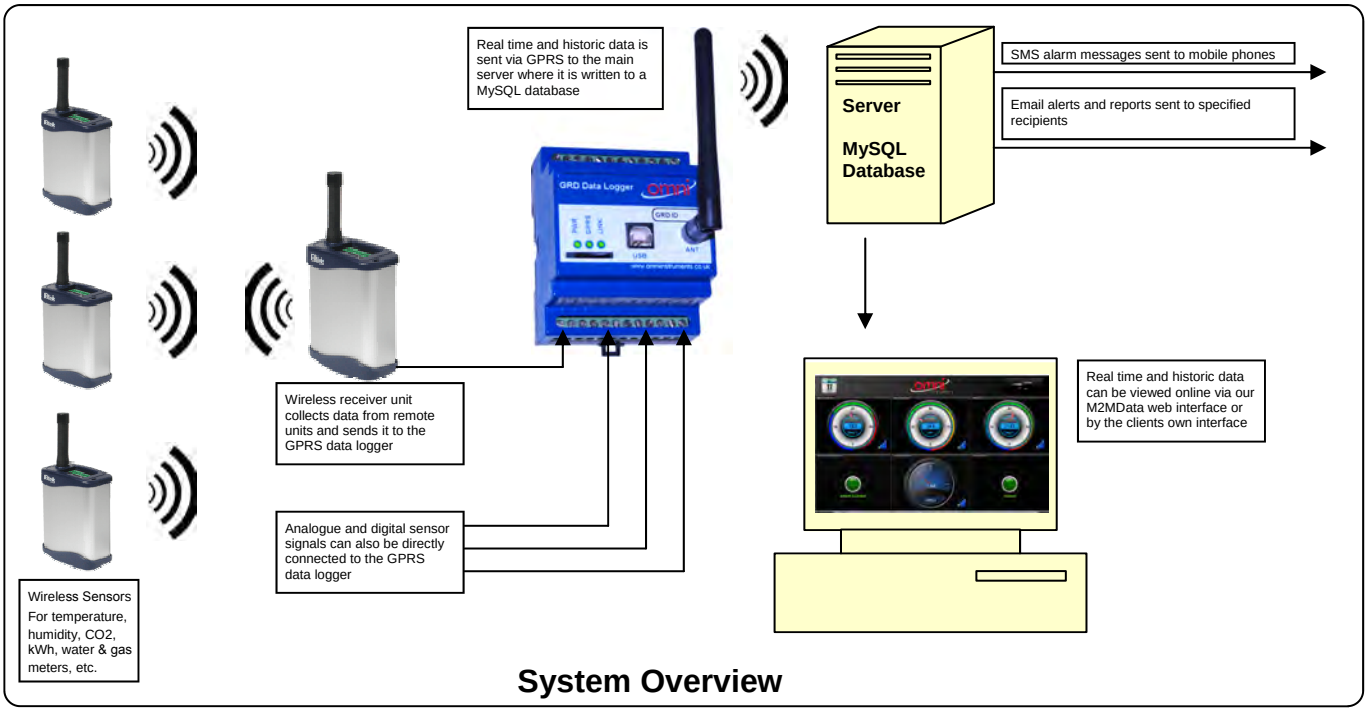
GEN II Wireless GSM/GPRS Data Acquisition System



System Overview

The Omni Wireless Data Acquisition System combines radio sensor modules with a GPRS data logger to provide a complete wireless system that can be used in buildings such as offices, hospitals and factories to measure a wide range of parameters around the site such as temperature, humidity, kWh, CO2, water & gas meters, etc. The data is sent in real time via GPRS to a central server where is is stored in a MySQL database. The data can be viewed online via our M2MData web interface or supplied to the client's own interface.

Using our M2M data web interface historic data can be viewed in graph and table format, and downloaded to CSV file for further analysis. The M2MData web interface can also generate SMS and email alerts for alarm or fault conditions. Most parameters such as alarm levels, channel labels and scaling in engineering units can be set via the web interface.

System Features

- Completely wireless data acquisition system
- Max sample rate 1 minute, max web update rate 1 minute
- Wireless sensors for temperature, humidity, pulse inputs (electricity/gas/water), CO2, 4-20mA, 0-5v etc.
- MODBUS master - connect any MODBUS RTU device and read/log up to 100 registers
- Collect data via web browser interface
- Use anywhere in the world with GSM/GPRS cover
- Fully user programmable via windows software
- Configuration for channel labels, scaling, alarm levels etc. via web interface
- 9-30vDC power supply
- GPRS unit stores up to 100,000 readings should the GPRS connection be lost and uploads readings when the connection is re-established
- Web interface generates real time and historic data pages with graphic and table views
- Alarms and alerts can be sent by email (optional module allows SMS text message)
- Data also available to client server on a MySQL database

For pricing or any further information, please contact Omni Instruments Ltd.

