

## Reliable measurement in electrolysis applications

### Promag P 300/500 immune to electrical interference



Westlake Vinnolit is a leading manufacturer of PVC and caustic soda, which are required in various industries including the construction sector, automotive industry, medical engineering, as well as pulp production and papermaking. As a manufacturer of special, high-grade PVC products, Westlake Vinnolit is a global market leader.

*"Initially, I was a bit skeptical, but the measurement delivered good, stable values right after installation. Floating measurement is an excellent addition to our control process."*

Peter Grandl  
EMR operating technician,  
Westlake Vinnolit GmbH & Co. KG



View of the electrolysis system at the Gendorf location

Westlake Vinnolit produces chlorine, caustic soda, and hydrogen at its Gendorf (Germany) site using chlor-alkali electrolysis. Chlorine is a precursor for the production of PVC plastic. Caustic soda is an important base chemical which is required for the production of paper, detergents and cleaning agents, viscose fibers, glass and ceramic, as well as aluminum. Precise, reliable flow measurement which is immune to electrical interference is essential in the production of these chemicals. Proline Promag P 300/500 from Endress+Hauser meets these requirements with the help of a "floating measurement" option.

**The customer requirement** A smooth chlor-alkali electrolysis requires reliable monitoring of the flow of liquids such as caustic soda, hydrochloric acid and brine. With conventional

electromagnetic flowmeters, the medium must be grounded electrically for proper measurement. This isn't possible in a chlor-alkali electrolysis,



Peter Grandl

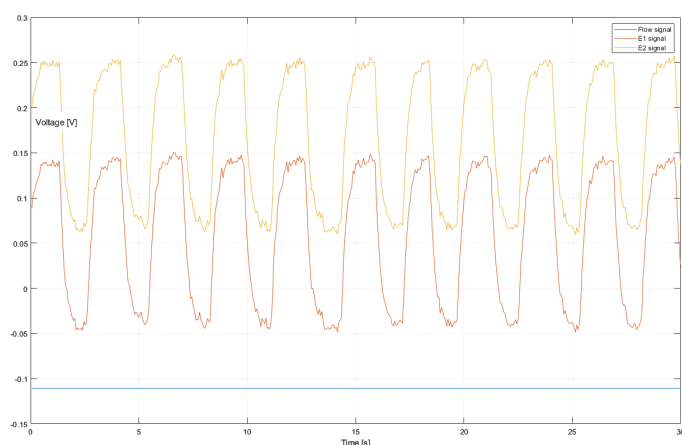
where there are voltages up to 500 volts and currents up to 17,000 amperes. These electrical influences interfere with the measurement when using conventional electromagnetic flowmeters, leading to unusable results. There is also the risk of the electrodes experiencing rapid electrochemical corrosion due to electrical potential differences between the medium and device. This would cause process medium to leak through the device.

**Our solution** With the electromagnetic flowmeter Proline Promag P 300/500 and "floating measurement" option, Endress+Hauser offers a solution, enabling precise, reliable measurement results even in these demanding applications.

The potential of the process medium is picked up by a reference electrode and supplied to the amplifier. This electrical potential is used as the reference. At the same time, the amplifier is electrically isolated from the ground potential of the power supply. This prevents harmful equalizing currents, which would have a negative influence on the measurement result. In conjunction with Heartbeat Technology, Proline Promag P 300/500 also supplies additional process information, allowing the electrical potential of the medium to be measured and output as a measured value.



Proline Promag P 300 delivers precise, reliable measurement results as well as additional process information.



The two electrode potentials and the filtered flow output signal

**The result** The rugged, innovative measuring technology of Endress+Hauser ensures high-precision and reliable monitoring of process stability and features the following properties:

- Immunity to electrical interference in the medium is ensured.
- Precise, reliable measured values support an increase in overall system productivity.
- Additional process information is provided with the use of Heartbeat Technology.

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