# Site Sentinel Aeos®

Low power, ultra-compact, Satellite Data Logger



- **INDUSTRIAL/MINING ASSET MONTORING**
- **INTERNAL WORLDWIDE SATELLITE MODEM**
- **REMOTE ASSET MONITORING**
- **TANK LEVEL FLOAT SWITCH/ LEVEL ALARMING**
- **PIPELINE PRESSURE AND CATHODIC PROTECTION MONITORING**
- **MODBUS COMMS FOR SMART INSTRUMENTS**
- **REMOTE DEVICE MANAGEMENT**
- **WIDE AREA WATER QUALITY MONITORING APPLICATIONS**

# S3-001

The S3 is the latest addition to the Site Sentinel Aeos® data logger and RTU family, providing highly-reliable, direct-to-host data monitoring in a single package, aimed at the utility and environmental sector. The Site Sentinel Aeos® S3's compact design is aimed at the large-scale low deployed cost remote monitoring market where connectivity via cellular or radio is not possible.
This product variant is ideal for new deployments or retrofitting onto existing remote sites.

This data is stored internally on non-volatile flash memory with upstream communications provided using an internal L-Band Satellite modem operating on the Astrocast Satellite Network Constellation. The Site Sentinel Aeos® S3 Remote Data logger is equipped with the latest generation of low-cost Satellite IoT connectivity, along with onboard GPS, permitting world-wide use almost anywhere with a view to the sky. Thanks to the Bi-Directional satellite communications service, complete Remote Device Management / Provisioning and Remote Device Configuration is supported via the ProcessrIO Cloud Hosted Data portal.

Easily access all device and user payload data via automatic data export from ProcessrIO Cloud platform or use the direct API Connection to ProcessrIO cloud platform.

In addition to the physical I/O, a communications port provides Modbus Master (RTU) RS485 serial communications capability. User configurable Modbus table permits download of pre-defined or ad-hoc Modbus data profiles to support 'smart' downstream devices such as flowmeters, power meters and water quality probes.

The device is housed in an ultra-low profile, domed robust ABS-plastic enclosure, UV stabilised and rated at IP67, allowing for direct outdoor installation, ideal for direct surface mounting on top of existing cabinets or structures, or mounting directly to existing poles or walls using the optional stainless steel combination mounting bracket.

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# Technical Specifications

## General

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| Supply Voltage | 9-36 Volts DC Supply |
| Current Draw | 45 $\mu$A sleep, 5 mA active, 0.5 A (peak) satellite network detection / TX |
| Real Time Clock | Internal: Year, month, day, hour, minute, second<br>Automatic time synchronisation from Satellite Constellation and / or onboard GPS. |
| Temperature | –20°C to +85°C |
| Humidity | 0 to 90% relative humidity, non-condensing |
| Programming | Local Wifi communications via iPhone / Android / Tablet / PC<br>Remote device management via Satellite network local firmware download via Wifi<br>Local (live) programming/diagnostics via Wifi while connected to browser |
| Mounting | 150mm (diameter) x 25mm (high)<br>4 x 6.5mm Integrated mounting holes for securing using screws / bolts<br>Supplied with installation kit that includes mounting screws, mounting hole drilling template, I/O and DC / Comms connection cables.<br>Optional stainless steel combination mounting bracket for pole / wall mounting |
| Environmental | IP67 |

## IO Interfaces

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| Digital Input | Two (2) low-current dry-contact binary inputs (overvoltage protected, but non-isolated)<br>Each input supports pulse counting up to 3Khz (sleep/wake mode dependant), Forward/Reverse/Nett Totalisers with 32-bit roll-over<br>Digital Inputs can be configured to act as Counters, Alarm Inputs (unsolicited and event recording) or Status Inputs (event recording)<br>Second Digital Input can be used as Tamper Detection |
| Analogue Input | Two (2) inputs, 0–20 mA or 0–5V DC (user selectable, per channel), 12 bit resolution (non-isolated)<br>Four (4) user-configurable alarm limits per channel |
| Switched DC Out | Supplies up to 900 mA to power external sensors<br>5V, 12V, 24V or Battery Volts, user software selectable<br>User configurable sensor power on time before sample / modbus poll |
| Serial Comms | 1 x Modbus Master (RTU) 2-wire RS485 , terminated with onboard 120 ohm termination resistor. |
| System Input | Internal measurement of Satellite RSSI, Satellite Diagnostics, Device Temperature, Device Battery Voltage and Device Session Status code |

## Pulse Counting

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| Counters | Forward Totaliser with 32-bit roll-over<br>Reverse Totaliser with 32-bit roll-over<br>Nett Totaliser with 32-bit roll-over |

## Telemetry

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| Satellite | L-Band Operation<br>Astrocast Satellite Network Constellation<br>Bi-Directional data communications<br>1525 to 1660 MHz.<br>Output power (+15dBm)<br>RX sniff beacons used for next satellite pass detection |
| Antenna | Internal ceramic patch antenna (2dBi Gain)<br>Dual-band RHCP performance<br>Wide beamwidth (100 Degrees)<br>Downlink Gain 3.0 dBic (max)<br>Uplink Gain 3.5 dBic (max)<br>Electronically switched and shared between onboard GPS and Satellite communications module |
| GPS | Onboard GPS for position / location data<br>Supports: GPS, GLONASS, QZSS and SBAS signals high sensitivity and minimal acquisition time<br>Geofencing function |
| User Data Payload | User Payload – 160 Bytes per message<br>Up to 8 x 160 byte messages can be loaded into internal buffer for transmission to Satellite on next pass.<br>GPS Lat / Long position data also sent in addition to each user data payload. |
| Host Support | Automatic data export from ProcessrIO Cloud portal<br>Direct API Connection to ProcessrIO for end user data access.<br>Automated device provisioning via ProcessrIO |
| User Data Protocols | Modbus Master (RTU) Support for connection to downstream smart Instruments.<br>Supports polling of:<br>  - 8 x 16 Bit Unsigned Integers<br>  - 8 x Floating Point objects |
| Security | Encrypted bi-directional data communication<br>2-level 256-bit AES with unique device key<br>Local / Remote Configuration Password Security<br>Bluetooth automatically disabled after 30 seconds of device power up. |

## Approvals

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| Build | RoHs |
| Standards | RCM (AUST/NZ), EMC compliance, CE,<br>FCC ID 2A26901001, other export standards on request |
| Production | Proudly Made in Australia |

## Factory Accessories

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| Accessories | A comprehensive range of factory manufactured or sourced accessories to ensure reliable and swift solution deployment, please **visit 37s.com.au** |

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