

Phocus®.sms

Leak detection logger with remote alarm via SMS

Phocus.sms is an acoustic logger with a remote alarm facility to host PC or to a mobile phone. It is designed for use in detecting and localising leakage on water distribution systems.

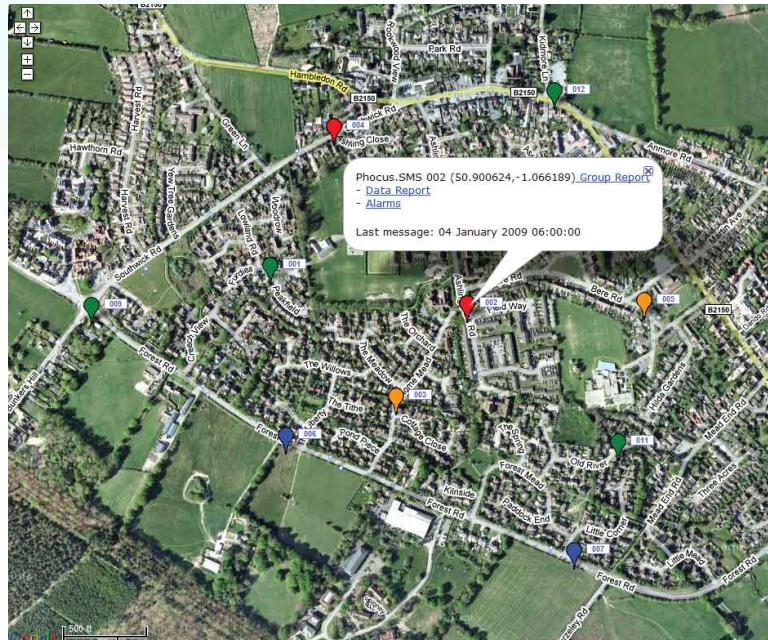
Phocus.sms automatically determines the presence of a leak. It also gives visual indication of the leak noise strength and a leakage confidence factor.

Features include:

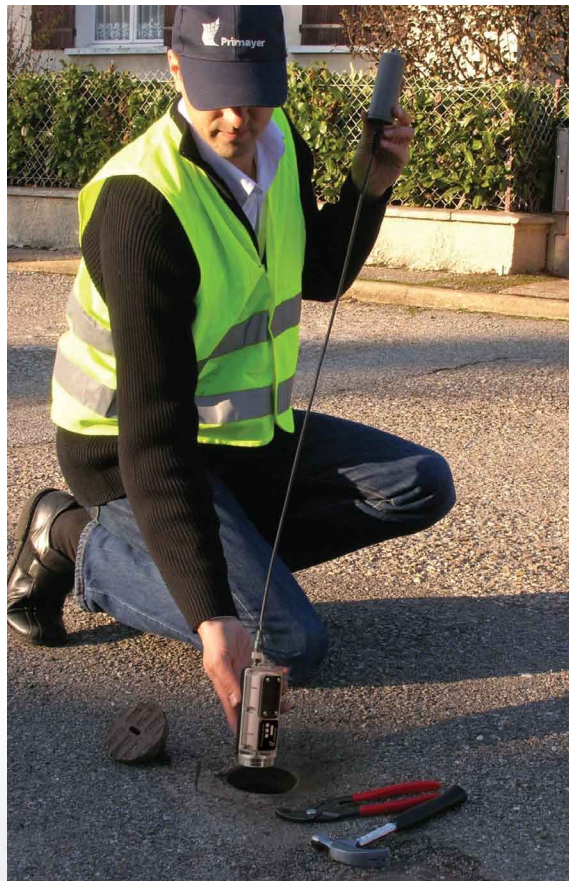
- Instant alarms - reduces time the leak 'runs'
- Three sample periods overnight separates genuine use from leakage so reducing the incidence of false alarms
- Uses Phocus noise algorithm to reduce incidence of undetected leaks
- Regular 'health-check' reports
- No 'drive-by' required reduces operational costs
- On-site indication of leakage

Operation

Phocus.sms is an intelligent acoustic logger which detects the noise generated by a water leak. The logger samples pipeline noise at one second intervals during each of three sample periods (termed epochs) during the night when background acoustic noise is lowest. It carries out statistical analysis on each of the three epochs to determine the Leakage Confidence Factor. If this is high then an alarm message is transmitted via a SMS message. The alarm message also includes the lowest leak noise amplitude measured, termed the Critical Noise Value. This value is important as a measure of how close to the leak the **Phocus.sms** logger is situated.



