Synergy

IM5208 Hanwell Synergy

User Manual

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Document History

Document Number: IM5208

Issue No.	Issue Date	Changes	By
0	10th April 2013	First Draft, not for release	DJR
1	16th April 2013	First issue. Released with Synergy Version 1	DJR
2	30th September 2013	Synergy Version 1.2.1	CRB
3	8th January 2014	Synergy Version 1.3.1	CRB
4	16 April 2014	Synergy Version 1.4.0	RAB
5	30 June 2014	Synergy Version 1.4.2 (Decimal Places facility)	RAB
6	4 July 2014	Synergy Version 1.4.2 (Decimal Places facility, new screenshot, Fig 98)	RAB
7	9 October 2014	Synergy Version 1.4.6	RAB
8	3 December 2014	Synergy Version 1.4.7. New section on setting up Local Alarms. Additional information on setting up email alert global settings.	CRB/RAB
9	28 January 2015	Synergy Version 1.4.8. Better representation of channel alarms.	RAB/SH
10	1 June 2016	Synergy Version 1.5.2. Edit password depth, ARB, Reports Folder, Company details, Reports, Add Multiple Sensors, Scale, TME MM7000	SH
11	22 July 2016	Add IMC SMS Unit.	CRB

1 Introduction to Synergy

Synergy is a platform for Hanwell wireless monitoring, and offers a modern Browser-based experience with a wide range of user options.

1.1 Introduction to Synergy Functionality

Data is mainly generated by wireless Hanwell sensors and collected by wireless receivers. The data is relayed to the server by TCP/IP, USB or GPRS and is stored in an SQL database. The data is then available for viewing using a local management application or via a standard Web Browser.

Synergy is:

Scalable: Synergy can be installed on a single site with 1 user up to 100's of sites with 1000's of users.

Browser-based: Synergy uses commercially available browsers such as Explores or Firefox to view the data.

SQL Database: Synergy uses an SQL database- the modern method making it easy to access data. SQL database could be used by 3rd -party tools if required/commercially desirable.

Synergy:

- allows you to rapidly change what you need to, given the necessary permissions
- allows you to select any combination(s) of sensors to form 'Views' with all subsequent operations (alarms, reporting) only operating on that subset
- gives you control of exception handling protocols, the various options do not have to be generically configured by the Administrator
- has extensive reporting capabilities, with custom reports available as easily accessible plug-ins to the main system (future proofing/ready customisation)
- has a totally separate GUI (Graphical User Interface) from the underlying hardware
- is a services-based system
- architecture ensures that support for as yet unknown hardware can be readily integrated (future proofing) by modularising the hardware services and accessing the database via a universal interface module
- uses Browser technology as the primary view (optionally over the web BUT NOT NECESSARILY, could be all Intranet). Browser support will likely be there as long as computers run, the risk of problems caused by Operating System Providers is therefore minimised
- allows seamless support for large numbers of sensor communication protocols, and very large numbers of sensors over multiple sites.

2 Software Installation

See the Installation Manual, document number IM5207.

3 Hardware Installation

3.1 SR2 Base Station

3.1.1 Pre-requisites

This section lists pre-requisites – physical and virtual – needed to configure and install Hanwell SR2 Smart receivers for operation on a network. This information can in most cases be obtained from your IT department.

The network information must be available prior to the commissioning of the system.

3.1.2 Physical Pre-requisites

The following pre-requisites assume that a final location for the Smart receiver(s) has been defined after a radio survey. If this is *not* the case, then the following should be factored in to deciding the final location.

There should be:

- A 24 hour mains outlet within 1.5m of the planned location.
- An active 10/100BaseT (RJ45) LAN socket at the planned location which is patched into the same network as the PC(s) from which Synergy is to be run.

  If this is greater than 1m from the planned location then a suitable straight through CAT5 lead is required. This can in most cases be supplied by the IT department.
- A suitable wall or structure on which the Smart receiver can be mounted so that the antenna is vertical.

The planned location should **NOT**:

- be in an area subject to high temperature or humidity levels
- have any metallic objects within 0.3m of the antenna in any direction.

This includes any structures hidden within walls, pillars etc.

3.1.3 Virtual Pre-requisites

Each Smart receiver requires a unique static IP address, which should be assigned by the IT department. This IP address should be accessible from the PC on which the software will run.

IP Address **For example, 192.168.1.100**	___ . ___ . ___ . ___
Subnet Mask **For example, 255.255.255.0**	___ . ___ . ___ . ___
Gateway Address **For example, 192.168.1.1**	___ . ___ . ___ . ___

If the IT department requires a MAC address in order to assign an IP address, contact Hanwell Instruments to request it. The MAC address is also listed on a label on the 'daughter' (or Wiznet) P.C.B. inside the Smart Receiver, in the format:

xx : xx : xx : xx : xx : xx.

3.1.4 Installing the SR2 controller

There are four steps to installing an SR2:

- Wall-mounting the SR2.
- Connecting the Receiver unit.
- Connecting the Power & Network connections to the SR2.

Note: ***Do NOT power up the SR2 until ALL these steps are complete!***

- Configuring the SR2 in Synergy.

In addition, you can change the default hardware settings of the SR2 (see section 6), or connect local sensors (see section 6.2).

3.1.5 Wall mounting

The SR2 has a key hole and two screw holes in its back plate. These should be used for wall-mounting the unit. A drilling template is supplied.

Note: We recommend the radio reception at the chosen location is thoroughly tested before final wall-mounting!

1. Use the drilling guide to position the screws.
2. Mount the SR2 to the wall and screw into place.

3.1.6 Connecting the receiver unit

1. The Receiver Unit will come supplied with 3m of cable pre-wired to it. This should be wired to JP14 on the SR2.
2. Open the SR2.
3. Feed the RX Receiver Unit cable through one of the glands in the base of the SR2.
4. Connect the cable to JP14 as below:

Pin 1: Unused (on left)

Pin 2: Unused

Pin 3: Yellow (RX data)

Pin 4: Red (RX power)

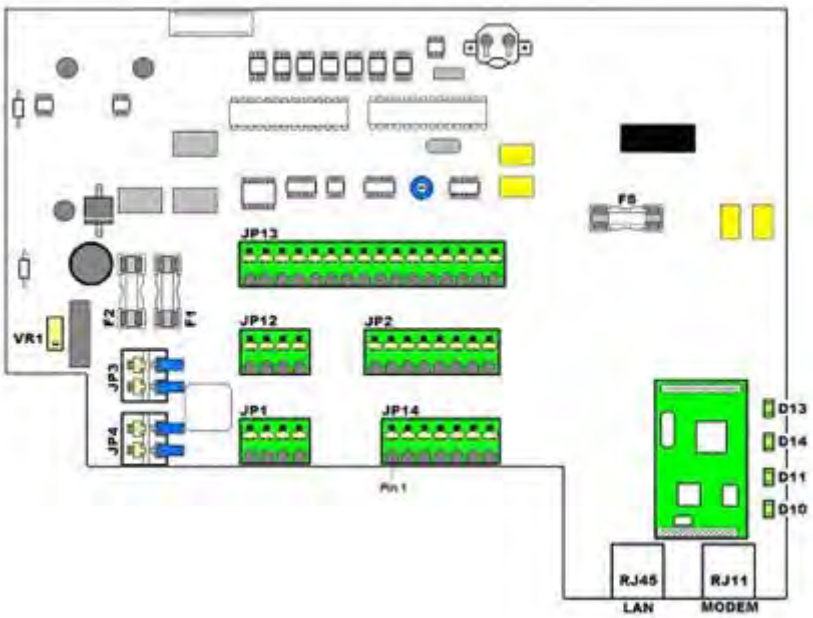
Pin 5: Blue (Signal Strength)

Pin 6: Unused

Pin 7: Green (GND)

Note: Incorrect wiring can seriously damage the SR2; always double-check the wiring before connecting the power!

5. Screw the aerial onto the Receiver Unit.



SR2 Main Components – Schematic

3.1.7 Connecting the Power and Network

1. Check that fuses **F1**, **F2** and **F5** are fitted.
2. Check that the **coin cell** is fitted (with the positive side topmost).
3. Connect the **UPS battery** to the leads: *double-check the polarity!*
4. Close the front panel and screw in place.
5. Connect the mains power and switch on.
6. Confirm that the **Mains** LED comes on.
7. Confirm that the **Receiver** LED comes on.
8. Connect the LAN cable from the LAN socket on the SR2 to the enabled Ethernet socket.
9. Confirm that the **Network Link** LED comes on.

3.2 Configuring the Smart Receiver on a Network

The Hanwell Smart Receiver(s) must be configured before use. This is normally done on the network but in some instances it may be necessary to connect to the Smart Receiver(s) directly.

Before the Smart Receiver(s) can be configured, fixed IP addresses should be assigned to each unit by the network manager. You should also know the Subnet and Gateway addresses. The Smart Receiver should be connected to the network using a straight-through network lead (supplied). Use the following steps to assign the IP addresses to the Smart Receiver(s):

Step 1

Run the **Synergy Management Tool**, see **Synergy Management Tool** instruction manual (document number IM5210).

Step 2

Select **Tools** from the main toolbar and then click on **SR2 Network Configuration**. Click on **Search** to start searching the network for connected SR2s.

Step 3

The program will search for any **SR2s** on the network; all **SR2s** found will be displayed in the **Board List**. If there are no SR2s found you will need to get the IT department to check the network. The SR2s can be connected directly to a laptop using a crossover cable to confirm their operation.

Step 4

Click once on a unit in the **Board List** to select it.

Enter the **Network Configuration** details as specified by your network manager and or as found on the Synergy Pre-requisites document (document number GD5209). This consists of the following:

- Local IP
- Subnet
- Gateway
- Server IP (should be set to match the Local IP address)
- Port

The **Port** details can be found on the Synergy Pre-Requisites document (document number GD5209), IMC recommend using the default **Port** 10992 for all **SR2s**.

Step 5

Enter additional **Configuration** details as follows:

Set the **Network Mode** to the option **Server Mode**.

Check the following options are **NOT** ticked:

- Enable Serial Debug Mode
- Enable DHCP Mode
- Use UDP Mode

Step 6

Click on the **Serial Configuration** tab and check it is as follows:

Smart Receiver Setting	
Speed	115200
Parity	None
Data Bit	8
Stop Bit	1
Flow Ctrl	CTS / RTS

Step 7

To program the **SR2** click on **Setup**.

Repeat steps 3 to 7 for any additional SR2s on the network.

3.3 Setting the Smart Receiver Clock and Erasing Memory

Smart Receivers are configured using the ***SynergyManagmentTools*** or ***SynergyRemoteManagementTool*** utilities, (see *IM5210-1 Synergy Management Tool* manual and *IM5242-1 Synergy Remote Management Tool* manual for more details).

The Smart Receiver has an on-board clock used for time/date stamping data. In Synergy most date time values, including data values are stored as Greenwich Mean Time, (GMT); setting the clock from one of the Management Tools will automatically set the SR2 clock to GMT.

Note: RadioLog uses local time to store data; which is why an SR2 cannot be shared between a Synergy and a RadioLog installation.

Ideally, you should set the clock so that the time is in synch with Synergy Server time: if it is out of synch you may get false Elapsed Time Alarms.

3.4 Advanced Hardware Configuration

The SR2 is sent out set to its default hardware configuration. These settings can be changed via a set of 8 DIP switches on the back of the display PCB. Switches 5-8 inclusive are not used and should be set to **OFF**.

3.4.1 Fallback Operation

The SR2 behaviour in the event of network or mains power failure. Set on DIP switch 1.

ON (default)	In the event of a mains power failure, the SR2 will switch to fallback mode. The Receiver will only be powered up for 5 minutes in every 20. This will prolong the power of the on-board battery but may cause gaps in the logged data. In the event of a network communications failure for 60 minutes, the SR2 will switch to fallback mode. The Receiver will only be powered up for 5 minutes in every 20. This will increase the amount of time data can be logged before the system wraps-around and starts to overwrite older data.
OFF	In the event of a network communications or mains power failure, the SR2 continues to log all data received until its on-board back up power is depleted. If network communications is not restored when the memory becomes full, older data will be overwritten.

3.4.2 Alarm Relay Operation

The SR2 has an on-board 12V relay which can be connected to a buzzer or beacon. The relay is normally held closed. It opens in the event of any alarm on the assigned Grids. DIP switch 3 sets which alarms the relay opens on.

ON	Network Fail Alarm: The relays will go off in the event of all alarms on the assigned Grids in the software or a network communications failure (no network communications for 60 minutes). When the network communications are restored, the relays will be reset.
OFF (default)	Normal Operation: The relays will respond to all alarms on the assigned Grids in the software.

3.4.3 Assigning SR2 Alarms

SR2 and MS1000 alarms are assigned to specified Sensor Alarm(s) using Sensor Groups and Local Alarms. For details on how assign the SR2 Alarm Relay, or an MS1000 channel, to activate on specific sensor alarm(s), see sections 3.4.4 and 0.

3.4.4 Alarm Relays

The SR2 has three on-board relay outputs which can be used to send alarm notification to a beacon or via an auto-dialler (or other 3rd party device).

These are connected via **JP2**, as follows:

Pin	Connection	
1	Relay 1 N/O	This relay closes and a nominal 12V appears on Pin 1 in the event of any alarm on the any of the assigned Grids. It is fused via F1. This is suitable for driving alarm beacons.
2	Relay 1 GND	
3	Relay 2 common	This is a changeover relay responding to alarms in the software. When no alarms exist, pins 3+5 are connected. When an alarm exists, pins 3+4 are connected.
4	Relay 2 NC	
5	Relay 2 NO	
6	Relay 2 common	This is a changeover relay indicating the mains power state of the SR2. When power is present pins 6+8 are connected. When power fails pins 6+7 are connected.
7	Relay 2 NC	
8	Relay 2 NO	

3.4.5 MS1000 Control Panel

The SR2 can be connected to a Hanwell MS1000 Control Interface. The connections are to **JP12**, as follows:

Pin	Connection
1	12V OUT
2	TX +
3	TX -
4	GND

4 Logging In

To view the Synergy website, you will need to open a browser and navigate to the Synergy site.

If you are working on the Synergy Server itself, type http://localhost/synergy on to the Browser's address field.

If you are working on a another computer or device, you will need to use the URL supplied by your System Administrator or IT Support provider to reach the Synergy server, this may be similar to \\ServerName\synergy for a LAN connection or www.mycompany.com/synergy for an internet connection.

Figure 1

Once you have navigated to the correct URL, the login screen will be displayed, as in Figure 1 above.

Enter your username and password to login, then click **Login.**

Note: passwords are case sensitive.

If you login with a Username with the **Access Archive Database** Permission set, then the choose database screen will be displayed as in Figure 2 below.

If your Username does not have the **Access Archive Database** Permission set, then Synergy will go straight to the live system Home screen.

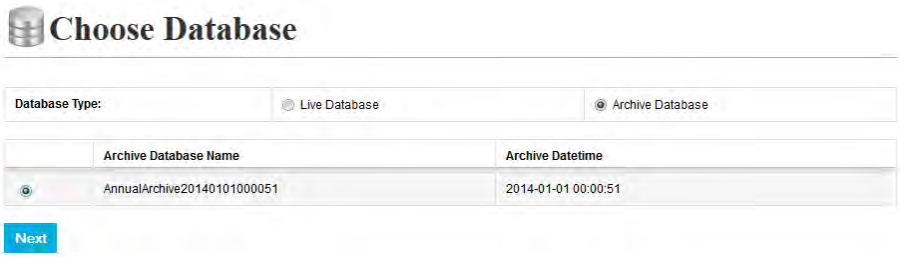
4.1 View Archived Database

For detailed information about the Synergy Archive / Backup system, see the ***IM5287 Hanwell Synergy Archive / Backup Manual***.

Figure 2

To access the live Synergy system, make sure **Live Database** is selected and click **Next**. To access Archived data, click **Archive Database**, select the required Archive Database, see Figure 3 below, and then click **Next**.

Figure 3



5 System Configuration Admin

This Section will guide you through the setting up of Users, User Groups, Access control, System Configuration, Sites, Device Configuration, Account settings, System Overview and Sensor Groups.

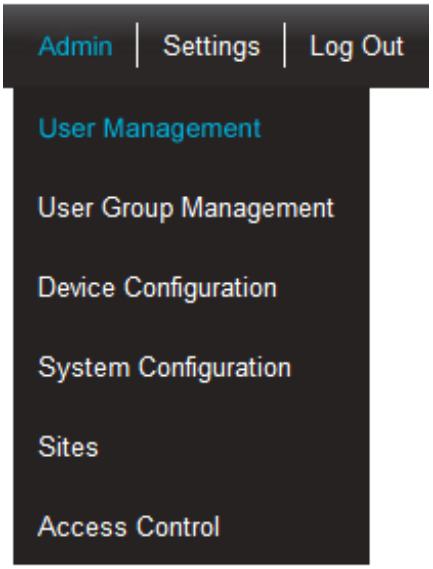
Note: The functionality described in this Section only applies to System Administrators or Users who have been given System Administrator access rights.

5.1 User Management

User Management allows you to add Users, edit Users add External Contacts and edit External Contacts.

5.1.1 Adding and Editing Users

Figure 4

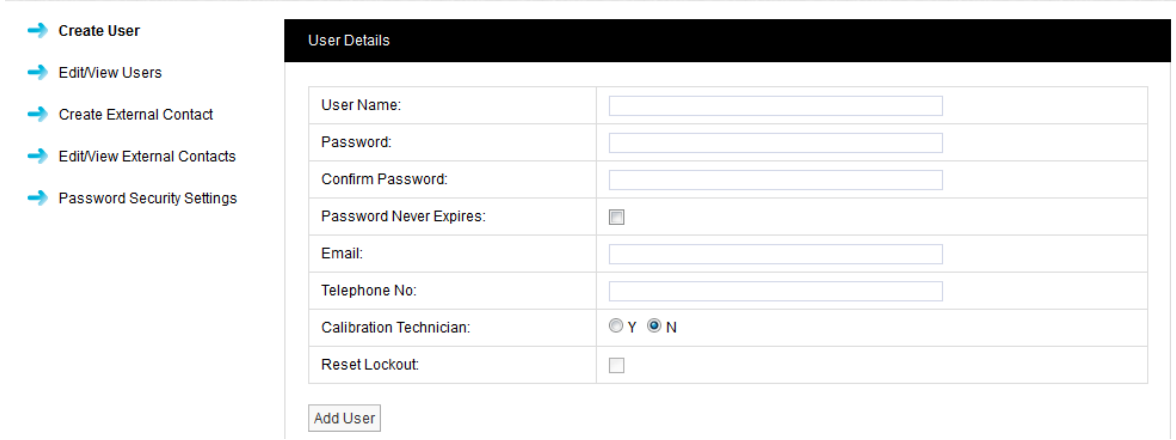


Select **Admin** then **User Management** from the drop down menu to access the **User Management** section.

The **Admin** menu is located at the right hand side of the top menu bar.

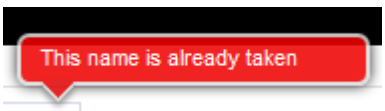
After selecting User Management a new window appears see Figure 5 below.

Figure 5

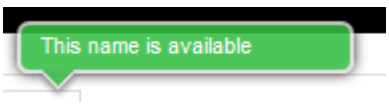


5.1.2 Add User Name

In the dialog box above (Figure 5) enter a new User Name if the user name is already taken the following message will be displayed.

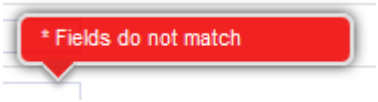


Select another **User Name** until the following message is displayed.



5.1.3 Add Password

Enter a password into the Password field, now re-enter your password into the **Confirm Password** field. It is not recommended to cut and paste the password as this would copy a mistake to the **Confirm Password** field. If when typing your password into the **Confirm Password** field you make a mistake, the following message will be displayed.



If you have re-typed your password correctly then you will be able to proceed to the next step.

By default, Synergy requires passwords to be at least four characters long. The Administrator will not be able to set a minimum password length of less than four characters. This is configurable by the Administrator. The User ID and password cannot be the same.

Administrators may also require that user passwords have an alphanumeric and mixed case. In this case, passwords must have numeric characters, upper and lower case letters.

5.1.4 Enter Email Address

This field allows you to enter your email address this is used to receive the following:

- email alerts generated from the system
- email reports.
- password reminders.

5.1.5 Telephone No:

This field allows you to enter your mobile phone number. This is used to receive the following:

- SMS text alerts generated from the system.

The number should be entered in the following format:

+44 123 987654

5.1.6 Calibration Technician

This allows the user to be set up as a calibration technician on the system. The default setting is **N** a user with the default setting **N** will be able to use the system to the extent of their user rights and have the ability to enter calibration data. A user that is set up with the setting **Y** will only allow that user to enter calibration data, this setting would be used to allow an external calibration engineer to come in and calibrate the system but not change anything else.

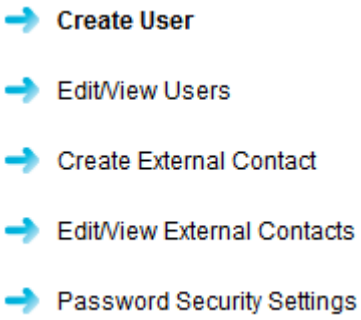
When you are happy that all details are correct, click the **Add User** button.

5.1.7 Edit/View Users

Edit/View Users allows you to edit existing user's details, the following functions are available:

- **Edit**, allows passwords to be changed along with email address, phone number and Calibration Technician status.
- **Delete**, allows single or multiple users to be deleted.
- **Privileges**, allows users to be set with viewing rights.

Figure 6



To edit new user, select Edit/View Users

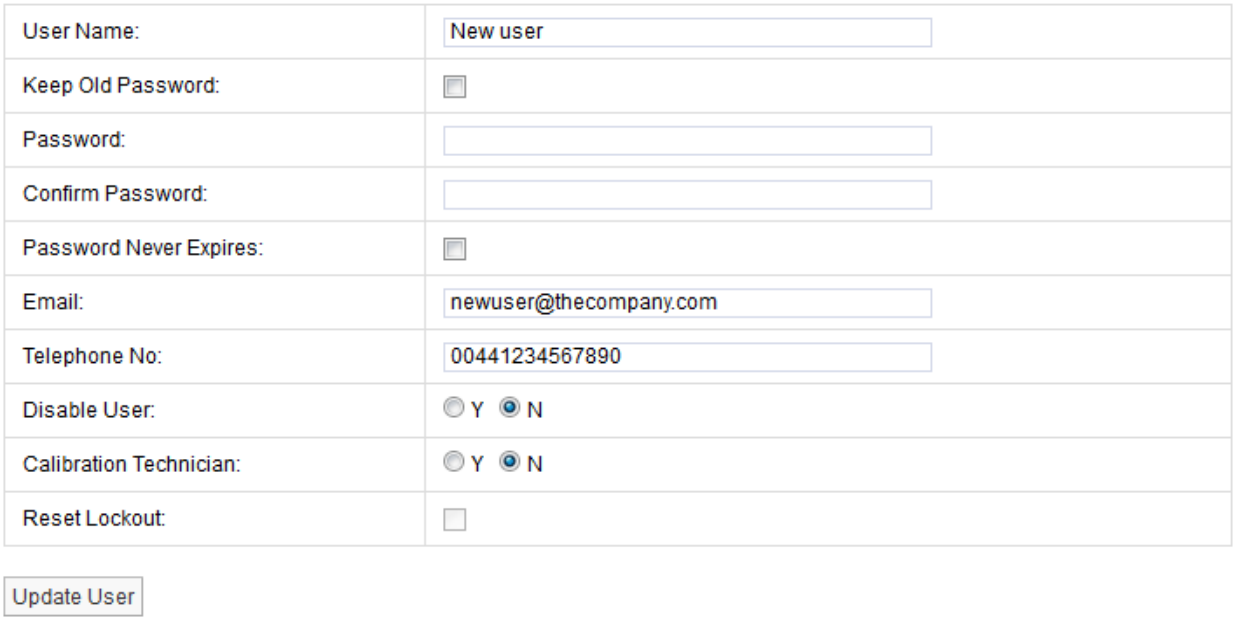
After selecting Edit/View Users a new window opens (see Figure 7).

Figure 7

5.1.7.1 Edit

To edit a user select **Edit**, after selecting **Edit** a new window opens (see Figure 8).

Figure 8



In this screen you can change the users email address, mobile phone number or calibration technician status. If you wish to update the user without changing your password tick **Keep Old Password** and the existing password will be populated in the password dialog boxes. If you wish to change your password follow steps in 5.1.3.

When you are happy that all details are correct, click the **Update User** button.

5.1.7.2 Reset User Lockout

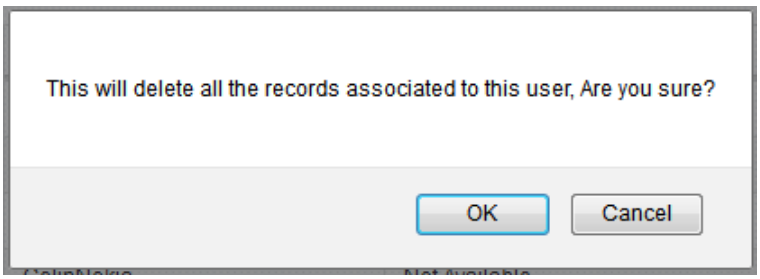
Locked out users can be reset from this screen, by selecting **Reset Lockout**, clicking **Update User**.

5.1.7.3 Delete User

There are three methods for deleting users:

1. Select the word Delete (see Figure 7) this will delete the record selected, once you are happy with your selection confirm delete by selecting OK on the warning dialog box (see Figure 9).

Figure 9



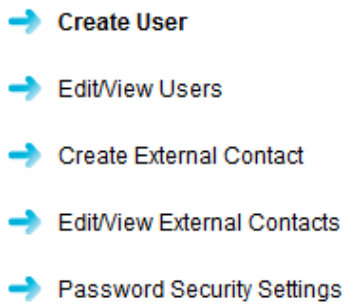
2. If more than one user is to be deleted select the tick box to the left of the name, tick all users to be deleted (see Figure 7). Once you are happy with your selections click the **Delete Users** (see Figure 7) select confirm delete by selecting OK on the warning dialog box (see Figure 9).
3. By clicking the tick box next to **Username** all users will be deleted, WARNING this will select all users for deletion (see Figure 7). Once you are absolutely sure you want to delete all users click **Delete Users** (see Figure 7) select confirm delete by selecting OK on the warning dialog box (see Figure 9).

WARNING: Deleting users cannot be undone.

5.1.8 Create External Contacts

External contacts are used when there is a requirement to email reports or send SMS alarms to people who are not Synergy users.

Figure 10



To create external contacts, select **Create External Contacts**.

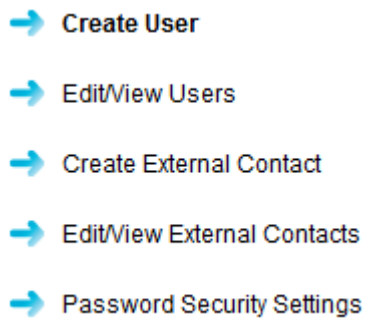
After selecting **Create External Contact** a new window opens, see Figure 11 below.

Figure 11

Enter User Name, Email and Telephone No as in section 5.1.2 for an external user there is no requirement for a password as these users do not have access to Synergy.

5.1.9 Edit/View External Contacts

Figure 12



To Edit/View external contacts, select Edit/View External Contacts

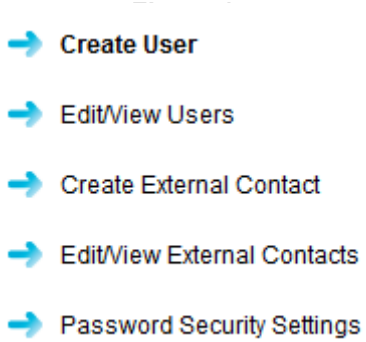
After Selecting **Edit/View External Contact** a new window opens (see Figure 13)

Figure 13

To edit external user details follow steps in section 5.1.7.1, to delete external users follow the steps in section 5.1.7.3.

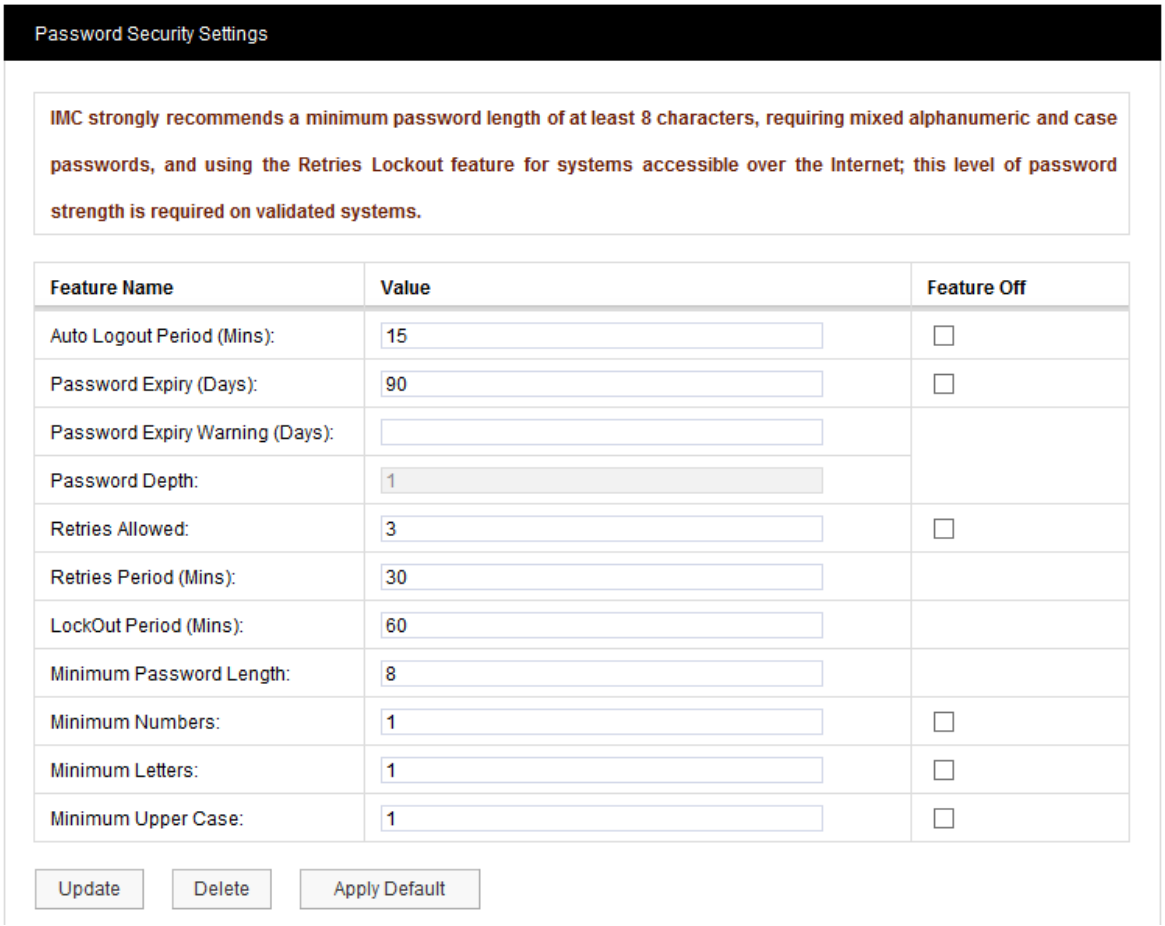
WARNING: Deleting users cannot be undone.

5.1.10 Password Security Settings



To Edit/View Password Security Settings, select **Password Security Settings**; once selected, the Password Security window will be shown see Figure 15 below.

Figure 15



The **Password Security Settings** window is used to set the system's login security features. Login security features apply globally to all logins; with some exceptions for the Admin User account, as detailed below.

Individual features can be disabled by selecting the associated **Feature Off** tick box.

Clicking **Apply Default** will return Password Security features to the default settings; click **Update** to apply any changes made.

5.1.10.1 Auto Logout Period

If a login session is left unattended, then the system will log the user off after the Auto Logout period. The auto logout period can be set by the Administrator.

When Auto Logout activates, the browser will continue showing the last screen actioned by the user; and if on the live view, data values will continue to update on the screen. However; when the user tries change window or enter a value, then the browser will show the login screen require the user to log back into the system.

The Auto Logout Period can be set between 5 and 60 minutes, the default period is 30 minutes. On W701 Validated systems, Auto Logout cannot be disabled, and the default period is 15 minutes.

5.1.10.2 Password Expiry

Passwords will automatically expire, and need to be changed, after the Password Expiry time.

By default user passwords are set to expire in 90 days, this is selectable by the Administrator.

Password Expiry does **NOT** apply to the Admin User password, which is always set to never expire.

Users are warned on login within 10 days of expiry, and given the option to type in a new password. This can be done any time between the first warning and expiry. The warning time is settable by the Administrator. This will be a countdown warning and will decrease as the expiry deadline approaches.

Once a password has expired no further access will be allowed for that user until they enter their expired password at which point the system will force a change before any further progress can be made.

5.1.10.3 Password Depth

Note: This feature is only available on systems with a W701 licence.

The Password Depth sets the number of previous passwords that cannot be immediately reused by a user. A password depth can be set globally, between 1 and 10.

5.1.10.4 Retries Allowed

This is the number of failed login attempts allowed for a username, within the **Retries Period**, before the user is locked out. Locked out users are informed of their locked out status, when they try to login.

Lockout Period is the time that a user will be locked out after the **Retries** limit is exceeded.

By default users will be locked out for 60 minutes after three consecutive failed password login attempts within a 30 minute period. Where a lockout occurs, the user will be informed of the lockout period by a message on the browser, and the lockout will be recorded in the activity log.

The number of Retries Allowed can be up to 10. The Lockout Period can be up to 1440 minutes; and the Retries Period can be between 10 and 1440 minutes. The Admin User is never locked out.

A lockout value of 0 will lock out users until reset by the Administrator. Any Administrator lockout will be for 30 minutes, (this prevents the Administrator becoming permanently locked out).

A ***Reset Lockout*** checkbox is available on the ***User Details*** screen. This control will normally be greyed out, and will only become active when the user is currently locked out. This control is only accessible by an Administrator.

Administrators can reset a locked out user from the **Edit/View Users** window, see section 5.1.7.1.

5.1.10.5 Username Reuse

Deleted usernames cannot be reused for the period of time specified by **Username Reuse**.

If an Administrator types a Reuse blocked username into the ***User Details*** screen, a warning will be displayed.

By default, Username Reuse checking is disabled; on **W701 Validated system** the default is 90 days.

5.1.10.6 Minimum Password Length

By default, Synergy will require passwords to be at least four characters long, the Administrator will not be able to set a password length of less than four characters. This is configurable by the Administrator. The User ID and password cannot be the same.

5.1.10.7 Accepted Value Ranges

The list below details the setting ranges for each option:

Auto Logout – 5 to 60 minutes.

Password Expiry – 30 to 730 days.

Retries Allowed – 1 to 10 attempts.

Lockout Period – 0 to 1440 minutes; 0 will lockout users until reset by the Administrator.

Retries Period – 10 to 1440 minutes.

Password depth – 1 to 10; this feature is only available on system with a W701 licence.

Minimum Password Length – 8 to 50 characters.

Minimum Numbers, Minimum Letters, and Minimum Upper Case – 1 to 50, these values are consistency checked, against minimum length and each other.

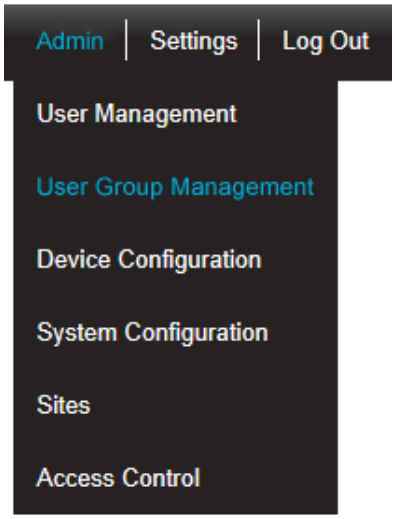
5.2 User Group Management

This section describes how **User Groups** are created and used. **User Groups** allow viewing **Privileges** to be set for a group, users add to that group inherit the viewing **Privileges** associated with that group. Any previous viewing Privileges assigned to an individual user will be overridden by the viewing **Privileges** associated with that group.

To learn about setting **Privileges** for individual users see section 5.2.4.

Privileges are the viewing rights that allow a user to see **Sites** and **Zones**. Through **Privileges** a user can be restricted to the number of **Zones** they can see this is especially useful on very large systems.

Figure 16



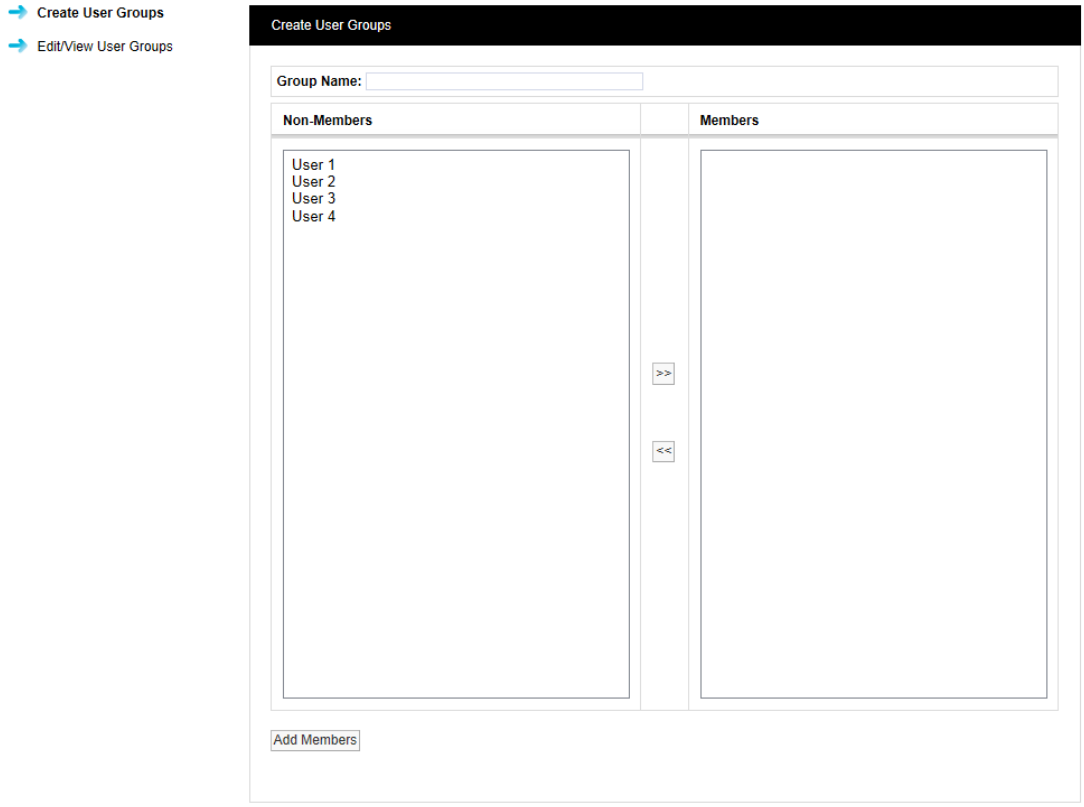
Select **Admin** then **User Group Management** from the drop down menu to access the **User Group Management** section.

The **Admin** menu is located at the right hand side of the top menu bar.

After selecting **User Group Management** a new window appears, see Figure 17 below.

5.2.1 Create User Groups

Figure 17



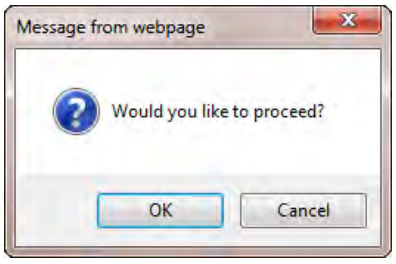
To create a **User Group**, enter a name for the **User Group** see examples below:

- **T+RH sensors** for a small site this could be used to allow access to all of the temperature and humidity sensors.
- **T+RH sensors 1st Floor** for a larger site this could be used to allow access to all of the temperature and humidity sensors on one floor.

Select the users that you would like to add to the group, all available users that have not already been associated with a group will be shown in the left column. To select more than one user hold the **Ctrl** key and select the required users. Once you are happy with the selected users click the double left arrows located between the columns, this will move the users to the right column.

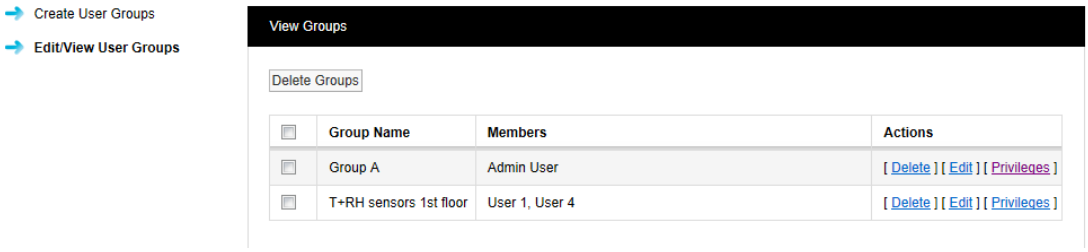
Users can be de-selected by selecting them in the right column and clicking the double left arrows. When you are happy with your selection, click on **Add Members**. You will be asked if you would like to proceed, see Figure 18 below.

Figure 18



Select **OK** to proceed or **Cancel** to abort.

5.2.2 Delete User Group



To **Delete** a **User Group** select **Delete** in the line corresponding to the **User Group** to be deleted. Once Delete has been selected you will be asked if you would like to proceed, see Figure 19 below.

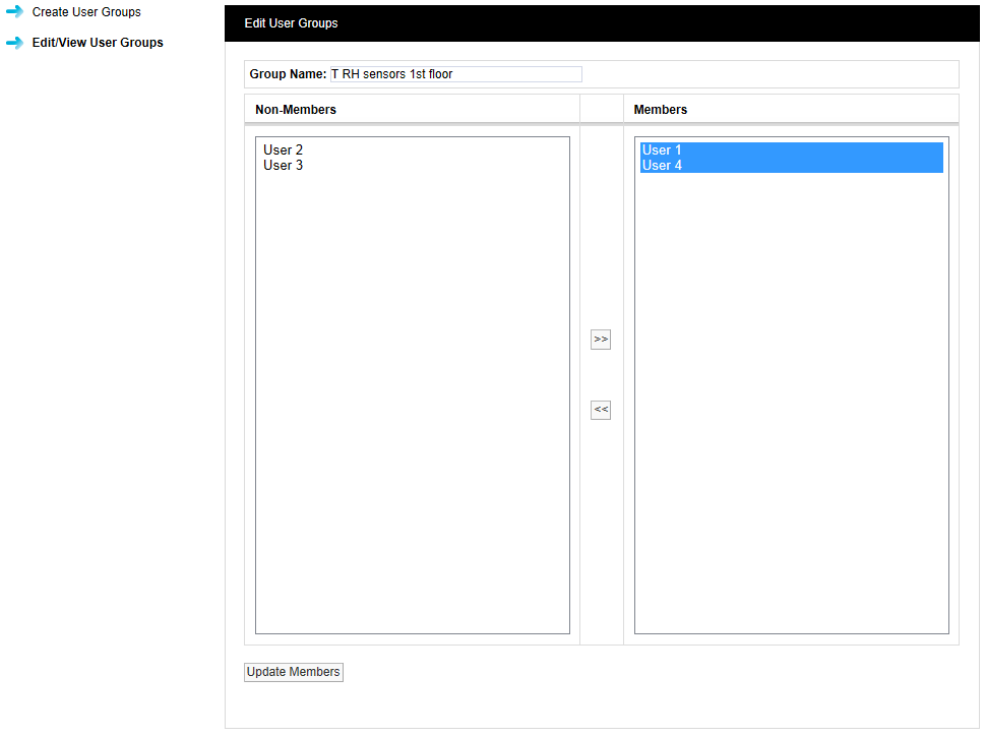
Figure 19

Select **OK** to proceed or **Cancel** to abort.

5.2.3 Edit User Group

To **Edit** a **User Group** select **Edit** in the line corresponding to the **User Group** to be edited. Once **Edit** has been selected the **Edit User Groups** window will appear, see Figure 20 below.

Figure 20



Users can be removed from the User Group or added, to remove Users highlight them in the right column and click the double left arrows. To select Users highlight them in the left column and click the double right arrows.

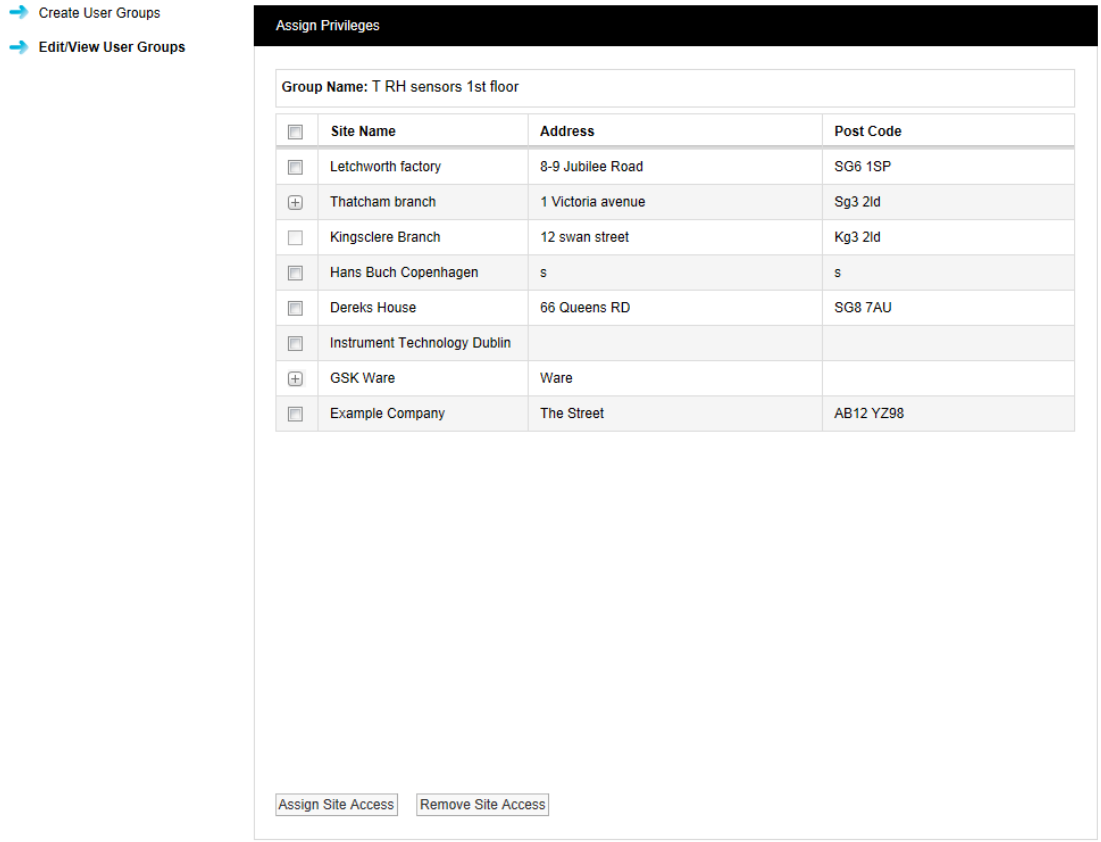
When happy with your selections click **Update Members**, you can't remove all the members from a group you always have to have at least one member in a **User Group**. If you want to remove all the members then the **User Group** needs to be deleted.

When a **User** is removed from a **User Group** that **User** will require **Privileges** adding, see section 5.1.8 to add **Privileges**.

5.2.4 User Group Privileges

To set the **Privileges** for a **User Group** select **Privileges** in the line corresponding to the **User Group** to be edited. Once **Privileges** has been selected the **Assign Privileges** window will appear, see Figure 21 below.

Figure 21

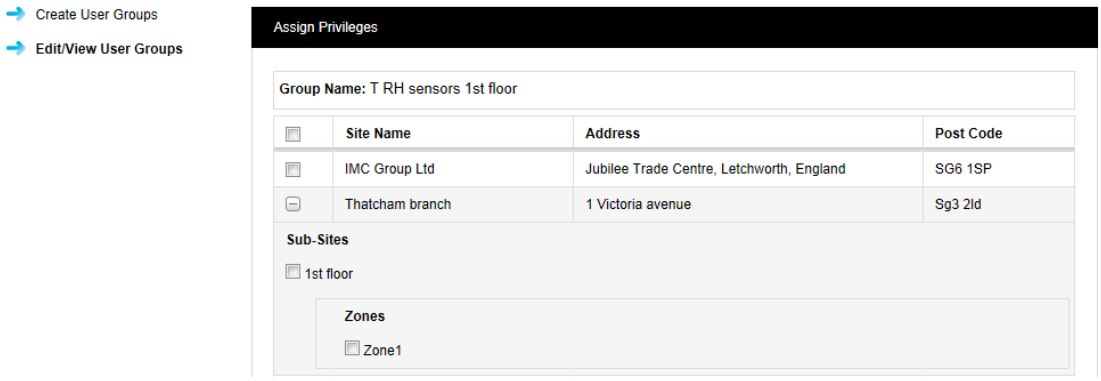


All **Sites** that have been added to Synergy will be visible in the **Assign Privileges** window. Sites with an empty tick box are top level Sites with no Sub Sites associated Sites with a + symbol have Sub Sites associated, see Figure 22 below.

Figure 22

To view **Sub Sites,** select the + symbol to see the available **Sub Sites**. Selecting the + symbol will reveal the Sub Site details, see Figure 23 below.

Figure 23



To allow the **User Group T RH sensors 1st floor** to view the sensors from the Thatcham branch **1st floor** select the tick box next to **1st floor**. This will now allow all Users added to this group to be able to see those sensors only.

When you are happy with your selections click on **Assign Site Access**, see Figure 24 below.

Figure 24

To remove access the process is the reverse of the above and when happy with your selections click on **Remove Site Access**.

Some sites will have more **Zones** and sensor types than other however the process for allocating **Privileges** is the same. Depending on what the system administrator want an individual User to see as many or as few sensors or **Zones** can be selected.

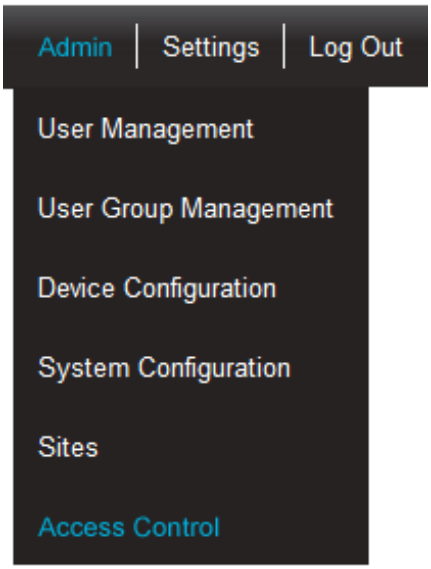
See section 5.1.8 for more information on setting **Privileges**.

5.3 Access Control

This section describes how users are granted **permissions**. Permissions are system access rights such as **Edit**, **Delete** etc.

Synergy allows the creation of **Roles** which are assigned with access permissions. **Users** are added to **Roles** and inherit the permissions assigned to the **Role** thus avoiding the repetitious and error prone task of adding multiple individual users.

Figure 25



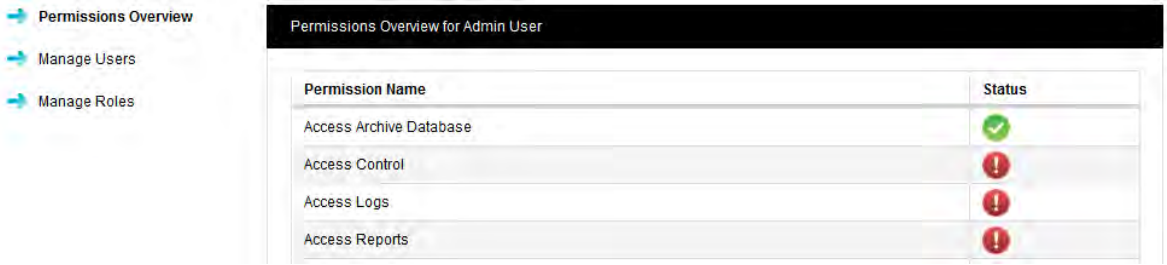
Select **Admin** then **Access Control** from the drop down menu to access the **Access Control** section.

The **Admin** menu is located at the right hand side of the top menu bar.

After selecting **Access Control** a new window appears, see Figure 26 below.

5.3.1 Permissions Overview

Figure 26



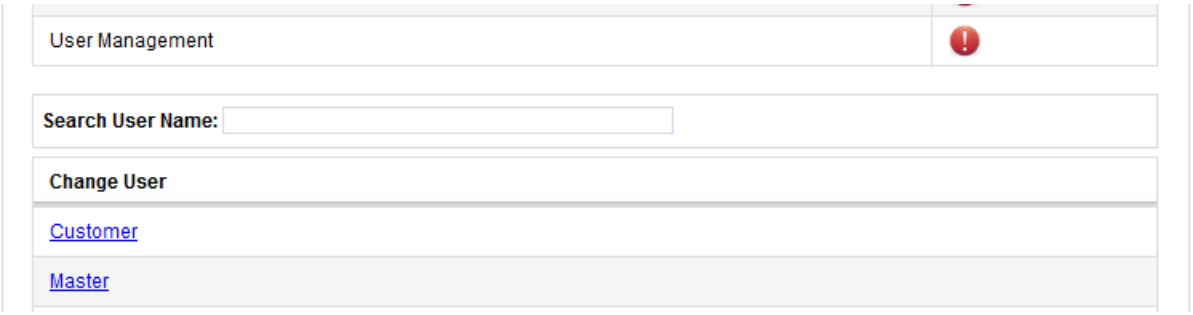
The menu on the right above gives access to the different sections of **Access Control**, the list on the left above is the **Permissions Overview** for the **Admin User**.

Note: the **Permissions Overview** list is much longer than the lists shown in this section, but these are abbreviated here for space reasons.

The **Admin User** is created automatically when Synergy is installed. The **Admin User** cannot be deleted or the **Permissions** altered.

As Users are added to the system they will automatically appear at the bottom of the Permissions overview screen, see Figure 27 below.

Figure 27



To view the Permissions granted to a user click on the underlined user name. The Permissions Overview for Customer window will appear see Figure 28 below.

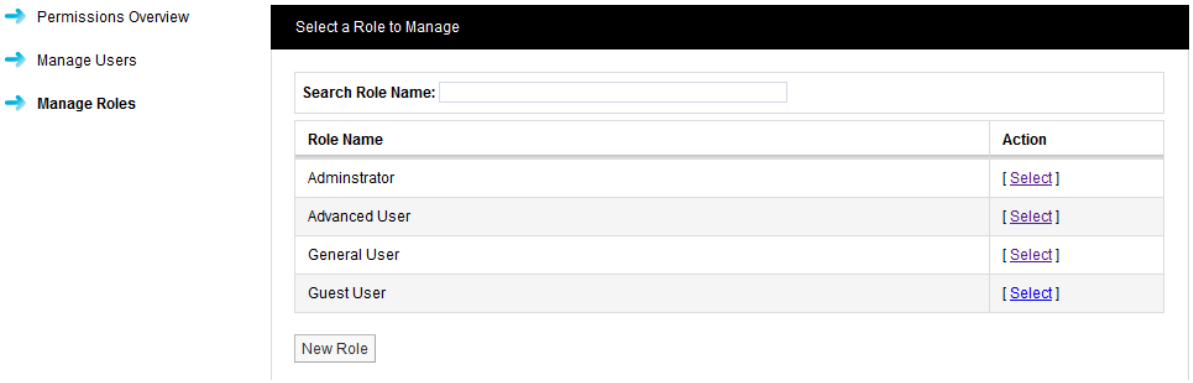
Figure 28

A red circle with a cross means that the **Permission** is denied, a green circle with a tick means that the Permission is granted. These permissions are inherited from the Role that the user has been assigned; this process is described in section 5.3.2.

5.3.2 Manage Roles

Before you can assign **Permissions** to a user you need to create **Roles**. To view Roles click on **Manage Roles** the **Manage Roles** window will appear see Figure 29 below.

Figure 29



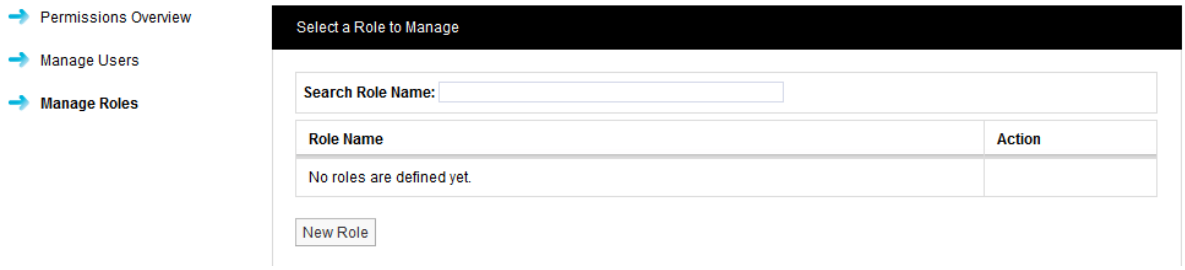
When Synergy is installed there are no pre-defined **Roles** set, the user can create their own **Roles** and decide what **Permissions** to assign to each **Role** (Figure 21) shows a typical set of users. There is no limit to the amount of **Roles** that can be set.

- Administrator
  This would be a high level Role with all Permissions assigned.
- Advanced User
  This would be a trusted user with access to Admin functions blocked but still able to edit sensor properties. Full data viewing and alarm acknowledging allowed.
- General User
  This would be a lower level user with access to Admin functions and sensor editing blocked. Full data viewing is allowed.
- Guest User
  This would be a view-only user with no editing or alarm acknowledging rights. Full data viewing is allowed.

When Synergy is installed a default Admin User is created, the **Default Admin User** cannot be deleted and is preset with the Username “Admin User” and the Password “Admin”. We recommend that these details are changed immediately after installation. This can be done in **Admin**, **User Management** see section 5.1.3. The **Default Admin User** is pre-assigned with all available **Permissions**.

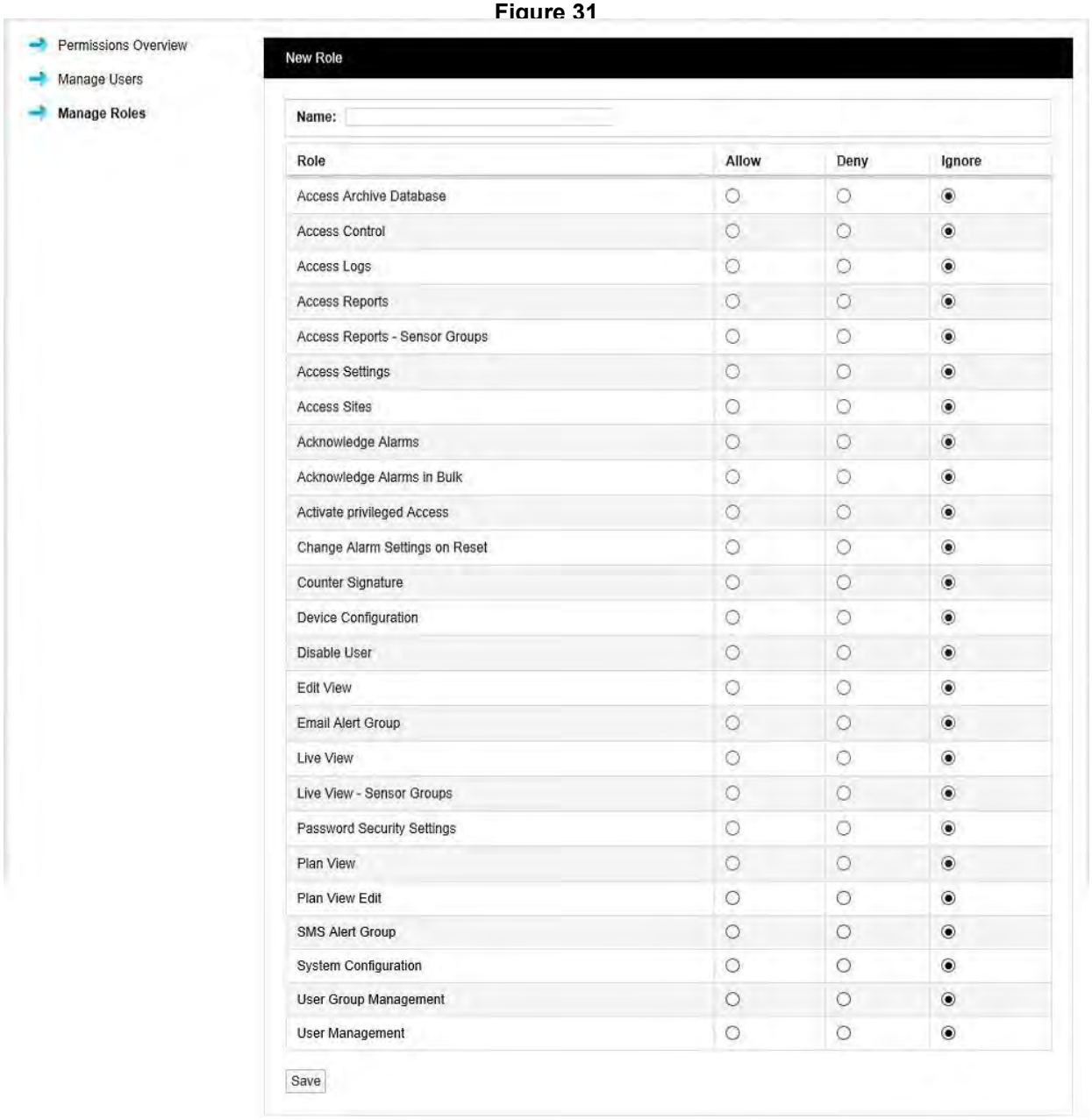
When setting up from first install, select **Admin>Access Control>Manage Roles** the **Select a Role to Manage** window appears see Figure 30 below.

Figure 30



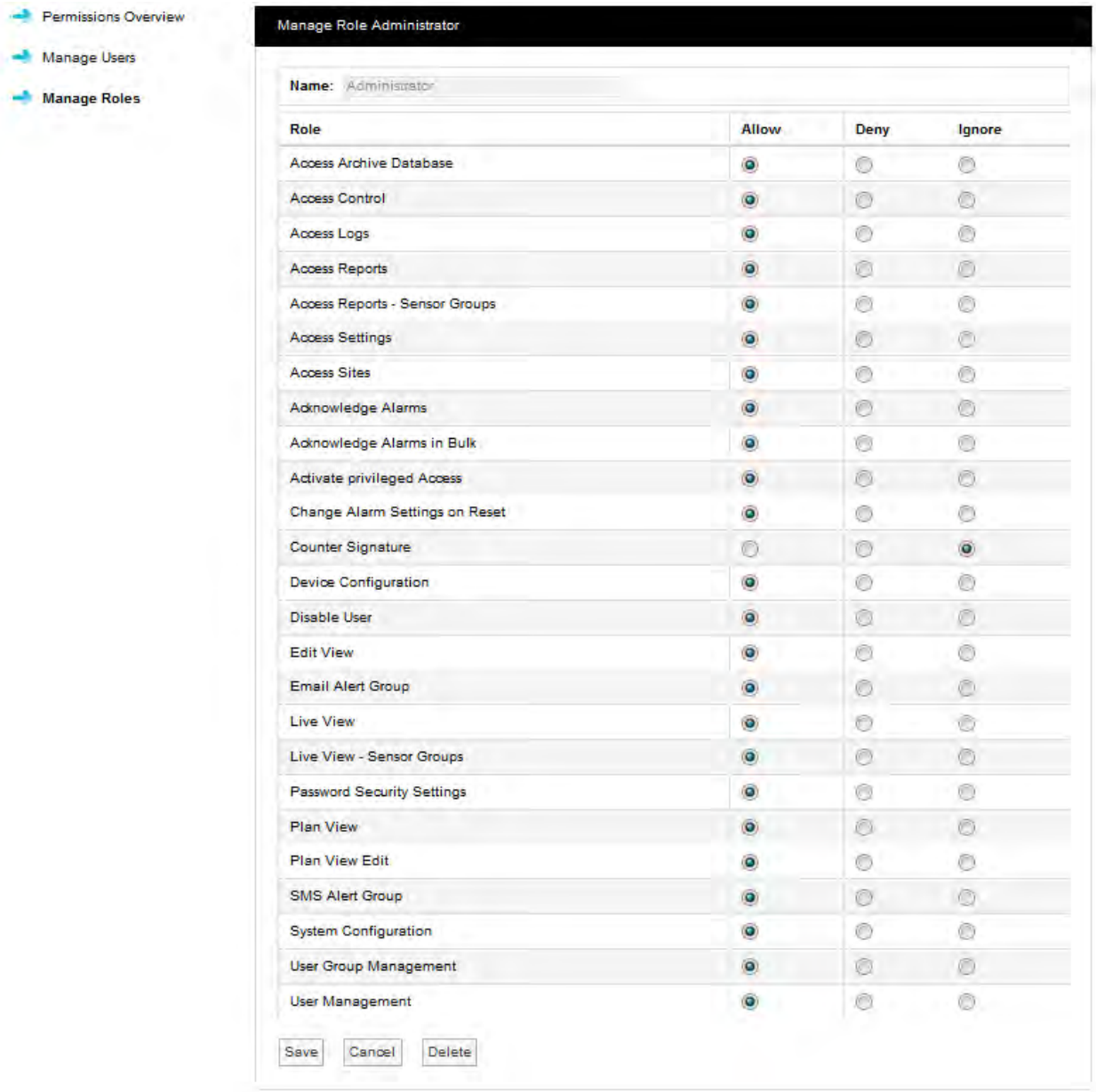
Click on **New Role**. The **New Role** window appears see Figure 31 below.

