

PermaNET F

Telemetry Noise Logger

PermaNET F combines a leak noise sensor with versatile telemetry technology into one single unit, creating a fixed network to monitor leakage.

Retaining the industry leading features of the PermaNET+ system, PermaNET F is designed specifically for smaller and more challenging installation areas.

PermaNET F is fully compatible with PermaNET Web, the online data viewing and analysis platform, combining to provide map-based display, GIS interface and full audio and correlation facilities.



Key Features and Benefits

- **Single compact unit:** combines leak noise sensor and telemetry into a single compact unit
- **Robust and durable:** designed specifically for smaller and more challenging installation areas
- **Quick response:** enables leakage teams to respond quickly to specific locations when a leak is detected
- **Telemetry:** NBIoT LTE-based cellular communication standard with fallback 2G capability
- **Secondary validation:**
 - Aqualog - detailed noise histogram to reduce 'false positives'
 - Audio - remotely listen to the noise
 - Remote correlation to localise leak position
- **Fully waterproof:** the IP68 rating has been tested at 10m depth over a 24 hour period
- **Easy to use:** compatible with HWM Deployment app. Select features can be programmed through PermaNET Web
- **PermaNET Web:** software supports
 - Correlation
 - select GIS file formats
 - Map view
 - Remote reconfiguration
 - Aqualog
 - Filtering

- **External antennas:** support improved signal strength (contact HWM for more information)

Applications

Once installed, leak data is calculated using the proven Pernalog algorithm, and data is transmitted via low cost cellular telemetry. This removes the requirement for expensive site visits and "drive by" data retrieval.

PermaNET F transmits data through an integral modem with GPRS/2G, 4G, LTE-M (Cat-1) and other NBIoT cellular options available.

PermaNET F allows leakage teams to monitor the status of each logger deployed from map based host software using any internet enabled device.

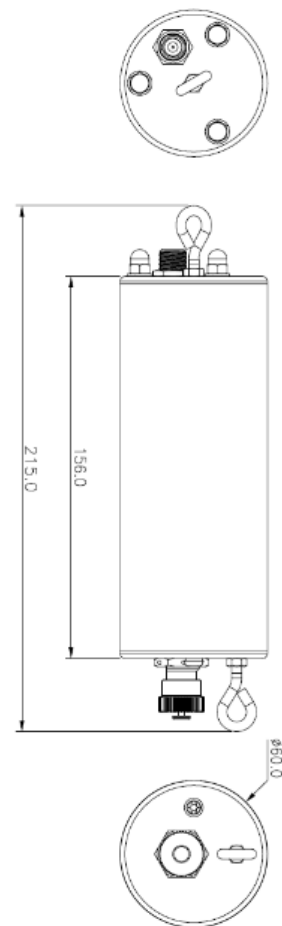
Leaks are identified immediately and once the presence of a leak has been identified, secondary measures can be used to check and remove 'false positives' and also to localise the leak position.

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Logger Features

Operating Temperature	-20 to 60°C (-5 to 140°F)
Memory	Primary recording: 1 million readings
Dimensions	Height = 120mm, Diameter = 60mm
Weight	900g
Ingress Protection	IP68 submersible
Antenna	Multiple external options - contact HWM for more information
Battery Life	Typical 5 years (depending on settings and signal condition)
Internal Cellular Modem	cellular modem supporting 2G/3G/NB-IoT/LTE-M (Cat-1) with SMS backup where available - contact HWM for available options
Alarms	Leak/no leak Signal received/not received



PermaNET Web

Online Data Portal

PermaNET Web is a secure, web-based portal designed to support the PermaNET product range in the remote identification of network leakage.

Supporting acoustic correlation, leak detection and logger programming, PermaNET Web delivers connectivity with multiple loggers and provides the user with numerous ways to view collected data.



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MONITORING ASSETS, DELIVERING DATA, BRINGING CONTROL