



SECURE DATA LOGGING SOLUTION FOR BS EN IEC 60060-2 COMPLIANCE

BACKGROUND

Process Instrument Solutions was approached by a major UK manufacturer of high-voltage cable jointing and termination systems to deliver a robust data logging solution. The system was required to support testing of large industrial cable joints, both underground and above ground, in line with the international standard BS EN IEC 60060-2:2025.



These components undergo destructive testing by Quality Assurance and Research & Development teams, where performance data such as stress, strain, temperature, waterproofing, and longevity must be accurately recorded and retained for compliance, traceability, and product development.

CHALLENGE

The existing system was a legacy, hand-built setup that had been in use for many years. While functional, it lacked the capability, scalability, and security required for modern testing standards.

A key requirement was to introduce a tamper-proof data logging system capable of securely recording real-time test data for inclusion in quality assurance documentation. The system also needed to handle a high volume of simultaneous inputs – including up to 50 thermocouple temperature points and multiple strain, force, and weight measurements – all while maintaining accuracy and reliability.



Additional complexity came from testing conditions, including water immersion testing, and the need for clear, real-time data visibility for operators during high-risk destructive tests.

SOLUTION

Process Instrument Solutions designed and implemented a fully integrated data acquisition and logging system built around the Eurotherm 6000XIO platform.

This system provided high-speed, multi-channel data logging with secure, non-volatile storage compliant with 21 CFR Part 11 standards, ensuring tamper-proof recording and full data traceability.





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New control panels were built to house the system, with full PC connectivity for data access, reporting, and integration into QA processes. Mathematical functions within the system were also utilised to automate calculations that had previously been performed manually, improving efficiency and reducing human error.

Water level measurement within test chambers was incorporated using Labom Pascal CV3 transmitters, ensuring accurate monitoring during waterproofing tests.

To enhance operator safety and visibility, multiple satellite panels were installed using Precision Digital Trident. These provided clear, real-time displays of critical parameters such as strain and force – particularly important during destructive testing where cable failure can result in sudden movement and high noise levels.

RESULT

The completed system delivers a secure, high-performance data logging solution that meets stringent international testing standards. All test data is now recorded in real time with full traceability, providing confidence in compliance and supporting detailed quality assurance reporting.

The tamper-proof nature of the system ensures data integrity, while the ability to log large volumes of data simultaneously has significantly improved testing capability. Automated calculations have reduced manual workload and increased accuracy.

Operators benefit from enhanced safety and situational awareness through real-time data displays, particularly during high-risk destructive tests.

Overall, the solution represents a major step forward in the customer's testing capability, supporting ongoing product development, improving quality assurance processes, and strengthening their position in the commercial and industrial marketplace.

EQUIPMENT SUPPLIED

- Eurotherm 6000XIO distributed data acquisition system
- Precision Digital Trident digital panel meters
- Labom Pascal CV3 pressure transmitters



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