On-line process hydrogen analyzer
Refinery hydrogen-recycle stream optimization

On a typical refinery process unit the HP30 hydrogen analyzer can save you more than $200,000 a year.

Measurement made easy

A refinery unit uses upwards of 25 tons of hydrogen per day. The ABB HP30 on-line hydrogen analyzer will pay for itself by improving hydrogen management.

Hydrogen is an extremely important, valuable and limited resource within a modern complex refinery. The profitable operation of a refinery is increasingly dependent on effective fuel upgrading and conversion activities, as well as effective control of final product fuel quality by managing the removal of sulfur from intermediate process streams.

Additionally, incorrect hydrogen management can lead to catalyst failure or significantly reduced throughput. The HP30 helps to prevent these process upsets and avoid millions in catalyst replacement costs.

Benefits

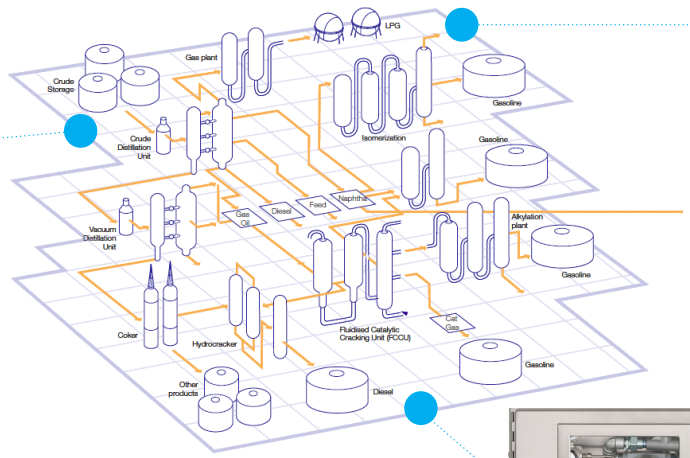
- Improve refinery hydrogen management by better than 1%
- Improve profitability by enabling production of higher value environmentally compliant fuels
- Not affected by typical refinery contaminants such as H_2S, CO, CO_2 and light hydrocarbons
- Save on expensive unit maintenance and extend catalyst life by managing hydrogen balance
- Maintenance free with no consumables for 10 years

Why ABB

- ABB provides a complete system with simple plug and play installation
- ABB offers a comprehensive portfolio of refinery analyzers that combine strategically to save you money
- ABB has been serving the refining and petrochemical industries for over 50 years and is present in over 100 countries so you can expect world class service and support

HP30 Process Hydrogen Analyzer

Refinery & Petrochemical Unit applications



Applications

- Reformer recycle hydrogen
- Hydrocracker recycle & make-up hydrogen
- Isomerization recycle hydrogen
- Butamer off-gas
- Hydro-desulphurization / Hydrotreater recycle hydrogen
- Fuel gas hydrogen content

Process	Measured Stream(s)	Process Optimization Benefit
Catalytic Reformer	Recycle Hydrogen	Hydrogen, in a mixture with 80% hydrocarbons is recycled to the catalytic reformer from a product separator. Monitoring the hydrogen assists in the overall process control of the unit, ensuring maximum process efficiency.
Hydrocracker	Recycle & Make-Up Hydrogen	Hydrogen measurement within the recycle and make-up hydrogen streams is a critical operating criteria for the hydrocracker. A miss on H2 purity can cost millions in diminished hydrocracker rate.
Isomerization Unit	Recycle Hydrogen	Hydrogen measurement provides critical information on condition of the catalyst or any potential upsets.
Butamer Unit	Off-Gas	In this process an analyzer is used to measure low-level hydrogen concentration at the stabilizer offgas to ensure that adequate hydrogen is available in the reactor for the desired isomerization reactions
HDS / Hydrotreater	Recycle Hydrogen	Hydrodesulphurization is a catalytic chemical process used to remove sulphur from gasoline, jet fuel, diesel fuel, etc. Hydrogen measurement is required to ensure overall process control and control and efficiency of the reaction.
Fuel Gas	Off-Gas	Off gas from a refinery is taken and mixed with natural gas to increase/ decrease BTU value. Measuring the hydrogen in refinery fuel gas provides information on the trending of the BTU value as hydrogen directly effects the BTU content within the process.

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Sales

Service

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for a better world™