Measurement and data acquisition solutions

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Wireless Sensor Modules

Models	Inputs
GC-5/GD-5	1 x built-in temperature -30 to 65ºC 0.1ºC ±0.5ºC (-10 to +55ºC)
GC-10/GD-10	1 x built-in temperature -30 to 65ºC 0.1ºC ±0.4ºC (+5 to +40ºC) ±1.0ºC (-20 to +80ºC) 1 x built-in RH 0-100% 0-100% ±2% (10 to 90%Rh) ±4% (0 to 100%Rh)
GD-11	1 x built-in temperature and RH As GC-10 1 x external thermistor temperature AS GC-12
GC-12	2 x external thermistor temperature -40 to 70ºC 0.1ºC (-15 to +40ºC) ±0.2ºC (-15 to +40ºC)
GD-14R	1 x external RH (Rotronic HC2-S) 0-100% At 23ºC ± 1.5%rh 1 x external temperature (Rotronic HC2-S) -40 to 85ºC At 23ºC ± 0,3K 2 x external thermistor temperature As GC-12
GS-21/GD-21	1 x external T or K type thermocouple temperature
GS-24/GD-24	4 x external T or K type thermocouple temperature
GD-24H	4 x external K type thermocouple temperature -200 to 1200ºC 0.5ºC ±2.0ºC
GS-31/GD-31	1 x external type U thermistor temperature
GS-32/GD-32	2 x external type U thermistor temperature -50 to 150ºC 0.1ºC (-25 to +100ºC) ±0.2ºC (-25 to +100ºC)
GS-34/GD-34	4 x external type U thermistor temperature 0.2ºC (-40 to +125ºC) ±0.4ºC (-40 to +125ºC)
GS-38/GD-38	8 x external type U thermistor temperature
GS-42	0-100mV 0.025mV 0-1V 0.25mV ±0.5mV 0-10V 2.5mV ±5mV 0-20mA ~5.4µA 25µA Scaling (Engineering Units) available for all ranges 4-20mA 0.05% 0.10%
GS-44	4 x external voltage or current As GS-42 plus slave output to switch an external sensor supply
GS-52	2 x 2 or 4 wire PT100 temperature -100 to 200ºC 0.1ºC ±0.3ºC
GS-52H/GD-52H	2 x 2 or 4 wire PT100 temperature -0 to 300ºC 0.1ºC ±0.3ºC
GC-60	2 x state indicators Volt free contact or signal <1V/>2.5V, maximum 5VDC
GS-61	8 x state indicators As GC-60
GC-62	2 x pulse inputs 0 to 10,000 counts, maximum frequency 100Hz
GD-43E	1 x external voltage or current As GS-42 1 x external type U thermistor temperature As GS-31 1 x external RH and temperature (RHT-10D) As GD-13E
GD-43R	1 x external voltage or current As GS-42 1 x external type U thermistor temperature As GS-31 1 x external RH and temperature (Rotronic HC2-S) As GD-14R
GD-47	1 x built-in C02 sensor 0-5000ppm < ± (50ppm + 3 % of measured value.) 1 x built in RH and temperature sensor As GC-10
GD-84	1 x differential pressure +/- 250 Pascal 0.1 Pascal
GL-70	1 x built in RH and temperature sensor As GC-10 1 x built in UV sensor 0-5000mW/M² or 0-10000µw/Lumen 1 x built in visible light sensor 0-4000 Lux 0.1 Lux 0-200 Klux 0.01 Klux
GD-72	1 x external RH and temperature (RHT-10D) AS GD-13E 1 x external UV sensor and visible light sensor (LS70) As GL-70

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GEN II Wireless GSM/GPRS Data Acquisition System

GRD GPRS Data Logger

- **Data Logger with integral GSM/GPRS modem**
- **Max sample rate 1 minute, max web update rate 1 minute**
- **Options for 2, 4, 6 or 8 analogue inputs 0-(1)10vDC/4-20mA**
- **2, 4 or 8 pulse counter inputs, TTL level or clean contact up to 4Hz**
- **4, 8 or 16 digital inputs, half configurable as digital outputs**
- **MODBUS master - connect any MODBUS RTU device and read/log up to 32 or 100 registers**
- **Collect data via web browser interface**
- **Control remote equipment using relay outputs (via SMS)**
- **Use anywhere in the world with GSM/GPRS cover Iridium satellite modem may be added to the GRD3545-XF for more remote areas.**
- **Fully user programmable via windows software**
- **Configuration for channel labels, scaling, alarm levels, etc via web interface**
- **12 bit resolution**
- **9-30vDC power supply (min 37mA at 12vDC)**
- **Unit stores up to 100,000 readings should the GPRS connection be lost and uploads readings when the connec-tion is re-established**

The GRD GSM/GPRS data logger combines a multi channel analogue/digital input data logger with a GSM/GPRS modem to provide an all in one instrument for data logging, remote data acquisition, alarm and control.

