

# *The Horizon Range For Monitoring Power*



*System Overview  
&  
Operating Manual*

# Horizon Overview

## The Concept

To make metering and monitoring Simple and affordable yet accurate and reliable.

## The Reality

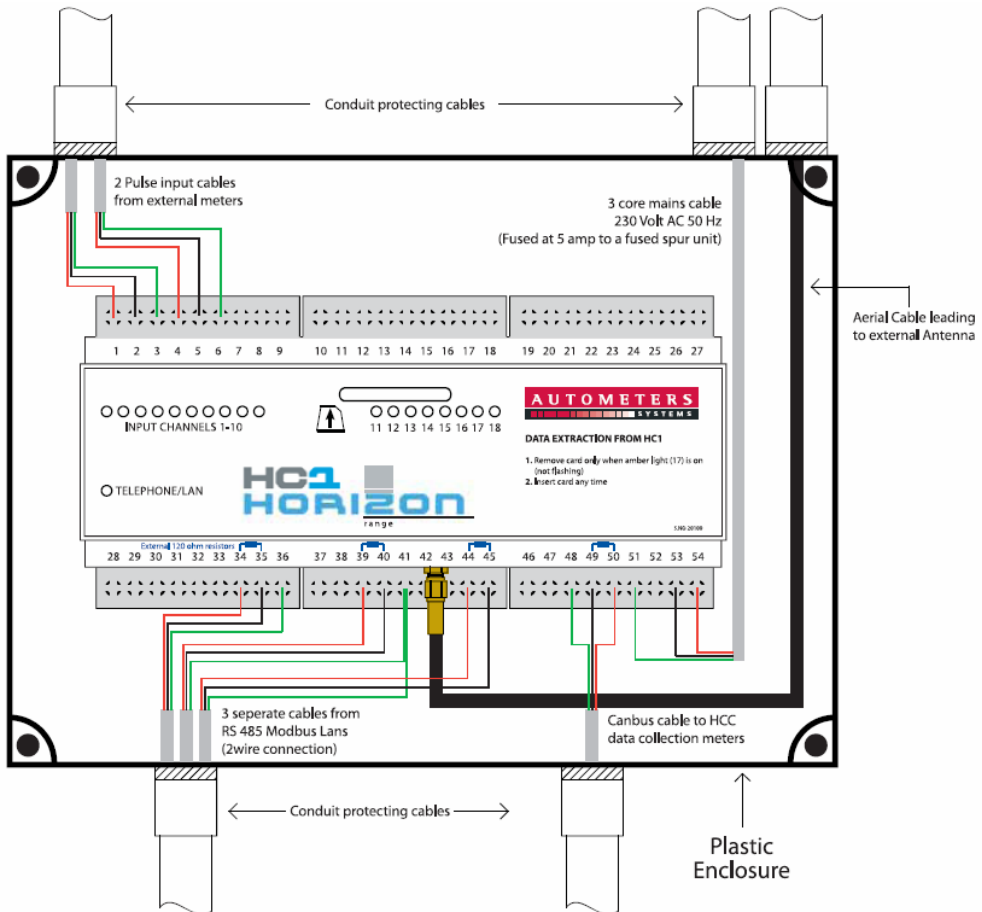
At the heart of the system is the HC-1, this is a DIN rail-mounted data collection device capable of storing information from up to 350 Meters via 3 separate RS485 Modbus communications ports, also available on the HC-1 are ten volt free input channels. These can be utilised for additional utility meters such as Water, Gas or Heat meters.

A Canbus channel is also available to enable the connection of up to 127 Horizon Canbus collectors, (HCC) giving the potential for an additional 2000 pulse meters to be added.

The Horizon System Website is a protected website to enable data from Horizon Data Collectors and Meters to be Viewed, Exported and Emailed from any web enabled PC.

Whether the Application is for a Single Multi Function meter for data logging or a complete building wired with Full Multi Utility metering, data is simple to view, download or export to a local PC for further analysis.

The website lists the meters in a tree system as they are wired in the field or as a series of functional groupings specified by the end user. Each meter has a clear customer specified identification, enabling all the measured parameters of each individual meter to be read easily and clearly identified. Data Collected may be viewed and manipulated so as to form the basis of an independent billing system or be used to monitor and control energy usage in line with the L2A/B Building regulations.



**Connectivity**

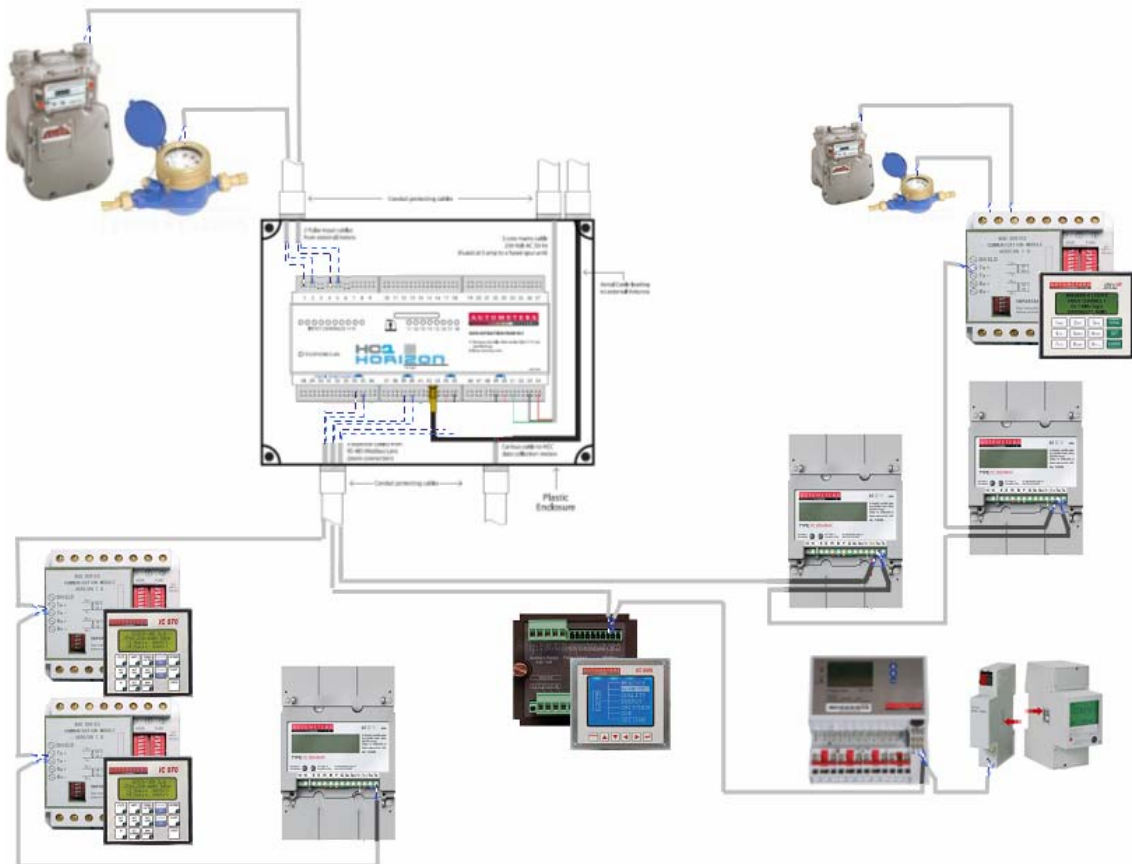
Making the interconnection between metering equipment and the Horizon Collectors simple is the secret to the making the system usable. Whether the connection is for a pulse or for full RS485 Modbus Communication, all cabling is a simple 2 wire connection. Autometers recomend the use of Beldon 9841 cable for all connections to ensure security and ease for installers. With its full coax screen and twin colour cabling it ensures that accuracy is maintained on installation.



Beldon 9841

**Installation overview**

Below is an example of an installtion installed with Autometers metering and Horizon monitoring. Whether the meters are single phase, kWh only or Full MultiFunction, they can all be incorporated within, mixed meter LAN networks and witht he additon of Modbus enabled pulse collectors, remote pulse meters can also be simply included.



