

Leakfrog

HIGHLY COST-EFFECTIVE CUSTOMER SIDE LEAKAGE MONITORING

▶ Leakfrog allows water companies, for the first time, to monitor their domestic customers' homes for water leaks, using highly cost-effective and unique technology.

Leakfrog's main benefits include:

- Accurately provides complete data for customer side leakage (CSL)
- Enables total water balance within a District Meter Area (DMA)
- Enables reporting and compliance targets to be met
- Reduced water losses
- Reduces subsequent damage to buildings
- Allows capital deferment (eg. of reservoirs)
- Increases security of supply
- Improves conservation performance

FEATURES

- Indicates leakage, wastage and flow
- Custom LCD display which will indicate interval between pulses, leak size, unit activity and other data
- Easy integration with existing meter reading cycle and systems
- Low cost, facilitating volume installations in homes
- Clips directly onto Elster V210 meters using integrated reed switch
- Can be connected to all pulse meters with additional pulse lead
- Long battery life
- Single user control – no set up required
- IP68 – submersible
- Rugged and lightweight
- Easy to deploy and collect
- Easy to interpret



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OVERVIEW

Leakfrog allows water companies to introduce a new, novel and highly efficient approach for detecting Customer Side Leakage (CSL) by monitoring minimum flow rate.

Traditionally, costly and complex data loggers have been deployed on water meters to gather daily usage patterns. Non-zero minimum flows, often taken to be during a "nightline" period between 03:00am – 04:00am, are used to indicate the presence of potential CSL. Sites suspected of containing CSL are then put forward into a rigorous proving process before being passed on for repair.

There is significant overhead associated with the use of traditional data logging devices.

These include:

- The high unit cost.
- Complex configuration of the device (often including site details, time, logging frequency etc.)
- The process of deployment and retrieval of logging units.
- Required IT infrastructure and systems to manage logger and site data.
- Back-office processing and interpretation of the logger data in terms of leakage detection.

Leakfrog replaces and enhances this costly and time-consuming method. The Leakfrog approach is to use low cost detection devices

that can be widely deployed either permanently or during a leakage sweeping programme. Installation is as simple as pressing a button on the unit, with no programming required. Leakfrog allows large volumes of minimum flow data to be collected simply and effectively using existing IT infrastructure such as handheld meter reading devices. Leakfrog has been specifically designed to provide the information required to target CSL and directly address a number of the issues currently associated with CSL identification, such as:

- leakage detection and reduction
- customer service improvement
- proving of quality of new meter installations
- regulatory leak level verification.

TECHNICAL SPECIFICATION

Sensor Input Option	Digital x 1	<p>Input 1: The device has a button to reset the unit.</p> <p>Input 2: The device attaches to pulsed output meters and records pulses via an integral magnetic reed switch assembly.</p>
Display Features	Type	Custom 4 digit LCD Display
	Display Interval	"0000" to "9999" seconds
	Operating Modes	<p>Output 1: 0000 – Initially after reset.</p> <p>Output 1: 0001 – to indicate that the time between pulses is less than 2 seconds since reset.</p> <p>Output 1: 0002 - 9998 – value in seconds displayed of the maximum time stored between pulses since reset.</p> <p>Output 1: 9999 – value in seconds displayed when the maximum time between pulses is equal to or greater than 9999 seconds since reset.</p> <p>Output 2: Maximum interval pending (arrow symbol). In the case where the unit has sampled and reported an interval and is currently counting a longer interval the unit indicates that it is in the state of sampling the current largest gap between pulses.</p> <p>Output: 2 ON is indicated by an arrow symbol in the top right hand corner of the display.</p> <p>Output: 2 OFF otherwise.</p> <p>Output 3: Heartbeat. A "frog" shaped heartbeat (cycle time approximately 1 second) is displayed in the top left hand corner of the display to indicate that the unit is currently monitoring for the maximum interval between pulses. The Heartbeat will:</p> <p>Output 3: STATIC, (on or off) when the flow rate is 1 pulse per second (+/- 10%)</p> <p>Output 3: FLASHING After the reset button has been pressed.</p> <p>Output 3: OFF when the unit is displaying 9999 seconds.</p> <p>Output 4: Continuity check. The unit displays a square wave shaped 'continuity' check symbol in the bottom left hand corner of the display indicating the state of the internal reed switch.</p> <p>Output 4: ON when the meter's pulsed output unit is under the sensor, forcing it to be closed.</p> <p>Output 4: OFF in all other cases.</p>
Physical	Dimensions	90 x 50 x 30mm
	Construction	Polycarbonate
	Weight	270g
	Operating Temp.	-10 to +70 C, (-5 to +160F)
	Ingress protection	IP68 submersible
	Power	Lithium thionyl chloride cell operational for 4 years under normal operating conditions
	Operation	Single sealed push-button operation for reset

