

ENCARDIO RITE



WEB BASED DATA MONITORING SERVICE

MODEL-WDMS

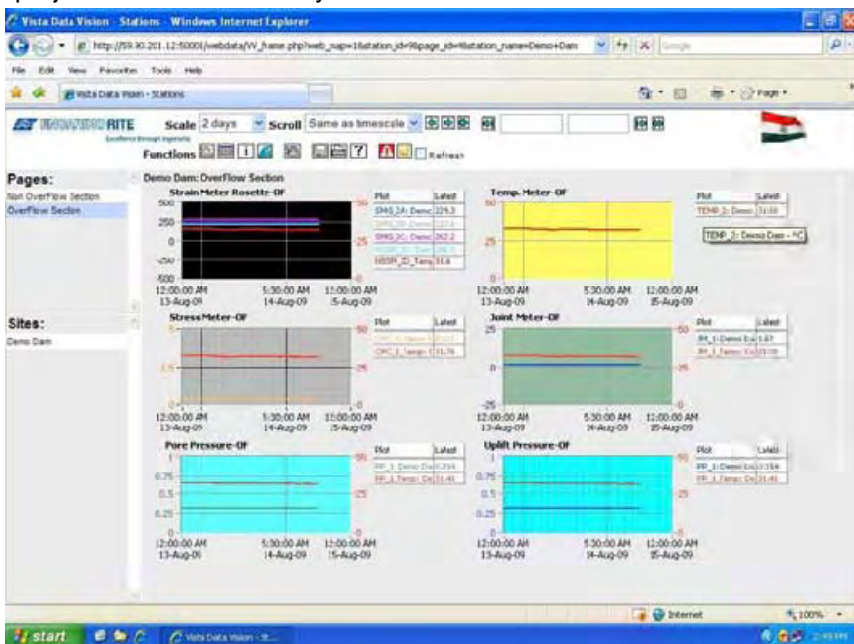
OVERVIEW

The web based data monitoring service (WDMS) is a web-based data-management and presentation tool for data collected by model EDAS-10 data acquisition system from a project site. The system handles all data processing requirements, starting with collection and storage of data, performing the required calculations on the data, presenting the results in graphical and numerical format and generating alarm messages.

The monitoring software is server based. Users interact with the software using their web-browser, when connected to the Internet, from any location in the world. It also allows multiple authorized users at different locations to view any data or report from the same project site simultaneously. The graphs & reports can be viewed using popular web browsers like Microsoft internet explorer or Mozilla Fire fox amongst others. The server for the above WDMS services is located at the Encardio-rite premises and is maintained 24 x 7.

DESCRIPTION

Encardio-rite web based data monitoring service (WDMS) allows you to monitor your project instrumentation data collected by Encardio-rite model EDAS-10 Data Acquisition Systems remotely from an internet connected computer located anywhere in the world. It also allows multiple authorized users at different locations to view any data or report from the same project site simultaneously.



FEATURES

- ✦ Enables user to monitor project instrumentation data collected remotely from an internet connected computer.
- ✦ Data access to multiple authorized users at different locations simultaneously.
- ✦ WDMS supports multiple data loggers.
- ✦ Data presentation in graphical as well as in tabular form available.
- ✦ Two alarm limits can be set by the site administrators.
- ✦ All users can only view the data and alarm status simultaneously but cannot make any changes.
- ✦ Each user is assigned an individual password for access to the logged data.
- ✦ WDMS can also be programmed to send SMS alert messages to selected users.
- ✦ The web browser interface of WDMS is very simple to use and intuitive.

An important feature of the WDMS system is the use of GSM/GPRS cellular services to transmit data from the individual EDAS-10 data loggers wirelessly to the remote monitoring computer (host). As long as a reliable GSM/GPRS cellular service is available at the data logger site, the data loggers can be located virtually any where in the world. WDMS can support multiple data loggers per project site and the individual data loggers can be spread out over a wide geographical area.

Encardio-rite WDMS field network consists of EDAS-10 data loggers equipped with GSM/GPRS data modems that send data wirelessly over the GSM cellular service providers network to the remote host.

Essentially the WDMS consists of software such as a data collection agent, a data base server and a web server hosted on a high reliability server computer. The host computer periodically collects data from remote EDAS-10 data loggers, which can be geographically spread over a large area, over cell phone network. The web server software then makes this data available over the internet so that an user can view the logged data or report using a suitable web browser, like Microsoft Internet Explorer or Mozilla Firefox, from virtually any where in the world. The only requirement is that each individual data logger site is covered by a cell phone service provider who can provide reliable GSM/GPRS enabled cellular data connection locally.

The servers computers are high reliability systems located in a dedicated data centre with matching infrastructure support and provide 24x7 availability with very low downtimes.