**Operation**

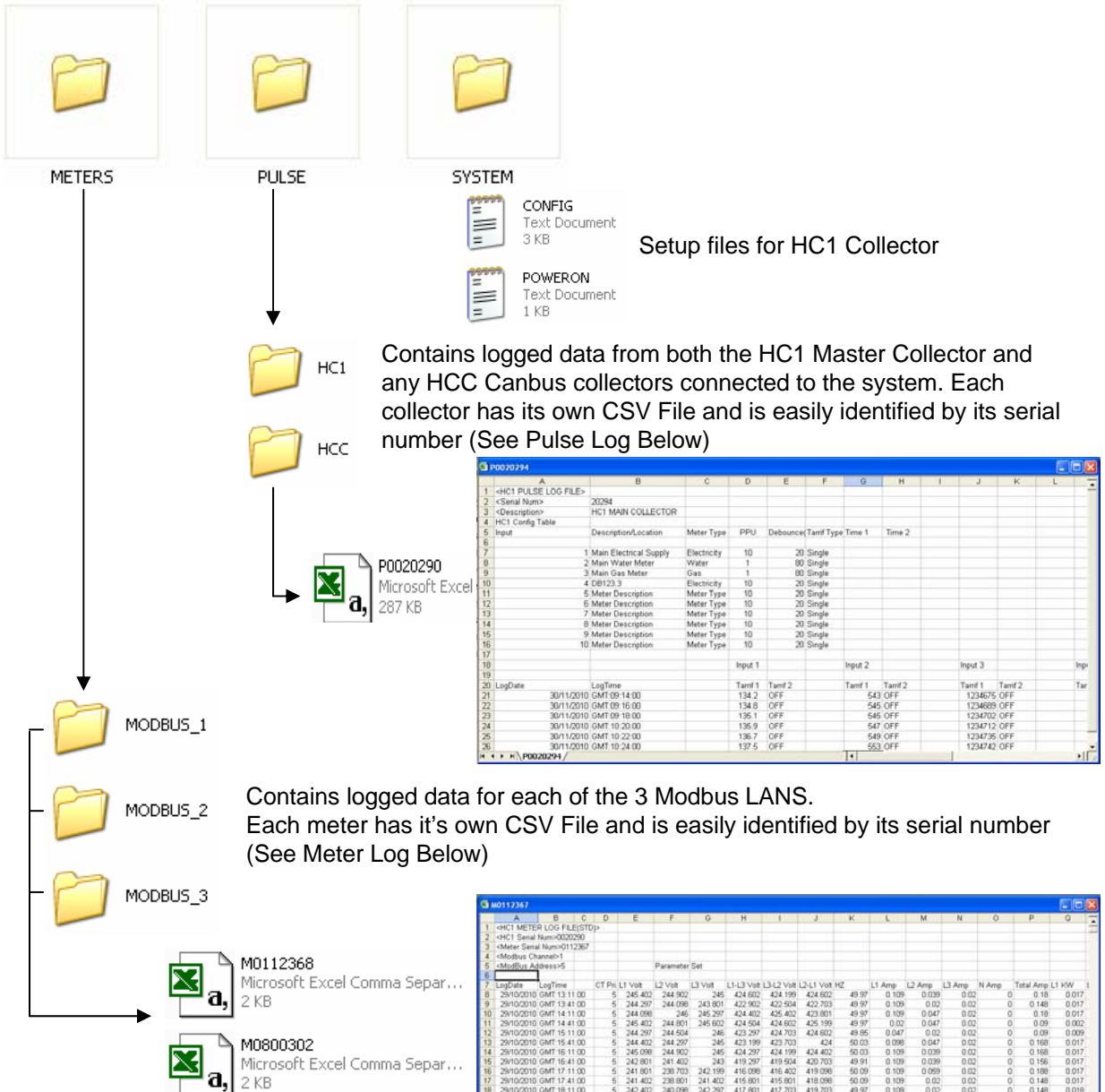
There are two methods of extracting data from the Horizon System.

**Stand alone** – SD Card Extraction

**GPRS** – Web enabled

**Stand alone**

This is the simplest and most cost effective way of extracting logged data. When information is required, you simply remove the SD card, put into your local card reader and the following files will self extract onto your screen.



**Stand alone . . continued**

Once data has been viewed or saved, then simply replace the SD card into the HC1 and logging will continue.

Whilst the card was removed logging will continue and store the logged files onto the internal memory. When the card is re-inserted into the HC1 the files are automatically transferred to the SD card ready for the next data extraction.

On average the 1GB SD card supplied with the HC1 will enable over 12 months of data storage (subject to the frequency and quantity of data required and the number of meters connected to the HC1). However when the card capacity reaches 90% continuously oscillating lights appear on the front of the HC1 as a warning. The card can then be removed, data saved, card erased, re inserted and continue logging as before. In the event that this does not happen, then the oldest data is overwritten following the FIFO (first in first out principle).

**GPRS –Web enabled**

For remote access of data a GPRS module can be fitted to the HC1. This replaces the need for SD card extraction and enables multiple users to access the logged information from any web enabled PC or communication device.

Data is transferred to a secure web server at time of logging which ensures that data is available within minutes of being logged. Access is User name and password protected, with the ability to give varied levels of access subject to responsibility and authority.

Using the GPRS solution enables users to view all logged data from any chosen location on the Autometers Horizon Website [www.autometershorizon.co.uk/METERS](http://www.autometershorizon.co.uk/METERS) .

In addition to the standard parameters the GPRS enables the user to set Logical views, create virtual meters, compare meter profiles and alarm on under/over usage.

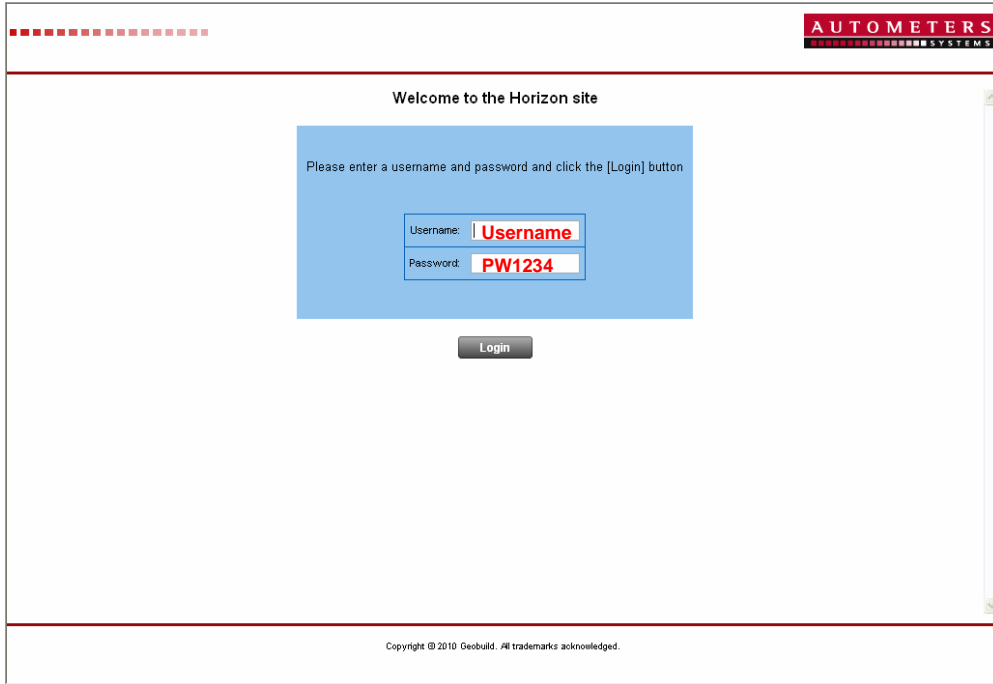
Automatic reporting and invoicing are also available with client specific cost centres and identification.

