

PROFESSIONAL REVIEW

Research lab reduces process control pressure calibration time by 40 %

Job role: Process Controls Technician

Company: Scientific research lab

Tools: Fluke 729 Automatic Pressure Calibrator

Key benefits:

- Reduces calibration time by 40 %.
- Increases accuracy.
- Saves repetitive stress from not having to use a hand pump.

Keeping processes running smoothly in a scientific research lab that produces neutrons requires stringent calibration of hundreds of process control instruments. The lab employs many different types of instrumentation that control vacuum and pressure for processes used in cutting edge scientific and engineering research projects. To maintain the highest level of research accuracy and integrity, the devices are pressure calibrated as needed (sometimes multiple devices per week) to ensure they are operating according to specifications.

“Our neutron beam facility, which consists of the linear accelerator, cryogenic plant, and target facility, is operated by various software and process controls,” says a process control technician for the facility. “We calibrate a number of pressure transducers, strain gauges, pressure switches, and signal conditioning boards as part of new installations, preventive maintenance, and troubleshooting. Accuracy is vital for successful operation.”

For many years, the lab had calibrated those devices using the Fluke 744 Documenting Process Calibrator. However, in 2017, that same process control technician attended a trade show where he saw a demonstration of a new Fluke 729 Automatic Pressure Calibrator. “I was very interested to see that the 729 had an automatic pump built into the device,” says the technician. “It’s like a one-stop shop to accomplish our calibrations, versus having to carry multiple components like a hand pump and a vacuum pump.”

The technician notes that, not only does the automatic pump save time, it is more ergonomic because he no longer has to pump up the pressure by hand. This can significantly reduce wear and tear on technicians over several calibrations. “When we check our pressure transducers we have to pump it up as high as 300 psi. I just enter the pressure required and the 729 automatically pumps up to that level. The automatic pump on the 729 reduces hand pump instrument error and reduces calibration time by about 40 %,” the technician adds.

Additional capabilities such as the ability to measure, source, and simulate 4 to 20 mA signals also increases efficiency. “The 729 allows us to take voltage readings on our pressure transmitter signal conditioners at the same time we measure pressure, which saves having to carry another meter,” the technician explains.

Each incremental unit of time savings adds up with hundreds of control devices that need calibrating to support dozens of research projects running at a time in the facility. “We don’t have a calibration production quota, we just calibrate the instruments as needed; but the Fluke 729 definitely allows us to do more in a day than we would normally be able to do,” the technician concludes.



“The automatic pump on the 729 pressure calibrator reduces hand pump instrument error as well as reducing calibration time by about 40 %.”