



Optergy Enterprise Help Guide

Optergy v6.0.0-BETA



Contents

1. Graphics & Displays	5
1.1. Dashboards	5
1.2. Job Installation	19
1.3. Meter Displays	21
1.4. Weather Stations Displays	23
1.5. Live Displays	24
1.6. Scrolling Display List	26
2. Report Management	29
2.1. Automatic Meter Reading	29
2.2. Utility Report Email Management	30
2.3. Utility Report Library	33
2.4. Utility Report Wizard	34
2.5. Viewing Utility Reports	36
2.6. Utility Summary Report	39
3. Building Performance	42
3.1. Building Performance Reports Email Management	42
3.2. Building Performance Reports Library	43
3.3. Performance Summary Report	44
3.4. Progress Against Budget	45
3.5. Space Report	47
3.6. Space Comparison Report	50
4. Project Performance	55
4.1. Project Management	55
4.2. Project Wizard	55
4.3. Project Performance Statement	57
5. Trend Logs	58
5.1. Viewing Trend Log Data	58
5.2. Saved Trend Views	61
5.3. Saved Trend Email Management	62
5.4. Viewing Trend Log Objects	63
5.5. Creating Trend Log Objects	64
5.6. Editing Trend Log Objects	66
5.7. Removing Trend Log Objects	67
5.8. Removing Trend Log Data	67
5.9. Importing and Exporting Trend Log Objects	67
5.10. Archive FTP / SFTP Setting	68
5.11. Transfer FTP Settings	70
5.12. Archiving	72

5.13. Trend Log CSV Upload	73
5.14. Polling State of Trend Log Objects	81
6. Building Tenancy	82
6.1. After Hours Requests	82
6.2. Generating After Hours Bills	84
6.3. Generating Utility Bills	85
6.4. Facility Managers	86
6.5. Tariffs	87
6.6. Tenants	100
7. Activity and Monitoring	108
7.1. Alarms	108
7.2. Alarm Reporting	110
7.3. Maintenance Request	111
7.4. Log Viewer	114
7.5. Page URL	115
7.6. Point Change Activity Report	115
7.7. System Message Notifications	116
7.8. Trend Log Event History	117
7.9. User Activity Report	118
8. Meter Management	119
8.1. Custom Meter Points	119
8.2. Energy Data Access	122
8.3. Energy Log Data Entry	122
8.4. Energy Log Management	125
8.5. Meter Alarms	128
8.6. Meters	132
8.7. Meter Displays	154
8.8. Meter Status	156
8.9. Meter Types	156
8.10. Gas MJ Conversion Factors	163
9. Building Management	166
9.1. Analog Values	166
9.2. BACnet Alarms	167
9.3. BBMD	177
9.4. Binary Values	178
9.5. Calendars	180
9.6. Demand Limiting	184
9.7. BACnet Devices	193
9.8. Manage Spaces	198
9.9. Modbus Devices	201

9.10. Network Serial Devices	206
9.11. Notification Classes	208
9.12. Object List	213
9.13. Optimum Start	215
9.14. Schedules	219
9.15. Virtual Devices	225
9.16. Virtual Points	227
10. Contact Management	230
10.1. Contact Wizard	230
11. User Configuration	232
11.1. Departments	232
11.2. Groups	234
11.3. Users	236
11.4. User Profile	242
12. Tools	244
12.1. Display Templates	244
12.2. Documentation and References	244
12.3. Modbus Client	244
12.4. BACnet Client	246
12.5. Ping Utility	247
12.6. Remote File Manager	247
13. Maintenance	250
13.1. Frozen Emails	250
13.2. Portal Status Report	250
13.3. System Backup	251
13.4. System Maintenance	254
13.5. System Restore	255
13.6. Software Update	257
13.7. P864 Maintenance	258
13.8. System Status	264
14. System Configuration	266
14.1. Setup Wizard	266
14.2. Optergy Software API Configuration	267
14.3. BACnet Configuration	268
14.4. Custom Unit Names	270
14.5. Email Configuration	271
14.6. Greenhouse Gas Emission Factors	272
14.7. Live Display (Compiler) Configuration	273
14.8. Licencing	274
14.9. Language Translation	275

14.10. Region Formats	275
14.11. Metering Configurations	276
14.12. Network Configuration	277
14.13. Fileshare Settings	278
14.14. Site Information	278
14.15. System Time Configuration	279
14.16. UPS Status	279
14.17. Virtual BACnet Configuration	281
14.18. Weather Data Sources	281
14.19. Weather Forecast Locations	282
14.20. Weather Station Configuration	287
14.21. Portal Preferences	299
14.22. Programming Tool Configuration	302
14.23. SSL Configuration	303
15. Programming Tool	306
15.1. Programming Tool Introduction	306
15.2. Programming Tool Environment	306
15.3. Workspaces Menu and Canvas	314
15.4. Logic Blocks	326
15.5. Points	343
15.6. NULL Values Interpretations	345
15.7. Subroutines	346
16. Display Tool	350
16.1. Display Tool Introduction	350
16.2. Display Tool Environment	350
16.3. Workspace	353
16.4. Toolbox	363

1. Graphics & Displays

1.1. Dashboards

Dashboards provide a simple, elegant way to monitor the system through user customisable, interactive displays which group together to view live data, BMS statuses and metering data.

