

PermaNET TM GPS |

Multi-Parameter Water Trunk Main Leak Detection with GPS Time Sync

PermaNET TM GPS is an acoustic monitoring system for trunk mains, plastic and sensitive pipelines that uses GPS Time Synchronisation to produce highly accurate correlations over long distances, on large diameter pipes and in difficult conditions.

Combining high performance Hydrophone 2 leak detection capability with flow and pressure transient information not only delivers highly accurate leak noise correlations but will potentially identify from where leaks are originating. The system is available with flow and pressure channels with fast logging capability.

Features:

Battery-powered telemetry acoustic (flow and pressure) leakage monitoring

- **Hydrophone 2:** high performance hydrophone for best results on large and non-metallic pipes.
- **GPS Time Synchronisation:** accurate correlation even over long runs and in rural locations.
- **Multi-parameter options:** flow and pressure capability, including fast logging (transient).
- **Easy to deploy:** battery powered, no requirement for solar or mains infrastructure.
- **Telemetry:** latest NBIoT/LTE-M/4G or 2G HWM telemetry.
- **PermaNET Web:** software supports
 - Correlation
 - Map view
 - Aqualog
 - GIS Interface
 - Remote reconfiguration
 - Filtering
- **Fast Burst Detection:** profile alarms on noise level (pressure and flow) to quickly identify leaks.
- **External battery packs:** to support fast logging or accelerated dial-in regimes.
- **Easy to use:** compatible with HWM Deployment app. Select features can be programmed through PermaNET Web.
- **Variable sampling:** sample times can be changed remotely through PermaNET Web or via IDT software.
- **Long-term monitoring:** typical 5 years battery life (depending on settings and signal strength).



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Specifications

Logger Features	
Frequency	Variable logger sample rate from 1s to 24hrs (this may affect battery life and communication costs)
Construction	PC/ABS plastic enclosure
Storage Temp. / Operating Temp.	-40 to 60°C / -20 to +60°C
Environmental	IP68 submersible
Power	Lithium Thionyl-Chloride, typical 5 years (depending on settings and signal condition). External power connection for battery box and DC input
Memory	Primary recording: 1 million readings (non-volatile memory)
Fast Logging (secondary channel)	Secondary, fast channel supports sampling up to 100 Hz and record average, minimum, maximum, standard deviation or time interval between pulses (for data smoothing)
Alarms	Multiple alarm options including Rate of Change, Profile, Minimum Night Flow and Threshold. 16 alarms per logger. Can be programmed to auto dial up to 8 telephone numbers on alarm. Over 16 alarms per logger depending on channel configuration
Internal Cellular Modem	Cellular modem supporting 2G/4G/NB-IoT/LTE-M (Cat-M1).
Accelerated dial-in	Dial-in rate is increased if alarm situation is triggered. Logger can accelerate dial-in at alarm level for multiple applications - including SonicSens, Flow, Pressure and other alarmed sensors
Inputs	
Noise	HWM Hydrophone 2 or LNS Accelerometer
Flow	One bi-directional pulse for Flow. Two single-directional pulse inputs for Flow logging. Up to 64 pulses per second
Analogue (Pressure)	Internal Pressure Transducer. External pressure. 4-20mA (optional). 0-20 bar / 0-200 meters head / 0-300psig, 0.1% repeatability / please note that the logger is calibrated to 10 bar as standard. (20 bar calibration must be specified at time of order if required). (0-10 bar / 0-100 meters head / 0-150 psig option also available)
Leak Detection	
Leak Identification	HWM noise level and spread algorithm, or Trunk Main mode: continuous sampling with alarm on threshold or profile breach
Sound File	Automatically recorded on alarm or manual request. Remote audio 'listening' Remote correlation
Correlation	Full feature correlation with GPS time synchronisation
Hydrophone Specification	
Unit Gross Weight	1.054kg
Safety Tested	Up to 25Bar
Material: Body	Stainless Steel 316 - DWI regulation 31
Material: Sensor	Araldite DFB/HY951 - BS 6920:2014
Environmental	IP68