

## A New Approach to Open-Channel Flow-Monitoring



**Recently developed range of flowmeters provide a revolutionary approach to open-channel flow monitoring by combining digital Doppler radar velocity sensing technology with ultrasonic pulse echo level sensing.**

As a result, they are extremely effective in applications which require maintenance-free open channel flows to be remotely measured.

Available through flowmeter specialists, the device is the ideal solution for monitoring difficult flow conditions for example, flows which have a high solid content, high temperatures, high content of caustic media, a high flow velocity etc..

The key benefits of these flowmeters are that they are highly accurate, easy to install and operators have no contact with the flow during installation. Also, the maintenance problems associated with other flow measurement technologies which depend on sensors being submerged in the flow, such as sensor fouling, are eliminated. They do not require on-site calibration and the interchangeable sensors and monitors can be replaced in the field.

The principle behind these flowmeters is that they transmit a digital radar beam that interacts with the fluid and reflects back signals at a different frequency from that which was

transmitted. These reflected signals are compared with the transmitted frequency and the resulting frequency 'shift' provides an accurate measure of the velocity and the direction of the flow.

The level is detected by ultrasonic pulse echo and the flow is then calculated based upon the Continuity Equation:  $Q = V \times A$ , Where  $Q$  = Flow,  $V$  = Average Velocity and  $A$  = Area.

Typical applications for these radar flowmeters include general process and industrial flow measurement applications, municipal, water and waste treatment sites or wherever highly accurate, open channel flow measurement is needed, regardless of difficult conditions.