Figure 31



Enter a name for Role. We would recommend using Administrator for the highest level user. It is also suggested that all functions are set to **Allow** with the exception of **Activate privileged Access** which should be set to **Deny**. Select **Save**. You have now created your **Administrator Role**. See Figure 32 below.

Figure 32



Other Roles can be created as required following the instructions above.

5.3.3 Role Definitions

Permission	Description	User level
Access Archive Database	Controls access to Archived read only data	M
Access Control	Controls access to the Access Control section	H
Access Logs	Controls access to system logs	M

Access Reports	Controls access to reports	M
Access Reports - Sensor Groups	Controls access to sensor group reports	M
Access Settings	Controls access to entire Settings menu	H
Access Sites	Controls access to sites	M
Acknowledging Alarms	Controls who can acknowledge alarms	M
Acknowledge Alarms in Bulk	Allows user to acknowledge multiple sensors alarms	H
Activate privileged Access	This allows a master user to access a lower level users site	H
Change Alarm Settings on Reset	User can change alarm values, when resetting an Alarm	M
Device Configuration	Denies access to vital system settings	H
Disable User	Allows a user to be disabled.	H
Edit View	Prevents unauthorised sensor editing	M
Email Alert Group	Denies access to email alert setup	M
Live View	Allows viewing of data this should be available to all users	L
Live View - Sensor Groups	Allows viewing of sensor groups	L
Password Security Settings	Allows access to Password Security Settings screen	H
Plan View	Allows viewing of data in Plan View	L
Plan View Edit	Allows movement of sensors in Plan View	M
SMS Alert Group	Denies access to SMS alert setup	M

System Configuration	Denies access to system alert settings	H
User Group Management	Denies access to user group management	H
User Management	Denies access to user management	H

User Level Key

- H These permissions are recommended for the highest level user only
- M These permissions can be granted to general users
- L These permissions can be granted to all users

5.3.4 Manage Users

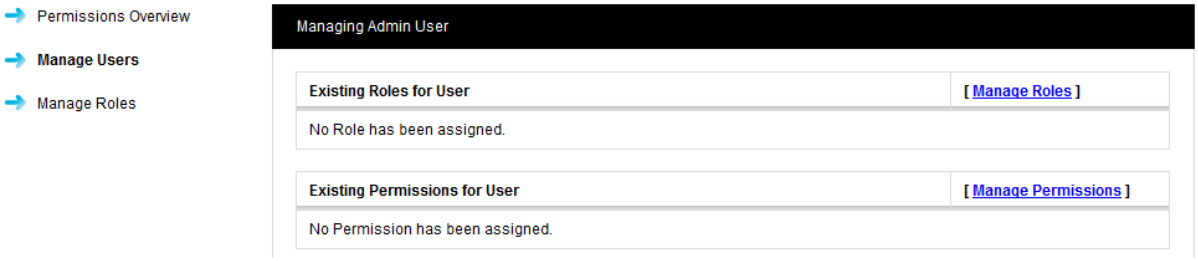
Synergy allows users to be associated with **Roles** rather than having to individually add **Permissions** to each individual **User**. **Permissions** can also be done individually if required.

When setting up users, select **Admin>Access Control>Manage Users**. The **Select a User to Manage** window appears. See Figure 33 below.

Figure 33

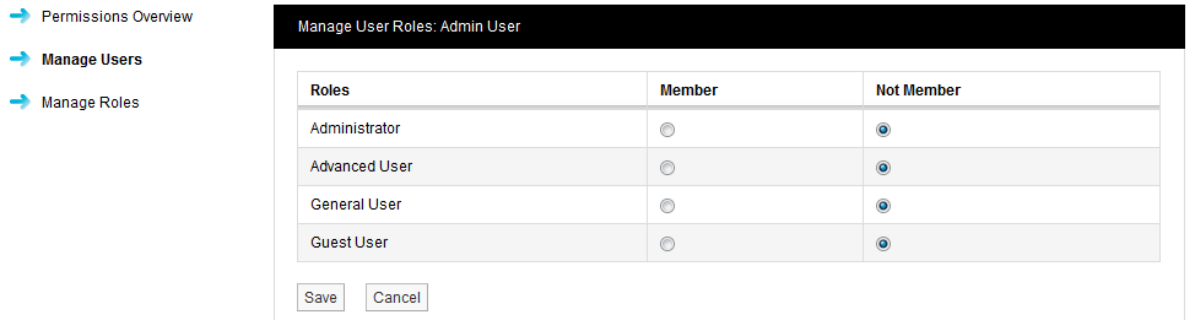
To assign a User to a Role click on Select next to the user name that you want to assign a Role to, see Figure 33 above. The **Managing User** window appears, see Figure 34 below.

Figure 34



To assign a **Role** to this User select **Manage Roles**. The **Manage User Roles** window appears. See Figure 35 below.

Figure 35



In this case the previously selected User was the **Administrator** user so we need to select the **Member** option button next to **Administrator** to put this user into the **Administrator Role**. This user will now inherit the **Permissions** assigned to this **Role**. More than one user can be assigned to the same **Role**.

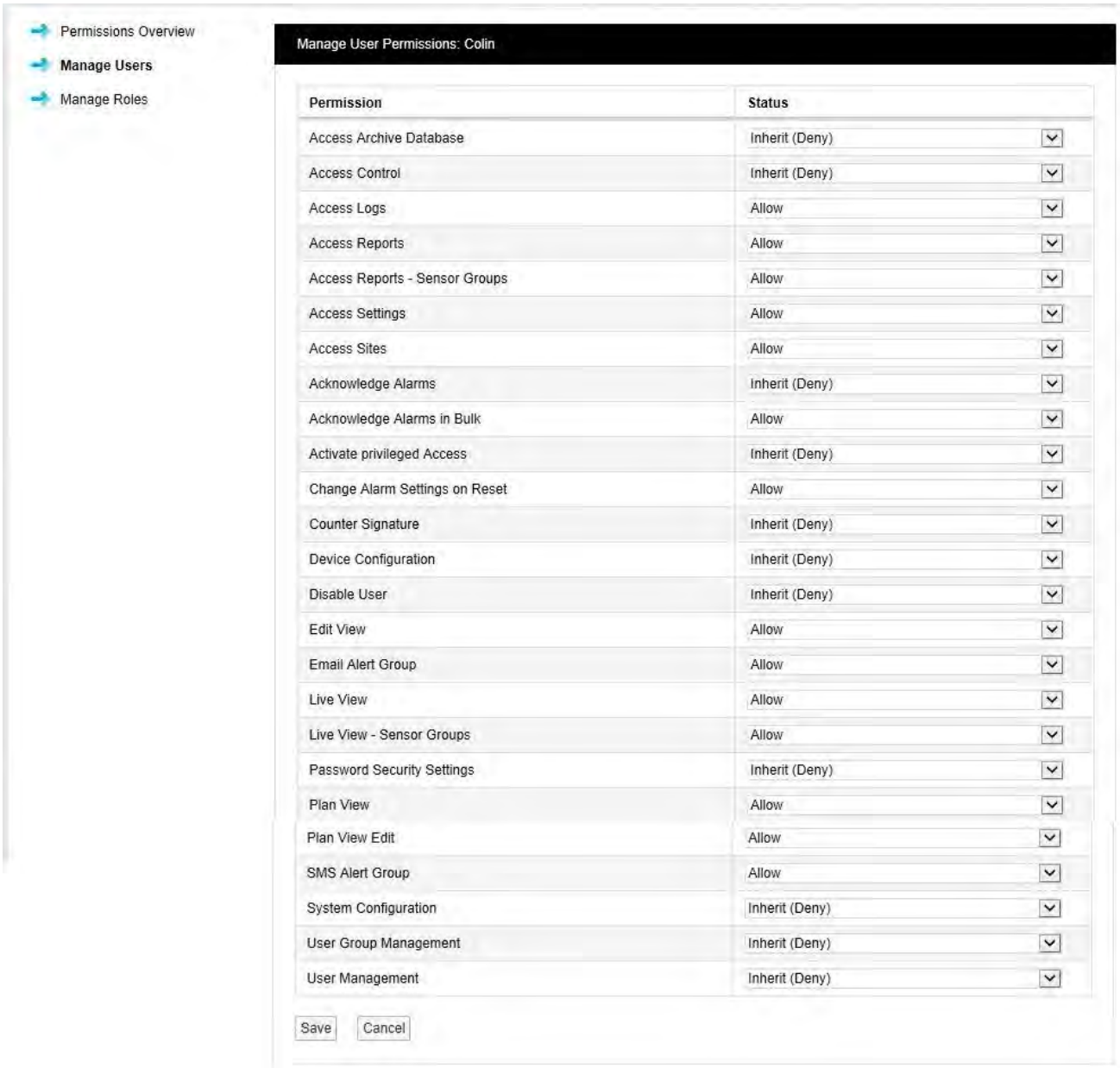
A user can be assigned to more than one **Role** for example a lower level user can be assigned a higher set of Permissions by an Admin user on a temporary basis. This allows a user to stand in for a colleague without the need to access the user settings and individually change the **Permissions**.

5.3.5 Manage Permissions

The main method for Synergy users to be granted **Permissions** is by association to a **Role** for total flexibility an individual user can have some permissions allowed or denied rather than inherited.

To **Manage Permissions Role** for this **User** select **Manage Permissions** the **Manage Permissions** Window will appear, see Figure 36 below.

Figure 36

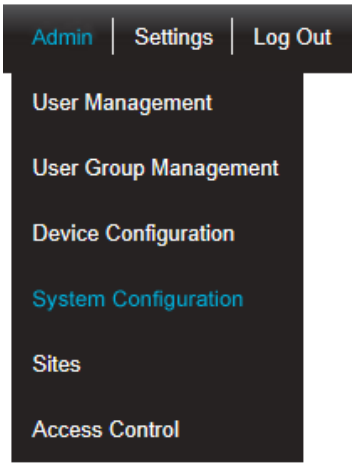


To change Permission select the drop down arrow next to the **Permission** to be changed and select either Allow or Deny. The above process can be repeated for other **Users** and **Roles**.

5.4 System Configuration

This section is where the email and SMS settings are set for the automated alarm functions.

Figure 37



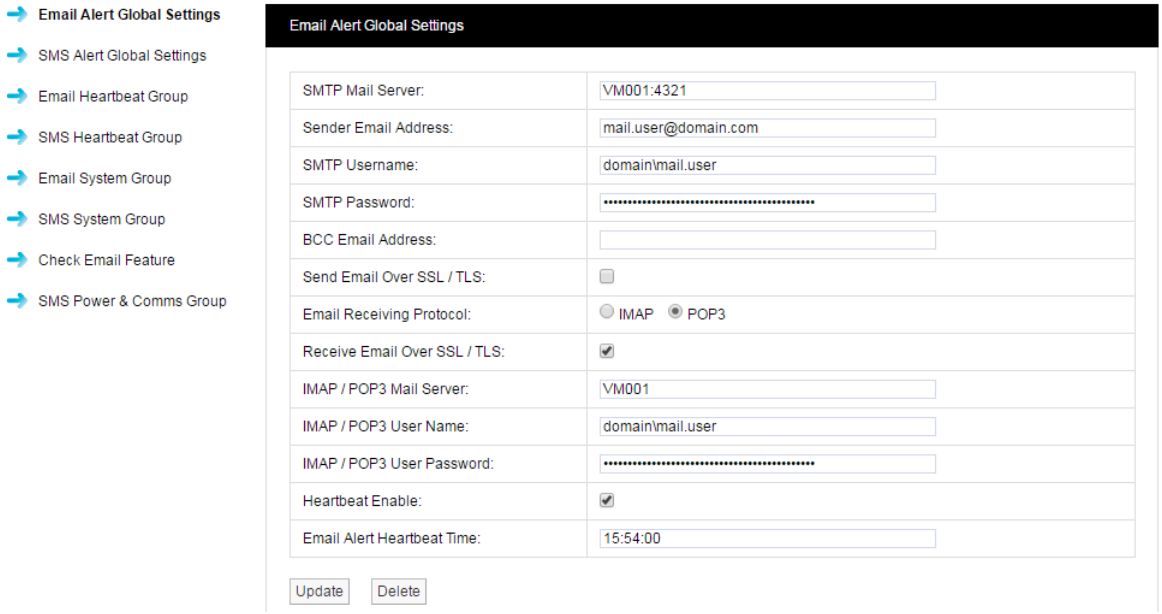
Select **Admin** then **System Configuration** from the drop down menu to access the **System Configuration** section.

The **Admin** menu is located at the right hand side of the top menu bar.

After selecting **System Configuration** a new window appears, see Figure 38 below.

5.4.1 Email Alert Global Settings

Figure 38



The above details ideally should have been collected prior to installation and if available will be on the Synergy Pre-Requisites form. If the details are not available at the time of commissioning, you will need to contact your IT department or provider. If the details are available enter them into the dialog boxes above.

It is not essential that these details are entered at this time; if email alerts and emailed reports are not required at this point these details can be entered at a later date.

Mail Servers can be specified as a resolvable hostname or IPv4 address. The example settings, shown in Figure 38 above, will use standard IANA assigned port numbers when connecting to the mail server(s). If required you can specify the port number to be used, by adding a colon ':' followed by the required port number to the server hostname or IPv4 address; e.g. 'VM001:25' would use port 25.

If you do not know the address(s) and/or port number(s) used by your Mail server, contact your system administrator or IT support provider; please do NOT contact IMC Technical Support, as this is information that only your IT administrator or support provider can supply.

It is recommended that the **Heartbeat** message is enabled, the problem with automated alarm systems using tools such as email, is if you don't get an alarm for several days or weeks then it is difficult to know if that is because the system is not generating any alarms or is it because the email system has failed. The **Heartbeat** message will give a daily indication that everything is functioning correctly. The timing of the Heartbeat message can be set in the bottom dialog box, please ensure that the time is entered in the following format:

- 14:15:00

Any time from the 24 hour clock can be set. When all settings are entered select **Update.**

The **Receive Email** and **IMAP/POP3** settings are for email alert acknowledgement handling, and can be left blank should this feature not be required.

Note: Do NOT set the BCC Email Address to be the same as the Sender Email Address.

Warning: It is not recommended that email alerts are used on their own for critical alarms. Email alerts rely on your internal email systems functioning correctly. Or if your Internet Service Provider is suffering any problems this will also cause disruption of service.

For critical alarms IMC recommend the use of two different methods to send out alarm alerts.

Other forms of alarm alert generation methods are SMS driven from an IMC SMS Unit or hard wired relays driven locally from the SR2 receivers. Both methods require extra hardware.

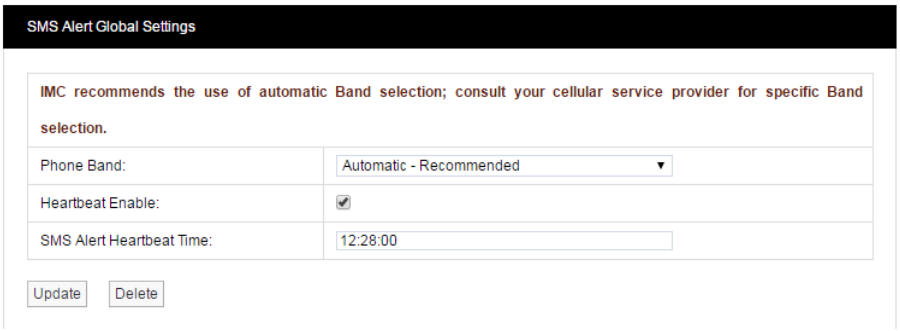
Contact your Hanwell sales representative or your local distributor for further details. Contact information can be found on our website at http://www.the-imcgroup.com/about-imc/contact-us for our UK Head office contacts or http://www.the-imcgroup.com/distributors to contact one of our authorised distributors.

5.4.2 SMS Alert Global Settings

Synergy allows alarm alerts to be sent out via **SMS Alerts**.

To setup **SMS Alert Global Settings**, select **Admin**, **Access Control**, **System Configuration,** the **SMS Alert Global Settings** Window will appear see Figure 39) below.

Figure 39



If required, the phone band can be selected from the dropdown control; IMC recommends the use of Automatic Band selection, consult your service provider for any specific Band selection that may be required for your SIM.

It is recommended that the **Heartbeat** message is enabled. The problem with automated alarm systems using tools such as SMS is, if you don't get an alarm for several days or weeks then it is difficult to know if that is because the system is not generating any alarms or is it because the SMS system has failed. The **Heartbeat** message will give a daily indication that everything is functioning correctly. The timing of the Heartbeat message can be set in the bottom dialog box, please ensure that the time is entered in the following format:

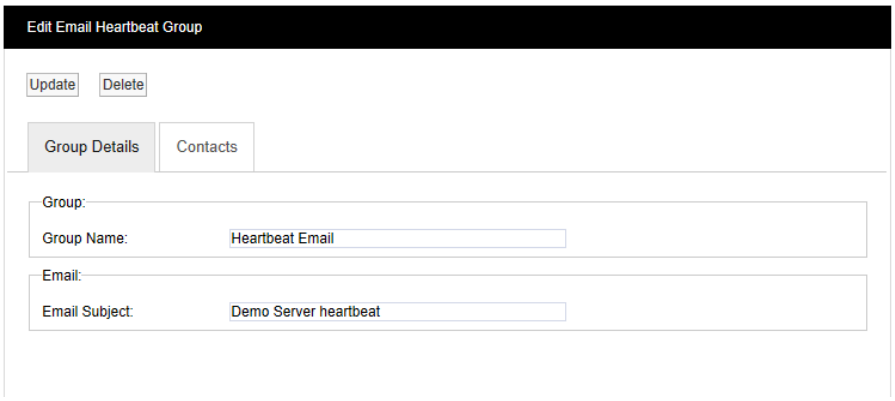
- 10:10:00

Any time from the 24 hour clock can be set. When all settings are entered select **Update**.

5.4.3 Email Heartbeat Group

You can create **Email Heartbeat Groups** which allows multiple users to be allocated to a group. To create an **Email Heartbeat Group** select **Email Heartbeat Group** from the menu and the **Edit Email Heartbeat Group** Window will appear, see Figure 40 below.

Figure 40



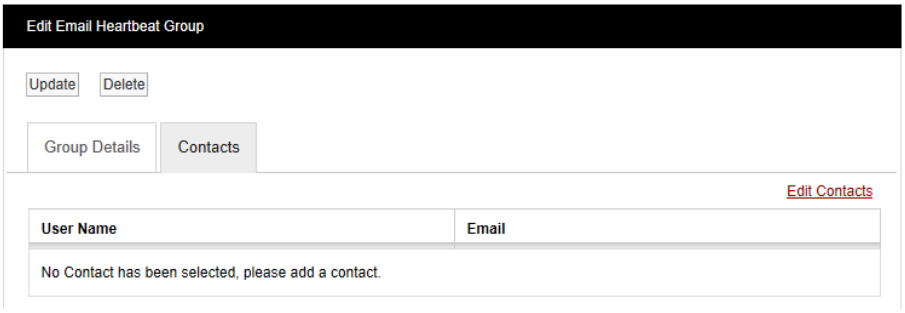
Step 1

Enter a name for the group in the dialog box next to **Group Name** next enter a phrase in the dialog box next to **Email Subject** the text entered here will become the subject of the email.

Step 2

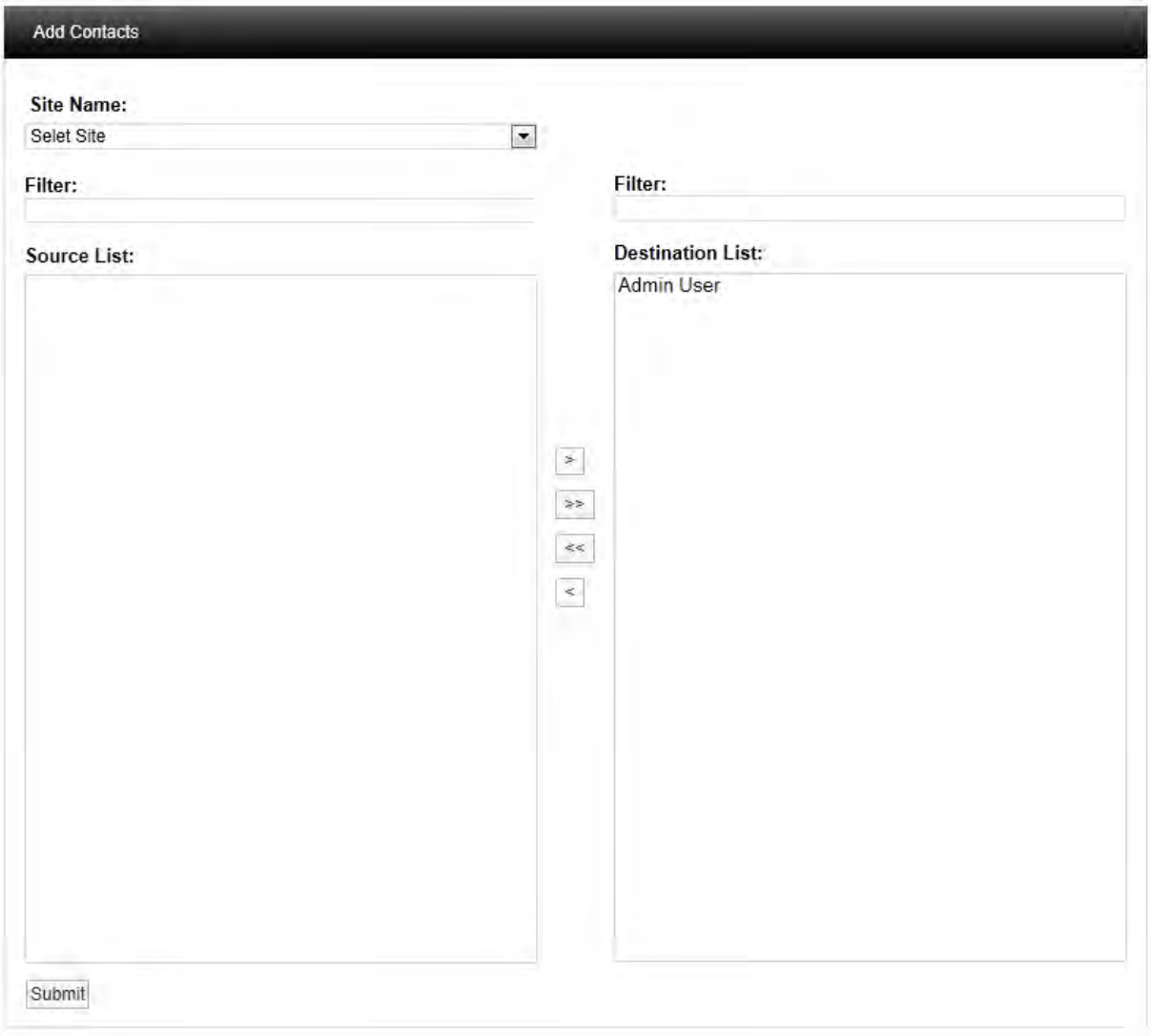
Click on the tab marked **Contacts** and the **Contacts** dialog box appears, see Figure 41 below.

Figure 41



To add Contacts select the Edit Contacts text and the **Add Contacts** window appears, see Figure 42 below.

Figure 42



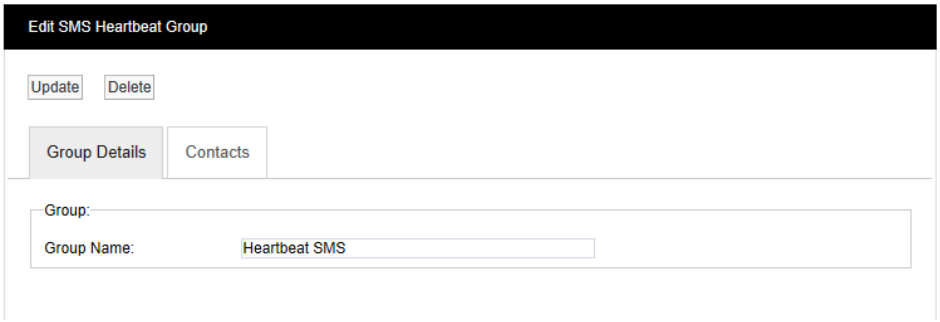
Select a **Site** using the drop down menu on the **Site Name** dialog box on initial setup there will only be one **Site** available which is created during the installation. See more about creating Sites in section 5.5.1.

The selected **Site** associated contacts will appear in the left window, when the **Site** contacts/users list is long the required **Site** can be found by using the filter. Select the right facing arrow to move the **Site** to the right window. More than one **Site** can be moved across. Once you are happy with your selection of **Sites** select the **Submit** button at the bottom left. This will return you to the **Edit Email Heartbeat Group** window; select the Update button to save the group.

5.4.4 SMS Heartbeat Group

You can create **SMS Heartbeat Groups** which allows multiple users to be allocated to a group. To create an **SMS Heartbeat Group** select **SMS Heartbeat Group** from the menu and the **Edit SMS Email Heartbeat Group** window will appear see, Figure 43 below.

Figure 43



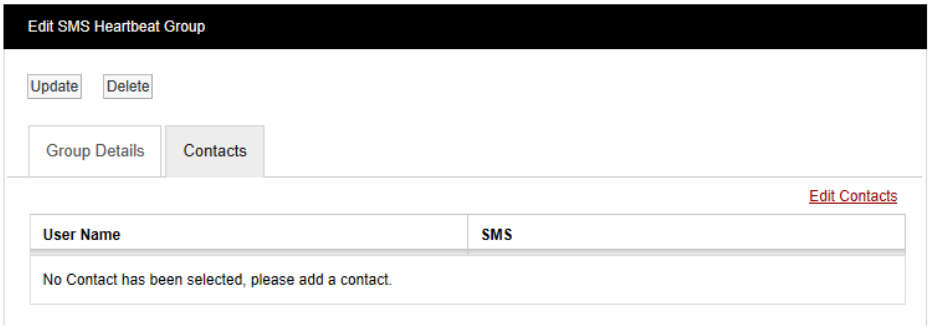
Step 1

Enter a name for the group in the dialog box next to **Group Name**.

Step2

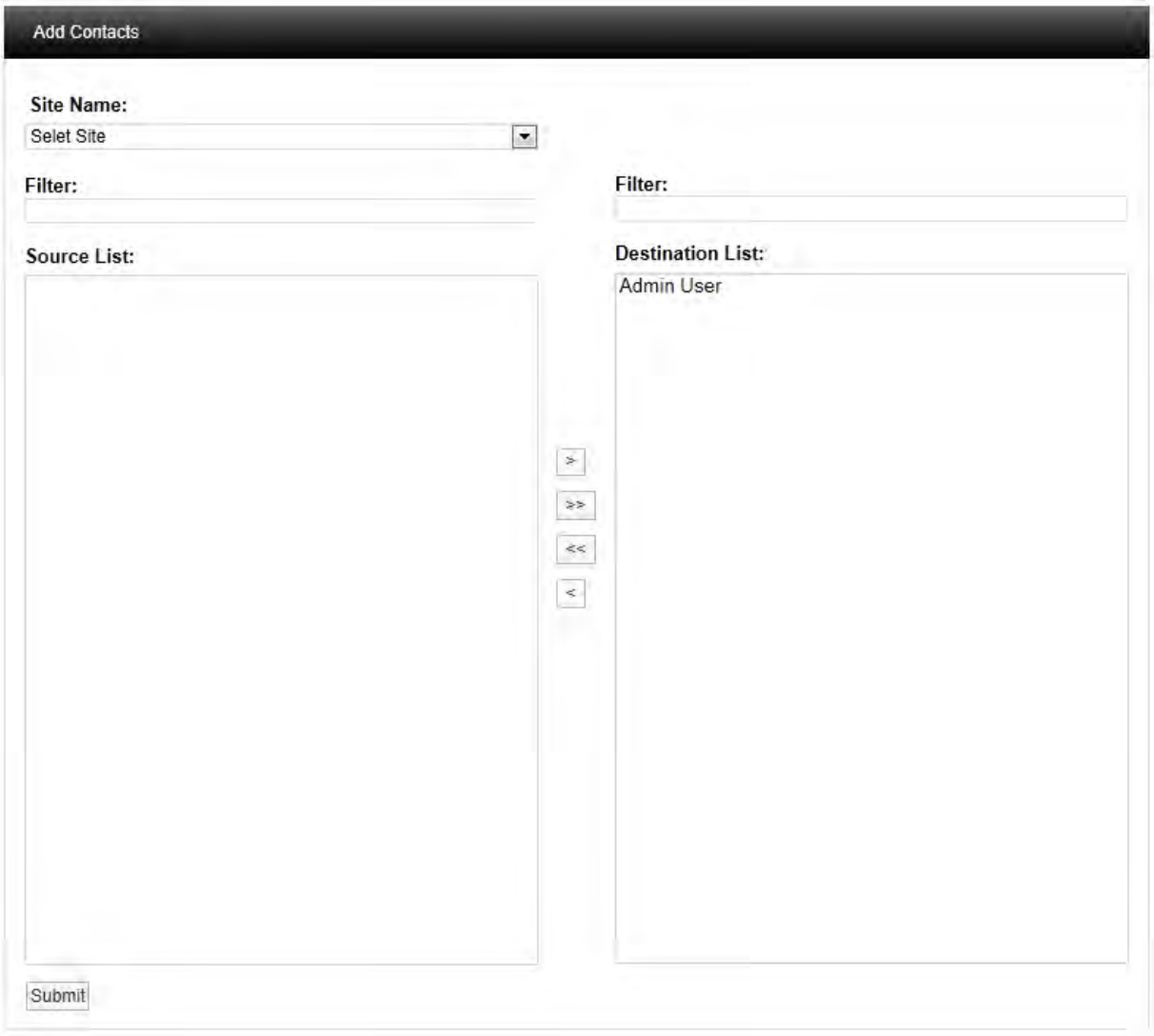
Click on the tab marked **Contacts** and the **Contacts** dialog box appears, see Figure 44 below.

Figure 44



To add Contacts select the Edit Contacts text and the **Add Contacts** window appears, see Figure 45 below.

Figure 45



Select a **Site** using the drop down menu on the **Site Name** dialog box on initial setup there will only be one **Site** available which is created during the installation. See more about creating Sites in section 4.5.

The selected **Site** will appear in the left window, when the **Site** list is long the required **Site** can be found by using the filter. Select the right facing arrow to move the **Site** to the right window. More than one **Site** can be moved across. Once you are happy with your selection of **Sites** select the **Submit** button at the bottom left. This will return you to the **Edit SMS Heartbeat Group** window; select the Update button to save the group.

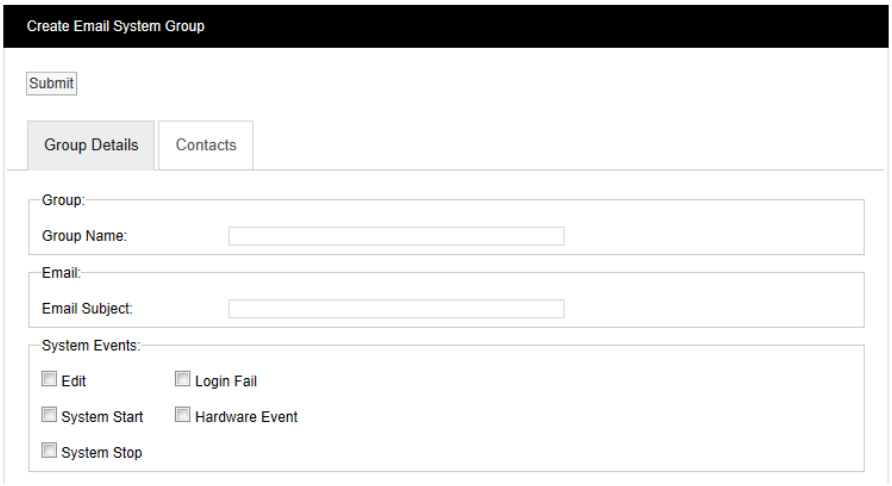
5.4.5 Email System Group

You can create **Email System Groups** an **Email System Group** sends email alerts from a predefined list of system events, these events are:

- Edit
- System Start
- System Stop
- Login Fail
- Hardware Event

Multiple users can be allocated to a group. To create an **Email System Group** select **Email System Group** from the menu and the **Edit Email System Group** window appears, see Figure 46 below.

Figure 46



Step 1

Enter a name for the group in the dialog box next to **Group Name** next enter a phrase in the dialog box next to **Email Subject** the text entered here will become the subject of the email.

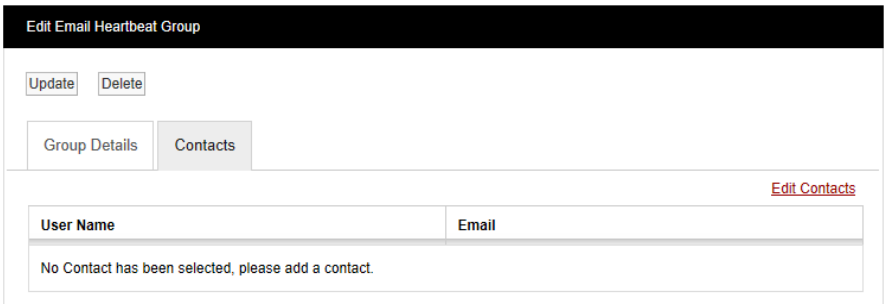
Step 2

Select the parameters from the **System Events** list that you require notification on.

Step 3

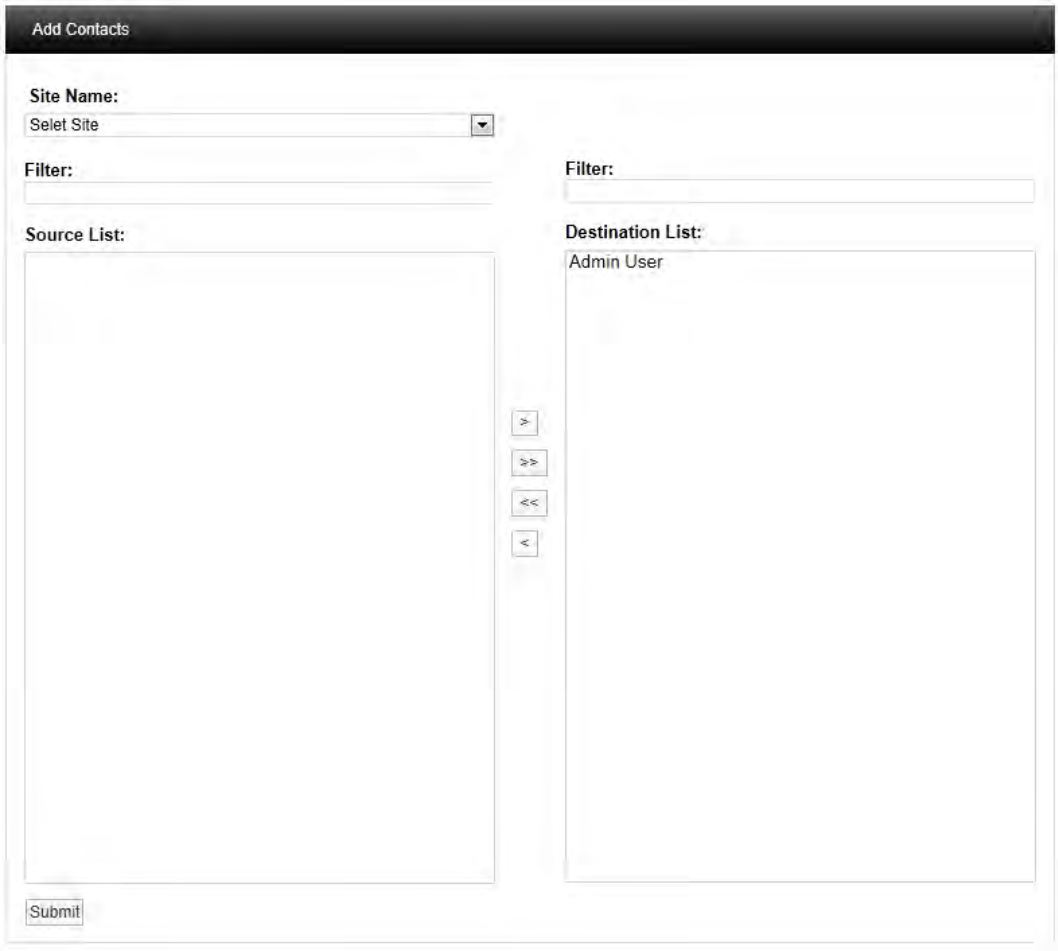
Click on the tab marked **Contacts** and the **Contacts** dialog box appears, see Figure 47 below.

Figure 47



To add Contacts select the Edit Contacts text and the Add Contacts Window will appear, see Figure 48 below.

Figure 48



Select a **Site** using the drop down menu on the **Site Name** dialog box on initial setup there will only be one **Site** available which is created during the installation. See more about creating Sites in section 4.5.

The selected **Site** contacts will appear in the left window, when the **Site** contacts list is long the required **Site** can be found by using the filter. Select the right facing arrow to move the **Site** to the right window. More than one **Site** can be moved across. Once you are happy with your selection of **Sites** select the **Submit** button at the bottom left. This will return you to the **Edit Email System Group** window; select the Update button to save the group.

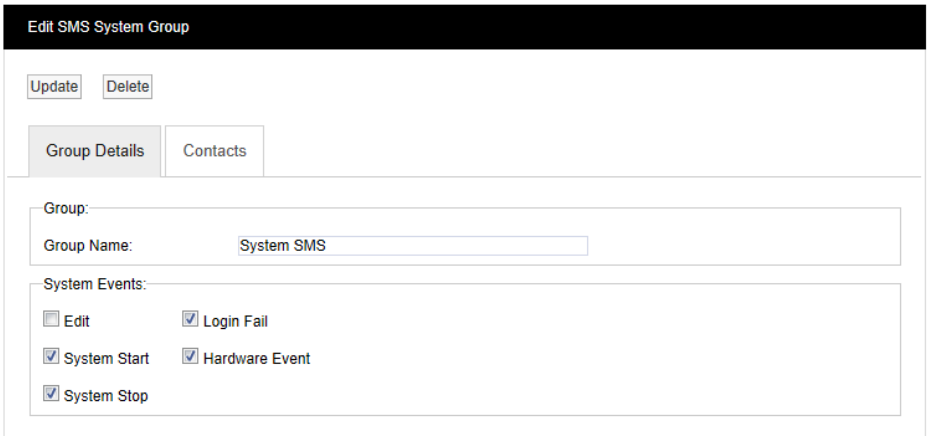
5.4.6 SMS System Group

You can create **SMS System Groups** an **SMS System Group** sends SMS alerts from a predefined list of system events, these events are:

- Edit
- System Start
- System Stop
- Login Fail
- Hardware Event

Multiple users can be allocated to a group. To create an **SMS System Group** select **SMS System Group** from the menu and the **Edit SMS System Group** Window will appear, see Figure 49 below.

Figure 49



Step 1

Enter a name for the group in the dialog box next to **Group Name**.

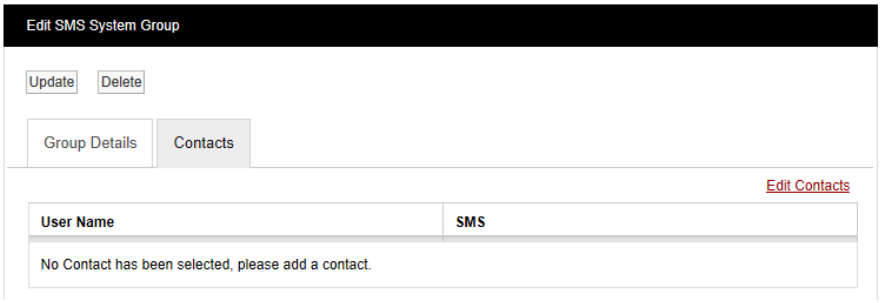
Step 2

Select the parameters from the **System Events** list that you require notification on.

Step 3

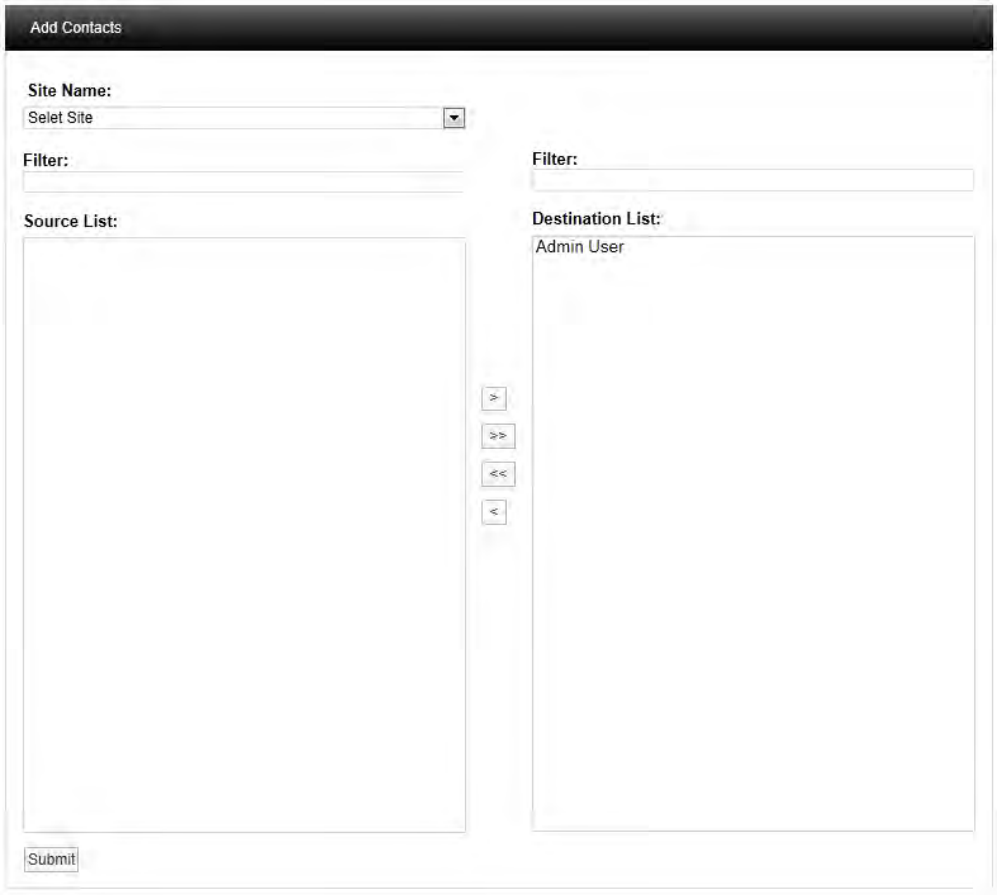
Click on the tab marked **Contacts** and the **Contacts** dialog box appears. See Figure 50 below.

Figure 50



To add Contacts select the Edit Contacts text and the **Add Contacts** window appears. See Figure 51 below.

Figure 51



Select a **Site** using the drop down menu on the **Site Name** dialog box on initial setup there will only be one **Site** available which is created during the installation. See more about creating Sites in section 4.5.

The selected **Site** contacts will appear in the left window, when the **Site** contacts list is long the required **Site** can be found by using the filter. Select the right facing arrow to move the **Site** to the right window. More than one **Site** can be moved across. Once you are happy with your selection of **Sites** select the **Submit** button at the bottom left. This will return you to the **Edit SMS System Group** window. Select the Update button to save the group.

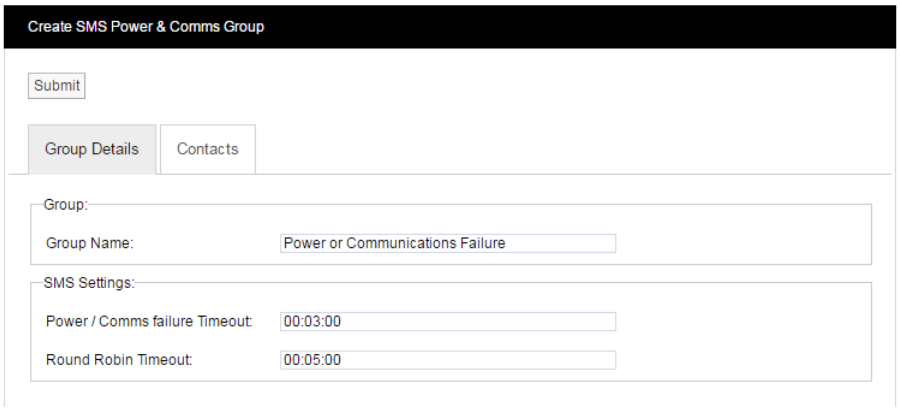
5.4.7 Check Email Feature

The Check Email Feature is provided to, enable testing of the email server settings. Enter an email address in the text box, and click **Submit**.

5.4.8 SMS Power and Comms Group

The IMC SMS Unit must have at least one phone number to contact in the event of a power or communications failure event, before it will operate.

The steps below describe how to create the **SMS Power & Comms Group**; once created, you can use the same process to edit the existing **SMS Power & Comms Group.**



Step 1

Enter a name for the Group in the **Group Name** text box.

Step 2

The **Power / Comms failure Timeout** is the time that the SMS Unit will wait after a power or communications failure has been detected, before it starts sending SMS warning messages; (note it can take 1 to 2 minutes for a power or communications event to be detected by the SMS Unit). Set **Power / Comms failure Timeout** to the required delay time.

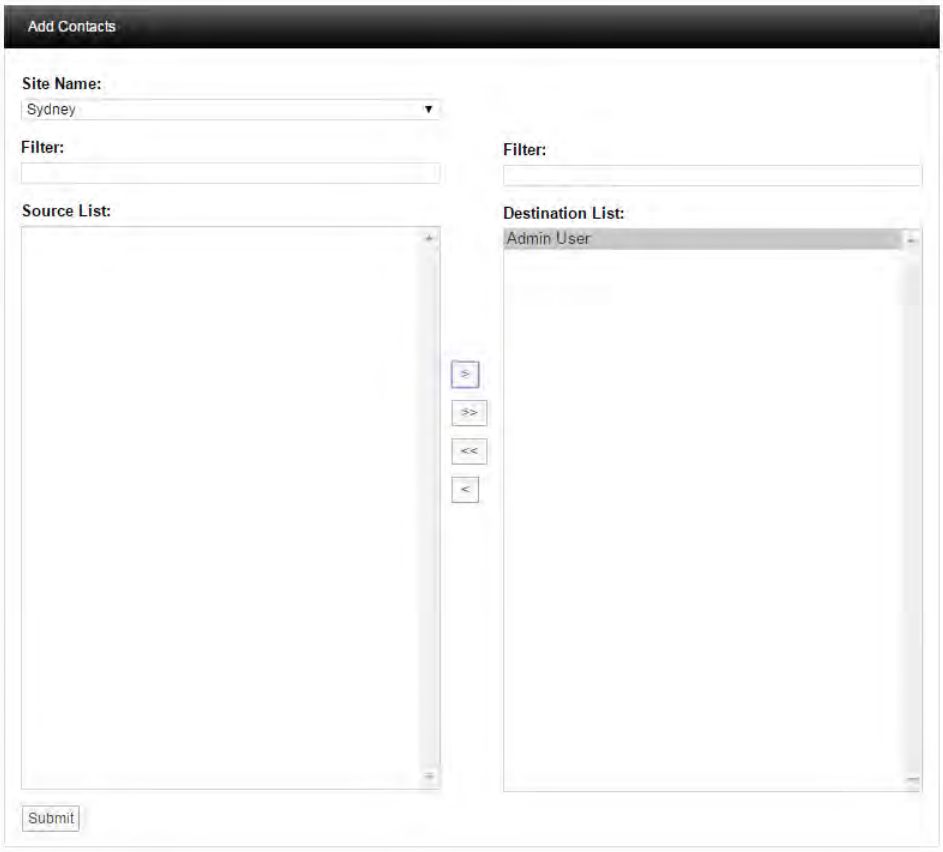
Step 3

Round Robin Timeout is the time delay between sending each power / communication failure waring SMS message. Set **Round Robin Timeout** to the required time; do not set a Round Robin time of less than a minute, or such that it would take more than 24hours – the SMS Unit's battery life – to send the required SMS messages.

Step 4

Select the **Contacts** tab then click **Add Contacts**, the **Add Contacts** window will display as below.

The IMC SMS Unit can accept up to 10 contacts in the **Power and Communication Group**.



Select a **Site** from the drop down list; then select contacts in the **Source List** and use the right arrow – located between the lists - to move the contacts to the **Destination List**. Contacts can be moved both to and from the **Destination List**, using the arrow controls.

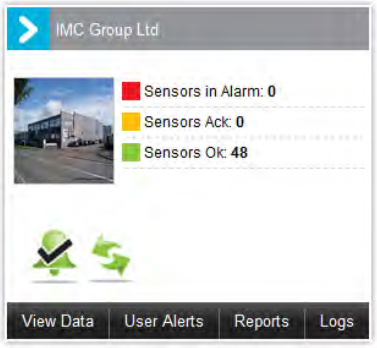
When finished, click **Submit** to accept the contact list and close the window.

Step 5

Back on the **Create SMS Power & Comms Group** view, click **Submit** to accept the settings.

5.5 Sites

Sites are the main access points to the system data, each **Site** represents a single physical Site where receiving devices such as SR2 Smart Receivers or CR2 Controllers are sited along with measuring Sensors/Transmitters.



There are two methods for viewing Sites:

1. Graphical View

Sites in **Graphical View** are represented by a square window which includes the following:

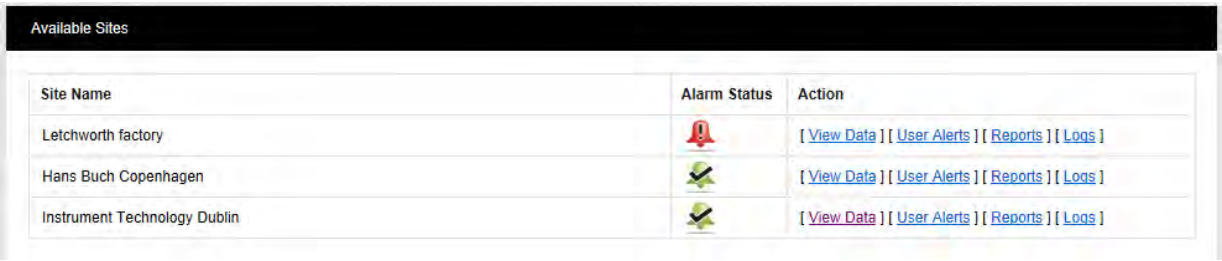
- Site name
- Picture of Site
- Status Overview
- System Alarm Status
- Control Device status
- Access to Data, Alerts, Reports and Logs

Sites can also have **Sub Sites** associated with the main top level **Site** a Sub Site are used where it is desirable to sub divide a main Site for example when there are large numbers of sensors on a Site or many departments. Sub Sites could be floors in a building or departments.

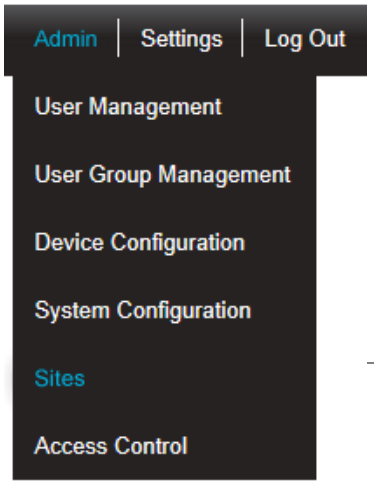
When **Sub Sites** are used the **View Data**, **User Alerts**, **Reports** and **Logs** are not available from the top level **Site** these functions are now available from the **Sub Sites**.

Up to six **Sites** can be shown on the Dashboard at any one time, when there are more than six **Sites** additional **Sites** can be viewed in **Text View**.

2. Text View



Text View has all the functionality of **Graphical View** but in a more familiar text format. **Text View** is the best way to view large numbers of **Sites**.



5.5.1 Creating Sites

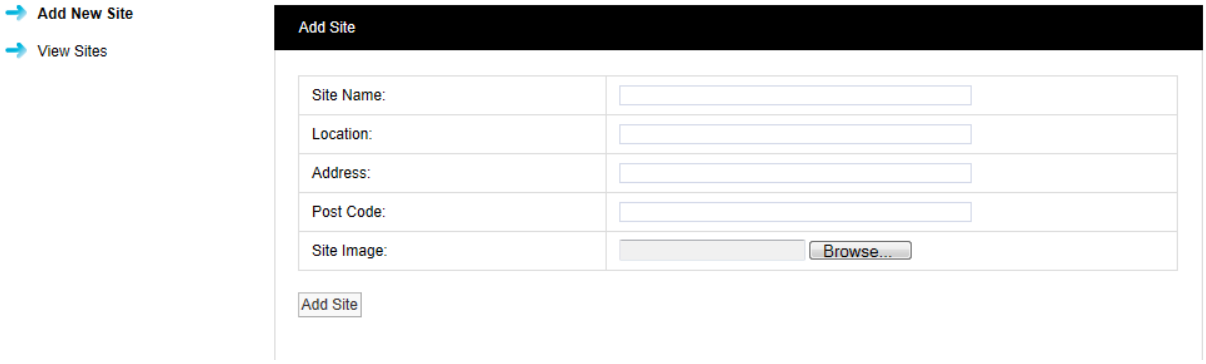
Figure 52

Select **Admin** then **Sites** from the drop down menu to access the **Sites** section.

The **Admin** menu is located at the right hand side of the top menu bar.

After selecting **Sites** a new window appears (see **Figure 53** below).

Figure 53



To add a **Site** complete the following:

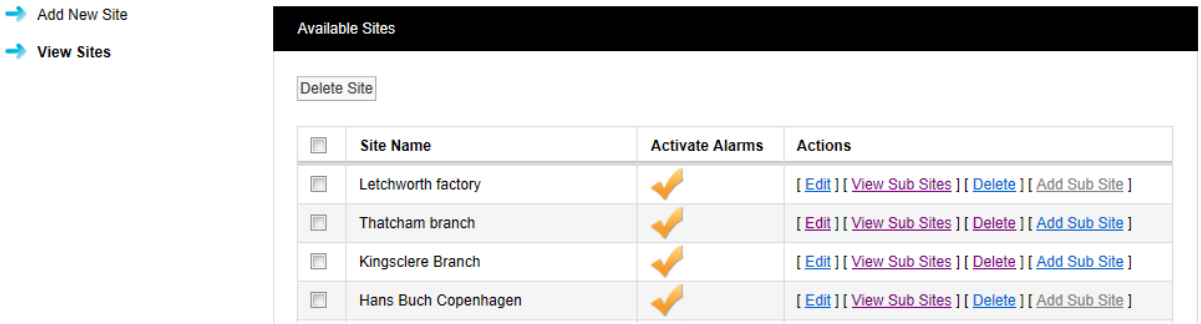
- Site Name: Enter a name for the **Site** for example; this could be the name of the company.
- Location: Enter the location for example; this could be the town or city. (not mandatory)
- Address: This would be the **Site** address. (not mandatory)
- Post Code: This would be the Site post code. (not mandatory)
- Site Image: This could be a photograph or a graphic depicting the site. Maximum image size is 30K. The best image formats are .pngs or. jpegs.

When all details have been entered and are correct, click **Add Site**.

5.5.2 Viewing Sites

To **View Sites** select **View Sites** from the menu. The **Available Sites** window appears. See, Figure 54 below.

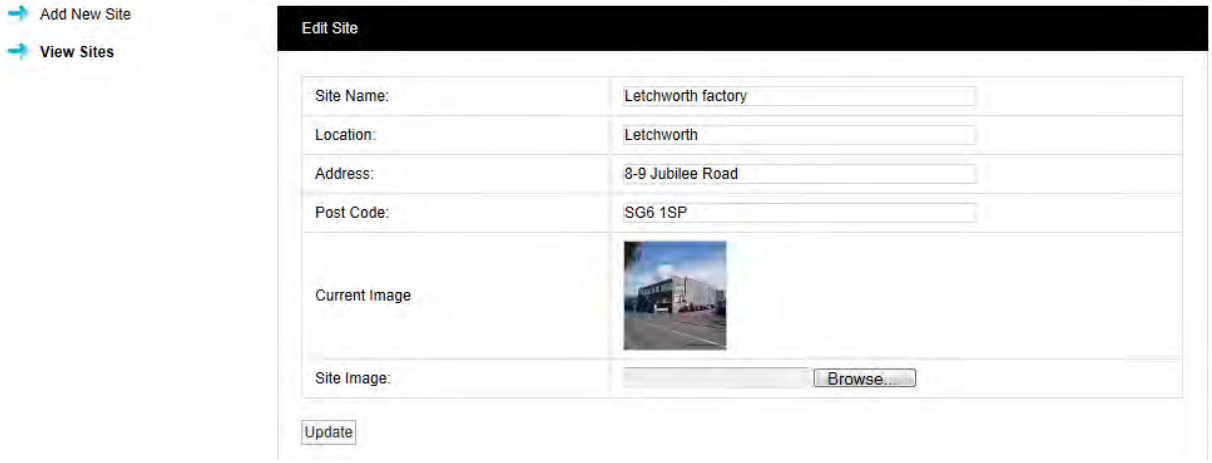
Figure 54



5.5.3 Editing Sites

To edit a Site select **Edit** on the line corresponding to the Site you wish to edit. The **Edit Site** window appears , see Figure 55 below.

Figure 55

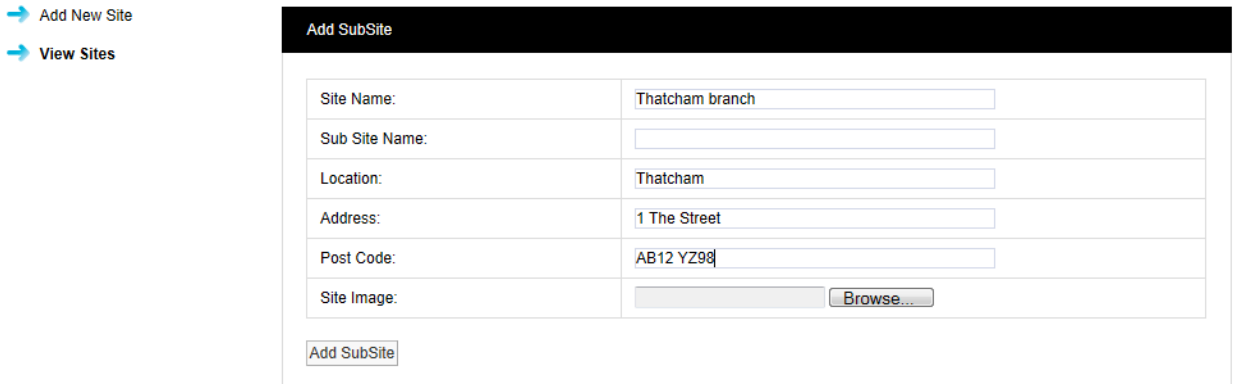


All Site details can be edited in this window, if required a new image can be uploaded. When all details are correct select **Update** to save details.

5.5.4 Adding Sub Sites

To add **Sub Sites** select **Add Sub Site** on the line corresponding to the Site you wish to add Sub Sites to. The **Add Sub Site** window appears, see Figure 56 below.

Figure 56



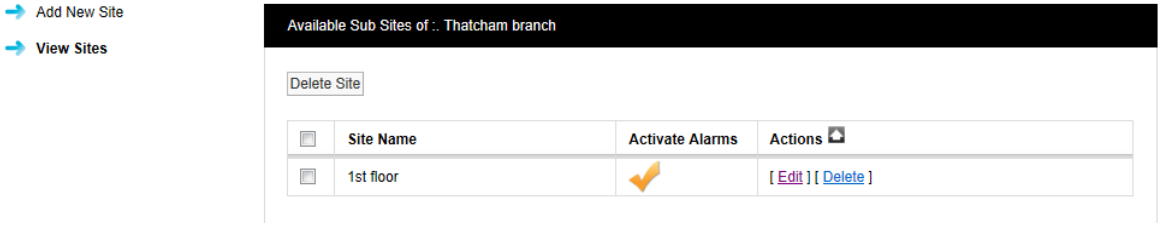
Enter a name for the Sub Site into the Sub Site Name dialog box. An image for the Sub Site can be uploaded follow steps in section 4.5.1. When all details are correct select **Add Sub Site** to save the details and add the Sub Site.

To return to the main Sites menu select **View Sites** from the menu.

5.5.5 Deleting Sites

To delete a Site you must first delete all Sub Sites if any exist. To check this select **View Sub Sites**, see section 5.5.2. If Sub Sites exist select **Delete** to delete the Sub Site, see Figure 57 below.

Figure 57



When you are happy that you are deleting the correct Sub Site select **OK**, see Figure 58 below.

Figure 58

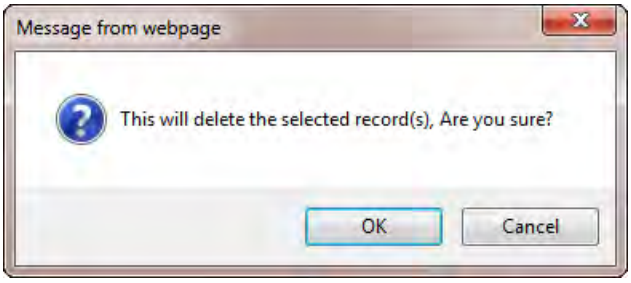
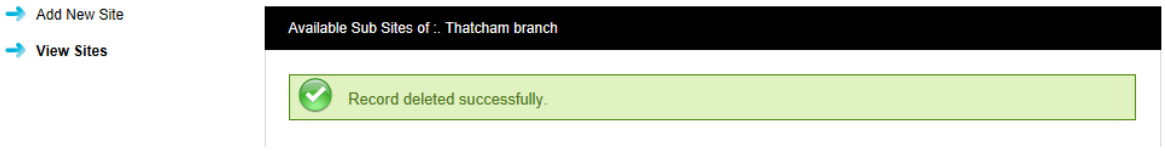
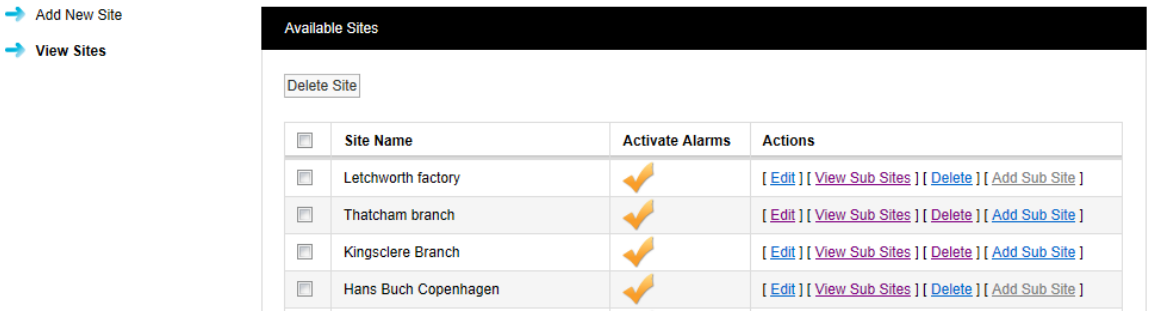


Figure 59



After selecting OK the Sub Site will be deleted and you will be returned to the **Sites** menu. To proceed select **View Sites**. This will take you back to the main **Sites** View see, Figure 60 below.