The following pages give an overview of the Horizon website, its functionality and capabilities;

# Login

To retrieve the Horizon login screen enter the following URL in a web browser:

[www.autometershorizon.co.uk/METERS](http://www.autometershorizon.co.uk/METERS)



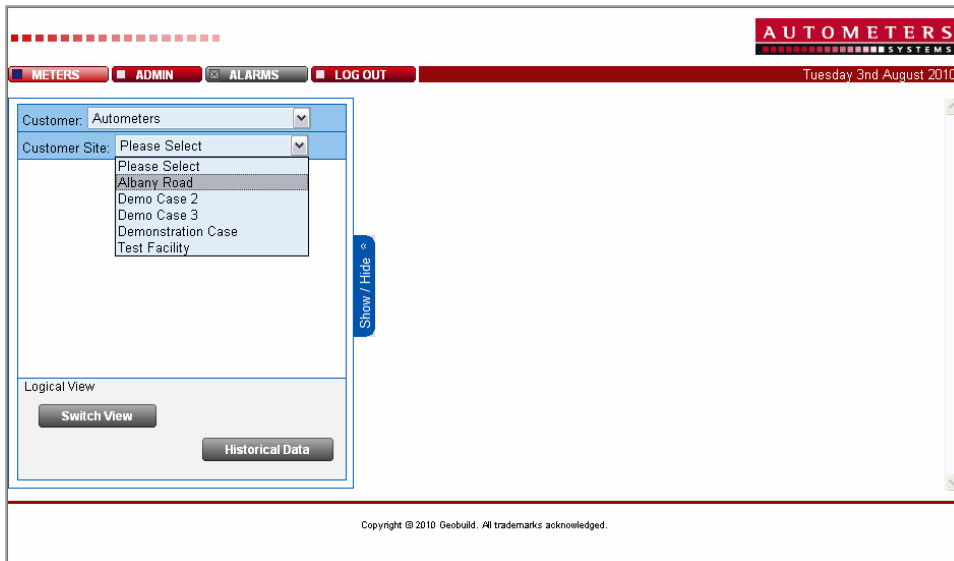
Complete the Username and Password boxes and click here to enter the Horizon site.  
NB – These are Case sensitive

Username and Passwords are users settable, from a “Manager level” login.  
Users can be created to have the ability to view only or extend to have full multi site access if required.

## Define Users

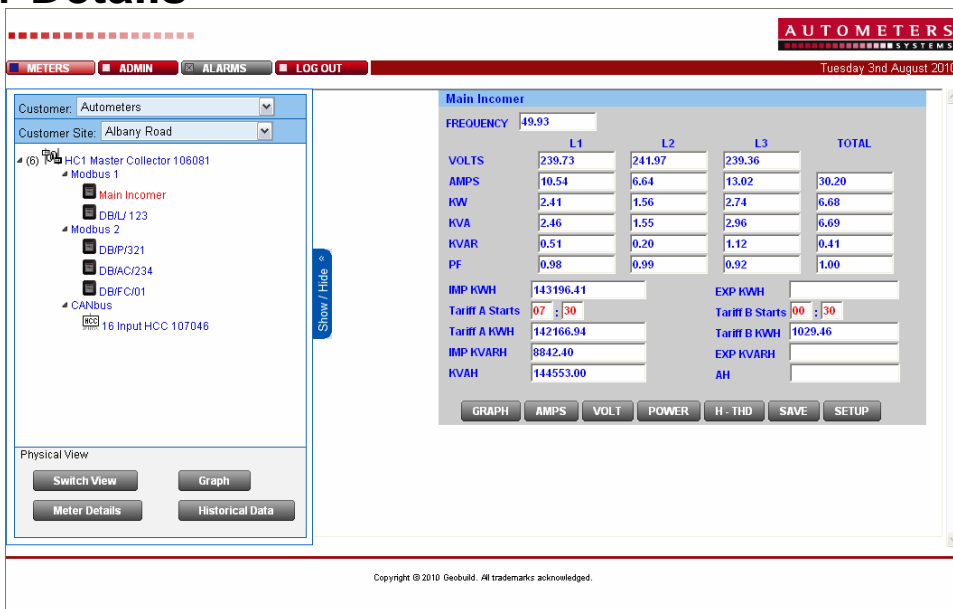
Customer:	Autometers
Customer Site:	Albany Road
Select User:	Iain
User Name:	Iain
Full Name:	Iain Stanway
Password:	.....
Confirm Password:	.....
User Type:	<input type="radio"/> Autometers <input checked="" type="radio"/> Normal <input type="radio"/> End User
Access to All Customer's Sites:	<input checked="" type="radio"/> No <input type="radio"/> Yes <input type="radio"/> View Only
User Admin Access:	<input type="radio"/> No <input checked="" type="radio"/> Yes <input type="radio"/> View Only
Last Logged in:	09/07/2008 12:49
Password Last Changed:	09/07/2008 12:49

# Site Selection



Using the drop down arrow, Select from the list your required site.

# Meter Details



Data is viewed in a Physical view format with all meters and collectors listed under the Modbus or Canbus LAN that they are connected to.

Data from either a Meter or a Collector can be viewed by simply clicking on the device. The data will appear on the right hand side of the screen.

If data is too large on the screen, then click on the Show/Hide Button and the Physical View will collapse to the side of the screen until retrieved by re-clicking.

# Meter Details . . Continued

More selective data can be viewed by clicking on the relevant parameter buttons.

NB- Only those parameters logged by the Horizon System can be viewed. All other parameters will show as a zero.

In addition to the standard measured features displayed, the "Tariff" selection enables a single rate meter to be split into a two rate for kWh. This enables either Day/Night or split shift monitoring to be achieved without the requirement of a two rate meter being fitted.

All Times are user programmable and can be set to different times per meter if required.



# Meter Graphs

Customer: Autometers  
Customer Site: Albany Road

HC1 Master Collector 106081  
 Modbus 1  
 Main Incomer  
 DB/L/123  
 Modbus 2  
 DB/P/321  
 DB/A/C/234  
 DB/F/C/01  
 CANbus  
 16 Input HCC 107046

Physical View  
 Switch View    Graph  
 Meter Details    Historical Data

**Main Incomer**  
 FREQUENCY: 49.93

	L1	L2	L3	TOTAL
VOLTS	239.73	241.97	239.36	
AMPS	10.54	6.64	13.02	30.20
KW	2.41	1.56	2.74	6.68
KVA	2.46	1.55	2.96	6.99
KVAR	0.51	0.20	1.12	0.41
PF	0.98	0.99	0.92	1.00
IMP KWH	143196.41			EXP KWH
Tariff A Starts	07 : 30			Tariff B Starts
Tariff A KWH	142166.94			Tariff B KWH
IMP KVARH	8842.40			EXP KVARH
KVAH	144553.00			AH

GRAPH    AMPS    VOLT    POWER    H - THD    SAVE    SETUP

**Main Incomer**  
 Graph Criteria    Select Colour

From: dd/mm/yyyy    To: dd/mm/yyyy

MAIN

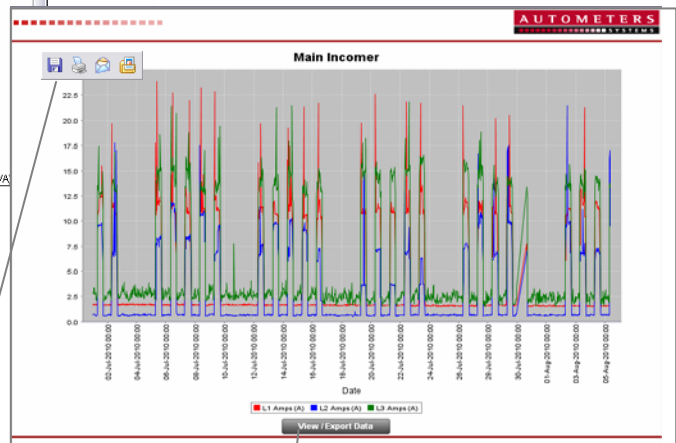
**Main Incomer**  
 Graph Criteria    Select Colour

- L1 Amps (A)    Change
- L2 Amps (A)    Change
- L3 Amps (A)    Change
- Neutral amps (A)
- Total amps (A)
- L1 Voltage (V)
- L2 Voltage (V)
- L3 Voltage (V)
- L1-L2 Voltage (V)
- L2-L3 Voltage (V)
- L3-L1 Voltage (V)
- L1 Power (kW)
- L2 Power (kW)
- L3 Power (kW)
- Total power (kW)
- L1 Apparent Power (kVA)
- L2 Apparent Power (kVA)
- L3 Apparent Power (kVA)
- Total apparent power (kVA)
- L1 Reactive Power (kVAR)
- L2 Reactive Power (kVAR)
- L3 Reactive Power (kVAR)
- Total reactive power (kVAR)
- L1 Power Factor
- L2 Power Factor
- L3 Power Factor
- Total power factor
- Present maximum demand for total power (kW)
- Maximum value for maximum demand total power (kW)
- Present maximum demand for total apparent power (kVA)
- Maximum value for maximum demand total apparent power (kVA)

Historical Graphs can be produced for each meter, comparing like parameters over a user selected time period.



The graph can be saved, printed or emailed directly from the screen for further analysis



If a more in depth analysis is required then click on the **View / Export Data** button.

