



MONITORING
SOLUTIONS



HydroTerra

Environmental Monitoring Specialists



DataStreamTM

TELEMETRY SYSTEMS

Solutions from HydroTerra

hydroterra.com.au

HydroTerra’s **DataStream™** (DS) Telemetry system is a highly configurable, IP-based, web-enabled platform for environmental and industrial monitoring. Proven in mining, landfills, and remote groundwater applications, it combines flexible data logging, communication, and management in harsh environments.

Built on Unidata Neon Remote Loggers (NRLs), DS Telemetry functions as both a data logger and intelligent RTU, supporting analog, digital, SDI-12, and Modbus 485 inputs and multiple instruments per logger. It communicates with HydroTerra’s cloud platform via TCP/IP over cellular, Wi-Fi, Ethernet, Inmarsat BGAN, Globalstar, Iridium, or LoRa LPWAN networks.



Example of Wastewater Dashboard





“Working with HydroTerra has been seamless. A single point of contact, deep technical expertise, and reliable after-sales support gave us confidence from start to finish. Their quality solutions, web-based platform with custom alerts, and local support ensure our operations run smoothly now and into the future. We’re proud to partner with HydroTerra and highly recommend their services.”

— James Downs, Landfill Construction Compliance Manager, Heidelberg Materials



Features:

Multiple Device Connectivity & Sensor Interfaces

- **Sensor Support:** DS Telemetry loggers can interface with diverse range of sensors, including those for water level, flow, temperature, pressure, rainfall and wind speed/direction.
- **Modbus & SDI-12:** The loggers support RS485 Modbus (RTU or ASCII) and SDI-12, allowing for connection to complex smart instruments and sensors.
- **HSIO Interface:** Utilizing the capabilities of Neon's HSIO (High Speed Input/Output) standard enables up to 16 compatible instruments to be connected to a single logger, with 3004/3016 models supporting 8 x 16-bit channels.
- **Digital & Analog Inputs:** DS Telemetry supports multiple 16-bit analog channels and digital counter channels (up to 20kHz) for versatile sensor connection.
- **Control Functions:** Beyond reading, the loggers can initiate actions in the field, such as turning pumps on/off or controlling gates, based on internal programmed events.

Communication Protocol Flexibility

- **IP-Based Telemetry:** HydroTerra's DS Telemetry loggers push data via TCP/IP, supporting Cellular (4G/3G/LTE/NB-IoT), Satellite (Inmarsat BGAN, Iridium, Globalstar), Wi-Fi, and Ethernet.
- **LoRaWAN Support:** The remote logger supports LoRaWAN, allowing for long-range, low-power communication with sensors in remote areas.
- **Bi-directional Communication:** The system allows for remote diagnosis, reconfiguration, and firmware updates, which minimizes the need for site visits.
- **Local & Remote Configuration:** Loggers can be configured in the field via Bluetooth (using the Neon Logger Utility on phones/tablets) or USB and reprogrammed remotely via the Neon web interface.



Data Handling & Integration

- Local Data Storage: Loggers securely store data locally in non-volatile memory until it is successfully transmitted to and acknowledged by the Neon server, ensuring no data loss during communication outages.
- Third-Party Integration: The DataStream Server software supports data exchange with other systems via API's.
- Push Data Model: The logger acts as a "push" device, sending data to the server at user-defined intervals (ranging from minutes to days).



DataStream[™]

Specifications:

Integrated logger specifications:

- Storage memory: 7.5Mbytes Flash (non-volatile), 3.75 Million log data points
- Scan rate: Programmable from 1 second to 5 minutes
- Log rate: Programmable from 1 second to 24 hours
- Time clock: Battery Backed Real Time Clock (RTC),
- Accuracy +/- 10 seconds/month (non-Neon version),
- locked to server time clock (Neon version)
- CPU: 16 Bit, 20MHz, Ultra-Low Power

DS Telemetry physical specifications

- The telemetry system can be housed in an enclosure most suitable for the application. Typical enclosures used include stainless-steel, powder-coated aluminium, high grade plastic cases (ABS) or Pelican Cases.



Electrical specifications

- External power: 9 to 30V DC – HydroTerra offer solar power, battery power or mains power.
- Current draw: 50µA Standby
- RTC backup battery: 3V Li Coin Cell CR1632, (5-year life)
- Internal Power: 3.6V Lithium D Cell
- Instrument Power: 5V or 12V or 18V regulated, 80mA, User Selectable
- Analog channels: 4 single-ended (max) or 2 differential (max) 24-bit resolution, 4 user-selectable gain ranges.
- Modbus: 1 independent channel, RS485, RTU or ASCII protocol, 57600 baud (max).
- SDI-12: 1 independent channel, SDI interface, 16 channels, bi-directional
- Counters: 4
 - 2 x 16 bit, DC to 20kHz free contact or 0 to 5VDC digital input (C0,C2)
 - 2 x 16 bit, DC to 300Hz free contact or 0 to 5VDC digital input (C1,C3)
- Configuration Port: USB B Micro Port and SD Micro Card
- Modem Options:
 - Cellular 4G/5G/LTE, NBIoT or Satellite Iridium SBD
- SIM Card: Single
- Barometer: 260-1260hPa Absolute Digital Output Barometer
- Digital Inputs: No
- Digital Output: 1 – Open Drain FET 30V DC, 250mA max

Contact HydroTerra
Today!

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Marketplace & Rental



Product Sales

Most suitable equipment and consumables for customer applications

Rental Services

Short-term monitoring equipment supply

Workshop, Support & Training



Workshop

Scheduled maintenance, calibration services and repairs in HydroTerra's Workshop.

Webinars and Training

held regularly to facilitate education



Field Services

Site Collection



Undertaking field measurements and analysing collected samples in a lab



Site Data Management

Generating publishable quality coded data files of known provenance



Site Reporting

Reporting on the sites operational and environmental compliance



DataStream™

Monitoring Systems



System Design

Developing monitoring plan and monitoring system design



System Specification

Specifying measurement points, equipment choices and data reporting



System Supply

Sourcing best software, hardware, hosting and telco options



Configure and Test

On selected systems design, calibration and alarm setup



System Install

Building and installing monitoring and sampling systems onsite.



System Oversight

Overseeing the monitoring system to ensure measurements are being captured and reported.



System Maintenance

Implementing the maintenance programs scheduled and unscheduled needs.



System Training

Deliver training programs to site operators enabling in-house maintenance and reporting.