



Approval #

980023-U (Replaces 920120-U)

Safety & Buildings Division
201 West Washington Avenue
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Wisconsin
Material Approval

Material

LS300 SERIES AND PL400 LINE LEAK DETECTORS

Manufacturer

Campo/Miller
PO Box 1809
Porterville, CA 93258-1809

SCOPE OF EVALUATION

The PL400; LS300-120 PLUS AL; LS300-120 PLUS A/S AL; and LS300-120 PLUS AL LSI were evaluated as annual line tightness tests under s. ILHR 10.615 (2).

The LS300-120 PLUS; LS300-120 PLUS AL; LS300-120 PLUS A/S AL; and LS300-120 PLUS AL LSI were evaluated as monthly line monitoring under ss. ILHR 10.615 (3) and 10.60 (2)(a) 2.

The LS300 N/C; LS300-120; LS300-120 XLC; LS300-120 GRS; LS300-120 PLUS; LS300-120 PLUS AL; LS300-120 PLUS A/S AL; and LS300-120 PLUS AL LSI were evaluated as hourly line leak detectors under s. ILHR 10.615 (1).

DESCRIPTION AND USE

PL 400 Annual Tightness Test

The PL400 pipeline leak detection system measures and reports output quantity and compares it to a threshold of 0.1 gallon per hour to determine whether a pipeline is leaking. A multiple test sequence of three tests conducted 15 minutes apart is used. The system declares a leak if the measurement exceeds 0.1 gallon per hour in one or more of the three tests.

The systems may be used when trapped vapor is present in the pipeline provided the amount of vapor does not exceed 210 ml at 0 psi.

A three-hour waiting period is recommended between the last dispensing of product through the pipeline system and the start of data collection. The test cannot be conducted when the temperature of the product and pipeline are unequal, so the waiting times will vary. The total time for data collection shall be up to 30 minutes.

LS300 N/C and LS300-120 Hourly Tests

The LS300 N/C and LS 300-120 hourly tests pipeline leak detection systems use a preset threshold and a single test to determine whether a pipeline is leaking. The systems declare a leak if the output of the measurement system exceeds a threshold of 3 gallons per hour.

The systems may be used when trapped vapor is present in the pipeline provided the amount of vapor does not exceed 105 ml at 0 psi.

There is no waiting period between the last delivery of product to the tank or the last dispensing of product through the pipeline system and the start of the data collections.

LS300-120 XLC Hourly Test

The LS300-120 XLC is functionally identical to the LS300-120 except that it has a case made of ABS rather than a fiberglass-filled epoxy case. The LS300-120 XLC provides only the audible and visual alarm signals.

LS300-120 PLUS Hourly and Monthly Tests and LS300-120 GRS Hourly Test

The LS300-120 Plus is identical to the LS300-120 in the performance of the 3-gallon per hour hourly test. In addition, it performs the 0.2-gallon per hour monthly test using a preset threshold. The system is permanently installed in the pipeline and may initiate the test automatically or manually, depending on the model selected. It is highly recommended that mechanical line leak detectors be removed to conduct the monthly test. The system can be used on pipelines pressurized as high as 300 psi.

To eliminate temperature effects, the monthly test is performed only in the early morning prior to sunrise, and after the submersible pump has not run for at least four hours.

The LS300-120 GRS uses a higher pressure transducer which allows it to conduct the 3-gallon per hour test on high pressure grease and heavy oil lines. The electronics are identical to the LS300-120 PLUS.

LS300-120 PLUS AL Series Hourly, Monthly and Tightness Tests

The system consists of a control box with encoded lights to indicate test conditions, a pressure transducer in the line and a microprocessor to evaluate the data from the transducer. The functional element is set above the pump operating pressure so that when the pump is shut off, the system will be able to detect a leak based on the pressure drop.

Hourly tests are conducted automatically every 45 minutes using a test from the pump operating pressure down to 7.5 psi.

Monthly monitoring will be conducted automatically after the pump has been turned off for 3 hours using a test from pump operating pressure down to 15 psi.

Annual tightness testing will be conducted automatically after the pump has been turned off for 6 hours using a test from the pump operating pressure down to 20 psi.

TESTS AND RESULTS

The performance of the Campo/Miller pipeline leak detection systems were determined by Jetronix Engineering Laboratories using the EPA protocol for evaluation of pipeline leak detection systems. The PL400 system was found to be capable of detecting a 0.01-gallon per hour leak at 20 psi with a PFA of 0 percent and a PD of 96.2 percent.

The basic LS300 system were found to be capable of detecting a 3-gallon per hour leak at 20 psi with a PFA of 0 percent and PD of 96.2 percent. The LS300-120 PLUS was capable of detecting a 0.2-gallon per hour leak with a PFA of 0 percent and a PD of 96.4 percent.

The LS300-120 PLUS AL series was found to be capable of detecting a 3.0, 0.2, or 0.1 gph leak with a probability of detection of 100 percent and a probability of false alarm of 0 percent.

LIMITATIONS OF APPROVAL

The Campo/Miller leak detection systems are approved for use on rigid pipeline systems with bulk moduli between 15,000-35,000 PSI. The maximum line size is 163 gallons, which is approximately 350 feet of 3 3/8-inch line.

The operating instructions and test procedures specified by Campo/Miller shall be used to conduct all tests. The leak detection equipment shall not be changed by subsequent modifications

The monthly monitoring function of the LS300-120 PLUS shall be conducted during nighttime hours and only after the submersible pump has remained idle for at least four hours.

This approval will be valid through December 31, 2003, 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 not specified in this document.

Reviewed by; _____

Approval Date: _____ By: _____

Duane Hubeler
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