

From supplier to partner

The Dow Chemical Company tremendously enhanced the quality of their pH measurements and substantially cut costs in their processes. All thanks to the trusted relationships formed with Endress+Hauser.

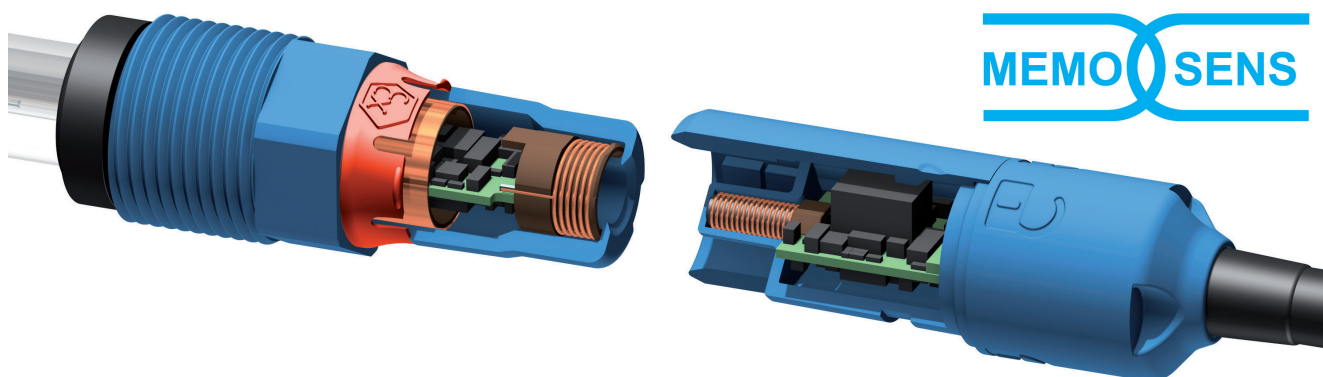
Several thousand people work for Dow in Freeport, Texas, one of the world's largest integrated petrochemical complexes. Three people in Freeport play a very special role: they work for Endress+Hauser. Based on a particular service contract, they look after the maintenance of pH measuring points at various plants of the complex.

In 2009, the economic crunch impacted US manufacturers in many areas, including employment. Also Dow had to cut back and further stretch their resources. "With the shortage of analyzer experts putting a burden on our workforce, we needed help finding the right people resources," explains Paul Coram, who is responsible for Process Analyzer Reliability in Dow.

Endress+Hauser, having the know-how in the field, recognized this as an opportunity to partner with Dow. "We approached the customer and looked for ways to cut costs," says Todd Lucey, Managing Director of Endress+Hauser USA. "We quickly found that there is a huge potential for improvement at the pH measurements." High maintenance expenses and low reliability and availability marked the situation on-site. "We offered to handle the pH measurements on our own – with the measurement, in a way, becoming a service."

End of troubles The chlor-alkali process was the first to be tackled. The pH value is considered crucial in the proper control of the electrolysis. "The analog measuring points caused a lot of trouble there," reports Tracy Doane-Weideman, Endress+Hauser's Product Manager for analytics. "The high-resistance signals are susceptible to faults and malfunctions." This caused the maintenance team to put in plenty of nonscheduled working hours.

The first step Endress+Hauser took was to fit all measuring loops with digital Memosens technology. "This gave Dow the opportunity to upgrade to new, cutting-edge technology on a common platform," explains Tracy Doane-Weideman.



Using inductive coupling – for power and bidirectional data transmission – the galvanically isolated Memosens digital sensors tackle the major problems associated with pH measurements at their roots such as moisture and corrosion.

Bunch of benefits The advantage of Memosens: the measured value is converted to digital signals right inside the sensor. Memosens probes rely on magnetic induction, both for signal transmission and power supply. “This tackles the major problems in pH measurement at their roots.”

Thanks to the sensor electronics, Memosens probes can be pre-calibrated in the laboratory under ideal conditions, to be exchanged quickly and easily on-site. In addition, the smart sensors permanently deliver information on their state. This allows to replace the probes if and only if necessary and to clean and regenerate them in the lab if reasonable. Gary Cowart Jr., Process Analyzer Leader for Dow’s Houston Hub operations, sees key benefits in the concept of preventative maintenance. “We could even increase our safety efforts by reducing the time personnel are spending in the field.”

The number of pH loops at Dow that are supported have increased by a factor of 5, and now count several hundred. Today, Endress+Hauser service technicians look after three plants in Freeport, four more technicians are stationed on production sites in Deer Park, Texas, and Texas City. “For Dow, we’ve evolved from a supplier to a true business partner,” states Todd Lucey.



Endress+Hauser’s Liquiline platform – Liquiline M CM42 two-wire transmitter for pH/ORP, conductivity or oxygen measurements; Liquiline CM44 multiparameter transmitter; Liquiline CM44R DIN-rail device – both support all Memosens protocol sensors available on the market today and in the future.

More than just a contract The options and opportunities offered by the collaboration are far from exhausted. “We’ve triggered a continuous improvement process,” says Tracy Doane-Weideman. In due course, all measuring points will gradually be retrofitted with wireless signal transmission using WirelessHART technology. “We want to get to the point where we centrally analyze all the sensor status information to improve maintenance management even further.”

“Endress+Hauser provided Dow with more than just highly reliable and accurate instruments, and exceptional service,” explains Gary Cowart. “The relationships formed throughout the program gave us a partnership with a supplier that we could trust – a win-win for all parties involved.”