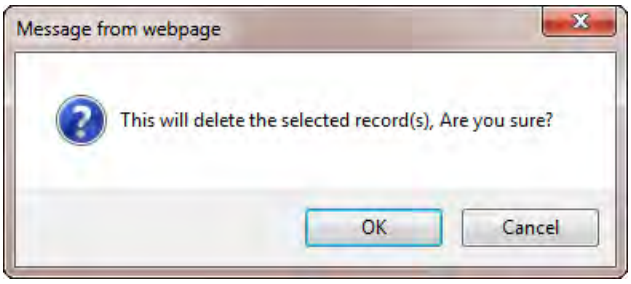
Figure 60



After deleting all **Sub Sites** the main site can now be deleted, to delete the required **Site** select **Delete** against the Site to be deleted.

When you are happy that you are deleting the correct Site select **OK**, see Figure 61 below.

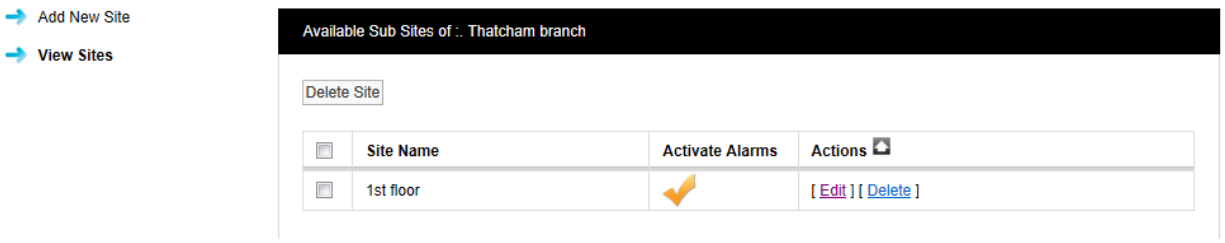
Figure 61



5.5.6 Viewing Sub Sites

To View a Sub Site select View Sub Sites on the line corresponding to the **Site** you wish to view Sub Sites for. The Available **Sub Sites of** window appears, see, Figure 62 below.

Figure 62



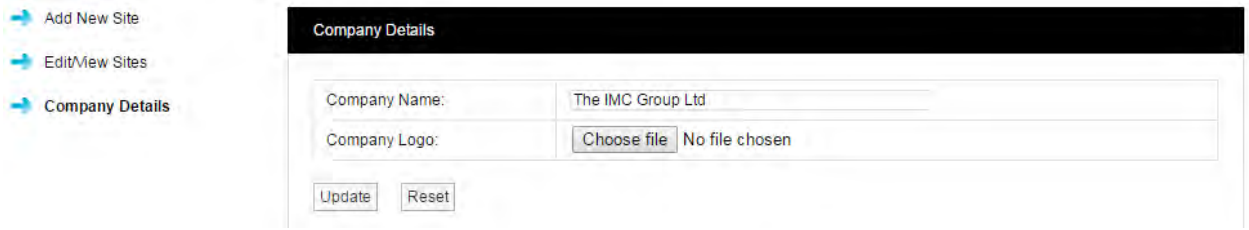
To **Edit** the **Sub Site** select **Edit**, address details and images can be changed or added. When happy with any changes select **Update**.

5.5.7 Adding Company Details

Select **Company Details** from the menu allows you to add your Company logo. After adding the details the logo will appear next to Synergy logo in the header of the website.

To add your logo, click **Choose File** navigate to the required logo image, and click **Open**. **Choose File** button varies from browser to browser; in some browsers it might say **Browse.**

Figure 63

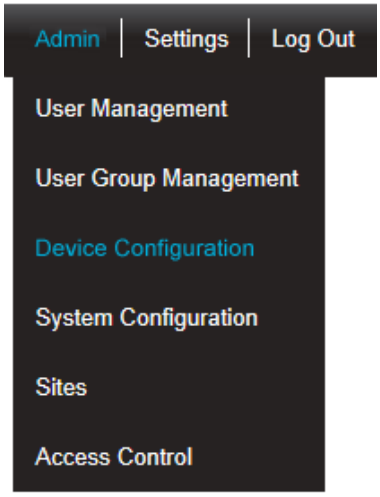


5.6 Device Configuration

Warning: Changing settings in this section will impact on system function, please proceed with caution. If in doubt please contact your local supplier or IMC Support.

This section is where Synergy **Services** and **Hardware Devices** are setup and configured.

Figure 64

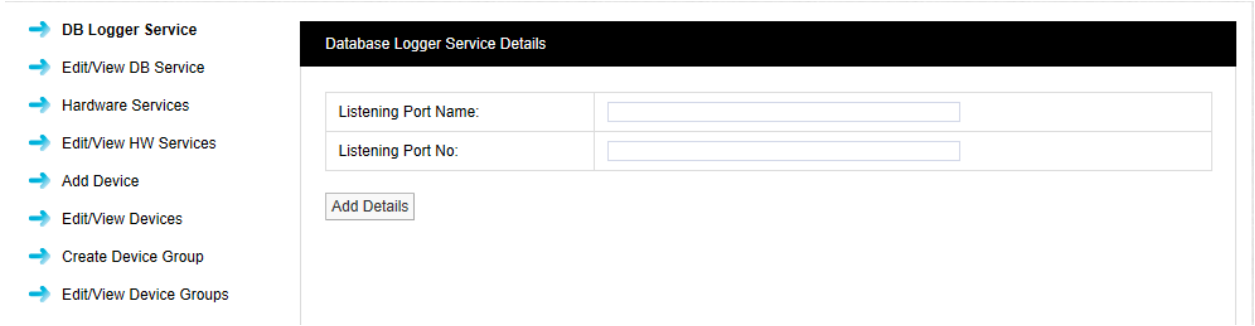


Select **Admin** then **Device Configuration** from the drop down menu to access the **Device Configuration** section.

The **Admin** menu is located at the right hand side of the top menu bar.

After selecting **Device Configuration** a new window appears (see Figure 65 below).

Figure 65



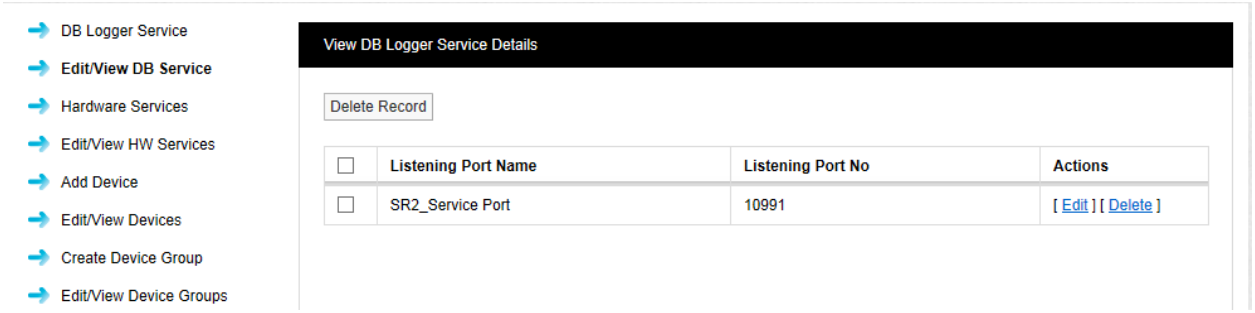
5.6.1 Setting up the Database Logger Service

The **DB Logger Service** is the **Service** that passes data from the **Hardware Services** to the SQL database. The Listening Port Name and the Listening Port No are set automatically during installation. There is an option to change this information during installation but it is highly recommended that the default values are used. If there is a port conflict this should be noted on the *Synergy Pre-Requisites* manual (doc. no. GD5209)..

5.6.2 Edit/View DB Service

To **Edit** the **Listening Port No** select **Edit/View DB Service** from the menu a new window **View DB Logger Service Details** will appear, see Figure 66 below.

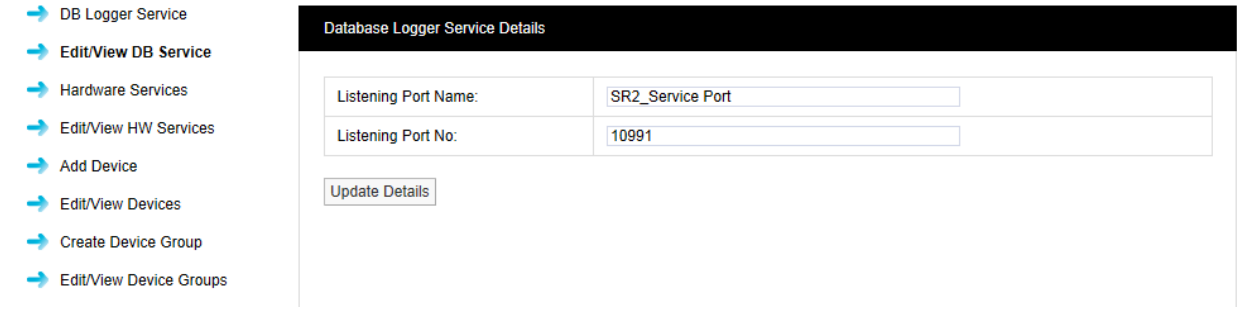
Figure 66



It is possible at some time in the future that a new piece of software could be added to the server which causes a **Port** conflict. IMC would recommend that the new item be given a different **Port** number. If this is not possible then a new Port number can be allocated to the relevant **Synergy Service**.

To **Edit** the **Port** number select Edit in the line corresponding to the Service you wish to change the **Port** number a new Window **Database Logger Service Details** will appear, see Figure 67 below.

Figure 67



You will need to contact your IT department or IT service provider to get a new **Port** number. Once you have the new **Port** number enter it into the dialog box next to **Listening Port No**. Once you are happy with the details select **Update Details**.

Warning: The Data Services will need to be re-started after changes are made in this section.

All Hardware Services that use the Port number will need to be re-installed with the new Port number set after the change.

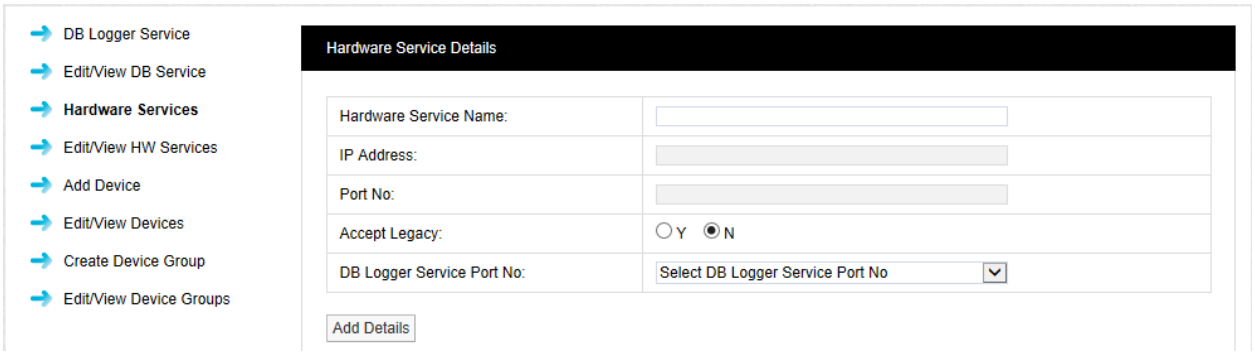
5.6.3 Hardware Services

A **Hardware Service** is a service that retrieves data from a data control device. A data control device is an SR2 (Smart Receiver), CR2 (Controller) or iSense (GPRS sensor/transmitter).

These details will be configured on install. There is an option to change this information during installation but it is highly recommended that the default values are used. If there is a **Port** conflict this should be noted on the Synergy Pre-requisites document and a new **Port** number specified.

Accept legacy is required if any sensors received by this device are prior to the 4000/5000 USB series.

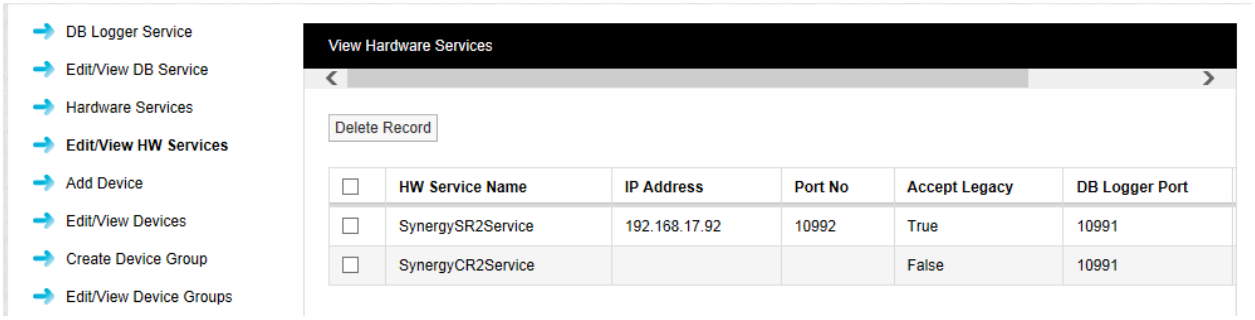
Figure 68



5.6.4 Edit/View HW Services

To **Edit** the **Hardware Service Details** select **Edit/View HW Services** from the menu a new window **View Hardware Services** will appear, see Figure 69 below.

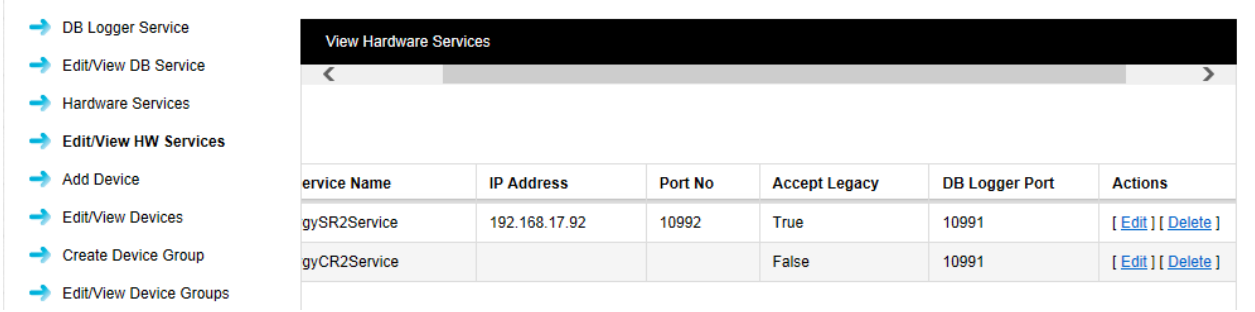
Figure 69



It is possible at some time in the future that a new piece of software could be added to the server which causes a **Port** conflict. IMC would recommend that the new item be given a different **Port** number; if this is not possible then a new Port number can be allocated to the relevant **Synergy Service**.

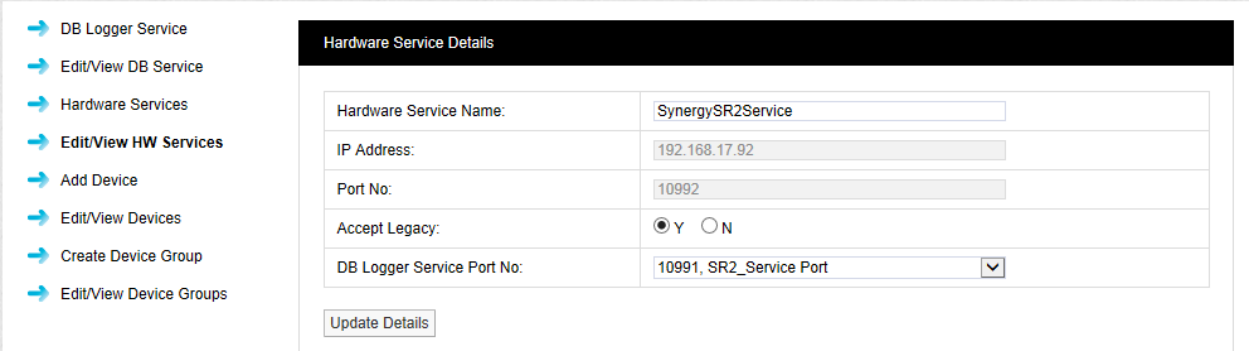
You will need to use the scroll bar at the top of the **View Hardware Services** window, see Figure 70 below to be able to view the **Edit** command.

Figure 70



To Edit the **IP Address** or **DB Logger Port** number select **Edit** in the line corresponding to the Service you wish to change either the **IP Address** or **DB Logger Port** number a new Window Database **Hardware Service Details** will appear, see Figure 71 below.

Figure 71



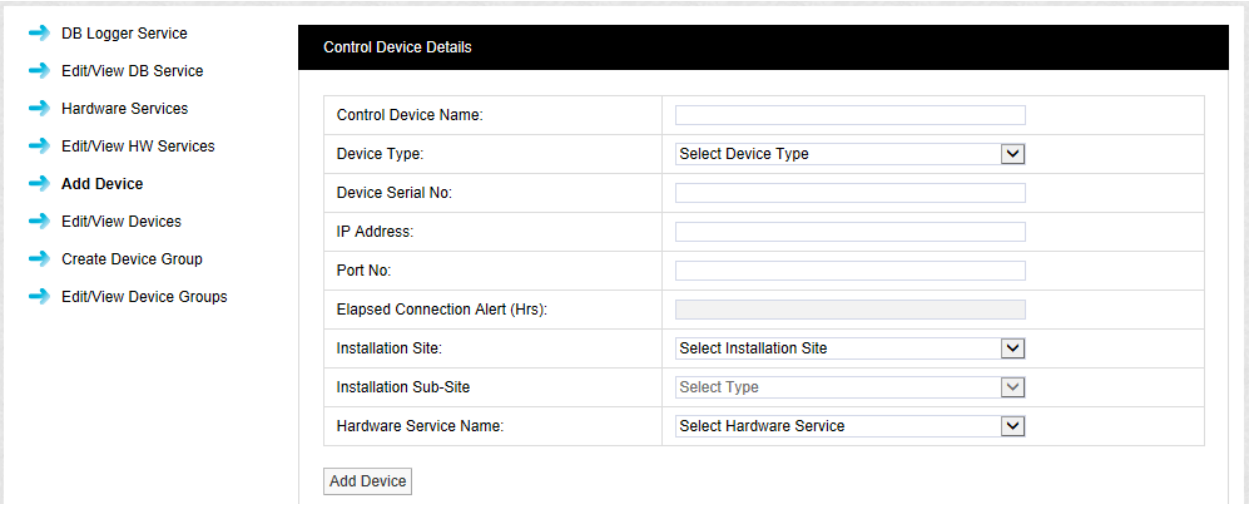
You will need to contact your IT department or IT service provider to get a new **IP Address** or **Port** number. Once you have the new details number enter it into the dialog boxes next to either **IP Address** or **Port No**. The details for **Hardware Service Name**, **Accept Legacy** and **DB Logger Service Port No** should not be changed. Once you are happy with the details select **Update Details**.

To make these changes take effect you will need to un-install the HW Services and re-install them, see the *Synergy Installation Manual* (doc. no. IM5207) for details..

5.6.5 Adding Devices

This section allows the addition of wireless receiving devices to Synergy. To add **Devices** to Synergy select **Add Device** from the menu a new window **Control Device Details** will appear, see Figure 72 below.

Figure 72



Control Device Name:

This should to be related to site and location to identify the **Device** this should be a unique name across all sites. Example: **SR2 First Floor Building One** Enter required text into dialog box next to **Control Device Name**.

Device Type:

The Device Type is selected from a pre-defined list; select the Device Type from the drop down menu. There is a label on the back of all **Receiving Devices** that states the **Device Type.**

Device Serial No:

This can be found on a label on the back of the device.

IP Address:

The **IP Address** can be found on the Synergy pre-requisite document, enter **IP Address** into dialog box next to **IP Address**. IP Address should be entered in the following way **192.168.1.20**

Port No:

The suggested **Port** number 10992 can be the same for all **Devices** this will be on the Synergy pre-requisite document. This can be specified by the client's IT department or IT provider and should be noted on the Synergy pre-requisite document.

Elapsed Connection Alert

(Can only be set for CR2 GPRS devices.) An Alert is generated if the specified time period elapses, without the CR2 GPRS unit connecting to the IMC Remote Data service. An entry is recorded in the Activity Log and the connection icon on the Site panel changed to red ( ); if the Email System Group and/or the SMS System Group, has Hardware Event selected, then an Email and/or SMS will be sent.

Installation Site:

The **Installation Site** can be selected from the drop-down menu. This list is automatically populated with **Site** names added in the **Sites** section (5.5.1). Select the **Site** name for the **Site** that you are adding the **Device** to.

Installation Sub-Site:

The **Installation Sub-Site** can be selected from the drop down menu. This list is automatically populated with Sub Site names added in the Sites section see 5.5.1. Select the **Sub Site** name for the **Site** to which you are adding the **Device**.

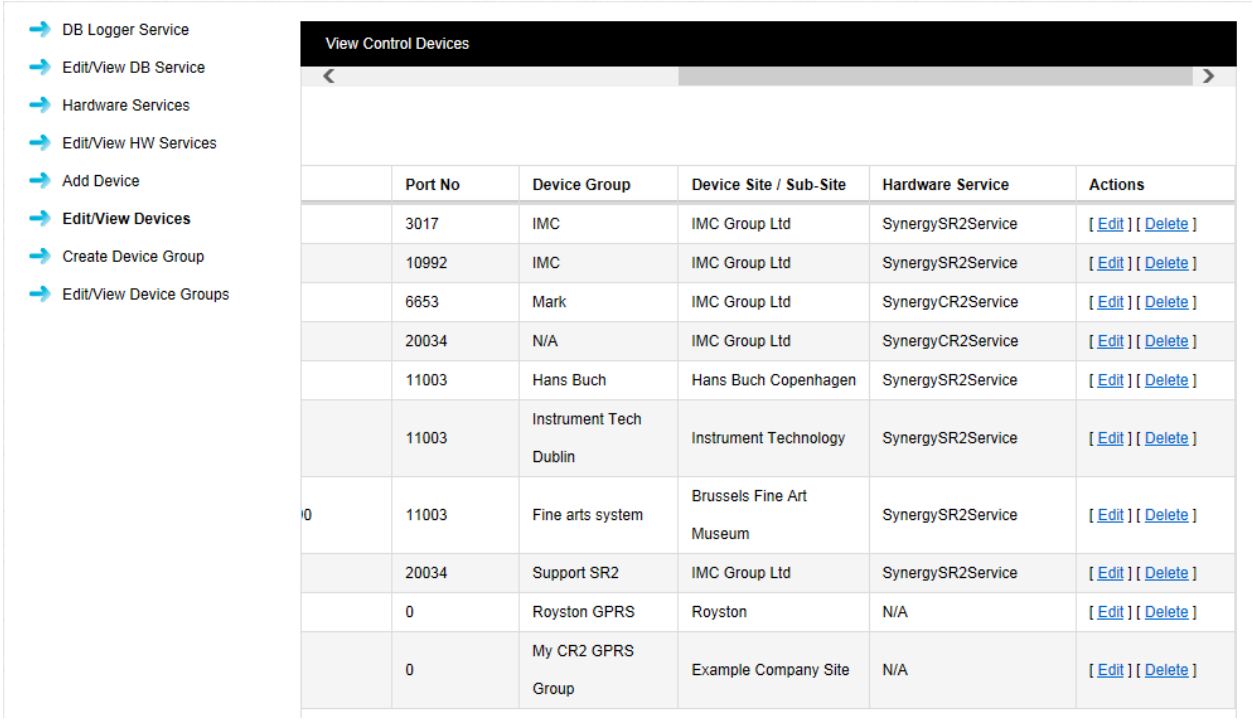
Hardware Service Name:

The **Hardware Service Name** must be the same as the **Device Type** being added. Once you are happy with the details select **Update Details**.

5.6.6 Edit/View Devices

To **Edit** the **Hardware Service Details** select **Edit/View HW Services** from the menu a new window **View Hardware Services** will appear, see Figure 73 below. You will need to use the scroll bars to see the **Edit** link.

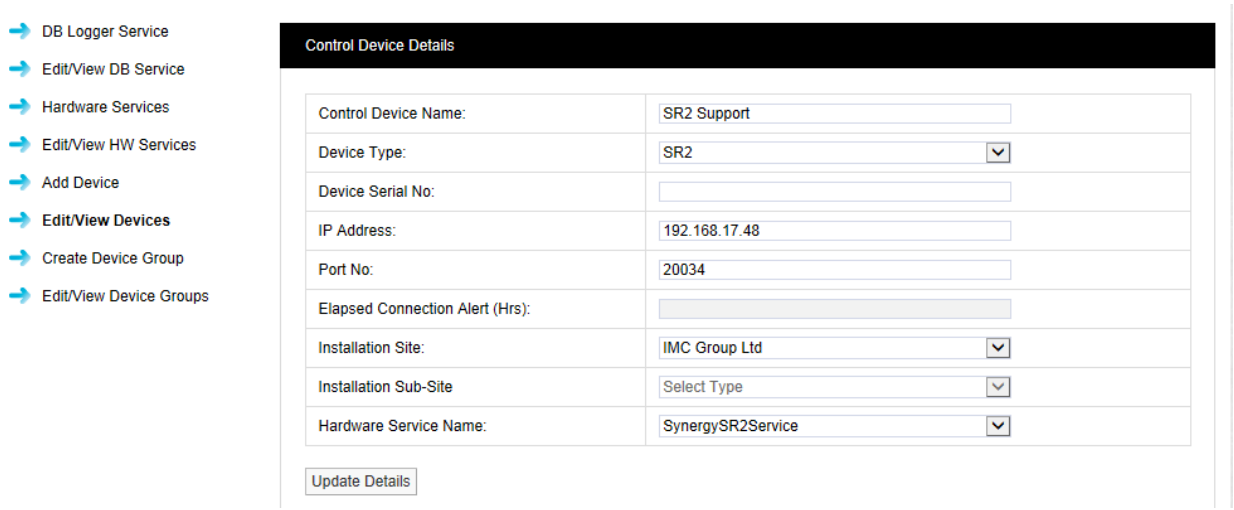
Figure 73



	Port No	Device Group	Device Site / Sub-Site	Hardware Service	Actions
	3017	IMC	IMC Group Ltd	SynergySR2Service	[Edit] [Delete]
	10992	IMC	IMC Group Ltd	SynergySR2Service	[Edit] [Delete]
	6653	Mark	IMC Group Ltd	SynergyCR2Service	[Edit] [Delete]
	20034	N/A	IMC Group Ltd	SynergyCR2Service	[Edit] [Delete]
	11003	Hans Buch	Hans Buch Copenhagen	SynergySR2Service	[Edit] [Delete]
	11003	Instrument Tech Dublin	Instrument Technology	SynergySR2Service	[Edit] [Delete]
0	11003	Fine arts system	Brussels Fine Art Museum	SynergySR2Service	[Edit] [Delete]
	20034	Support SR2	IMC Group Ltd	SynergySR2Service	[Edit] [Delete]
	0	Royston GPRS	Royston	N/A	[Edit] [Delete]
	0	My CR2 GPRS Group	Example Company Site	N/A	[Edit] [Delete]

Select the **Edit** link in the line corresponding to the **Device** that you wish to **Edit** a new window will appear, see Figure 74 below.

Figure 74

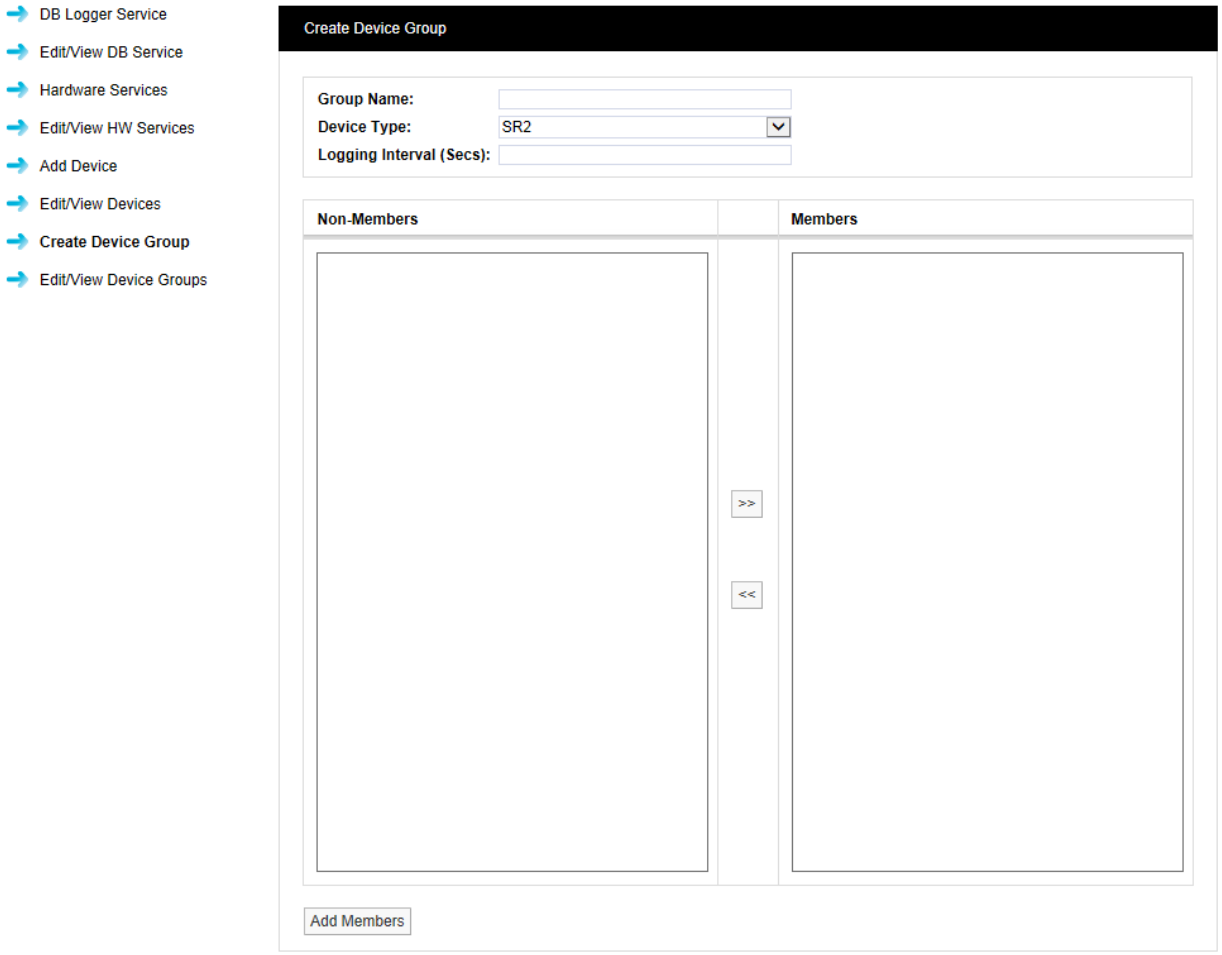


Select the items to **Edit** when happy with the changes select **Update Details**. You will need to use the **Management Tool** to re-configure Control Device Hardware with the new settings.

5.6.7 Create Device Groups

Device Groups enable dealing with systems that have more than 255 transmitters. To add a **Device Group** select **Create Device Groups** from the menu, a new window **Create Device Groups** will appear, see Figure 75 below.

Figure 75



The **Group Name** should be a name that easily identifies a **Device Group** a **Group** that contains one or more receiving Devices. Every receiving device must be in a **Device Group**, see examples below:

- Site with one receiver and 25 transmitters would have the one receiver in one group.
- Site with 3 receivers and 200 transmitters would have all 3 receivers in the same group.
- Site with 3 receivers and 400 transmitters 200 transmitters going to 2 receivers and 200 transmitters on a different frequency going to the third receiver would have 2 in one group and 1 in a second group.
- Site with 3 receivers and 600 transmitters with 200 transmitters each on a different frequency would have three groups each group with one receiver in each.

Each receiving device can receive data from a maximum of 255 transmitters; there can be multiple receiving devices in one **Device Group** providing the total number of transmitters going to those receiving devices does not exceed 255.

The **Device Group** name should be something that represents the site where the receiving devices are located. Enter the name in the **Edit** box next to **Group Name**.

The **Device Type** is selected from a drop down menu, select the **Device Type** that corresponds to your **Device**, there will be a label on the back of your receiving device that will identify the **Device Type**.

The **Logging Interval (Sec)** is the time period the associated **Hardware Service** communicates with the **Devices** in the Group. The minimum time is 60 seconds settings below 60 seconds will be ignored, and the **Hardware Service** will communicate with the **Group Devices** every minute. When receiving **Devices** are located in remote sites a time period of 120 or more seconds is recommended to keep traffic on the network connection down. For some devices (for example a CR2 Controller), the logging interval is not appropriate and the Logging Interval box is greyed out.

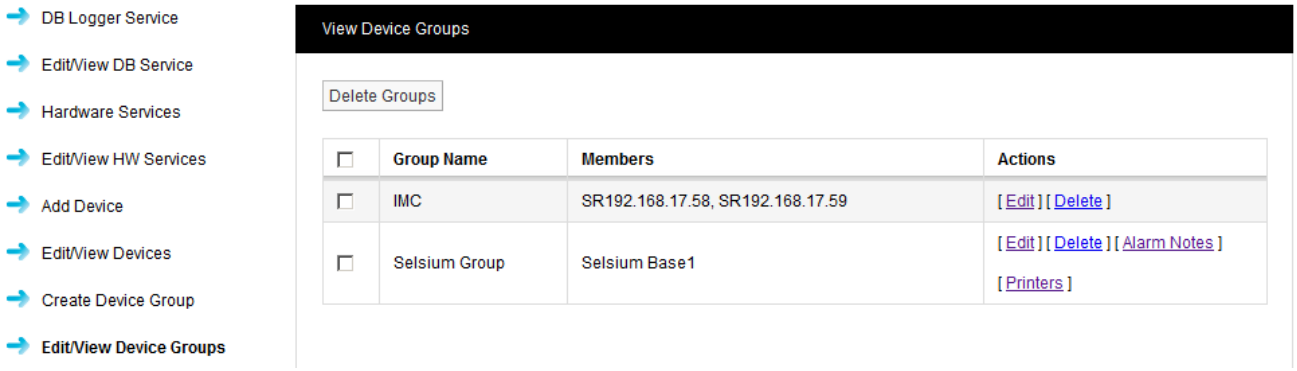
Available **Groups** will be listed in the left column, to select a **Device** highlight it then click the double right arrows to move it across to the right column.

Once you are happy that the details are correct select **Add Members**.

5.6.8 Edit/View Device Groups

To **Edit/View Device Groups** select **Edit/View Device Groups** from the menu a new window called **View Device Groups** will appear, see Figure 76 below.

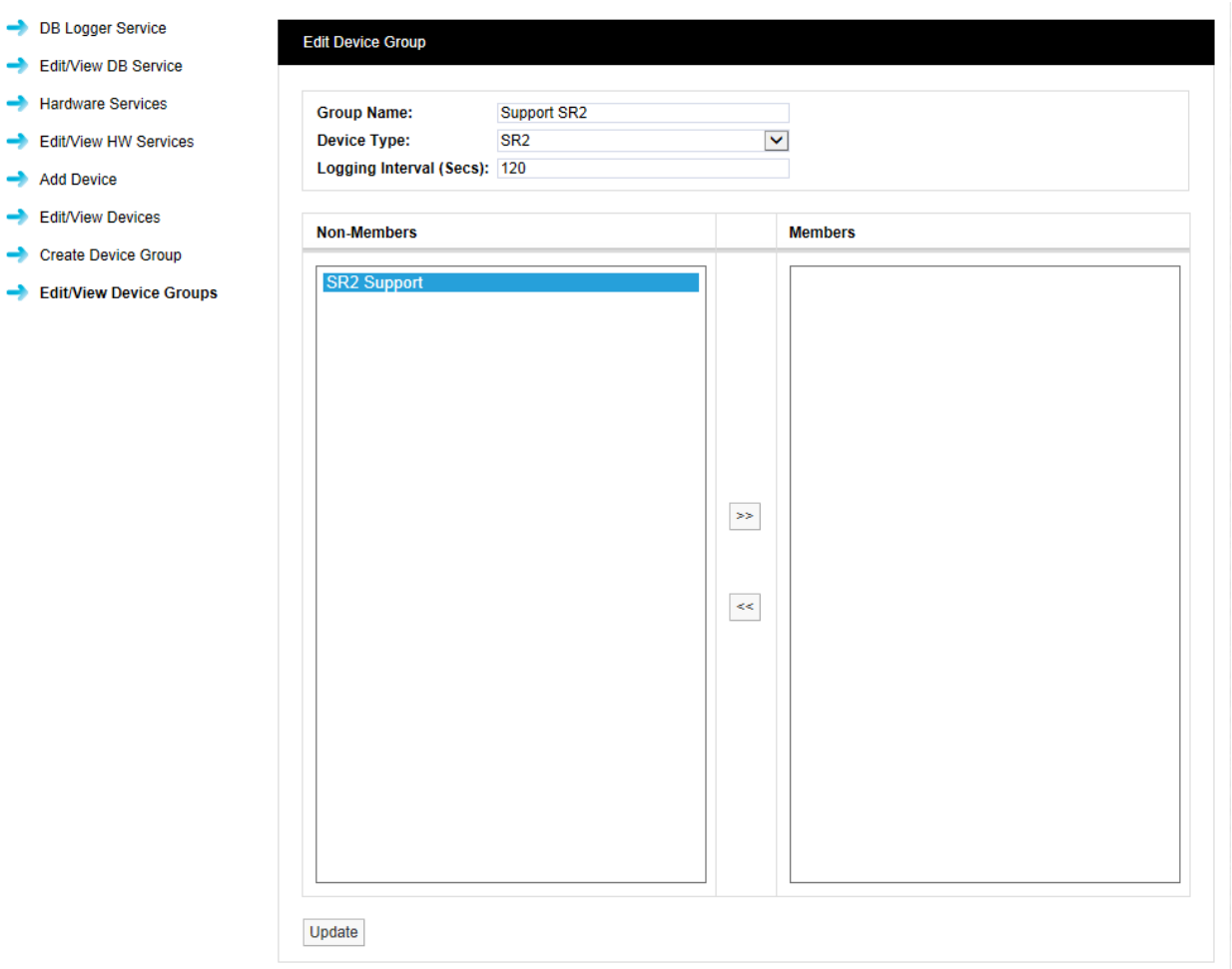
Figure 76



To **Edit** a **Device Group** select **Edit** in the line corresponding to the **Group Name** that you wish to **Edit**, a new window called **Edit Device Groups** will appear, see Figure 77 below.

Alarm Notes and **Printers** a ***Selsium*** specific option, and is only available when the ***Selsium*** OEM licence is present.

Figure 77



To remove **Devices** from the **Group,** highlight them in the right hand column then select the double left arrows this will de-select them and move them to the left column. You cannot de-select all **Devices** from a **Group** a **Group** always has to have at least one **Device**. If you need to de-select all the **Devices** then Delete the **Group**. This can be done in the previous step, see Figure 77.

Where the ***Selsium*** OEM licence is active, a user can enter Alarm notes for a Device Group and also associate a printer with the Device Group. Alarm notes entered for a Device Group will only be used if Sensor Alarm Notes are not available, see Figure 78 below. Information related to sensors in alarm will be printed to the selected printer.

The system will only print to printers installed on the **Synergy** server; the Customer's IT department is responsible for making sure that printers are installed on the server. A test print feature is also available on **Printers** screen; when user clicks the button a standard test message is printed on the current printer, see Figure 79 below.

Figure 78

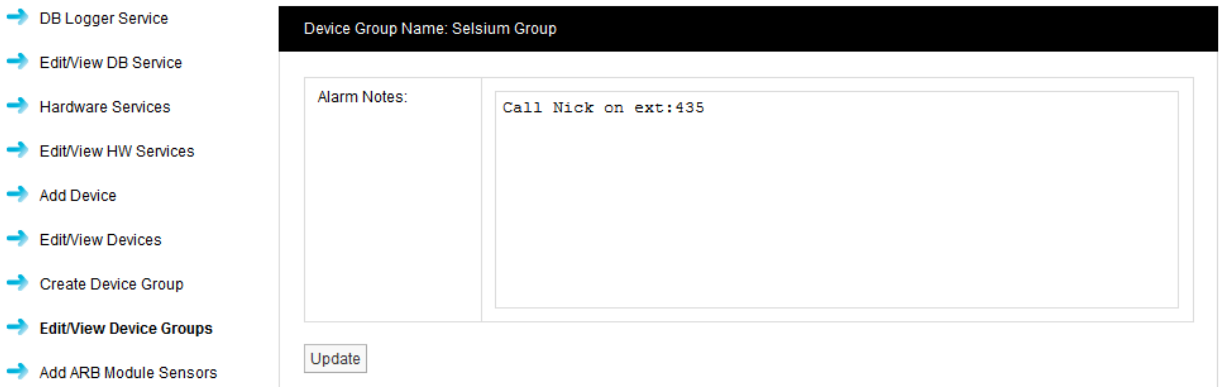
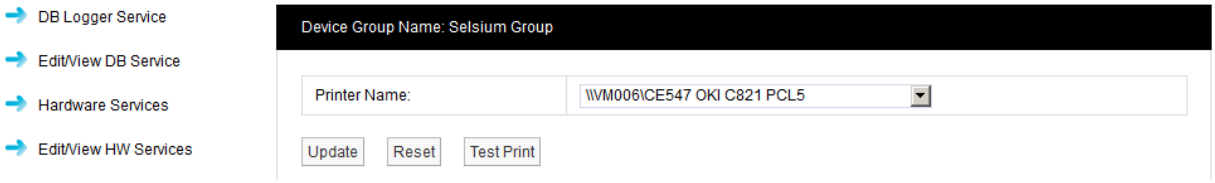


Figure 79



5.6.9 Adding ARB Module Sensors

This facility supports the operation of the IMC ARB Module and enables you to associate sensors with the module. Select **Add ARB Module Sensors** from the side menu, see Figure 80 below.

Site Name

Select the Site which contains the ARB module of interest from the pull-down list.

Sub Site Name

Select the Sub Site (if present) which contains the ARB module of interest from the pull-down list.

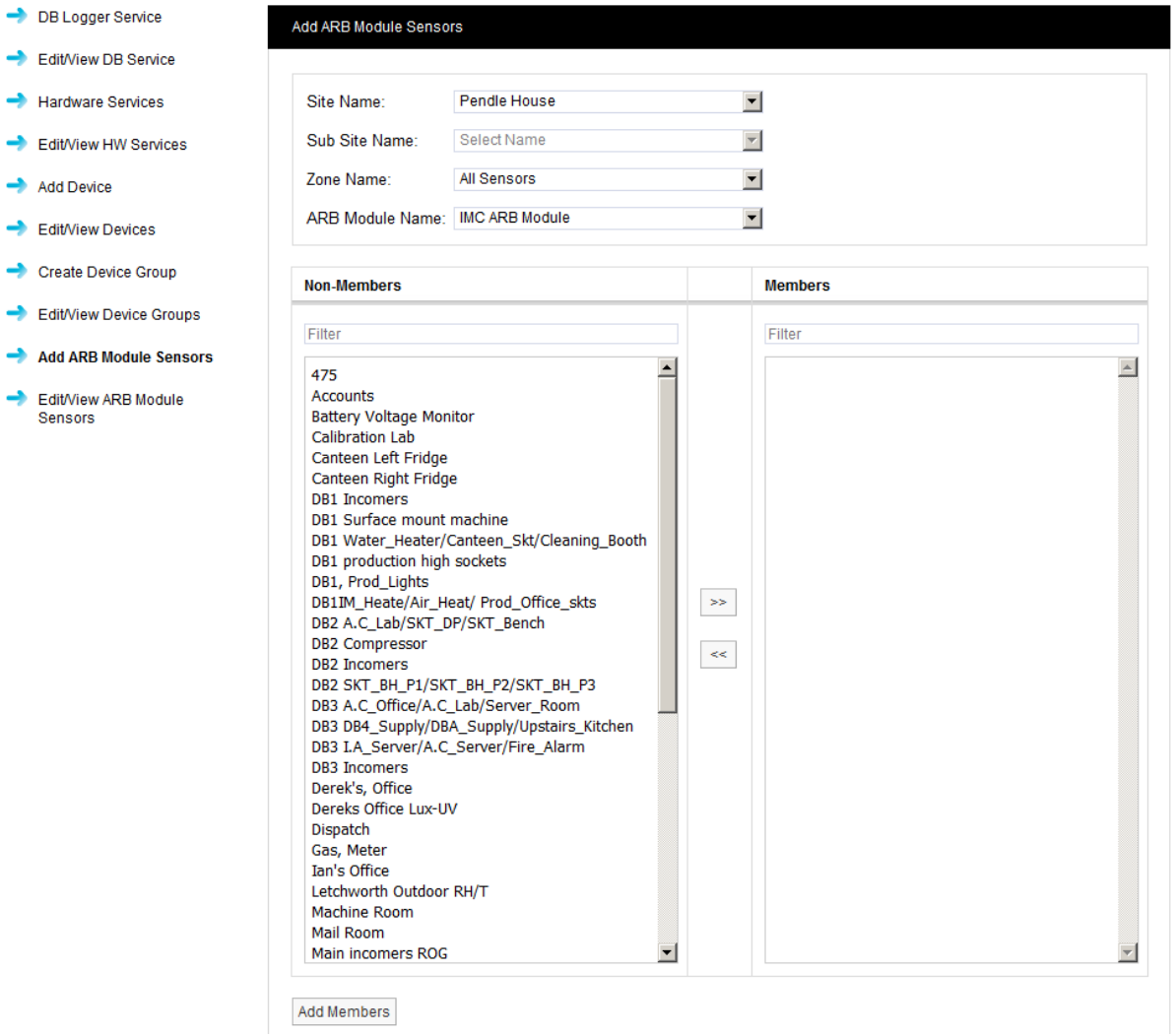
Zone Name

Select the Zone which contains the Sensors of interest from the pull-down list. A list of sensors appear under Non-Members, select sensors of interest which can be which can be associated with the Alarm Unit.

Alarm Unit Name

Select the Alarm Unit of interest (previously created using the Adding Devices facility).

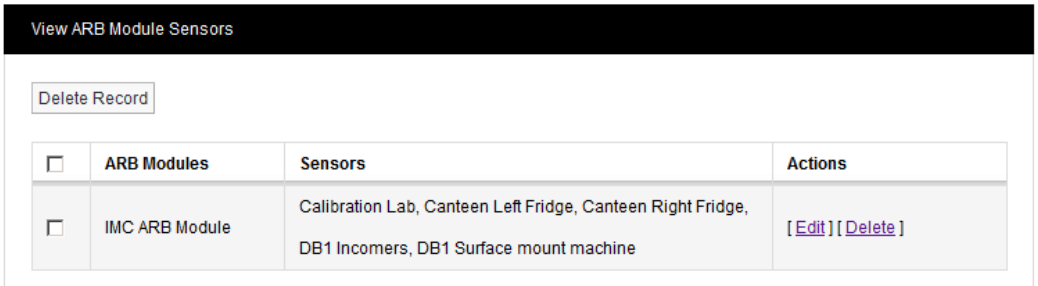
Figure 80



To associate sensors with the ARB module select the required sensors from the Non-Members list then select the double arrow, to move the selected sensors to the Members list. Click Add Members to move the selected sensors to the Members list.

The View ARB Module Sensors dialogue box will appear to show the sensors which have been associated with the ARB Module. See Figure 81 below for example

Figure 81

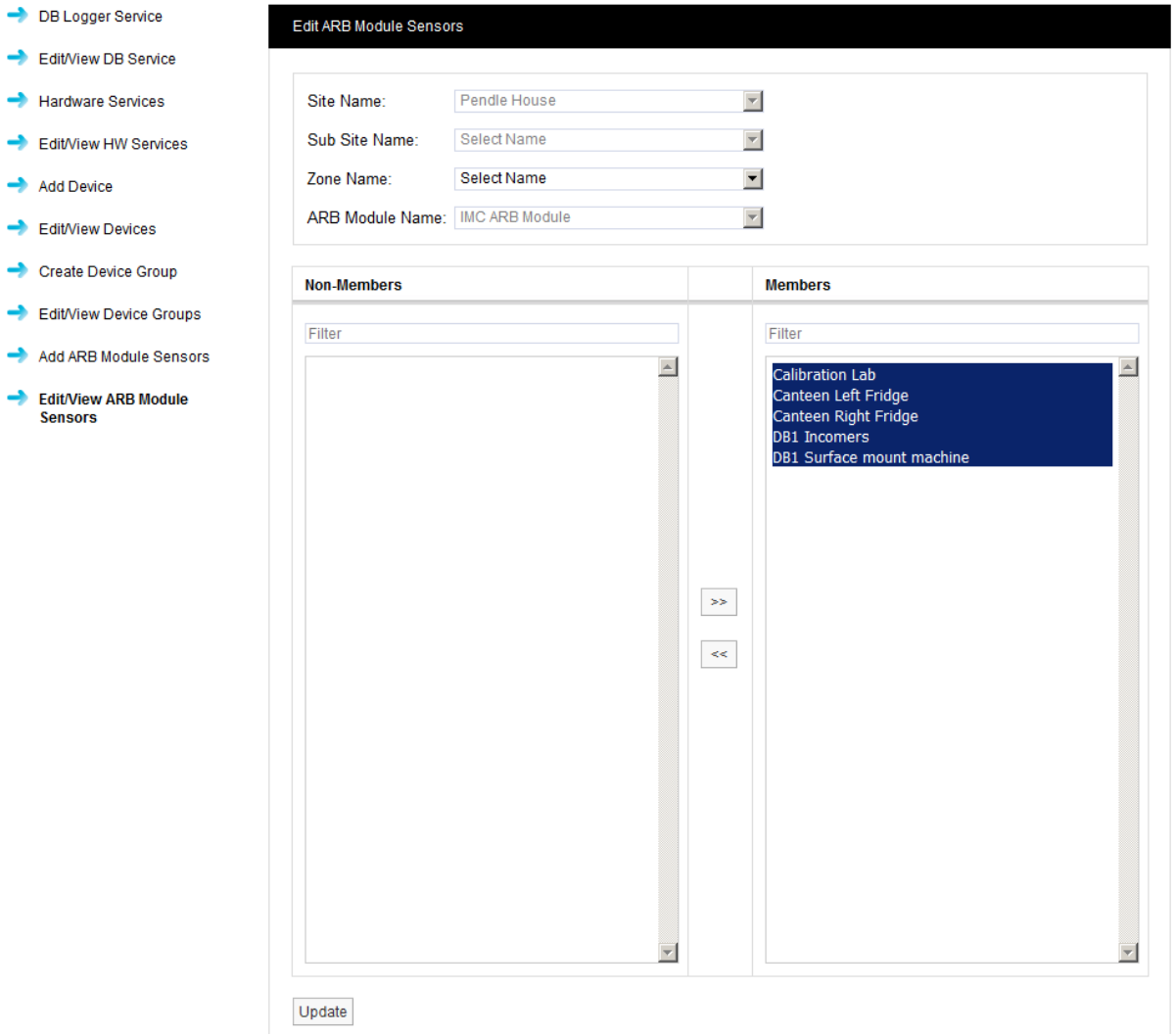


5.6.10 Editing/Viewing ARB Module Sensors

To edit or view associated ARB Module sensors select **Edit/View ARB Module Sensors** from the menu to give the **View ARB Module Sensors** window, see above for example.

To edit the list of sensors associated with a given ARB module, select Edit in the line corresponding to the Sensor list that you wish to Edit. A new window called **Edit ARB Module Sensors** will appear, see Figure 82 below.

Figure 82

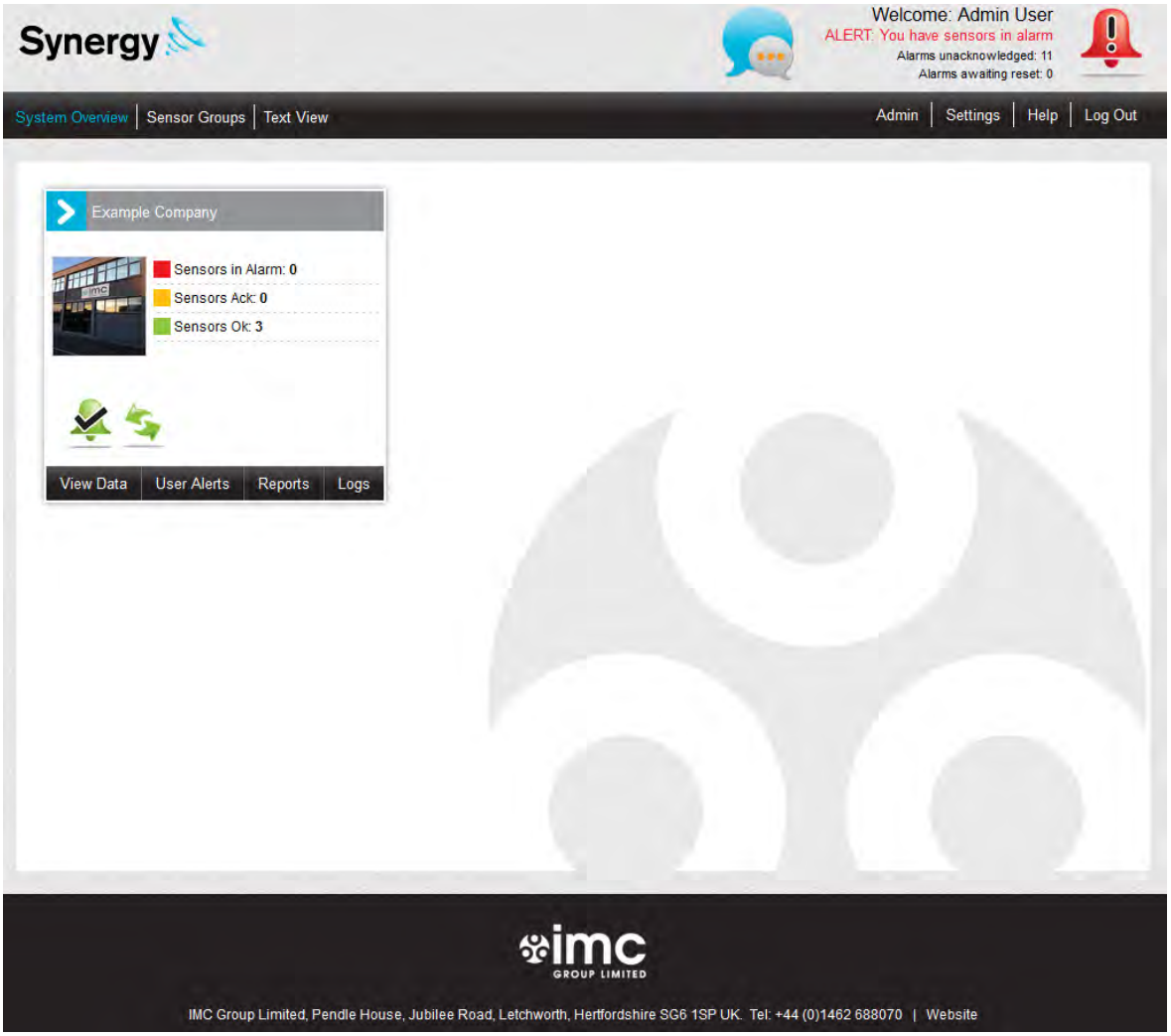


To remove sensors from the list highlight them in the left hand column then select the double left arrow control. The double left arrows will de-select the selected sensor(s) and move them to the left column. Having de-selected the required sensors click Update to update the list.

6 System Configuration Sensors

During the Synergy installation process a default Site will have been created you can Edit the details for the default site, see section 5.5. The first time you run Synergy the front or opening screen will look something like Figure 83 below.

Figure 83



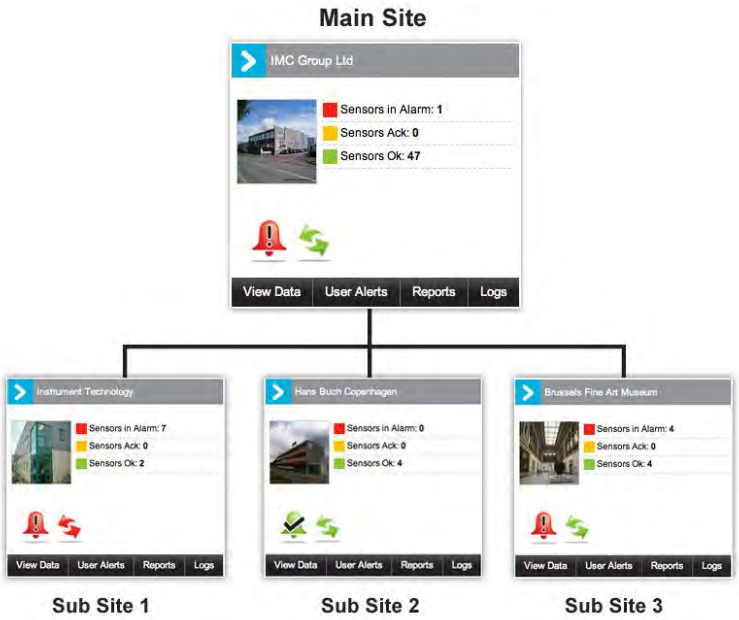
Before you can start monitoring you will need to add some sensors to Synergy.

The front overview screen gives an overall view of the system; **Sites** can be added to the front screen or **Dashboard** up to six **Sites** can be added to the **Dashboard,** the **Sites** that are displayed on the **Dashboard** would normally be the primary **Sites**.

Each main **Site** can have up to six **Sub Sites** which gives a total of 36 **Sites** that can be displayed on the **Dashboard**. For larger systems **Sites** can be viewed in a **Text View** format.

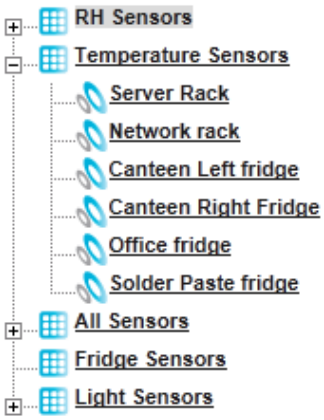
See Figure 84 below.

Figure 84



Sensors added to a **Site** can be sub divided into **Zones**; **Zones** are viewed in a familiar **Windows** style tree, see Figure 85 below.

Figure 85



Zones allow large systems to be sub divided into logical groups of sensors.

Zones can also be used when granting viewing **Privileges.** When a Site contains many sensors just granting **Privileges** for a whole site could still lead to a single user being overloaded with data that doesn't relate to that user. **Zones** can be allocated to users as well as Sites.

Individual sensors can't be allocated in Privileges only Sites and Zones, there is no practical limit to the amount of Zones that can be added to the system. To allocate an individual sensor to a user add a Zone for that sensor.

6.1 Adding Zones

Zones are used to logically group sensors, this could be all sensors of the same type or all the sensors in a particular area. For example a Zone could be called RH-T Sensors which contains all the humidity and temperature sensors, or First Floor Sensors which contains sensors of different types but are all on the first floor.

During installation a default Site is created this Site contains one empty Zone called Zone1. To view Zones select **View Data** on the default Site.

A new window will appear this window will, as we add Zones and sensors become the main data viewing and access window, see Figure 86 below.

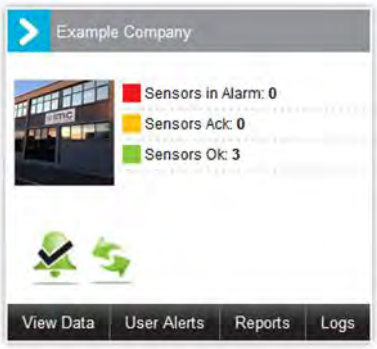
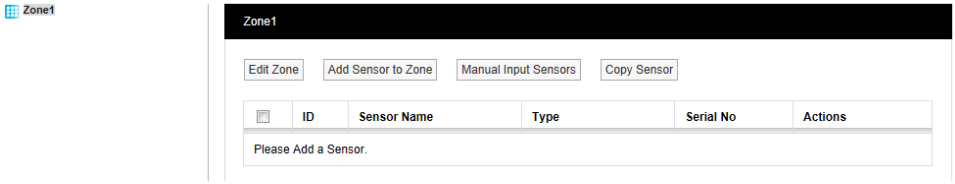


Figure 86

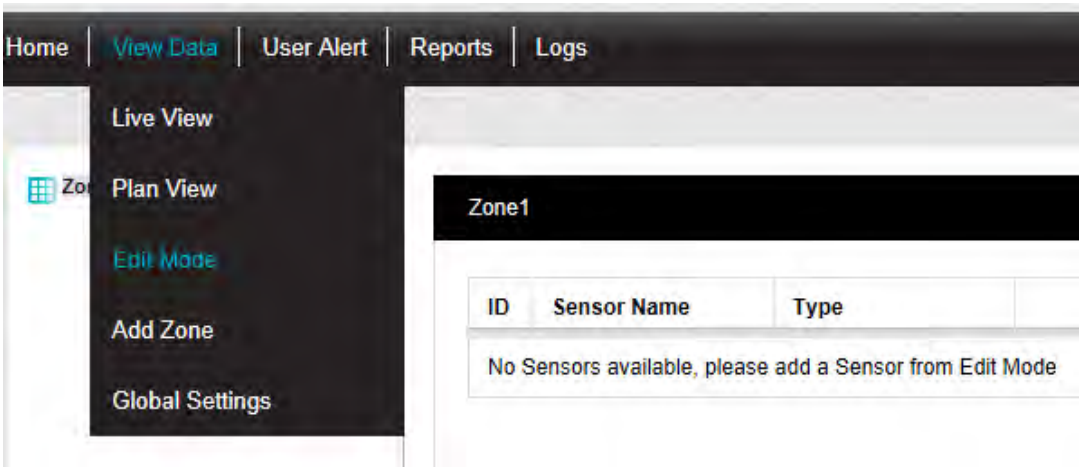


To Edit and add Zones select View Data from the main menu bar then Edit Mode a new window will appear, see Figure 87 below.

Edit Mode is only available if you have the correct access Permissions, if you do not have the access permissions you will see the following message:

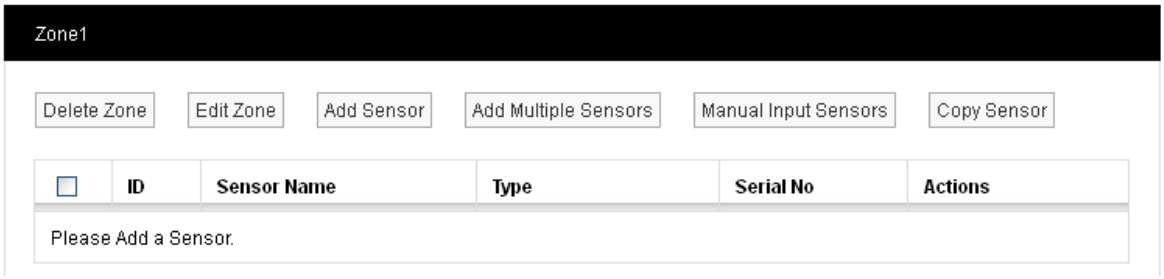
Access Denied. You are not authorised to perform this task, please contact your System Administrator.

Figure 87



After selecting Edit Mode the Sensor and Zone editing/configuration window appears, see Figure 88 below.

