# Measuring steam at temperatures exceeding 220 °C, non-invasive ultrasonic clamp-on flowmeters are ensuring high system availability

Once considered an almost insurmountable challenge for non-invasive measurement technology, steam is being accurately and reliably measured by clamp-on ultrasonic flowmeters with no disruption to normal system operations whatsoever.

To deal with incredibly high temperatures, and where a system shutdown is simply not an option, the superheated steam flow meter is a tailormade solution. Two pairs of ultrasonic sensors are mounted on the pipe at a defined distance from one another, forming two acoustic measuring 'gates'. Ultrasonic signals are radiated into the pipe and modulated by the vortices of the turbulently flowing fluid. Because the vortices are carried along by the flow, they pass between the two measurement gates with a time delay. By cross-correlating the modulation signals over time, the flow velocity of the steam can be determined, and the mass flow can be calculated based on the geometry of the measuring point and the physical parameters.

**Essential real-time data delivered precisely when and where needed.**
A major German chemical manufacturer needed a flow measuring point retrofitted, in order to accurately assess the quantities fed into and consumed by their steam networks, in real-time. A metering orifice was already installed at the outlet of the waste incineration plant to indicate the amount of steam generated, however a corresponding input measurement on the part of the grid operator was missing. So with no interruption to normal operations, no pressure loss and therefore no energy loss, FLEXIM's clamp-on ultrasonic technology was employed.

**Reliable and accurate recording of steam quantities from outside the pipe.**
A key advantage of non-invasive ultrasonic flow measurement, is that it can easily be trialled for suitability in operation before a commitment to investment is made. Following a convincing test period on the plant's DN250 steam feed line, an ultrasonic system was permanently installed, enabling the operating personnel to have the real-time data they needed to feed steam from the waste treatment plant into their medium-pressure steam network.


As users in the chemical and petrochemical industries look to minimise energy costs wherever possible, accurate steam flow measurements will continue to be essential. Ultrasonic clamp-on technology is the perfect partner, offering reliability, accuracy, no drop in pressure and no need for regular maintenance.

***For more information on the benefits of non-invasive ultrasonic flow measurement of steam in the chemical industry, contact Simon Millington - www.flexim.co.uk | sales@flexim.co.uk | +44 (0)1606 781 420***

# Lokring UK have continued their sponsorship of Runcorn Town FC, by becoming front of shirt sponsors for the clubs under 16's team

Runcorn Town FC were born out of the local chemical industry, initially being known as Mond Rangers, the works team of Brunner Mond who was the predecessors of ICI and they currently play in the North West Counties Football league.

Lokring have sponsored Runcorn Town for a number of years, with the Lokring advertising boards complementing the teams industrial landscape home ground.

Lokring UK managing director Ross Millar knows the importance of sponsoring local grass roots football, having previously played as a professional in the Scottish Leagues and managed a team within Scottish amateur football.

All at Lokring UK wish Runcorn Town and their teams all the best for the season.

***https://www.lokring.com/***