The 'Dashboard List' page is a central place for configuring and managing all dashboards in Optergy Software.

Available dashboard actions:

- View Dashboards
- Add Dashboards
- Edit Dashboards
- Duplicate Dashboards
- Remove Dashboards

1.1.1. View Dashboards

Required Privilege: Manage Dashboards

The 'Dashboard List' page, found within the 'Graphics & Displays' sub-menu, will load with a list of all the dashboards that are currently stored in Optergy Software. To get more information about a dashboard and view what its current configuration will display, either double click the dashboard row, or select the dashboard then click  (Open) or  (Open (popup)).

1.1.2. Add Dashboards

Required Privilege: Manage Dashboards

To create a new dashboard click  (Add) from the 'Dashboard List' page. This will bring up a popup which will enable the user to configure and create a new dashboard.

General Details

Name:

The name of the dashboard

Description:

A brief description of the dashboard, possibly indicating the type of configuration it will include

Users and groups with VIEW access:

Select from all the recorded user and groups in Optergy Software, the users and/or groups to have view only access to the dashboard.

Note: The creator of the dashboard will be automatically included even if not checked.

Users and groups with EDIT access:

Select from all the recorded user and groups in Optergy Software, the users and/or groups to have edit (and subsequently view) access to the dashboard.

Note: The creator of the dashboard will be automatically included even if not checked.

1.1.3. Edit Dashboards

Required Privilege: Manage Dashboards

There are two sets of configuration parameters for a dashboard: basic configuration (name and description of the dashboard), and widget configuration (configuration of how the dashboard actually looks when it is loaded).

Editing Basic Configuration

To edit an existing dashboard, select the dashboard and click  (Edit) from the 'Dashboard List' page. This will bring up the edit popup pre-populated with the currently selected dashboard's configuration.

Contains minimal dashboard configuration details. All of these fields can be updated, view [Add Dashboards](#) documentation for field definitions.

Widget Configuration

Note: To update widget configuration, 'Edit Mode' must be activated. To activate, click  (Edit Mode) button by opening the side dock (if closed).

Configuration and manipulation of widgets is only possible once the dashboard has been created. Once created, any number of widgets can be added, edited or removed from the desired dashboard. Widgets can display numerous Optergy Software features such as:

- HTML pages
- Chart images
- Dial images
- Live data points (boolean, range, values, etc)
- Data comparisons
- Data progress bars
- Digital gauges
- Weather forecasts
- Weather station data points
- Text labels
- Navigation buttons

To add a new widget, click  (Add Widget). A new widget box will appear on the dashboard.

To duplicate an existing widget, click  (Duplicate Widget). A popup duplicate widget form will then appear, which will allow for the creation of a new widget based on the currently selected widget item in the popup. Once selections have been finalised, click 'Duplicate'. If the duplication succeeds, a widget box will appear on the dashboard.

To edit an existing widget, click the configure spanner located on the right side of the widget. To view possible widget functions, view [Creating Widgets](#) documentation for field definitions.

To move a widget, click and drag the title bar of the widget to be moved to a new location. When finished moving the widget (the position is finalised), release the mouse.

To resize a widget, hover over the outline of the box of the widget to be resized. The cursor should change to a cursor with resize capabilities. Resize as per any normal graphics application.

To remove an existing widget, click the cross located on the right side of the widget to remove the title bar. A popup confirmation will then appear asking to confirm the removal of the selected widget. If 'Remove' is clicked the widget will then be removed from the dashboard.

Background Configuration

All of these fields can be updated, see field definitions below.

Name:

The name of the dashboard

Description:

A brief description of the dashboard, possibly indicating the type of configuration it will include

Show Title:

Specifies whether or not to display the name of the dashboard at the the top of the page when in viewing and/or editing mode

Background Colour:

The background colour of the whole dashboard, including individual widgets. To customise the background colour, un-check the 'Default' option and click 🎨.

Background Image:

The background image of the whole dashboard, including individual widgets. To customise the background image, click 'Browse'. An image dialog popup will appear containing all the available images on the portal.

Once all desired changes have been made click  (Save), to save all changes.

