

The image shows two male workers in white hard hats and high-visibility yellow-green safety vests. They are kneeling outdoors, looking at a piece of equipment. One worker is holding a tablet and writing on it with a pen. The other worker is looking at a device connected to the equipment. The background shows a large white pipe and a red traffic cone.

RPS Water

Accuflow™

flow metering via existing sluice valves

- Up to 33% of all leaks repaired have no effect on reducing reported leakage levels
- It is costing the UK water industry approximately £100M per year to repair these leaks
- Accuflow™ enables more effective deployment of leakage repair budgets through better identification and quantification of leaks
- Accuflow™ can reduce repair costs by up to 30%

Accuflow™ estimates flow rates

- Overall accuracy levels of +/- 10% are obtainable at flow rates ranging from 0.3 litres/sec to 3 litres/sec.
- The total operation takes less than ten minutes for a 100mm sluice valve.
- Accuflow™ measures flow rates lower than that of a conventional type meter. For example, the minimum flow specified for a 100mm helical vane meter is 0.5 litres/sec.

Accuflow™, developed by RPS in conjunction with the electronics company Technolog and Dŵr Cymru Welsh Water, uses the relationship between flow rates and acoustic noise.

It consists of:

- A display unit which provides visual and audible signals to the operator at each stage of the flow monitoring process.
- A keypad to facilitate input of key data.
- A microprocessor which records and processes the input and sensor-derived data to provide an estimation of flow.

The device provides the operator with step-by-step instructions on how to close the valve in a controlled fashion. This action is fundamentally important because it provides the information needed to analyse the current flow rate when the valve is fully open. The valve needs to remain closed for only a few seconds before being reopened. The estimated flow rate is displayed on the Accuflow™ LCD panel immediately after valve closure. With Accuflow™ every sluice valve is a potential metering point.

Accuflow™ can:

- Provide immediate indication of the flow passing through the fully open valve.
- Enable better identification and quantification of leaks.
- Allow leak repair schedules to be prioritised.
- Facilitate new ways to improve system knowledge.
- Check commercial meter accuracy.
- Identify illegal water usage.

This innovative technology is likely to form an important part of the future leakage consultancy offered by RPS Water.





Accuflow™ - highly portable



Fits over sluce valve spindle



Touch-sensitive operator screen

Accuflow™ turns sluce valves into metering points

- Conventional step-testing provides flow information – but requires expensive installations for each metering point. Work has to be undertaken at night – which can cause disruption to customers' supplies.
- It is not always possible to get good results due to intermittent night use within the area being monitored.
- Acoustic logging can identify leakage – but often provides a poor indication of the leak size.
- Accuflow™ overcomes these problems. It can be used on any distribution sluce valve and requires no excavation of or modification to the valve.
- With Accuflow™, measurement of the flow simply requires a controlled closing of the valve. The valve can be immediately reopened – resulting in little or no disruption to the supply. Daytime flow monitoring becomes possible, whereas step-testing normally requires night working – with all the associated extra costs.

Accuflow™ detects and quantifies leaks

- Quantitative local information on levels of rate of flow is easily obtained.
- Metering points can be close to the area being monitored – thus reducing the effect of customer usage on the measurements.
- The controlled nature of the valve operation reduces the likelihood of causing small bursts on weak mains or discolouring the supply.
- Follow-up monitoring to assess the effect of leak repairs is possible.
- No susceptibility to external noise – as is the case with acoustic logging.
- No fixed installation required – thus reducing costs.
- Can be used to detect illegal use of water on fire mains.
- Can be used to control and monitor valve operations and speed of closing sluce valves.

Accuflow™ requires

- A sluce valve with leak-proof closure and no gland leakage.
- A clean valve head to provide a good contact with the acoustic sensor.
- The ability to completely close the valve for a short period – although this is only normally required for approximately 10 seconds.
- A sluce valve that can be operated from fully open to fully closed without removing the Accuflow™ from the valve head.



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