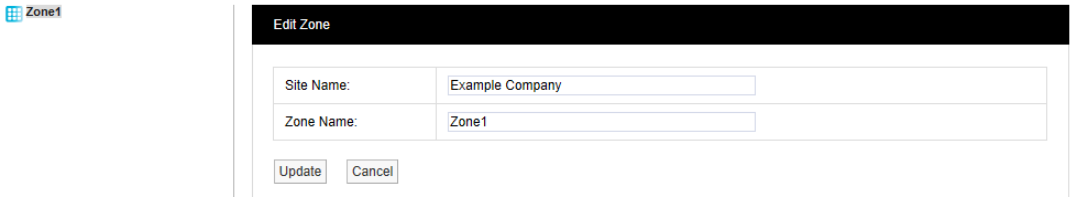
Figure 88



6.1.1 Editing Zones

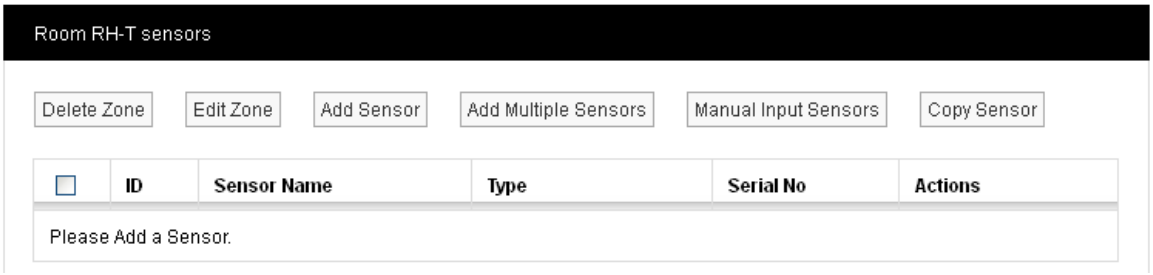
To Edit the Zone select Edit Zone the Edit Zone window will appear, see Figure 89 below.

Figure 89



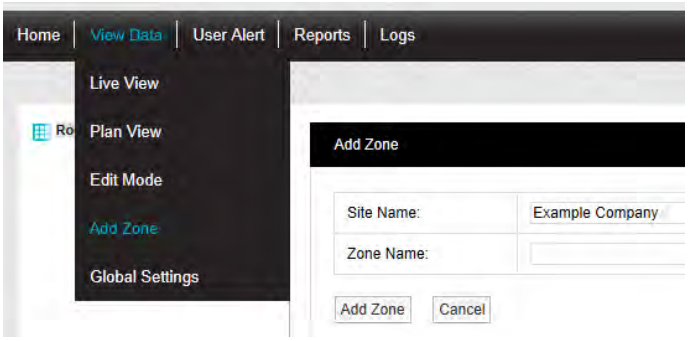
Select a name for the **Zone** that will make it easy to identify either the type of sensors in the **Zone** or the location of the **Zone**. In this example we are going to call the **Zone Room RH-T sensors**. Type the name in the dialog box next to **Zone Name,** once happy select **Update**, see Figure 90 below.

Figure 90



To add a new **Zone** select **Add Zone** from the main **View Data** menu, see Figure 91 below.

Figure 91

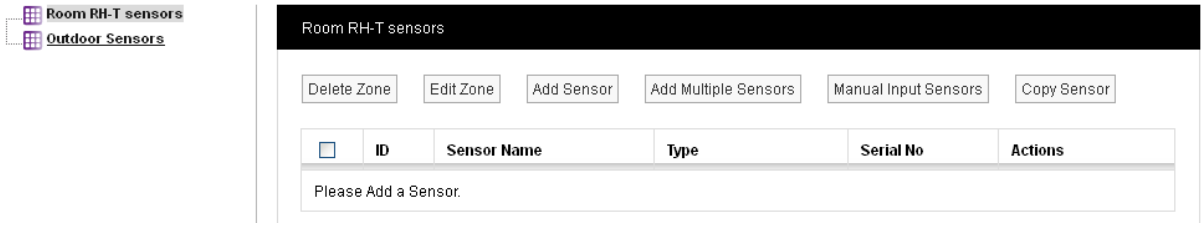


A new window will appear, see Figure 92 below.

Figure 92

To add a new **Zone,** enter a name in the dialog box next to **Zone Name**. For this example we will call the **Zone Outdoor Sensors**. When happy select **Add Zone**. You will now see that another Zone has appeared in the tree, see Figure 93 below.

Figure 93

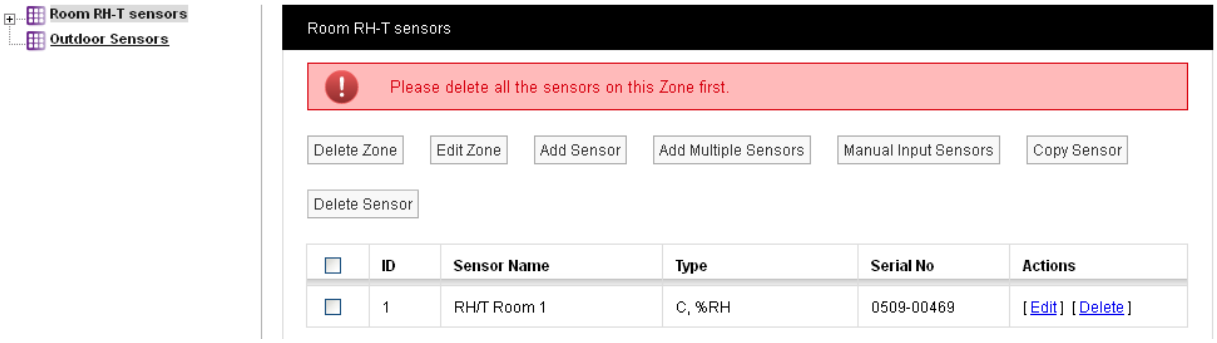


6.1.2 Deleting Zones

To **Delete** a **Zone** select check the checkbox next to the Zone that you want to **Delete** then select **Delete Zone** from the menu. You cannot **Delete** a **Zone** with **Sensors** still in the **Zone**, see below Figure 94 below.

Delete all sensors in **Zone** then repeat steps above to **Delete** the **Zone**. Alternatively select **Edit** in the line corresponding to the **Zone** to be **Deleted**.

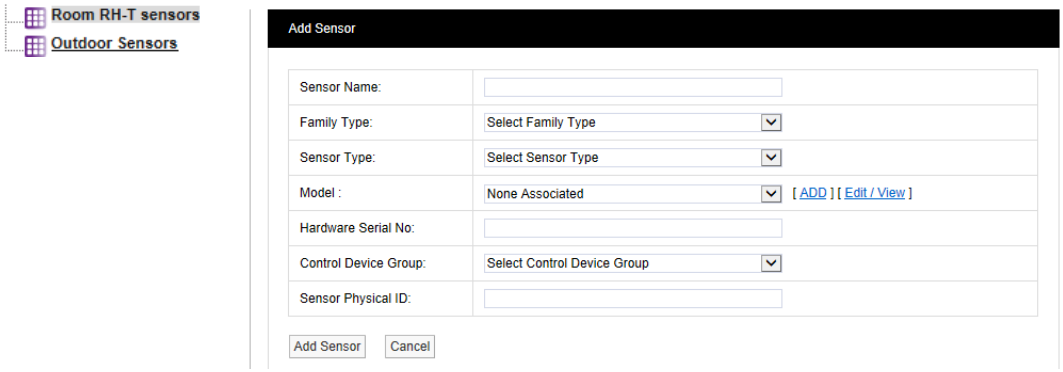
Figure 94



6.2 Adding Sensors

Now that we have added some **Zones** we can now add some **Sensors**. Before adding **Sensors** you need to select the **Zone** that you wish to add **Sensors** to. To add **Sensors** select **View Data>Edit Mode**, then select **Add Sensor**. A new window called **Add Sensor** will appear, see Figure 95 below.

Figure 95



You will notice that the **Zone** Room RH-T sensors is highlighted this is the **Zone** that the new **Sensor** will be added to.

Sensor Name:

Here you can type a name for the Sensor that means something in relation to either the type of measurement that the Sensor is making or the location, for example, **RH/T Room 1** or **Room 1**.

For this example we are going to call our **Sensor**, **RH/T Room 1**.

Family Type

The 'family' for the sensor you are adding. Select from Hanwell Radio, iSense, Manual Input or Logger.

Sensor Type:

Select the type of **Sensor** you are adding from the drop down menu, a detailed list explaining all the **Sensor** types can be found on our website at this address. http://www.the-imcgroup.com/sensors-type-descriptions

For this example we will add a temperature and humidity sensor, the standard temperature and humidity sensor can be found in the list as **Thermistor/RH**.

Model:

This field is not mandatory, you can use the add button to add a list of sensor types or families. This is an aide-mémoire and serves no operational function within the software.

Sensor Physical ID:

This is the unique sensor ID, it can be in the range 1 to 255. For this example we are going to select sensor 1. If the Physical ID is already used by another sensor ,then the system will suggest the next available ID.

Hardware Serial No:

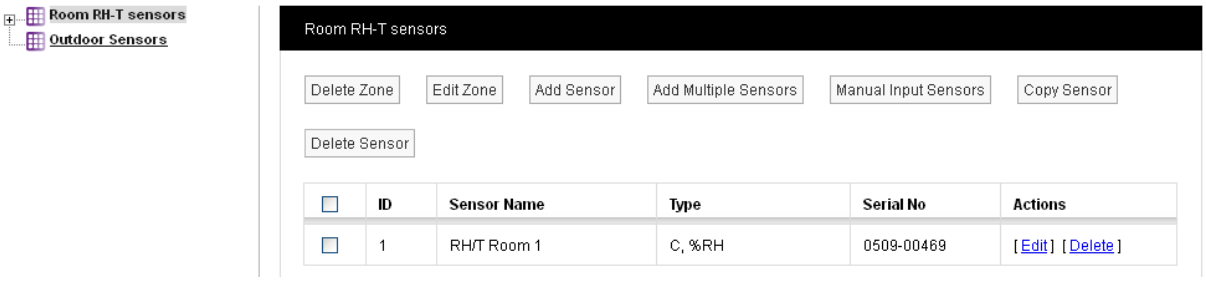
This is the transmitter serial number and can be found on the back of the transmitter, you can either enter the serial number in the dialog box in the following format, 0113-00001 or you can enter a 0 (zero), if a 0 (zero) is entered the serial number will be filled in automatically by the Synergy Management Application when the sensor is synchronised. For details see the *Synergy Management Tool* manual, document number IM5210.

Control Device Group:

The **Control Device Group** is the wireless receiving device that will receive the data from the transmitters. The **Control Device Group** is selected from the drop down menu, select the **Control Device Group** corresponds to the **Site** and is compatible with the wireless transmitters used at that **Site**. For more details see section 5.6.5. For this example, we are going to select IMC.

Once you are happy with the details select update. You will now see that the **Zone** icon has a + symbol to the left of the icon and that the sensor we have just created has appeared in the gird on the right hand side of the screen. See Figure 96 below.

Figure 96



You can add more sensors by repeating the steps in section 1.2. When adding more sensors additional **Zones** can also be added and additional sensors added to those **Zones**. Sensors can be **Edited** or **Deleted** by selecting either **Edit** or **Delete in** the line corresponding to the sensor to be **Edited** or **Deleted**. You can sort sensors record by clicking **ID** or **Sensor Name** headings.

6.2.1 Add Multiple Sensors

Multiple sensors of same sensor type can be added by selecting **Add Multiple Sensors**, this feature is useful for adding sensors in a batch.

6.2.2 Manual Input Sensors

Synergy has been designed with the concept of having sensors where the data is input manually. An example would be data from pest control traps, pests caught in a pheromone traps could be counted on a weekly basis and the numbers entered into a **Manual Input Sensor** this data could then be compared against temperature and humidity sensors in the same area to see if there is any correlation in changes in temperature or humidity on insect activity.

6.2.3 Copy Sensors

Sensors can be copied from on Zone to another; there are several cases where you may want to have the same sensor duplicated in different Zones.

Example 1

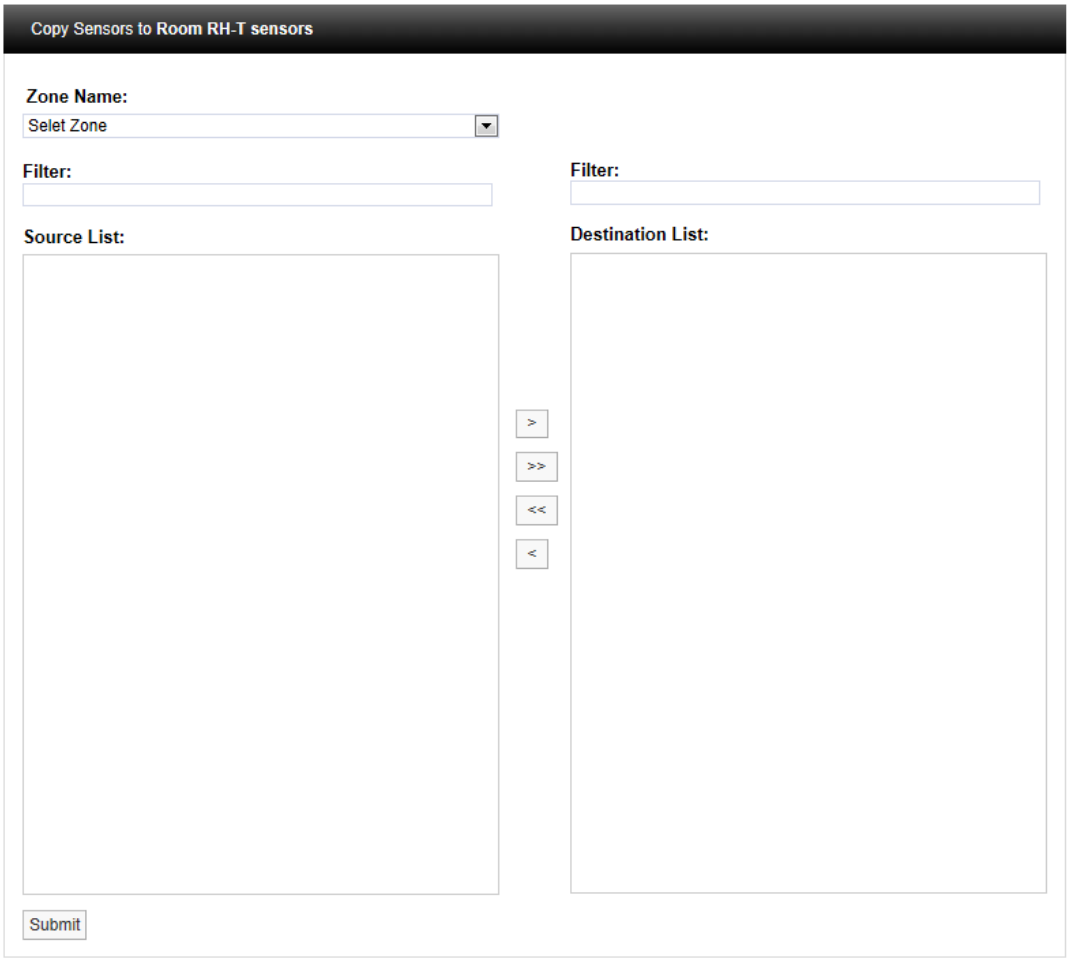
When a site has an outdoor sensor it is desirable to have this sensor available in every Zone. The data from an outdoor sensor can be compared with sensor data from individual rooms to see if the conditions inside are being driven by the conditions outside. This is a good indicator of how well HVAC systems (Heating, Ventilating and Air Conditioning) are performing.

Example 2

Rooms that have many enclosed spaces such as fridges in a Hospital or display cases in a Museum can benefit from being able to compare sensor data. A gallery with 20 display cases all with RH/T sensors could be compared with an RH/T sensor placed in the open gallery again by comparing the data you can see if the conditions outside are driving the conditions inside the case.

To copy sensors, highlight in the **Zones** list the **Zone** that you want to copy sensors to then select **Copy Sensors** from the menu. The **Copy Sensors** window appears, see Figure 97 below. You will notice that the name of the Zone that the sensors are going to be copied to forms part of the window name.

Figure 97



Select the **Zone** that you want to copy the sensor/s from. The names of the available sensors in that Zone will appear in the left column. Highlight the sensor/s you wish to copy then click on the right arrow. This will move the highlighted sensor/s to the column on the right. When happy with the details select **Submit**. To copy all the sensors click the double right arrows.

6.2.4 Delete Sensors

There are two methods to delete Sensors:

- Select the tick box to the left of the sensor names that you want to delete then select **Delete Sensor** from the top menu, this will delete all highlighted sensors.
- Select the tick box on the left of the title row of the table of sensors that you wish to delete. Select **Delete Sensor** to delete all sensors in the table.
- Select Delete in the row corresponding to the sensor you wish to delete. This will delete only that sensor.

Warning: Deleting Sensors cannot be undone.

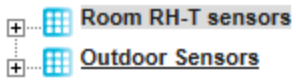
6.3 Configuring Sensors

This section takes you through the configuration of the **Sensor** properties which include, **General Settings**, **Calibration**, **Alarms** and **Filters**.

6.3.1 Accessing Sensor Properties

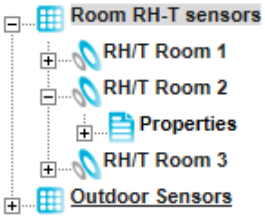
To access **Sensor** properties highlight the **Zone** name that contains the **Sensor** that is to be edited, see Figure 98 below.

Figure 98



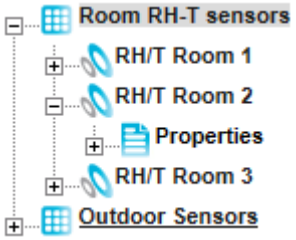
To see the available **Sensors** click on the + symbol next to the highlighted **Zone** the selected branch will expand showing all the available sensors, see Figure 99 below.

Figure 99



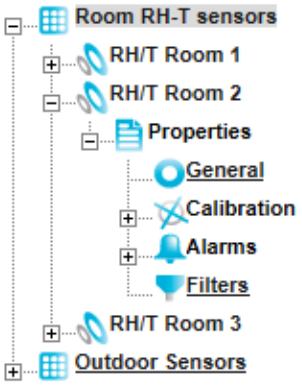
To view the **Sensor** properties of the **Sensor** that is to be **Edited** click on the + symbol next to the **Sensor** name. This will expand the branch again, see Figure 100 below.

Figure 100



To access the individual **Sensor** properties click on the + symbol next to properties this will expand the branch again, see Figure 101 below.

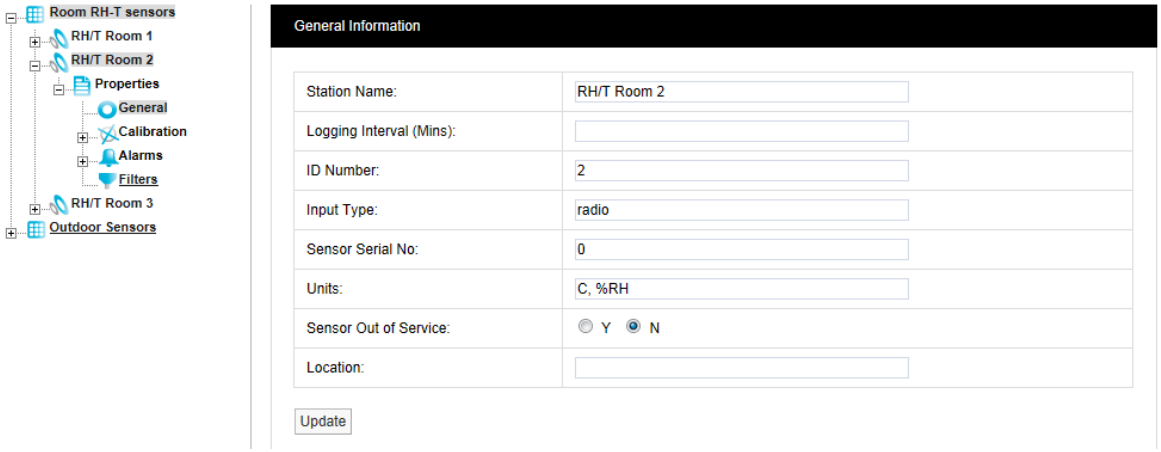
Figure 101



6.3.2 General Properties

To edit the General Sensor Properties click on the underscored link **General** .This opens the G**eneral Information** window, see Figure 102 below.

Figure 102



Station Name:

The **Station Name** can be changed, be aware that changing the name may be confusing for other **Users** as the **Station Name** normally relates to the physical location of the Sensor/Transmitter. Changing the **Station** name no longer starts a new data file.

Logging Interval (Mins):

This is only required if you wish to set the Sensor/Transmitter to log. The time entered here will set the data logging period in the data logger. If logging is not required enter 0. Enter the time in this format **15** this will set the logging interval to 15 minutes.

ID Number:

This is the ID number that the Sensor/Transmitter transmits that identifies it to the system. This number once set should not be changed.

Input Type:

This determines the type of transmission protocol that the Sensor/Transmitter is using; this field is here to cater for future developments. The type field is propagated when the Sensor/Transmitter is added to the system.

Sensor Serial No:

This is set when the Sensor/Transmitter is added to the system and will be completed either automatically by radio or via the **Synergy Management Application**.

Units:

This is the units for each of the channels for the Sensor/Transmitter these cannot be changed here as they are set by the Sensor/Transmitter install.

Sensor Out of Service:

This feature allows you to temporally take a sensor out of service, this is useful if the Sensor/Transmitter is measuring something that is turned off for a period and monitoring is not required. It avoids alarms being generated while the Sensor/Transmitter is not required. Out of Service Sensors are displayed with blue text in the **Live View**.

Location:

The Location field allows you to put a note against the sensor to assist with physically locating the Sensor/Transmitter within a building. This is an aide-mémoire and serves no operational function within the software and is not mandatory.

Once you are happy with any changes select **Update**.

6.3.3 Calibration

To access **Calibration** properties click on the + symbol next to **Calibration** and the tree will be further expanded, see Figure 103 below.

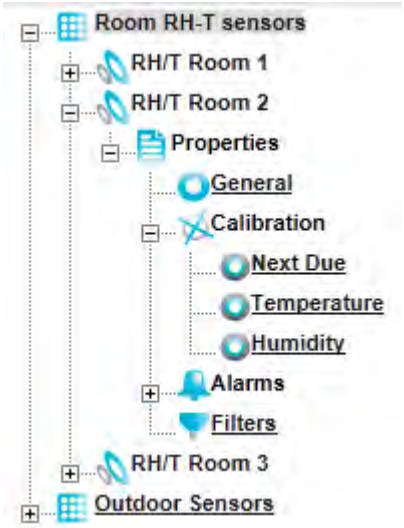


Figure 103

The **Calibration** section allows you to calibrate the Sensors/Transmitters either by calling in an external calibration company, returning the Sensors/Transmitters to IMC, having IMC Calibration Engineers come to Site or self-calibration by the client. Caution should be exercised when calling in external calibration companies, they should be asked for a copy of their IMC Hanwell training certificate.

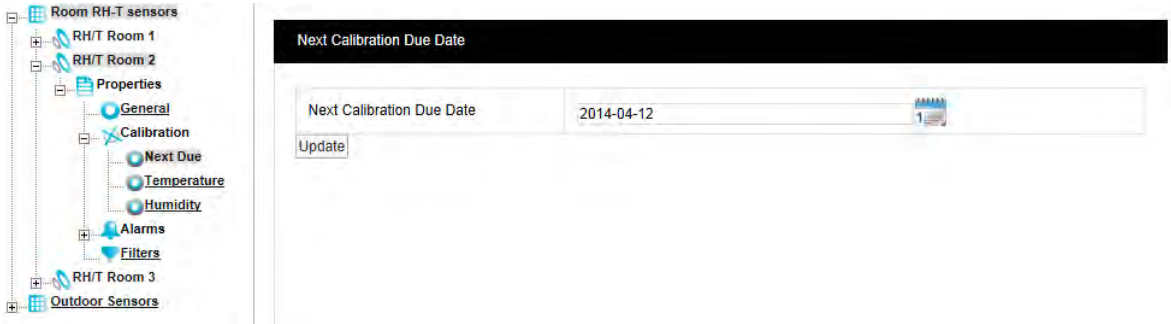
To access calibration features click on **Next Due**, **Temperature** or **Humidity**.

Next Due

This feature allows the next Calibration due date to be entered into the system. A PDF report can be triggered from the due date field. This is very useful in a regulated environment where exceeding the stipulated calibration period would cause a non-compliance.

To access **Next Due** click the link, the **Next Calibration Due Date** windows appear, see Figure 104 below.

Figure 104



To enter the **Next Due** date click on the calendar icon, if the Sensor/Transmitter has just been added to the system you will notice that the date in the form will be one year from the date that the Sensor/Transmitter was added. To change the date, select the next date from the calendar. The normal calibration period is one year.

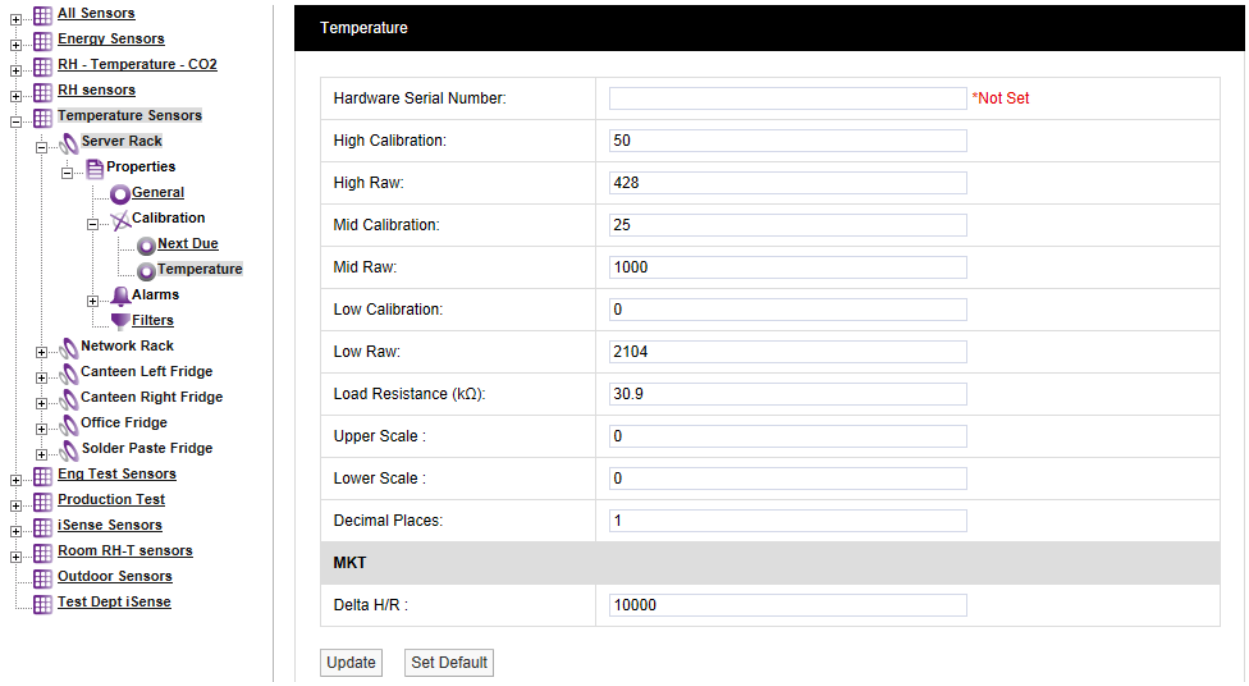
A good rule of thumb would be 12 months for environments that are contaminated or the constant operating humidity's are very high. Where the environments are clean and the averages humidities are mid-range then every 24 months would be acceptable.

When you are happy with the new date select **Update**.

6.3.3.1 Channel One/Temperature Calibration

To enter the **Temperature Calibration** page select **Temperature**, the **Temperature** window appears, see Figure 105 below.

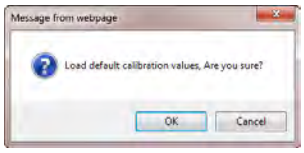
Figure 105



All Hanwell **Sensors/Transmitters** come with default calibration numbers which are created during installation, over the years as **Sensors/Transmitters** are calibrated these numbers will change. Each Sensor/Transmitter is installed with a default range, in the example above the calibration points are +50, +25 and 0°C these are only a suggestion and can be changed to suit the **Users** requirements.

The defaults can be re-loaded by selecting **Set Default** you will be asked to confirm see Figure 106 below.

Figure 106



Select **OK** to confirm.

If the Sensor/Transmitter has a published specification of say -40°C to +60°C the unit can be calibrated at any three points between the upper and lower specifications.

It is not advisable to calibrate over a very small range, for example if the unit was being used at +5°C to calibrate at say 0, +5 and +10°C. If the unit was then moved to say +30°C the calibration would be invalid.

If the unit was always going to be used between 0°C and +10°C and the readings outside this range were unimportant then it would be fine to calibrate over the tighter range.

To calibrate a Sensor/Transmitter follow the calibration procedure, this can be obtained on request from IMC. Additional hardware is required to carry out the calibration, temperature generators and if required humidity generators will be required to apply the referenced conditions to the sensors.

Each Sensor/Transmitter has a default graph scale for each channel these can be set here. There are three ways to scale a graph:

- Use the default scale
- Use Auto scale
- Use the user defined scale as set here.

The upper and lower scales can be entered in the form in Figure 105. These can be set as tight or as wide as required. Be aware that if the scales are set very tight and the sensor starts to read higher or lower nothing will be seen on the graph.

Once the new calibration details are known these can be entered into the table in Figure 105 above. Select **Update** to confirm the details. If correct the following message will be displayed, see Figure 107 below.

Figure 107

6.3.3.2 Channel Two/Humidity Calibration

To access the Humidity or second channel repeat the steps in 6.3.3.1.

Note: Not all Sensors/Transmitters have two channels, some have one and others have three. The process is repeated for the number of channels.

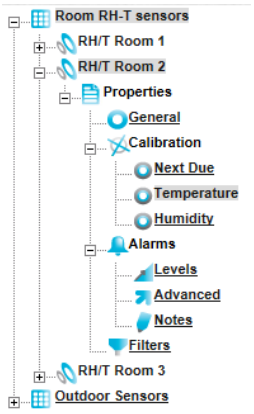
6.4 Alarms

This section will take you through setting **Alarms**.

6.4.1 Levels

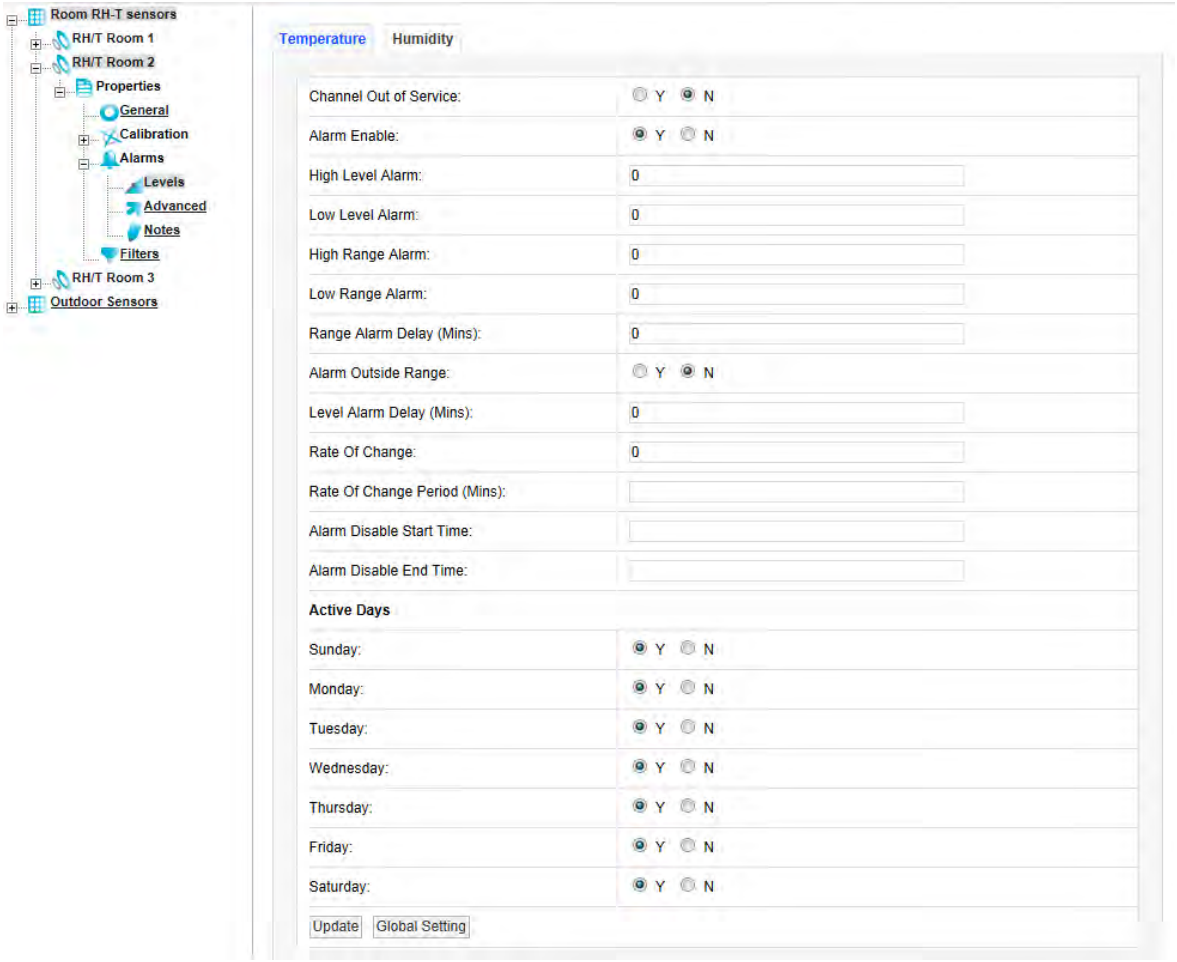
To access **Alarm Settings** click on the + symbol next to **Alarms** (in Edit Mode). This will expand the branch again, see Figure 108 below.

Figure 108



To access **Levels** click on **Levels**. The **Alarm** window will appear, see Figure 109 below.

Figure 109



The Sensor/Transmitter in this example is a two channel temperature and humidity device. You will see two tabs at the top one marked **Temperature** and highlighted the other marked **Humidity**.

The highlighted tab is the active tab. The tab names will change depending on sensor type, the number of tabs will change depending on the number of channels.

Channel Out of Service

This feature allows a single channel on a dual channel device to be taken out of service. This is useful as it may not be desirable to take the whole device out of service for example if a dual channel temperature transmitter was being used to measure the temperatures in a fridge freezer and the freezer had failed or was not in use the channel associated with the freezer could be taken out of service. This would allow alarms from the fridge to come through the system but there would be no alarms from the unused freezer.

To take a channel out of service select the appropriate tab and select the **N** option button to take that channel out of service. When the channel is required again select the **Y** option button.

Alarm Enable

If a Sensor/Transmitter is temporally out of service, or if the alarms are temporally not required rather than set all the alarm settings to zero the alarms can be disabled. To disable the alarms select the **N** option button. When the alarms are required again select the **Y** option button.

High Level Alarm

The **High Level Alarm** is the highest level alarm that can be set on the system; this alarm should be set at a level that warns the user of potential damage. To set the **High Level Alarm** type a value in the dialog box next to **High Level Alarm** the level can be set to one decimal place and should be entered like this for a whole number - **25** or like this - **25.5** for a fraction.

Low Level Alarm

The **Low Level Alarm** is the lowest level alarm that can be set on the system; this alarm should be set at a level that warns the user of potential damage. To set the **Low Level Alarm** type a value in the dialog box next to **Low Level Alarm** the level can be set to one decimal place and should be entered like this for a whole number - **5** or like this - **5.5** for a fraction.

High Range Alarm

The **High Range Alarm** would be set to a level that would represent the highest point of the desirable working range. To set the **High Range Alarm** type a value in the dialog box next to **High Range Alarm** the level can be set to one decimal place, and should be entered like this for a whole number **25** or like this **25.5** for a fraction.

Low Range Alarm

The **Low Range Alarm** would be set to a level that would represent the lowest point of the desirable working range. To set the **Low Range Alarm** type a value in the dialog box next to **Low Range Alarm** the level can be set to one decimal place, and should be entered like this for a whole number **25** or like this **25.5** for a fraction.

Range Alarm Delay (Mins)

The range alarms can be delayed this is very useful to prevent false alarms. In many buildings rooms are air conditioned to keep the environmental conditions constant, the conditions in any room change when doors are opened but soon recover when the door is closed again.

If range alarms are set these could be activated very time a door is opened which would generate many alarms on the system. There is a danger with alarms that a syndrome called alarm fatigue develops where alarms are generated so frequently that they become an annoyance and are consequently ignored.

To avoid this a delay in minutes can be set for the range alarms. For example when a door is opened the temperature drops but has recovered back to normal 10 minutes after the door is closed, without an **Alarm Delay** an alarm would be generated every time the door is opened. With an **Alarm Delay** of 15 minutes there would be no alarm generated however if the door was left open there would be an alarm generated after 15 minutes. To enter a **Range Alarm Delay** enter the time in minutes in the dialog box next to **Range Alarm Delay** like this: **15**.

Alarm Outside Range

To activate **Range Alarm Delays** click the **Y** option button to disable Range Alarm Delays click the **N** option button.

Level Alarm Delay (Mins)

This feature allows a delay to be activated on the High and Low level alarms. It is generally accepted that no delay is enabled on the **High** and **Low** alarms as these are normally the fail safe alarm levels. If delays are used here it may be that a very small delay is used to avoid a single reading out of spec generating alarms. To put a delay on the **High** and **Low** alarms type a value in the dialog box next to **Level Alarm Delay (Mins)**, and should be entered in minutes like this **5**.

Rate of Change

This feature activates rate of change alarms, depending on the application a high and low level alarm does not work. A Rate of Change alarm is a mechanism that monitors how fast a parameter is changing and generates an alarm based on the selected criteria.

The Rate of Change is the amount of units that for example Temperature is changing, i.e. by more than 10°C per minute. To set the Rate of Change enter a value in the dialog box next to Rate of Change and should be entered in the measurement units for that channel. For a temperature channel the number should be degrees and entered like this 10.

Rate of Change Period (Mins)

This feature is used together with the Rate of Change value above. Rate of Change Period is the time period associated with the Rate of Change value. This would be entered in minutes, so combined with Rate of Change would work like this, if the temperature changed by more than 10°C in 5 minutes and alarm would be generated. To set the Rate of Change Period enter a value in the dialog box next to Rate of Change Period (Mins) and should be entered like this 5.

Alarm Disable Start Time

This feature allows alarms to be disabled during certain time periods. For example if a room is used during the day to work on sensitive items, alarms would be required during the day but not required during the night. To set the Alarm Disable Start Time enter the time in the dialog box next to Alarm Disable Start Time and should be entered like this 18:00:00 in hours, (24 hour clock format) minutes and seconds. All alarms will be disabled after 18:00.

Alarm Disable End Time

This feature works together with Alarm Disable Start Time and sets the reactivation time for alarms. To set the Alarm Disable End Time enter the time in the dialog box next to Alarm Disable End Time and should be entered like this 08:00 in hours, (24 hour clock format) minutes and seconds. All alarms for this device will be active again after 08:00:00.

Active Days

This feature allows alarms to be turned off on certain days. For example where sensitive goods are worked on during the week and put away each evening and at the weekend alarms would not be required at these times. The weekday alarms are handled by Alarm Disable Start and Stop Times the weekends can be handled by disabling the alarms on Saturday and Sunday. To disable alarms on certain days select the N option button in this example we want to disable the alarms on Saturday and Sunday to do this select the N option button next to Saturday and Sunday. To make those days active again select the Y option button.

Once you are happy with your selection select Update the alarm setting will be saved, the above can be repeated for the second tap if applicable. After selecting Update and the settings are saved the settings page returns with a message “Record updated successfully” see Figure 110 below.

Figure 99 shows a correctly completed temperature alarm settings page. The actual values will change depending on the measuring parameters, every application will be different.

The example in Figure 110shows a high level alarm of 25.5°C, a low level alarm of 5°C with a delay of 5 minutes. The high range is set to 20°C and the low range to 5°C with a delay of 5 minutes.

There is a rate of change alarm active which will alarm if the temperature changes by more than 10°C in 5 minutes.

All alarms are disabled between the hours of 8am and 6pm and there will be no alarms at any time on Saturdays or Sundays.

Caution:

Alarm fatigue can be a major problem on automated monitoring systems especially when the alarms can drive emails or SMS alerts to call out service personnel.

There are many circumstances where the conditions of a room or space are not actively controlled and are driven by outside forces such as what's happening next door or the weather outside. In these cases there is little point setting alarms that would relate to ideal conditions especially if those conditions couldn't be met on a daily basis.

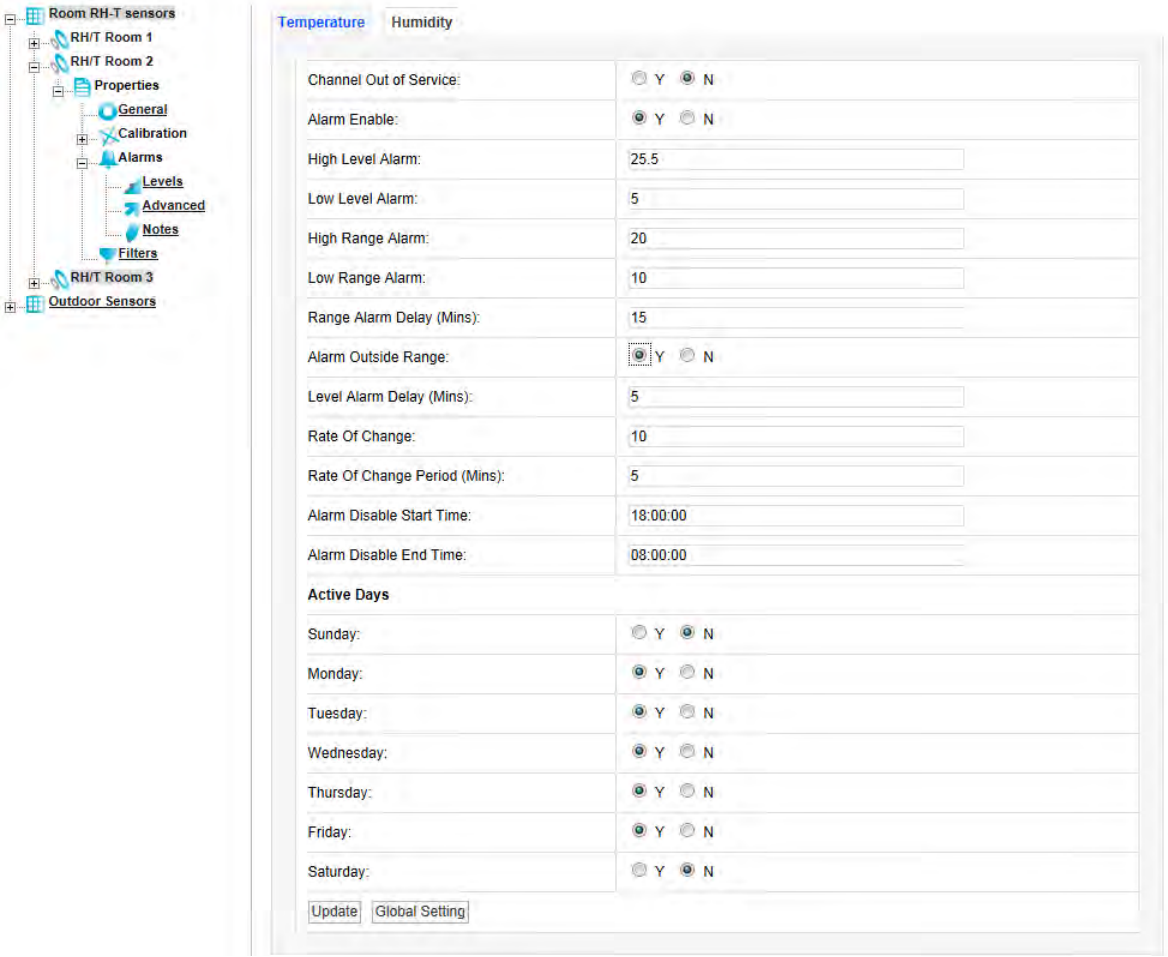
In these cases it is better to have no alarms set.

The danger of receiving many alarms that do not have an action where something can be done to prevent the reoccurrence of that alarm is the main cause of alarm fatigue.

If on the same system there was a critical space with high value objects that was controlled by an HVAC (Heating Ventilation and Air Conditioning) system, and on system failure an alarm was generated there is a great danger that this alarm could be ignored.

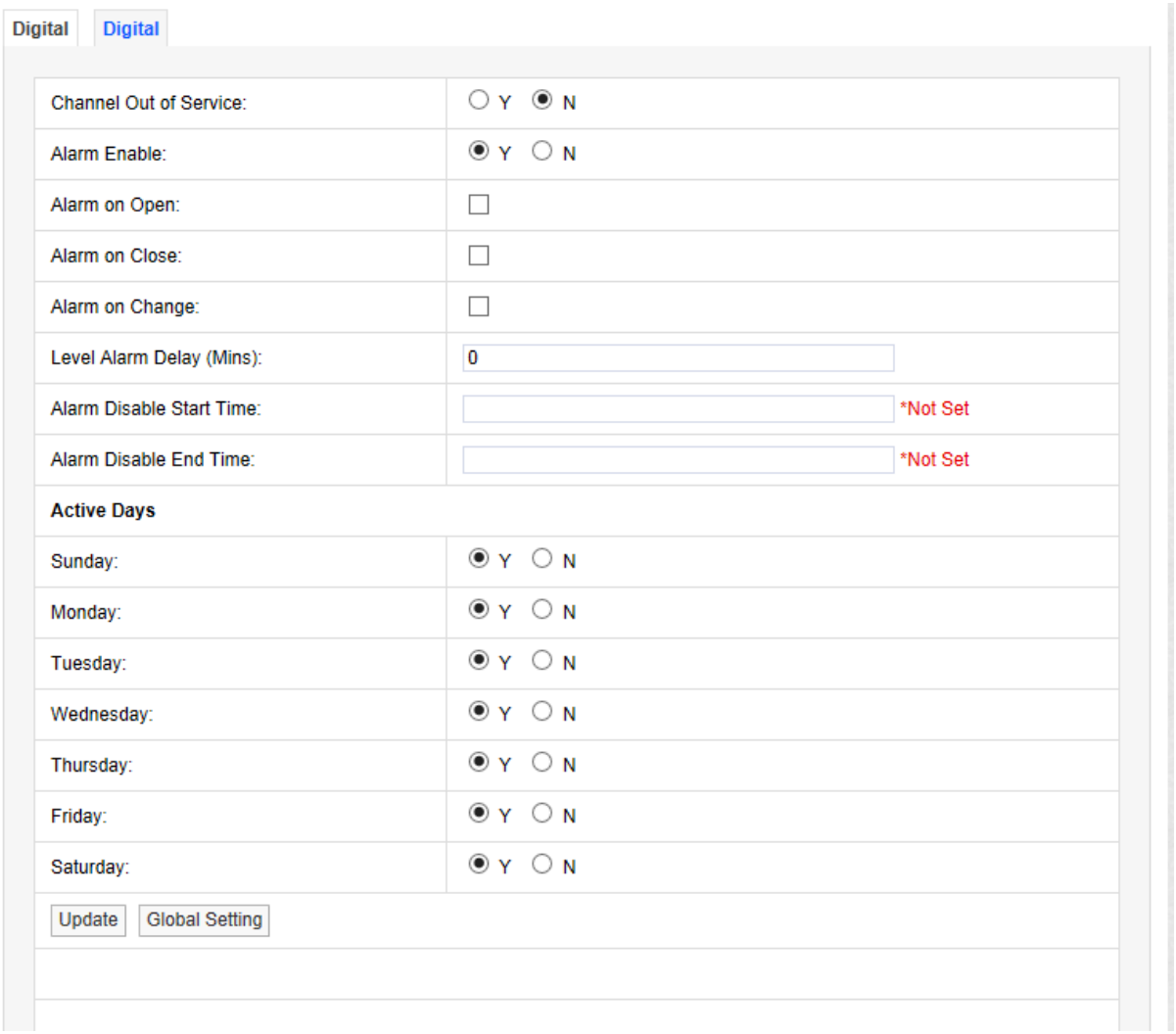
We are not suggesting that alarms are never set in these conditions just that thought and consideration are given during the alarm setting process.

Figure 110



Digital Alarms are Alarms generated by digital channels that record data from devices such as flood sensors and door open close sensors. Digital channels can only have two states, which are analogous to open or closed. Figure 111 below shows the alarm Levels settings view for a Digital channel:

Figure 111

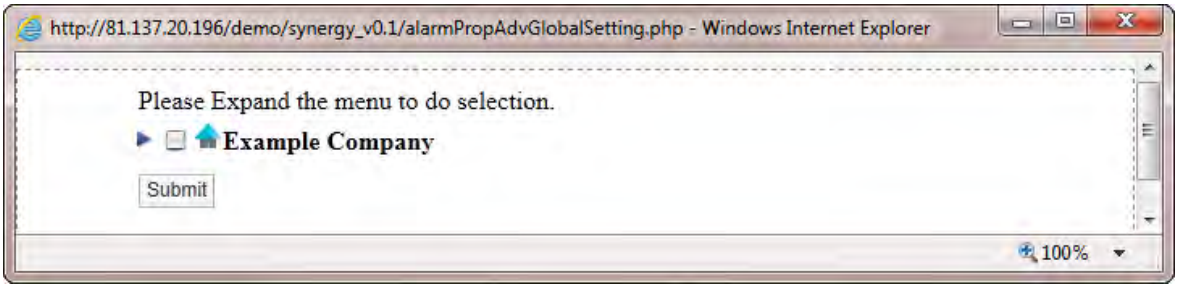


For a door open/close sensor, **Alarm on Open** would give an alarm if someone opened the door, **Alarm on Close** would give an alarm if someone closed the door, **Alarm on Change** would give an alarm if someone opened or closed the door.

If there are many Sensors/Transmitters on the same system doing the same function in different spaces it can be tedious and error-prone to go through all the Sensors/Transmitters on the system. There is a facility to change the **Alarm** settings **Globally** on a number of sensors.

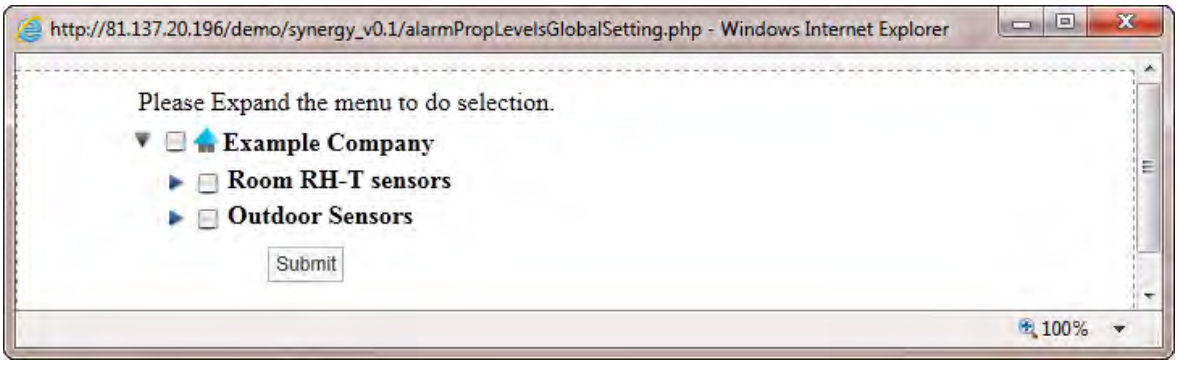
To make **Global** changes stay on the alarm settings tab that you want to use to update other **Sensors/Transmitters** with and select **Global Setting** at the bottom of the tab. A new window will appear, see Figure 112 below.

Figure 112



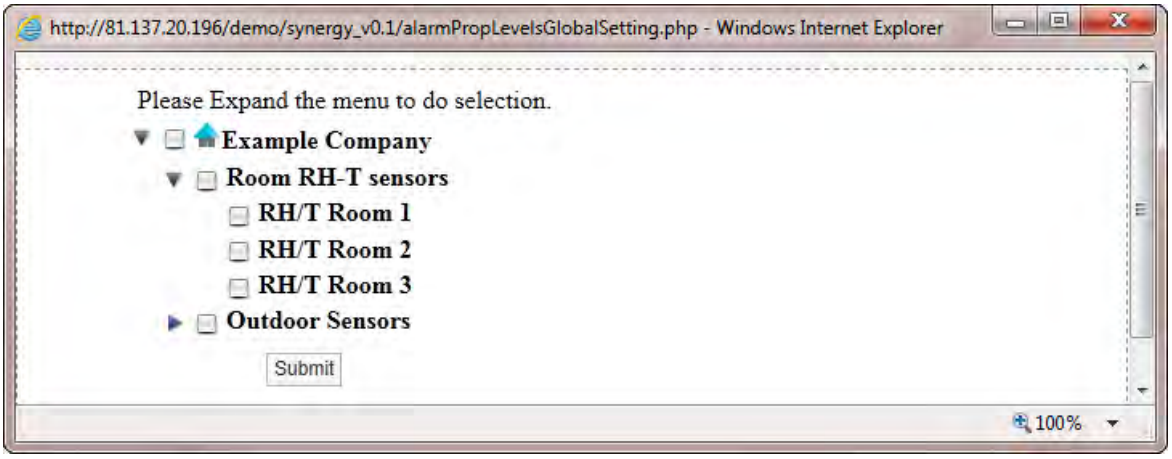
To expand the tree, select the blue arrow to the left of the **Site** name, see Figure 113 below.

Figure 113



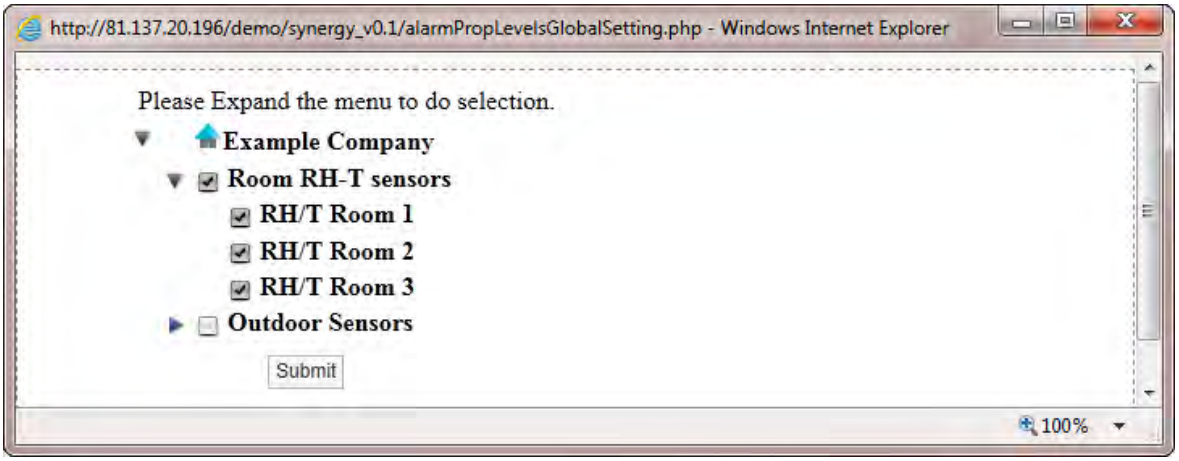
To see the **Sensors/Transmitters** in a **Zone** click the blue arrow to the left of the **Zone** name, see Figure 114 below.

Figure 114



To select the **Sensors/Transmitters** to update the alarm settings either click in the tick box next to the **Zone** name which will select all the sensors in that **Zone** or individual select each sensor in turn by clicking in the tick box next to the Sensor/Transmitter name, see Figure 115 below.

Figure 115

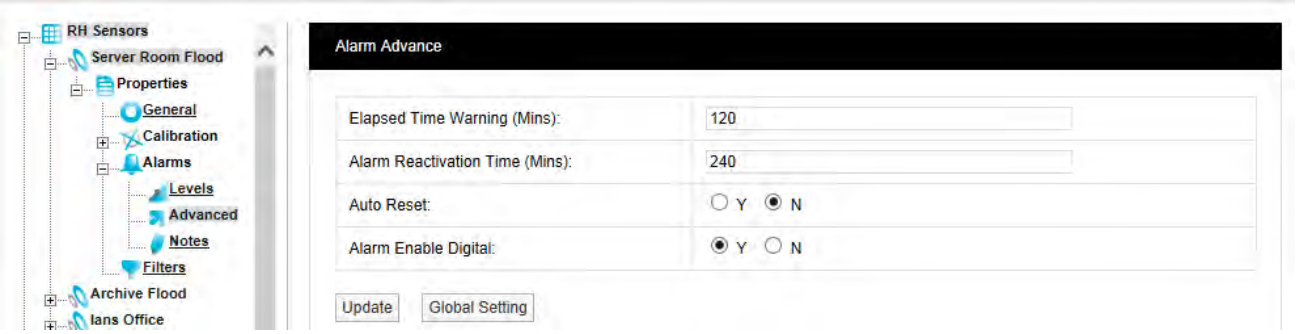


Once you are happy with your Sensor/Transmitter selections select **Submit**. The selected Sensor/Transmitter**s** will now be updated with the alarm settings from the selected Sensor/Transmitter. This can be checked by going into the alarm properties of another Sensor/Transmitter.

6.4.2 Advanced

To edit the **Advanced** settings select **Advanced** a new window called **Alarm Advance** will appear, see Figure 116 below.

Figure 116



Elapsed Time Warning (Mins)

The elapsed time warning is used to alarm when a signal is not received from a Sensor/Transmitter within the predetermined time. In the default settings the **Elapsed Time Warning** is set to 120 minutes. This can be changed to any time up to 999 minutes. It is not recommended to set the Elapsed Time Warnings to very long periods. If there are lots of Elapsed Time Warnings being generated this may be an indication of a more serious problem such as poor radio coverage.

The main purpose of the Elapsed Time Warning is to alert the user that a problem has occurred such as a Sensor/Transmitter has failed, been moved out of radio range or has inadvertently had the battery removed.

There are occasions where all the sensors in a Zone or Zones that are served by a wireless receiving device go into **Elapsed Time Warning** at the same time this would be caused by either a failure in the wireless receiving device or a network problem causing the wireless receiving device to stop communication with the database. If such problems are seen then these need to be investigated.

To set the **Elapsed Time Warning** period type the required time into the dialog box next to **Elapsed Time Warning** the time should be entered like this - **120** in minutes.

Alarm Reactivation Time (Mins)

The **Alarm Reactivation Time** is the default setting for the time between acknowledging an alarm and when the system checks to see if the alarm condition has returned to normal.

If the alarm condition has returned to normal the alarm status will change from amber (acknowledged) to green (OK), if after the **Alarm Reactivation Time** the alarm condition still exists the alarm status will return to red (unacknowledged) and create a new alarm on the system.

The default setting is 60 minutes to change this enter a new value in the dialog box next to **Alarm Reactivation Time** the time should be entered like this **60** in minutes.

Auto Reset

Auto Reset is used to reset an alarm status to green when an alarm condition returns to normal. The default is **N** which means that all alarms have to be acknowledged by the **User**. The disadvantage is that a Sensor/Transmitter could go in and out of alarm all night but when the User checks in the morning the status shows green so without looking at the graphs or alarm logs they would be unaware of a problem.

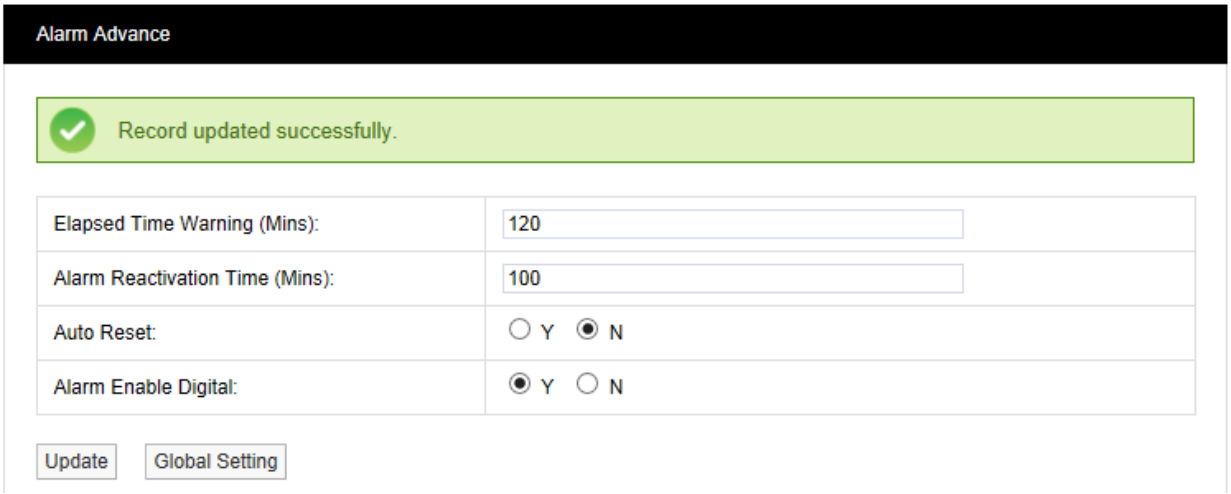
To change the setting click the option button for **Y** or N depending on your choice.

Digital Enable

This function enables digital input alarms. When happy with the settings select Update the setting will be saved, see Figure 117 below.

Note: these Alarms are for sensors that have a non-recorded digital input; settings on these alarms do not affect Digital Channel Alarms.

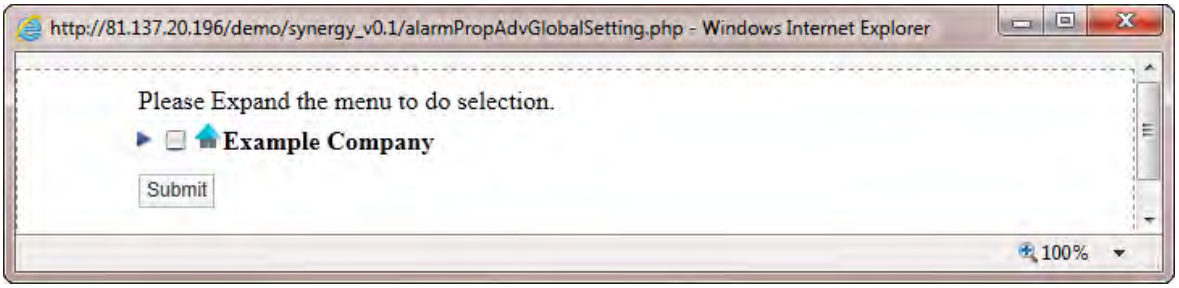
Figure 117



If there are many **Sensors/Transmitters** on the same system doing the same function in different spaces it can be a real chore going through all the **Sensors/Transmitters** on the system and can be prone to error. There is a facility to change the **Advanced** settings **Globally** on a number of sensors.

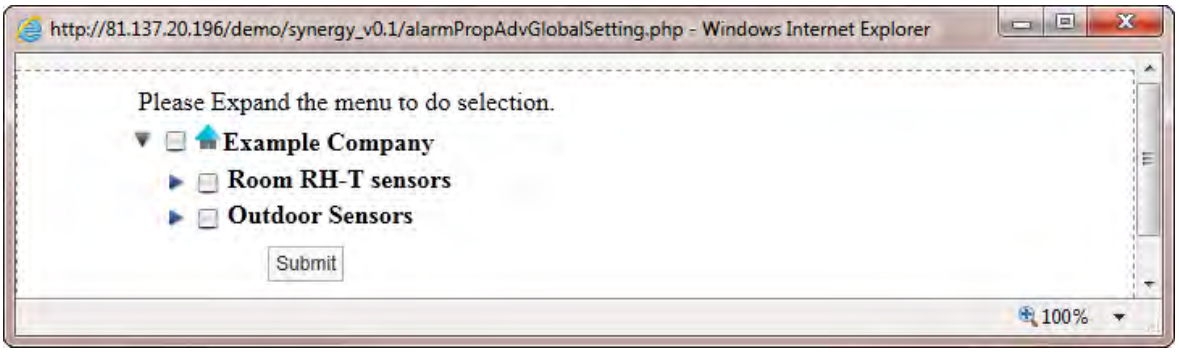
To make **Global** changes stay on the Advanced settings window that you want to use to update other **Sensors/Transmitters** with and select **Global Setting** at the bottom of the data entry table. A new window will appear, see Figure 118 below.

