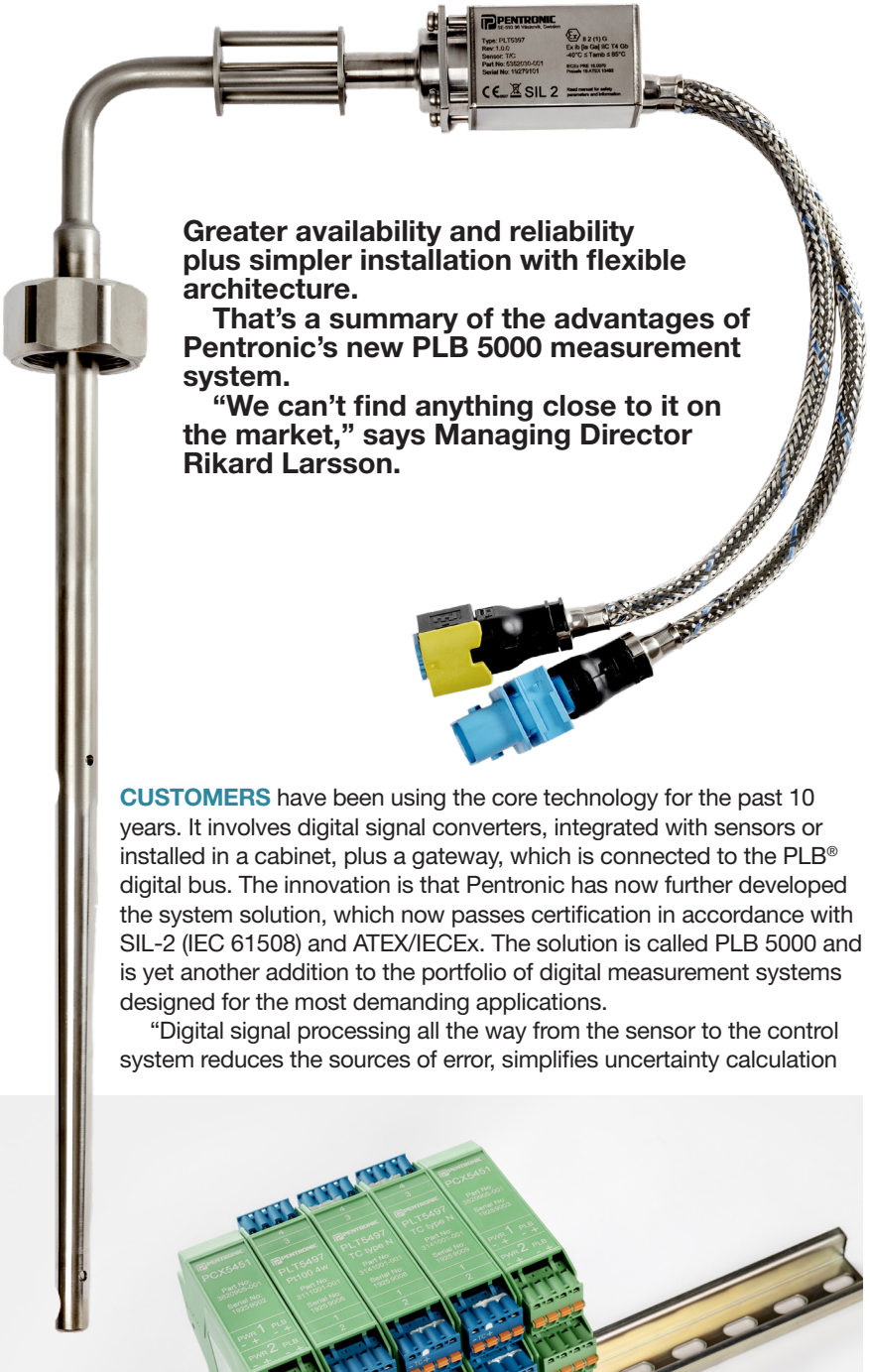
NEW MEASUREMENT SYSTEM FROM PENTRONIC:

IF YOU WANT RELIABLE MEASUREMENT FOR DEMANDING ENVIRONMENTS – PENTRONIC HAS THE SOLUTION



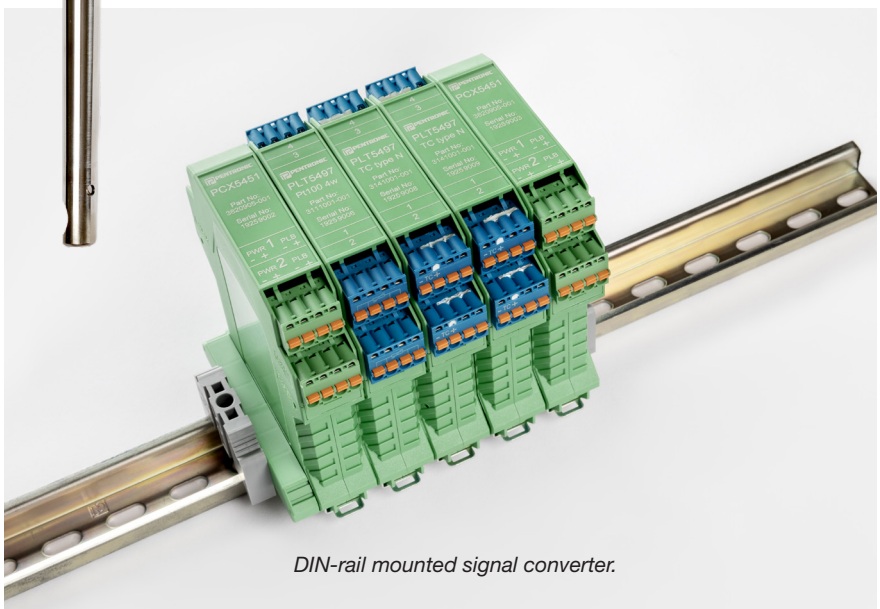
Greater availability and reliability plus simpler installation with flexible architecture.

