De-salter wash water & effluent (pH/ ORP)

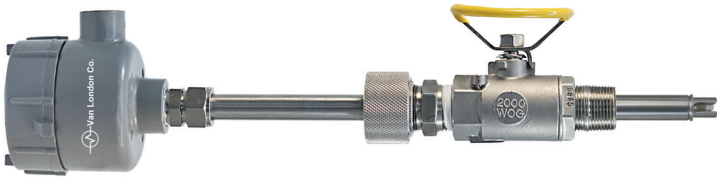
One of the first steps in preparing crude oil for distillation is desalting. True to it's name, the purpose of the desalter is removing salt impurities from crude, including common salts such as CaCl, MgCl and NaCl. Entrained salts can lead to issues with corrosion, plugging of downstream equipment, and end-product quality issues. The desalter also separatees solids, such as drilling mud, sand, and paraffin waxes. pH is typically measured on the wash water leading into the desalter within a range of 5.5 to 7 pH, acidified using sulfuric, acetic, or citric acid. This water is typically recycled, so it may contain ammonia or phenols, and may be at temperatures between 100ºC-150ºC. The combination of temperature and chemicals can be demanding on a pH sensor.

pH is also measured on the brine effluent, which is much more difficult due to a blend of salt, sulfides, heavy metals, and oil. pH can fluctuate due to crude oil source and pretreatment used in extraction and transport. pH will be measured at this stage to determine the treatment requirements within the wastewater treatment plant. Proper pH management at the desalter can impact all stages of refining.

Challenges

Wash water can vary in acidity based upon chemical profile of the crude oil used within the process. Recycled wash water may contain contaminants, and high temperatures of 100ºC-150ºC. Contaminants within brine effluent can abrade and coat the electrode, and pH can fluctuate due to crude oil source and pretreatment methods.

If the process is isolated, an in-line electrode such as the Y-410B-F6 or V-19DB-F6 Series is recommended.



If the process is not isolated, a retractable such as the MK7 or Live Tap model is recommended.

Specifications

Body material	Ryton	Kynar	Stainless Steel
pH Range	0-14	0-14	0-14
Temperature Range	0-130ºC	0-130ºC	0-130ºC
Pressure Range	0-150 PSI @ 25ºC		

For more information, contact your AlpHa/Van London Co. representative or distributor.