Historic data can be viewed in graph and table format, and downloaded via the web page interface.

Alarm levels can also be set for any of the analogue or digital inputs, triggering SMS alarm messages and emails. The digital outputs can also be controlled via SMS text messages.

The GRD comes with and easy to use configuration software for setting up input parameters for both analogue, digital and serial inputs. The configuration can be done on a PC and downloaded either locally using USB cable or from a distant location through the GSM/GPRS cellular network via the Middleware Administration software. Script programming can also be used to make the unit more powerful and flexible with simple maths and logic functions.

Technology	GSM - 850/1900MHz EGSM - 900/1800 MHz GSM, GPRS, and SMS	**Power supply** **Average current**	9 - 30vDC average 90mA @ 12V Max 1A when transmitting
Analogue Input	Options for 4-20mA, 0-1V or 0-10V on all channels	**Sample rate**	Min. 1 minute, max 24 hours
Digital State Input	Dry contact/open collector	**Web page update rate**	Min. 1 minute, max 24 hours
Counter Input	input frequency 50Hz/1kHz max depending on model	**Operating temperature**	-20°C to 65°C
Digital Output	Transistor Open collector	**Operating Humidity**	5% to 95%
Serial Input	RS485 Modbus RTU, ITAS Satellite Modem or MetPak	**Dimensions**	From 70 x 90 x 65mm to 150 x 90 x 65mm

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M2M System Overview

Our M2M system uses various data loggers that report either directly to the web server or to an intermediary server that mainly performs SMS functions before passing the data to the web server. The web server uses several databases to manage the data along with a third party web application called Mango Automation. Mango Automation is licensed for our use from Infinite Automation Systems Inc. Once the data has been collected and scaled on the web server, the data is then displayed in several formats such as a graphical display, charts and statistical details. The users can log into the web site from any location and view or download the available data as required. The M2M system can be configured to provide alarms via email or SMS. Also available from the M2M system are many different kinds of reports that can be schedule on a recurring basis or only run when a user requests the data. The reports can also be emailed to anyone that needs to get the data.

Demonstration Page:

Log into the Omni Instruments Server Room Monitor at the following web address:

http://31.193.131.54:8080/login.htm

Username: omniguest
Password: preview

You will be initially presented with the graphical view of our server room sensors.

From this screen you will have access to the individual data point details including recent data history. Just click on a gauge or graphic to access the data point details page. The bar symbols next to each gauge will also access a graphs page.

