



37SOUTH

SITE SENTINEL[®] X1

Ultra low-power, flexible data logger + RTU



SEWER-MANHOLE
MONITORING



WATER GRID-ZONE
PRESSURE MONITORING



STREAM FLOW & LEVEL
MONITORING



FLOOD WARNING



INTERNAL 3G/4G
MODEM OR
SIGFOX RADIO



LONG BATTERY LIFE



REMOTE DEVICE
MANAGEMENT

X1

The X1 is the flagship variant of the Site Sentinel[®] 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[®] X1's flexible device configuration enables the measurement of a variety of analog and digital signals. This data is stored internally on non-volatile Flash memory with upstream communications provided using an internal 3G or 4G cellular modem. The X1 can be ordered with a Sigfox radio module instead of the cellular modem module, permitting use in the Sigfox RCZ4 network region.

Host compatibility is ensured with integrated support for DNP3.0 and FTP data protocols. 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. Remote configuration and device management is supported via leading industry SCADA applications, remote firmware download capability is provided via FTP file transfer.

Additional communications port provides Modbus Master 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 a low-profile, robust ABS-plastic enclosure, UV stabilised and rated at IP68, allowing for direct outdoor installation, capable of withstanding submersion to a depth of four metres for four continuous days. An in-built solar regulator is standard across many models in the X1 product range.

TECHNICAL SPECIFICATIONS

General

Supply Voltage	3.5 – 8.5V DC, High-capacity, internal Lithium battery pack (field replaceable), built in solar regulator (see table)
Current Draw	30 μ A sleep, 5 mA active, 200 mA 3G communications, 2 A (peak) 3G network detect (measured at 3.6V DC)
Real Time Clock	Internal – Year, month, date, hour, minute, second, Automatic DNP3 time synchronisation from DNP3 master, Automatic cellular network time sync when using FTP data export mode
Temperature	-20°C to +65°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
Mounting	90 mm (h) x 125 mm (d, nominal) / 155 mm (d, maximum), supplied with stainless steel mounting bracket
Environmental	NATA certified to IP68 (4 metres depth/4 days duration)

IO Interfaces

Digital Input	Up to 4x low-current dry-contact binary inputs (non-isolated), see table. Each input supports pulse counting, up to 10Khz Forward/Reverse/Nett Totalisers with 32-bit rollover
Analogue Input	Up to 4x inputs, 0–20 mA, 0–2.048V DC or 0–5V DC (user selectable, per channel), 15 bit resolution (non-isolated, see table), 4x user-configurable alarm limits per channel
System Input	Internal measurement of Cell Network RSSI, RTU temperature, RTU battery voltage and session status code
Switched DC Out	Supplies up to 80 mA to power external sensors (24V, 5V or Battery Volts, user selectable)
Serial Comms	1x Modbus Master 3-wire RS232 or 3-wire RS485 user selectable (see table)

Telemetry

3G Cellular (Standard)	Supports 3G B1 (2100), B5 (850), B8 (900), Class 3 output power (+24dBm)
4G Cellular (Option)	Supports 4G/LTE B1 (2100), B3 (1800), B5 (850), B8 (900), B28 (700), Class 3 output power (+23dBm)
Sigfox Radio (Option)	Sigfox compliant radio module, +22dBm TX power, RCZ4 region support covers Australia, New Zealand, Asia
Antenna	Internal antenna (2dBi Gain) / External SMA female connector, user selectable
SIM Card	1.8 and 3V UICC (Standard size SIM card)
Data Protocols	DNP3.0 Slave unsolicited / polled mode, FTP data export, Sigfox data export
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




Approvals

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

Factory Accessories

Accessories	A comprehensive range of factory manufactured or sourced accessories to ensure reliable and swift solution deployment (see website)
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KEY FEATURES

	X1-000	X1-001	X1-002
			
Digital I/P	2	2	4
Counters	2	2	4
Analog I/P		2	4
Solar Regulator		✓	✓
MODBUS Comms			✓
Magnetic Swipe	✓	✓	✓