1.1.4. Duplicate Dashboard

Required Privilege: Manage Dashboards

To duplicate a dashboard from the 'Dashboards' list page, click  (Duplicate). A popup duplicate form will then appear, which will allow for the creation of a dashboard based on the currently selected dashboard item in the popup. Fill in the following fields, and once finished click 'Duplicate'. If the duplication is successful, a new entry will appear in the dashboard list.

New Name:

A brief, unique name to identify the dashboard

New Description:

A brief description of the dashboard, possibly indicating the type of configuration it will

include.

1.1.5. Create Widgets

Required Privilege: Manage Dashboards

Configuration and manipulation of widgets is only possible once the dashboard has been created. Once created, any number of widgets can be added, edited or removed from the desired dashboard. To edit an existing widget, click the configure spanner located on the right side of the widget to be edited in the title bar.

Available widgets are:

- HTML pages
- Chart images
- Dial images
- Live boolean data point
- Live range data point
- Live text data point
- Data comparisons
- Data progress bars
- Digital gauges
- Weather forecasts
- Weather station data point
- Text labels
- Navigation buttons

The following will appear on some widgets in certain circumstances:

-  - When not enough information has been configured for the widget to work correctly
-  - When a BACnet live reading fails (Eg Comms are down)

1.1.5.1. HTML Widget

The HTML widget displays any Optergy Software internal page (BMS displays, meter displays, utility reports, etc) or external website.

General configuration allows for the entry of generic widget property configuration details.

Title:

The name of the widget (optional)

Background:

The background colour of the widget. The default is transparent.

Header and border visible in view mode:

Indicates whether or not to display the title and a border around the widget

Select a widget:

The 'HTML' widget option must be selected

Basic configuration allows for the entry of minimal HTML widget configuration details. Depending on the system, there are up to seven (7) options to populate the widget's URL:

1. Custom URL - Any valid URL
2. Display - Select and display any [BMS Displays](#) saved in Optergy Software
3. Saved Utility Report - Select and display any saved utility reports from in the [Utility Report Library](#)
4. Saved Building Performance Report - Select and display any saved building performance reports from in the [Building Performance Report Library](#)
5. Saved Trend Log - Select and display any [Trend Log Data](#) saved in Optergy Software
6. Meter Display - Select and display any [meter's configuration display](#) saved in Optergy Software
7. Bookmark - Select and display any user or group bookmark configured in Optergy Software
8. Dashboard - Select and display any [dashboard](#) saved in Optergy Software
9. Optergy Software Page - Select and display a common Optergy Software screen/page

'Transparent Background' when ticked will be applied where possible, it may not be applicable to all HTML pages.

Once all configuration details have been filled in, click the  (Save) button to update the widgets display.

1.1.5.2. Chart Image Widget

The chart image widget displays an internal Optergy Software saved utility report.

General configuration allows for the entry of generic widget property configuration details.

Title:

The name of the widget (optional)

Background:

The background colour of the widget. The default is transparent.

Header and border visible in view mode:

Indicates whether or not to display the title and a border around the widget

Select a widget:

The 'Chart Image' widget option must be selected

Basic configuration allows for the entry of minimal chart image widget configuration details. Depending on the system, there are up to three (3) options to populate the widget's image URL:

1. Saved Utility Report - Select and display any saved utility reports from in the [Utility Report Library](#)
2. Saved Building Performance Report - Select and display any saved building performance reports from in the [Building Performance Report Library](#)

Once all configuration details have been filled in, click the  (Save) button to update the widgets display.

1.1.5.3. Dial Widget

The dial widget displays a customisable, possibly multi-valued dial chart.

General configuration allows for the entry of generic widget property configuration details.

Title:

The name of the widget (optional)

Background:

The background colour of the widget. The default is transparent.

Header and border visible in view mode:

Indicates whether or not to display the title and a border around the widget

Select a widget:

The 'Dial' widget option must be selected

Basic configuration allows for the entry of minimal dial widget configuration details.

Value:

Select the 'Configure' button to set. See [setting widget values](#) for more details on how to set the value.

Colour Theme:

The style of the displayed dial image

Face Text:

To display the current value of the above point, set this to {value}, or to display static text, simply enter any text string

Scale:

A number in which to scale the above {value} by

Advanced configuration allows for the entry of additional dial widget configuration details. To view the advanced configuration options, click the 'Advanced Configuration' button. The advanced configuration options will appear on the far right-hand side of the page.

Customise Colour Theme

Tick:

Allows for the customisation of the tick colour. Click on the 🎨 (Palette) to choose a colour.

Tick Label:

Allows for the customisation of the tick label colour. Click on the 🎨 (Palette) to choose a colour.

Text:

Allows for the customisation of the text colour. Click on the 🎨 (Palette) to choose a colour.

Face

Auto Range:

Allows for the customisation the widgets displayed value range. To enable customisation, un-check the default option and specify minimum and maximum values.