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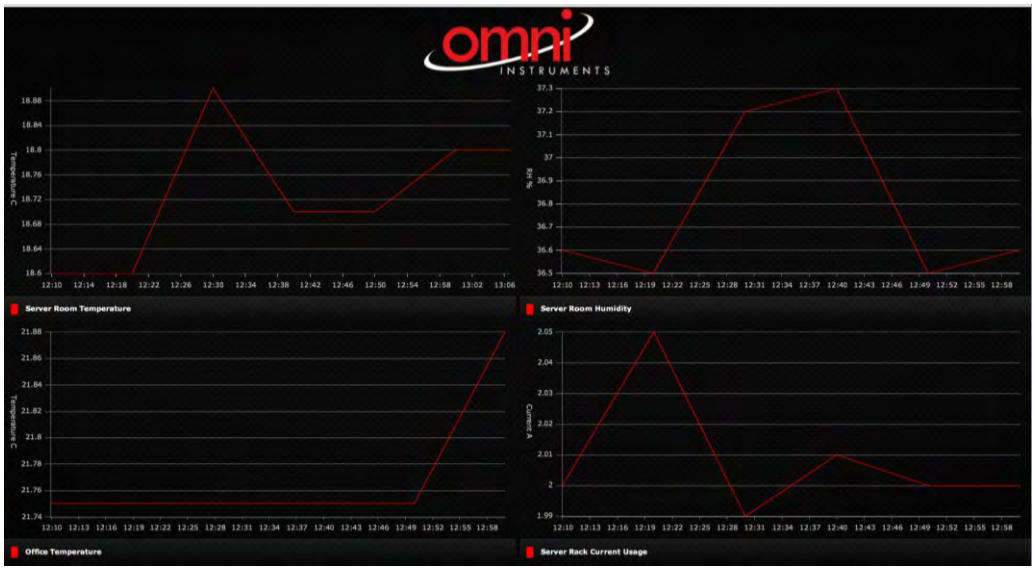
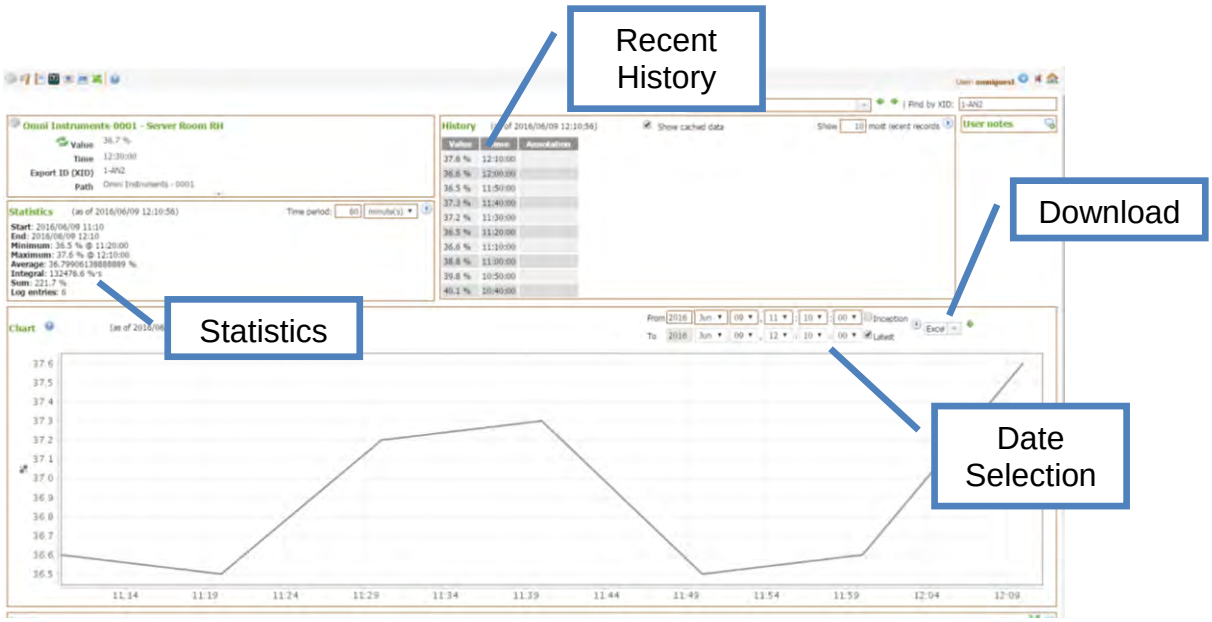


Data Point Details:

The data point details page display many aspects of the data that has been collected. It will show recent history, a chart of the recent history, some statistics from the recent history as well as any alarms that have been triggered. The page also allows you to choose a data range to chart as well as download in either CSV or XLSX formats.



The site allows for alarms to be detected and have emails and text messages sent to selected recipients.