Figure 118



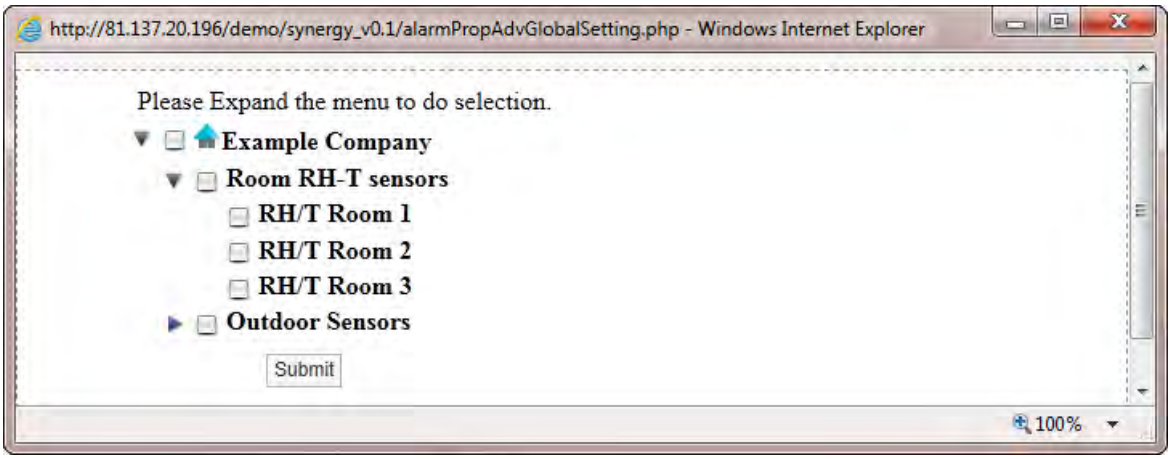
To expand the tree, select the blue arrow to the left of the **Site** name, see Figure 119 below.

Figure 119



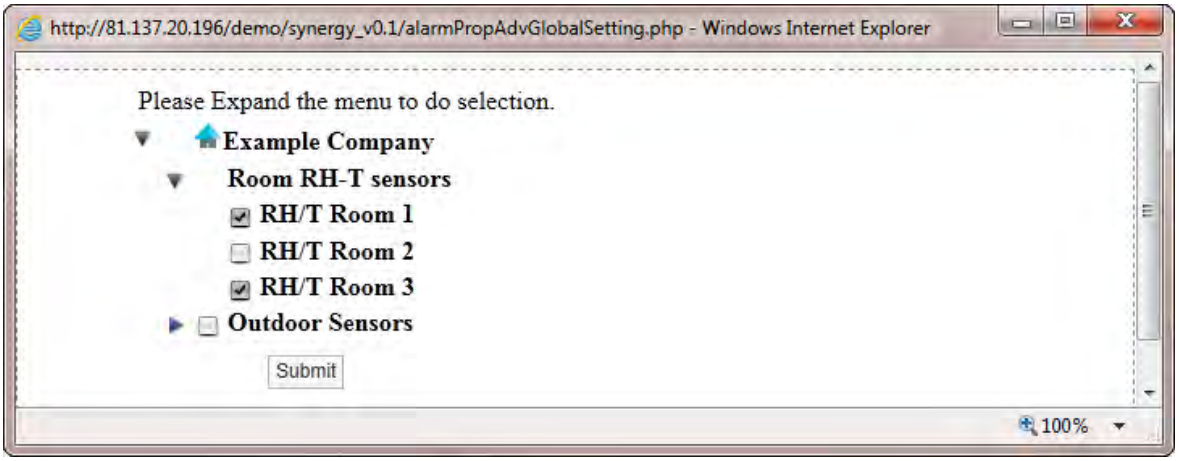
To see the Sensors/Transmitters in a Zone click the blue arrow to the left of the Zone name, see Figure 120 below.

Figure 120



To select the Sensors/Transmitters to update the alarm settings either click in the tick box next to the Zone name which will select all the sensors in that Zone or individual select each sensor in turn by clicking in the tick box next to the Sensor/Transmitter name, see Figure 121 below.

Figure 121



Once you are happy with your Sensor/Transmitter selections select **Submit**. The selected Sensor/Transmitter**s** will now be updated with the **Advanced** settings from the selected Sensor/Transmitter. This can be checked by going into the **Advanced** properties of another Sensor/Transmitter.

6.4.3 Notes

To edit the **Notes** settings select **Notes**. A new window called **Alarm Notes** appears, see Figure 122 below.

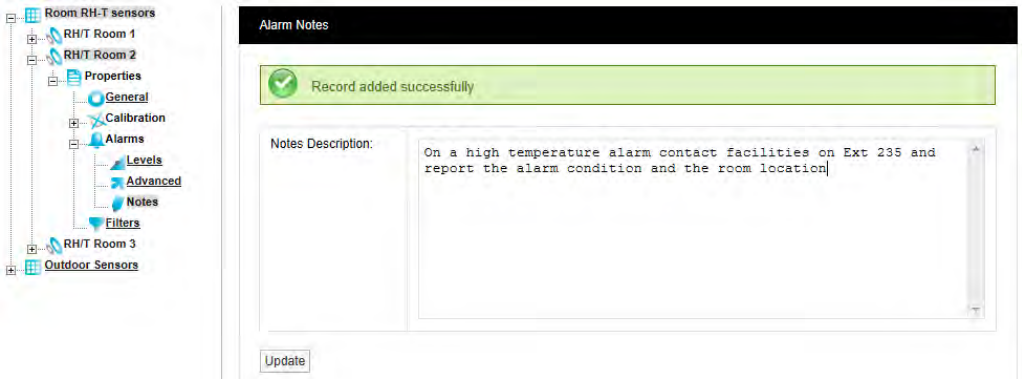
Figure 122

This feature allows you to enter **Notes** for an Alarm. this is especially useful for inexperienced operators. The system can be set up so that low level users can monitor the system but can't make changes. The **Alarm Notes** will give an inexperienced user specific instruction on what to do when an Alarm occurs.

For example in the middle of the night the temperature increases in a room or space containing high value objects, an Alarm is generated and a night shift operative or security guard views the Alarm the Alarm message would say "On a high temperature alarm contact facilities on Ext 235 and report the alarm condition and the room location". This feature means that someone not familiar with an area or its contents can still effectively and efficiently deal with an alarm condition.

To activate this feature type your instruction into the dialog box and when happy select **Add**, this will add the message to this Sensor/Transmitter. This can be set individually for every Sensor/Transmitter on the system. Once the changes have been added and are OK you will see the following window, see Figure 123 below.

Figure 123



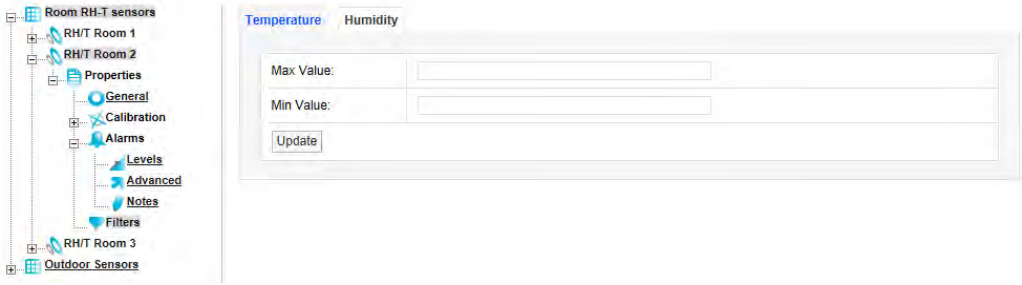
6.4.4 Filters

This feature lets you set filter limits for the Sensor/Transmitter. These should only be used in exceptional circumstances. For example if a Sensor/Transmitter is located in or near an electrical switch panel which can be very noisy electrically this can occasionally cause interference on the radio link, which would be seen on the graph as a large spike in the data.

The filters are designed to remove such interference, if the Sensor/Transmitter is reading temperature and the expected range for this application is -10°C to +50°C a filter could be set at say -40°C for the Min Value and +80°C for the Max Value. Any readings seen above or below these readings would be rejected.

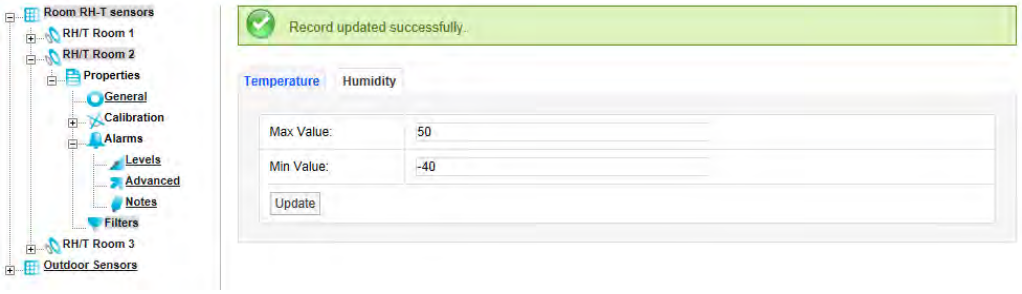
To edit the **Filter** settings select **Filters**. The **Filters** tab will appear, see Figure 124 below.

Figure 124



To activate this feature enter the required **Min** and **Max** values in the dialog boxes. The values should be whole numbers in the range **50** for the **Max Value** and **-40** for the **Min Value**. Select **Update** when finished. (A warning message is given if you click on another tab before you've selected **Update** for a change you made on the current tab.) Once the data is accepted you will see the following screen, see Figure 125 below.

Figure 125



For dual or triple channel Sensor/Transmitters repeat the above process for the other channels.

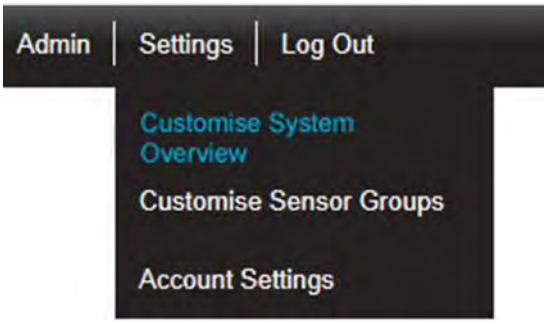
Note: Setting filters will cause data to be rejected above and below the filter limits. Check that any filter limits set are above and below the expected ranges.

7 Viewing Data

This section will guide you through **Viewing** data including adding **Sites** to the **Dashboard**.

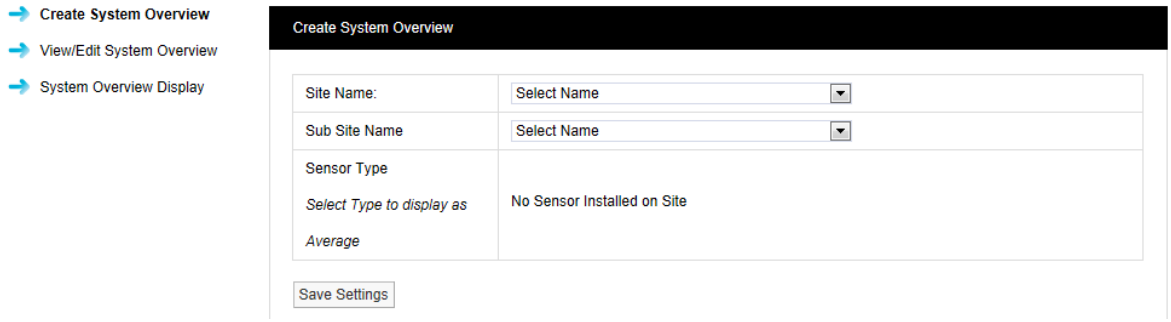
7.1 Adding Sites to the Dashboard

To add a Site to the **Dashboard** you need to have created some **Sites**, see Section 5.5. Once you have Sites added you can add them to the **Dashboard**, to add sites to the **Dashboard** select **Customise System Overview** from the **Settings** menu, see below.



After selecting **Customise System Overview** a new window called **Create System Overview** will appear. The **System Overview** allows you to choose how you see information on the **Sites** icon when viewed on the **Dashboard**, see Figure 126 below.

Figure 126



To create a System Overview select a Site from the drop down menu, you will see the Sites that were created in Section 5.5. Select the Site that you wish to change the viewing information on, if this is a Site with a Sub Site you will need to select the appropriate Sub Site.

There are two types of information that can be viewed on the Site icon:

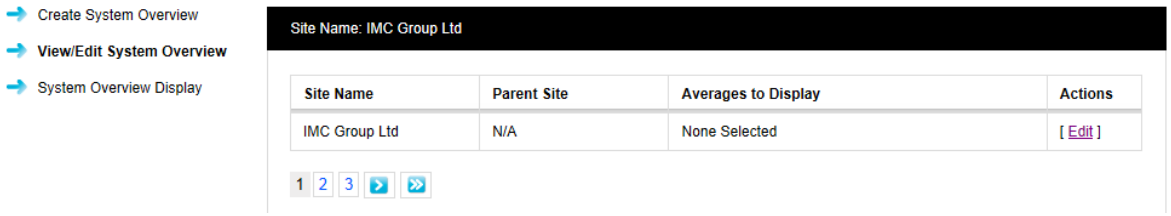
- Sensor/Transmitter Averages
- System Alarm Status. This gives an overview of Sensor/Transmitters in alarm condition over the Site

To set Sensor/Transmitter Averages select from the list the type of Sensor/Transmitter **Averages** you would like to see, click in the tick box to select the Sensor/Transmitters. This option should only be used if all the Sensor/Transmitter**s on the Site** are measuring the same parameter.

To view the System Alarms Status leave the tick boxes clear.

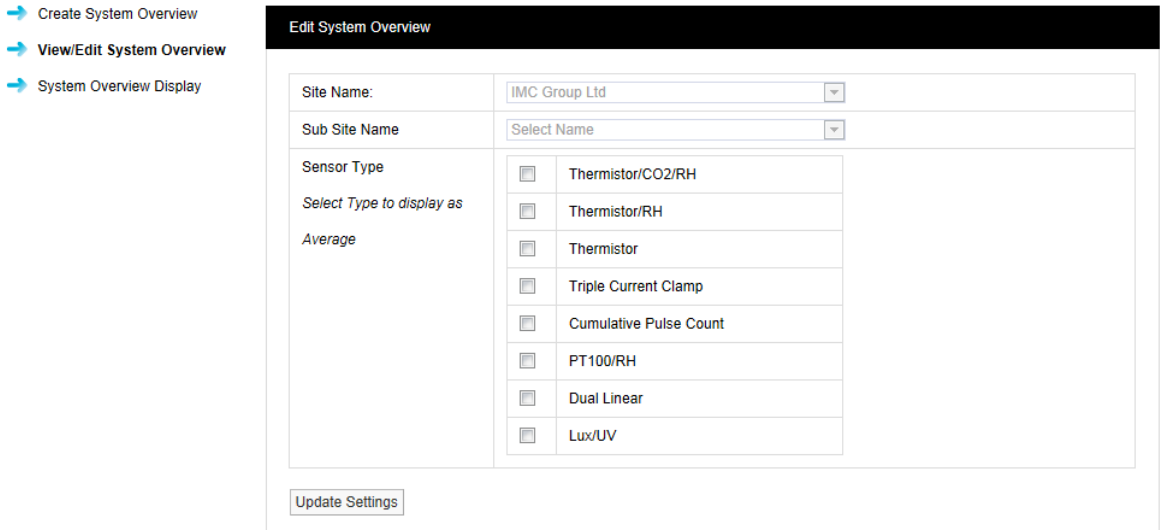
To Edit existing Sites select **View/Edit System Overview** from the menu, see Figure 127 below.

Figure 127



To edit a site select Edit in the line associated with the Site to be Edited. The **Edit System Overview** window appears, see Figure 128 below.

Figure 128



As there are no Sensor/Transmitters types selected this Site will be showing the **System Alarm Status** information in the **Site** Icon.

Make changes as required and select **Update Settings** to save.

See Figure 129 below for an example of a Site with **System Alarm Status** information activated and Figure 130 for a Site with **Averages** activated.

Figure 129

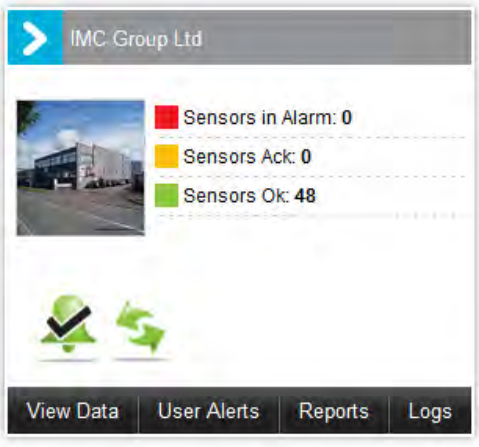
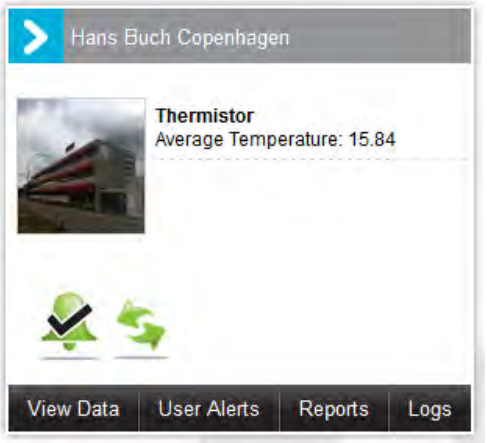
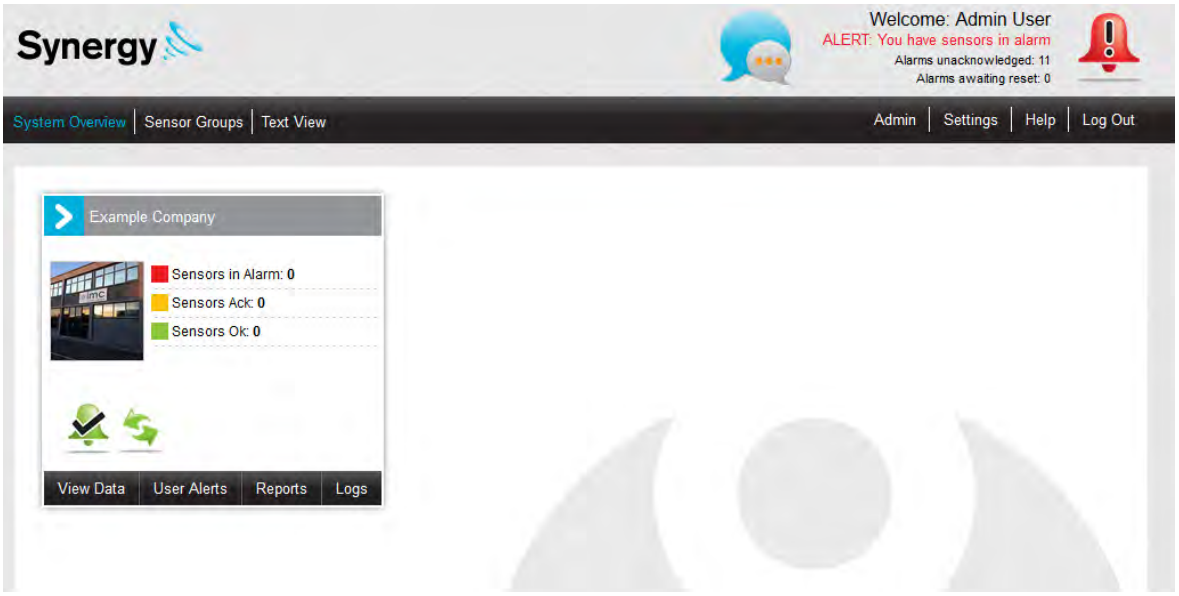


Figure 130



Synergy is installed with one Site which will appear on the **Dashboard**, the default screen will look like this, see Figure 131 below.

Figure 131

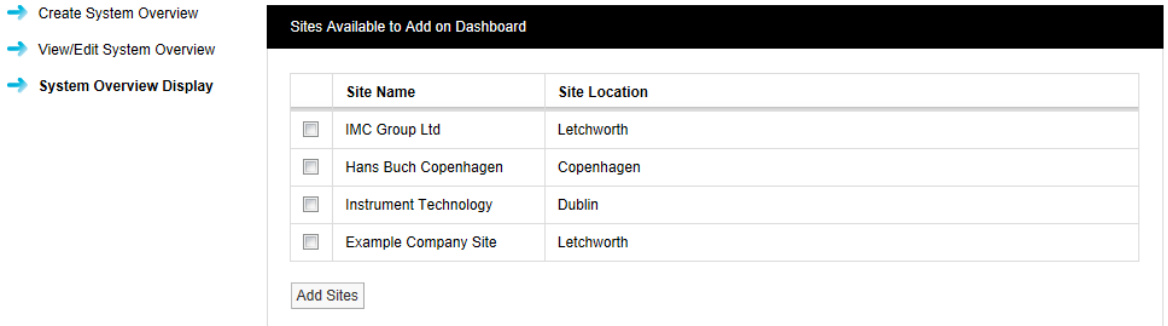


To add more Sites select **System Overview** from the menu. The **Sites Visible on Dashboard** window appears, see Figure 132 below.

Figure 132

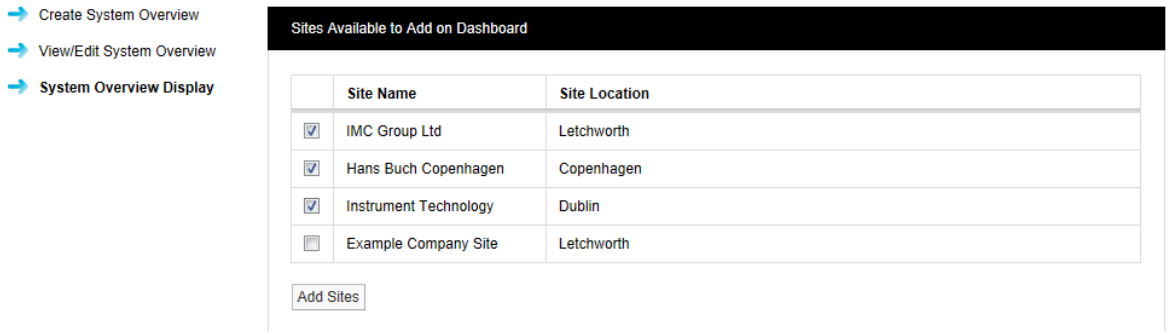
Select **Add to Dashboard** to add more Sites to the Dashboard. A list of available Sites will appear, see Figure 133 below.

Figure 133



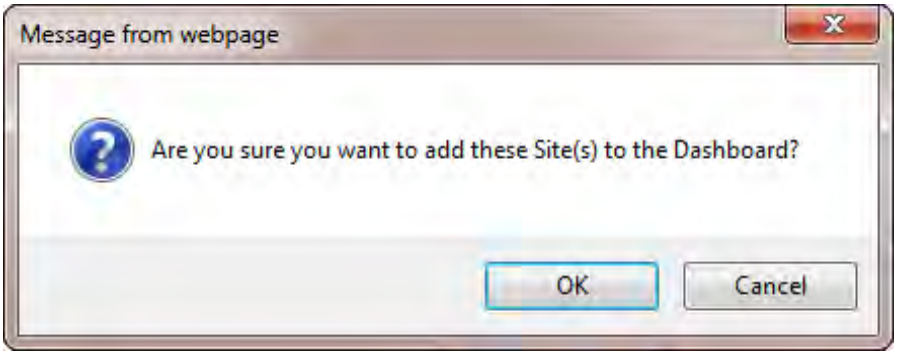
Select the **Sites** that you would like to see on the **Dashboard** (maximum 6 Sites). To select a Site click in the checkbox next to the **Site Name**, see Figure 134 below.

Figure 134



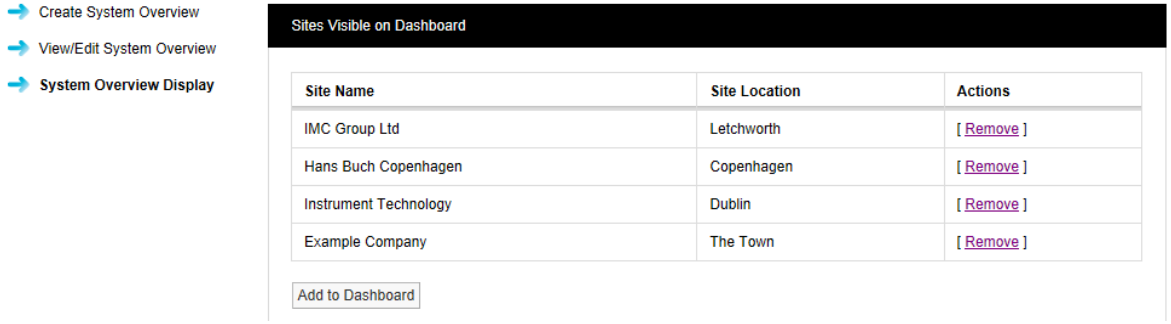
When happy with your selections click on **Add Sites**. You will be asked to confirm that you want to add these Sites to the Dashboard, see Figure 135 below.

Figure 135



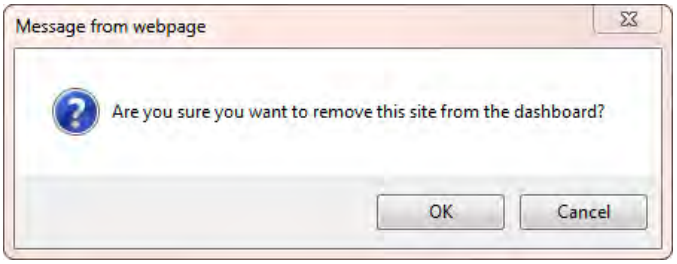
Select **OK** to continue. The **Sites Visible on Dashboard** window appears, see Figure 136 below.

Figure 136



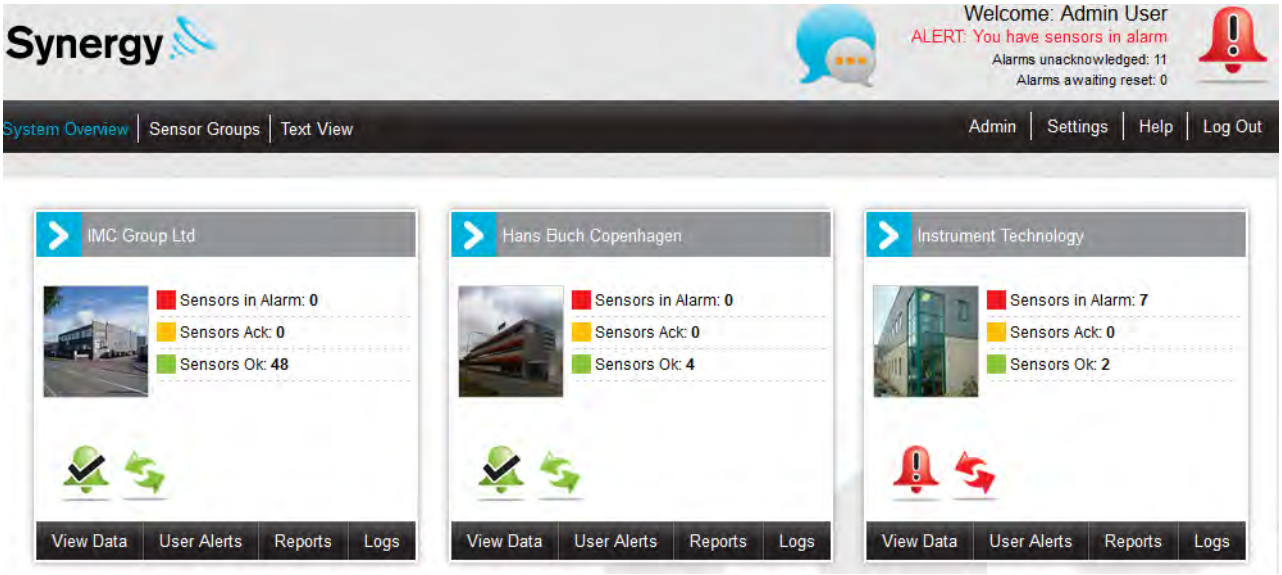
The **Dashboard** can be changed at any time, to Remove a Site select **Remove** in the line corresponding to the Site to be Removed. You will be asked to confirm that you want to remove these Sites from the Dashboard, see Figure 137 below.

Figure 137



Select **OK** to continue. The Dashboard now has the new Sites visible, see Figure 138 below.

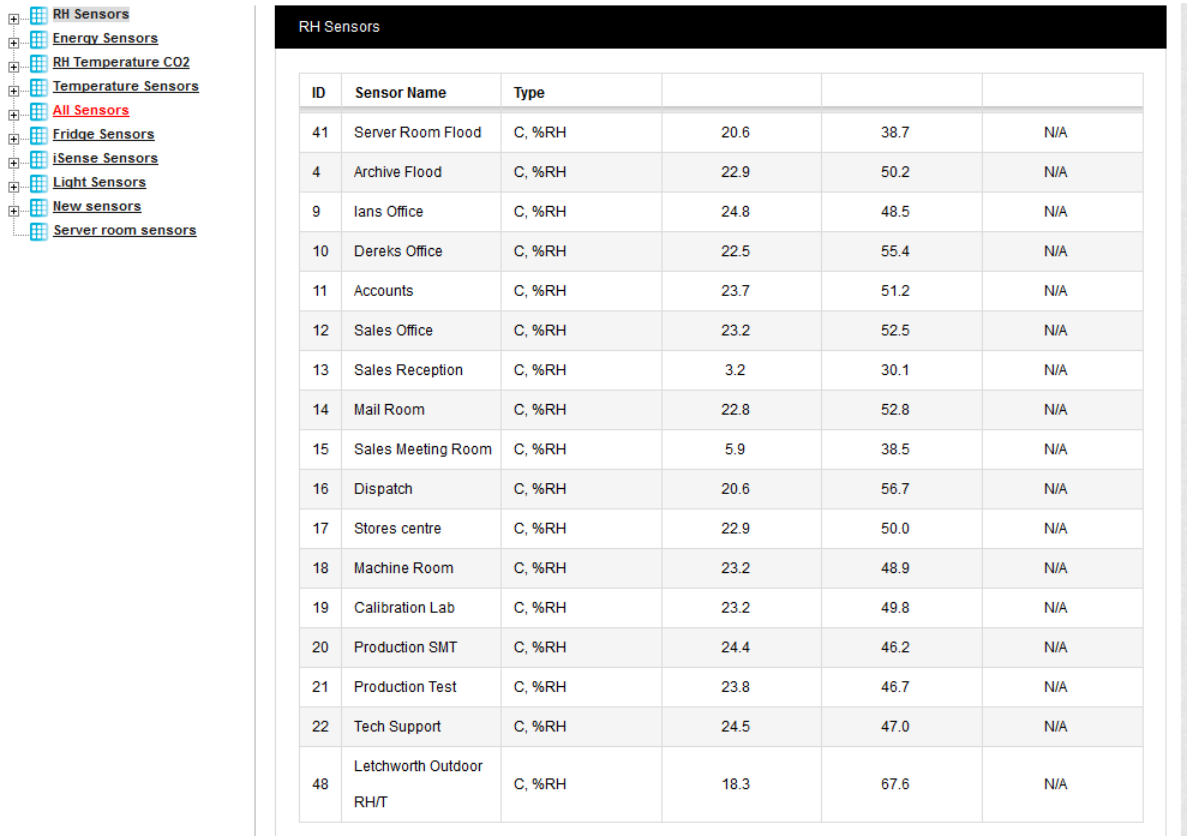
Figure 138


Synergy
Welcome: Admin User
ALERT: You have sensors in alarm
Alarms unacknowledged: 11
Alarms awaiting reset: 0
System Overview
Sensor Groups
Text View
Admin
Settings
Help
Log Out
IMC Group Ltd
Sensors in Alarm: 0
Sensors Ack: 0
Sensors Ok: 48
View Data
User Alerts
Reports
Logs
Hans Buch Copenhagen
Sensors in Alarm: 0
Sensors Ack: 0
Sensors Ok: 4
View Data
User Alerts
Reports
Logs
Instrument Technology
Sensors in Alarm: 7
Sensors Ack: 0
Sensors Ok: 2
View Data
User Alerts
Reports
Logs

7.2 Viewing Data

To View Data select the **View Data** menu on the Site icon that you wish to view the data on. The Live Data View for that Site will now appear, see Figure 139 below.

Figure 139



ID	Sensor Name	Type			
41	Server Room Flood	C, %RH	20.6	38.7	N/A
4	Archive Flood	C, %RH	22.9	50.2	N/A
9	Ians Office	C, %RH	24.8	48.5	N/A
10	Dereks Office	C, %RH	22.5	55.4	N/A
11	Accounts	C, %RH	23.7	51.2	N/A
12	Sales Office	C, %RH	23.2	52.5	N/A
13	Sales Reception	C, %RH	3.2	30.1	N/A
14	Mail Room	C, %RH	22.8	52.8	N/A
15	Sales Meeting Room	C, %RH	5.9	38.5	N/A
16	Dispatch	C, %RH	20.6	56.7	N/A
17	Stores centre	C, %RH	22.9	50.0	N/A
18	Machine Room	C, %RH	23.2	48.9	N/A
19	Calibration Lab	C, %RH	23.2	49.8	N/A
20	Production SMT	C, %RH	24.4	46.2	N/A
21	Production Test	C, %RH	23.8	46.7	N/A
22	Tech Support	C, %RH	24.5	47.0	N/A
48	Letchworth Outdoor RH/T	C, %RH	18.3	67.6	N/A

The first time you enter this screen the tree listing the **Zones** will be collapsed, the Sensors on view in the right window are the Sensors for the highlighted Zone. You can sort sensors record by clicking **ID** or **Sensor Name** headings.

The **All Sensors** Zone text, shown in To View Data select the **View Data** menu on the Site icon that you wish to view the data on. The Live Data View for that Site will now appear, see Figure 139 below.

Figure 139 above, is displayed in red to indicate that at least one Sensor in the Zone is in Alarm.

To view other Zone Sensors select the **Underlined** Zone name that you wish to view Sensor data on. To View graphs for individual Sensors select the **+** next to the Zone name that you wish to view the **Sensor data** for, and that branch will expand. Figure 141 below shows the **All Sensors** Zone expanded.

Letting the mouse pointer hover over a Sensor Name in the Live View table displays a displays a tooltip of basic instructions. Clicking the tooltip once will show information about alarms, date time, battery etc. See Figure 140.

Figure 140

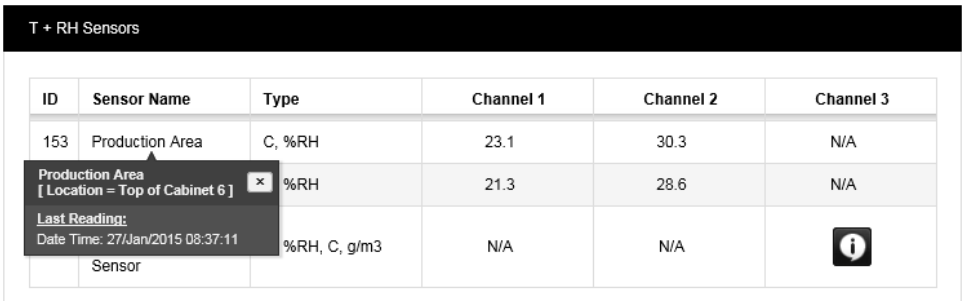
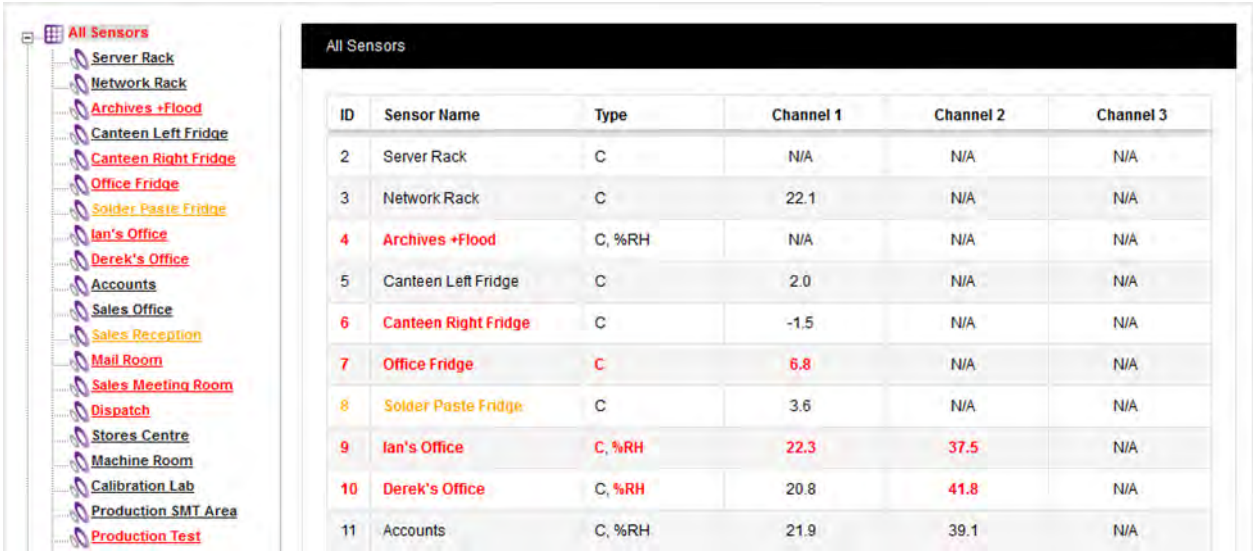
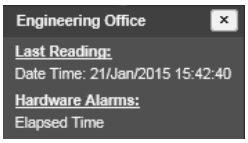


Figure 141

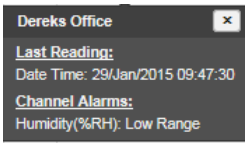


In the example in Figure 141, sensor ID 4 is in alarm, but these are Hardware Alarms only, so the Channel Alarm column entries are not highlighted in red. Clicking on the Sensor Name for a similar sensor in the same state could give:



(shows an Elapsed Time hardware alarm).

Sensor ID 10 is also in alarm, with the Relative Humidity (RH) Alarm in red, and the reading in Channel 2 (the RH channel), also being displayed in red. In this case, the tooltip shows:



The Sensor list that is in the right viewing window is duplicated in the expanded branch under the **Zone** name. Sensor names and values are shown in different colours to indicate the current sensor status:

7.2.1 Normal Condition

Sensors and Zones in a normal state are shown with black text.

7.2.2 Alarm Condition

Zones with Sensors in **Alarm,** and Sensors in **Alarm**, are shown with red text; see *All Sensors* in Figure 141 above.

7.2.3 Acknowledged Alarms

Zones with Sensors in the **Acknowledged** state, and Sensors in the **Acknowledged** state, are shown with orange text, see Sensor ID 8 in Figure 141 above.

7.2.4 Out of Service

Out of Service Sensors are shown with blue text.

To view the **graph data** for a Sensor/Transmitter click on the **underlined** Sensor/Transmitter name in the left-hand list, or double-click on the sensor name in the right-hand table. The graphing window appears. The graphing window can also be displayed by double-clicking on the Sensor name in the Live View list (right-hand list), see Figure 142 / Figure 143 below.

Figure 142 – Line Graph

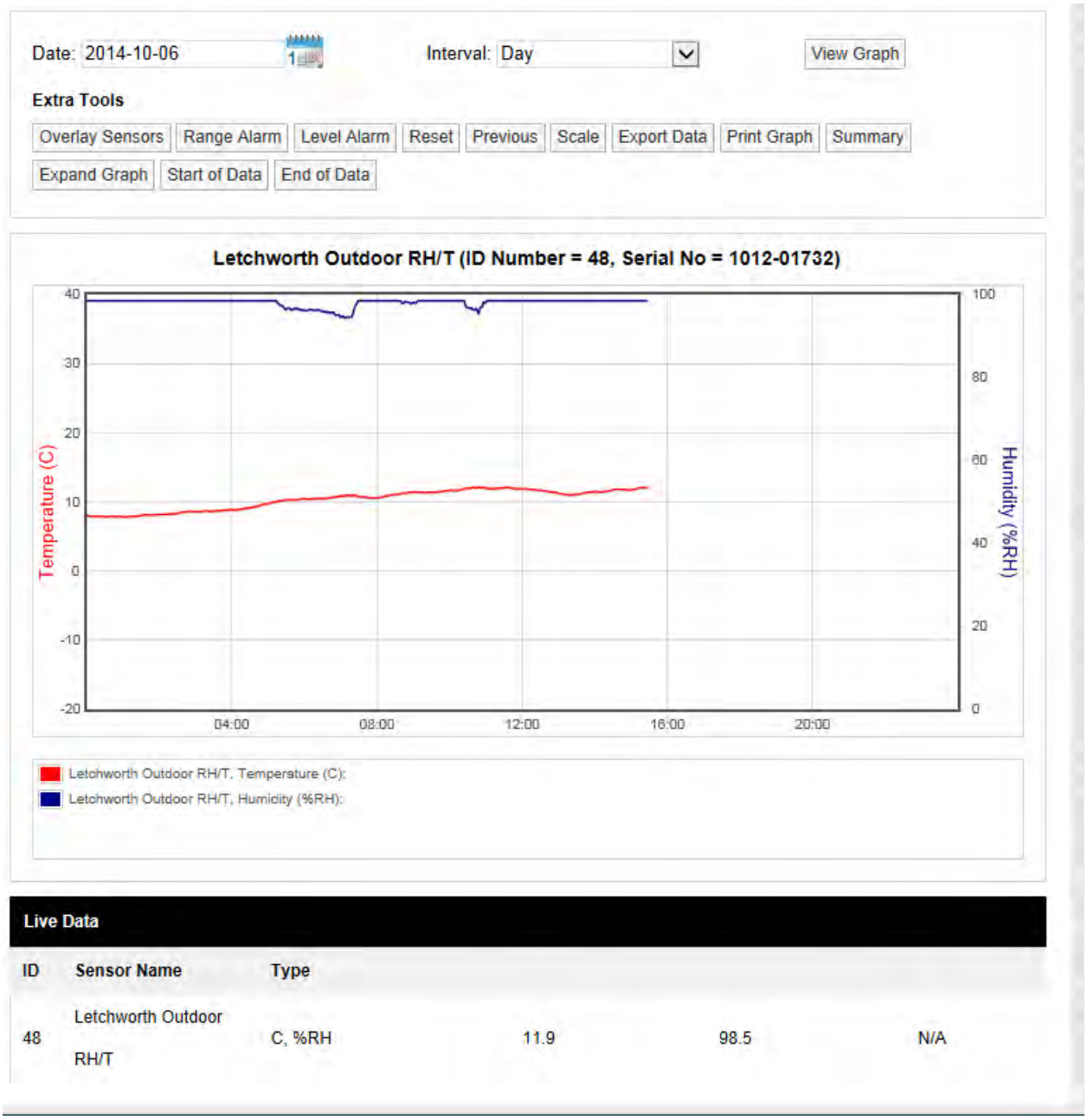
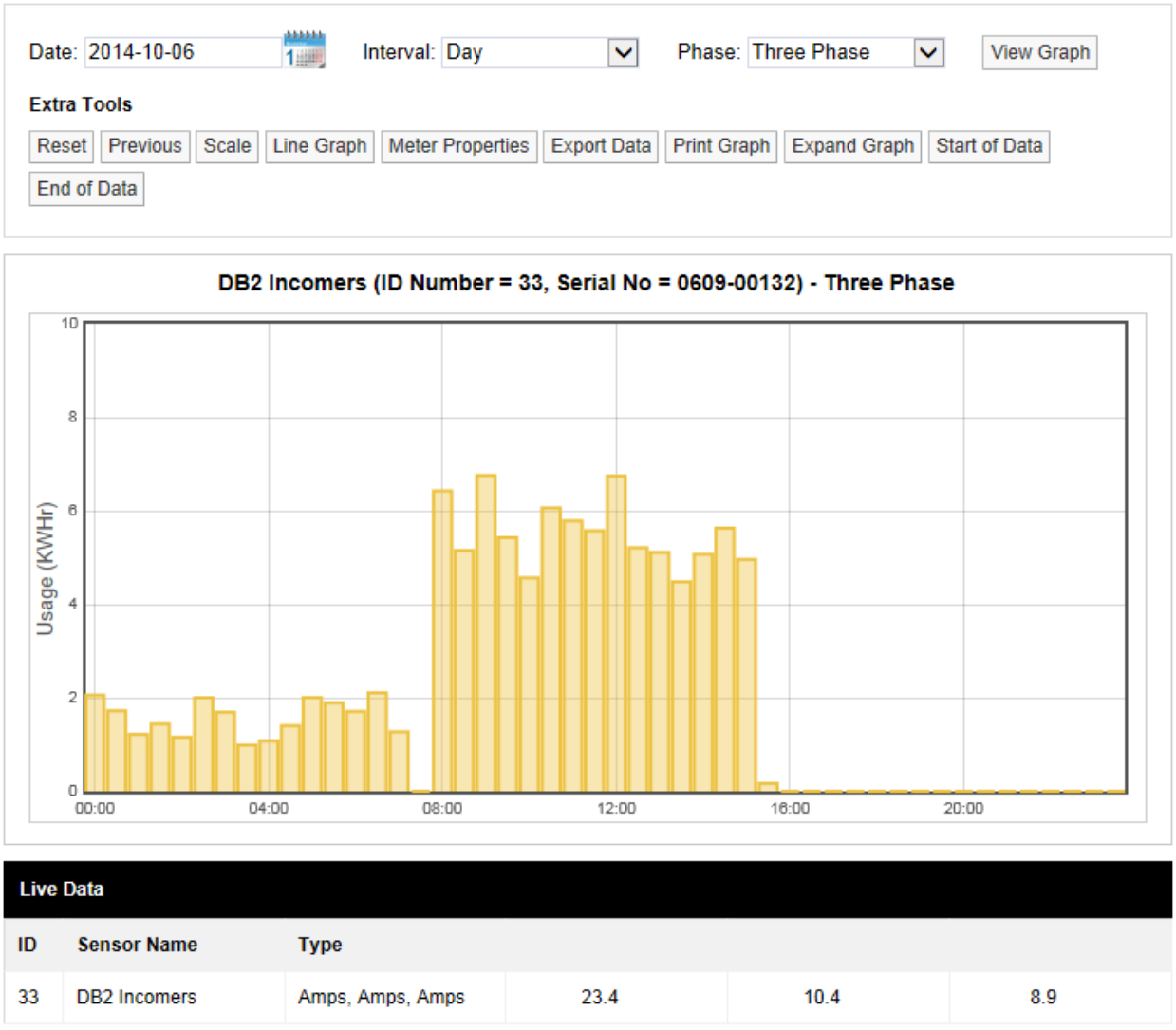


Figure 143 – Current / Pulse Counter Bar Chart

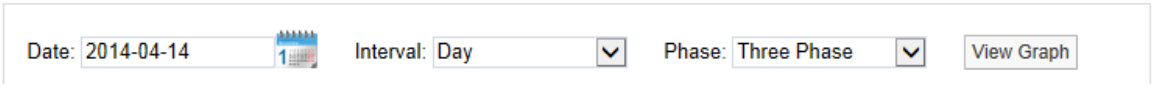


Current and Pulse Count sensor graphs display as a Utilities Bar Chart data. Many of the graph features are common to both graph types, for Utilities Bar Chart specific option, see section 7.2.22 below.

The graphing window defaults to displaying the current day's data.

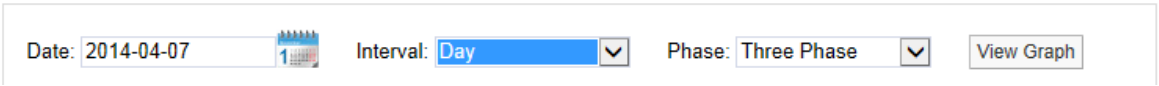
To change the date range for the graphing period, use the **Date** and **Interval** menus, see Figure 144 below.

Figure 144



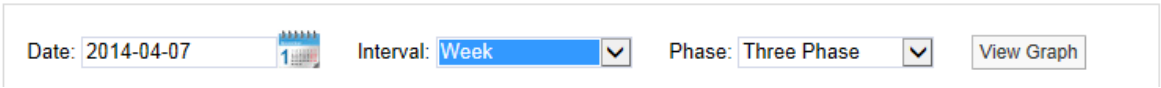
Select the calendar icon to change the data graphing start date, this is the data that the graph will start from, see Figure 145 below.

Figure 145



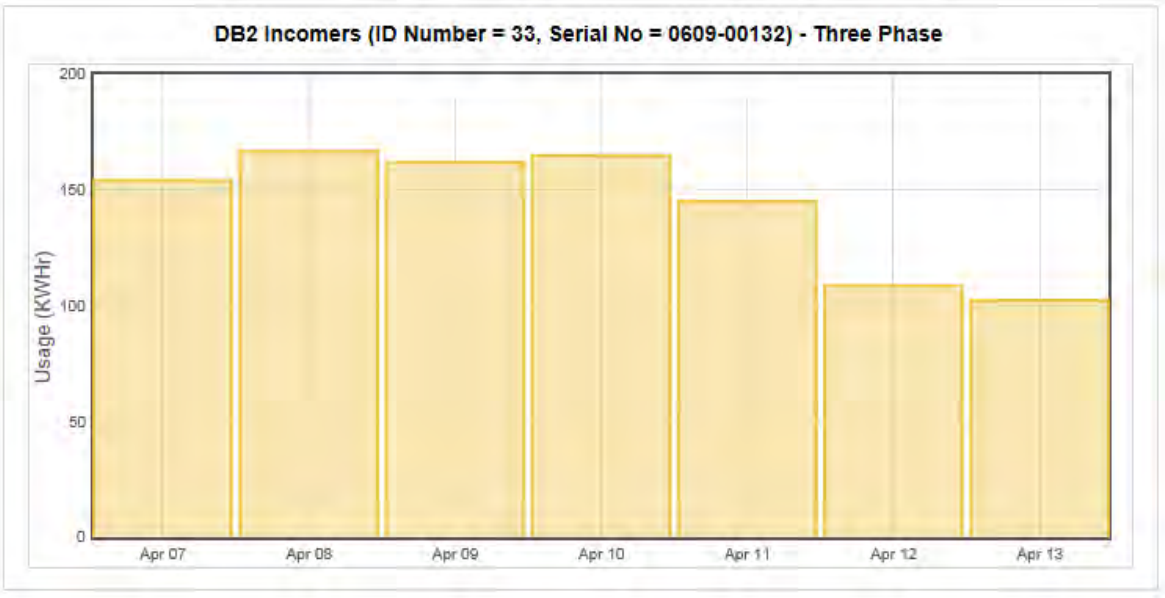
The date has been changed to the 7th April 2014. To view data for one week (commencing 7th of April 2014) use the **Interval** drop down menu and select Week, see Figure 146 below.

Figure 146



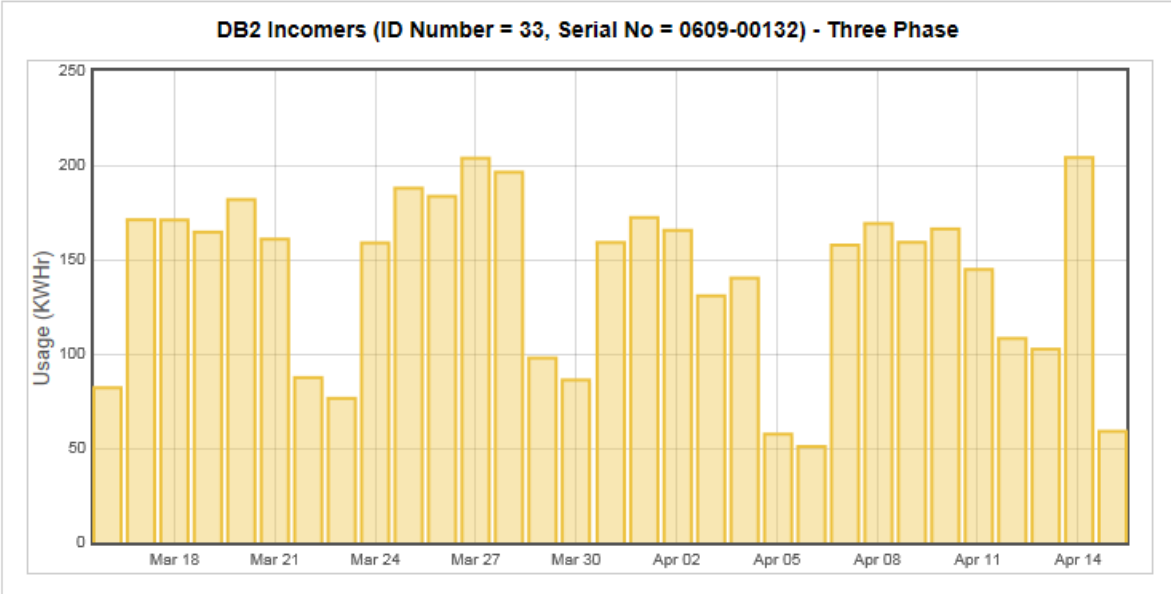
Click on **View Graph** to generate the graph, see Figure 147 below.

Figure 147



To view data for a month follow the steps above selecting a date from the calendar that is a month or more prior to the current date, set the Interval to Month and select **View Graph**, see Figure 148 below.

Figure 148

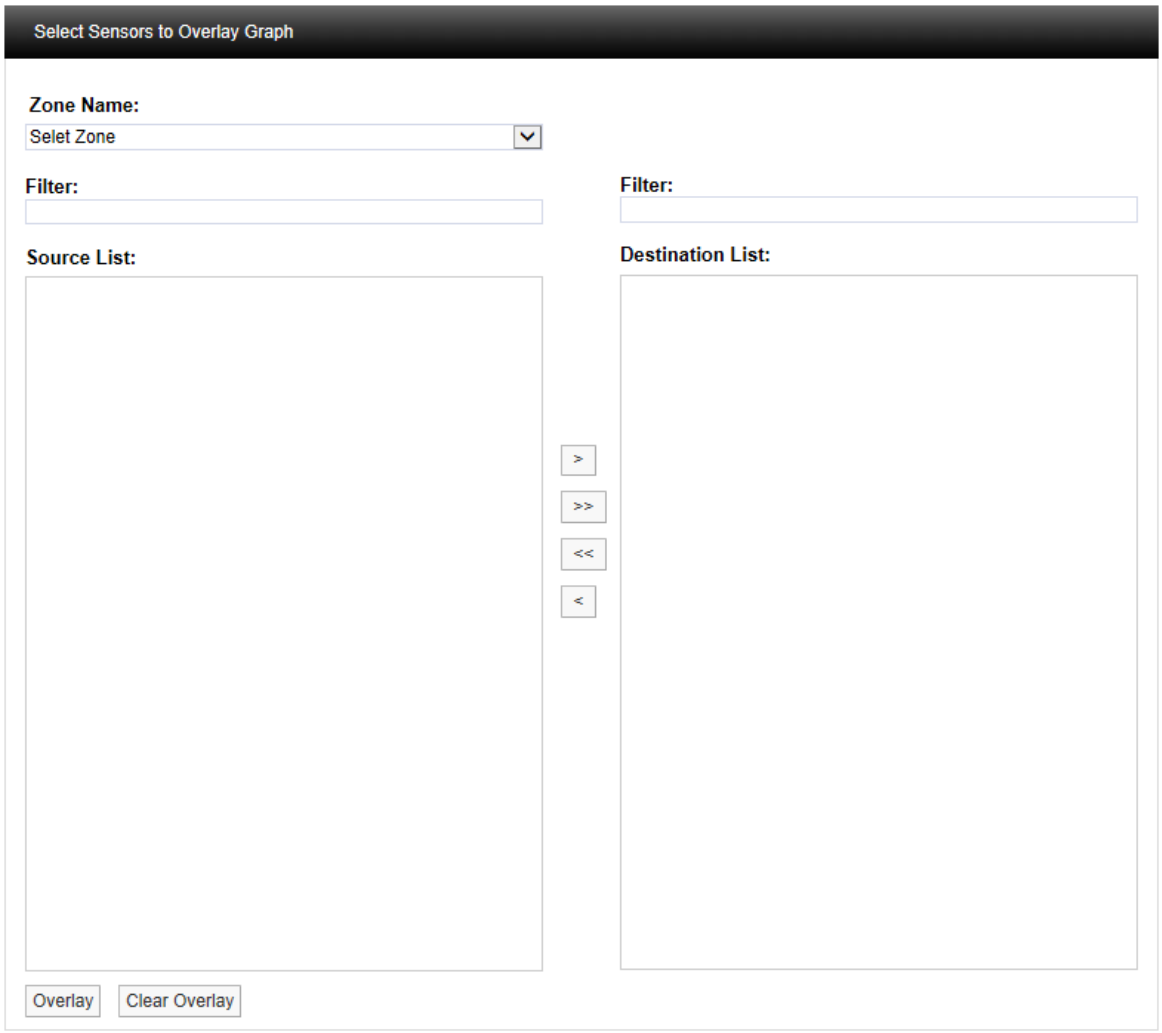


Using the tools above the graph window the following functions can be performed.

7.2.5 Overlay Sensors

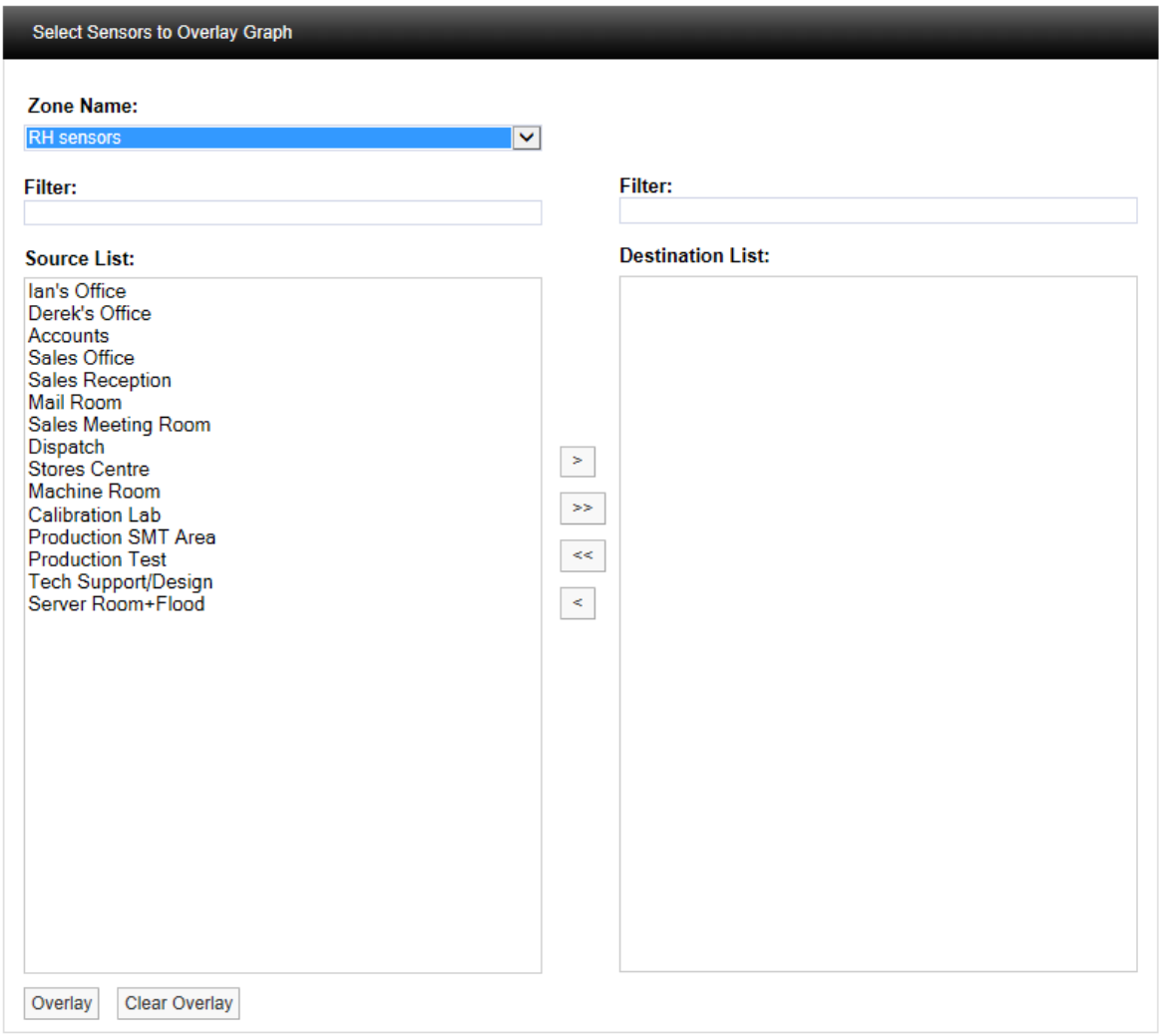
This feature allows the comparison of one or more sensors. This is particularly useful if you have an outdoor Sensor/Transmitter and want to see if the outdoor conditions are driving the conditions indoors. To overlay Sensor/Transmitter**s**, in Live View select **Overlay Sensors** from the bar menu in the Live View window. A new window called **Select Sensors to Overlay Graph** will appear, see Figure 149 below.

Figure 149



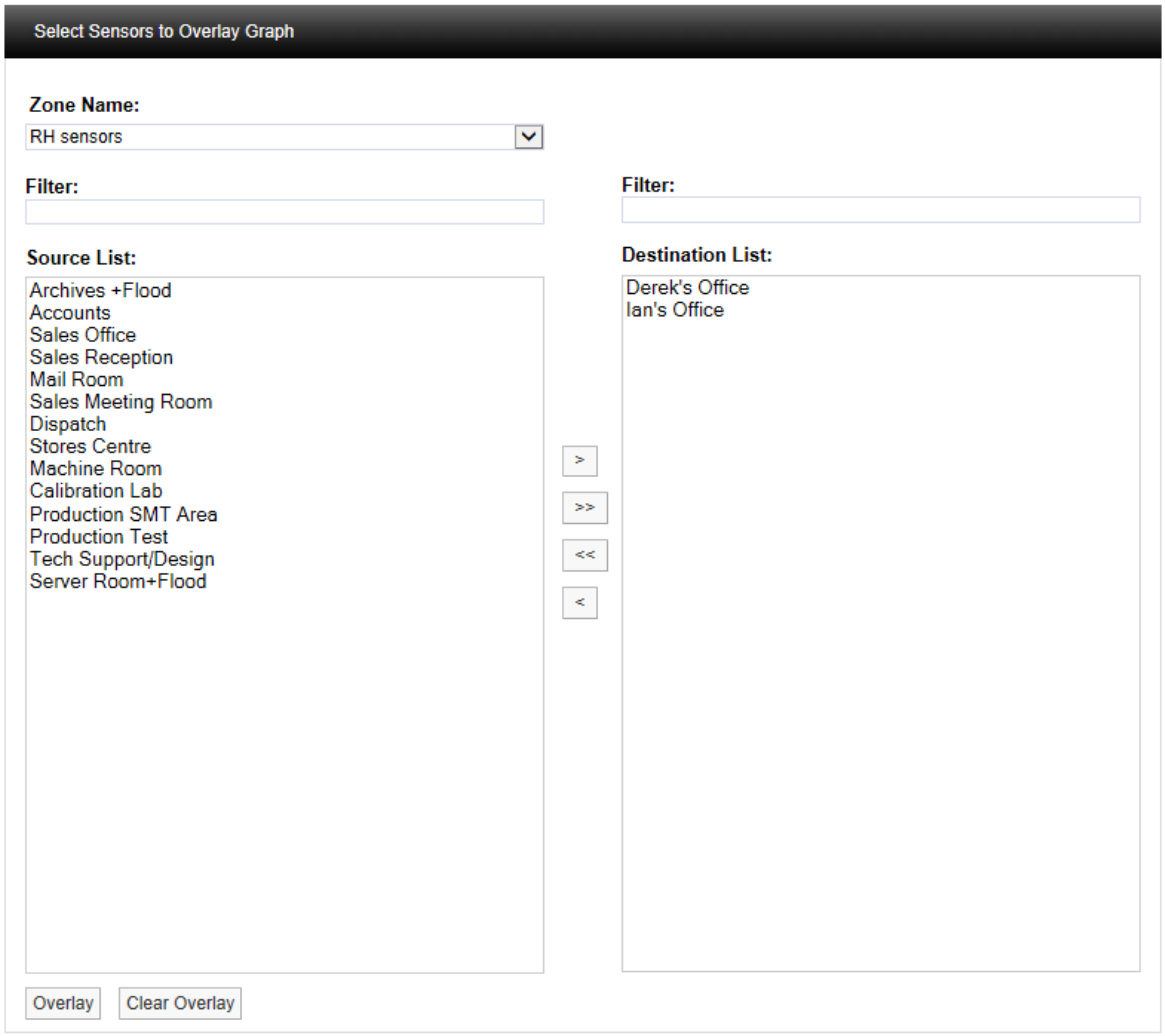
Select the Zone containing the relevant sensors from the **Zone Name:** pull-down list. See Figure 150 below.

