

Micronics DFM-IV contributes to process quality improvements at automotive plant

Three DFM-IV Ultrasonic Flow Meters have been installed at the Plasticomnium automotive plant in Derby as part of a project to improve the quality performance of their Spray Booth Plant.



The DFM-IV utilises an external Clamp-On sensor providing reliable measurement and control with no Process Contact, Installation or in-line Maintenance required. Utilising Doppler technology it monitors the flow rate of "difficult" liquids including: paint slurries, wastewater, chemicals, acids, abrasives and viscous liquids. And is suitable for full pipes and any fluid that contains solids such as paint or bubbles.

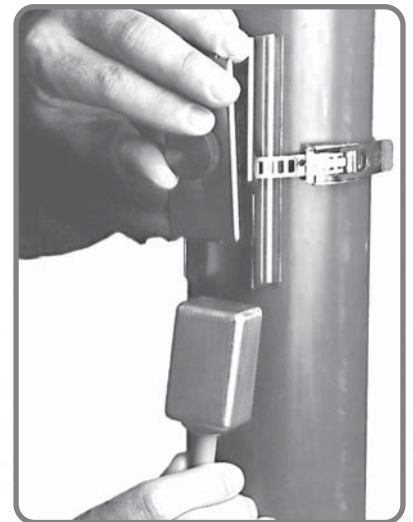
A strap-on sensor is mounted on the outside of a plastic or metal pipe and to measure flow an acoustic signal is reflected back to the sensor from particles or gas bubbles in the fluid. No contact is made with the moving fluid and as a consequence there is no fouling or scale build-up on the sensor.

Installation is easy - without shutting down the flow system and no pipe cutting or drilling is required, providing significant cost savings over alternative in-line meters.

Plasticomnium operate within the automotive supply industry providing components for a number of leading car manufacturers with demanding quality standards and quality maintenance and improvement is a continuous process.

Overspray recovery from the booths is by water curtains and treatment of the contaminated exhaust air and water. The interaction or balance between the exhaust air and water recovery process is related to the quality of the paint finish on the bumper sets being sprayed and the DFM-IV's are being used to measure the process water flow. The contaminated water is pumped from the booth sumps for chemical treatment and removal of the paint sludge prior to being recycled in the process. And a reduction in the water flow rate because too much paint is being collected and recovered from the system indicates that the process is out of balance and corrective measures are required.

Plant Engineer Mark Cashmore says, "The Micronics meters provided a cost-effective way of measuring the recycled water flow. We've found that if we monitor and manage the water component in the system the exhaust air component is kept in balance and the result is consistent high quality with significant savings from reduced reworking of the bumper sets. There were some initial snags as you would expect with any new system, however, the meters have worked well and Micronics service response has been good".



DFM-IV Doppler Flow Meter

- Watertight enclosure.
- Signal strength Indicator.
- RFI rejection Filters.
- Backflow protection.

Pipe Range:- >13mm up to 4.5m

Power Input:- 100 –260VAC, 50/60Hz,
12-28VDC 5watts max.

Flow Rate Range:- 0.08m/s to 12m/s

Accuracy:- +/-2% of full scale. Requires solids
or bubbles of minimum size 100 microns,
minimum concentration 75ppm.

Repeatability:- +/- 0.1%.

Linearity:- +/-0.5% of full scale.

Display:- Large 4 Digit LCD for programmable output in
engineering units.16-digit alpha numeric for Totaliser,
Menu, status, signal strength.

Output:- Isolated 0/4 –20mA(1000ohm load max.)

3-5amp rated SPDT relays, programmable flow
alarms and/or proportional pulse. Adjustable
sensitivity and damping.

Electronics Operating Temp:- -23°C to + 60°C.

Sensor Operating Temp:- -40°C to + 90°C.

Options:- Intrinsic safety barriers, high temp to 150°C,
ISE insertion and dual head types for special
applications. Enclosure heater controlled to maintain
temp. at 40°C

Data logger:- 50,000 points via RS 232 output with
Windows software.