Google Maps interface for leak alarm visibility (courtesy of Google Maps)



technology for network management and leakage control

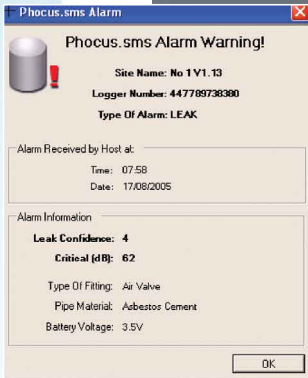
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Regular 'health-check'

In addition to the alarm information *Phocus.sms* also transmits a regular 'health-check'. The 'health-check' message comprises the most recent Critical Noise Values and Leakage Confidence Factor values. This provides confirmation that the logger is operational and gives a record of the water network acoustic situation.

Logger characteristics

- Logger determines presence and strength of leak noise
- Integral accelerometer with high sensitivity
- Operation underground in most locations (with special antenna for optimised performance)
- Leak, low battery, and low SMS credit alarms
- Powered for up to 5 years (significantly reduced if 'Health-check' messages sent daily, weekly or two weekly)
- Submersible to IP68



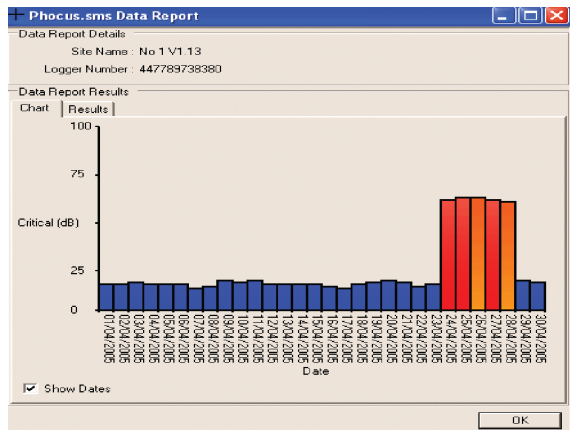
Part Numbers

Phocus.sms Noise Logger
(includes underground antenna)

AXG 900

Site Name	Fitting	Material	Critical Noise Value (CNV) Dates												Most Recent Report Statistics				Comments
			17/08/2007	18/08/2007	19/08/2007	20/08/2007	21/08/2007	22/08/2007	23/08/2007	24/08/2007	25/08/2007	26/08/2007	27/08/2007	28/08/2007	29/08/2007	30/08/2007	DB Trend	Peak dB	
001 (A)	AV	AC	22	14	14	6	17	16	17	13	14	12	3	1	16	22	50	29	
002	AV	AC	11	12	9	17	20	14	6	7	7	10	1	9	16	91	54		
004	AV	AC	13	13	11	17	19	13	25	6	6	10	1	6	25	66	29		
005	AV	AC	15	16	12	18	19	14	3	4	7	10	1	9	18	83	22		
006	AV	AC	24	12	13	10	18	49	41	41	38	38	3	4	35	38	96	19	
008	AV	AC	15	13	12	19	15	19	26	22	28	5	4	32	34	91	22		

Tabular report for status of all loggers deployed



Plot of daily Critical Noise Values.

Visual indication

The logger gives an on-site, visual indication of the Critical Noise Value and Leakage Confidence Factor for the most recent night. Indication is initiated by use of a special stroboscopic torch. This is also used to commission the logger and initiate the GSM network signal strength at time of installation.



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