The WDMS allows the user to view the data from any transducer connected to the remote DAS over a selected time period in either a tabular spread sheet type format or as a graph. A graphic like a map, ground plan or a photograph can be put on the opening screen marked with installed sensors represented as square dots. As soon as the mouse pointer is brought over any sensor location the corresponding sensor details like sensor identification Tag, last recorded sensor reading, and the values of the programmed alert levels pop up in a box. If any one of the alarm level is exceeded the sensor location turns to a red dot. Clicking the pop up table with the mouse brings up an associated data window where the sensor data can be seen either as a table or as a graph. The user can select the period of time and starting date for each graph or table and the displayed data will be dynamically updated to reflect the user's selection.

Site administrators can set two alarm limits which are generally considered as "alert level" and "work stoppage level". Other users can only view the data and alarm status but cannot make any changes. The same data can be viewed world wide by a number of users simultaneously. Each user is assigned an individual password for access to the logged data.

The WDMS can also be programmed to send SMS alert messages to selected users as soon as any sensor data crosses its predefined alarm levels, either

while going above or going below the alarm level. It can also be programmed to send the health status of the system to selected users.

Although the WDMS is a complex mix of hardware and software the web browser interface is very simple to use and intuitive. An user who is only interested in viewing the data and reports will take just a few minutes to get familiar with the operation of the system.

VISIT OUR DEMO WEBSITE TO GET A HANDS ON FEEL OF THE SYSTEM

The best way to evaluate a system like WDMS is to get some hands on experience of the look and feel of an actual site. As our customers are generally reluctant to share their data with people outside their organization we have set up a live demo site that mimics a small part of a typical dam site. We have a demo EDAS-10 data acquisition system connected to a representative array of vibrating wire transducers used in a typical dam. Although most of the data is static because the transducers are not embedded in a real dam the temperature sensors show the ambient temperature at the transducer location.

To visit our WDMS demo website, point your browser to "<http://59.90.201.12:50001/webdata/>".

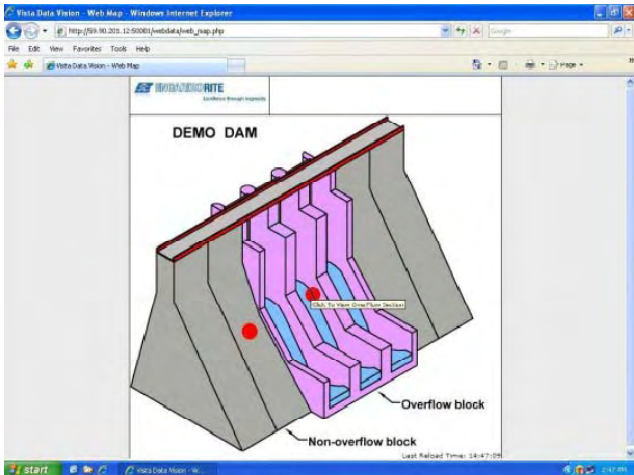


You will be directed to a opening login page where you will need to enter a valid user ID and a password to access data from our demo site. To get your password please send us an email at geotech@encardio.com with "pw request for WDMS" in the subject line. Do not forget to give your complete contact details in the message body. On receipt of this request a password would be mailed to your mailbox. The demo can be viewed on any computer with the following essential configuration:

Operating system: Microsoft Windows 2000 (Service Pack 4), Microsoft Windows XP Professional (Service Pack 2) or Windows Vista or above operating systems.

Web Browser: Microsoft Internet Explorer version 6 or later. Mozilla Firefox version 3 or later. The demo is best viewed on a monitor with a resolution of at least 1024 x 768 pixels.

Internet connection: A broadband connection is recommended for viewing the demo.



RUNNING THE DEMO

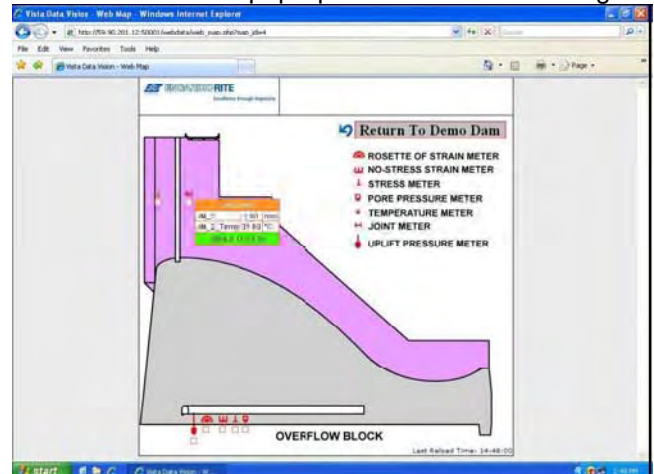
If your computer meets the above requirement, start your web browser and open the following location: <http://59.90.201.12:50001/webdata/>

You will be presented with a log in screen as shown in accompanying screen shot. This is the main login page. If login is successful an authorized user will be taken directly to his project site. For access to our demo website in user ID box type "erguest".

You will now be presented with a cross section drawing of the overflow block showing the location of the different sensors installed.

Notice that each sensor location on the cross section drawing is marked with a symbol corresponding to the type of sensor installed at that location. The symbol is explained in the accompanying symbol table at top right.