# Meter Details . . Continued

## Meter Alarms

Clicking on the Setup button from any meter enables the user to set individual meter alarm levels for Under/Over values along with Profile and non usage alarms. Once set these alarms can be visually seen whilst logged in, both by highlighting the values on all screens in Yellow and by a pop up warning message.

An email is also sent to a user defined address to notify when not on line.

✉ **webdata@autometers.co.uk**      **10:36**  
Horizon Meter Alarm

All alarm activations and resets are logged and are viewable via the ADMIN button for manager level access

### View Historical Alarms

Customer: Autometers  
Customer site: Albany Road  
Alarm Date Tripped Between: 01/01/2010 and 05/08/2010  
Select Collector: HC1 Master Collector 106081  
Select Meters or Pulses: Meters  
Search For Alarms Under: All Meters Under Selected Collector

Meter Name	Modbus Description	Alarm Type	Date Alarm Tripped	Date Alarm Reset
Main Incomer	L1 Amp	Over Usage	18/01/2010 12:26:53	18/01/2010 12:30:32
Main Incomer	L3 Amp	Over Usage	18/01/2010 12:26:53	18/01/2010 12:30:32
Main Incomer	L2 Amp	Over Usage	18/01/2010 12:26:53	18/01/2010 12:30:32

The Non Usage Alarm ensures that, in the event of power loss, or "tampering" and no power is consumed within a log cycle, an email is sent to a user defined address to advise of the status. This ensures that power outages and miss uses are reported quickly and effectively

# Pulse Details

Customer: Autometers  
Customer Site: Albany Road

16 Input HCC 107046

Pulse	Count	TARIFF - A PULSE			TARIFF - B PULSE			TOTAL PULSE		Measure	Graph
		Factor	Value	Count	Factor	Value	Count	Value			
IC990 kWh 900186	99050.00	1.00	99050.00	0.00	0.00	0.00	99050.00	99050.00	kWh	Graph	
IC990 kVAH 900186	100658.00	1.00	100658.00	0.00	0.00	0.00	100658.00	100658.00	kVAH	Graph	
IC970 KWH 701049	99374.00	1.00	99374.00	0.00	0.00	0.00	99374.00	99374.00	kWh	Graph	
IC970 KVAH 701049	100112.00	1.00	100112.00	0.00	0.00	0.00	100112.00	100112.00	kVAH	Graph	
IC970 KWH 700836	397396.00	1.00	397396.00				397396.00	397396.00	kWh	Graph	
IC970 KVAH 700836	424098.00	1.00	424098.00				424098.00	424098.00	kVAH	Graph	
Pulse 7	0.00	1.00	0.00				0.00	0.00	0	Graph	
Pulse 8	0.00	1.00	0.00				0.00	0.00	0	Graph	
Gas Meter	4549.68	1.00	4549.68				4549.68	4549.68	M3	Graph	
Pulse 10	0.00	1.00	0.00				0.00	0.00	0	Graph	
Pulse 11	0.00	1.00	0.00				0.00	0.00	0	Graph	
Pulse 12	0.00	1.00	0.00				0.00	0.00	0	Graph	
Pulse 13	0.00	1.00	0.00				0.00	0.00	0	Graph	
Pulse 14	0.00	1.00	0.00				0.00	0.00	0	Graph	
Pulse 15	0.00	1.00	0.00				0.00	0.00	0	Graph	
Pulse 16	0.00	1.00	0.00				0.00	0.00	0	Graph	

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Data from a Collector can be viewed by simply clicking on a pulse device. This can either be the main HC1 Collector or a HCC 16 Channel Pulse collector on the Canbus network. When selected the data will appear on the right hand side of the screen. If data is too large on the screen, then click on the Show/Hide Button and the Physical View will collapse to the side of the screen until retrieved by re-clicking.

Input names & fuel type can be user set with an option for Pulses to be split into a two tariff register if required

16 Input HCC 107046

Pulse	FUEL TYPE	TARIFF TYPE	TARIFF A		TARIFF B		SYS TIME		BASE VALUES	
			TARIFF A	TARIFF B	TARIFF A	TARIFF B	TARIFF A	TARIFF B		
IC990 kWh 900186	Electricity	Single	00	00			00	00	0.00	
IC990 kVAH 900186	Electricity	Dual	00	00	07	00			0.00	0.00
IC970 KWH 701049	Electricity	Dual	00	00	07	00	00	00	0.00	0.00
IC970 KVAH 701049	KWh (Gas)	Dual	00	00	04	00			0.00	0.00
IC970 KWH 700836	Water Heat Meter for CHP System	Single	00	00					0.00	
IC970 KVAH 700836	Electricity	Single	00	00					0.00	
Pulse 7	Electricity	Single	00	00					0.00	
Pulse 8	Electricity	Single	00	00					0.00	
Gas Meter	Gas	Single	00	00					0.00	
Pulse 10	Electricity	Single	00	00					0.00	
Pulse 11	Electricity	Single	00	00					0.00	
Pulse 12	Electricity	Single	00	00					0.00	
Pulse 13	Electricity	Single	00	00					0.00	
Pulse 14	Electricity	Single	00	00					0.00	
Pulse 15	Electricity	Single	00	00					0.00	
Pulse 16	Electricity	Single	00	00					0.00	

Buttons: Save, Alarm Setup, Main

# Pulse Alarms

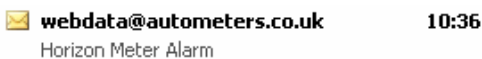
Pulse	FUEL TYPE	SETUP				SYS TIME	BASE VALUES	
		TARIFF TYPE	TARIFF A	TARIFF B	TARIFF A		TARIFF B	
IC990 kWh 900196	Electricity	Single	00	00	00	00	0.00	
IC990 kVAH 900196	Electricity	Dual	00	00	07	00	0.00	0.00
IC970 kWh 701049	Electricity	Dual	00	00	07	00	0.00	0.00
IC970 kVAH 701049	Electricity	Dual	00	00	04	00	0.00	0.00
IC970 kWh 700836	Electricity	Single	00	00			0.00	
IC970 kVAH 700836	Electricity	Single	00	00			0.00	
Pulse 7	Electricity	Single	00	00			0.00	
Pulse 8	Electricity	Single	00	00			0.00	
Gas Meter	Gas	Single	00	00			0.00	
Pulse 10	Electricity	Single	00	00			0.00	
Pulse 11	Electricity	Single	00	00			0.00	
Pulse 12	Electricity	Single	00	00			0.00	
Pulse 13	Electricity	Single	00	00			0.00	
Pulse 14	Electricity	Single	00	00			0.00	
Pulse 15	Electricity	Single	00	00			0.00	
Pulse 16	Electricity	Single	00	00			0.00	

Clicking on the Alarm Setup button from enables the user to set individual High/Low input alarms based on the 30 Min Profile of the Pulse consumption.

Once set these alarms can be visually seen whilst logged in, both by highlighting the values on all screens in Yellow and by a pop up warning message.



An email is also sent to a user defined address to notify when not on line.



Pulse	High (Over) Alarm Usage	Low (Under) Alarm Usage	Non Usage Alarm
IC990 kWh 900196	24.000	5.00	<input type="checkbox"/>
IC990 kVAH 900196			<input type="checkbox"/>
IC970 kWh 701049			<input type="checkbox"/>
IC970 kVAH 701049			<input type="checkbox"/>
IC970 kWh 700836			<input type="checkbox"/>
IC970 kVAH 700836			<input type="checkbox"/>
Pulse 7			<input type="checkbox"/>
Pulse 8			<input type="checkbox"/>
Gas Meter			<input type="checkbox"/>
Pulse 10			<input type="checkbox"/>
Pulse 11			<input type="checkbox"/>
Pulse 12			<input type="checkbox"/>
Pulse 13			<input type="checkbox"/>
Pulse 14			<input type="checkbox"/>
Pulse 15			<input type="checkbox"/>
Pulse 16			<input type="checkbox"/>

All alarm activations and resets are logged and are viewable via the ADMIN button for manager level access



The Non Usage Alarm ensures that, in the event of power loss, or “tampering” and no power is consumed within a log cycle, an email is sent to a user defined address to advise of the status. This ensures that power outages and miss uses are reported quickly and effectively

# Pulse Graphs

The screenshot displays the AUTOMETERS software interface. The top navigation bar includes 'METERS', 'ADMIN', 'ALARMS', and 'LOG OUT'. The main window is titled '16 Input HCC 107046' and contains a table with the following columns: Pulse, Count, Factor, Value, Count, Factor, Value, Count, Value, Measure, and Graph. The table lists various pulse inputs such as 'IC990 KVAH 900186', 'IC990 KVAH 900186', 'IC970 KVAH 701049', etc., with their respective counts and values. Below the table are 'Save' and 'Setup' buttons. To the left, a tree view shows the hierarchy of meters under 'Customer: Autometers' and 'Customer Site: Albany Road'. A 'Physical View' section at the bottom left has 'Switch View', 'HCC Details', and 'Historical Data' buttons.

