detection Time (minute)	Immediate
Fall Time (minute)	Immediate

Table 3. Results of the 724 and 724O with Unleaded

Parameter	Data
Threshold Level (inches)	0.904
Precision - Standard Deviation (inches)	0.027
Detection Time (minute)	Immediate
Fall Time (minute)	Immediate

Table 4. Results of the 724 and 724O with E85

Parameter	Data
Threshold Level	0.877
Precision - Standard Deviation (inches)	0.028
Detection Time (minute)	Immediate
Fall Time (minute)	Immediate

Specificity – The 724 Leak Indicator and 724 Overfill Indicator sensors will respond identically to any liquid after the threshold is exceeded. This testing was specifically done to determine performance using water, E85, diesel fuel and unleaded gasoline.

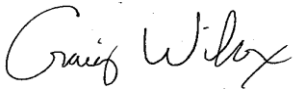
Additional Limitations or Considerations - None

> Safety Disclaimer: This test procedure only addresses the issue of the methods ability to respond to liquids. It does not test the equipment for safety hazards.

Certification of Results

I certify that the liquid level sensor was tested under conditions according to the vendor's operating instructions. I also certify that the evaluation was performed using methods described in the attached Alternative EPA Test Procedures for Liquid level sensors, and that the results presented above are those obtained during the evaluation.

Craig D. Wilcox, President
(printed name)



(Signature)

Ken Wilcox Associates, Inc.
(organization performing evaluation)

Grain Valley, MO 64029
(city, state, zip)

February 26, 2020
(date)

(816) 443-2494
(phone number)

Laboratory Data

Test Results for the Morrison Bros. 724 Leak Indicator Alarm

Run #	Height at Alarm(inches)			
	Water	Diesel	Unleaded	E85
1	0.691	0.716	0.765	0.756
2	0.672	0.705	0.794	0.769
3	0.689	0.741	0.846	0.748
4	0.693	0.712	0.83	0.793
5	0.665	0.761	0.821	0.815
6	0.721	0.723	0.815	0.821
7	0.697	0.719	0.829	0.793
8	0.673	0.741	0.799	0.773
9	0.641	0.705	0.85	0.831
10	0.72	0.775	0.843	0.792

Mean	0.6862	0.7298	0.8192	0.7891
STDEV	0.0245	0.0240	0.0268	0.0278
Threshold	0.7639	0.8057	0.9040	0.8770

***Detection Time for any Liquid - immediate**

***Fall Time for any Liquid – immediate**

**** “Height at Alarm” refers to the depth of the liquid measured from the bottom of the sensor at the time of the alarm.**