Application Note

Application Note: 030707

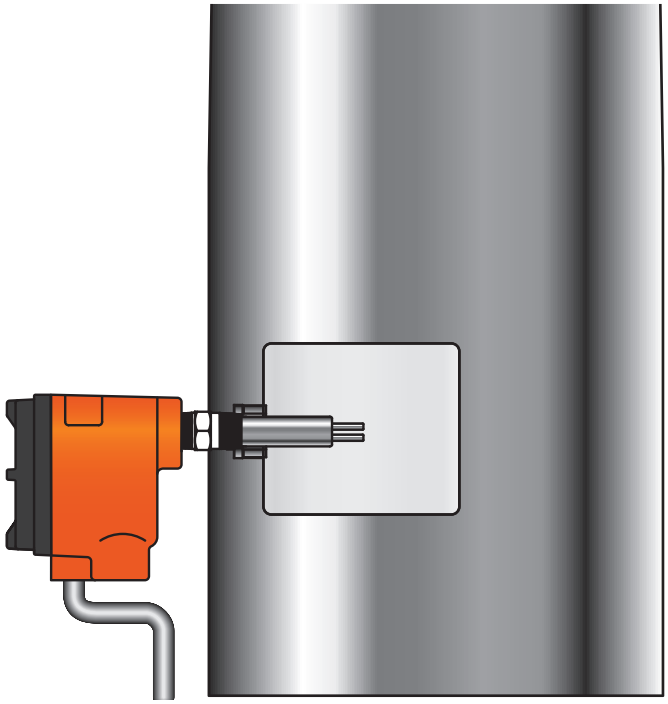
KAYDEN INSTRUMENTS

Oil Water Separation Tank

Application: Interface (Level) Detection: Oil / Water, Separator (Treater) Tank

Product: Kayden CLASSIC 800 Series Thermal Dispersion Flow, Level, Interface & Temperature Switch & Transmitter

Display Panel



Description:

Oil is pumped from the well (or well storage) into the (“knock-out”) tank to separate the oil from the water and debris (sand, etc.). The interface (level) switch controls the (water) drain valve by energizing / de-energizing one of the internal relay contacts as the switch reacts to the material difference of the oil / water.

Problem:

In oil / water interface applications the level switch must:

- Resist failures caused by corrosion and / or “sludging” damage to the sensor.
- Not react slowly or intermittently due to coating of the sensor.
- Easily be configured (programmed, adjusted) by the user to achieve the optimum balance between response time and sensitivity to prevent tank overflows, oil in the drain line and unwanted cycling of the drain valve.

Solution:

The Kayden CLASSIC 800 Series Thermal Dispersion Flow, Level, Interface Switch is used to provide the critical control for interface level in the tank.

Unlike float, paddle or gap switches Kayden switches feature all-welded sensors, no-moving-parts design and true digital electronics in a rugged package that is not bothered by coating of the probe and will not drift, seize or ever require calibration.

- Easy, front panel controls and display make set up fast and easy.
- The switch may be set to activate or deactivate the pump or feed valve using either of the independent relay contacts or the 4-20mA analog output.
- Each relay contact may be configured with a digital time delay to pre-set tank drain cycles based on tank capacity.
- To accommodate different mounting positions and tank configurations (screens, weirs, etc.) Kayden switches are available with several types (Threaded Insertion, Flanged, and Packing Gland & Ball Valve) and sizes (no premium charge for “custom” insertion lengths).
- The self-diagnostic function runs automatically and continuously monitors all parts and functions of the Kayden switch. In the event of any error the relay contacts de-energize and the FAULT alarm is activated and displayed on the front panel via the 4-20mA signal and via Modbus to the RCM software.
- The Kayden RCM software (provided free on request) may be used (via Modbus RS-485) to continuously trend the fill / drain cycles of the tank.

Display Panel

Display Panel Indicators:

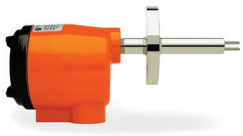
Relay 1	On steady when Relay 1 is energized
Relay 2	On steady when Relay 2 is energized
Fault	Indicates a self-test error or fault condition
Set Point 1	On steady when viewing Set Point 1
Set Point 2	On steady when viewing Set Point 2
Run Mode	Flashing when switch is operating
Bypass	Flashing when the Start-up Bypass Timer is active
Thermal Signal	Displays Thermal Signal

The Thermal Signal increases as:

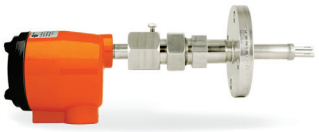
Flow	The flow rate increases
Level	The sensor is submerged
Interface	The sensor is submerged by the second liquid of greater thermal conductivity

Applicable CLASSIC™ 800 Models

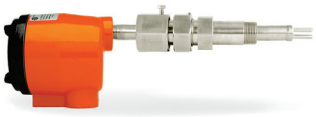
CLASSIC™ 810



CLASSIC™ 812



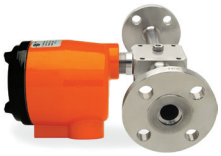
CLASSIC™ 814



™ 816

CLASSIC™ 828

CLASSIC™ 830



CLASSIC™ 832

Ordering Information

Order Online

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Distributors

Visit kayden.com to find a local Distributor near you. Distributors provide local inventory, technical support and service.

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KAYDEN INSTRUMENTS 24th ANNIVERSARY 1994 2018

For more information about the CLASSIC Series or any of Kayden's other products, please visit kayden.com