A second screenshot shows the 'Water Meter' configuration window. It has tabs for 'Readings', 'Reading Profile', and 'CO2 Profile'. Under 'Readings', there are radio buttons for 'Change' (selected), 'Normal', and 'Change'. Below this, there are date pickers for 'From' (14.07.2010) and 'To' (14.07.2010), and 'Continue' and 'MAN' buttons.

Historical Graphs can be produced for each inputs in tow formats.

This section illustrates the two graph formats available. On the left, the 'Readings' option is selected, showing a red 'Change' button. On the right, the 'Reading Profile' option is selected, showing a blue 'Change' button. Below these are two screenshots of the 'Water Meter' graph. The left graph shows a cumulative 'Readings' graph with a red line showing an upward trend over time. The right graph shows a 'Reading Profile' graph with a blue line showing periodic peaks and troughs. Both graphs have a y-axis representing pulse count and an x-axis representing time. At the bottom, there are icons for saving, printing, and emailing the graphs.

The graphs can be saved, printed or emailed directly from the screen for further analysis

# View and Export Historical Data

From the Main Screen click on the **Historical Data** button. This screen enables the following data.

- Historical Data**
- View Data
- View Live Data Feed
- Export Data
- Email Data
- Compare Data

by using the historical logged data.

The screenshot shows the 'View And Export Historical Data' interface. On the left, a tree view shows the hierarchy: Customer: Autometers, Customer Site: Albany Road, HCC1 Master Collector 106081, Modbus 1 (Main Incomer, DBL/123), Modbus 2 (DBP/321, DBAC/234, DBFC/01), and CANbus (16 Input HCC 107046). The main area contains several dropdown menus for 'Select View Type', 'Select View, Export, Email or Compare Data', 'Select Item Type to View', 'Enter Date Range', 'Select Customer Group', 'Select Customer Site', 'Select Collector', and 'Select Meter'. Two calendar widgets are shown for date selection. A text box at the bottom states: 'All options have a data selective option'.

**View Data** enables information to be viewed between user selectale dates. A simple tick box selection enables a single or all logged parameters from a meter or collector to be viewed.

The screenshot shows the 'View And Export Historical Data' interface with a data table. The 'Select View Type' is set to 'View Data', 'Select Item Type to View' is 'Data for a Meter', and the date range is from 01/07/2010 to 07/07/2010. A 'Select data items to use' panel on the left has checkboxes for L1 Amp, L2 Amp, L3 Amp, N Amp, Tot. Amp, L1 Volt, L2 Volt, L3 Volt, L1-L2 Volt, L2-L3 Volt, and L3-L1 Volt, all of which are checked. The data table below shows the following columns: Date, L1 Amp, L2 Amp, L3 Amp, N Amp, Tot. Amp, L1 Volt, L2 Volt, L3 Volt, and L1-L2 Volt. The table contains 15 rows of data, with the first row highlighted in red.

Date	L1 Amp	L2 Amp	L3 Amp	N Amp	Tot. Amp	L1 Volt	L2 Volt	L3 Volt	L1-L2 Volt
05.08.2010 15:16	11.76	11.54	15.78	8.86	39.06	240.45	241.91	241.88	411
05.08.2010 14:41	11.74	11.46	15.68	8.86	38.88	239.17	241.19	242.78	411
05.08.2010 14:05	11.96	11.52	15.50	8.72	38.98	242.85	247.45	240.44	421
05.08.2010 13:30	14.46	10.66	14.66	10.34	39.70	242.09	246.12	242.73	421
05.08.2010 12:58	11.32	10.56	15.54	9.34	37.42	243.21	245.88	242.79	42
05.08.2010 12:19	11.58	10.50	14.38	9.22	36.46	243.01	246.97	241.99	42
05.08.2010 11:43	11.40	9.92	14.38	8.70	35.76	243.82	242.90	241.14	411
05.08.2010 11:11	11.16	9.66	14.26	8.82	35.08	243.88	244.64	238.84	411
05.08.2010 10:35	11.20	9.68	14.66	9.14	35.54	244.44	246.16	241.05	42
05.08.2010 09:57	11.18	9.70	14.18	9.16	35.06	245.29	245.52	241.98	42
05.08.2010 09:20	30.56	8.40	13.94	23.80	63.90	238.21	242.12	241.42	41
05.08.2010 08:45	10.78	9.48	13.34	8.42	33.58	241.29	240.30	239.35	411

**View Live Data** enables the latest 20 Logs information to be viewed for a single meter or collector. If left in this screen the data is automatically updated every 2 Minutes to enable any new logs to be displayed. A simple tick box selection enables a single or all logged parameters from a meter or collector to be viewed. Data can be viewed as a Table, Graph or Oscillate between the two. If Oscillation is selected, then different parameters can be selected for each and a frequency of change can be selected.

The screenshot displays the 'View And Export Historical Data' interface. The top section shows a table of data with columns for Date, L1 Amp, L2 Amp, L3 Amp, and Volt. The bottom section shows a graph view with a legend for L1 Amp, L2 Amp, and L3 Amp, and a highlighted CO2 Emissions value of 2.15 kgCO2.

Date	L1 Amp	L2 Amp	L3 Amp	N	Volt	L2 Volt	L3 Volt	L1-L2 Volt	
05-08-2010 15:16	11.76	11.54	15.78	8.86	39.06	240.45	241.91	241.88	416.7
05-08-2010 14:41	11.74	11.46	15.88	8.86	38.88	239.17	241.19	242.78	415.7
05-08-2010 14:05	11.96	11.52	15.50	8.72	38.98	242.65	247.45	240.44	420.2
05-08-2010 13:30	14.46	10.86	14.66	10.34	39.78	242.09	246.12	242.73	420.2
05-08-2010 12:56	11.32	10.56	15.54	9.34	37.42	243.21	245.88	242.79	421.2
05-08-2010 12:19	11.58	10.50	14.38	8.32	36.46	243.01	246.97	241.99	421.2
05-08-2010 11:43	11.40	9.92	14.38	8.70	35.76	243.82	242.90	241.14	419.7
05-08-2010 11:11	11.16	9.66	14.26	8.82	35.08	243.88	244.64	238.84	419.5
05-08-2010 10:35	11.20	9.66	14.26	8.82	35.08	243.88	244.64	238.84	419.5
05-08-2010 09:57	11.18	9.66	14.26	8.82	35.08	243.88	244.64	238.84	419.5
05-08-2010 09:20	30.56								

On live data view CO2 emissions can be viewed on the graphical display, When the CO2 emissions are reducing, the value will be shown highlighted in green. When the CO2 emissions are increasing, they will be shown highlighted in Red.

**Export Data** enables the information from a Meter, Collector or Group of meters be exported to the users PC in a CSV Format for further analysis. Data can be both data and parameter selected to ensure only that information that is required is exported.

View And Export Historical Data

**AUTOMETERS**  
SYSTEMS

Thursday 5th August 2010

METERS     ADMIN     ALARMS     LOG OUT

Select View Type: Physical View  
 Select View, Export, Email or Compare Data: Export Data  
 Select Item Type to Export: Data for a Meter  
 Enter Date Range: Data for a Collector / Data for a group of Meters

Select Customer Group: Autometers  
 Select Customer Site: Albany Road  
 Select Collector: HC1 Master Collector 106081  
 Select Meter: Main Incomer

**Select data items to use**  
 L1 Amp   
 L2 Amp   
 L3 Amp   
 N Amp   
 Tot. Amp   
 L1 Volt   
 L2 Volt   
 L3 Volt   
 L1-L2 Volt   
 L2-L3 Volt   
 L3-L1 Volt

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A Please wait message is displayed whilst the data is collated and once retrieved it can be either saved or opened. When saving the file name can be changed or left as the default, reference followed by data and time of exporting.

Please wait while your data is obtained.

**File Download**

Do you want to open or save this file?