Beside each sensor symbol is a small square box with white fill. This is the hotspot for the sensor. If this box turns red it means that the sensor has crossed one of its alarm limit. Put the mouse pointer over white box near the sensor as shown in the adjacent screen shot. A table showing the sensors installed at this location pops up showing the tag name given to the sensors, last received data, units of measurement and the data and time corresponding to the last received data from those sensors. The pop up table is visible as long as



you keep your mouse pointer over the white box associated with a sensor. If you want to freeze the

Functions Refresh

For password enter the password that has been mailed to you. Password is case sensitive. The supplied password may be valid for a limited time and will stop working after that. If your user ID and password is correct you will be directed to the Demo Dam opening screen which is a schematic drawing of a small dam. This drawing shows both overflow and nonoverflow sections. Notice two solid red circles on the diagram, one over an overflow section and the other over a non-overflow section. Clicking on the red circles will direct you to the web page for that corresponding section. For now, click on the red circle over the overflow section in the middle of the dam.

table, click on the white box. The data table will now freeze even if you move away from the sensor box. If you want to return to the main demo dam picture click on the 'Return To Demo Dam' box at top right. Otherwise if you want to have a look at the data from the sensors installed in this block, click the pop up table itself. You will now be presented with a screen similar to the one shown on the left. Here you can see the data from each of the sensor installed in the overflow block as a set of graphs. Data from sensors showing related data are combined in a single graph. Notice that most of the measured parameter graphs also show the sensor temperature data that is plotted

against the right hand axis for temperature correlation. Click on any one of the graphs. You will be directed to a page where you can see a magnified view of the graph together with additional statistical data for each of the sensors, like maximum, minimum and average values etc. over the chosen time period. Clicking on the magnified graph will bring you back to the original page.

At the top of the page containing the graphs you will see a tool bar pictured below containing a set of function icons. To select any function click the corresponding icon. The purpose of some of the icons are described below.

The first icon selects the page showing the sensor data as a set of graphs. The second icon selects the page showing same sensor data in a tabular form as shown on the next page. The third icon marked "i" shows additional information about the page being displayed. The fourth icon, which shows a part of a globe, returns you to the web map page which shows any map, picture or drawing associated with the site you are viewing. To get more information about existing alarm conditions, click the red icon marked "!". This page shows information about existing and new alarm conditions. The fresh alarm conditions are identified with a flashing red dot.

At the top of the graph and table pages there are two boxes labeled 'Scale' and 'Scroll'. Click on the arrow beside the box marked Scale.

Time	SMG_1A: Demo Dam (Microstrain)	SMG_1B: Demo Dam (Microstrain)	SMG_1C: Demo Dam (Microstrain)	NSSM_1D: Demo Dam (Microstrain)	NSSM_1D_Temp: Demo Dam (°C)	CPC_1: Demo Dam (MPa)	CPC_1_Temp: Demo Dam (°C)	JM_1: Demo Dam (mm)	JM_1_Temp: Demo Dam (°C)	TEMP_1: Demo Dam (°C)
13-Aug-09 12:05:00 AM	274.443	238.665	294.876	240.205	32.6375	0.324426	32.8383	1.66592	32.8785	31.7947
13-Aug-09 12:10:00 AM	274.451	238.679	294.861	240.221	32.4777	0.324711	32.7177	1.66592	32.798	31.8041
13-Aug-09 12:15:00 AM	274.361	238.672	294.899	240.244	32.5975	0.324426	32.7177	1.66592	32.8383	31.8041
13-Aug-09 12:20:00 AM	274.443	238.665	294.891	240.077	32.5945	0.324567	32.7147	1.66614	32.9158	31.8041
13-Aug-09 12:25:00 AM	274.443	238.715	294.861	240.141	32.5575	0.324567	32.7176	1.66614	32.8785	31.8029
13-Aug-09 12:30:00 AM	274.451	238.679	294.937	240.133	32.6375	0.324567	32.6776	1.66592	32.8785	31.8041
13-Aug-09 12:35:00 AM	274.456	238.722	294.884	240.205	32.5575	0.324142	32.7177	1.66614	32.7579	31.8065

This will open a drop down list from which you can select the time period over which you want to see the data in a single graph or table. Similarly you can see the historical data for a sensor by going back and forth in time in steps that you can select from the drop down list in the 'Scroll' box.

Nearly all the icons on this page have a associated help text that pops up as you hover the mouse pointer over that icon. These help text will give you information about the other functions not mentioned in this note.

Once you have explored our demo website you will find that the WDMS webpage interface is very intuitive and a separate manual is not required for evaluation. As the demo site is opened in read only view, feel free to explore the different features of the program as any data cannot be accidentally changed.

**All specifications are subject to change without notice.*

ENCARDIO-RITE ELECTRONICS PVT. LTD.

A-7 Industrial Estate, Talkatora Road, Lucknow, UP-226011, India
 p +91 522 2661040, f +91 522 2662403, email: geotech@encardio.com
 International: p +91 522 2661044,
www.encardio.com

DATA SHEET 1221-12