Seal Pot Installation Guide

Why use Seal Pots?

Seal pots (sometime also called condensate pots) are used to allow a liquid seal between the instrument and flowing gases such as steam. Their primary function is to keep the liquid level constant in the impulse lines their by maximizing the accuracy of differential pressure flow measurement on steam (or vapour) applications. They are also used in the flow measurement of high density or corrosive media to protect the measuring instrument from the aggressive media.

Indispensable for Steam, they are used to ensure that the condensation of steam in the impulse lines does not impair the ability to accurately sense differential pressure fluctuations and to minimize gauge line error because of differences between pairs of impulse lines.

The theory of operation for condensate pots is that between the process taping and the pot is steam vapour. Between the pot and the differential pressure transmitter is water (liquid) which eliminates any measurement errors due a liquid / vapour mix at the measurement device. In order for this to work correctly both high pressure (HP) and low pressure (LP) impulse lines should be the same length. Thus, eliminating pressure head errors. One condensate pot will be required for each impulse line.

Installation Guidelines

1. Evaluate the number of connections required on the seal pot before ordering (inlets, outlets, fill port, drain port, gas vent port etc.)
2. Make sure seal pot design pressure and temperature meets the process requirements.
3. Consider the need to heat trace and insulate all impulse lines. Generally, if the process & impulse lines are traced, seal pots should be traced too.
4. Consider the need to add an anti-freeze media such a glycol to the water lines.
5. Keep vapour impulse lines as short as practicable, i.e. install seal pots as close as possible to the process root valves.
6. Ensure both seal pots are mounted at the same level. The higher connection point should be the reference. Consider both Vertical and horizontal steam pipelines.
7. The differential pressure measuring device (DP) should be mounted below both the seal pots and the steam pipeline.

8. It is recommended that both impulse lines from the seal pot to the DP include the facility for ‘blow down’. Blowing down these lines periodically ensures that collection of debris is prevented from impacting the measurement accuracy.

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