Site Sentinel®

Ultra low-power and compact, 4G cellular data logger

RAIN GAUGE

REMOTE ASSET MONITORING

PULSE-OUTPUT FLOW METER MONITORING

INTERNAL 4G CAT-M1/NB-IoT MODEM

REMOTE DEVICE MANAGEMENT

LONG BATTERY LIFE

TANK LEVEL MONITORING

SEWER-MANHOLE MONITORING

C1-002 (Multi I/O)

The Site Sentinel® C1 Multi-I/O variant is an ultra-low power, compact device, designed to operate in the field for up to five years on a single battery (based on one report per day).

The Site Sentinel® C1 Multi-I/O variant offers flexible device configuration enabling the measurement of a variety of analog and digital signals and features switched power output for powering low-power connected sensors. Data is stored internally on non-volatile flash memory with upstream communications provided using an internal 4G cellular modem, permitting use on 4G CAT-M1 and NB-IoT networks worldwide.

The Site Sentinel® C1 Multi-I/O variant is the highest specification version of the Site Sentinel C1 4G logger range from 37South to provide high reliability data, directly to a host database using the industry standard DNP3 protocol. Remote configuration and device management is supported via leading industry SCADA applications, remote firmware download capability is provided via FTP file transfer.

The C1 Multi-I/O variant is equipped with one (1) analog input and two (2) digital inputs / pulse counters and provides Forward/Reverse/Nett Totalisers and instantaneous flow calculation as standard. A 'magnetic swipe' function is provided to allow on-demand data updates by field personnel. The C1 device configuration supports bulk editing/generation permitting high volume configuration, deployment, and auto-provisioning. The C1 device features an accellerometer to record X/Y position of the logger, configurable data recording and alarm limits.

Complete control is handed to the user to allow custom data reporting and wake-from-sleep regimes to be configured to balance battery life against data reporting requirements. The device is housed in a low-profile, robust ABS-plastic enclosure, UV stabilised and rated at IP68, permitting direct installation outdoors and is capable of surviving submersion to a depth of four metres for four days, making it suitable for installation in flood prone locations such as vaults, pits, and chambers.

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Technical Specifications

General

Supply Voltage	3.6V DC, High-capacity, 13,000 mAh internal Lithium battery pack (field replaceable)
Current Draw	50 μA sleep, 5 mA active, 200 mA cell communications, 2 A (peak) cell network detect, (measured at 3.6V DC)
Real Time Clock	Internal – Year, month, day, hour, minute, second, Automatic DNP3 time synchronisation from DNP3 master
Temperature	–20°C to +85°C Celsius
Humidity	0 to 90% relative humidity, non-condensing
Programming	Windows based Configurator M+ configuration software, Remote device management via DNP3, Remote firmware download via FTP, local programming port, live local diagnostics, local firmware upgrade.
Mounting	120 mm (h) x 75 mm (diameter, nominal), 2x integrated mounting feet, M5 Diameter
Environmental	IP68 (4 metres depth/4 days duration)

IO Interfaces

Digital Input	2 x low-current dry-contact binary inputs (non-isolated), each input supports pulse counting, up to 3Khz (sleep/wake mode dependant), Forward/Reverse/Nett Totalisers with 32-bit rollover
Analogue Input	1 x Inputs, 0–20 mA, 0–2.048V DC or 0–5V DC (user selectable, per channel), 15 bit resolution (non-isolated), 4 x user-configurable alarm limits per channel
System Input	Internal measurement of Cell Network RSSI, device temperature, device battery voltage and session status code
Flow Calculation	Instantaneous flow calculation based on time window 1-59 minutes
Switched DC Out	User configured, switched sensor power output, choose from regulated 3.0 Volts DC or Battery Volts ranging from 3.0 to 3.6 Volt DC. Supplies up to 50 mA to power external sensors
Accelerometer	Internal X/Y accelerometer/tilt position sensor, 4x user-configurable alarm limits on each axis

Telemetry

4G Cellular	Supports World-wide 4G/LTE Cat-M1 / NB-IoT Bands: B1, B2, B3 (1800 MHz.), B4, B5, B8, B12, B13, B18, B19, B20, B25, B26, B27, B28 (700MHz.), B66, B71, B85. Class 3 Output Power (+23dBm)
Antenna	External SMA Female connector, stainless steel construction
SIM Card	1.8 and 3V UICC (Standard size SIM card)
Data Protocols	DNP3.0 Slave unsolicited mode
Host Support	True TCP support to DNP host (supports three Master IP addresses)
Security	CHAP or PAP authentication, SIM credentials, configurable username, password and APN, built in IP firewall, 512-Bit AES Encrypted firmware download, confirguration security (local/remote), Electronic Serial Number (ESN)

Approvals

Build	RoHs
Standards	RCM (AUST/NZ), EMC compliance, other export standards on request
Production	Proudly Made in Australia

Factory Accessories

Standard Ordering Accessories	Standard accessories ordering include: - Lithium Battery Pack - Stainless steel combination mounting bracket for walls/pipes/poles - Antenna options - Factory terminated I/O cables

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