





Site Sentinel®

Ultra low-power, Cellular data logger with integrated pressure sensor



-  WATER GRID-ZONE PRESSURE MONITORING
-  INTERNAL 4G CAT-M1/NB-IoT MODEM
-  LONG BATTERY LIFE
-  REMOTE DEVICE MANAGEMENT

Z1-001

The Z1 is a specific variant of the Site Sentinel® data logger and RTU family, providing highly-reliable, direct-to-host water pressure monitoring in a single package, aimed at the utility sector.

The Site Sentinel® Z1 is designed for direct connection to customer taps or water mains for the purpose of temporary or permanent pressure measurement for zone monitoring or analysing customer water pressure complaints. The Site Sentinel® Z1 is also ideal for temporary deployment for use in calibrating water models. Swift deployment is made possible thanks to the built-in front panel mounted pressure sensor equipped with quick-connect bayonet style fitting.

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. Host compatibility is ensured with integrated support for DNP3.0 slave 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 logging and data reporting requirements.

Remote configuration and device management is supported via leading industry SCADA applications, remote device firmware download capability is provided via FTP file transfer, permitting device configuration and upgrades without requiring site visits.

The device is housed in a low-profile, robust ABS-plastic enclosure that is 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.

Technical Specifications

General

Supply Voltage	3.5 – 8.5V DC, High-capacity, internal Lithium battery pack (field replaceable)
Current Draw	50 μ A sleep, 5 mA active, 200 mA Cell module communications, 2 A (peak) Cell network detect
Real Time Clock	Internal – Year, month, day, 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 +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 (inside unit), live local diagnostics
Mounting	90 mm (h) x 125 mm (d, nominal) / 155 mm (d, maximum), supplied with stainless steel mounting bracket and installation kit that includes O-rings, O-ring grease and Antenna.
Environmental	IP68 (4 metres depth/4 days duration)

IO Interfaces

Analogue Input	1 x Integrated Pressure Port, Bayonet Quick Connect Coupling fitting, sensor constructed from 316L stainless steel 0-16 Bar Measurement Range, +/- 0.25% Accuracy, Compensated temperature range is 0°C to +60°C 16 bit resolution, Piezo-Resistive type Strain Gauge Pressure Sensor, Safe Overload is 150% of stated input pressure range 4 x user-configurable alarm limits on Pressure Sensor Input, allows recording of alarm limit breaches as events or immediate unsolicited data to host upon breach of alarm limit, or both
System Input	Internal measurement of Cell Network RSSI, RTU temperature, RTU battery voltage and session status code, Magnetic swipe function to initiate data transmission to upstream hosts
Data Logging and Event Buffer	User Configurable Data Logging regimes from once per day down to 1 second time stamped resolution interval. Up to 2,000 time stamped events, event buffer discards newest data when full, user configurable to automatically upload event logs when buffer full, or on timed schedule, or both

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	Internal antenna / External SMA female connector, user selectable
SIM Card	1.8 and 3V UICC (Standard size SIM card)
Data Protocols	DNP3.0 Slave (unsolicited mode), FTP 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

Standard Accessories	Each device is supplied with a battery, stainless steel quick release mounting bracket and installation accessories kit.
Optional Accessories	A comprehensive range of factory manufactured or sourced accessories to ensure reliable and swift solution deployment. Visit 37s.com.au



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