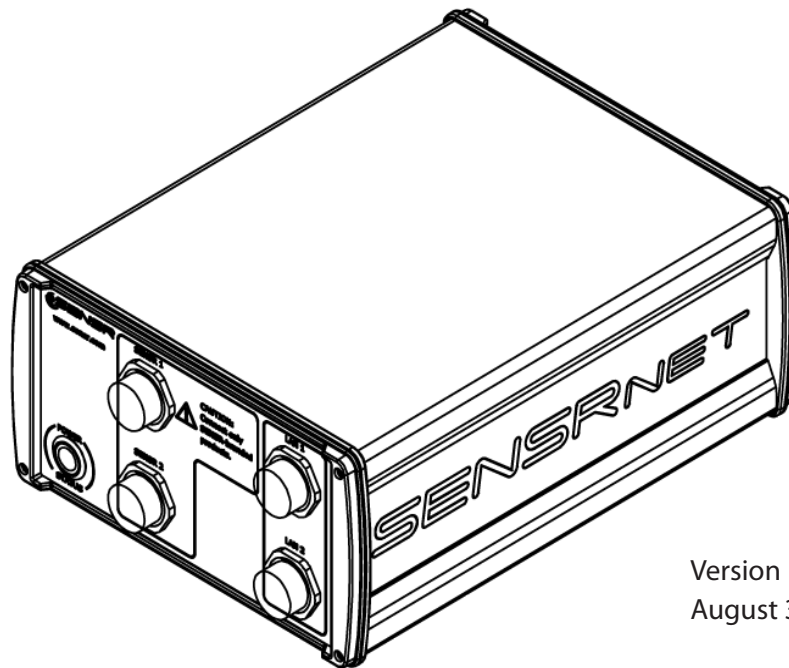


# SNA1 User Guide

---

SENSRNET SERVER



Version 1.0  
August 31, 2010



## TABLE OF CONTENTS

<b>1</b>	<b>PREAMBLE</b>	<b>3</b>
1.1	FCC Statement	3
1.2	Acceptable Use	3
<b>2</b>	<b>SENSRNET SERVER</b>	<b>3</b>
2.1	General	3
2.2	Specifications	3
<b>3</b>	<b>SYSTEM SET-UP</b>	<b>4</b>
3.1	System Requirements	4
3.2	Software Components	4
3.3	Installing the SENSRnet Server	4
<b>4</b>	<b>CONNECTING TO THE SENSRNET SERVER</b>	<b>5</b>
<b>5</b>	<b>OPERATING THE SENSRNET SERVER</b>	<b>6</b>
5.1	Accessing the Data	6
<b>6</b>	<b>MISCELLANEOUS</b>	<b>8</b>
6.1	Maintenance	8
6.2	Technical Support	8
6.3	Product Warranty	8



## 1 PREAMBLE

---

### 1.1 FCC Statement

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

This device may not cause harmful interference.

This device must accept any interference received, including interference that may cause undesirable operation.

### 1.2 Acceptable Use

It is the responsibility of the user to confirm that any use of the SENSrnet Server conforms with all: country, federal, state, county and municipal laws, ordinances and regulations.

## 2 CX1 NETWORK ACCELEROMETER AND INCLINOMETER

---

### 2.1 General

The SENSrnet Server is an integrated processing unit that:

- Manages sensors
- Collects their measurements
- Creates data files and reports
- Provides remote internet access to the data via Web and FTP servers

### 2.2 Specifications

Housing Material:	Aluminum
Size:	12.67" x 9.17" x 5.03"
Weight:	8 lbs.
Connectivity:	Weather-proof RJ style connectors
Communication:	2 - SENSr, 2 - LAN
Power Source:	120 – 240 VAC, 50 - 60Hz
Power Consumption:	20 Watts.
Standard Temp. Range:	- 4°F to 122°F ( -20°C to 50°C)
Environmental Protection:	IP54 with connectors capped or mated
Sensor Sample Rate:	2000 SPS for Accelerometers, 10 SPS for Tilt, 1 SPS for Temp.
Accelerometer Frequency Response:	.1Hz – 200Hz for Accelerometers
Data storage capacity:	77 GB



## 3 SYSTEM SETUP

---

### 3.1 System Requirements

**TAC Power** – The SENSRnet Server requires 120V – 240V line power. If the power source is unreliable it is recommended that a power conditioner or a UPS be employed to supply power to the SENSRnet Server.

