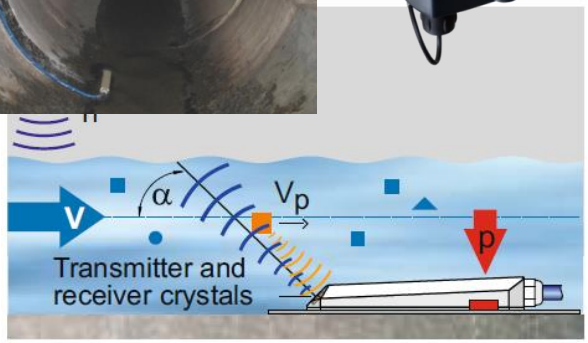
XiLog+ Waste water applications

The *XiLog*+ data logger range may be used with a range of sensors on waste water networks. Applications include permanent monitoring of storm weirs, sewer overflows, network modelling and influence of rainfall and industrial discharges to networks.

Open channel flow using Doppler sensor

The Doppler method uses a continuous, ultrasonic signal sent into the water at a known angle to measure the flow velocity. Moving particles generate a frequency shift proportional to the velocity of the particles



- One sensor for *Doppler* measurement + piezo-resistive pressure (depth) measurement + temperature compensation
- Wedge sensor for mounting on channel bottom
- For use in slightly to heavily polluted water
- Flow velocity range; ±600 cm/sec
- Level range; 0 - 350 cm

Level measurement using ultrasonic sensor

Ultrasonic pulses are reflected by the surface and received at the sensor. A common application is for depth v flow-rate determination on weirs and flumes.

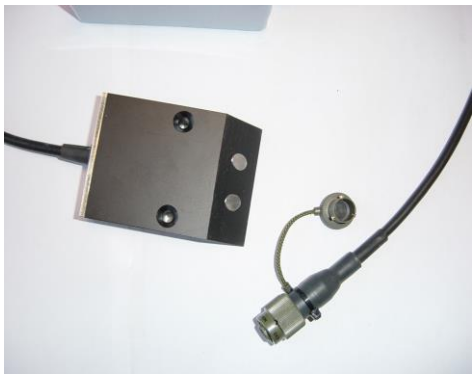
- Typical application is for monitoring sewer overflows at times of excessive rainfall when sewerage may be discharged into the environment
- Range; 0 - 5 metre sensor to 0 - 15 metre sensor
- Deviation; ±4 mm or <0.2%
- 4-20mA interface to logger

Level measurement using radar sensor

Sensor uses pulsed microwaves enabling high accuracy over a wide range. Furthermore, it is not affected by humidity, surface foam, etc., creating false echoes.

- Accuracy; ± 2 mm (of reading)
- One device covers range 0 – 8 metre
- No dead-band under sensor (ultrasonic 250mm dead-band, 6m range)
- Not affected by temperature, humidity, surface foam, dust and air movements
- Low maintenance costs
- No drift and no recalibration

Overflow sensor



The overflow sensor is self-powered and, when submerged, indicates presence of water. The system measures the time an overflow occurs, e.g. over a weir.

Installation of the sensor is made in the required position to detect an overflow. The sensor has a designed profile to avoid sediment build up.

Applications include;

- Storm weir overflow
- Detection of a tank overflowing
- Level detection in waste water chamber
- Alarm on threshold of water

Raingauge

A raingauge can give first indication of increased surface water entering the sewer network. This provides information to treatment works upon predicted increased water volumes.

Features;

- Standard tipping-bucket rain gauge with 0.2 mm per tip
- All ‘tip events’ logged
- Report on start time, duration, total rainfall (mm) and rainfall intensity (mm/hour)

Pump time functioning – current clamp

The current clamp detects when a pump is taking electric power; thus monitoring the functioning time of the pump. The volume of water pumped is calculated from the pump run-time. The accuracy can be limited but it is useful for modelling and understanding the network.

Features;

- Indicates if pump operation time increases - perhaps due to blockages
- No disruption to pump operation
- Can monitor two pumps
- Clamps installed on one phase of supply

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