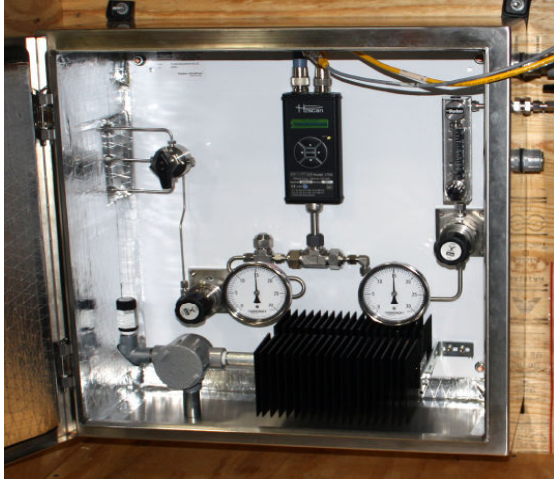


# Air Separation Unit

## Hydrogen Measurement in Deoxo Skid



H2scan HY-OPTIMA™ 1700AS

### TECHNICAL BACKGROUND

At a large company specializing in air separation, the thermal conductivity analyzer used for the hydrogen measurement was not providing the desired accuracy due to the fluctuating, multi-component nature of the process stream. As the TCD analyzer reached the end of its life, the site engineers began looking for a superior hydrogen analyzer to replace the aging unit.

### THE H2SCAN SOLUTION

H2scan's HY-OPTIMA™ Model 1700AS was selected, which included the H2scan 1700 analyzer (ATEX/UL Hazardous Area) and a turnkey sample system. The analyzer system product enabled direct installation at the measurement point on the deoxo skid. Previously, the sample had to be transported from the tap point to a climate controlled shelter to accommodate the TCD's operating requirements. The result was a complete hydrogen measurement solution, fully supported by H2scan that provided better accuracy and better response time than the previous TCD analyzer.

*"The H2scan hydrogen analyzer has been integral in providing accurate, excess hydrogen measurement on our deoxo skid. The H2scan system was easy to set up and H2scan's technical staff has provided excellent support."*

- Lead Technician, Major Gas Company

Based on the feedback from the site, H2scan analyzers have been selected to replace all thermal conductivity hydrogen analyzers on the company's deoxo skids within the US.

### APPLICATION DETAILS

- Hydrogen level must be maintained within a specific range on the deoxo skid outlet
- Too much hydrogen causes excess heat on the catalyst bed
- Too little hydrogen results in oxygen entry - an impurity that cannot be allowed out of the skid
- Loss of excess hydrogen analysis in an argon production skid will halt operation of the skid

### H2SCAN SPECIFIC ADVANTAGE

- **Accuracy:** due to the number of gases present (Ar, O<sub>2</sub>, N<sub>2</sub>, H<sub>2</sub>) and the binary component assumption of the thermal conductivity measurement technique, a TCD will inherently be less accurate. The TCD accuracy loss for this application is substantial given the range of interest. The H2scan analyzer will provide much better accuracy (+/- 0.3%).
- H2scan sensors measure H<sub>2</sub> specifically, independent of background gases.
- No reference gas required
- Minimal maintenance
- H2scan designed & supported hydrogen measurement solution