**Sensors** - The SENSRnet Server manages and gathers data from SENSR CX1 Dynamics Monitors, at least one CX1 is required to be connected to the Server. The SENSRnet Server can support up to 8 CX1s.

**Remote Connection** – The SENSRnet Server collects and manages sensor data and makes it available through a remote LAN connection. This connection can be a computer, network or the Internet. The SENSRnet Server contains a DHCP controller that is used to manage the sensor network and establish a fixed address for the SENSRnet Server. For remote connection configuration information, refer to the attached system architecture diagram.

### 3.2 Software Components

The SENSRnet Server saves collected sensor data in a compressed SNSR file format, this file format can be opened with program called Sensview. This program is used to review data, compare readings and convert files to CSV format. For more information about this program consult the Sensview User Manual.

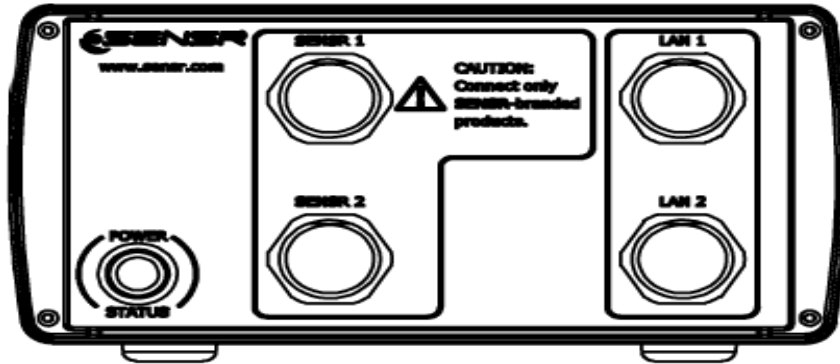
### 3.3 Installing the SENSRnet Server

Several factors need to be considered when deciding where to install the SENSRnet Server including:

- Distance from the CX1s – The SENSRnet Server uses a special cable to connect to the SENSR CX1s. The length of this cable would have been specified at the time of ordering. The maximum length for this cable is 250'. An Expansion Module is available which can add another 250' of working distance.
- Sheltering – The SENSRnet Server is rated for moderate outdoor environments. However, certain locations should be avoided such as those locations that place the unit in the path of run-off or areas that are a risk for puddling or pooling of water. An ideal location is one where the SENSRnet Server is kept between 5°C and 40°C and sheltered from sunlight and precipitation.
- Remote Access – Consideration needs to be given to the equipment required to facilitate the remote access function. Review the other equipments User Manual to identify whether or not this equipment can be located with the SENSRnet Server.



## 4 CONNECTING TO THE SENSRNET SERVER



Each SENSRnet Server is preconfigured prior to leaving the factory. In order to maintain the intended configuration, a specific connection scheme needs to be followed:

**NOTE: Do not connect AC power to the SENSRnet Server until directed.**

### STEP 1

Connect the CX1s or Extenders to the ports labeled SENSR #. The SENSRnet Server can support up to 8 CX1s and two Extenders.

### STEP 2

Connect the router or modem to the LAN 1 port of the SENSRnet Server.

### STEP 4

Connect power to the SENSRnet Server – the SENSRnet Server uses a twistlock AC power cable that connects to the back panel of the SENSRnet Server. Connect this twistlock connector before inserting the NEMA 5 plug.