Figure 150


Select Sensors to Overlay Graph
Zone Name:
RH sensors
Filter:
Source List:
Ian's Office
Derek's Office
Accounts
Sales Office
Sales Reception
Mail Room
Sales Meeting Room
Dispatch
Stores Centre
Machine Room
Calibration Lab
Production SMT Area
Production Test
Tech Support/Design
Server Room+Flood
>
>>
<<
<
Filter:
Destination List:
Overlay
Clear Overlay

Select the sensor(s) you require from the **Source List** then click [>]. To select more than one sensor, hold down the Ctrl key as you select the sensors, then click [>]. See Figure 151 below.

Figure 151

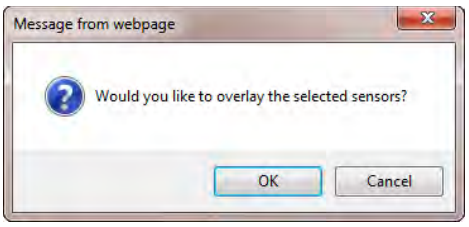


Once you are happy with your selection, scroll to the bottom of the list and select **Overlay**, see Figure 152 below.

Figure 152

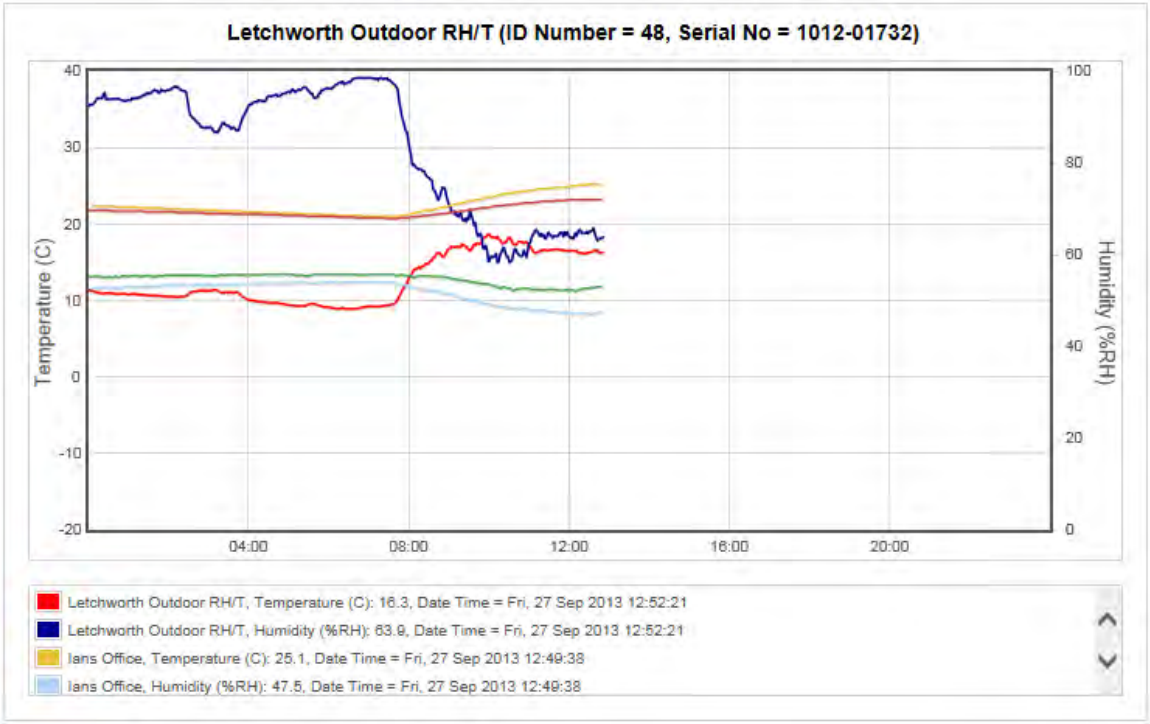
After selecting **Overlay** you will be asked to confirm your selection, see Figure 153 below.

Figure 153



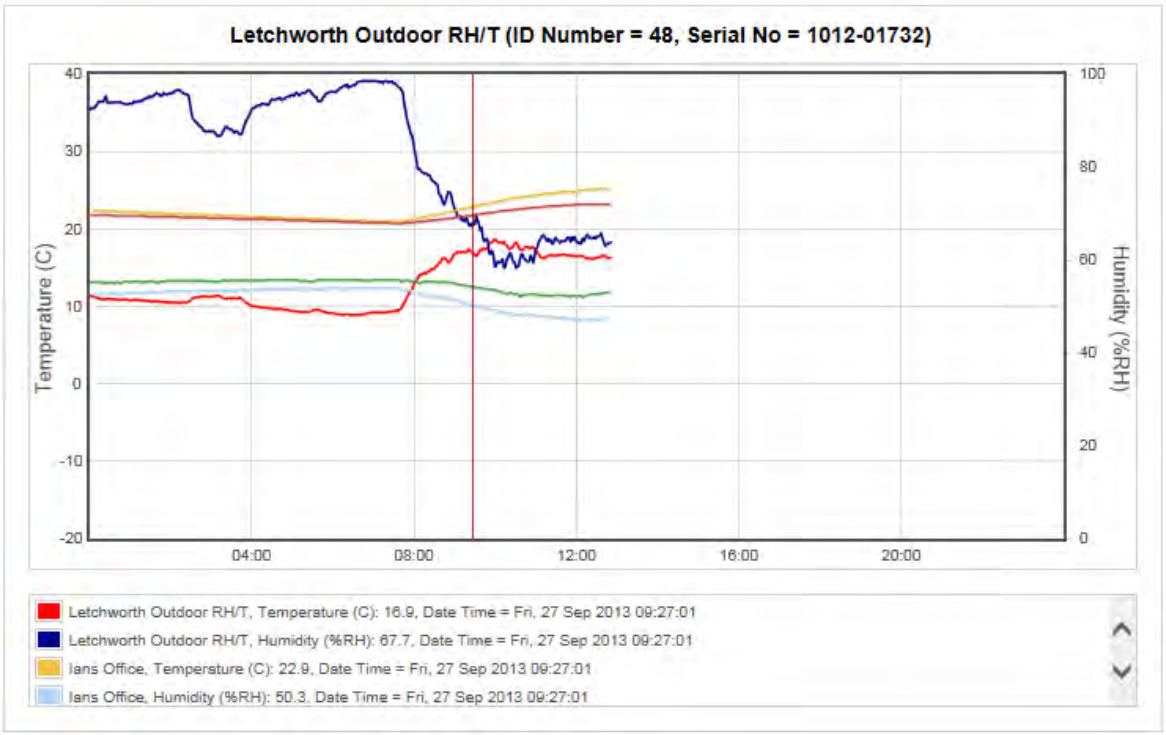
Select **OK** to confirm and to proceed with overlaying data. The graph window will re-appear with the selected Sensor/Transmitters overlaid over the original graph, see Figure 154 below.

Figure 154



The coloured key below the graph window clearly identifies the overlaid data traces. To see all the key information use the scroll bars to view the lower data. To view specific values on the graph a cursor can be applied, to use the cursor move the mouse pointer over the graph window and the cursor will appear, see Figure 155 below.

Figure 155



Keeping the mouse cursor within the graph window, move the mouse to the left and right to move the cursor across the screen as the cursor moves you will see the sensor values along with the date and time changing.

You can see from Figure 155 that as the outside temperature (red trace) increases the two indoor temperature traces (salmon & mustard) are moving up as well. This indicates that the equipment controlling the indoor space is not powerful enough to overcome the effects of the outside temperature changes.

To remove the overlay select the **Overlay Sensors** button and scroll to the bottom of the Sensor/Transmitter list and select **Clear Overlay**, see Figure 156 below.

Figure 156

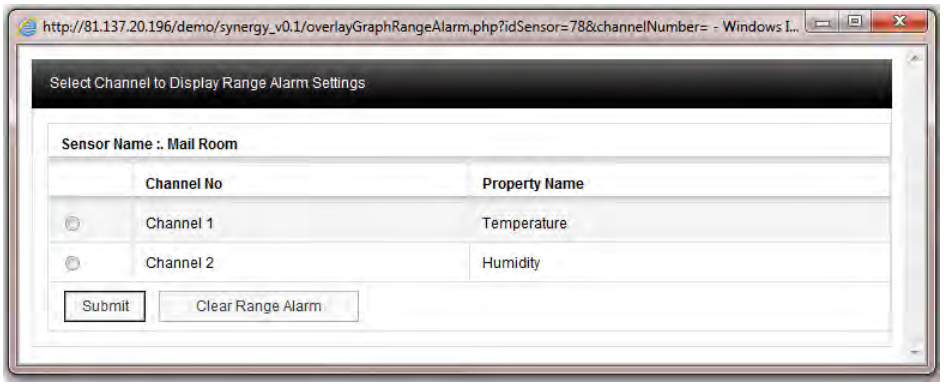
The graph data will return to the original data.

7.2.6 Range Alarm

This feature allows the levels for alarms to be overlaid on the graph, to use this feature alarm levels will need to be set, see section 6.4 on how to set alarms.

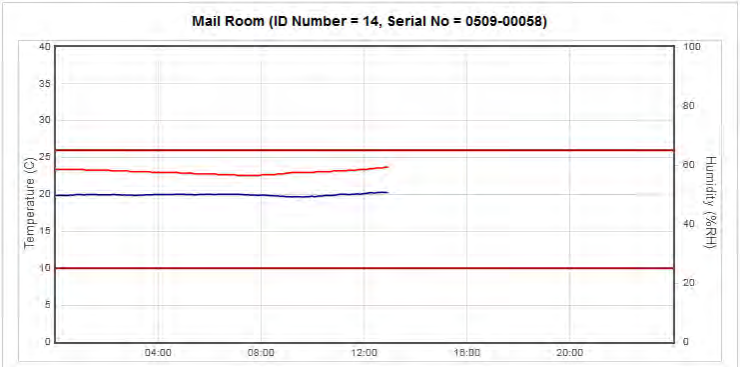
Click on the **Range Alarm** button, the **Select Channel to Display Range Alarm Settings** window appears, see Figure 157 below.

Figure 157



To bring on the temperature range alarms select the option button next to **Channel 1** and select **Submit**. A line representing where the range alarm levels are set will appear on the graph, see Figure 158 below.

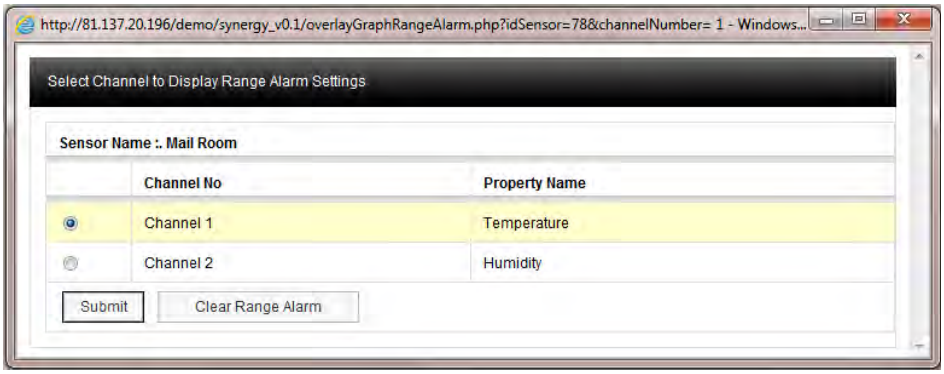
Figure 158



This gives a clear visual indication if there has been an excursion either above or below the range alarm settings. To clear the Range Alarm select **Range Alarm** from the graph window, the **Select Channel to Display Range Alarm Settings** window will appear again, this time the **Channel** that has been put on the

graph will be highlighted. To clear select **Clear Range Alarms**, the Range Alarms will now be removed from the graph, see Figure 159 below.

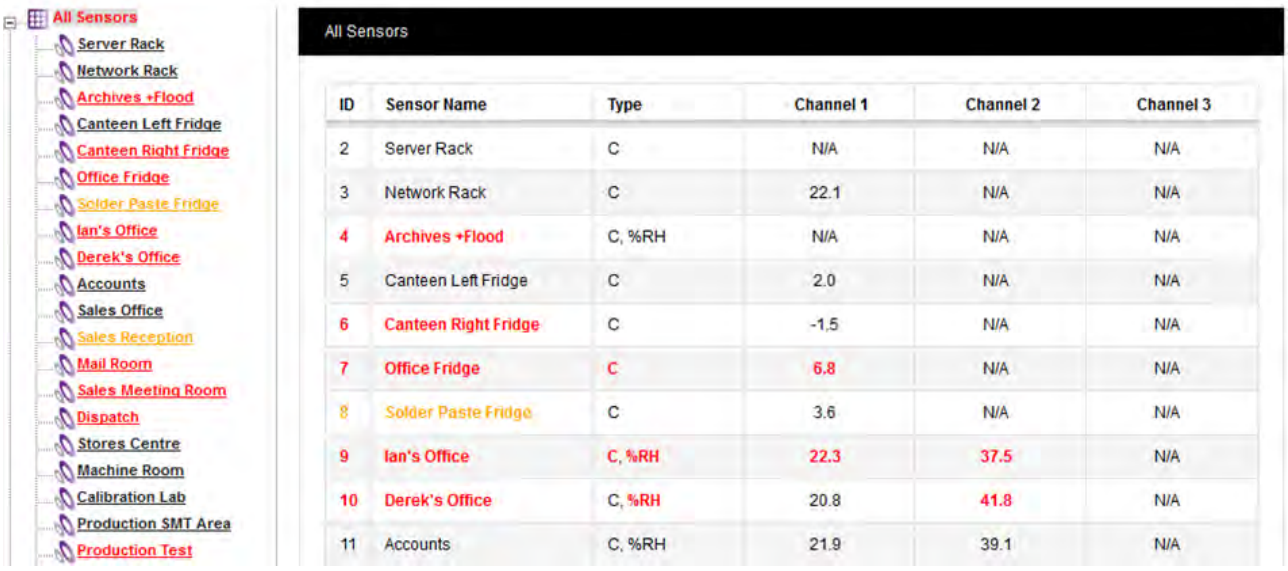
Figure 159



1.1.1 Channel Alarms

Channel-specific alarms appear as shown in Figure 160. Single click on the **ID** shows the **Acknowledging Alarm for** . . . window.

Figure 160



7.2.7 Level Alarm

This feature has the same function as the **Range Alarms** only this time the **High** and **Low** alarm levels are overlaid on the graph. Follow the instructions for Range Alarms to set **Level alarms**. To start the routine, select **Level Alarm** from the toolbar above the graph window.

7.2.8 Reset

This function will clear the graph window back to the default view regardless of where you are. The default view is the current date with one day's data displayed. To reset the graph select **Reset** from the menu above the graph window.

7.2.9 Previous

The **Previous** function steps you back through the data one graph span at a time. If the Interval is set to **Day** then graph will step in days, **Week** and it will step in weeks and **Month** it will step in months.

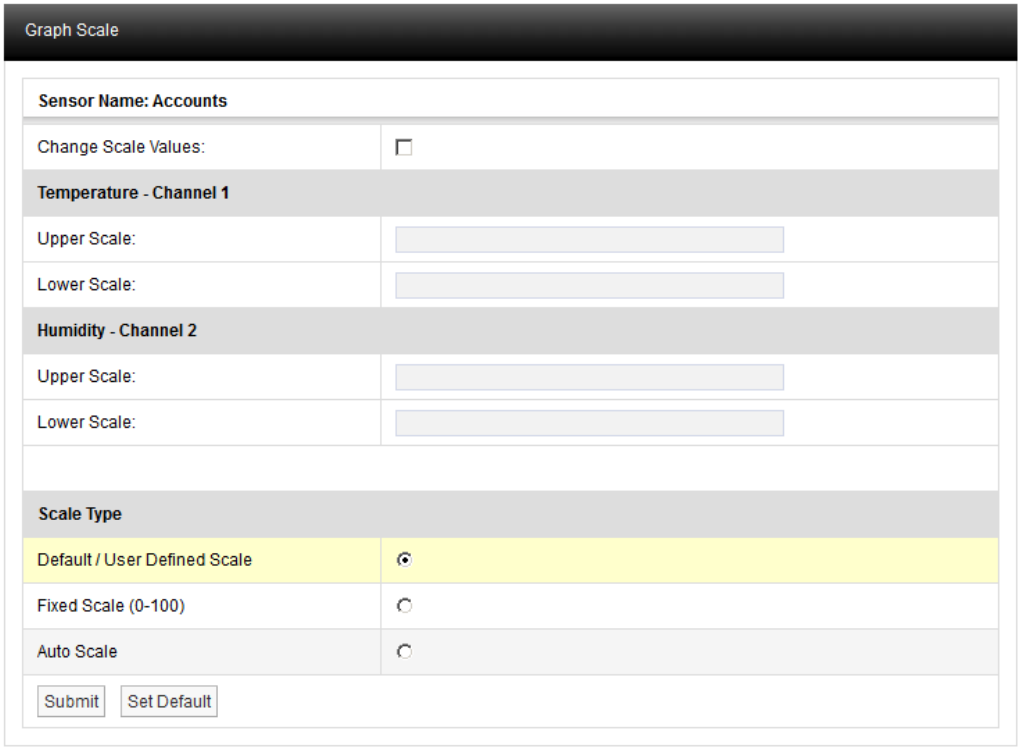
7.2.10 Next

The **Next** function steps you through the data one graph span at a time. If the Interval is set to **Day** then graph will step in days, **Week** and it will step in weeks and **Month** it will step in months. When a graph is first generated the **Next** button won't be visible as there is no future data to display. Once you select a time to graph in the past the **Next** button will appear.

7.2.11 Scale

The configuration of the graph **Scale** can be selected by the user; there are three methods of selecting the graph Scale. To change the **Scale** select **Scale** from the menu above the main graph window, a new window called **Graph Scale** will appear, see Figure 161 below.

Figure 161



Change Scale Values

By checking this check box you can enter upper and lower scale values and update them by clicking Submit.

Default/User Defined Scale

You can define a default Scale for each Sensor/Transmitter on the system. The **User Defined Scale** can be set in the **Calibration** page see section 6.3.3. Some Sensor/Transmitters have a very wide operating range but the Sensor/Transmitter in question may be being used at one end of the range. A **User Defined Scale** allows a more detailed view of the data.

Fixed Scale (0-100)

Each Sensor/Transmitter installs with a **Default Scale** which would cover the maximum range for that Sensor/Transmitter. This is **Scale** setting is OK if the Sensor/Transmitter is going to be used over its range if it's to be used over a smaller range then a **User Defined Scale** may be more appropriate, see above.

Auto Scale

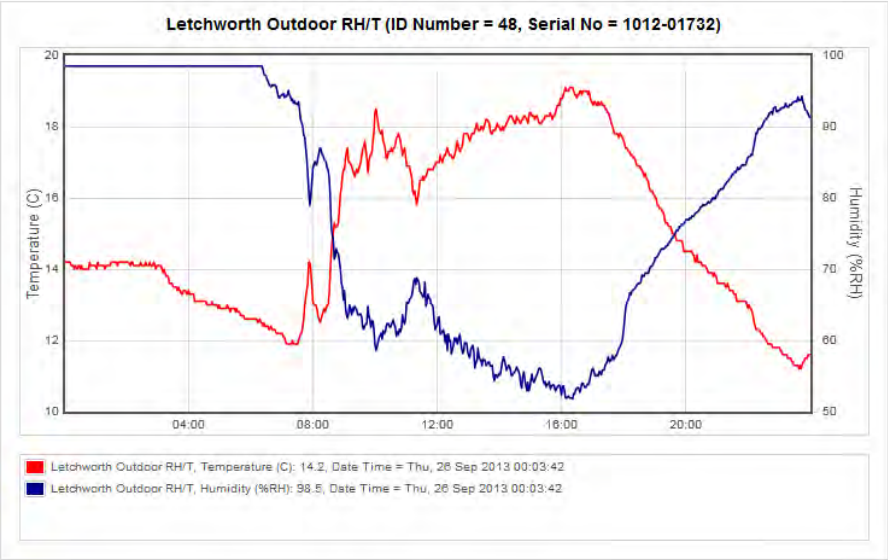
This feature allows the graph **Scale** to be set automatically, **Auto Scale** will set the graph **Scale** to a very tight range which covers the range for the data displayed. This gives a much expanded view of the data and may confuse as the data can look like it is changing dramatically.

Set Default

Default scale values can be applied by clicking **Set Default**.

Select the Scale type you require by clicking the option button next to the **Scale** type and select **Submit**. The graph will re-draw with the new Scale settings, see Figure 162 below.

Figure 162



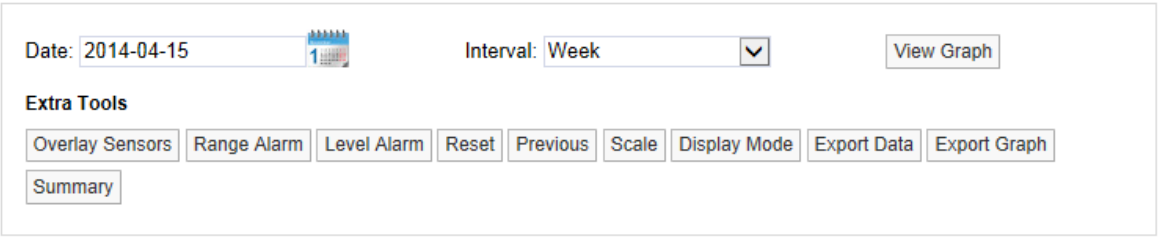
The User Defined Scale for this Sensor/Transmitter is -20°C to +40°C and 0°C to 100°C. Using **Auto Scale** has rescaled the graph to 10°C to 22°C and 50°C to 100°C.

7.2.12 Display Mode

When displaying Month or Week Interval data, Synergy compresses the data displayed on the graphs to reduce loading times, limit network bandwidth usage, and maintain graph clarity.

Synergy has two compression modes: **Min & Max** and **Averages**; by default compressed graphs are drawn in **Min & Max** mode. You can switch between display modes by clicking the **Display Mode** button, see Figure 163 below.

Figure 163



To change the display mode, click **Display Mode**, the **Select Graph Display Mode** window is displayed, see Figure 164 below.

Figure 164

Select the required **Display Mode** by clicking the adjacent option button, then click **Submit** and the graph will re-draw using the selected mode.

7.2.12.1 Compression Modes

When drawing **Week** or **Month** interval graphs, Synergy gets data for the required graphing period in slots, and displays the data for each slot period as points on the graph. Synergy uses 10-minute periods for **Week** interval graphs, and 30-minute periods for **Month** interval graphs.

Min & Max – Each slot contains the Minimum and Maximum data values for the slot period. **Min & Max Mode** graphs can look less smooth than **Averages Mode** graphs, but show the full range of all value excursions.

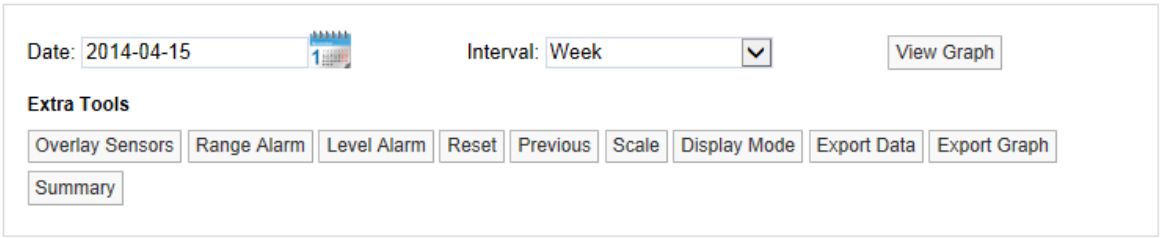
Averages – Each slot contains the average data value for the slot period. **Averages Mode** graphs can look smoother than **Min & Max Mode** graphs, but can also give a misleading impression of data values.

7.2.13 Export Data

The data associated with **Day** and **Week** interval graphs can be exported to a comma separated variables file, (.CSV). The entire Day or Week's data will be exported, irrespective of the current zoom state when the data is exported.

To export data click the **Export Data** button shown in Figure 165 below.

Figure 165



Note: the **Export Data** button can appear under the **Overlay Sensors** button or to the right of the **Display Mode** button, this is normal and depends on graph view, browser, screen width, etc.

Once clicked you may be asked to choose between saving the file and opening with your computers default spread sheet application. However; the exact action will depend on the Browser you are using; the default settings you have made for your Browser; the computer operating system and its set-up; and any spread sheet application you may have installed on your computer. If you require assistance with this contact your system administrator or IT support provider, please do NOT contact IMC Technical Support, as this is help that only your administrator / support provider can supply.

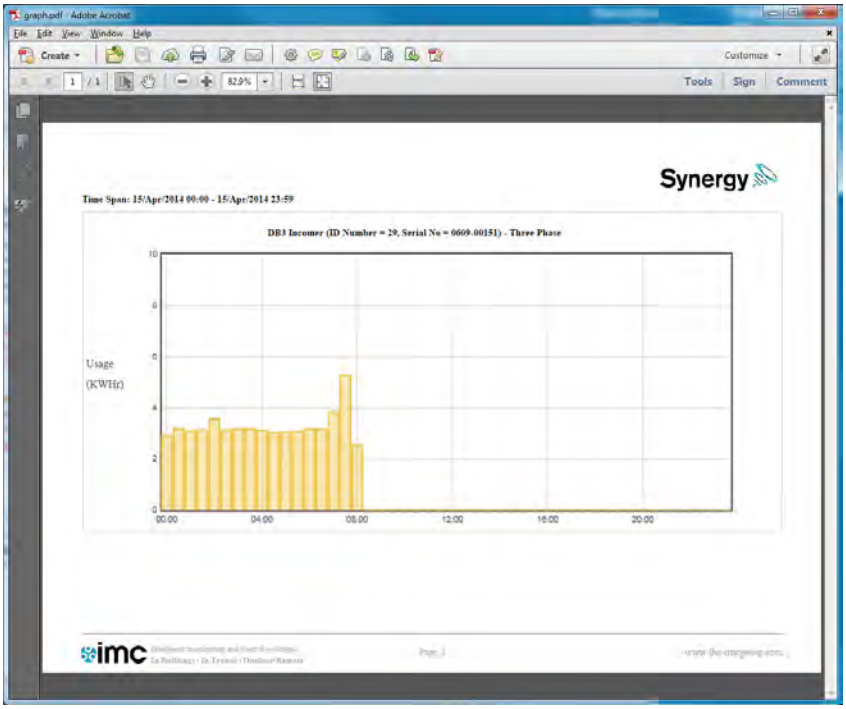
7.2.14 Export Graph

The Export Graph function allows you to export a picture of the graph (line or bar chart) in .pdf format. Clicking on the **Export Graph** button gives the browser's standard "Do you want to open or save . . ." window.

Figure 166

Clicking **Open** displays the graph in a .pdf window, with IMC headers and footers:

Figure 167



Click Save to save the file to your Windows downloads folder with name graph.pdf, Save as to save the graph file to another folder, renaming the file if required.

7.2.15 Expand Graph

Select this button to display the current graph in a separate (larger) window.

7.2.16 Start of Data, End of Data

Select **Start of Data** to change the graph display to the date/time when data was first recorded by the sensor. **End of Data** returns the display to the show data at the current date/time.

7.2.17 Summary Data

Summary Data is available for most sensor types. Click the **Summary** button to give summary data for the selected time span in the **Data Summary** window.

Figure 168

Data Summary

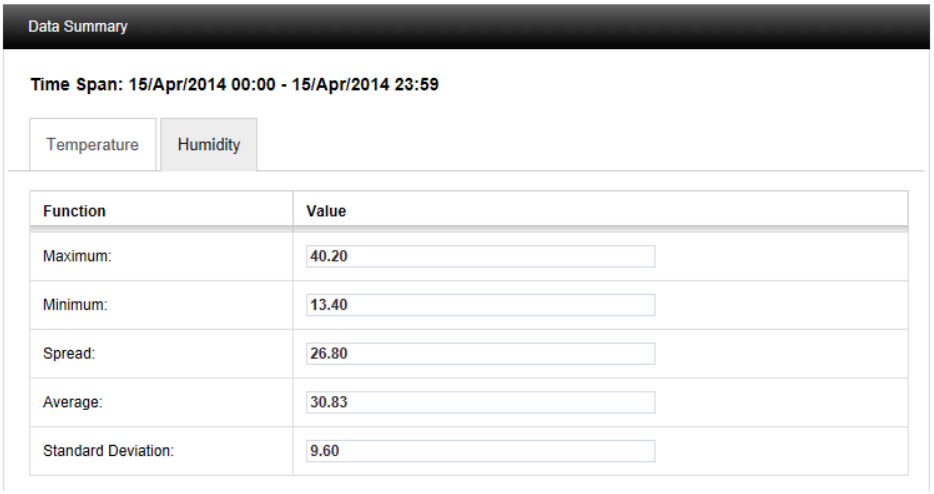
Time Span: 15/Apr/2014 00:00 - 15/Apr/2014 23:59

Temperature | Humidity

Function	Value
Maximum:	38.00
Minimum:	13.20
Spread:	24.80
Average:	20.85
Standard Deviation:	8.08
Mean Kinetic Temperature:	24.89

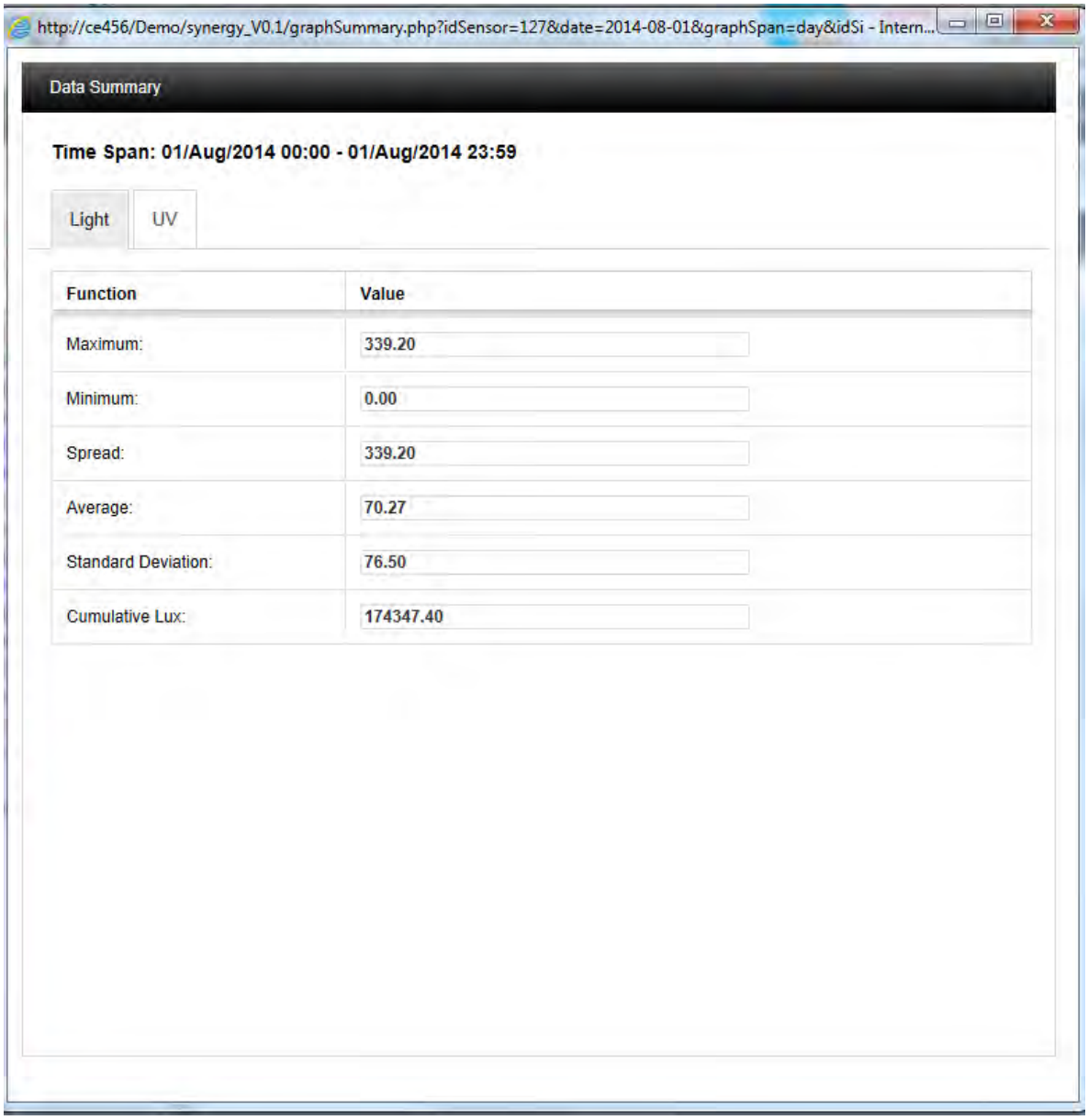
Clicking the Humidity tab will give similar data (but not the Mean Kinetic Temperature value).

Figure 169



As another example, a Data Summary window for a Cumulative Lux (light) sensor could be as shown in Figure 170.

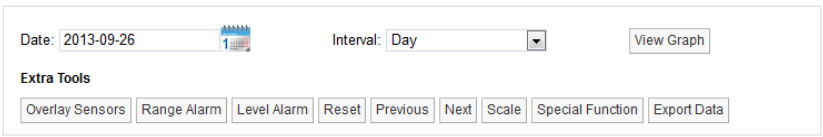
Figure 170



7.2.18 Special Function

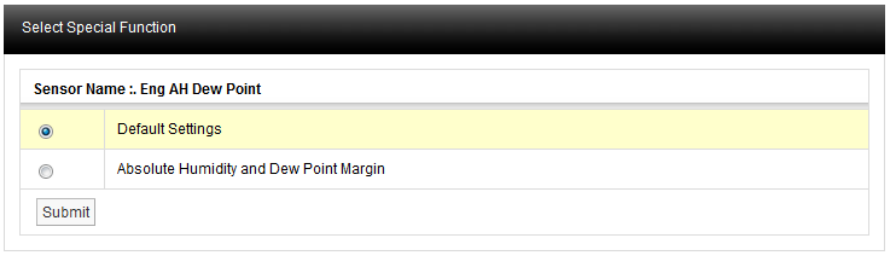
The Graph window shown for Absolute Humidity / Dew Point Sensors will include the **Special Function** button, see Figure 171 below. The **Special Function** feature allows the graph function to be switched between showing Temperature / Humidity or Absolute Humidity / Dew Point.

Figure 171



To switch the graph function click **Special Function**, the **Select Special Function** window, shown in Figure 172 below, will display.

Figure 172



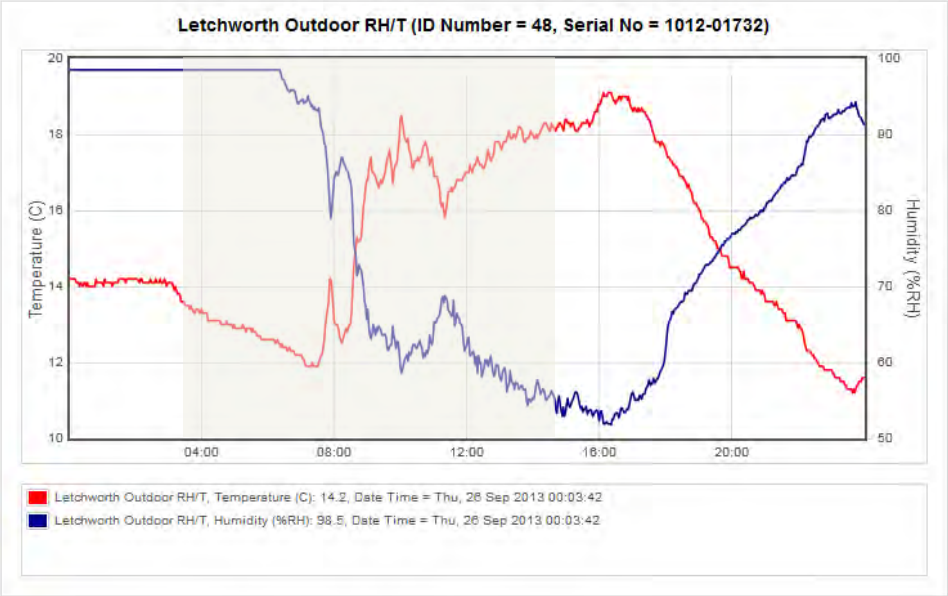
Select the required graph function by clicking the adjacent option button, then click **Submit**, and the graph will redraw to show the selected function.

7.2.19 Graph Zoom

The graph can be zoomed by using the mouse, to Zoom in on a section of the graph place the mouse cursor at the place where you want to Zoom in on, click and hold the left mouse button and move the mouse to cover the section of the graph to Zoom in on.

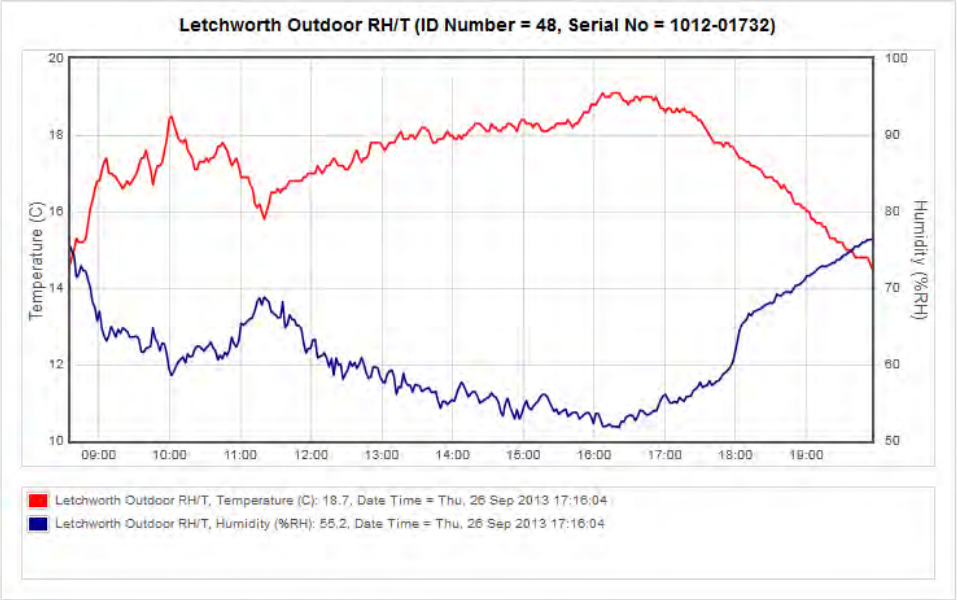
When the area required is highlighted release the left mouse button, see Figure 173 below.

Figure 173



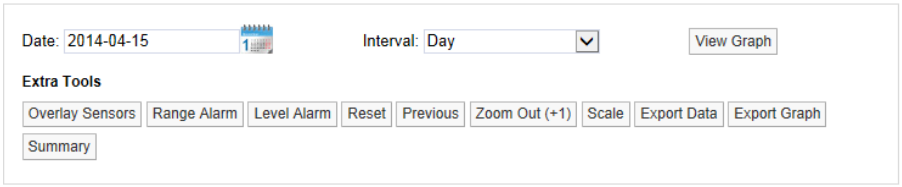
The graph will re-draw zoomed into the area selected, see Figure 174 below.

Figure 174



Once the graph has been zoomed a new button on the graph toolbar will appear, see Figure 175 below.

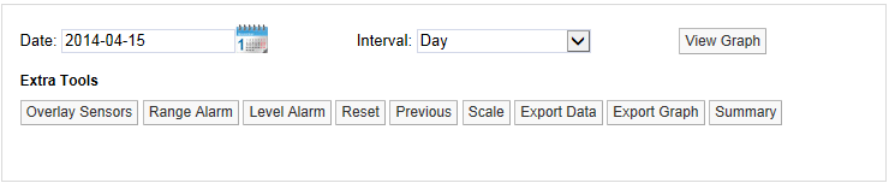
Figure 175



The new button will **Zoom** the graph out, you will see that the button is called **Zoom Out** with a number in brackets in this example (+1) this tells you that the graph has been zoomed one time if the number in brackets was (+3) that would indicate that the graph has been zoomed three times.

Clicking the **Zoom Out** button once will take you back one step. To go back to no **Zoom** in one step you can select **Reset**. Once the graph has been returned to an un-zoomed view the **Zoom Out** button will disappear, see Figure 176 below.

Figure 176



7.2.20 Graph View Live Data

At the foot of the graph window the current Live Data is available, see Figure 177 below.

Figure 177

Live Data

ID	Sensor Name	Type			
48	Letchworth Outdoor RH/T	Thermistor/RH	10.3	83.4	N/A

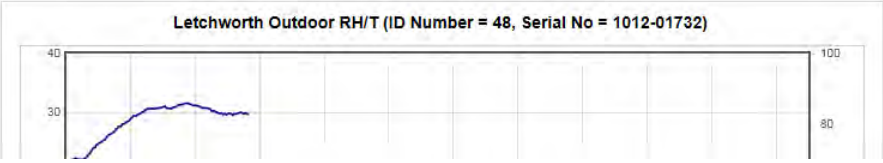
The data is displayed in columns and is shown in the order that the units are displayed in the **Type** column. In this example 10.3 represents temperature and 83.4 represents RH.

Columns can contain data from different sensor types.

7.2.21 View Data Graph Titles

The graph title appears above the graph and is auto generated by the system, the name consists of the Sensor/Transmitter name allocated by the user when the Sensor/Transmitter was added to the system, the ID number and the serial number, see Figure 178 below.

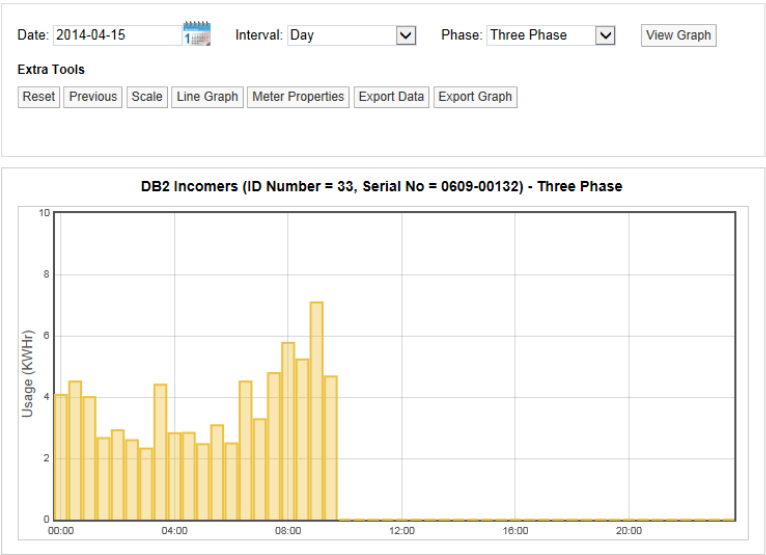
Figure 178



7.2.22 Utilities Bar Chart

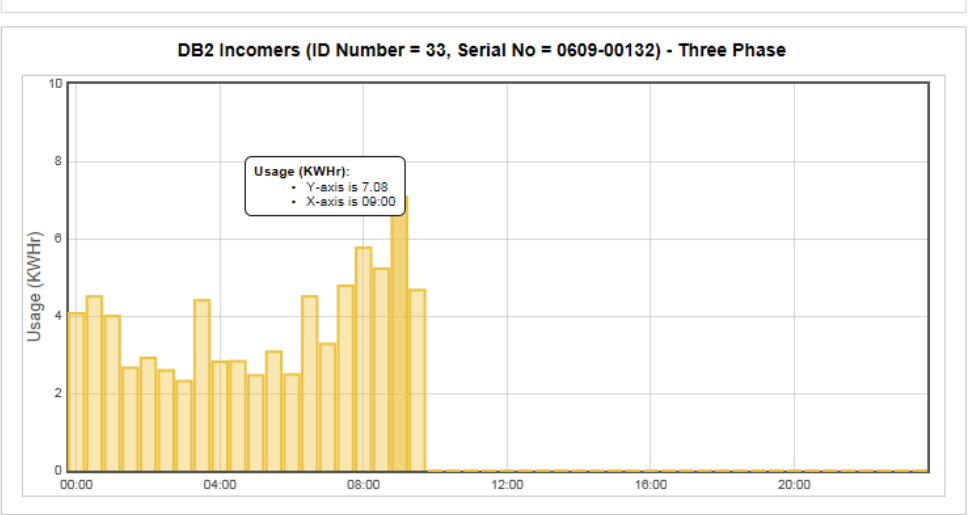
When a Current or Pulse Count Sensor is clicked, a Utilities Bar Chart is displayed, showing the energy/water/gas etc. usage for the graph period, see Figure 143 above.

Figure 179



To view the usage during a specific bar period on the graph, hover the mouse pointer over the graph bar and the usage values will display as shown below.

Figure 180



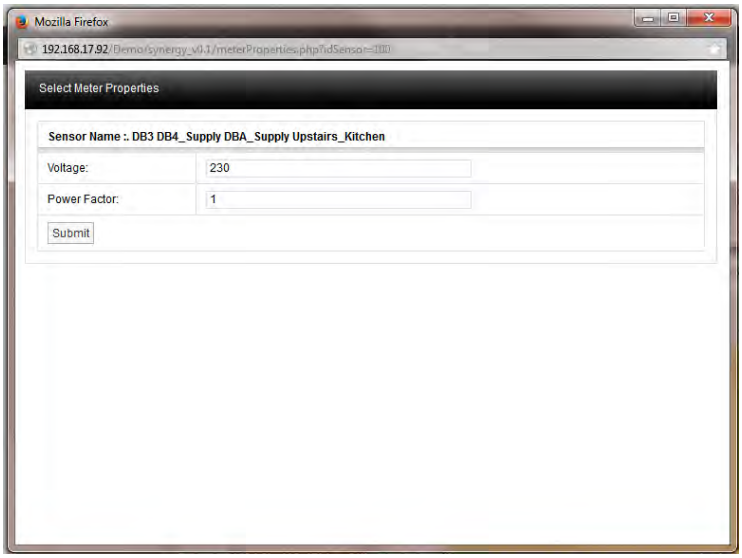
7.2.22.1 Line Graph

Click this button to view the data as a line graph, with options as shown in sections 7.2 to 7.2.21 above. To return to the Utility Bar Chart graph view from the Line Chart view, click the sensor on the sensor tree again.

7.2.22.2 Electricity Meter Properties

Meter properties such as voltage and power factor can be altered for Current Clamp sensors. Click **Meter Properties** to display the **Select Meter Properties** window, as shown in Figure 181 below.

Figure 181

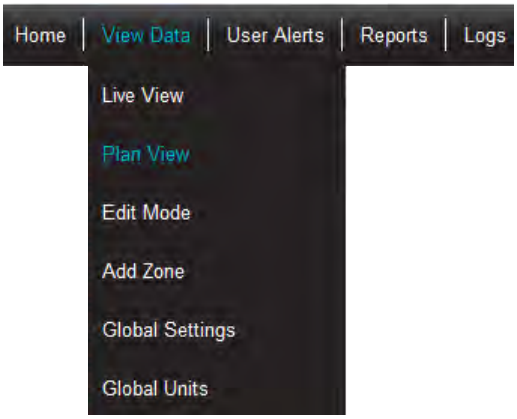


When new values have been entered, click Submit to accept the changes and close the **Select Meter Properties** window.

7.3 Data Plan View

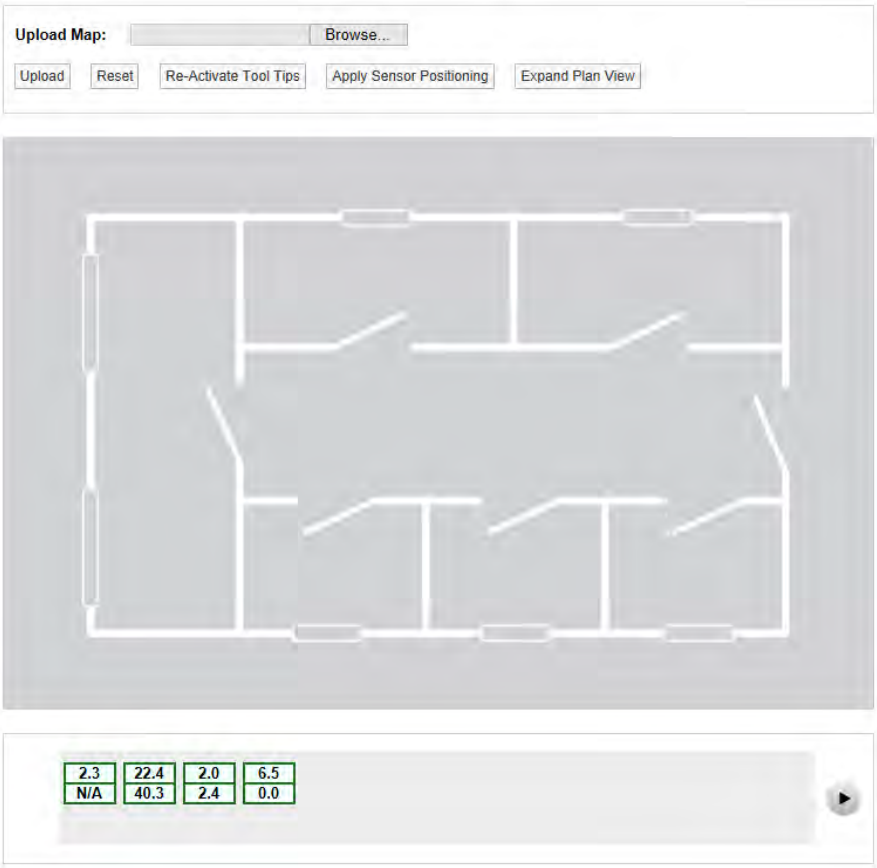
Synergy allows the User to allocate **Plans** to a Zone. Plan View gives a graphical view of the data. To access Plan View select **Plan View** from the **View Data** menu from the top menu bar, see Figure 182 below.

Figure 182



To add a Plan select **Browse** to locate a suitable **Plan**, suitable **Plan** formats are .gif, jpg and .png formats and should be no larger than 30K, see Figure 183 below.

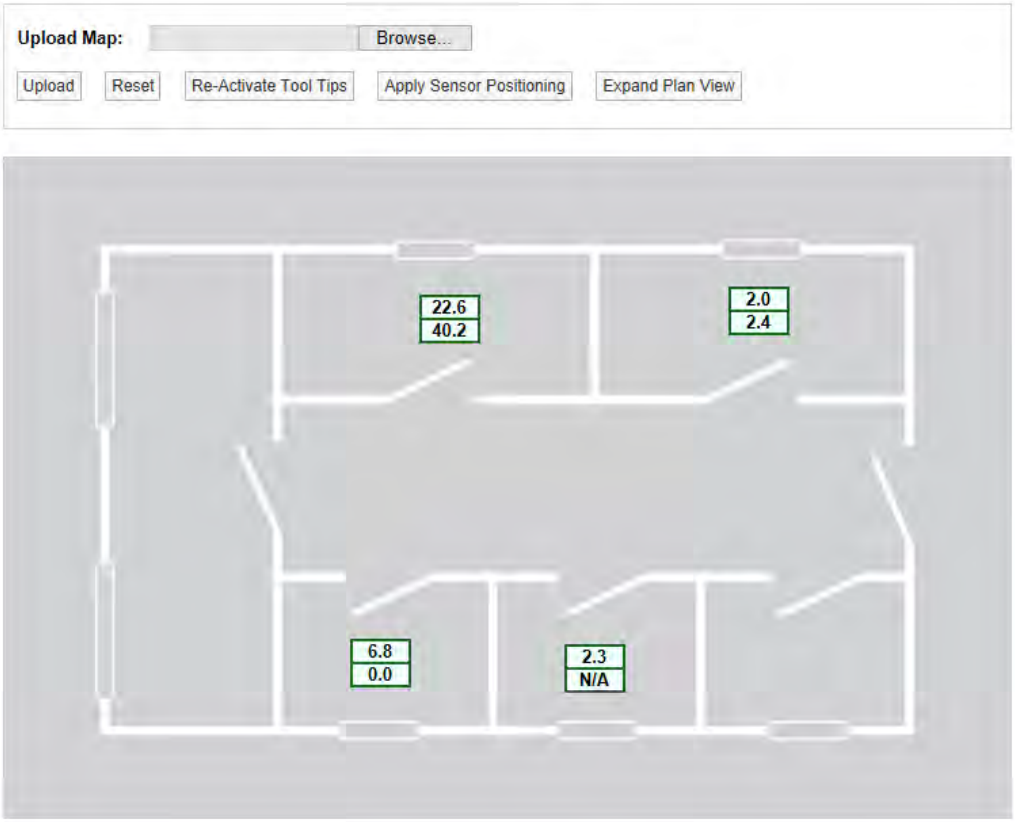
Figure 183



Once a suitable Plan has been located select **Upload** to load the image.

When a plan is first loaded all the sensor icons will be located along the bottom bar. The icons can be dragged to the Plan by moving the mouse cursor over the icon, hold down the left mouse key and drag the required sensor icon to the desired location on the Plan, see Figure 184 below. You must have the Plan View Edit Permission set to **Allow** to be able to do this.

Figure 184

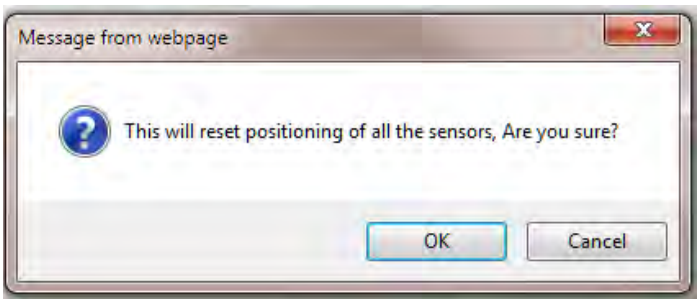


Each channel is represented by a single block. A double-channel device is represented by two blocks, a three-channel device by three blocks. See below for an example.

Figure 185

If required all icons can be removed from the **Plan** to the bottom bar, to perform this function select **Reset**, you will get a confirmation request, see Figure 186 below.

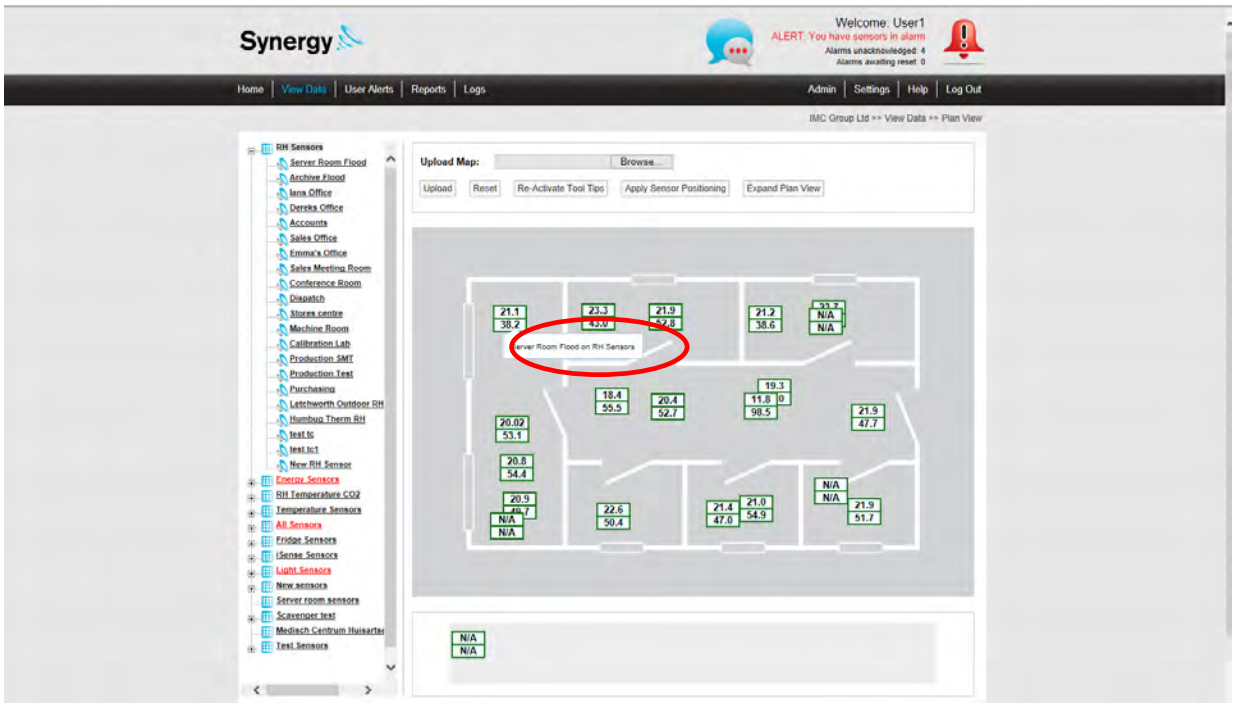
Figure 186



To continue select **OK**, all icons will be moved to the bottom bar.

Moving the mouse pointer over a Sensor icon displays a tool tip with the sensor name and its parent Zone. See Figure 187. Click the Re-Activate Tool Tips button if the tool tips are not visible.

Figure 187



A larger Plan View can be obtained by selecting **Expand Plan View**. This button then changes to **Compact Plan View**, which you should select if you wish to return to the smaller view.

Note: if you reposition sensors in one Plan View, the sensors will remain in their original positons when you switch to a different size Plan View. If you select **Apply Sensor Positioning** the sensors will move to new positions on the new View.

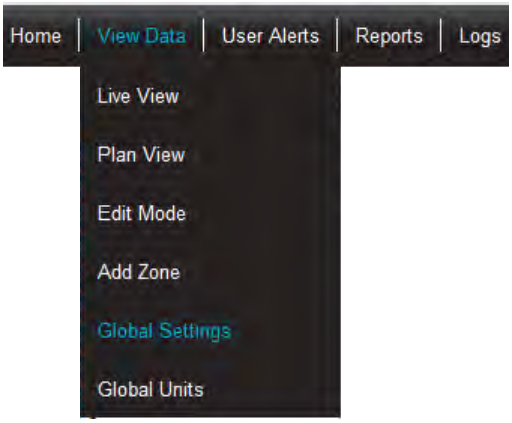
'Out of Service' sensors are displayed on the Plan View in blue. See Figure 188.

Figure 188

7.4 Global Settings

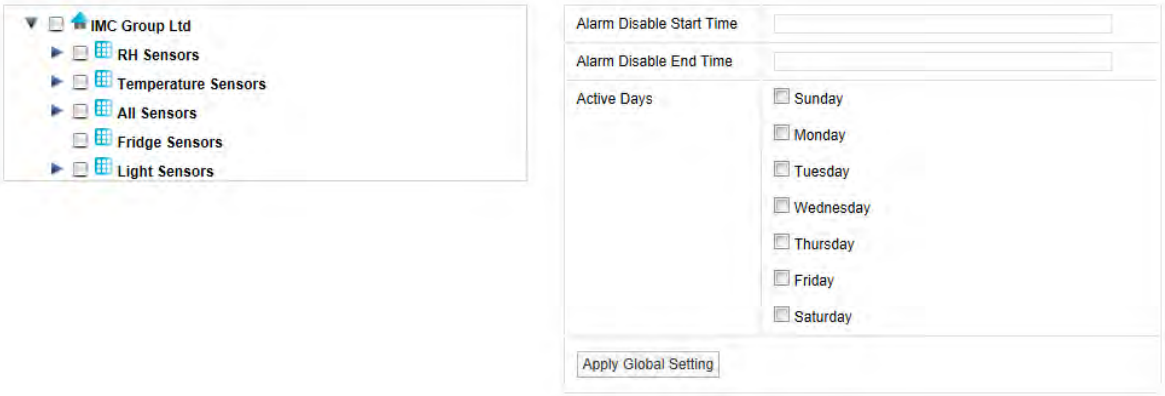
Global Settings allows alarm disable times and days to be set across a range of Sensor/Transmitter**s**. To access Global Settings select **Global Settings** from the **View Data** menu from the top menu bar, see Figure 189 below.

Figure 189



After selecting Global Settings a new page will appear, see Figure 190 below.

Figure 190

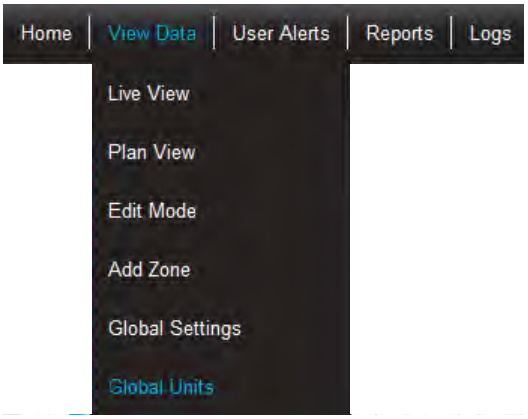


For information on setting times and days see section 6.4.1, once the times and days have been set use the **Site** and **Zone** tree on the right hand side to select which Sites and Zones to apply the changes to.

7.5 Global Units

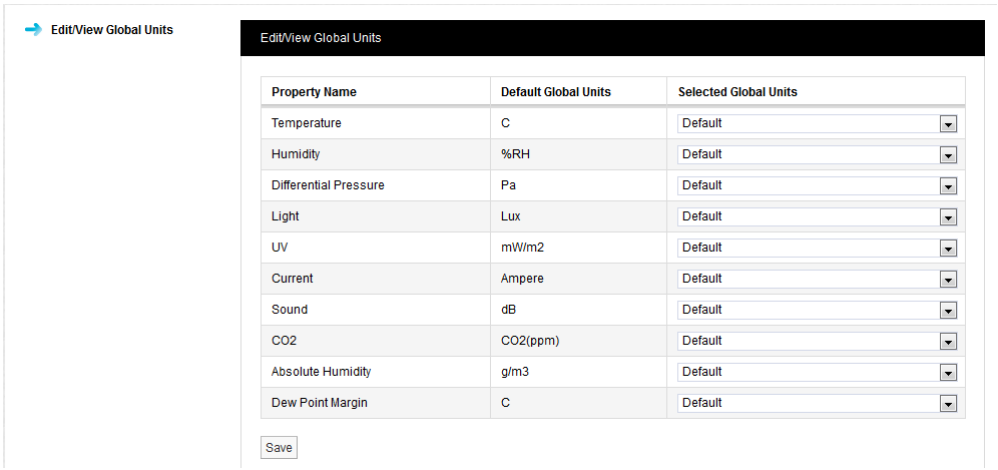
Global Units allow common Sensor value types to be displayed using alternative units, for example displaying Temperature values as Fahrenheit instead of Celsius. To access the **Global Units** window, select **Global Units** from the View **Data Menu**, see Figure 191 below.