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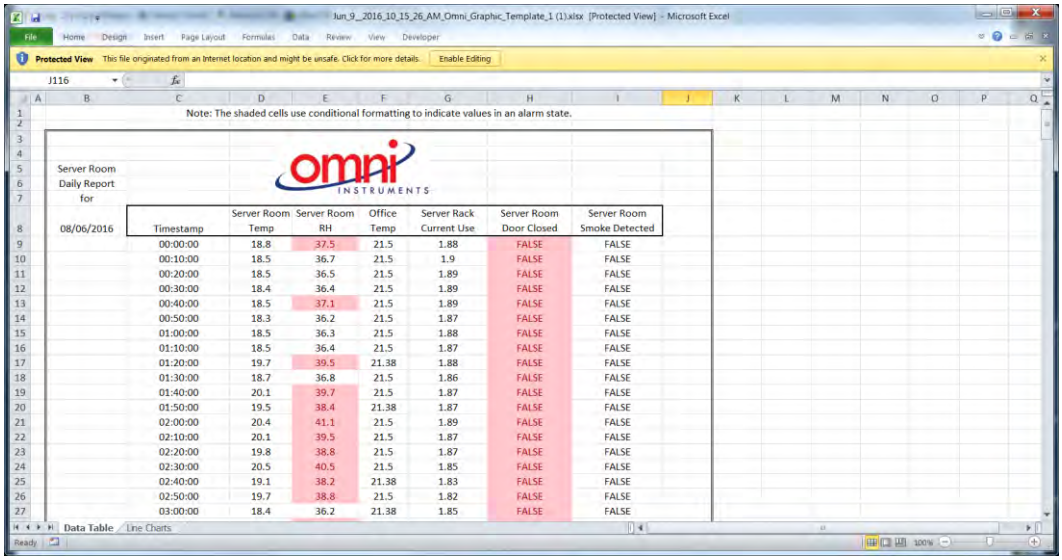
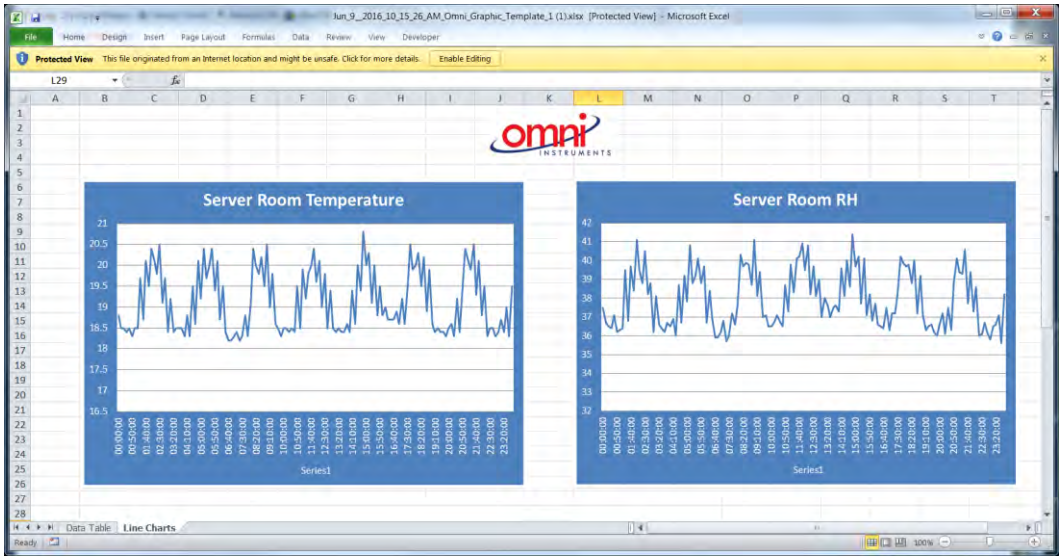
Customised Excel report templates can be created and used to automatically generate detailed reports.



Note: The shaded cells use conditional formatting to indicate values in an alarm state.

Server Room Daily Report for 08/06/2016

Timestamp	Server Room Temp	Server Room RH	Office Temp	Server Rack Current Use	Server Room Door Closed	Server Room Smoke Detected
00:00:00	18.8	37.5	21.5	1.88	FALSE	FALSE
00:10:00	18.5	36.7	21.5	1.9	FALSE	FALSE
00:20:00	18.5	36.5	21.5	1.89	FALSE	FALSE
00:30:00	18.4	36.4	21.5	1.89	FALSE	FALSE
00:40:00	18.5	37.1	21.5	1.89	FALSE	FALSE
00:50:00	18.3	36.2	21.5	1.87	FALSE	FALSE
01:00:00	18.5	36.3	21.5	1.88	FALSE	FALSE
01:10:00	18.5	36.4	21.5	1.87	FALSE	FALSE
01:20:00	19.7	39.5	21.38	1.88	FALSE	FALSE
01:30:00	18.7	36.8	21.5	1.86	FALSE	FALSE
01:40:00	20.1	39.7	21.5	1.87	FALSE	FALSE
01:50:00	19.5	38.4	21.38	1.87	FALSE	FALSE
02:00:00	20.4	41.1	21.5	1.89	FALSE	FALSE
02:10:00	20.1	39.5	21.5	1.87	FALSE	FALSE
02:20:00	19.8	38.8	21.5	1.87	FALSE	FALSE
02:30:00	20.5	40.5	21.5	1.85	FALSE	FALSE
02:40:00	19.1	38.2	21.38	1.83	FALSE	FALSE
02:50:00	19.7	38.8	21.5	1.82	FALSE	FALSE
03:00:00	18.4	36.2	21.38	1.85	FALSE	FALSE



These reports can be scheduled to run at specific times and cover almost any defined time periods. Additionally the reports can be set to be emailed to any address after the report has been run.

On the main help page you will find links to a more in depth user manual as well as our terms and conditions for the M2M system. http://31.193.131.54:8080/login.htm

The Omni Instruments M2M system can be tailored to your needs in many ways, please contact us for more information.

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