### STEP 5

Press the power button to turn on the SENSRnet Server. System power-up should take approximately 1 minute. During this time the status LED will blink. The status LED will go solid green after power-up. If the power is interrupted while the SENSRnet Server is powered on, the SENSRnet Server will automatically power back up when power is restored. To shut the SENSRnet Server down for transport or storage, press and release the power button then wait approximately 15 seconds until the LED shuts off.

### STEP 6

Refer to section 4.1 and access the data.



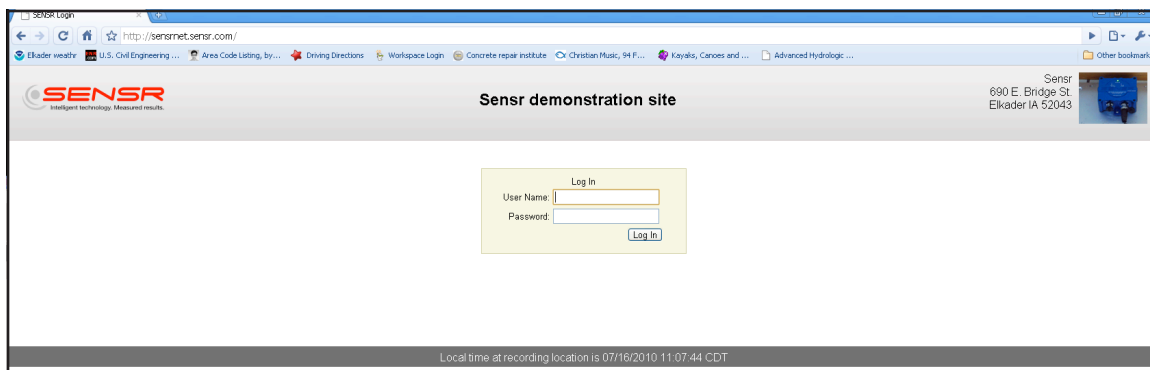
## 5 OPERATING THE SENSRNET SERVER

### 5.1 Accessing the Data

The SENSRnet Server uses an internal web server to make the recorded data available for remote access. A standard web browser is used to review data.

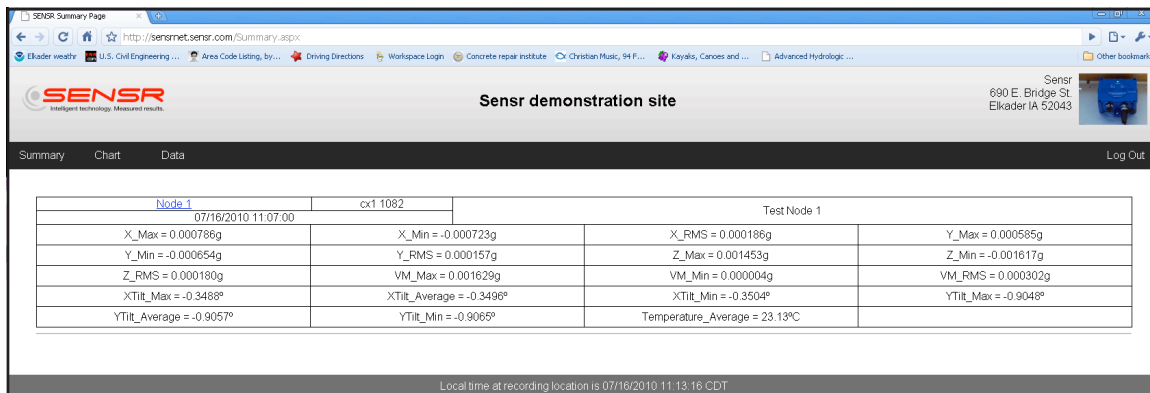
The address for this SENSRnet server is located on the installation card that accompanied this manual.

The SENSRnet Server uses a basic Username and Password login. For this system, the Username and password for this server are located on the installation card that accompanied this manual.



