

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. The results forms were modified from the Vapor-Phase Out-of-Tank Product Detectors.

Tank owners using this leak detection 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 PMP Corporation Piping Sump Sensors

Version -
63228 & 63229 Sensors for use with Veeder-Root TLS-450 series, TLS-4 series, TLS-350 series, TLS-300 series, TLS-PC, ILS-350, Simplicity, Gilbarco EMC series, EMC Basic series, EMC-PC, Red Jacket ProMax and ProPlus

Vendor PMP Corporation
(Name of Manufacturer)
25 Security Drive, P.O. Box 422
(Address)
Avon CT 06001-0422 860-677-9656
(City) (State) (Zip Code) (Phone)

Evaluation Parameters

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

Threshold (Lower Detection Limit) - The smallest product thickness that the detector can reliably detect.

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.

Sensor Name: PMP Liquid Level Sensor

Version Number(s): 18280-63228

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.

<u>Product</u>	<u>Parameter</u>		
	<i>Lower Detection Limit (in)</i>	<i>Precision (in)</i>	<i>Detection/Fall Time</i>
Water	<u>1.135</u>	<u>0.007</u>	<u><1 min</u>
Ethanol-Free Gas	<u>1.309</u>	<u>0.010</u>	<u><1 min</u>
Diesel	<u>1.239</u>	<u>0.004</u>	<u><1 min</u>
E10	<u>1.348</u>	<u>0.008</u>	<u><1 min</u>
E15	<u>1.332</u>	<u>0.003</u>	<u><1 min</u>
E25	<u>1.326</u>	<u>0.005</u>	<u><1 min</u>
E85	<u>1.304</u>	<u>0.006</u>	<u><1 min</u>

Specificity - 100% in Water, Ethanol-Free Gas, Diesel, E10, E15, E25, E85

Additional Limitations or Considerations - N/A

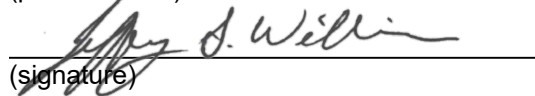
> Safety Disclaimer: This test procedure only addresses the issue of the methods ability to detect leaks. It does not test the equipment for safety hazards.

Certification of Results

I certify that the interstitial monitor 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 Interstitial Monitors, and that the results presented above are those obtained during the evaluation.

Jeffrey S. Williams

(printed name)



(signature)

10/18/18

(date)

Solution Engineering Group

(organization performing evaluation)

420 N Main Street, Montgomery, IL 60538-1367

(city, state, zip)

630-701-7703

(phone number)

Sensor Name: PMP Liquid Level Sensor

Version Number(s): 755259-63229

<u>Product</u>	<u>Parameter</u>		
	<i>Lower Detection Limit (in)</i>	<i>Precision (in)</i>	<i>Detection/Fall Time</i>
Water	<u>1.156</u>	<u>0.011</u>	<u><1 min</u>
Ethanol-Free Gas	<u>1.353</u>	<u>0.017</u>	<u><1 min</u>
Diesel	<u>1.234</u>	<u>0.004</u>	<u><1 min</u>
E10	<u>1.368</u>	<u>0.009</u>	<u><1 min</u>
E15	<u>1.365</u>	<u>0.011</u>	<u><1 min</u>
E25	<u>1.367</u>	<u>0.009</u>	<u><1 min</u>
E85	<u>1.352</u>	<u>0.011</u>	<u><1 min</u>

Specificity - 100% in Water, Ethanol-Free Gas, Diesel, E10, E15, E25, E85

Additional Limitations or Considerations - N/A

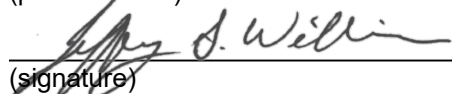
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