



# Multilog 2

LTE-M and NBloT-enabled  
Multi-channel Data Logger



MONITORING ASSETS, DELIVERING DATA, BRINGING CONTROL





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## LTE-M & NBloT-enabled Multi-channel Data Logger

Multilog 2 is the highly advanced and versatile multi-channel data logger designed to monitor any combination of digital and analogue signals.

Ideal for a wide variety of specialised applications, including monitoring PRV flow and/or pressure in a district or zone to assess demand, leakage and conformance, Multilog 2 contains our advanced modem (capable of connecting via LTE-M or NBloT with 2G fallback, 3G or 2G).

Multilog 2 is an effective data logging solution and is available with support for WITS 1.3, delivering direct integration with WITS SCADA systems.



### Key Features and Benefits

- **Telemetry:** NBloT/LTE-based cellular communication standard with fallback 2G capability
- **Serial input option:** for connection to digital meters, SonicSens 3 level sensor, Modbus, SDI12, RS232, Badger/Sensus/Neptune serial meter interfaces
- **4 channel logging:** 8 or 16 channels available on request
- **Fast logging:** primary logging to 1 second as standard - 25hz for transient events
- **Alarm:** full alarm functionality
- **Robust:** rugged die cast aluminium case
- **True readings:** true max and min flow and investigation of pressure spikes
- **Pulse interval timing:** smooths reading of infrequent pulses
- **External antennas:** support improved signal strength (contact HWM for more information)
- **Local data download:** 10 pin military plug connected to laptop or desktop PC
- **Fully waterproof:** the IP68 rating has been tested at 10m depth over a 24 hour period
- **Long-term monitoring:** 5 year battery life
- **Optional outputs:** replicate inputs or trigger on alarm, allows operation of third party sensors, e.g. water samplers
- **WITS 1.3 protocol:** support for WITS 1.3 delivering direct integration with WITS SCADA systems

### Applications

After installation, all firmware upgrades and programming changes are made remotely. As well as ensuring that changes are made efficiently, this is also cost-effective, as it removes the need for site visits.

Multilog 2 transmits data through an integral modem with NBloT / LTE-M (Cat-1) with 2G fallback or 2G as primary technology, as well as other available cellular options.

An innovative feature of Multilog 2 is a secondary channel, enabling additional fast logging down to 25Hz as standard or 100Hz if specifically requested on product build.

Secondary logging can be triggered on time schedule and/or in response to an alarm condition being triggered. This is invaluable when more detailed investigation is required, such as pressure spikes and 'true' minimum night flow.

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### Input Options

Digital	Maximum 6 uni-directional flow or 3 bi-directional channels.  Volt free or powered meter connections.  Digital channels configurable as Tamper Detection.  Up to 64 pulses per second.
Pressure	Up to 2 internal or 4 external pressure connected via 6pin (or optional 4pin) IP68 Mil-Spec Connector  0-20 bar / 0-200 meters head / 0-300psig, 0.1% repeatability / please note that the logger is calibrated to 100m as standard.  (200m calibration must be specified at time of order if required).
Analogue	External pressure. 4-20mA (optional).  Leak noise, 0-10V, 0-1V, temperature or 4-20 mA variants.
Serial Input	Proprietary serial interface for SonicSens ultrasonic level monitors and third-party devices like Serial Meters using Modbus, SDI12 and RS232.  Support for multiple Water Quality Sensors such as MetriNet pH, Turbidity and Conductivity.  Configurable Modbus Master to connect to Modbus Slave Sensor.

### Features

Frequency	Standard Logging: 15 min (variable logger sample rate from 1s to 24hrs - this may affect battery life and communication costs).
Fast Logging (secondary channel)	Secondary, fast channel supports sampling up to 25 Hz (option for 100 Hz) and record average, minimum, maximum or standard deviation
Pulse Interval Timing	Count and Event logging modes independent for both recordings. Pulse Interval Timing helps to smooth readings (e.g. leakage) in low flows by counting the time between each pulse (event mode). This is available in addition to totalling the pulses (count mode).
Logger/Site ID	7 alphanumeric characters. Readable factory set serial number in firmware
Dimensions	H = 257mm, W = 129mm, D = 77mm (10.1" x 5.0" x 3.0")
Construction	Die-cast aluminium enclosure, powder-coat spray painted
Weight	1.6kg (3.5lb)
Operating Temp.	-20 to +60°C (-5 to +140°F)
Ingress Protection	IP68 submersible
Power	Lithium Thionyl-Chloride cell batteries.  Typical 5 years (depending on settings and signal condition), otherwise maintenance free design.  External power connection for battery box and other supplies like 12V/235V power (via PSU) supported for more frequent dial-in and long-term accelerated logging.
Memory	Standard recording: 2 million readings records multiple years of data and alarms/events (at 15 minute logging).  Optional up to 64 million readings and expandable HC SD card  Configuration and data/alarms stored in non-volatile memory.  Alarms shared with data memory.



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### Communication

Local	High-speed USB 2.0 for connection to hand held devices, Windows tablets, laptop or desktop PC
Internal Cellular Modem	Cellular modem supporting 2G(GPRS or SMS)/3G/4G/NBloT/LTE-M (Cat-1) with SMS backup where available - contact HWM for available options.  GPRS/NBloT/LTE-M (Cat-M1) can send data down to every 15 minutes with appropriate battery pack.
SIM Card	HWM Roaming or customers supplied
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.
Remote Communication	Remote configuration of sample and log rates, calibration factors, alarm settings.  No limit on remote configuration.
Time Synchronisation	On-board 24 hour real time clock with date facility with time synchronisation with every connection to server.

### Alarms

Alarms Features	16 alarms types per logger (can be increased above 16 alarms in certain configurations)  Alarms can be forwarded to multiple (8+) mobile numbers or via SMS.  Alarm comment field 16 characters.  No limits on alarms sent from logger.  All alarms Time-Stamped within logger before upload to server.
Configurable Data Alarms	Threshold High/Low.  Rate of Change.  Profile (Time).  Minimum Night Flow  Sensor out of range High/Low alarms.
System Alarms	Local Configuration Alarms.  2-stage battery alarm (configurable).  Configuration Corruption Alarm.  External Power Disconnect Alarm.



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