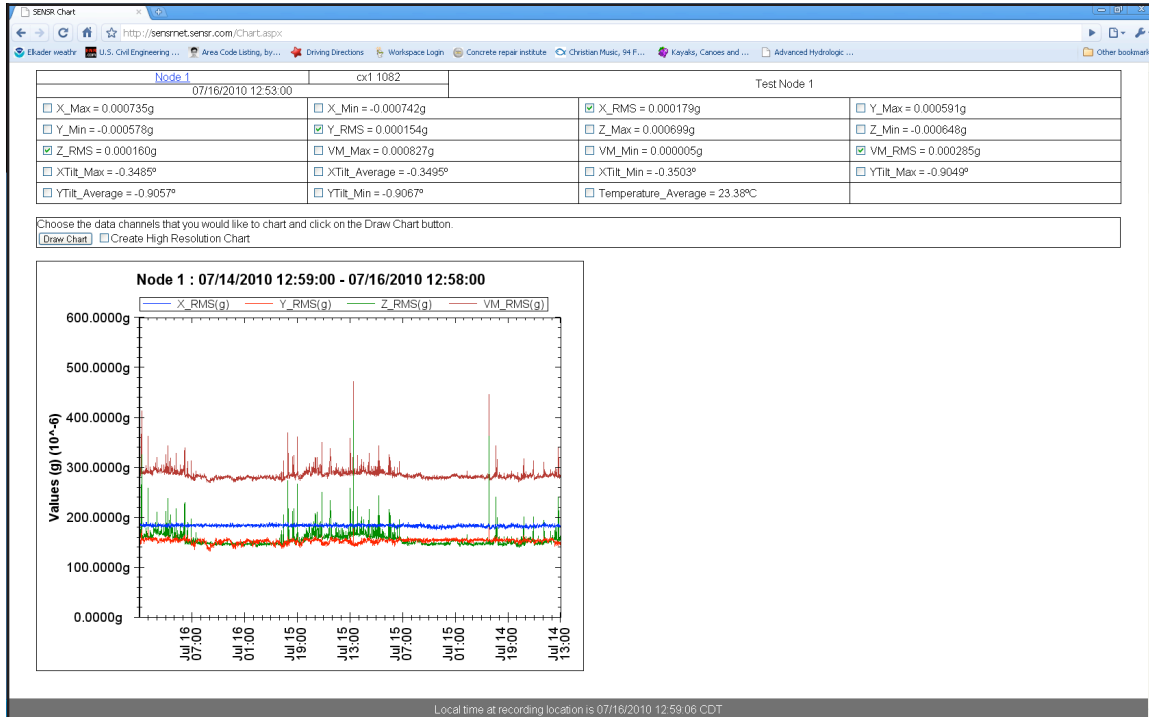
Once logged in the first screen is the summary screen – this screen displays the connected CX1s and the last minute's epoch data record. The epoch data record represents statistics which characterize the structure's response during that period. Using your browser's Refresh button will update the table to a later time.

Selecting an individual sensor will bring up the Chart page – this page can also be requested by selecting the Chart label in the black header.

