

Sensor WITH INTELLIGENCE



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COMPUTING Solutions

Safe and intelligent: Memosens from Endress+Hauser Conducta captivates with its induction technology and integrated memory chip

In liquid analysis, the connection between sensor and cable has so far been the weakest point. Memosens from Endress+Hauser Conducta has now found a remedy with a new principle: induction technology ensures maximum fault protection with easy use. At the same time, the Memosens technology, with its wide range of uses, for the first time allows the storage of process-relevant data directly in the sensor. The integrated memory chip guarantees not only complete documentation, but will also allow the direct connection of the measuring point to the Internet.

Measurement variables with very small currents make high demands on the connection between sensor and transmitter. Leaks and corrosion impair the measurement value transfer. In this case, particularly high-resistance measurements in a dirty or damp environment quickly become a problem. In order to minimise as far as possible the voltage drop as far as possible, the use of expensive MIL connectors with gold contacts, complicated special cable and complex measuring amplifier has until now been necessary. However, the systems remained prone to failure.

"Previously, only the symptoms were treated", says Dr. Detlef Wittmer, Manager of F&E at Endress+Hauser Conducta. "Whereas Memosens eliminates the causes of the disadvantages." An inductive connection between cable and electrode allows the hermetic sealing of connector head and coupling, allows bidirectional data transfer and provides the connector head with power. The mechanical and electrical advantages are apparent: there are no longer any contacts at risk of corrosion; dampness is not able to falsify the voltage signal. Cable length and quality are almost irrelevant for the quality of the signal transmission.

The principle of galvanic decoupling from the measuring transmitter simplifies the wiring and at the same time increases electromagnetic compatibility. The plug-in connection between cable and sensor with its bayonet connection is not only easy to handle, but is also very safe. For example, it is no longer possible to unscrew the sensors from process connections unintentionally when releasing the cable.

Versatile sensor intelligence

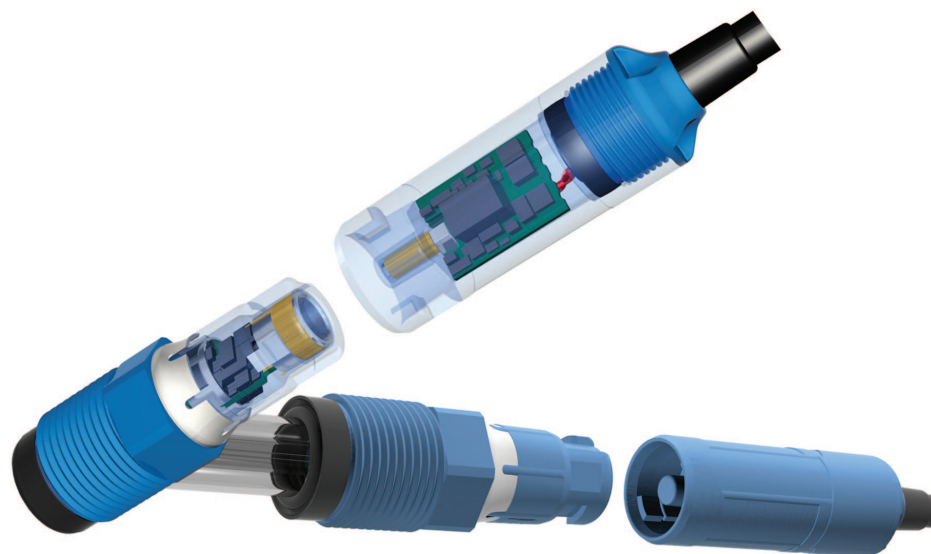
With its built-in intelligence, Memosens allows storage and evaluation of process and sensor-relevant information. This information can be traced back to calibration in the factory and used in a variety of ways. Records of sensor loading can, for example, be used for purposes of preventive maintenance, thus significantly increasing the service life of the measuring point. The electronic signature required in the pharmaceutical sector points the way for the future. Recording all operation processes and the password protection as per 21 CFR 11 in the measuring transmitter make it possible to comply with GMP guidelines, which are of increasing significance for the retraceability required for sensitive production processes.

"A decisive advantage of the Memosens technology is the storage of calibration data", stresses Dr. Hermann Straub, Product Manager in charge. It means the sensors can be precalibrated in the laboratory under optimum conditions and then replaced in the system with a few simple moves. This reduces lengthy measurement interruptions in sensitive processes, facilitates work on measuring points accessible only with difficulty, and increases safety in areas at risk. Thanks to its memory chip, each sensor is clearly identifiable and can be allocated to a concrete measuring point. The possibility of convenient presetting in the laboratory renders calibration in the field under dirty, damp or even dangerous conditions superfluous.

Memosens sensors can be connected to conventional measuring transmitters, but a direct connection to the Internet will also be possible.

Memosens spares your wallet and the environment

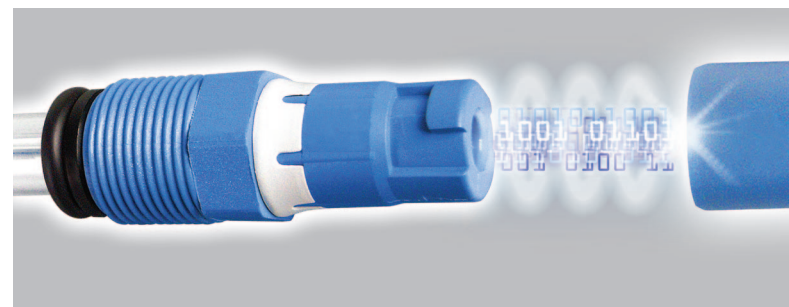
"Memosens technology creates not only increased added value for the customer, but also lowers the costs of ownership", says Dr. Straub. In addition to the significantly simplified handling, the costs are below those for comparable conventional measuring



points. And the intelligent chip technology also helps to reduce expenditure. Thanks to Memosens, sensors which until now have been discarded too early can again be tested in the laboratory under ideal conditions and - for example, after appropriate cleaning and regeneration - work longer in the process.

Thanks to the significantly increased reliability, operational safety and availability of digital sensors with Memosens technology, improved environmental protection is ensured. The danger of unnecessary loads due to rejects is reduced, which safeguards resources and saves energy. Dr. Straub states succinctly: "Memosens optimises technical processes ecologically and economically."

Marc Buttman, Marketing Manager at Endress+Hauser Conducta, anticipates resounding success of the new sensor technology on the market. Intelligent pH sensors will be the start; measuring points for conductivity, oxygen and turbidity will follow. In three to five years, Endress+Hauser Conducta wants to cover 10 to 15 per cent of the attainable sensor market with Memosens. The development of further applications from 2006 - for example, by means of Internet technology - will then probably again increase the market potential considerably. Already today, Endress+Hauser Conducta, with over 300,000 sensors each year, is the world market leader in the process and environment sector.



Facts

Memosens technology: Sensors with inductive plug-in connection for power supply and bidirectional signal transfer and integrated microchip for storing process and sensor-relevant data.

Suitable for the entire sensor measuring technology; available for ex and non-ex, 2- and 4-wire applications; certified as per EHEDG, 3A, 21 CFR 11, SIL2, CE, ATEX, FM, FDA etc.

Range of use: Intelligent physical sensors, potentiometric, amperometric, ion-selective and optical sensors, electrochemical gas sensors and semiconductor sensors in process and laboratory analysis measurement technology. Today available for pH measurement.

Sectors: chemical, pharmaceutical, environmental technology, food, power plant, paper and cellulose industry, oil and gas, medical technology and the automobile industry

