

Digital pressure gauge in a modular system

For measuring instruments, users are increasingly looking out for flexibility in operation. This trend must not necessarily lead to product solutions, peppered with many different features, fitting into the "all-in-one" category. Keyword 'modularity'. A new precision digital pressure gauge from WIKA for test and calibration tasks, for example, can be fitted in a modular system.

The efficiency of a process depends critically upon its instrumentation. This controls and regulates the predefined safety and quality of processes. At the same time, these instruments must fulfil their demands in an economically efficient manner as well.

For economic reasons, global businesses with several production locations strive, so far as is possible, to standardise their process instrumentation and to reduce the variance in devices accordingly. On the other hand, there are companies that, with their choice of measuring instruments, focus exclusively on the requirements of the respective application. To save on costs, these products do not need to offer anything more than the exact performance required. Both interest groups are, however, agreed in the desire for simple and fast handling of the instruments in order to underpin safety and efficiency.

Against this background, WIKA has developed the model CPG1500 – a new precision digital pressure gauge for test and calibration tasks. Its standard version can be upgraded with a bundle of features, completely or with individual options, depending on the need.

The base model of the precision measuring instrument operates with a thin-film sensor with high measuring stability and an accuracy of 0.1 % of span. It can be commissioned and parameterised via an intuitive menu navigation system. All process connections are manufactured from stainless steel, while the case, with an ingress protection of IP65, is from nickel-plated, die-cast aluminium. The CPG1500 is thus also suitable for applications in harsh environments. In order to minimise routine interruptions in operating phases, the instrument



Application example

features an energy-saving function with a sleep mode. With this, the battery life increases to up to 2,500 hours.

The CPG1500 registers pressure ranges from 0 to 1,000 bar - the smallest of these covering the span from 0 ... 100 mbar. Furthermore, application-specific pressure ranges can also be realised. Information about the measured values can be obtained on site via a 5½-digit display with bar graph and also a min/max function. "Min/max" can also be used for the detection of leakage: The alarm limits can be wrapped tightly around the "set pressure". A measurement under the limit therefore signals a leak. In this way, for example, pipelines can be tested following construction and during later maintenance.

In numerous applications, over and above the on-site display, a detailed analysis of the measured values is required. For this case, the CPG1500 can be fitted with a data logger which can register and store up to 50 measured values per second. Due to its large memory capacity, the data can be accessed over a long period of time.

With the aid of the logger and WIKACal software, the fields of application for the digital pressure gauge can be further extended – for example, in the control of mobile tanks for transporting temperature-sensitive chemicals or compounds. The logger records an

accurate picture of pressure peaks, which enables, in turn, conclusions on temperature changes.

The logger operations can be viewed live and immediately evaluated via the software, either as a sequence of numbers or as a bar graph. All the data is transmitted wirelessly via the WIKAWireless function. This form of communication primarily facilitates the query and analysis of pressures from hard-to-access measuring points.

The durable construction of the CPG1500 also meets the requirements placed on instruments with different fields of application. A large proportion of critical applications includes a process hazard of explosion. For these demands, the user can react with an intrinsically safe version of the CPG1500 which is ATEX, IECEx and CSA certified.

Apart from the control of process pressure, the new precision measuring instrument is also suitable for the calibration of analogue pressure gauges, first and foremost in the field. The principle of modularity continues here. A complete service case (CPG-KIT) is available for this task. In addition to the CPG1500, it contains either a pneumatic or a hydraulic hand pump for the generation of test pressure.

Primarily, but not only, for calibration another option comes into consideration: one with the measurement accuracy doubled to a level of 0.05 % of span. For the CPG1500 itself, an annual recalibration is recommended. Here, users also have a



The robust model CPG1500 precision digital pressure gauge fulfils the IP65 ingress protection class and is thus also able to be used under the most adverse of conditions. Picture credit: Source: WIKA

INSTRUMENTATION/ MEASUREMENT

choice: They can have the check confirmed with a factory certificate or with a DKD/DAkks certificate.

Conclusion:

A modular instrumentation follows the tendency for ever more streamlined processes. The flexibility of operation is just one aspect, albeit the most

important. Modular instruments also result in a lower outlay in handling and administration: Irrespective of the task and equipment, software, drivers and operational functions remain the same. Moreover, with one instrument model with different features only one internal approval process, one customs duties process and one database that must be

maintained within the EDP system is necessary.

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Enquiry No. 12