Name: MainIncomer 05-08-10 16 40 10.zip  
 Type: Compressed (zipped) Folder, 6.56 KB  
 From: 195.10.231.31

Always ask before opening this type of file

While files from the Internet can harm your computer. If you do not save this file. [What's the risk?](#)

Microsoft Excel - MainIncomer 05-08-10 16 50 58 [Read-Only]

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34		
Date	L1 Amp	L2 Amp	L3 Amp	N Amp	Tot. Amp	L1 Volt	L2 Volt	L3 Volt	L1-L2 Volt	L2-L3 Volt	L3-L1 Volt	L1 kW	L2 kW	L3 kW	Tot kW	L1 kWh	L2 kWh	L3 kWh	Tot kWh	L1 kWh	L2 kWh	L3 kWh	Tot kWh	L1 kWh	L2 kWh	L3 kWh	Tot kWh	L1 kWh	L2 kWh	L3 kWh	Tot kWh				
27/05/08 20:10:52	10.6	7.84	15.82	11.5	34.26	242.59	243.97	242.16	419.74	422.29	419.94	2.49																							
27/05/08 20:10:15	11.76	11.54	15.78	8.86	39.06	240.45	241.91	241.86	416.72	419.35	418.61	2.74																							
27/05/08 20:10:14	11.74	11.46	15.68	8.86	38.88	239.17	241.19	242.78	415.71	417.91	418.6	2.72																							
27/05/08 20:10:14	11.96	11.52	15.5	8.72	38.98	242.65	247.45	240.44	420.23	425.23	419.03	2.81																							
27/05/08 20:10:13	14.46	10.66	14.66	10.34	39.78	242.09	246.12	242.73	420.2	424.19	421.26	2.72																							
27/05/08 20:10:12	11.32	10.56	15.54	9.34	37.42	243.21	245.88	242.79	421.25	424.26	421.64	2.68																							
27/05/08 20:10:12	11.99	10.5	14.38	8.32	36.46	243.01	246.97	241.99	421.25	425.33	420.92	2.76																							
27/05/08 20:10:11	11.4	9.92	14.38	8.7	36.76	243.82	242.59	241.14	419.71	421.31	419.32	3.26																							
27/05/08 20:10:11	11.16	9.66	14.26	8.82	35.08	243.88	244.64	238.04	419.51	422.45	417.43	2.59																							
27/05/08 20:10:10	11.2	9.68	14.66	9.14	35.54	244.44	246.16	241.05	421.58	424.61	420.63	2.61																							
27/05/08 20:10:09	11.19	9.7	14.18	9.16	36.06	245.29	245.52	241.98	422.27	425.3	420.56	2.63																							
27/05/08 20:10:09	10.06	10.06	13.78	4.98	40.86	239.17	246.01	241.39	416.62	423.56	417.88	2.25																							
27/05/08 20:10:07	10.88	16.18	13.5	5.66	40.56	244.69	238.02	244.04	419.61	418.33	420.89	2.41																							
27/05/08 20:10:06	1.96	0.68	1.96	2.18	4.2	239.65	245.04	243.73	417.58	423.92	420.24	0.36																							
27/05/08 20:10:06	1.54	0.66	1.84	1.98	4.04	241.8	244.31	242.26	420.17	422.88	418.41	0.36																							
27/05/08 20:10:05	1.66	0.66	2.4	2.72	4.02	242.37	243.95	246.14	422.68	424.09	427.42	0.36																							
27/05/08 20:10:05	1.58	0.76	2.64	3	4.94	244.5	249.34	247.83	426.73	431.18	426.61	0.37																							
27/05/08 20:10:04	1.56	0.7	2.12	2.38	4.38	244.87	247.2	244.1	424.3	428.21	422.43	0.37																							
27/05/08 20:10:03	1.54	0.68	2.48	2.76	4.7	242.29	247.01	246.57	423.09	427.42	423.8	0.36																							
27/05/08 20:10:02	1.54	0.66	2.26	2.58	4.46	242.77	247.06	245.36	422.95	427	423.28	0.36																							
27/05/08 20:10:02	1.48	0.72	2.46	2.72	4.66	241.99	247.25	246.34	421.81	427.45	423.6	0.36																							
27/05/08 20:10:01	1.66	0.7	2.2	2.46	4.46	245.5	246.42	244.69	422.36	426.18	423.94	0.36																							
27/05/08 20:10:01	1.58	0.8	3.18	3.54	5.54	245.18	250.26	249	427.87	432.65	428.7	0.37																							
27/05/08 20:10:00	1.6	0.74	2.7	3.06	5.04	245.64	249.74	247.81	427.55	431.61	427.82	0.38																							
27/04/08 20:10:23	1.46	0.62	2.42	2.66	4.5	239.54	243.36	245.7	418.03	422.84	420.96	0.34																							
27/04/08 20:10:22	1.56	0.66	1.86	2.88	4.08	242.14	243.85	242.57	418.85	423.5	419.19	0.37																							
27/04/08 20:10:22	1.56	0.62	1.6	1.64	3.84	241.42	245.26	238.15	417.12	422.98	414.94	0.37																							
27/04/08 20:10:21	1.54	0.68	2.26	2.48	4.48	241.34	245.47	245.13	419.87	425.72	421.9	0.36																							



**Campare Data** enables the user to compare the information from a Meter or Pulse in Daily, Weekly, Monthly or Yearly time periods. Data can be viewed as a line Graph or Bar Chart and on weekly, Monthly or Yearly data can be viewed as whole data or zoomed for for detailed information.

**View And Export Historical Data**

**AUTOMETERS**  
SYSTEMS

Friday 6th August 2010

METERS    ADMIN    ALARMS    LOG OUT

Select View Type: Physical View  
 Select View, Export, Email or Compare Data: Compare Data  
 Select Item Type to Compare: Data for a Meter  
 Select Date Period to Compare: Day

Select Customer Group: Please select  
 Select Customer Site: Please Select  
 Select Collector: Please Select  
 Select Meter: Please Select

**View And Export Historical Data**

**AUTOMETERS**  
SYSTEMS

Friday 6th August 2010

METERS    ADMIN    ALARMS    LOG OUT

Select View Type: Physical View  
 Select View, Export, Email or Compare Data: Compare Data  
 Select Item Type to Compare: Data for a Meter  
 Select Date Period to Compare: Week

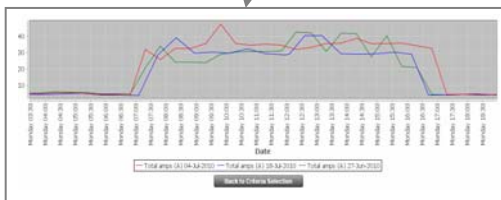
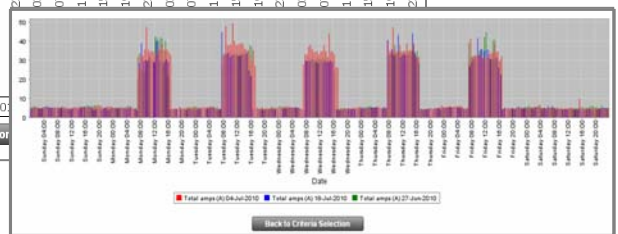
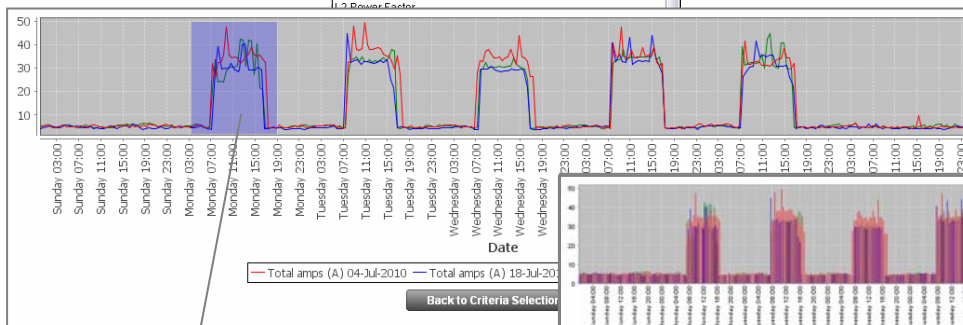
Select Customer Group: Autometers  
 Select Customer Site: Albany Road  
 Select Collector: HC1 Master Collector 106091  
 Select Meter: Main Incomer

Select Graph or Bar Chart: Graph

Select Loading Speed or Versatility: Quicker Loading Speed. (cant zoom in/out)

Criteria 1: Total amps (A)   Date Period 1 Starts: 04/07/2010  
 Criteria 2: Total amps (A)   Date Period 2 Starts: dd/mm/yyyy

L1 Voltage (V)  
 L2 Voltage (V)  
 L3 Voltage (V)  
 L1-L2 Voltage (V)  
 L2-L3 Voltage (V)  
 L3-L1 Voltage (V)  
 L1 Power (kW)  
 L2 Power (kW)  
 L3 Power (kW)  
 Total power (kW)  
 L1 Apparent Power (kVA)  
 L2 Apparent Power (kVA)  
 L3 Apparent Power (kVA)  
 Total apparent power (kVA)  
 L1 Reactive Power (kVAR)  
 L2 Reactive Power (kVAR)  
 L3 Reactive Power (kVAR)  
 Total reactive power (kVAR)  
 L1 Power Factor  
 L2 Power Factor



Example shows 3 separate weeks of data compared using Bar/Line Graphs.