That's a summary of the advantages of Pentronic's new PLB 5000 measurement system.

"We can't find anything close to it on the market," says Managing Director Rikard Larsson.

CUSTOMERS have been using the core technology for the past 10 years. It involves digital signal converters, integrated with sensors or installed in a cabinet, plus a gateway, which is connected to the PLB® digital bus. The innovation is that Pentronic has now further developed the system solution, which now passes certification in accordance with SIL-2 (IEC 61508) and ATEX/IECEx. The solution is called PLB 5000 and is yet another addition to the portfolio of digital measurement systems designed for the most demanding applications.

"Digital signal processing all the way from the sensor to the control system reduces the sources of error, simplifies uncertainty calculation



DIN-rail mounted signal converter.

and increases system performance," says development engineer Erik Gullqvist, who has been involved in the project from the start.

But let's go back in time a bit. Why did Pentronic develop its own bus when there were already many standard ones on the market? Erik explains:

"Our solution involves a fast update rate, many measuring positions and long cable lengths of up to 500 metres. All this is in the form of cost-effective hardware that meets the high safety requirements for potentially explosive atmospheres and that is required by IEC 61508."

The system solution is based on digital communication for signal transmission and the potential to have a redundant power supply to the signal converters. The system can handle up to 120 channels, which is equal to the same number of measuring junctions. In Ex-classified environments the system has up to 48 channels, with the signal converters connected to the gateway via an isolation barrier.

In addition, a signal converter mounted directly on the sensor can handle up to three channels. This makes it possible, for instance, to connect a sensor with dual measuring positions for increased safety, or with three for measuring at different levels. The DIN rail-mounted signal converters have four sensor inputs each. The system's gateway communicates both with the signal converters and with superior systems via a standardised interface such as PROFIsafe.

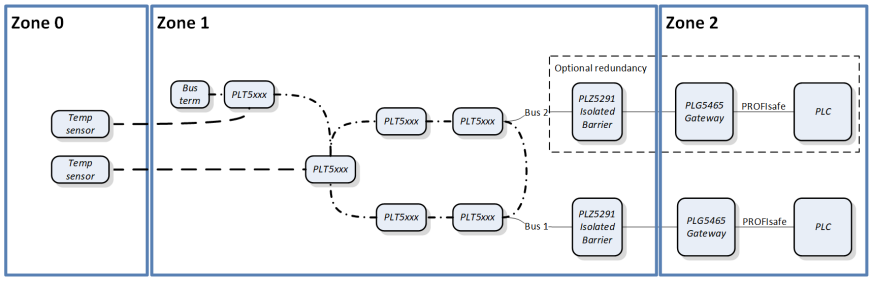
The architecture also makes it possible to have different topologies, for example in a ring, which enables the system to continue functioning even in the event of cable breakage.

The signal converters have dual inputs for voltage measurement and communication. This enables a system design with cable and gateway redundancy, which thereby further increases system availability.

All standardised temperature sensors, such as Pt 100s, Pt 1000s and various types of thermocouple, can be connected to the system.

"A big advantage is that the installation and service becomes far simpler. For example, one of our customers has over 100 measuring positions in a machine. That's a lot of cabling that disappears with this system," Rikard Larsson explains.

Direct mounted signal converter.



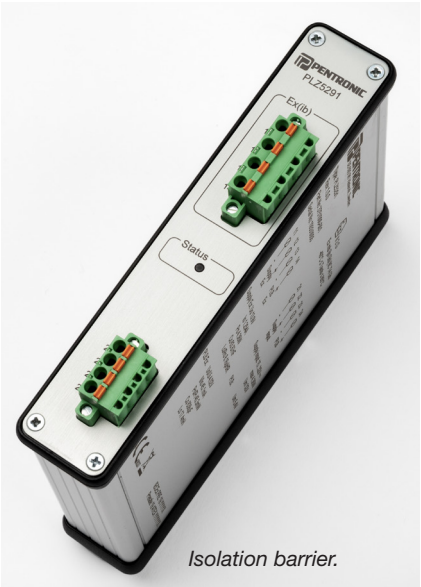
The system supports various topologies; here is an example of a typical configuration.

In addition, accuracy is improved when the signal converters and sensors are calibrated as a system on delivery. The performance of any individual system depends on its measurement environment, temperature range and sensor type; a typical measurement uncertainty for signal converters and Pt 100 sensors is ±0.2 °C.

With a new gateway the system is now complete and offers many possibilities for customisation to individual customers' needs and new functions. Everything has been developed by Pentronic, which has also created an advanced system for the automatic testing and validation of the complex products. This means Pentronic can ensure that the customised systems function in a real-world environment.

The PLB 5000 has been developed and manufactured for demanding measurement environments where potentially explosive gases, such as highly flammable hydrogen, can arise. The sensors are designed for Ex Zone 0 and the intrinsically safe signal converters meet the demands for Ex Zone 1 with sensor inputs for Ex Zone 0.

The products are developed in accordance with the IEC 61508 standard. The result is greater availability, more accurate measurements, simpler installation and a flexible architecture.



Isolation barrier.

Gateway.