



### Benefits and Features

- Remote acquisition of instrumentation data at high speed
- Works with most sensors using DC excitation
- 4, 8, or 16 analog inputs, strain gage inputs, or vibrating wire inputs
- Expandable to 255 cells per remote network
- Easy installation
- Gets rid of wires and saves money

### Remote Instrumentation Monitoring System

The *iSite*™ system is designed for monitoring applications where the user needs access to data from remote instrumentation quickly and inexpensively. The system consists of standalone data loggers which take and store readings at programmed intervals. Each unit is networked wirelessly through our unique *iSite*™ Remote Area Network (RAN). Any unit can be reached from any location within the network. The RAN can be accessed from any unit via a RS232 connection, or externally via an IP modem. The RAN uses miniature, low power radio transceivers placed in each unit to provide a wide area communications network among all units.

The built-in radios broadcast at 10 mW of power and require no FCC license for operation. They can reach up to 200 m in line-of-site applications. Each cell radio acts as a repeater within the remote radio network.

The RAN is accessed by the user in several ways. Any device that supports RS232 communications can be connected to any unit to access the RAN. Software is available for WINDOWS based systems. Alternatively, the RAN can be accessed externally via modem and a land line or a cell-modem option. External access is done via dial up or the *iSiteCentral*™ web server service. Data are available immediately from *iSiteCentral*™ through any web browser.

With the *iSite*™ Alarm option, the *iSiteCentral*™ web server will monitor each sensor to detect any reading which exceeds a programmed threshold value. This event triggers the Web server to send a preprogrammed message to an email address, pager, or cell phone to indicate which instrument triggered an alarm and the data for that instrument.

The *iSite*™ system is compatible with any sensor with DC voltage output of up to 4 volts, strain gages, or any vibrating wire type sensor. Each unit can excite and read up to 4, 8 or 16 sensors, depending on the model. The unit provides sensor excitation that is user adjustable between 5.5 and 10 Vdc for each channel. An option provides built-in lightning and surge protection on each sensor. All components, including options, are preassembled inside a weather resistant NEMA 4 metal enclosure.

Installation is simple and quick. Program the unit for communications. Adjust the excitation level to that required by a particular sensor and connect the sensor. Install the unit. Set the reading interval. Start the logger.

Each unit can store up to 512 kbytes of data in nonvolatile memory. Each unit runs for up to 14 days on the standard rechargeable battery. Options are available to power the unit with an external battery, AC power, or a solar cell.

The *iSite*™ system removes the need for wires connecting sensors to a central data logging unit. This greatly lowers the materials and installation costs for most field monitoring applications. *iSite*™ is useful in most field monitoring applications that use DC or vibrating wire based sensors. Some of these include monitoring weather, groundwater, ground movements, temperature, industrial flow and pressure, tilt, and structural strains.

Versions are available to monitor sensors at frequencies up to 1000 Hz, noise, and vibrations.

## Remote Data Acquisition System Specifications

**NUMBER OF CHANNELS**

8 differential individually configured.

**ANALOG INPUTS**

ACCURACY:  $\pm 0.002\%$  of FSR  
( $-40^{\circ}$  to  $85^{\circ}$  C)

**RANGE AND RESOLUTION**

Input Range (mV)	Resolution ( $\mu$ V)
$\pm 2500$	0.15
$\pm 1250$	0.075
$\pm 625$	0.037
$\pm 313$	0.019
$\pm 156$	0.009
$\pm 78$	0.005
$\pm 39$	0.002

**SAMPLE RATES FOR RESOLUTION**

3,840 for 13 bits

7.5 for 23 bits

**SAMPLE AND STORE**

1 per 5 seconds

**SAMPLING FREQUENCY**

User programmable for values of 1, 2, 4, 8, 16, 32 and 64

**INPUT POLARITY**

User programmable unipolar or bipolar

**INPUT NOISE (GAIN=64)**

1.36  $\mu$ V at 3,840 Hz sample rate

0.009  $\mu$ V at 7.5 Hz sample rate

**NOISE FREE RESOLUTION (GAIN=64)**

13 bits at 3,840 Hz sample rate

20 bits at 7.5 Hz sample rate

**NOISE FREE RESOLUTION (GAIN=1)**

13 bits at 3,840 Hz sample rate

23 bits at 7.5 Hz sample rate

**COMMON MODE REJECTION**

0-5 volts at gain of 1

0.7 to 3.3 volts for gain > 1

**DC COMMON MODE REJECTION**

120 dB

**INPUT CURRENT**

0.5 nA for gain>1

**INPUT RESISTANCE**

2.5 Gohms typical

**SENSOR EXCITATION**

5-9 Vdc adjustable for each channel; 100 mA maximum

**FREQUENCY INPUTS**

Sample Rate: 16 kHz

Maximum Frequency: 8,000 Hz

Minimum Frequency: 400 Hz

Frequency Resolution:  $\pm 2$  Hz

FFT Conversion: 4,000 samples in 15 seconds with Dedicated Signal Processor

Accuracy:  $\pm 0.003\%$  of reading

**CPU AND INTERFACE**

Processor: WINBOND W77LE58

Program Storage: 32 kbytes

Data Storage: 512 kbytes FLASH with zero power backup with circular FIFO storage (4 Mbytes optional) Alarms: User programmable high and low on each input channel Peripheral Interface: RS232

Band Rate: 19,200 baud ASCII protocol with one start bit, one stop bit, eight data bits, no parity

Clock Accuracy:  $\pm 1$  minute per month

Operating Temperature:  $-25^{\circ}$  to  $+60^{\circ}$ C

Temperature Sensor:  $0.5^{\circ}$ C resolution, to  $\pm 2^{\circ}$ C accuracy

Battery Backup: CR2032 lithium battery for clock 220 with mAh for up to 2 months reserve

Main Internal Battery: 3.6 Vdc 3600 mAh NiMH rechargeable

Typical Current Drain: 70 mA @ 12 VDC

External Power Source: 12 to 18 VDC or 9 to 12 VAC

Optional Chargers:

AC/DC adaptor - 100 mA at 9 volts max

12 volt battery with 60 mA adaptor

Solar panel 6.7 x 13.7 inch 290 mA at 11.5 volts max

**SENSOR CONNECTORS**

MIL-C-26482 12-10 size circular bayonet lock connector

**ENCLOSURE**

Size: 7.8 x 7.8 x 4.7 inches

195 x 195 x 120 mm

7.1 l (3.2 kgm)

Lightening And Surge Protection (Optional):

1st stage: tripolar plasma surge arrestors

2nd stage: SiDactor™ medium voltage surge arrestors

3rd stage: SiDactor™ low voltage surge arrestors

**RADIO TRANSCEIVER (OPTIONAL)**

Frequency: 915 MHz ISM band 2 way

2.5 GHz Spread Spectrum

Ranges: 600 ft line of site

Modulation: OOK proprietary Manchester-Encoded protocol

Interference: Collision detection Automatic retry with error checking

Antenna: Tamper proof

**REMOTE ACCESS**

Optional and requires local availability of appropriate public phone network

**WARRANTY**

Three years against defects in materials and workmanship. Damage from abuse, misuse or direct lightening strike excluded.

Specifications subject to change without prior written notice.

Visit [www.iSiteCentral.com](http://www.iSiteCentral.com) to configure unit to meet your exact requirements.

Customized units can be built to order in many but not all cases.