Leak Detection

for crude-, product- & gas-pipelines

Leak Detection System for pipelines

Leak Detection System is based on high precision ultrasonic flow meters. The design of the system is to meet highest level of performance on pipelines with crude oil, refined petroleum and liquid gas. The system, using the API test methods, produced batch totals within 0.05%, on hundreds of batches. The operator may detect extremely small leaks in the area of 0.2% of nominal flow rate when operator observing and evaluating trends on screen before they are able to breach the settable alarm thresholds. To date there is over 50 successful, major installations of Leak Detection Systems for pipelines that perform this accurate.

Major System Attributes and Benefits

The System 1010PV systems proposed will provide the following unique benefits.

- WideBeam® technology to permit accurate operation over a wide range of flow rates and fluid properties
- AutoZero™ to calibrate for zero flow without the need to stop the flow
- Zeromatic PathTM to eliminate the effects of drift by automatically and continuously correcting for the drift-causing factors
- Lowest cost of ownership due to the low installation costs and the intrinsic reliability of transducers
- Flowmeters can be optimized remotely, saving you the cost of bringing staff on-site.

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Description of the Solution (General)

The drawing below shows a "general" Leak Detection System in which the Site Stations are connected to a Master Station that provides centralized monitoring and control of the entire system. The system is configured for the monitoring the segments of a pipeline. A segment is defined as the pipe between two site stations, one at each end of each segment. The Site Stations measure the mass flow into and out of the segment. A difference in the flow in vs. flow out that exceeds the preset threshold will be alarmed as a leak.

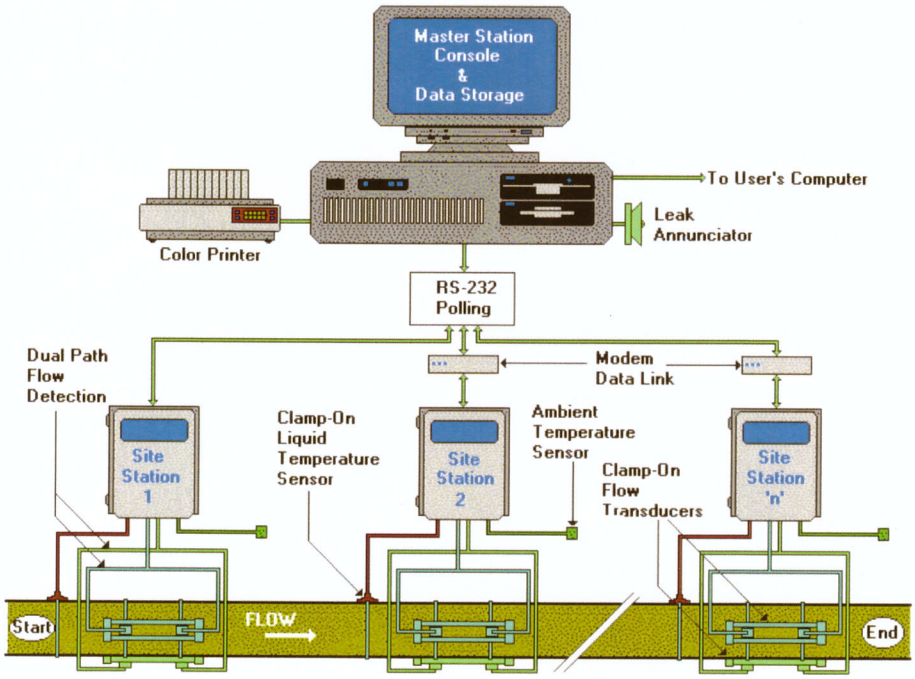
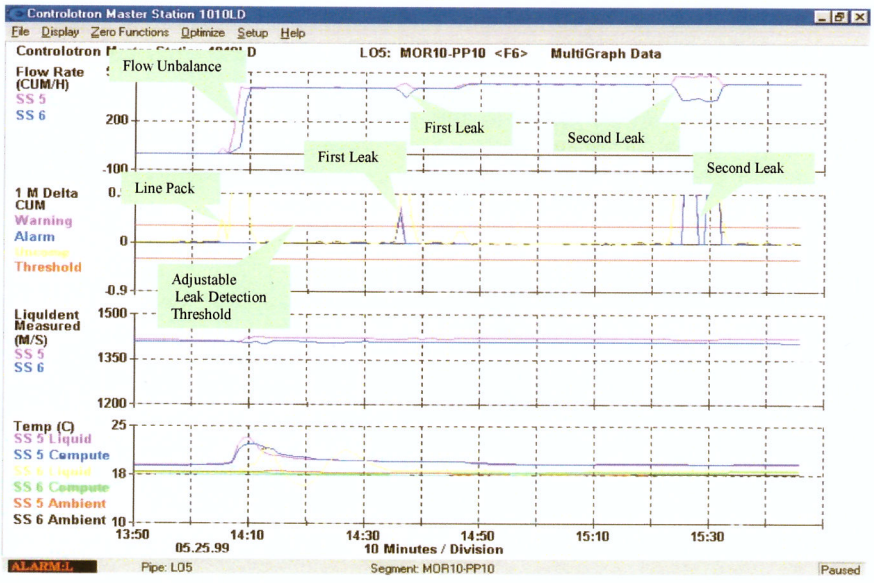


Figure 2: Transit-Time Leak Detection System Schematic

It should be noted that the displays on the Master Stations can be used to perform trending that will permit the identification of leaks that are below the threshold before they become larger leaks.



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