



THERMATEL®
Thermal Dispersion Switch



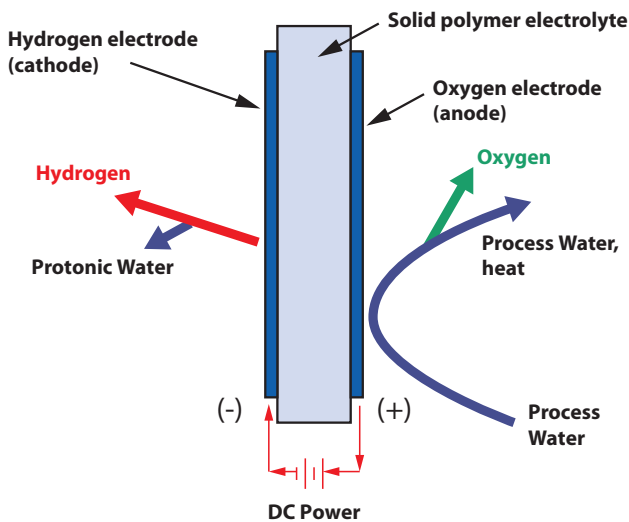
Flow Switching on Hydrogen Generator Skids

Models

Model TD2-xxxx-xxx Flow Switch

Application

A renewable energy company that produces and stores green hydrogen had a need for flow switches on their hydrogen generator skids for low flow protection.



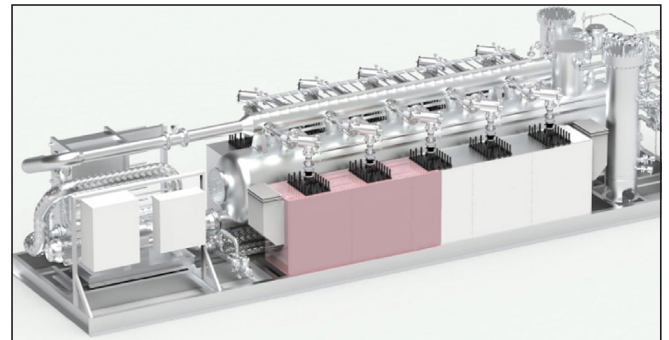
PowerElectrolysis is the process of using electricity to split water into hydrogen and oxygen. Each electrolyzer stack must have a consistent and reliable flow of UPW (Ultra Pure Water) as a mission critical aspect of the process. If flow is interrupted or there is insufficient flow to the electrolyzer stacks, there is a significant risk of a number of cascading effects which will negatively impact the green hydrogen skid.

Lack of UPW to the electrolyzers can quickly lead to overheating of the stacks and represents the primary operational and equipment concern. Immediate catastrophic and irreversible damage can occur if not caught in a timely manner. This can lead to derivative effects such as reduced operational life, reduced efficiency,

increased TCO (total cost of ownership), increased downtime and, ultimately, a reduction in revenue. In addition, damage to the electrolyzer stack has the potential for shutting down an entire array/skid, which in a mission critical deployment, can have severe unintended consequences.

Solution

After evaluating multiple technologies, companies and products, the company chose the AMETEK LMS Magnetrol® branded Thermatel® Model TD2 flow switch. After placing their initial order in March of 2022, the customer successfully installed a TD2 with pre-calibrated minimum flow setpoint for each stack of a 1MW unit. Additionally, multiple TD2s, with pre-calibrated minimum flow setpoint for airflow, were installed for each electrolyzer system.



Hydrogen Generator Skid

Benefit

By delivering significant value for the customer through enhanced operational life, mitigation of potential damage to capital intensive electrolyzer stacks, increased end user satisfaction and increased uptime and revenue, AMETEK LMS has become the preferred company to provide flow switches for 1-, 5- to 10-MW hydrogen generator skids globally.



Registered Address

ABLE Instruments & Controls Ltd
Cutbush Park, Danehill, Lower Earley,
Reading, Berkshire, RG6 4UT. UK.

Phone

+44 (0)118 9311188

Email

info@able.co.uk

Web

able.co.uk

E-commerce

247able.com



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