



BEST SENSORS

CASE STUDY



SONTEC SENSORS IN USE AT HOCHWALD

TESTED UNDER TOUGH FIELD CONDITIONS

HUNGEN (wl) – A genuine win-win situation is emerging from the long-standing cooperation between milk processor Hochwald and sensor manufacturer SONTEC: Innovative sensor technology is being put through its paces under the extreme conditions in which a food manufacturer operates. Joint system developments are being driven forward on the basis of the findings.

“In over 100 countries worldwide, consumers have a high regard for our company’s products”, says Uwe Dralle, Head of Process Automation at the Hochwald site in Hungen. The raw milk is delivered from eight German federal states between Schleswig-Holstein and Bavaria and from areas close to the border in the Lorraine region of France, in Luxemburg and the Netherlands. It is then processed by Hochwald into a wide range of dairy products. Hochwald, with its subsidiary in the Netherlands and sales and distribution organisations for Belgium and Dubai, also has an international presence.



“At the Hungen plant alone, well over a million litres of milk are processed every day into a variety of products which the end customer can then purchase under familiar brand names in supermarkets.” Controlled processes, he explains, constitute for the company the basis for continual optimisation and improvement in the customers’ interest and in the interest of the commercial development of the company.

Hochwald Foods GmbH invests in technology to be able to better process and bottle the milk. For plant

manufacturers and component suppliers, this is a demanding task with stringent requirements: hygiene, vibration resistance, temperatures of +5°C to +140°C and long service life are listed in the functional specification document. Over 1500 sensors monitor the processing of the milk. “In order for us to have our plants firmly under control, the process comprises more than 1,500 measuring points with at least as many sensors”, says Uwe Dralle counting up. Temperature, conductivity and levels must be precisely determined in the different milk pasteurisers, tanks and pipelines and this information transferred to its control centre. “In addition to the high level of technical expertise, I value the proximity and the fact that the SONTEC field staff are quickly accessible. For many years we have worked out various special solutions in a quick, targeted way and made them ready for series production.”

Dralle integrates the new SONTEC sensors directly into the Hochwald process engineering. “Field conditions make it possible to determine, better than in the laboratory, whether a product has that which the manufacturer promises and which we expect.”

SONTEC SENSORS FOR EXACTING INDUSTRIES

Since 1990, SONTEC Sensorbau GmbH has been developing special sensors for a wide variety of sectors – from solar technology and heating engineering, through medical and laboratory technology and apparatus engineering, food & pharmaceuticals, to mechanical engineering. With over 100 experienced employees and a high level of vertical integration, the owner-managed medium-sized company has great flexibility when it comes to customer support and the manufacturing process. Together with the modular conception of the SONTEC products, tailored yet cost-effective customer solutions are possible at any time.



Uwe Dralle, Head of Process Automation at the Hochwald site in Hungen

CONDUCTIVITY SENSOR FOR GOOD-VALUE-FOR-MONEY PHASE AND PRODUCT MONITORING

The new conductivity sensor CPS-7 is undergoing test runs at Hochwald; this sensor was designed to detect product changes and for phase separation in plants in the food and pharma industries. It uses the conductive measurement principle in measuring ranges from 1µS to 15,000µS/cm, with response times below 0.5s. Consequently, the CPS-7 performs extremely accurate and reliable measurements even with highly viscous or lumpy media which, depending on the sector, may be present in the plants. It works at 24VDC and on the output side makes 4...20 mA or PNP signals available.

Owing to its compact design, the sensor can even be used in small pipe diameters of DN25 thanks to a hygienic G1/2”-process connection. Its stainless steel and PEEK casing has no influence on the product quality of the liquids flowing through it. For the CPS-7, the process connections customary in



CPS-7
THE conductivity sensor



The conductivity sensor CPS-7 makes it possible to detect product changes and determine phase separations in the food and pharma industries.



Thanks to optimised flow geometry and very fast response times the ICS-8 is ideal for phase separation, product detection and measurement of media concentration in CIP plants.

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the industry, namely Tri-Clamp, Varivent, 'milk pipeline fitting' etc. are available. The sensor is introduced into the product pipeline using a hygienic welding sleeve. The measuring point is constructed exclusively with FDA-approved materials such as PEEK and VA; the process connection is EHEDG-compliant. Also new is the model ICS-8 which, thanks to optimised flow geometry and very rapid response times are ideally suited to phase separation, product detection and measurement of the media concentration in CIP plants.

The sensor offers excellent precision even at low conductivity values or very low flow rates. Its range of measurement lies between 0 and 999 mS/cm.

"We are able to parameterise the measurement ranges, conductivity and the four temperature ranges easily using the free SONVIS software", says Uwe Dralle. The intelligent sensor also has automated range switching so that measurement always takes place in the optimum measurement range.

The ICS-8, too, is contained within a robust stainless steel housing made from 1.4305 (the tip touching the product is from 1.4404); it has been designed to comply with hygiene requirements using the material PEEK. "Consequently our sensor is FDA- and 3A-compliant", adds Patrick Sonntag, head of the SONTEC company.

SONTEC + SONDEV + SONDIS INTELLIGENT COMPANY STRATEGY POOLS KNOW-HOW

"In our independent development company SONDEV, practically oriented technological solutions to meet many different requirements are generated from new ideas. This includes the development of hardware and software in the area of measurement technology, sensor technology and industrial electronics and naturally also continuous product maintenance." The sensors are manufactured, together with system equipment, by the parent company SONTEC. With a high level of vertical integration, and with the aid of comprehensive testing

equipment, the product solutions are generated quickly, in high quality and cost-effectively. "Here, Hochwald's practical experience flows directly into development and manufacture", says Patrick Sonntag.

SONDIS supplies customers across the globe with SONTEC standard solutions and additional products from the area of measurement and control technology. "We have been working closely with Uwe Dralle for many years. His process experience and our expertise complement one another perfectly when it comes to developing new sensors and optimising existing ones."

A current project is a new SONTEC temperature sensor which sends its data by radio to the control centre. "We are now testing this in various sections of the plant in order to ultimately achieve error-free transmission from everywhere."



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