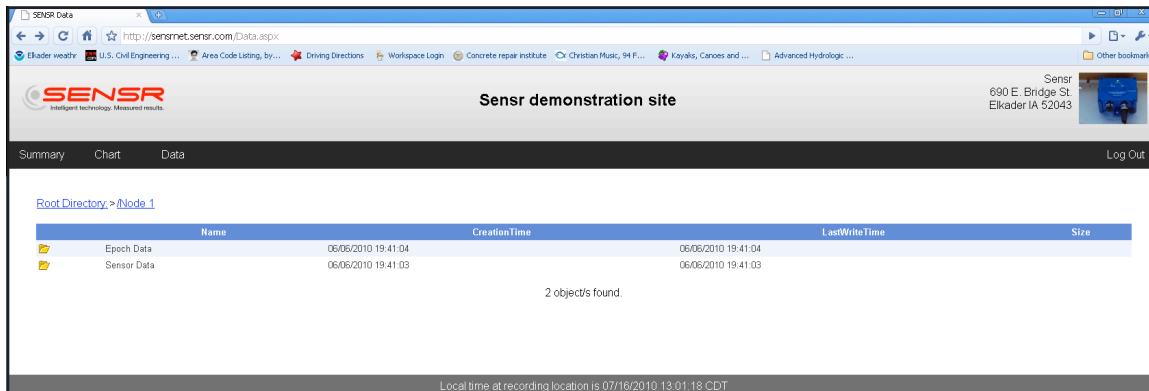




The Chart page lets users compare current epoch readings with those that were recorded during the last 48 hours. Users can select which sensor and which readings they want to display and compare.



Selecting the Data label on the black header bar brings up the data directory page. The SENSrnet Server collects sensor readings and organizes them into two data directories:



Epoch Data files – these files are the summary data for each minute. During each minute of sampling the CX1 measures acceleration, tilt and temperature at the rate specified on the installation card. At the end of each minute an analysis is run on the data and the data is summarized into statistics that identify the dynamics during that period. Epoch Data files are condensed into CSV files that represent 24 hour monitoring periods. The data files are organized by: Sensor > Year > Month > Day. To download an Epoch Data file using your browser, select the paper icon adjacent to the file that you want and specify a download directory. The Epoch Data file for the current day is an appending file that includes all of the Epochs up until the time the file is downloaded.



The Epoch Data files are stored in the SENSRnet Server. The Server will store approximately 1 year of Epoch records before it begins to overwrite the oldest files first.

Sensor Data files – these files are the raw data samples for each minute. Each 1 minute file contains all of the acceleration, tilt and temperature samples gathered during the period. Sensor Data files are in a compressed SNSR format. The directory is organized by: Sensor > Year > Month > Day > Hour > Minute. To download a Sensor Data file select the paper icon that is adjacent to the file that you want.

The Sensor Data files are stored in the SENSRnet Server, the duration for which is stored before overwrite is defined on the installation card. Once this period has been exceeded the Server will overwrite the oldest files first.

For downloading multiple files we recommend using an FTP client such as Filezilla – there are several free clients that can be downloaded from the Internet. To access the data folder with an FTP client specify the SENSRnet Server's IP address and the user name and password.

## 6 MISCELLANEOUS

---

### 6.1 Maintenance

No periodic maintenance is required.

### 6.1 Mechanical Support

For questions about the SENSRnet Server or an application, e-mail support at [support@Sensr.com](mailto:support@Sensr.com) or call 563.245.3750. Standard hours of operation are 8 am - 5 pm CST, Monday thru Friday.

### 6.3 Product Warranty

SENSR LLC. ("SENSR") warrants to the original Customer ("Customer") that SENSR brand products ("Product") are free from defects in material and workmanship under normal use and service for a period of 1 year commencing upon the date of purchase.

This Limited Warranty is conditioned upon proper use of Product by Customer. This Limited Warranty does not cover: (a) defects or damage resulting from accident, misuse, abuse, neglect, unusual physical, electrical or electromechanical stress, or modification of any part of Product, including cables, or cosmetic damage; (b) equipment that has the serial number removed or made illegible; (c) any surfaces or other externally exposed parts that are scratched or damaged due to normal use; (d) malfunctions resulting from the use of Product in conjunction with accessories, products, or ancillary/peripheral equipment not furnished or approved by SENSR; (e) defects or damage from improper testing, operation, maintenance, installation, or adjustment; (f) installation, maintenance, and service of Product, or (g) Product used or purchased outside the United States or Canada. During the warranty period, SENSR will repair or replace, at SENSR's sole option, without charge to Customer, any defective component part of Product. To obtain service under this Limited Warranty, Customer must contact SENSR Customer care at 563.245.3750. Upon receipt, SENSR will promptly repair or replace the defective Product. SENSR may, at SENSR's sole option, use rebuilt, reconditioned, or new parts or components when repairing any Product or replace Product with a rebuilt, reconditioned or new Product. Repaired or replaced product will be warranted for a period equal to the remainder of the original Limited Warranty on the original Product or for 90 days, whichever is longer. All replaced parts, components, boards and equipment shall become the property of SENSR. If SENSR determines that any Product is not covered by this Limited Warranty, Customer must pay all parts, shipping, and labor charges for the repair or return of such Product.