Figure 191



After select Global Units the Global Units window will display, see Figure 192 below.

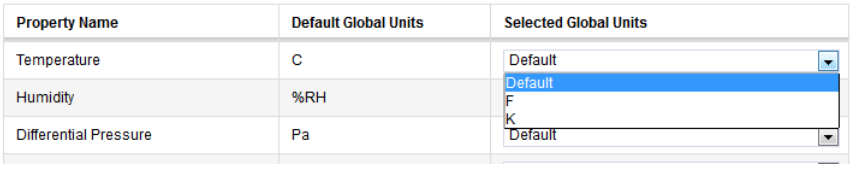
Figure 192



Synergy Version 1.2.1 releases Fahrenheit and Kelvin as alternative units for Temperature; future Synergy versions will add alternative to other SI / Standard units.

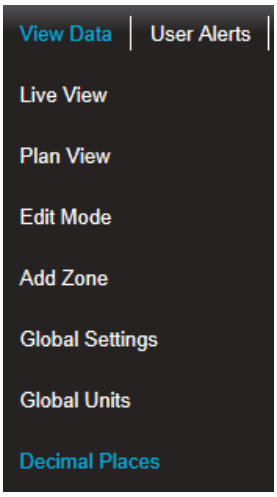
To change the used for Temperature values, click the down arrow to the right of **Default** and select the required unit option, F or K, see Figure 193 below, then click **Save**. When asked '**Are you sure?**' click **OK** to confirm.

Figure 193

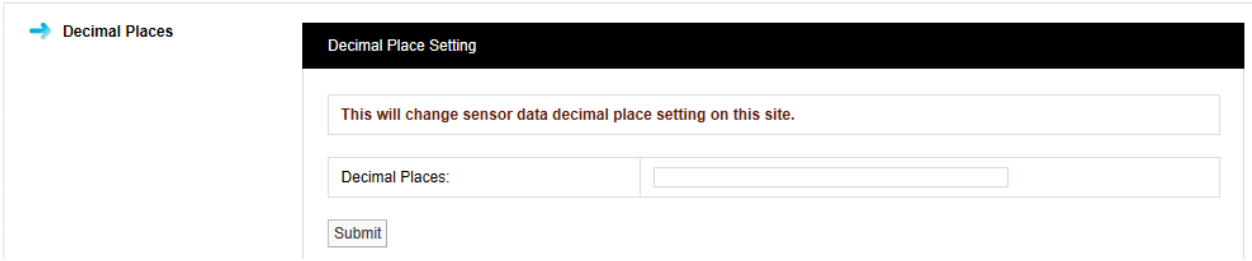


7.6 Decimal Places

Figure 194



Allows you to set the number of decimal places to be used to display sensor data.

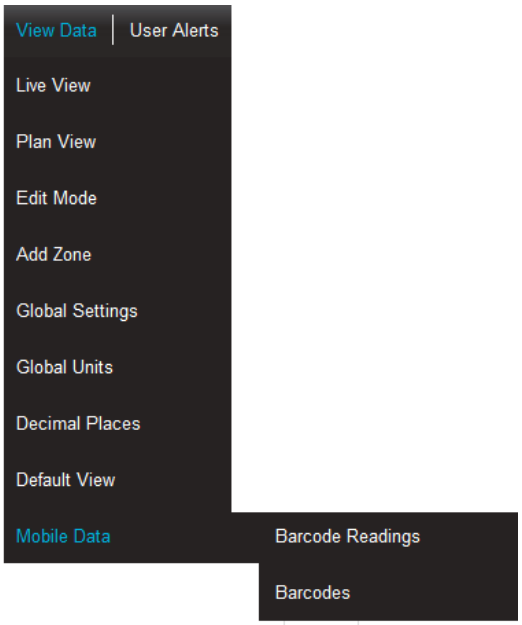


Enter the number of decimal places you require in the Decimal Places: field and click Submit.

7.7 Mobile Data

The TME MM7000 is a handheld temperature recording device that transmits data records via Bluetooth. Each data record has a bar code, time stamp and temperature reading.

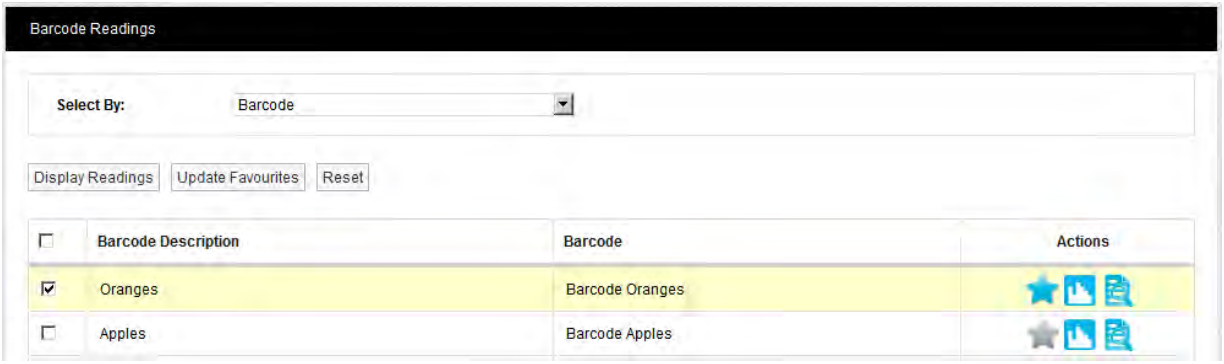
Figure 195



7.7.1 Barcode Readings

By clicking **Barcode Readings** you see a screen of the available barcodes, see Figure 196 below. Users can select barcodes by barcode or zone by clicking **Select By** dropdown.

Figure 196



User can display barcode readings by clicking **Display Readings** button or icon, see Figure 197 below. Search can be further refined by selecting various parameters such as **Start Date**, **End Date**, and **Barcode** etc. See Figure 197 below.

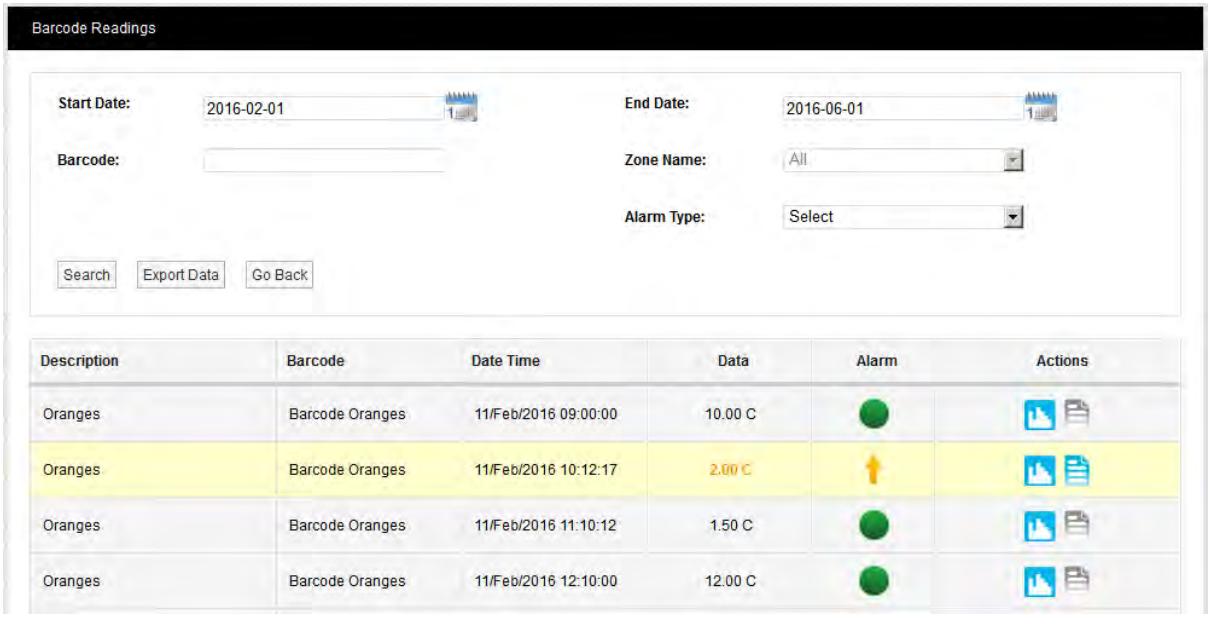
If there are any alarms they will display under **Alarm** heading, alarm symbols and their meaning is as follows. User can also acknowledge alarm by clicking on the red arrow symbols. These alarms are separate from other Synergy alarms and can only be viewed under section **Barcode Readings**, see Figure 197 below.

- High Alarm
- High Alarm is Acknowledged

- Low Alarm
- Low Alarm Acknowledged
- No Alarm

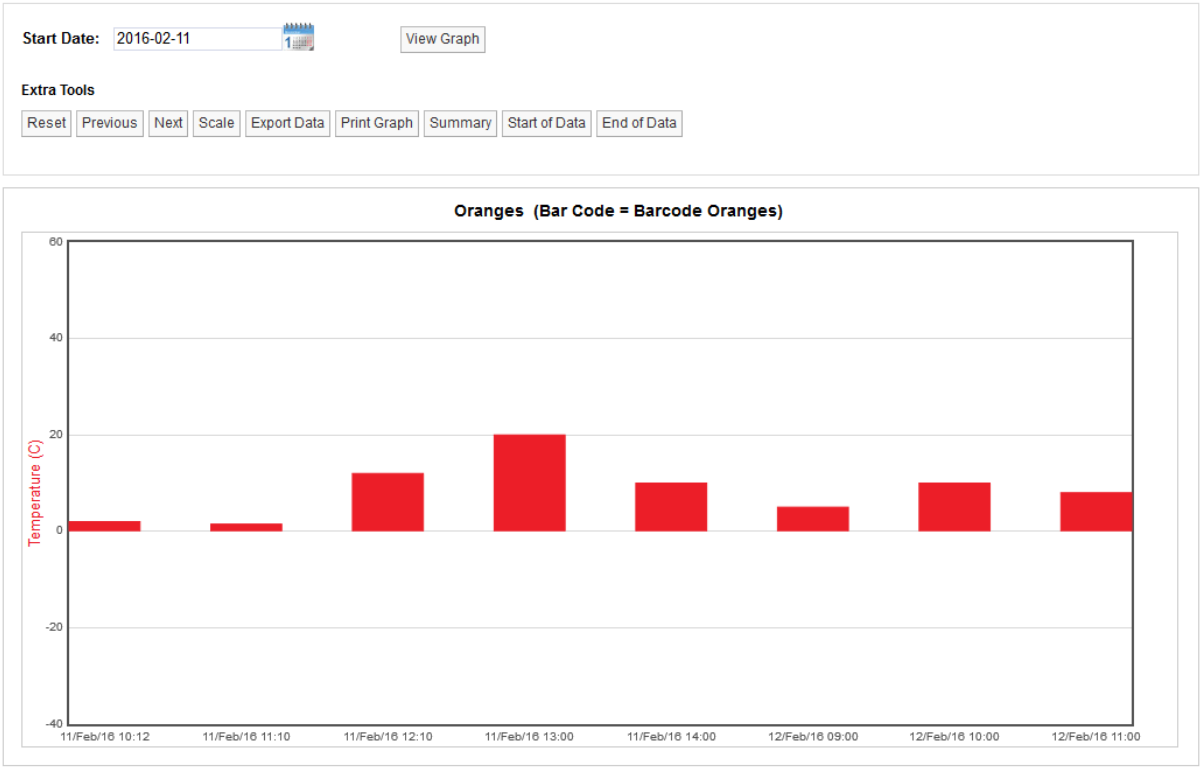
Alarm notes can be entered by clicking icon and if it's not greyed out. Data can also be exported into CSV format by clicking **Export Data** button.

Figure 197



A bar graph can be viewed by clicking icon, see Figure 198 below.

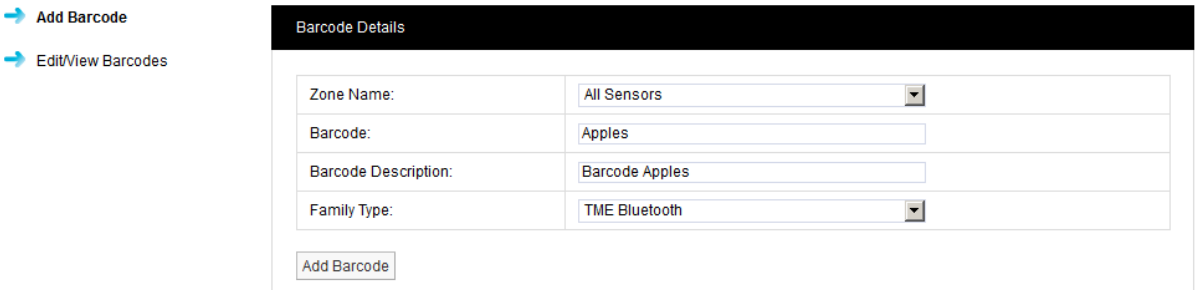
Figure 198



7.7.2 Barcodes

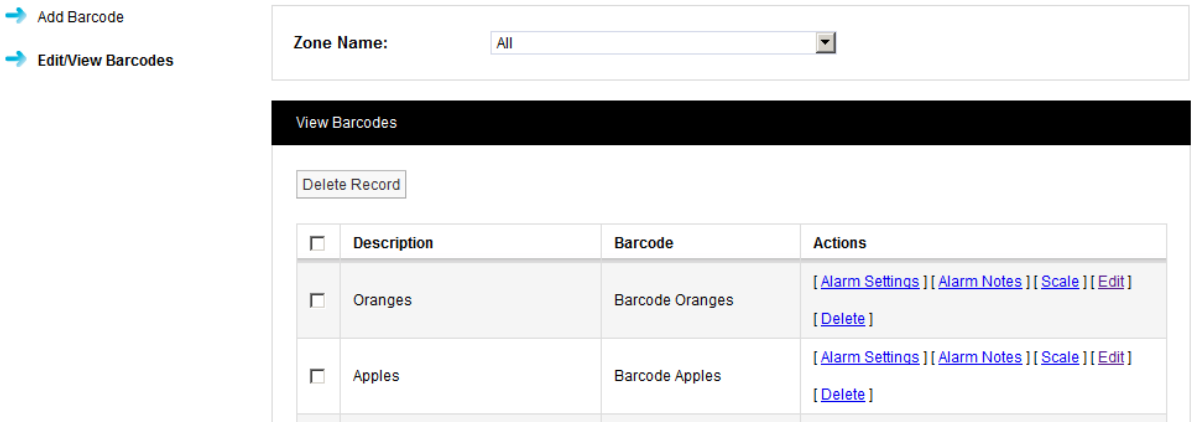
Barcodes can be added to the system by clicking Add Barcode, see Figure 199 below.

Figure 199



You will see the following screen once the Barcode is added successfully, see Figure 200 below. This is where other operations can be performed such as changing alarm settings, adding alarm notes, defining scale for the graph, edit or delete of the Barcode. Users can also filter Barcodes by Zone name.

Figure 200

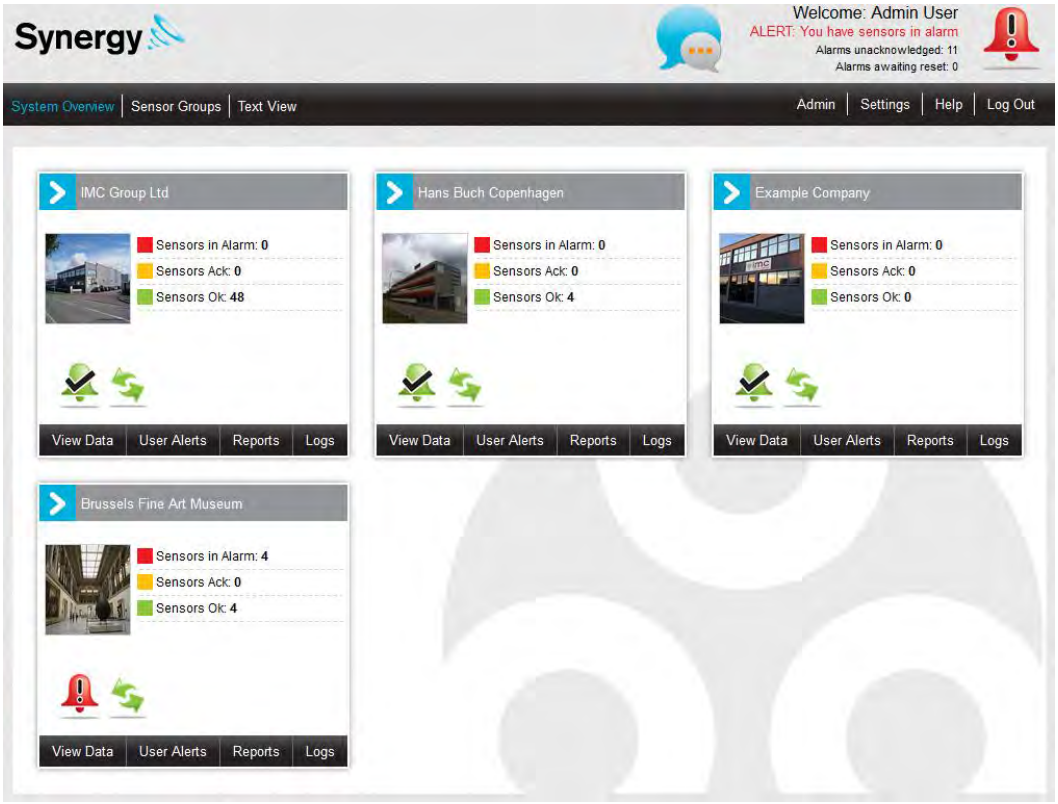

Add Barcode
Edit/View Barcodes
Zone Name:
All
View Barcodes
Delete Record
Description
Barcode
Actions
Oranges
Barcode Oranges
[Alarm Settings] [Alarm Notes] [Scale] [Edit] [Delete]
Apples
Barcode Apples
[Alarm Settings] [Alarm Notes] [Scale] [Edit] [Delete]

8 Alarm Management

This section will take you through managing alarms generated by the system. When the **User** first logs onto Synergy the first screen gives an overview of the system. The overall system alarm status can be seen by looking at the **Alarm** icon at the top right hand side of the screen, see Figure 201 below.

8.1 System Status Overview

Figure 201



We can see straight away that there are eleven alarms on the system and there are no unread system messages. System messages can be viewed in the system message alert icon, see Figure 202 below.

Figure 202

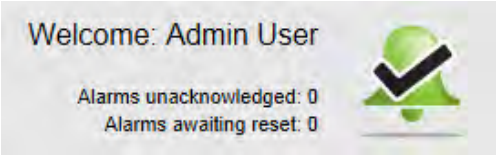
The three coloured dots indicate the system message status.

- **White** there are no system messages
- **Amber** there no new unread system messages
- **Red** there are new unread system messages

8.1.1 System Alarm Status Overview

The **Alarm** icon on the top right of the main screen gives a system wide view of the **Alarm** status, see Figure 203 below.

Figure 203



The following data is shown:

- The User that is logged in, in this example it is **Admin User**
- The number of unacknowledged alarms, in this example there are none
- The number alarms awaiting reset, in this example there are none.

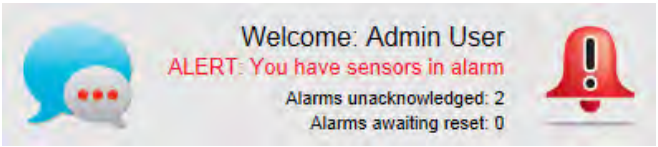
The individual **Site** icons show the alarm status for that individual Site only, see Figure 204 below.

Figure 204

In this example we can see that we have no sensors in **Alarm**, no sensors acknowledged, and 48 sensors OK. Control Device communications are operating normally, (see section 8.1.2 below for details).

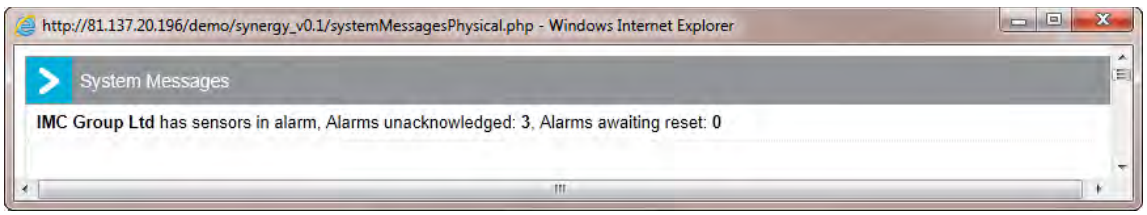
When an Alarm is generated on the system, the **Alarm** icon turns Red as does the **System Message** bubble. The message ALERT: You have sensors in alarm appears in Red. The number of Alarms on the system is shown as **Alarms unacknowledged**, see Figure 205 below.

Figure 205



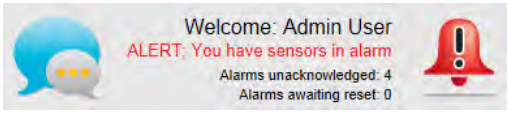
To view the **System Messages** click on the **System Status** message bubble. A new window will appear, see Figure 206 below.

Figure 206



The **Status Message** informs the User of where on the system the Alarms are. Once this window is closed the **System Message** bubble changes to amber which indicates that there are still live messages but there are no new ones since the last time the **System Messages** were checked, see Figure 207 below.

Figure 207



The **Status Message** bubble is amber.

8.1.2 Communications Status

The green connection icon, shown on the Site Panel, indicates that communications to all control devices, (such as SR2s), associated with the site are operating normally.

Whereas if communications have been lost to one or more of the sites control devices, the connection icon will display in red and entries will be added to the activity log, (see section 11.1).

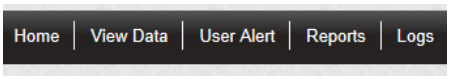
8.1.3 Locating Alarms on the System

There are two ways that you can find Alarms on the system:

Method 1

Select **Home** from the main menu bar, see Figure 208 below.

Figure 208



This takes you to the main system overview screen, if any Sites that are visible on the Dashboard are in Alarm their individual Alarm icons will have turned red.

Note: If the system has more than six Sites then not all Sites will be visible on the Dashboard.

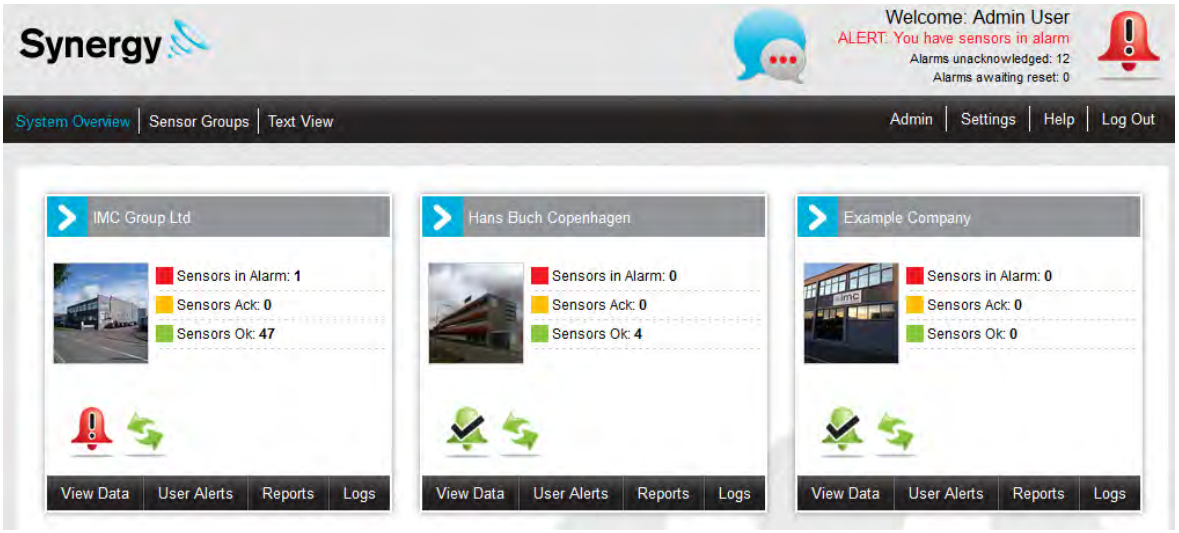
Method 2

Click on the main **Alarm** icon, see Figure 209 below.

Figure 209

This will take you to a Text View of Sites where any Sites with Alarms will be indicated by a **Red Alarm** icon. When following **Method 1** the main system view will appear, see Figure 210 below.

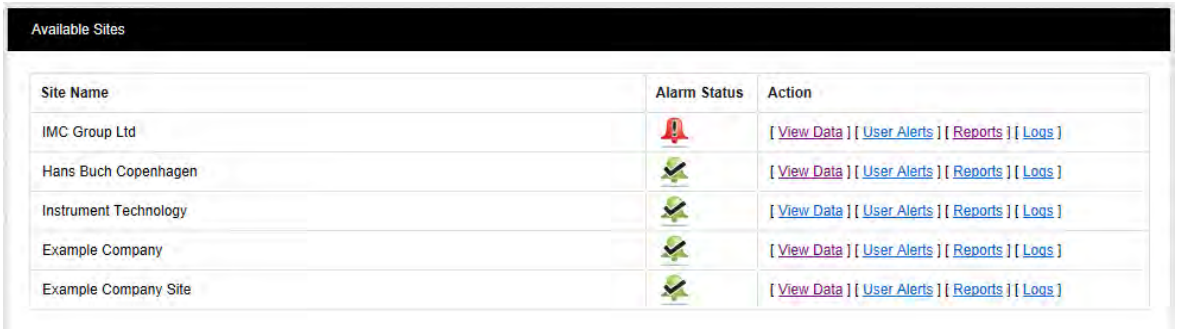
Figure 210



The example above shows that there are new or unacknowledged Alarms on the Site named IMC Group Ltd.

When following Method 2 the Sites text view list appears, see Figure 211 below.

Figure 211

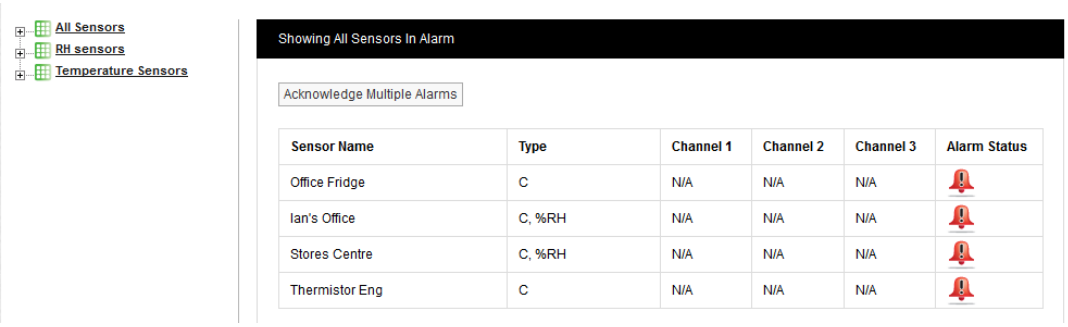


The example above shows that there are new or unacknowledged Alarms on the Site named IMC Group Ltd. The main difference is that in Figure 210 there are four Sites visible but in the example in Figure 211 there are five Sites visible.

8.2 Acknowledging Alarms

This section will take you through the process of acknowledging Alarms. There are three ways to get to the acknowledging dialog box; either select the **Red Alarm Bell** in the Site or main system view, or the Red Alarm Bell on the **Text View**; it also possible to acknowledge an Alarm from the **Live View** listing, see Section 7.2. Once the Red Alarm Bell is clicked the **Showing All Sensors In Alarm** window appears, see Figure 212 below.

Figure 212

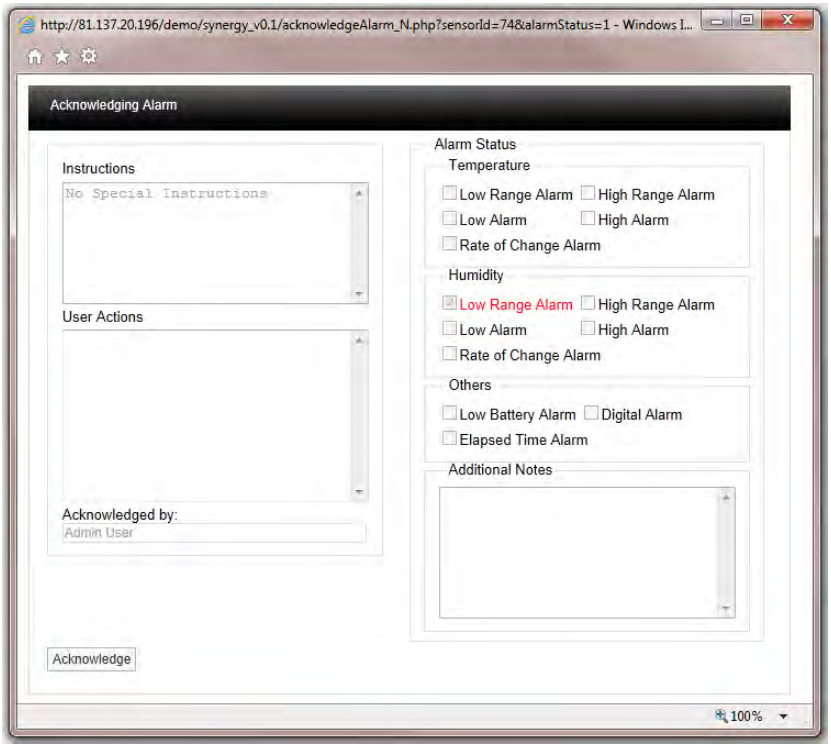


The above window will show all Sensors/Transmitters on a Site that are in Alarm.

8.2.1 Acknowledge Individual Alarms

To acknowledge an individual **Alarm** click on the **Red Alarm Bell** in the line corresponding to the Sensor/Transmitter that you want to acknowledge the alarm for, the **Alarm** acknowledge window will appear, see Figure 213 below. You can also acknowledge an alarm by clicking the red sensor ID in the Live View listing.

Figure 213

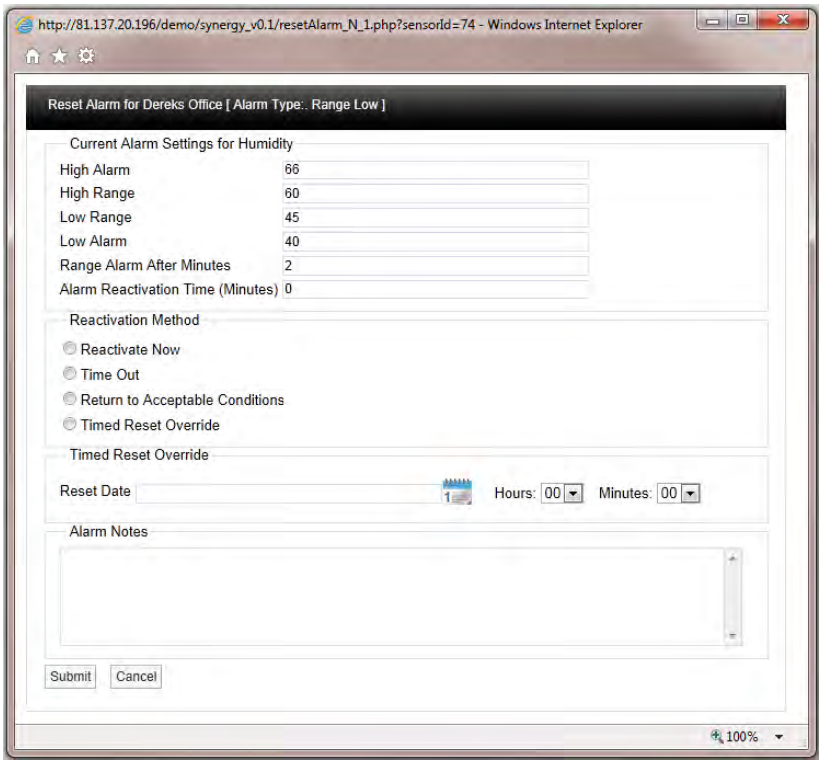


The type of **Alarm** will be highlighted in **Red**, in this example it is a **Low Range Alarm** for **Humidity**, if there were special instruction added when the alarm parameters were set these would appear in the dialog box under **Instructions**. For more information on instructions see section 6.4.3..

In the dialog box **User Actions** enter a note that is relevant to the **Alarm**, for example “Humidifier out of water, humidifier tank filled up”. You cannot acknowledge the **Alarm** without putting something in this dialog box. When happy click **Acknowledge**, the window will close and the **Alarm** icon will turn **Amber** which indicates an acknowledged state.

When you are satisfied that either the cause of the alarm has been resolved and the conditions returned to normal limits the Alarm can be completed, to complete click on the amber icon, a new Alarm acknowledge window will appear, see Figure 214 below.

Figure 214



This window allows several advanced features to be used.

The **Current Alarm Settings** are displayed at the top of the window, if the logged in User has the **Permissions** these limits can be adjusted at this stage. Caution Note: Any changes made here will be populated back to the main database.

There are four methods available to reset the Alarm:

Reactivate Now

If **Reactivate Now** is selected as soon as you select **Submit** the Alarm will be acknowledged. If the Alarm condition still exists the status will return to red and a new Alarm will be generated on the system. If the Alarm conditions have returned to normal the amber Alarm icon will be removed from the list.

When selecting **Reactivate Now** a default message “**Reactivate Now was selected for this Alarm**” will be entered into the **Alarm Notes** text box. This can be added to or overwritten.

Time Out

If **Time Out** is selected as soon as you select **Submit**. The Alarm will be acknowledged after the time delay entered into the **Alarm Reactivation Time (Minutes)** dialog box. If the Alarm condition still exists after the Time Out period the status will return to Red and a new Alarm will be generated on the system, if the Alarm conditions have returned to normal the amber Alarm icon will be removed from the list.

When selecting **Time Out** a default message “**Time Out was selected for this Alarm**” will be entered into the **Alarm Notes** dialog box. This can be added to or overwritten.

Return to Acceptable Conditions

If **Return to Acceptable Conditions** is selected as soon as you select **Submit** the Alarm will be acknowledged as soon as the conditions return to normal limits. The amber Alarm icon will remain until the conditions return to normal limits.

When selecting **Return to Acceptable Conditions** a default message "**Return to Acceptable Conditions was selected for this Alarm**" will be entered into the **Alarm Notes** text box. This can be added to or overwritten.

Timed Reset Override

This feature allows you to defer the Alarm reset until a date in the future, to enter the required date select the calendar icon and select the date. This will be entered in the dialog box next to **Reset Date**, select the time of day from the **Hours** and **Minutes** drop down menus.

This feature would be used if for example the air conditioning in a room or space failed and it was going to take several days to get an engineer in to carry out repairs. In this case the Alarms would be going off all the time which is an inconvenience.

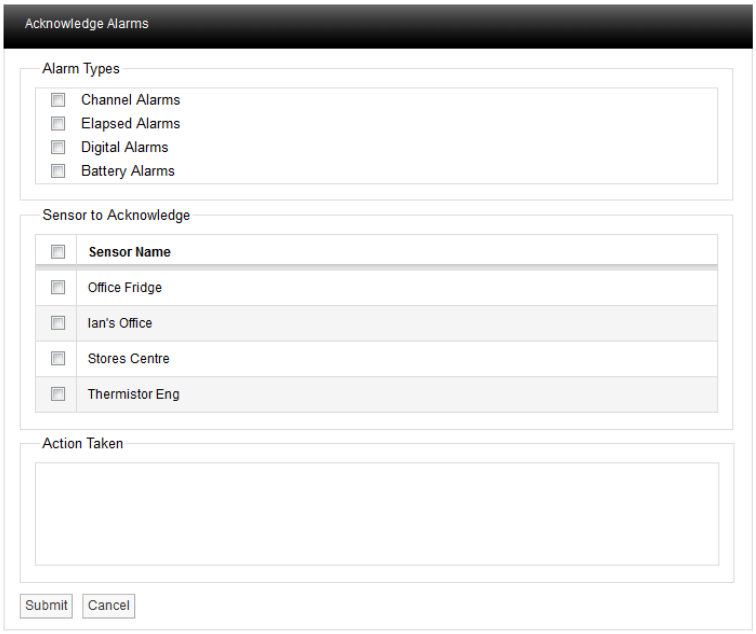
Using this feature requires you to manually enter a note into the **Alarm Notes** text box. A suitable note may be "Engineer called to repair Humidifier unable to attend site before next Friday"

When happy with the details select **Submit**.

8.2.2 Acknowledge Multiple Alarms

To acknowledge multiple **Alarms** click the **Acknowledge Multiple Alarms** button.

Figure 215



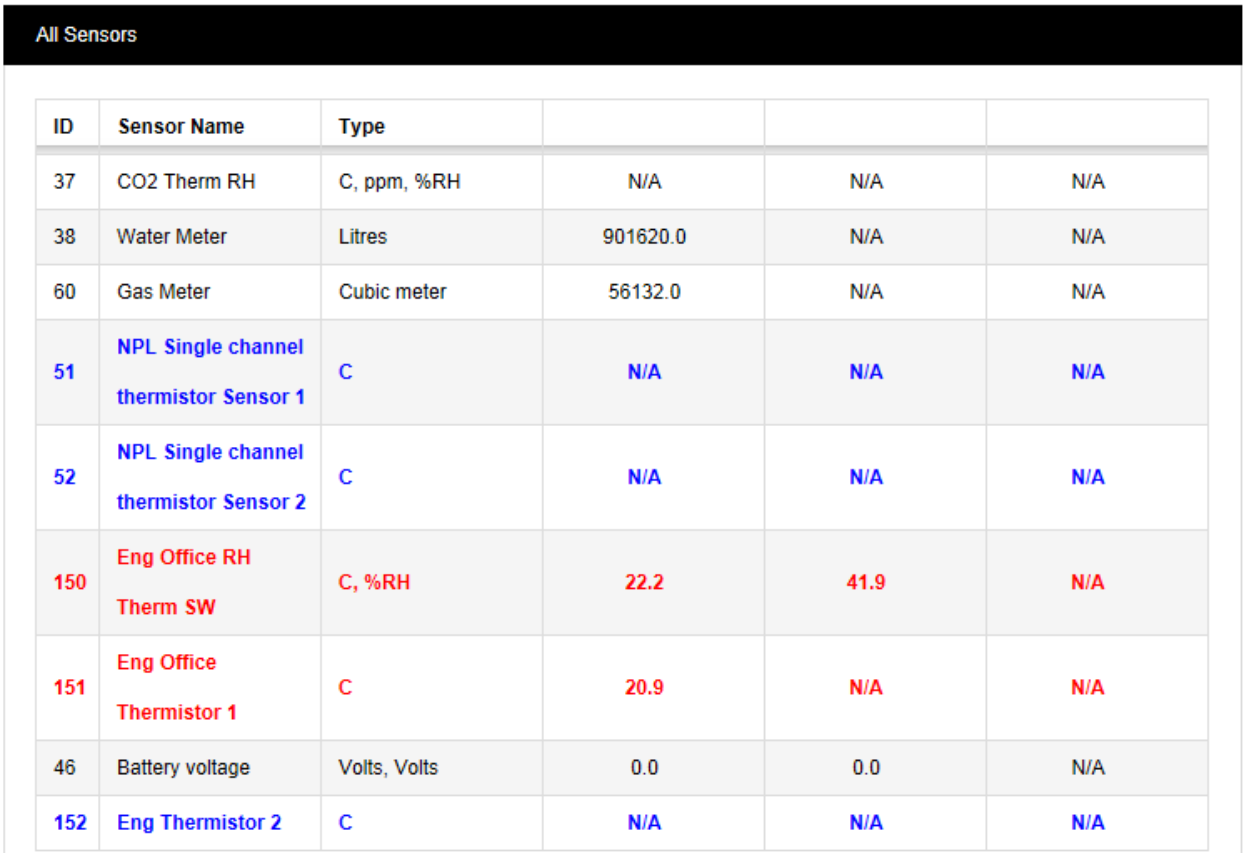
Select the required **Alarm Types** option, and below this the **Sensors** that you wish to **Acknowledge**. Then add a comment for the **Action Taken**, and when happy with the details select **Submit**.

8.2.3 Acknowledging Alarms from the Live View

It is also possible to acknowledge and Alarm from the Live View (a Sensor in an alarm condition will be appear in red in the sensors listing).

Bring up Live View by selecting **View Data>Live View**, then select a Zone name which contains one or more sensors in alarm (this will be displayed in red). See Figure 216.

Figure 216



ID	Sensor Name	Type			
37	CO2 Therm RH	C, ppm, %RH	N/A	N/A	N/A
38	Water Meter	Litres	901620.0	N/A	N/A
60	Gas Meter	Cubic meter	56132.0	N/A	N/A
51	NPL Single channel thermistor Sensor 1	C	N/A	N/A	N/A
52	NPL Single channel thermistor Sensor 2	C	N/A	N/A	N/A
150	Eng Office RH Therm SW	C, %RH	22.2	41.9	N/A
151	Eng Office Thermistor 1	C	20.9	N/A	N/A
46	Battery voltage	Volts, Volts	0.0	0.0	N/A
152	Eng Thermistor 2	C	N/A	N/A	N/A

Clicking on the ID for a sensor brings up the **Acknowledging Alarm for** . . . window.

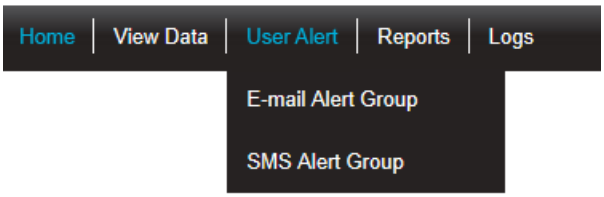
.

9 User Alerts

User Alerts provide automated Alarm notification delivered via **Email** or **SMS** or both. (Additional hardware required for SMS Alarms).

This section will take you through the use and settings for **Email** alarms and **SMS Alarms**. To access the **User Alert** settings select **User Alert** from the main menu, see Figure 217 below.

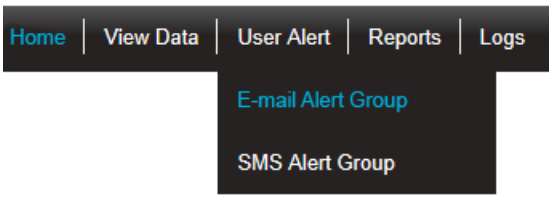
Figure 217



9.1.1 Email Alert Group

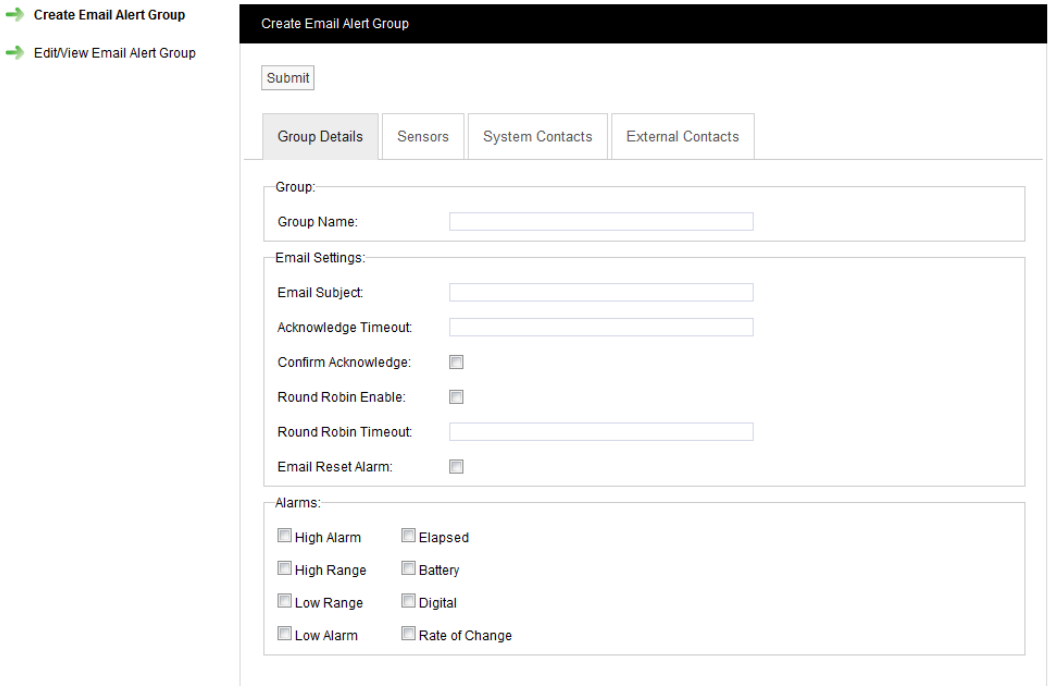
To access the E-mail Alert Group settings select **E-Mail Alert Group** from the menu, see Figure 218 below.

Figure 218



After selecting **E-mail Alert Group** the **Create Email Alert Group** window appears, see Figure 219 below.

Figure 219



The window above allows User Groups to be created and configured for the automated notification of email Alarms.

Step 1

Create a group name this can be something that makes sense to the **Site** in question or something related to the function. For this example we will call the group, "**Service Email**" this will be a group that sends email **Alarms** to the service engineers.

Step 2

Enter a subject title for the **Email** into **Email Subject**, for this example we will call it "**System Alarm** on **IMC Site**" this would then alert the engineer in the email subject that they were getting an **Email** about an **Alarm** condition on that **Site**.

Step 3

Enter an **Acknowledge Timeout** this is the time that the system will wait for an acknowledgement email. This should be entered in time format like this **12**:**00:00**; this would be a 12 hour delay.

Step 4

Select the checkbox next to **Confirm Acknowledge** if an acknowledgement **Email** is required.

Step 5

Email Alerts can be sent in **Round Robin** mode **Round Robin** mode is when **Email Alerts** are sent to the first name in the list, if there is no response within the time limit the system moves on to the next person in the list and so on until a response is received, or emails have been sent to everybody in the list. To activate **Round Robin** mode select the checkbox next to **Round Robin Enable**.

Step 6

You can select the time period the system waits before sending the next email, this should be entered in time format like this **00**:**15:00**, this would be a 15 minute delay.

Step 7

If require a reply **Email** can be sent which will reset the **Alarms**, to activate this feature select the checkbox next to **Email Reset Alarm**

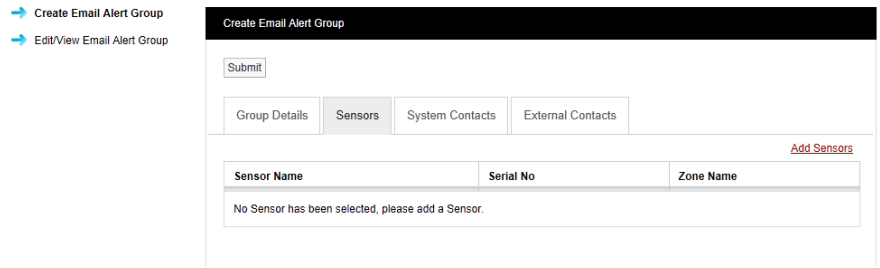
Step 8

Select the Alarm parameters that Email Alerts are required for by clicking in the checkbox next to the Alarm condition. Multiple selections can be made.

Step 9

Select the Sensor/Transmitter**s** that you require to be included in the **Alert Group**. To select Sensor/Transmitter**s** click on the **Sensors** tab a new window will appear, see Figure 220 below.

Figure 220



To add sensors click the underlined Add Sensors link, a new window will appear, see Figure 221 below.

Figure 221

To select a Sensor first select a Zone from the drop down menu, for this example we will select RH Sensors.

As the Zone is selected the available **RH Sensors** will populate the left column (source list).

To select Sensors highlight the ones that you want to generate email alerts for then click the right arrow.

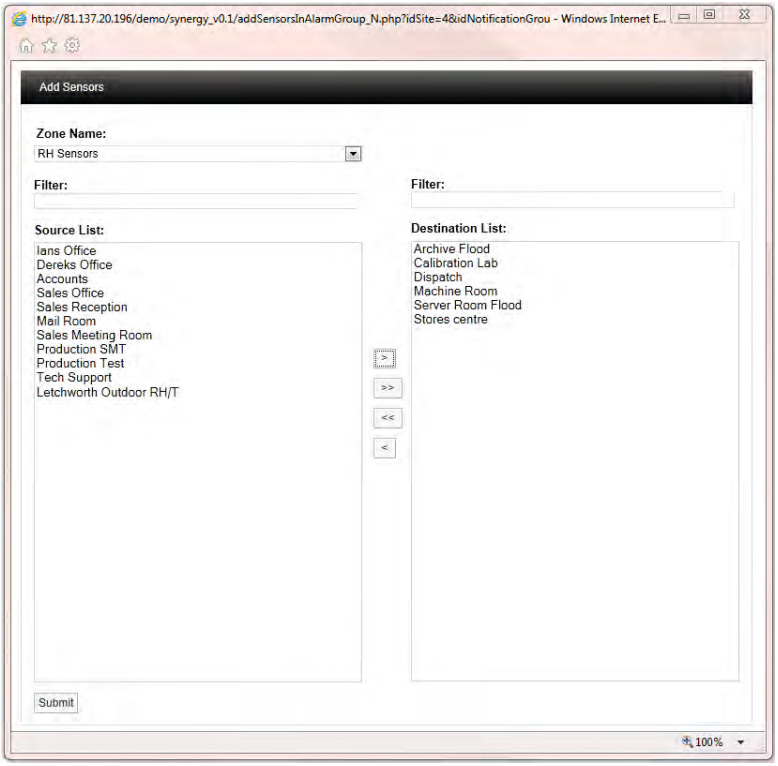
To deselect Sensors highlight them in the right column and click the left arrow.

To move all Sensors across click the double arrows.

Once happy with you selection select **Submit**.

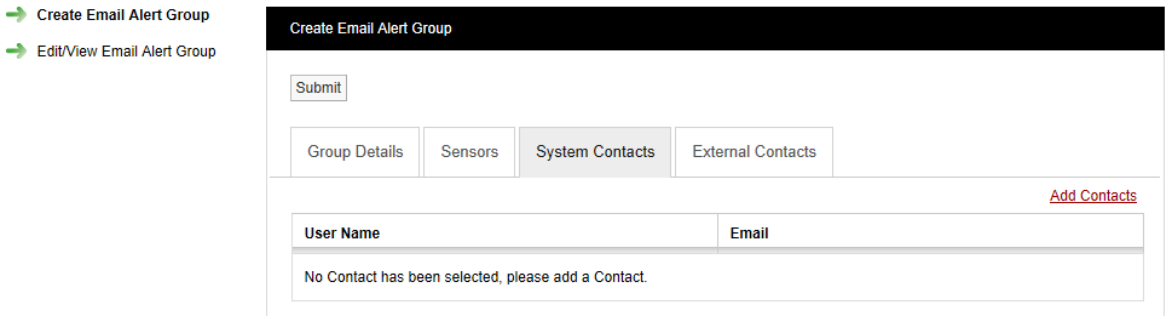
See Figure 222 below.

Figure 222



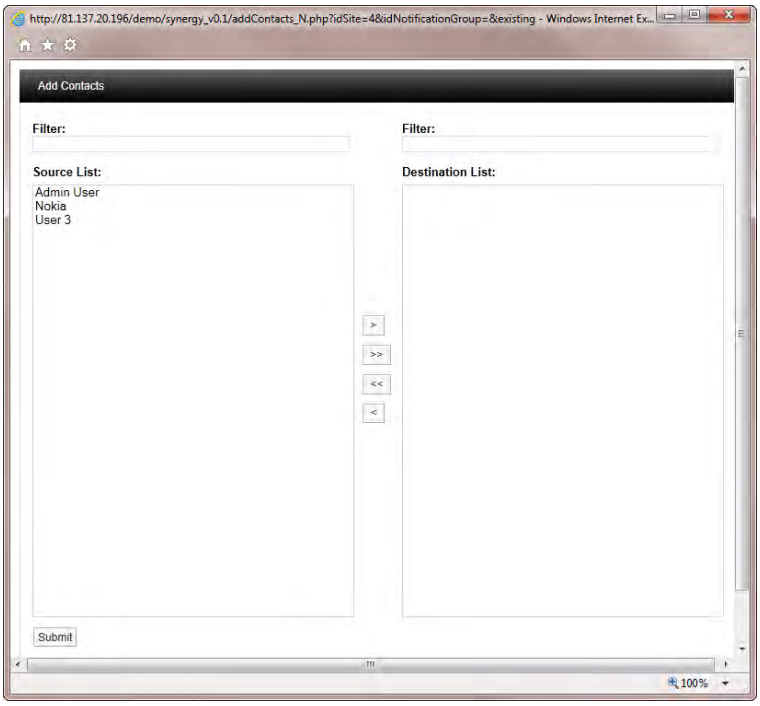
To add **Contacts** to the **Group** select the **System Contacts** tab see Figure 219, the **Create Email Alert Group** window appears, see Figure 223 below.

Figure 223



Contacts are the people that you want alerting by email when any of the selected Sensors are in Alarm. To add Contacts select **Add Contacts**. A new window will appear see Figure 224 below.

Figure 224



To select a **Contact** or **Contacts** highlight the required **Contacts** and select the right arrow, to de-select a **Contact** highlight the **Contact** and select the left arrows.

When happy with the details select **Submit**.

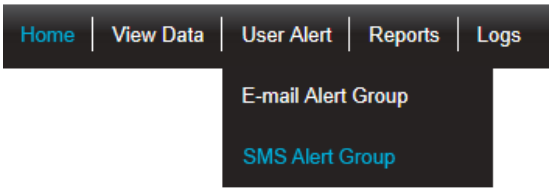
There is an option to have email **Alarms** sent to non-**Synergy Users** or **External Contacts**. To add **External Contacts** to the system see section 5.1.8.

To select **External Contacts** follow the procedure above for adding **System Contacts**.

9.1.2 SMS Alert Group

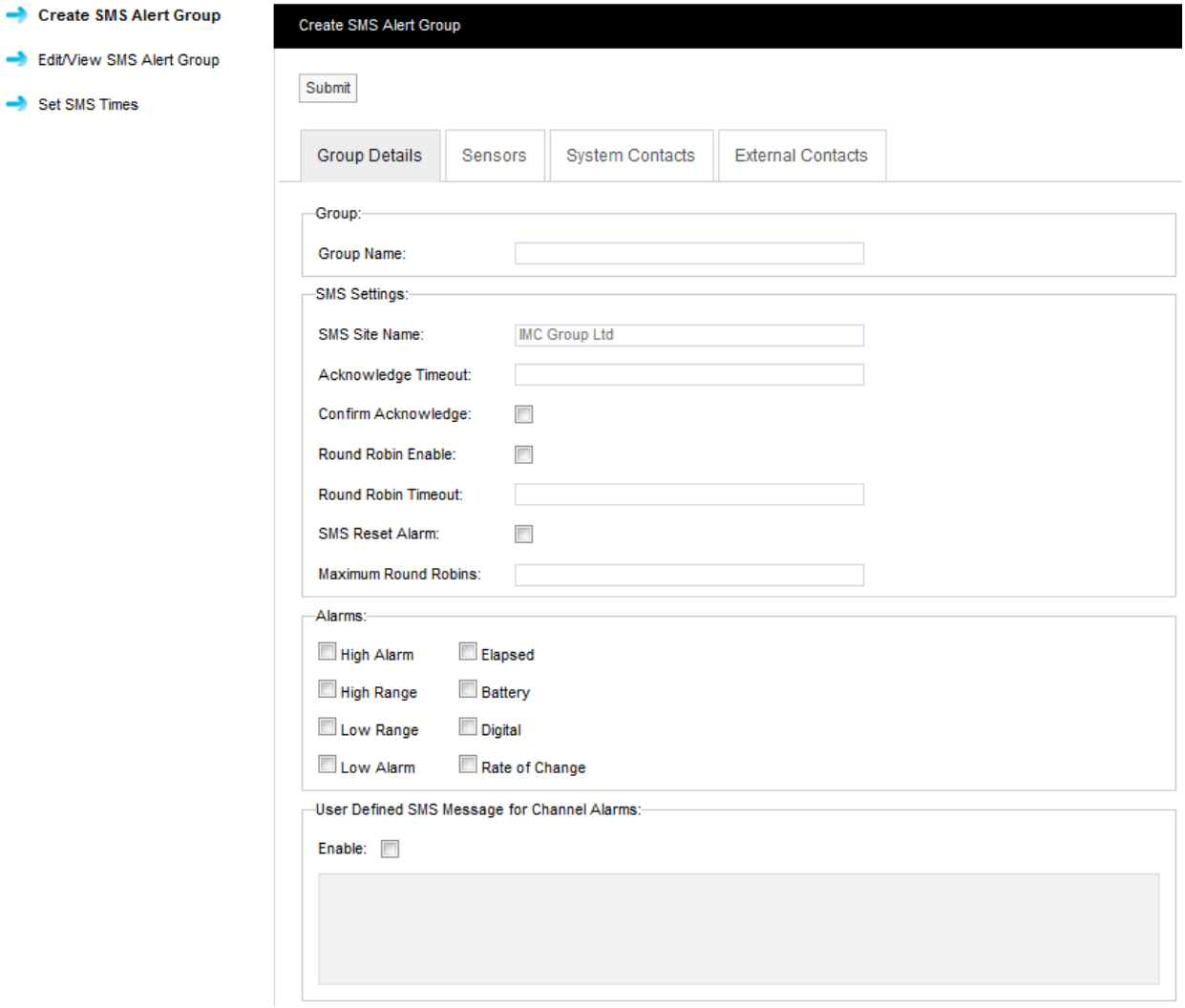
To access the SMS Alert Group settings select **SMS Alert Group** from the menu, see Figure 225 below.

Figure 225



After selecting **SMS Alert Group** the **Create SMS Alert Group** window appears, see Figure 226 below.

Figure 226



The window above allows **User Groups** to be created and configured for the automated notification of **SMS Alarms**.

Step 1

Create a group name this can be something that makes sense to the **Site** in question or something related to the function. For this example we will call the group, "**Service SMS**" this will be a group that sends **SMS Alarms** to the service engineers.

Step 2

Enter an **Acknowledge Timeout**. This is the time that the system will wait for an acknowledgement message before re-sending the message. This should be entered in time format like this **00**:**10:00**, this would be a 10 minute delay.

Step 3

Select the checkbox next to **Confirm Acknowledge** if an acknowledgement SMS message is required.

Step 4

SMS Alerts can be sent in **Round Robin** mode. Round Robin mode is when SMS Alerts are sent to the first name in the list, if there is no response within the time limit the system moves on to the next person in the list and so on until a response is received. To activate Round Robin mode select the checkbox next to **Round Robin Enable**.

Step 5

You can select the time period the system waits before sending the next message, this should be entered in time format like this **00**:**15:00**, this would be a 15 minute delay.

Step 6

If you require a reply **SMS** can be sent which will reset the Alarms, to activate this feature select the checkbox next to **SMS Reset Alarm**.

Step 7

The number of times the system will go around the **Round Robin** loop can be limited to activate this feature enter the number of times the system should go round the loop.

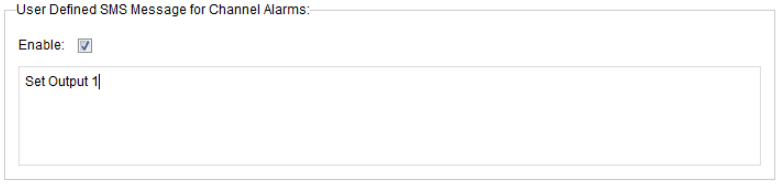
Step 8

Select the Alarm parameters that Email Alerts are required for by clicking in the checkbox next to the Alarm condition. Multiple selections can be made.

Step 9

For Channel Alarms, you may define your own text message, (this can be used to trigger events on a third party system with SMS receive capability).

Figure 227

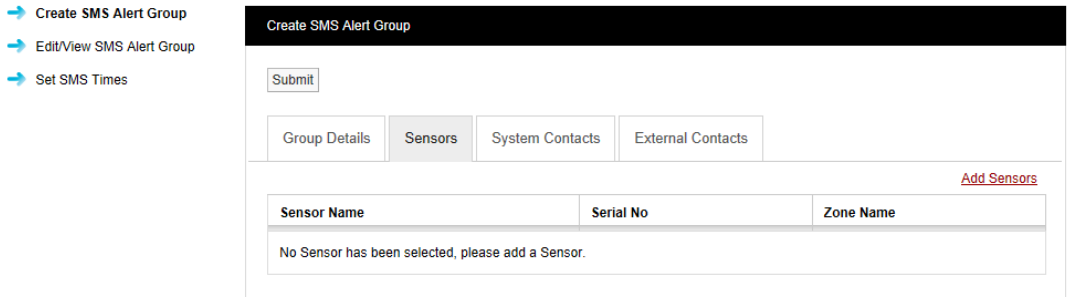


To set-up the required message select the **Enable** and enter the required text in the text box.

Step 10

Select the Sensor/Transmitter**s** that you require to be included in the **Alert Group**. To select Sensor/Transmitter**s** click on the **Sensors** tab a new window will appear, see Figure 228 below.

Figure 228



To add sensors click the underlined Add Sensors link, a new window will appear, see Figure 229 below.

Figure 229

To select Sensor first select a Zone from the drop down menu, for this example we will select **RH Sensors**.

As the Zone is selected the available RH Sensors will populate the left column (source list).

To select Sensors highlight the ones that you want to generate email alerts for then click the right arrow.

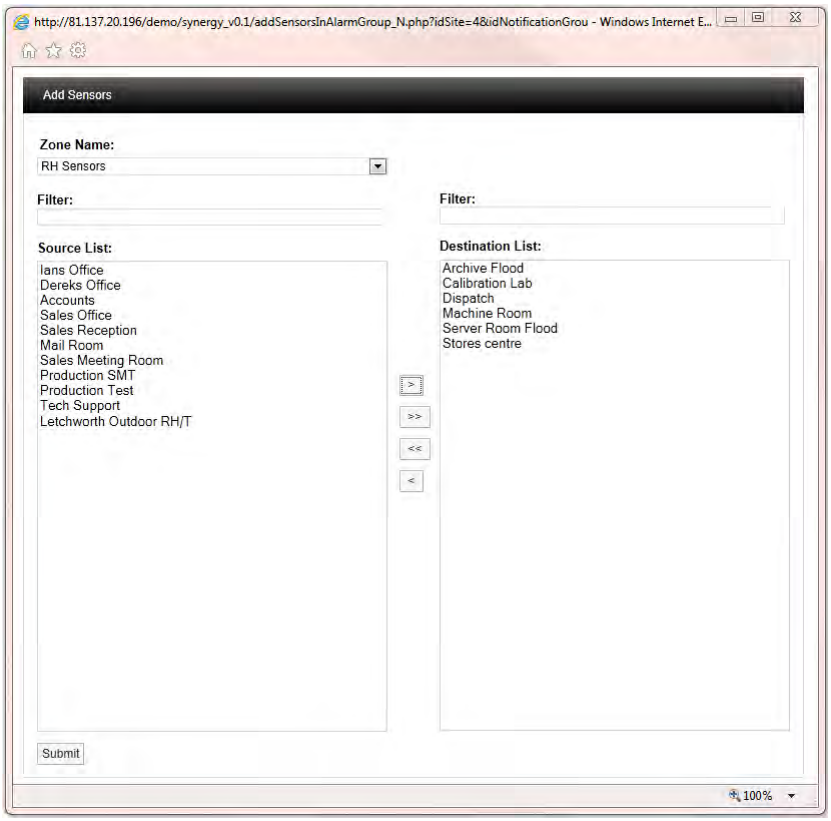
To deselect Sensors highlight them in the right column and click the left arrow.

To move all Sensors across click the double arrows.

Once happy with you selection select **Submit**.

See Figure 230 below.

