

## McMenon Engineering Recalibrating for the future

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Greg Millar,  
Technical Manager



An engineering firm has used digital technology to transform how it tests and calibrates its flow and temperature measurement products.

McMenon Engineering, based in Cumbria, has fully automated and digitalised a previously manual calibration and data acquisition process using a solution which integrates a PLC, programmable HMI touch-screen and software.

The company is forecasting that the investment will treble its productivity, remove the existing bottleneck and capacity challenge, and enable the business to sell calibration as a service.

Greg Millar, Technical Manager, said: “Thanks to Made Smarter's support, this investment will vastly improve productivity and capacity, enabling us to process more of our own products as well as develop a new service offering.”

“It will have a major transformational impact on McMenon through the continued and more speedy growth of the calibration business as a commercial offering. This project aligns well with our business strategy of diversifying the portfolio to other sectors and services.”

### The Challenge

Over the last 75 years McMenon Engineering has built a reputation on producing safe and accurate flow, temperature, and process measurement solutions for a range of sectors including energy, defence, and renewables.

From its Workington facility a team of 70 staff manufacture a range of products which are exported globally to over 60 countries including the Middle East, North and South America, Africa, and Australia.

As well as machining and welding workshops, which use state of the art CAD/CAM manufacturing processes, McMenon Engineering is one of only a few manufacturers in the UK with its own calibration service.

The calibration laboratory includes several rigs to ensure its flow meter instruments retain their accuracy.

However, set up and operation of the equipment as well as data acquisition is manual and suboptimal. It demands supervision and intervention from a specialist engineer and takes up to three hours for each test, creating a bottleneck.

McMenon's recent acquisition of a state-of-the-art product line from Europe means that manufacturing is set to increase significantly over the next few years, adding more demands on the calibration team.

Greg Millar explained: “Our calibration lab is a great asset of the business and sets us apart from competitors. However, it was in need of an upgrade to automate control and digitalise data acquisition and analysis.”

McMenon's Made Smarter journey began with a digital transformation workshop, a fast track process looking at the product, process and people to identify potential solutions to their challenges. From there, the calibration service was seen as a priority project.

### The Solution

McMenon Engineering is adopting a modern PLC (programmable logic controller) which will integrate with the instrumentation in the rig.

It will be capable of monitoring up to 12 measurement channels with various signal types, such as flow rate, pump power, temperature, and pressure.

A programmable HMI touch-screen will display the real-time readings of the measurements.

Meanwhile, software automatically identifies what type of flow meter has been fitted and raises the profile from the digital library reading for testing.

The solution will enable the business to fully automate the calibration and data acquisition process.

### The Impact

When fully implemented the new solution is forecast to reduce the set up and testing process from three hours to one.

This will allow the business to treble productivity, removing the existing bottleneck and capacity challenge and sell calibration as a service.

Automation of the process is also safer for operators and frees up skilled engineers to focus on more high value tasks, while offering others the opportunity to upskill through experience of new technologies.

The investment will also enable the growing firm to take a giant leap towards achieving ISO/IEC 17025 accreditation, the



international standard for high-quality testing or calibration services.

Greg said: “This project will result in a fit for purpose calibration setup, which will easily allow any flow meter to be fitted, measured, and the results produced automatically.”

“Upgrading the calibration process will result in an increase in productivity and quality – faster calibration in a consistent manner. We can turn this efficiency into faster lead times for our customers and improved sales.”

### The Future

McMenon Engineering is only part way through testing the new technology on one of its liquid calibration rigs, but can already see the positive outcomes from the automation and data acquisition.

Greg added: “We are proud to have a knowledgeable and experienced workforce and are committed to giving them the best tools and technologies to improve our systems and services.”

“From the very start working with Made Smarter has been a positive, streamlined and frictionless process. The level of insight and experience of technology advice has been incredible.”

“We've also been offered access to other SMEs exploring similar technologies. That has given us huge confidence in committing to this level of investment. We wouldn't hesitate to work with Made Smarter again.”