



Panametrics Flow Technology optimizing operations in Oil Terminals

Overview

Oil terminals are places where crude oil or/and refined products are stored in caverns or in tank farms.

These sites both receive and dispatch liquids like crude oil, gasoline, diesel, jet fuel, LPG, lubricants, LNG, etc, arriving and departing on vessels, pipelines, trucks or trains. These types of facilities also often have the capability to blend the product to a certain set of specifications before sending onwards to a customer.

Challenges

Oil terminals have lots of flow applications. One of their biggest challenges is to ensure no downtime, but at the same time provide accurate and reliable operations to transfer batches on time. It is critical for Oil Terminal Operations Teams to run on schedule to prevent unnecessary immobilization of vessels, trains or trucks.

For example, when medium is handled close to its vapor pressure point, ensuring there is no local flashing that could cause inaccuracies is critical. For several technologies, this requires increasing the back up pressure, which consequently reduces the flow rate and increases the transfer time.

And, of course, amongst the key applications, movements through long or short pipelines to the jetty, for instance, to detect and track leaks for buried lines quickly and accurately to help preserve assets, health and safety and brand reputation.

Applications

Whether it is a high-end application for Custody Transfer or to connect to a Leak Detection System to identify and locate leaks, or a process control application, Panametrics has a range of accurate and reliable flow measurement technology widely deployed across multiple applications in oil terminals, including:

- Blending with additives
- Internal movements
- Tank dewatering
- Slops

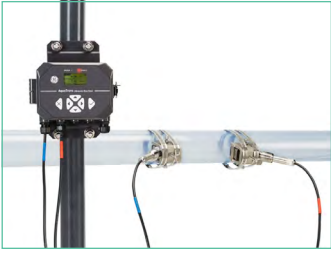


PanaFlowLC liquid clamp on meter in 1, 2 or 3 path for the above mentioned applications.



PanaFlow Z3 inline 3 path meter for the above mentioned applications.

- Fire pumps



AT600 liquid clamp on meter for water and fire pump lines.

- Custody Transfer for receiving and sending, change of ownership
- Leak Detection System for safe pipeline operations



Sentinel LCT4 or LCT8 4 and 8 path liquid meters for the above mentioned applications.



Sentinel LCT4 or LCT8 4 and 8 path liquid meters for the above mentioned applications.

- Steam for heated tanks
- Vapor Recovery Unit



PanaFlow Z1G or PanaFlow Z2G 1 or 2 path gas meter for the above mentioned application.

- etc.

Panametrics, a Baker Hughes business, provides solutions in the toughest applications and environments for moisture, oxygen, liquid and gas flow measurement.

Experts in flare management, Panametrics technology also reduces flare emissions and optimizes performance.

With a reach that extends across the globe, Panametrics' critical measurement solutions and flare emissions management are enabling customers to drive efficiency and achieve carbon reduction targets across critical industries including: Oil & Gas; Energy; Healthcare; Water and Wastewater; Chemical Processing; Food & Beverage and many others.

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Solutions

With a long track record of success across the Oil & Gas sector, Panametrics Ultrasonic Flow Meter solutions technology push the boundaries of innovation to support customers.

- No drift over time
- Energy efficient, as they do not generate any pressure drop
- Low risk of flashing and hence able to handle high flows
- Low OPEX (operational expenditures)
- Increase process availability with no downtime as they are easy to maintain
- High reliability
- High accuracy and repeatability
- Smart meters with embedded diagnostics to assess their 'health'
- Specific to clamp on:
 - No process interruption
 - Installation within minutes from outside the pipe (water)
 - Ability to measure on large lines
 - Simple installation on reflective mode even on large pipes (40" or more)

Clamp on

- PanaFlow LC (blending, tank dewatering, internal movement, process control, etc.)
- AT600 (fire pumps, utilities)
- Transport PT900 (flow surveys)

Inline

- PanaFlow Z3 (blending, tank dewatering, internal movement, process control, leak detection)
- Sentinel LCT4 and Sentinel LCT8 (Custody Transfer and leak detection)
- and PanaFlow Z2G (gas to VRU)