Using the Versatility Graph data can be zoomed for more detailed viewing.

# Logical View

By clicking on the **Switch View** button a *Logical* view can be displayed where meters can be grouped to the users specification. This is user definable and is a standard user admin function. (See ADMIN for further details) Meters and Pulses can be grouped together to enable whole department or specific client monitoring. When a logical group is selected the chargeable utility is displayed for ease of viewing. If the individual meter/pulse details are required, these can be viewed in exactly the same way as the original *Physical* view, simply click on the device required.

The screenshots illustrate the 'Logical View' functionality in the Autometers Systems software. Each screenshot shows a navigation menu on the left and a main data table on the right. The top navigation bar includes 'METERS', 'ADMIN', 'ALARMS', and 'LOG OUT', with the date 'Friday 6th August 2010'.

**Top Screenshot: HCC1 Master Collector 106001**  
 This view shows a table of meter pulses for a specific collector. The table has columns for Pulse, Count, Factor, Value, Total Pulse Count, Total Pulse Value, and Measure. The data is as follows:

Pulse	Count	Factor	Value	Count	Value	Measure
Water Meter	40533.00	1.00	40533.00	40533.00	40533.00	Litres
106001	14376419.00	1.00	14376419.00	14376419.00	14376419.00	0
kWh Meter	36.00	1.00	36.00	36.00	36.00	kWh
Gas Meter	242717.00	1.00	242717.00	242717.00	242717.00	kWh
Pulse 5	0.00	1.00	0.00	0.00	0.00	0
Pulse 6	0.00	1.00	0.00	0.00	0.00	0

**Middle Screenshot: Power Meters**  
 This view shows a table of power meter readings. The table has columns for Meter, Value, and Measure. The data is as follows:

Meter	Value	Measure
DB/L/123	75617.50	kWh
DB/AC/234	143449.20	kWh

**Bottom Screenshot: Multi Utility Test**  
 This view shows a table of multi-utility test pulses. The table has columns for Pulse, Count, Factor, Value, Total Pulse Count, Total Pulse Value, and Measure. The data is as follows:

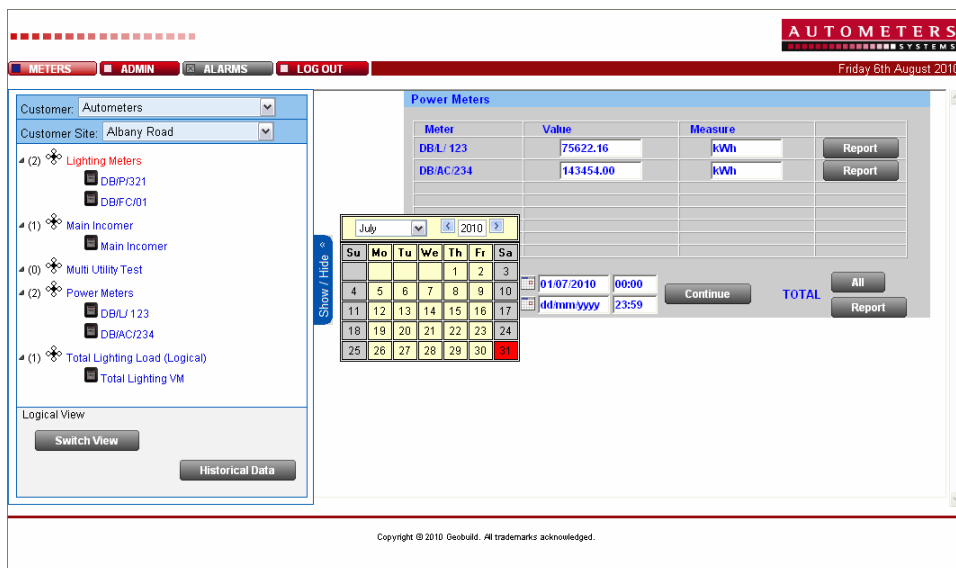
Pulse	Count	Factor	Value	Count	Value	Measure
Water Meter	40533.00	1.00	40533.00	40533.00	40533.00	Litres
Gas Meter	242717.00	1.00	242717.00	242717.00	242717.00	kWh
kWh Meter	36.00	1.00	36.00	36.00	36.00	kWh

Arrows in the screenshots point to the 'Switch View' buttons and the specific logical view titles, with text labels: 'Logical View Group view showing Power readings only' and 'Logical View Group view showing Multi Utility Pulse view'.

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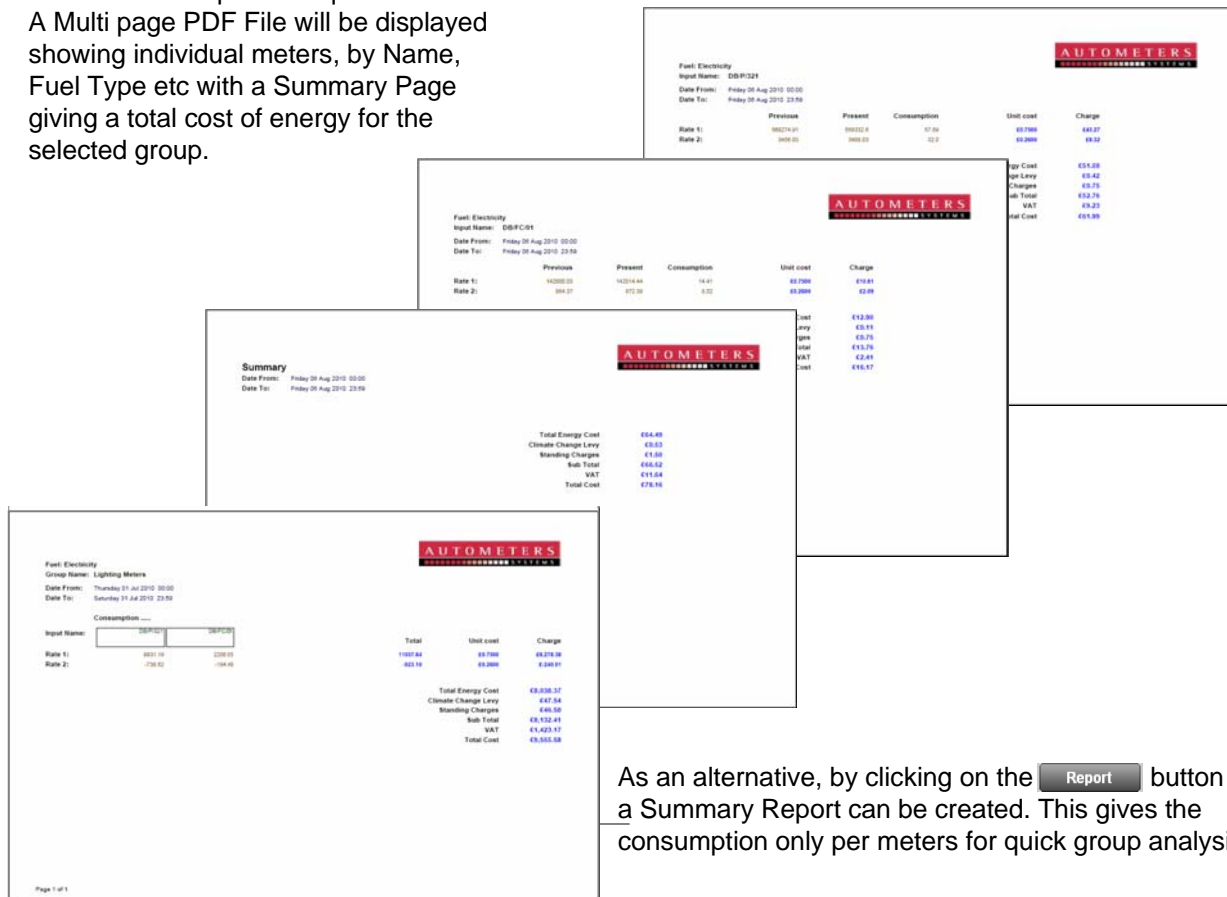
# Costed Reporting

From the Logical view users are able, if subscribed, to created Costed Reports. These enable true energy costs to be created for individual meters with a Summated total consumption and cost.



