

PermaNET+ Spider 2

Data logger

The PermaNET+ system from HWM combines the Permalog leak noise sensor, versatile telemetry data technology, with Aqualog and Correlation secondary validation, to create an advanced fixed network to monitor leakage.

All components are deployed in the chamber, removing the need for expensive and disruptive above ground installations.



Key Features and Benefits

- **Smaller:** Designed to fit in compact spaces and still provide the same innovative features as the PermaNet+
- **Secondary validation:**
 - Aqualog- Detailed noise histogram to fully understand leak events
 - Audio- Remotely listen to the noise
 - Remote correlation- Verify leak present
 - Leak sizes can be determined by matching daily alarms with flow data thus allowing leak investigations to be prioritised
- **Remote notification of leak:** Reduces leak run time
- **Non disruptive:** No above ground infrastructure, all deployed below ground
- **Map based web viewer:** Processing via server hosted software
- **Fully Waterproof:** The IP68 rating has been tested at 10 m depth over a 24 hour period
- **Ability to log noise more frequently:** Establish the noise profile and profile alarms for precise immediate leakage alarms
- **Efficient:** Problem zones brought quickly and effectively under control
- **Connectorised:** Easy to replace battery and antenna options

Applications

Once installed, leak data is calculated using HWM's proven Permalog algorithm. Data, is transmitted via low cost GPRS. This removes the requirement for expensive site visits and "drive-by" data retrieval.

PermaNET+ allows leakage teams to monitor the status of each deployed logger using HWM's map based host software (PermaNet Web) and any internet enabled device. The map based approach provides live on screen tracking, allowing leakage teams to easily see and respond quickly to problem areas.

Once the presence of a leak has been identified, secondary measures can be used to confirm the nature of the leak including its size before teams are deployed.

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Sensor Input options

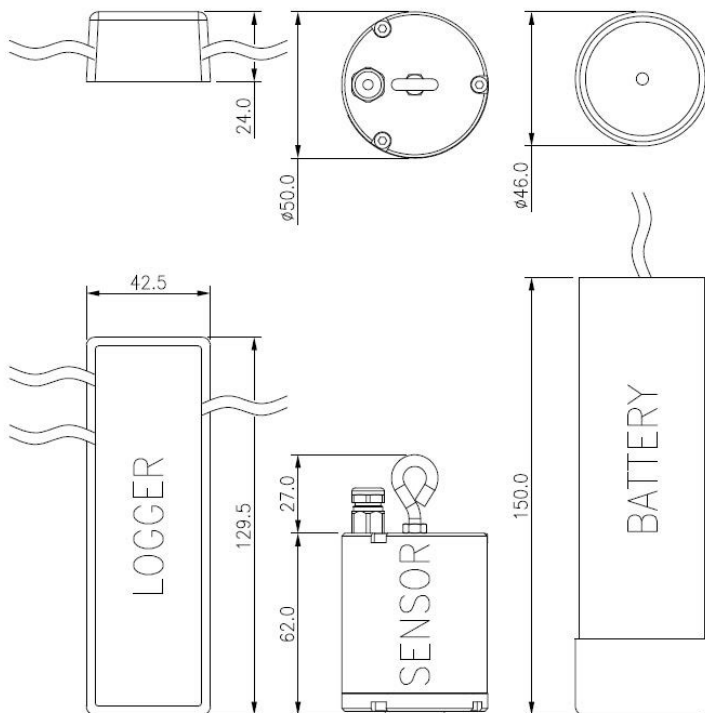
Noise	Permalog LNS Sensor
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Communication and programming

Serial	USB Cable for connection to hand held programming and data collection unit - tablet, laptop, or desktop PC.
Internal Cellular modem	Configurable message frequency 1/ week to every 15 mins, with a choice of battery packs for frequent dial-in modes. GPRS site using HWM DataGate or customer specific data server. Quad band modem supplying 850/900/1800/1900MHz bands

Logger Features

Operating temperature	Logger: -20 to +60°C (-5 to +140°F) Leak Noise Sensor: -20 to +60°C (-5 to +140°F)
Memory	Primary recording 100,000 reading sets and 32 sound recordings
Weight	Combined weight approx. 1200g
Ingress protection	IP68 submersible
Clock	On board 24 hour real time clock with date facility. Automated synchronization from remote data server
Logger ID	Up to 7 alphanumeric characters. Also readable factory set serial number in firmware
Alarms	Leak/no leak Signal received/not received
Ingress protection	IP68



Replacement battery part number

Battery type	Product number
D-Cell	EBC/4S/G

PermaNET+ Spider 2 part number

Product number	SP/LBF
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