EXCEPT AS SET FORTH IN THE EXPRESS WARRANTY CONTAINED HEREIN, CUSTOMER TAKES THE PRODUCT "AS IS," AND SENSR MAKES NO WARRANTY OR REPRESENTATION AND THERE ARE NO CONDITIONS, EXPRESS OR IMPLIED, STATUTORY OR OTHERWISE, OF ANY KIND WHATSOEVER WITH RESPECT TO THE PRODUCT, INCLUDING BUT NOT LIMITED TO: THE MERCHANTABILITY OF THE PRODUCT OR ITS FITNESS FOR ANY PARTICULAR PURPOSE OR USE; OR COMPLIANCE OF THE PRODUCT WITH THE REQUIREMENTS OF ANY LAW, RULE, SPECIFICATION OR CONTRACT PERTAINING THERETO. NOTHING CONTAINED IN THE INSTRUCTION MANUAL SHALL BE CONSTRUED TO CREATE AN EXPRESS WARRANTY OF ANY KIND WHATSOEVER WITH RESPECT TO THE PRODUCT. ALL IMPLIED WARRANTIES AND CONDITIONS THAT MAY ARISE BY OPERATION OF LAW, INCLUDING IF APPLICABLE THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE HEREBY LIMITED TO THE SAME DURATION OF TIME AS THE EXPRESS WRITTEN WARRANTY STATED HEREIN. SOME STATES/PROVINCES DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS, SO THE ABOVE LIMITATION MAY NOT APPLY TO YOU. IN ADDITION, SENSR SHALL NOT BE LIABLE FOR ANY DAMAGES OF ANY KIND RESULTING FROM THE PURCHASE, USE, OR MISUSE OF, OR INABILITY TO USE THE PRODUCT OR ARISING DIRECTLY OR INDIRECTLY FROM THE USE OR LOSS OF USE OF THE PRODUCT OR FROM THE BREACH OF THE EXPRESS WARRANTY, INCLUDING INCIDENTAL, SPECIAL, CONSEQUENTIAL OR SIMILAR DAMAGES, OR LOSS OF ANTICIPATED PROFITS OR BENEFITS, OR FOR DAMAGES ARISING FROM ANY TORT (INCLUDING NEGLIGENCE OR GROSS NEGLIGENCE) OR FAULT COMMITTED BY SENSR, ITS AGENTS OR EMPLOYEES, OR FOR ANY BREACH OF CONTRACT OR FOR ANY CLAIM BROUGHT AGAINST CUSTOMER BY ANY OTHER PARTY. SOME STATES/PROVINCES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATION OR EXCLUSION MAY NOT APPLY TO YOU. THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS, AND YOU MAY ALSO HAVE OTHER RIGHTS, WHICH VARY FROM STATE TO STATE/PROVINCE TO PROVINCE. THIS LIMITED WARRANTY SHALL NOT EXTEND TO ANYONE OTHER THAN THE ORIGINAL CUSTOMER OF THIS PRODUCT AND STATES CUSTOMER'S EXCLUSIVE REMEDY. IF ANY PORTION OF THIS LIMITED WARRANTY IS HELD ILLEGAL OR UNENFORCEABLE BY REASON OF ANY LAW, SUCH PARTIAL ILLEGALITY OR UNENFORCEABILITY SHALL NOT AFFECT THE ENFORCEABILITY FOR THE REMAINDER OF THIS LIMITED WARRANTY WHICH CUSTOMER ACKNOWLEDGES IS AND WILL ALWAYS BE CONSTRUED TO BE LIMITED BY ITS TERMS OR AS LIMITED AS THE LAW PERMITS.