

Ultrasound in Organic Chemistry



KROHNE UFM 3030 with Heated Cladding

In the chemical industry there is a range of organic products, which crystallize and can no longer be used as soon as the process temperature falls below 150°C. In such cases, KROHNE offers throughflow meters with heated cladding. Ultrasound is the measuring principle of choice at a chemical company in Genf. The UFM 3030 from KROHNE is the standard device for the process industry. Even the basic version can handle temperatures of up to 220°C, while temperatures of up to 500°C are no problem for the high temperature version. The UFM 3030 is used in the steamer with internal condenser to measure different substances. The nominal throughflow of 850l/h is regulated by a gate valve. To keep the various process media liquid, the UFM 3030 is surrounded with heated cladding, which has a mixture of water and glycol flowing through it. This has a temperature of 200°C at a pressure of 15-20 bar, so the media in the pipe always stays liquid.

The company also required the pressure loss to be kept as low as possible. With the UFM 3030 it's no problem. The sensor is free of assembly parts, it has flat internal and external surfaces and it has no wearing moving parts. This means there is no additional pressure loss, regular recalibration is not necessary and maintenance and servicing are minimal.

Every UFM 3030, with a nominal diameter of DN 25 to DN 3000 and throughflow of approx. 1 m³/h to 40 000 m³/h, is wet-calibrated. For nominal diameters above DN 150 calibration is carried out on the most precise and largest factory calibration equipment in the world, with an uncertainty of 0.03% of the measurement value. This ensures that every device, which is delivered, keeps to the stated specifications. Every measuring transducer is also operated, checked and documented live with a simulated throughflow through several temperature cycles from -20°C to +60°C. This increases reliability in the field and ensures smooth running and precision for outdoor locations at any time of year.

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