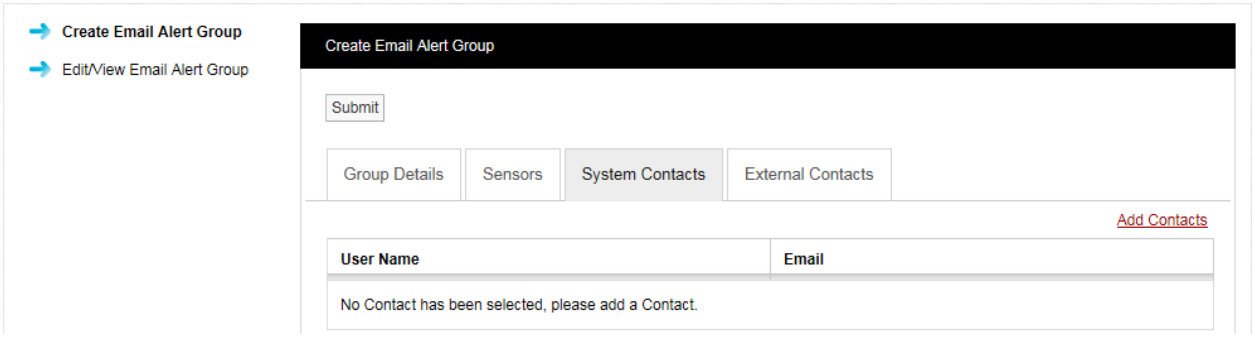
Figure 230



To add Contacts **to the** Group **select the** System Contacts **tab, a new window will appear called** Create SMS Alert Group, see

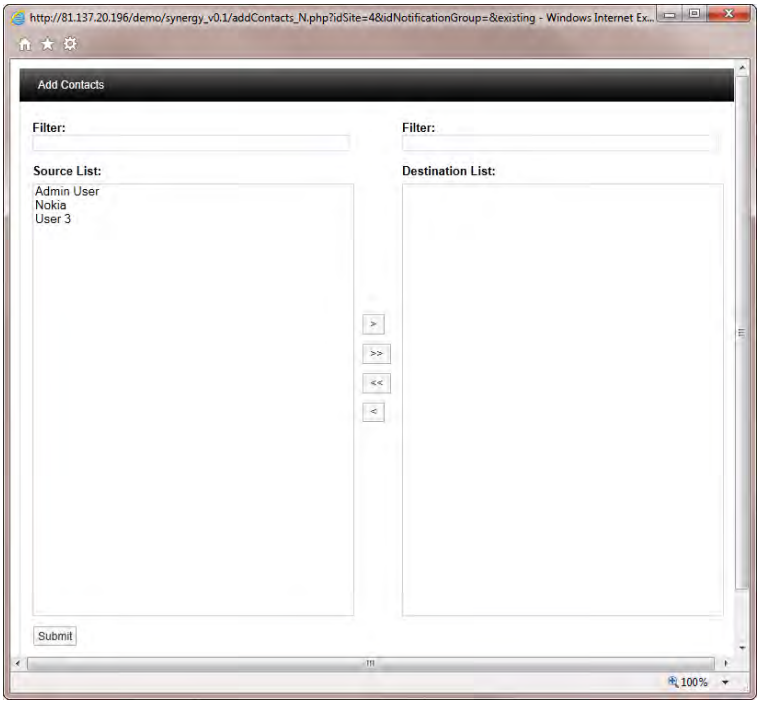
Figure **231** below.

Figure 231



Contacts are the people that you want alerting by email when any of the selected Sensors are in Alarm. To add **Contacts** select Add Contacts. A new window will appear see Figure 232 below.

Figure 232

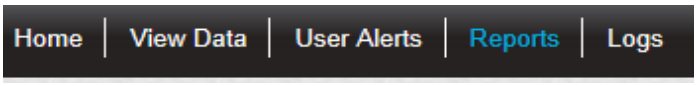


To select a Contact or Contacts highlight the required Contacts and select the right arrow, to de-select a Contact highlight the Contact and select the left arrows. When happy with the details select **Submit**.

There is an option to have email Alarms sent to non-Synergy Users or **External Contacts**. To add External Contacts to the system see section 5.1.8.

To select External Contacts follow the procedure above for adding System Contacts.

10 Reports



Synergy has been designed to be able to accommodate custom plug in reports, these can be tailored to customer's individual specifications. The report will be in PDF format with the option to have a CSV data file attached.

Scheduled Reports are designed to be user configurable and once configured to be auto generated on a daily, weekly or monthly basis and sent to the user by email. The on-screen reports can be downloaded and saved in PDF format.

Four types of Report are available:

- **Summary Reports** (**Reports>Summary Reporting**)

These can be divided into two sub-types:

  - **Sensor Reports** - Summaries of data collected by a selected sensor (temperature for a Temperature Sensor, current for an Energy Sensor etc.) for a specified date range (the past week by default)..

For example:

Figure 233

Sensor Summary Report - IMC Group Ltd

Time Span: 21/Apr/2014 to 28/Apr/2014

Summary for Sensors of Type:. Triple Current Clamp

Sensor Name	ID	Current									Current				
		Min	Max	Mean	Spread	Count	LowRange	<Low	HighRange	>High	Min	Max	Mean	Spread	Cr
DB2 Incomers	33	1.7	39	8.4	37.3	678	Not Set	0	Not Set	0	1	32.5	7.17	31.5	67

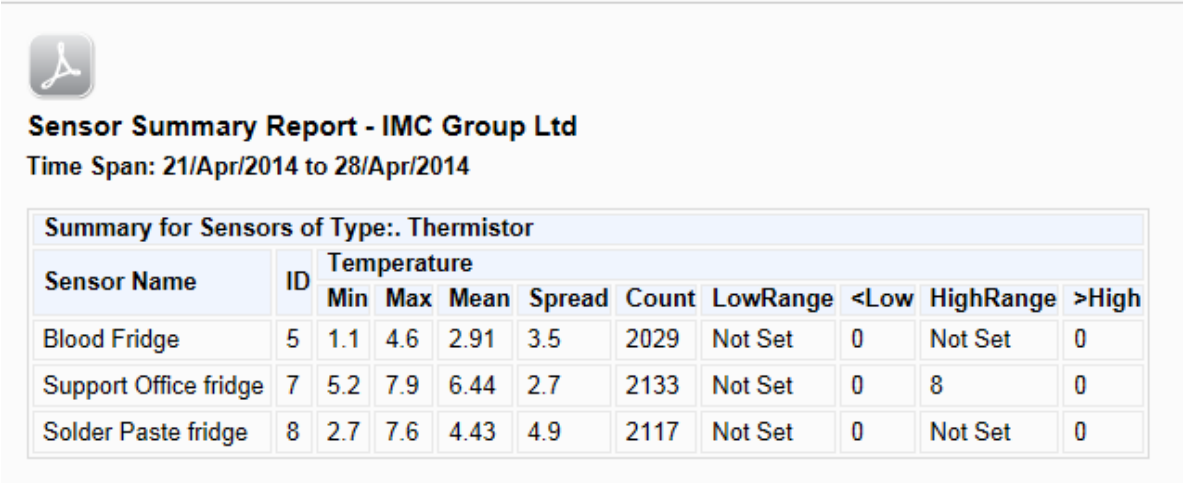
Summary for Sensors of Type:. Thermistor/RH

Sensor Name	ID	Temperature									Humidity	
		Min	Max	Mean	Spread	Count	LowRange	<Low	HighRange	>High	Min	Max
Dispatch	16	14.5	23.6	19.27	9.1	2031	Not Set	0	Not Set	0	35	57.3
Letchworth Outdoor RH/T	48	4.7	19.5	11.77	14.8	5147	Not Set	0	Not Set	0	45.5	98.5

- **Zone Reports** - Summaries of data collected by all Sensors in a given Zone for a specified date range.

For example:

Figure 234



Sensor Summary Report - IMC Group Ltd

Time Span: 21/Apr/2014 to 28/Apr/2014

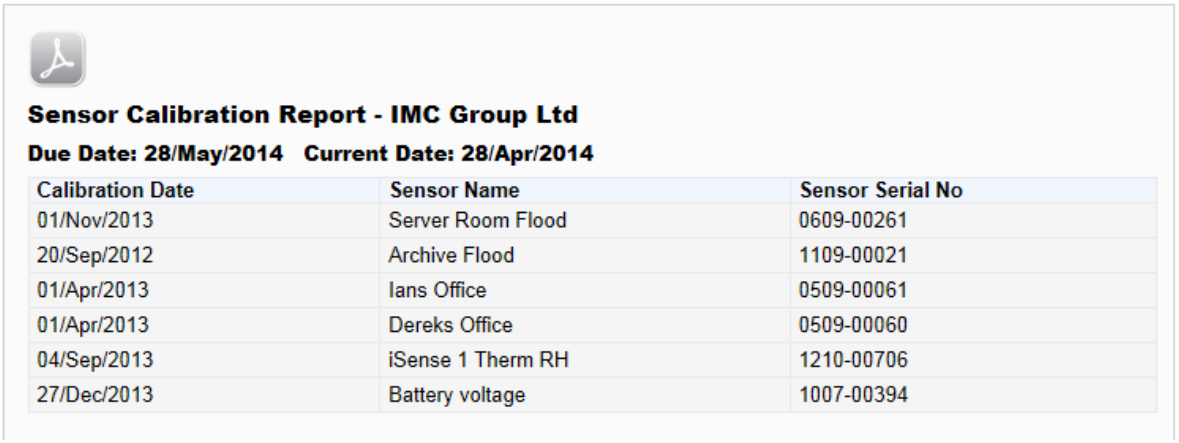
Summary for Sensors of Type:. Thermistor										
Sensor Name	ID	Temperature								
		Min	Max	Mean	Spread	Count	LowRange	<Low	HighRange	>High
Blood Fridge	5	1.1	4.6	2.91	3.5	2029	Not Set	0	Not Set	0
Support Office fridge	7	5.2	7.9	6.44	2.7	2133	Not Set	0	8	0
Solder Paste fridge	8	2.7	7.6	4.43	4.9	2117	Not Set	0	Not Set	0

- **Calibration Reports** (**Reports>Calibration Reporting**)

A simple report of sensors that need calibrating on a given date (one month from today's date by default).

For example:

Figure 235



Sensor Calibration Report - IMC Group Ltd

Due Date: 28/May/2014 Current Date: 28/Apr/2014

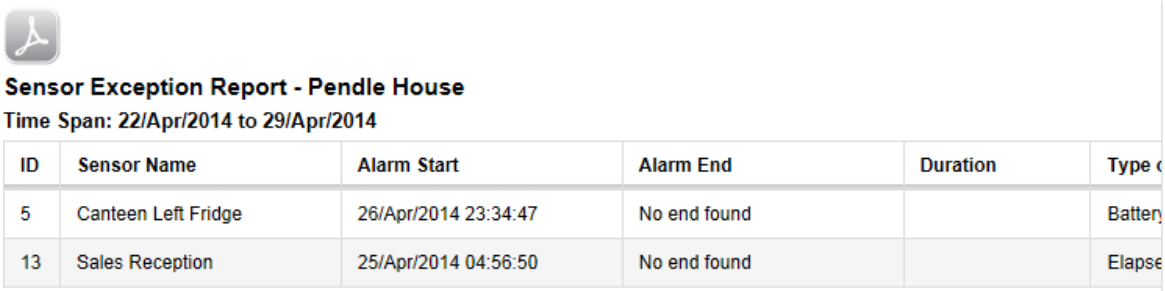
Calibration Date	Sensor Name	Sensor Serial No
01/Nov/2013	Server Room Flood	0609-00261
20/Sep/2012	Archive Flood	1109-00021
01/Apr/2013	Ians Office	0509-00061
01/Apr/2013	Dereks Office	0509-00060
04/Sep/2013	iSense 1 Therm RH	1210-00706
27/Dec/2013	Battery voltage	1007-00394

- **Exception Reports** (**Reports>Exception Reporting**)

Reports of ongoing alarm conditions, by Sensor or by Zone.

For example:

Figure 236



Sensor Exception Report - Pendle House

Time Span: 22/Apr/2014 to 29/Apr/2014

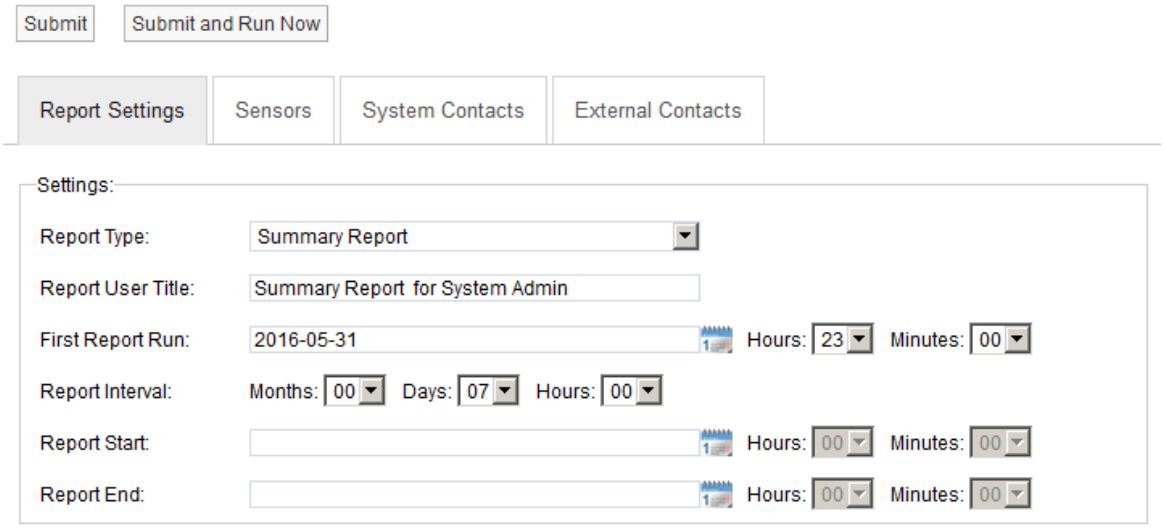
ID	Sensor Name	Alarm Start	Alarm End	Duration	Type
5	Canteen Left Fridge	26/Apr/2014 23:34:47	No end found		Battery
13	Sales Reception	25/Apr/2014 04:56:50	No end found		Elapse

- **Scheduled Reports** (**Reports>Schedule Reporting**)

These cover a variety of Report types, which can be set up to start at a predefined date/time and can run at predefined intervals.

For example:

Figure 237



Submit and Run Now button is used to generate reports immediately; however some delay can be expected if a large report is submitted.

Note: If your Email Server has been set up to limit the maximum allowed email/attachment size, then Scheduled Reports in excess of the size limit will be blocked by your Email Server. Please note that because there is no standard mechanism for feeding this eventuality back to the email client, Synergy cannot know that these emails have been blocked by the server. Most Email Servers inform the sender of this situation by placing a message in the sender account's Inbox.

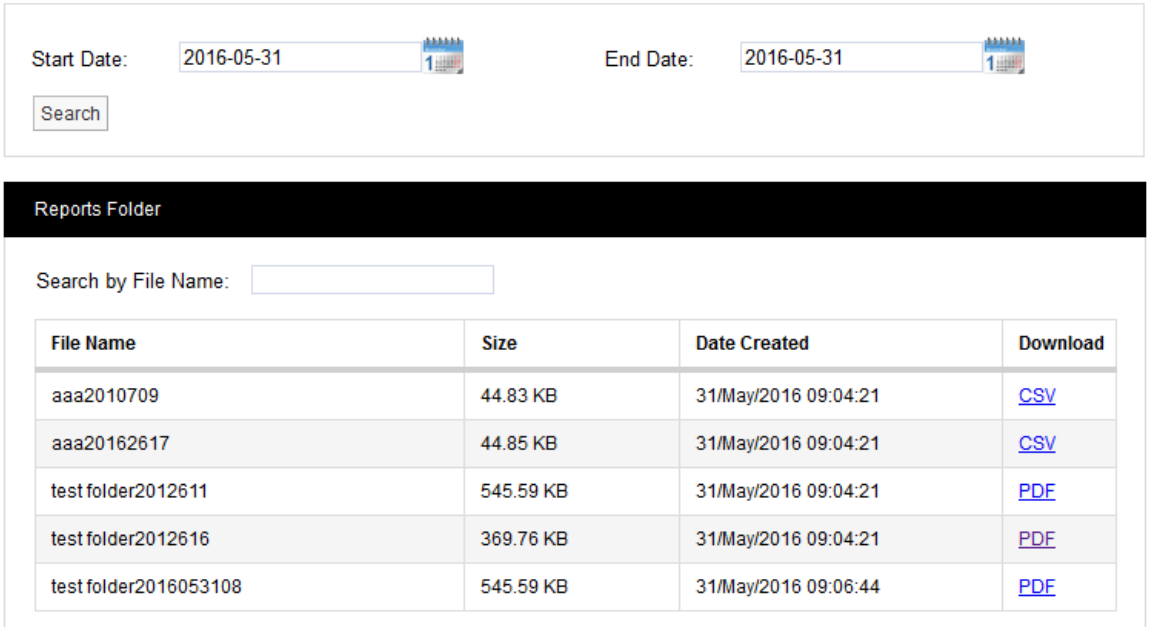
If Scheduled email Reports are not being sent, please check the Inbox for the sender account you setup in Synergy.

10.1 Reports Folder

This section display Scheduled reports saved in the **Reports Folder**, users can view or save the report by clicking the hyperlink provided under **Download**. The Reports folder needs to be set-up first by using **Synergy Config** utility otherwise reports will not be displayed.

In order to refine the search use two calendars to select a **Start** and **End Date** and select **Search**. All scheduled reports generated between these dates will be displayed, see Figure 238. A particular file can be searched quickly by entering first few characters of the file name in **Search by File Name** input field.

Figure 238

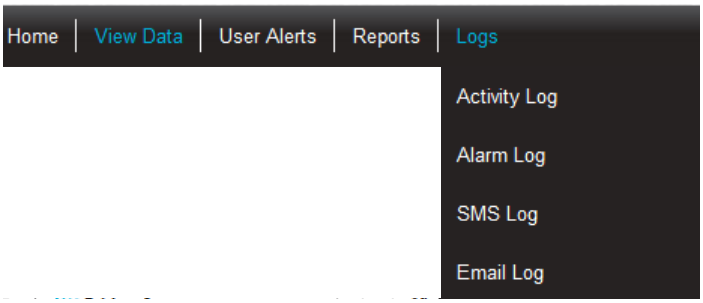


11 System Logs

Synergy has a series of **System Logs** for keeping track of critical events such as system activity, alarm activity and SMS activity.

To access the System Logs select **Logs** from the main menu, see Figure 239 below.

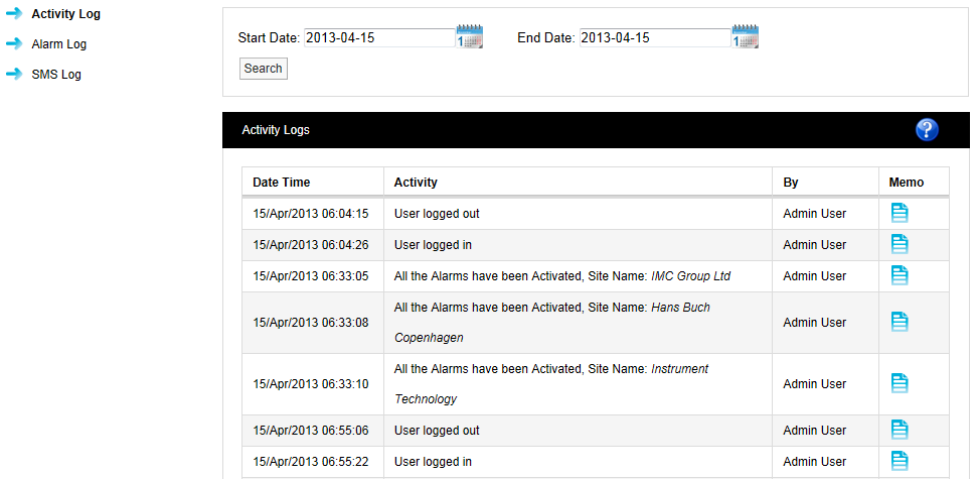
Figure 239



11.1 Activity Log

The **Activity Log** contains all the **User Activity** on the system such and logging in and out and editing. To access the **Activity Log** select **Activity Log** from the main menu. The **Activity Logs** window appears, see Figure 240 below.

Figure 240



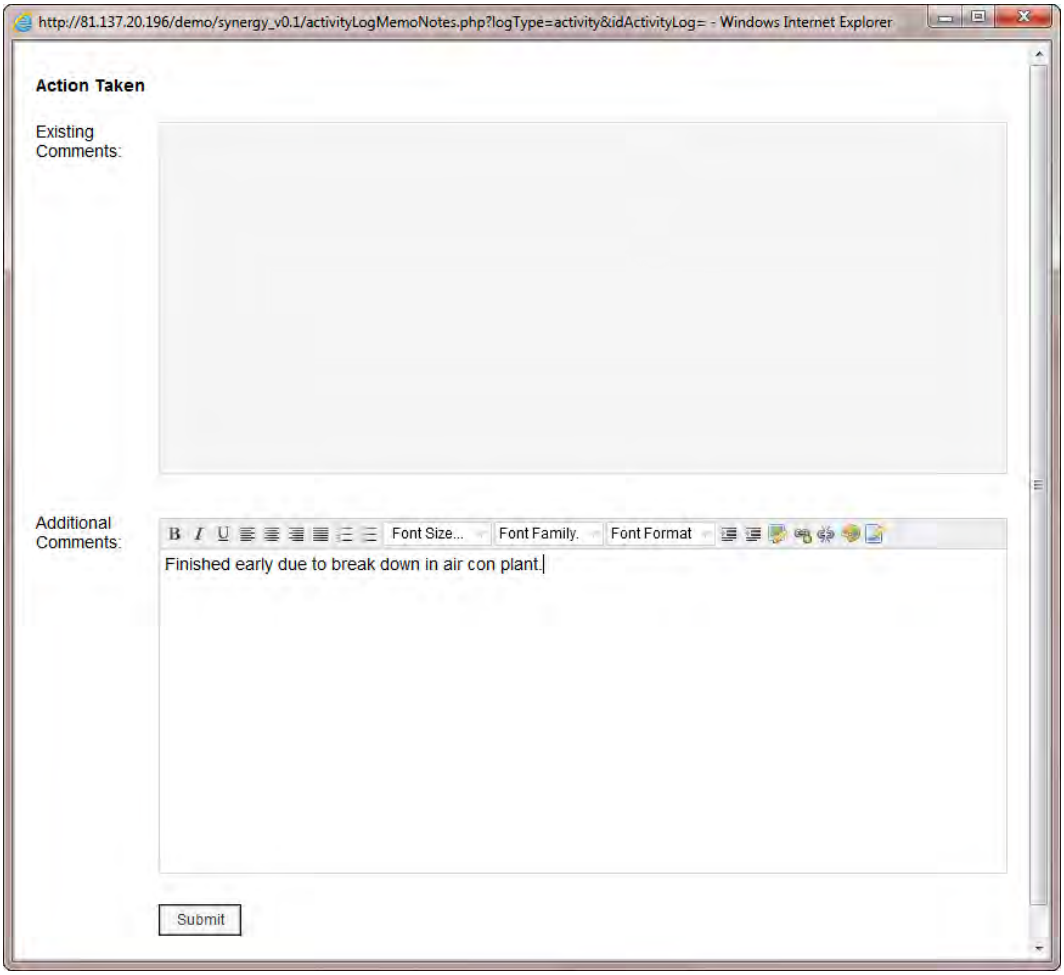
Date Time	Activity	By	Memo
15/Apr/2013 06:04:15	User logged out	Admin User	
15/Apr/2013 06:04:26	User logged in	Admin User	
15/Apr/2013 06:33:05	All the Alarms have been Activated, Site Name: *IMC Group Ltd*	Admin User	
15/Apr/2013 06:33:08	All the Alarms have been Activated, Site Name: *Hans Buch Copenhagen*	Admin User	
15/Apr/2013 06:33:10	All the Alarms have been Activated, Site Name: *Instrument Technology*	Admin User	
15/Apr/2013 06:55:06	User logged out	Admin User	
15/Apr/2013 06:55:22	User logged in	Admin User	

The Activity Log follows system events each entry is date and time stamped with a description of the action carried out or activity and the user.

There is a memo field that may or may not contain any memos for example an activity such as User logged out would not have a memo as it is created by the system when the user logs out.

If required the user can select the memo icon next to an activity and add a memo. See Figure 241 below.

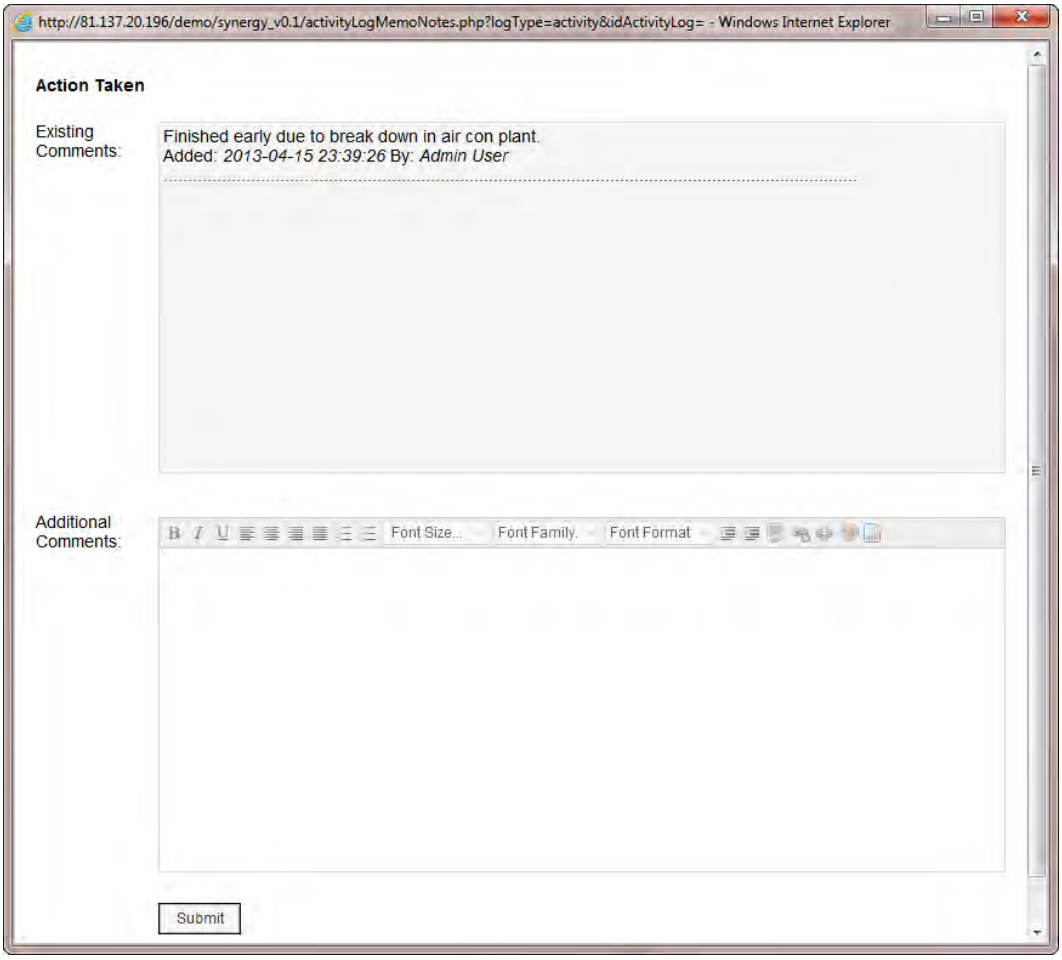
Figure 241



When happy with memo select **Submit**.

The memo will now be saved in the top section under existing comments, these comments are date and time stamped and are identified by user and are now not editable, see Figure 242 below.

Figure 242



Additional comments can be added at any time.

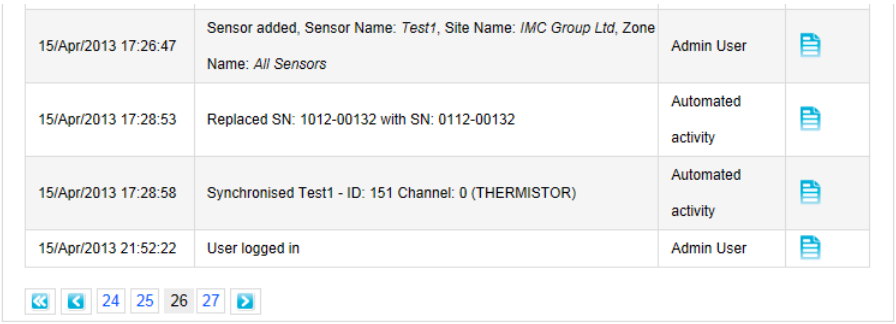
To search back through previous Activity Logs use the **Search** function, see Figure 243 below.

Figure 243

Use the two calendars to select a **Start** and **End Date** and select **Search**. All Activity Logs between these dates will be displayed.

To move through available log pages, use the green left and right arrows at the bottom of the page. The single green arrows will step through one page at a time; the double green arrows will take you to either the first page or the last page of the search, see Figure 244 below.

Figure 244



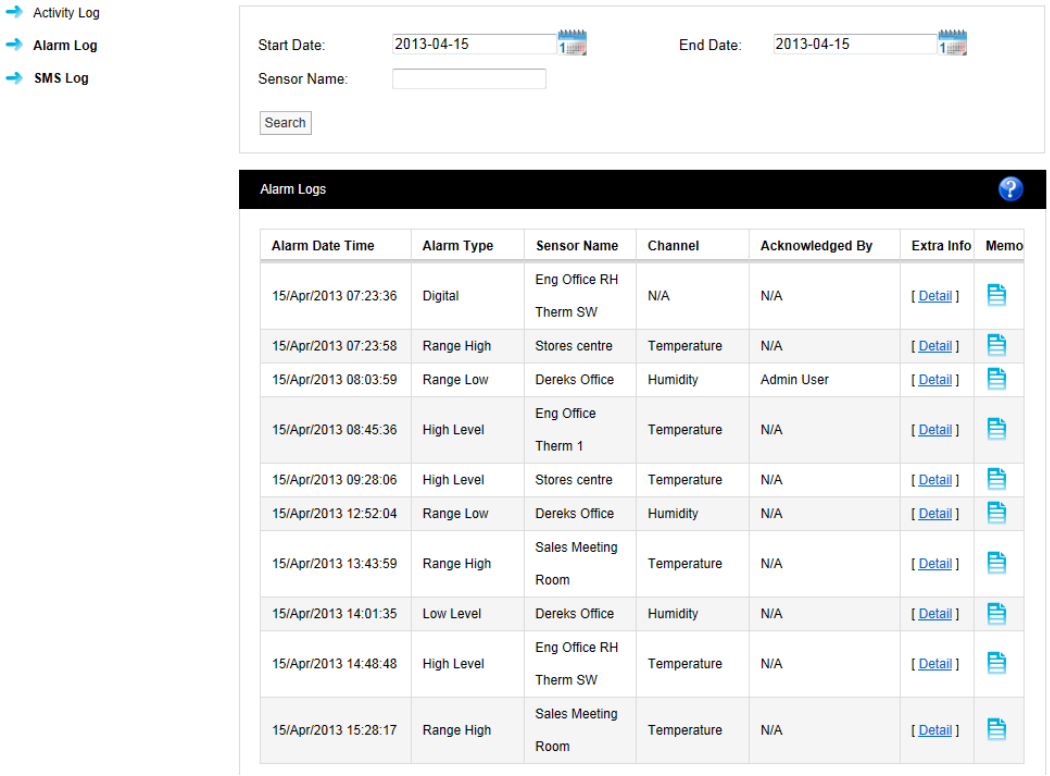
15/Apr/2013 17:26:47	Sensor added, Sensor Name: *Test1*, Site Name: *IMC Group Ltd*, Zone Name: *All Sensors*	Admin User	
15/Apr/2013 17:28:53	Replaced SN: 1012-00132 with SN: 0112-00132	Automated activity	
15/Apr/2013 17:28:58	Synchronised Test1 - ID: 151 Channel: 0 (THERMISTOR)	Automated activity	
15/Apr/2013 21:52:22	User logged in	Admin User	

24 25 26 27

11.2 Alarm Log

The **Alarm Log** contains all the **Alarm Activity** on the system. To access the Alarm Log select **Logs>Alarm Log** from the main menu. The **Alarm Logs** window appears, see Figure 245 below.

Figure 245



Activity Log
Alarm Log
SMS Log

Start Date: 2013-04-15 End Date: 2013-04-15
Sensor Name:
Search

Alarm Logs

Alarm Date Time	Alarm Type	Sensor Name	Channel	Acknowledged By	Extra Info	Memo
15/Apr/2013 07:23:36	Digital	Eng Office RH Therm SW	N/A	N/A	[Detail]	
15/Apr/2013 07:23:58	Range High	Stores centre	Temperature	N/A	[Detail]	
15/Apr/2013 08:03:59	Range Low	Dereks Office	Humidity	Admin User	[Detail]	
15/Apr/2013 08:45:36	High Level	Eng Office Therm 1	Temperature	N/A	[Detail]	
15/Apr/2013 09:28:06	High Level	Stores centre	Temperature	N/A	[Detail]	
15/Apr/2013 12:52:04	Range Low	Dereks Office	Humidity	N/A	[Detail]	
15/Apr/2013 13:43:59	Range High	Sales Meeting Room	Temperature	N/A	[Detail]	
15/Apr/2013 14:01:35	Low Level	Dereks Office	Humidity	N/A	[Detail]	
15/Apr/2013 14:48:48	High Level	Eng Office RH Therm SW	Temperature	N/A	[Detail]	
15/Apr/2013 15:28:17	Range High	Sales Meeting Room	Temperature	N/A	[Detail]	

The Alarm Log contains date and time stamped data, alarm type, sensor name, channel, acknowledged by, extra info and a memo. Extra info is a link to a floating tip, the tip contains site and zone name information.

The memo contains information on alarm reasons and action taken, additional notes can be added at any time, these notes are not editable. Notes are added by following the steps in activity logs above.

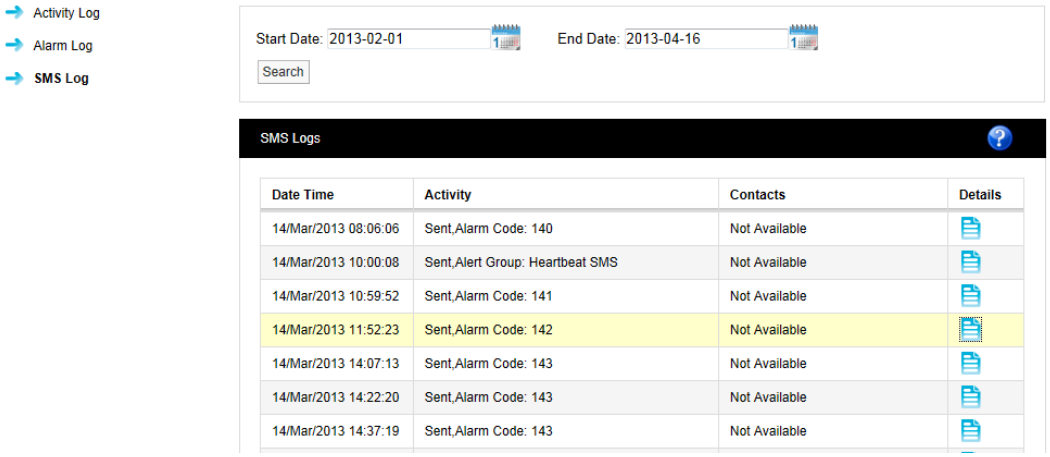
More Alarm Logs can be viewed by using the calendar **Search** function.

To move through available Alarm Log pages, use the green left and right arrows at the bottom of the page. The single green arrows will step through one page at a time. The double green arrows will take you to either the first page or the last page of the search.

11.3 SMS Log

The **SMS Log** contains entries for all system **SMS Activity**. To access the **SMS Log,** select **Logs>SMS Log** from the main menu. The **SMS Logs** window appears, see Figure 246 below.

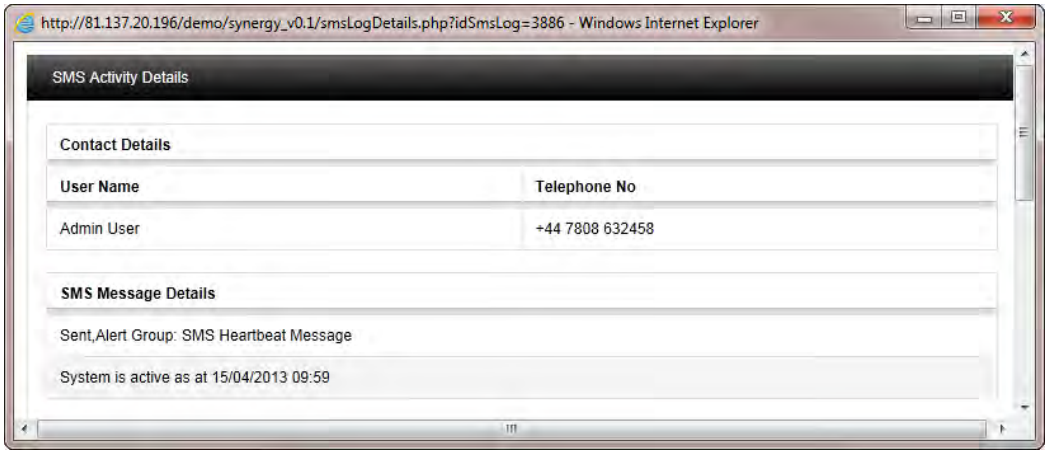
Figure 246



The SMS Log contains date and time stamped data, activity details contacts and a details or memo field.

The SMS **Details** contains details of the message sent including User name and the contact number that the SMS message was delivered to, see Figure 247 below.

Figure 247



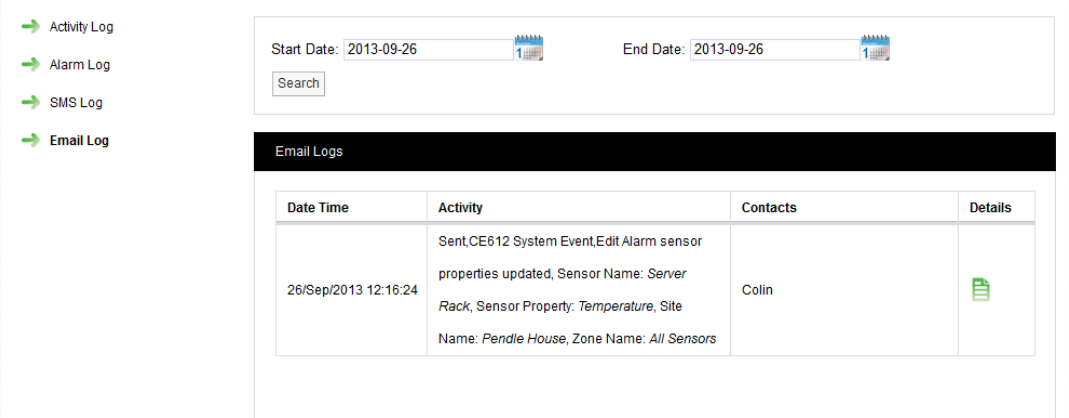
This SMS was a regular system heartbeat message sent to the Admin User. More SMS logs can be viewed by using the calendar search function.

To move through available SMS log pages, use the green left and right arrows at the bottom of the page. The single green arrows will step through one page at a time. The double green arrows will take you to either the first page or the last page of the search.

11.4 Email Log

The **Email Log** contains entries for all system **Email Activity**. To access the Email Log, select **Logs>Email Log** from the main menu. The **Email Logs** window appears,, see Figure 248 below.

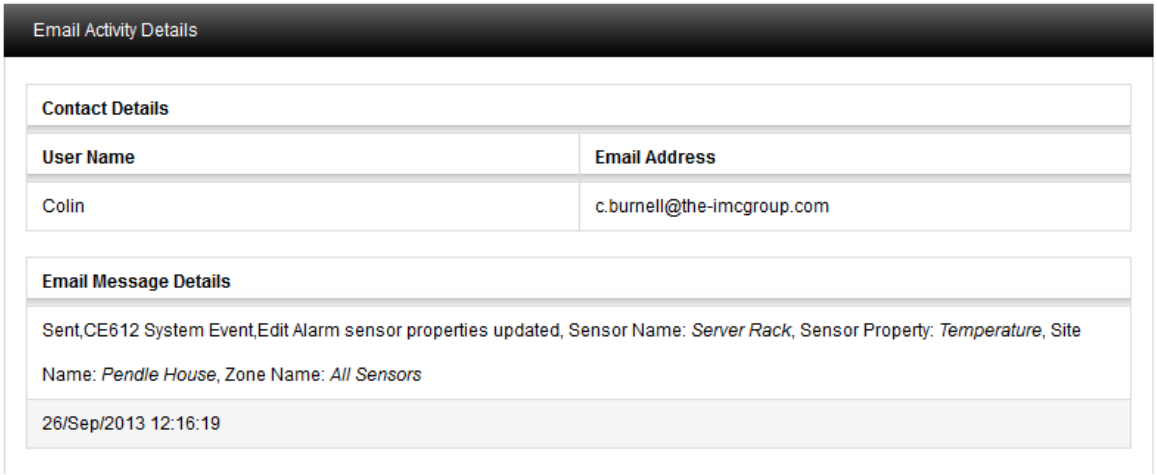
Figure 248



The **Email** log contains date and time stamped data, activity details contacts and a details or memo field.

The Email **Details** contains details of the message sent including User name and the contact email address that the **Email** was sent to,, see Figure 249 below.

Figure 249



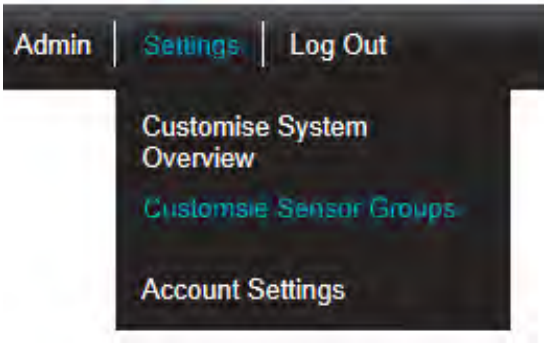
12 Sensor Groups

Synergy has the capability to group sensors of the same time together into **Sensor Groups**, for example for a series of rooms where temperature and humidity is being measured these sensors can be brought together in one group. Once grouped the **Sensor Group** can be set to show averages.

Sensor Groups are also used to control SR2 Alarm Relays, CR2 Alarm Relays, and associated MS1000 Control Interface outputs; via the Local Alarms settings.

To create a **Sensor Group** select **Settings>Customise Sensor Groups** from the main meu, see Figure 250 below.

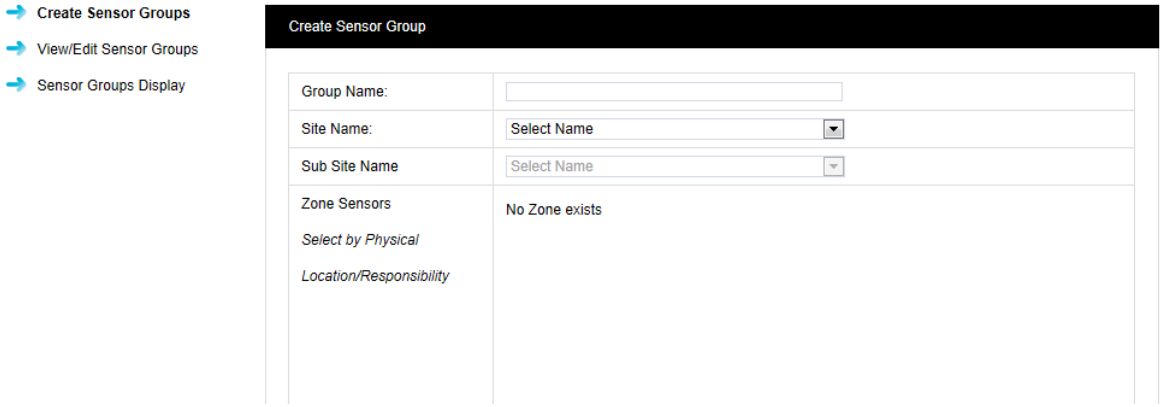
Figure 250



The **Create Sensor Group** window appears, see Figure 251 below.

12.1 Creating Sensor Groups

Figure 251

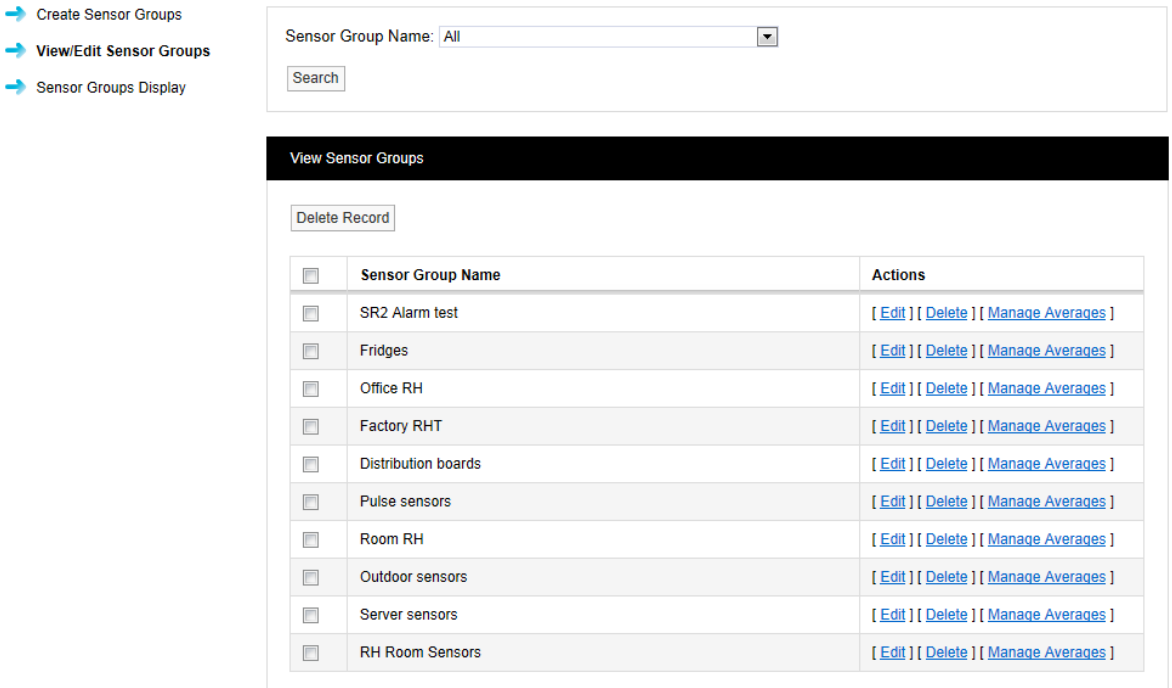


Enter a name for the **Group** this could be “RH Room sensors” select the **Site** from the drop down menu next to **Site Name** for this example we will select IMC Group Ltd. If the selected **Site** contains **Sub Sites,** these can be selected from the **Sub Site Name** drop down menu.

After selecting the **Site** the available **Zones** on that **Site** become visible, select the + symbol next to the **Zone** name that contains the **Sensors** that you wish to select. Here we will select the room sensors.

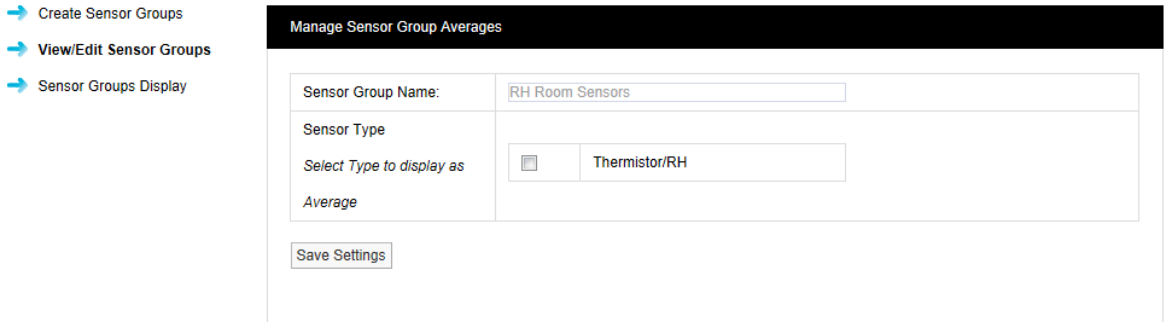
Once you are happy with your selections select **Submit**. The **View Sensor Groups** window appears, see Figure 252 below.

Figure 252



This list contains all the Sensor Groups that are available. Each Sensor Group can be **Edited** or **Deleted** and the **Averages** can be **Managed**. To Manage Averages select Manage Averages. The Manage Sensor Group Averages window appears, see Figure 253 below.

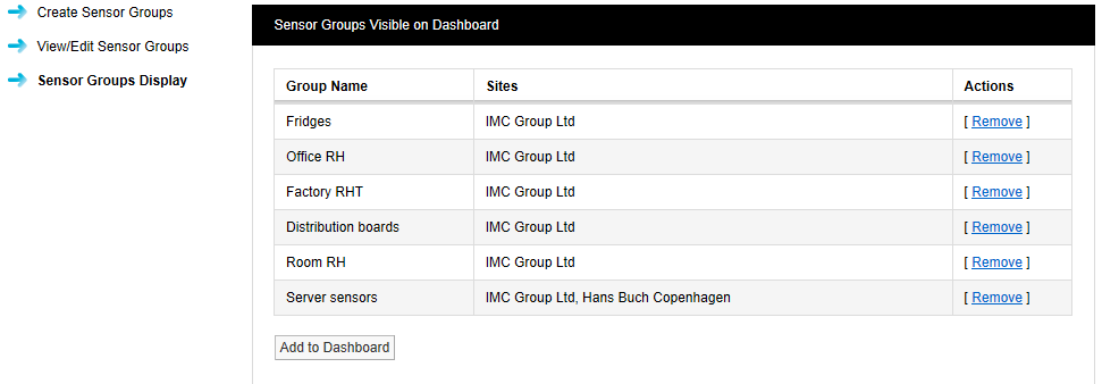
Figure 253



As we only selected RH and Temperature sensors there is only one selection available, to select click in the tick box then select **Save Settings**.

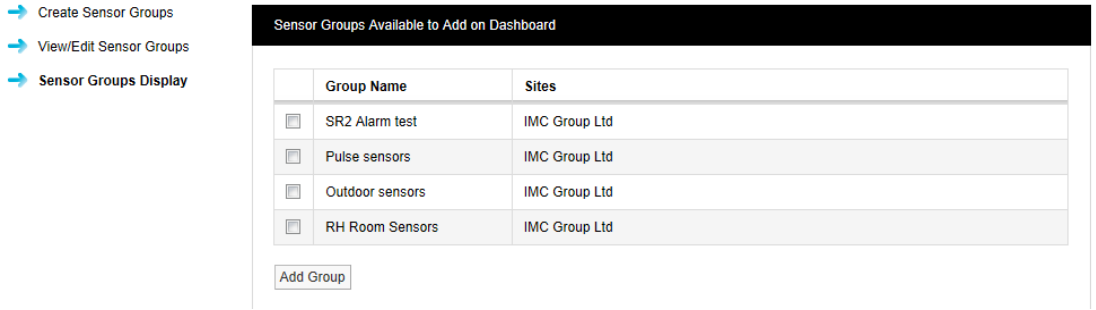
To add a Sensor Group to the **Dashboard** select **Sensor Groups Display** from the side menu, the **Sensor Groups Visible on Dashboard** window appears, see Figure 254 below.

Figure 254



To add a **Sensor Group** to the **Dashboard** select **Add to Dashboard**, a new window will appear, called **Sensor Groups Available to Add on Dashboard,** see Figure 255 below.

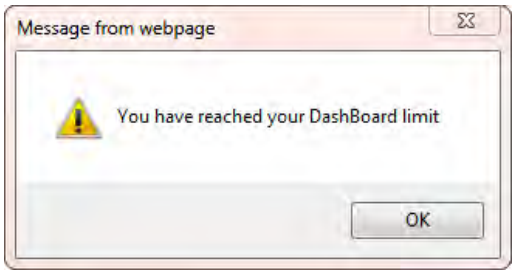
Figure 255



12.2 Adding Sensor Groups to the Dashboard

Select our new Sensor Group **RH Room Sensors** by clicking in the tick box, then select **Add Group**. You will receive a warning message, see Figure 256 below.

Figure 256



This is because the Dashboard already has the limit of twelve Sensor Groups. Go back to the window **Sensor Groups Visible on Dashboard** window (Figure 254) and select a Sensor Group to Remove. Once a Sensor Group has been Removed our new Sensor Group can now be added to the Dashboard.

12.3 Local Alarms

Sensor Groups are used to control Local Alarms on SR2 and CR2 USB devices; if an alarm is activated for a Sensor that is a member of the Sensor Group, then the associated Local Alarm will be activated on the SR2 or CR2 USB device.

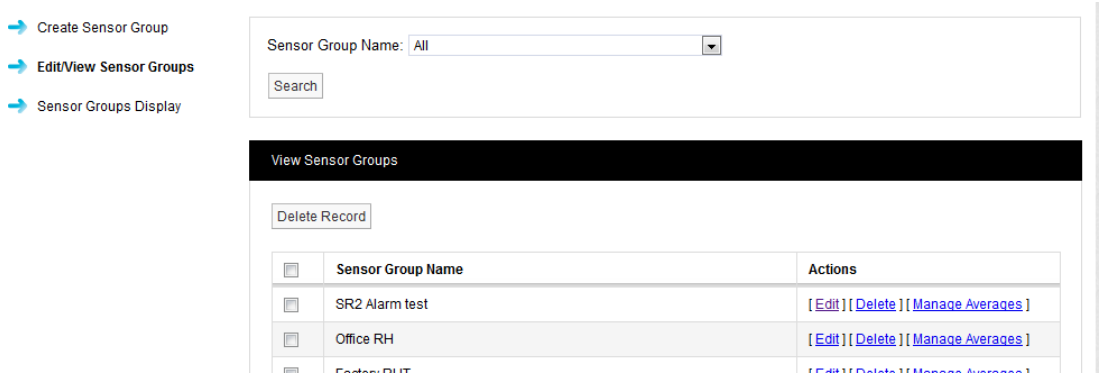
Note: Local Alarms do not work with CR2 GPRS devices.

12.3.1 Setting up Local Alarms

Firstly create a Sensor Group, as described in section 12.1 above, adding the required Sensors.

Once the required Sensor group is created, select **Edit/View Sensor Group** in the left hand menu, see Figure 257.

Figure 257

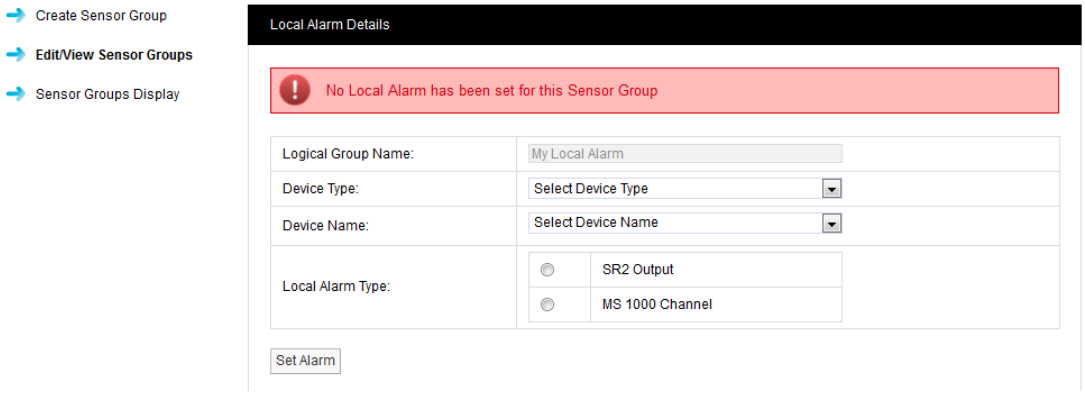


Now click on the **Edit** action for the new Sensor Group. The edit view will be displayed, see Figure 258.

Figure 258

Click the **Local Alarms** button to display the Local Alarms view, see Figure 259.

Figure 259



Click on the Device Type combo control, and select the required control device type – SR2 or CR2 USB, see Figure 260; then click on the Device Name combo control and select the require device by name.

The view will now change to display device information and Local Alarm options, see Figure 261; in the example we have selected an SR2, but CR2 operation is almost identical.

Figure 260

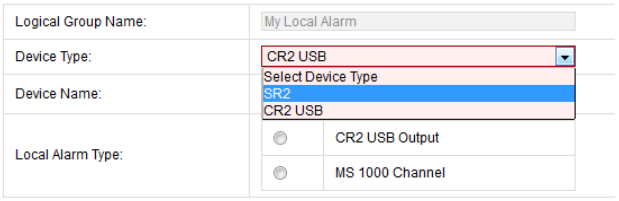
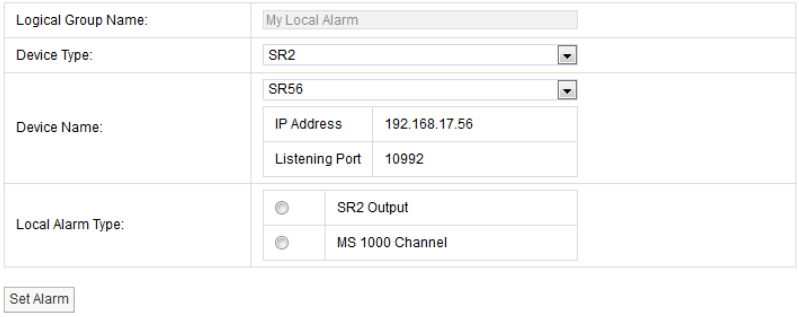


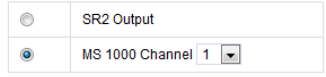
Figure 261



To use the SR2 Alarm Relay, select the option button adjacent to the **SR2 Output** text.

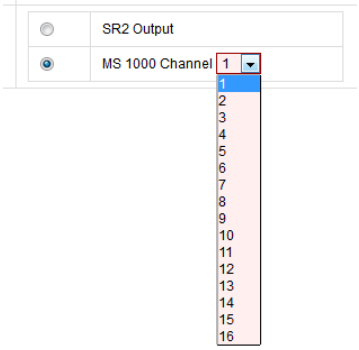
If you wish to use an output on a MS1000 card; select the option button adjacent to the **MS 1000 Channel** text, this displays the MS1000 channel options, see Figure 262.

Figure 262



Click on the MS1000 Channel combo control, and then select the required channel number, see Figure 263.

Figure 263

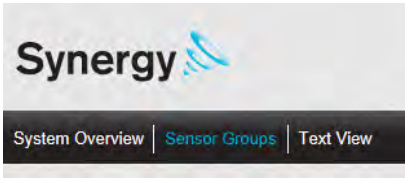


When the required Local Alarm has been selected, click **Set Alarm** to save the settings.

12.4 Viewing Sensor Groups

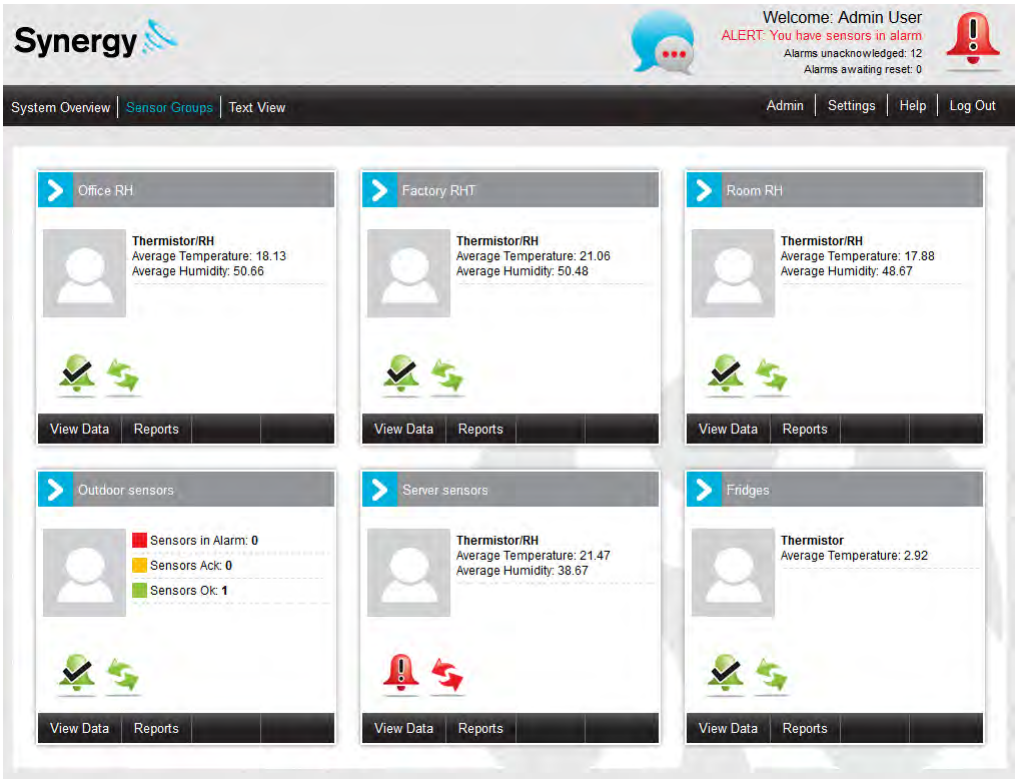
To view a **Sensor Group** select **Sensor Groups** from the main menu, see Figure 264 below.

Figure 264



The Sensor Group Dashboard will appear, see Figure 265 below.

Figure 265



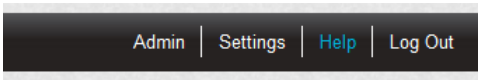
The Sensor Groups Dashboard view has full Alarm visibility and access to Alarm acknowledging pages. The Sensor Group feature is extremely useful for grouping sensors of the same time that are measuring the same parameters. Sensors from different Sites can be added to one Sensor Group.

13 Help

13.1 Online Help

Users can view this manual at any time during normal operation of Synergy, by clicking **Help** on the right hand side of the top menu strip, see Figure 266 below.

Figure 266



This will open the Synergy User Manual for viewing in a separate browser window or tab – depending on your browser setup.

Note: For this feature to operate, the user's Browser must be configured with a Portable Document Format (PDF) plugin. Most PDF Readers will automatically add a plugin to common internet browsers after installation.

If you require help with PDF Readers, browser plugins, and/or getting PDF files to launch from your Browser, please contact your system administrator or IT support provider; please do NOT contact IMC Technical Support, as only your administrator / support provider will be able to supply this help.

13.2 Browser Issues

13.2.1 Blank Graphs on Internet Explorer 10

Users of Internet Explorer 10, (IE10), may find that Graph appear blanked out; this is usually due to IE10's *Compatibility View* being turned on.

The *Compatibility View* control appears as a small icon on the IE10 address bar, Figure 267 below shows the address bar with *Compatibility View* turned on; to turn *Compatibility View* off click on the icon and it will turn off, changing to the state shown in Figure 268.

Figure 267

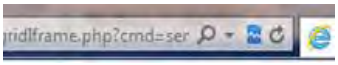


Figure 268

13.2.2 Fields Sunken &/or Display incorrect after Upgrade

After an upgrade to Synergy, list view fields such as used in the **Live View** may have a Sunken or 3D appearance; and other windows may not display correctly; this is due to caching in the user's Browser. To correct the display, users need to force a refresh of their Browser.

Internet Explorer and Firefox browsers can be refreshed by clicking the refresh icon that appears as a circular arrow in the right hand side of the address bar.

If a refresh fails to rectify the problem, you may need to delete your Browser history. The exact operations required to delete browser history will depend on the browser and browser version in use.

For help with Refreshing or deleting your browser history, see the help provided with your browser, or contact your system administrator or IT support Provider.

13.2.3 Date Time Pickers not Working

Users of Internet Explorer, (IE), running on servers, may find that dates cannot be selected from the date time picker controls, (e.g. when setting up scheduled reports). This is usually caused by IE Enhanced Security Configuration disabling some JavaScript functionality.

Close IE, and disable IE Enhanced Security Configuration in the Server Manager; or use an alternative browser.

If you require help making these changes, please contact your system administrator or IT support provider; please do NOT contact IMC Technical Support, as only your administrator / support provider will be able to supply this help.