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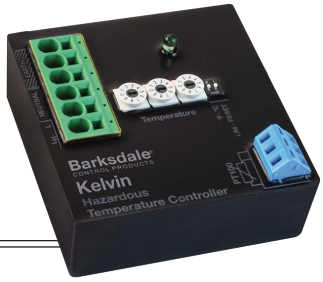
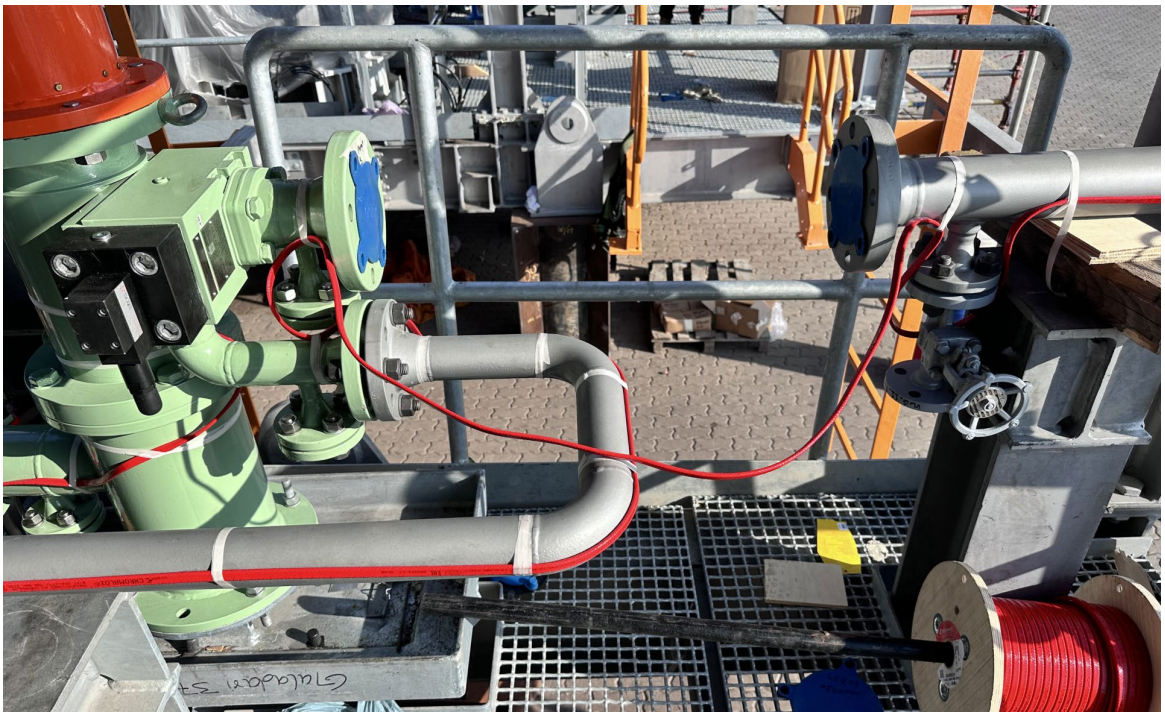
Keeping It Kelvin – Taking The Freeze Out Of Offshore Operations





Electronic Trace Heating for Extreme Industrial Environments

In demanding industrial environments such as offshore oil and gas platforms, reliable temperature control is essential to maintaining process continuity and protecting critical equipment. Electronic thermostats play a central role in trace heating systems, preventing freezing, maintaining fluid viscosity and reducing the risk of temperature-related failures.

Barksdale's custom electronic thermostat solutions combine continuous temperature monitoring, flexible communications and certified protection to support safe, energy-efficient operation in some of the world's most challenging environments.

Electrical trace heating systems are widely used across industrial, commercial and infrastructure applications wherever pipes, tanks or process equipment must be protected from freezing or maintained at a controlled temperature.

By applying controlled heat to the outside of process equipment, trace heating helps maintain liquid flow, prevent pipes and tanks from bursting and reduce the risk of costly production interruptions. Accurate temperature control also contributes to improved energy efficiency by ensuring that heat is applied only when required.

Barksdale trace heating control solutions continuously monitor operating conditions, helping protect personnel, equipment and the environment while supporting reliable plant operation.

A recent offshore project demonstrates how Barksdale's collaborative engineering approach, advanced control technology and hazardous-area expertise were combined to meet a particularly demanding application.

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

Phone
+44 (0)118 9311188

Email
info@ableinstruments.com

Web
ableinstruments.com

able
instruments & controls

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The Application: Critical Temperature Management in Extreme Environments

On offshore oil drilling platforms in Norway, extremely low temperatures can create significant operational challenges. Lubricants can thicken, liquids can become difficult to pump and critical equipment may fail if temperatures fall below acceptable limits.

To address this problem, Barksdale worked closely with a major North Sea Oil & Gas operator to develop a custom electronic thermostat system called Kelvin, as part of a comprehensive trace heating solution.

The system monitors the temperature of lubricating grease used on drill pipes, helping maintain the correct viscosity and ensuring reliable operation in sub-zero conditions.

Both temperature controllers and independent limiters are used to provide layered protection and fail-safe operation. The system is available in several configurations, including versions incorporating Bluetooth, Modbus communications and alarm relays, enabling flexible integration and real-time monitoring of critical operating parameters.

ATEX-certified versions of Kelvin are also available for installation in hazardous areas, making the technology particularly suitable for offshore oil and gas environments.

Collaborative Innovation: Developed Together with the Customer

A major factor in the project's success was Barksdale's ability to provide a custom-engineered solution rather than a standard off-the-shelf product.

Working directly with the customer, Barksdale developed Kelvin tailored to the specific operational, environmental and regulatory requirements of the application. This included adapting communication options, safety functions and system configurations to suit different installation requirements.

By aligning its engineering capability closely with the customer's needs, Barksdale created a solution that addressed the immediate challenge while also providing a flexible platform for future trace heating applications.

Barksdale®
CONTROL PRODUCTS

Why Barksdale Was Selected

The project represented a significant order of more than 3,500 units, valued at over €450,000 in early 2026, and was secured against established competitors including JUMO.

Three factors were central to Barksdale's success. First, collaborative engineering and customisation enabled Kelvin to be developed around the customer's exact requirements, including Bluetooth and Modbus variants.

Second, ATEX-certified protection provided the level of safety required for hazardous offshore environments. Finally, Barksdale demonstrated the manufacturing capability and reliability needed for a high-volume, mission-critical application.

The combined use of controllers and limiters adds an additional layer of protection, helping safeguard personnel, valuable equipment and process continuity against temperature-related failure while improving the overall efficiency of the trace heating system.

For more information, please contact Able Instruments on +44 (0)118 9311188 or by email: info@ableinstruments.com

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

Phone
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Email
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Web
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