Click on the one of the report buttons for individual meters or All for all meters, Select the data and time of the time period required and click continue.

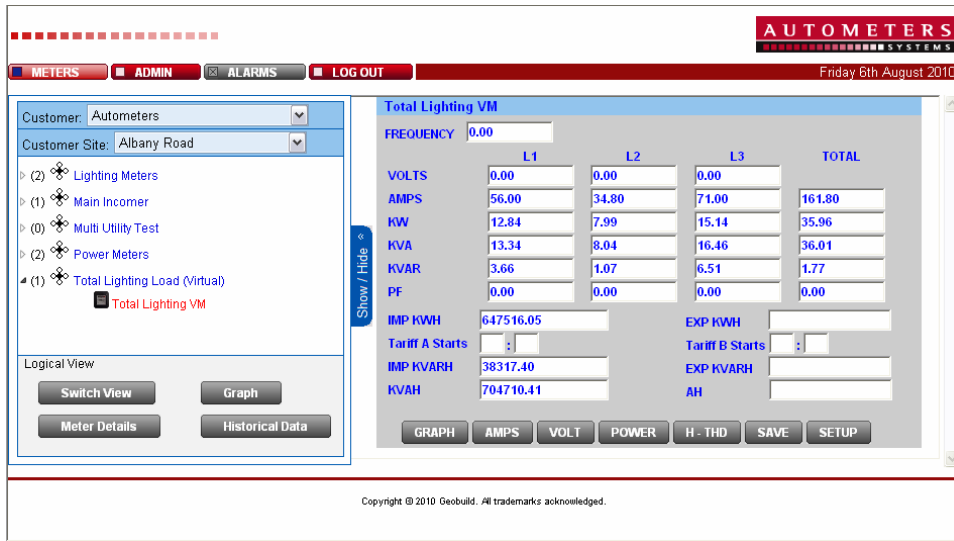
A Multi page PDF File will be displayed showing individual meters, by Name, Fuel Type etc with a Summary Page giving a total cost of energy for the selected group.



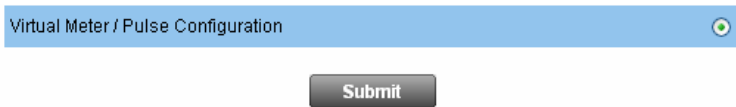
As an alternative, by clicking on the **Report** button a Summary Report can be created. This gives the consumption only per meters for quick group analysis.

# Virtual Meters

Virtual meters can be created from *actual* meters in the form of either Summated or Net calculations. This can be done for both MEters and Pulses and once created these meters can then be viewed in the Logical view and Operate, Log and export data as if they were actual devices. These are especially useful when total loads are required to be known for either utilities or individual clients etc



Meters are created via the ADMIN tab of the can be created from *actual* meters in the form of

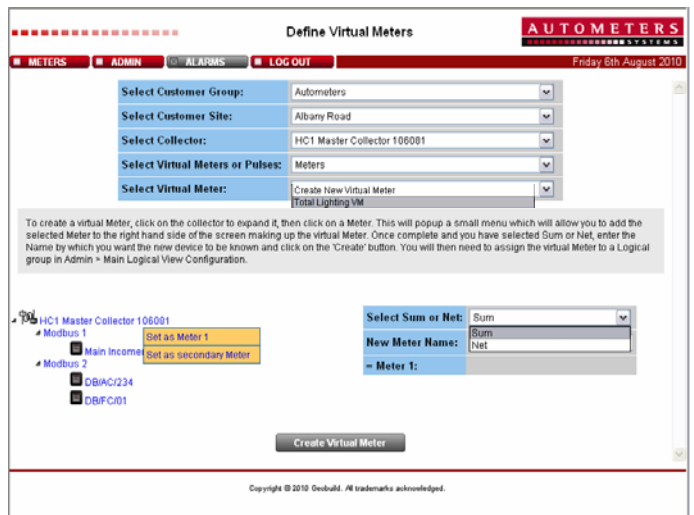


Virtual Meter/Pulse are names and a simple click and select procedure is followed to create create either a Sum or Net device.

Virtual



Once created the new device is listed under a Virtual heading in the Logical view Configuration where it can be allocated to any logical group.



# Invoicing


Manual and Automatic Invoicing is available, if subscribed, from the Horizon Web. These can be raised for single or grouped meters based on the Logical view configuration. Separate templates can be created for each logical group enabling specific departmental or customer invoicing. Invoices can be created with customer logos and all invoices are created with sequential numbering.

All elements of the invoice are programmable including the Description

Demand Number  
**D000030**

Meter Reading Certificate

Date Issued: 03/08/2010  
Our Ref:  
VAT Reg. No.: 298 3762 20



---

Demand Number  
**D001151**

VAT Invoice

**AUTOMETERS**

Date Issued: 07/08/2010  
Our Ref: Iain Stanway  
VAT Reg. No.: 815 8882 01

Acting as Agent for:  
Autometers Systems Limited

Autometers Systems Limited  
Metering and Monitoring Specialist

Invoice To	Premises
Autometers Systems Limited 4b Albany Road Chorlton cum Hardy Manchester Lancs M21 0AW	Meter House 245 Monitoring Road Stafford Staffs ST16

For any queries please contact Iain Stanway 0161 861 9056

New Charges Fri, 06/08/2010 00:00 - Fri, 06/08/2010 23:59											
Due Day	Meter Ref	Previous	Present	Usage	PPU	VAT	Energy Cost	CCL	Stndg Chrg	VAT Amt	Gross Amt
20080810	DBAL125 Tariff A	140.61	140.78	37		0.7534 17.50%	427.75	48.17	48.75	48.83	638.68
20080810	DBAL125 Tariff B	882	870	9		0.7534 17.50%	42.06	48.04	48.37	48.48	82.48
20080810	DBAC024 Tariff A	142589	142630	37		0.7534 17.50%	427.75	48.17	48.75	48.83	638.68
20080810	DBAC024 Tariff B	889	874	9		0.7534 17.50%	42.06	48.04	48.37	48.48	82.48
<b>Totals:</b>				89			896.66	104.42	105.96	106.79	1372.26

**Remittance Advice - Please include with your Payment**

Send Payments/Remittances to:

4b Albany Road  
Chorlton cum Hardy  
Manchester  
Lancashire  
M21 0AW

Please Make Cheques Payable to:

Autometers Systems Limited

Tenant Name: RJJ Ogden  
Tenant Ref: RJJ 01  
Date Issued: 07/08/2010  
Demand No: D001151

Charges on This Invoice: £72.96

Amount Paid: .....

Each line represents a meter with previous and present readings, PPU and standing charges all shown clearly for client information.

A remittance advice slip is included for return payment

Define Billing for Emailing **AUTOMETERS**

Friday 6th August 2010

METERS
ADMIN
ALARMS
LOG OUT

Select Customer Group: Autometers

Customer Site: Albany Road

Select Setup: test Invoice

Description: test Invoice

Select Item Type to Email: All Meters in the Logical Group

Select Group: Power Meters

Select Billing Template: Autometers Standard

Select Email Group: Iain MFM Test

Interval: Monthly

Next Data Due: 01/09/2010 00:05

Update Delete

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Invoices can be emailed Automatically in user defined intervals, to user defined groups. The initial time and date of these invoices can be set to co ordinate with client requirements.

For further information relating to the Horizon System, or to arrange a demonstration, contact our Horizon Specialist team;

Autometers Systems Limited

Telephone : 0161 861 9056

Email : [sales@autometers.co.uk](mailto:sales@autometers.co.uk)

## NOTES

Information is correct at time of publication. Product development is continuous and Autometers Systems Ltd reserves the right to make alterations without notice. Information or description may therefore differ from the descriptions and illustrations in this publication.