Range Bands

Ranges:

Enables customisation to display coloured sections on the dial between two values. To set one or more ranges, click the 'Configure' button. This will bring up a popup which will enable the user to enter one or more ranges. To set the minimum and maximum values, see [setting widget values](#) for more details. To set the colour of the range, click the 'Configure' button under the map column. This will allow for either an image or colour to be selected.

Band Style:

Select the style of the ranges. There are two (2) options:

1. Line
2. Wedge

Once all configuration details have been filled in, click the 💾 (Save) button to update the widgets display.

1.1.5.4. Live Point Boolean Widget

The live point boolean data widget displays an active or inactive image based on a points state. General configuration allows for the entry of generic widget property configuration details.

Title:

The name of the widget (optional)

Background:

The background colour of the widget. The default is transparent.

Header and border visible in view mode:

Indicates whether or not to display the title and a border around the widget

Select a widget:

The 'Boolean' widget option must be selected

Basic configuration allows for the entry of minimal live point range data widget configuration details.

Value:

Select the 'Configure' button to set. See [setting widget values](#) for more details on how to set the value.

Active (1) Graphic:

Select the 'Configure' button to set what will be displayed when the above value is in an active state. A popup will appear, enabling either an image or colour to be set.

Inactive (0) Graphic:

Select the 'Configure' button to set what will be displayed when the above value is in an inactive state. A popup will appear, enabling either an image or colour to be set.

Once all configuration details have been filled in, click the  (Save) button to update the widgets display.

1.1.5.5. Live Point Range Widget

The live point range data widget allows for a data point's value to be customised and displayed differently depending on its current value.

General configuration allows for the entry of generic widget property configuration details.

Title:

The name of the widget (optional)

Background:

The background colour of the widget. The default is transparent.

Header and border visible in view mode:

Indicates whether or not to display the title and a border around the widget

Select a widget:

The 'Range' widget option must be selected

Basic configuration allows for the entry of minimal live point range data widget configuration details.

Value:

Select the 'Configure' button to set. See [setting widget values](#) for more details on how to set the value.

Ranges/MultiStates:

Enables customisation to display the above value as different images or colours depending on its value fitting into a predefined range criteria. To set one or more ranges, click the 'Configure' button. This will bring up a popup which will enable the user to enter one or more ranges. To set the minimum and maximum values, see [setting widget values](#) for more

details. To set the colour or image that will represent the range, click the 'Configure' button under the map column. This will allow for either an image or colour to be selected.

Once all configuration details have been filled in, click the  (Save) button to update the widgets display.

1.1.5.6. Live Point Text Widget

The live point text data widget allows for a data point's text value to be customised and displayed differently depending on its current value.

General configuration allows for the entry of generic widget property configuration details.

Title:

The name of the widget (optional)

Background:

The background colour of the widget. The default is transparent.

Header and border visible in view mode:

Indicates whether or not to display the title and a border around the widget

Select a widget:

The 'Live Data (Text)' widget option must be selected

Basic configuration allows for the entry of minimal live point text data widget configuration details.

Value:

Select the 'Configure' button to set. See [setting widget values](#) for more details on how to set the value.

Font Colour:

Allows for the customisation of the text colour. Click on the  (Palette) to choose a colour.

Font Size:

Sets the size of the value displayed in the widget

Advanced configuration allows for the entry of additional live point text data widget configuration details. To view the advanced configuration options, click the 'Advanced Configuration' button. The advanced configuration options will appear on the far right-hand side of the page.

Extra Text

Before Text:

Additional user supplied text that will appear before the above value

After Text:

Additional user supplied text that will appear after the above value

Analog Only Extras

Scale:

A number in which to scale the above value by

Value Format:

Sets how many decimal places the above value will be displayed to

Binary Only Extras

Active Text:

Sets what text will be displayed when the above value is in an active state

Inactive Text:

Sets what text will be displayed when the above value is in an inactive state

Use Text From Point:

Indicates whether or not to display the text data supplied from the point itself

Once all configuration details have been filled in, click the  (Save) button to update the widgets display.

1.1.5.7. Comparator Widget

The comparator widget displays an image or block of colour based on the results of a comparison between two values.

General configuration allows for the entry of generic widget property configuration details.

Title:

The name of the widget (optional)

Background:

The background colour of the widget. The default is transparent.

Header and border visible in view mode:

Indicates whether or not to display the title and a border around the widget

Select a widget:

The 'Comparator' widget option must be selected

Basic configuration allows for the entry of minimal comparator widget configuration details.

Value 1:

Select the 'Configure' button to set the first value in the comparison equation. See [setting widget values](#) for more details on how to set the value.

Operator:

The comparison equation operator

Value 2:

Select the 'Configure' button to set the second value in the comparison equation. See [setting widget values](#) for more details on how to set the value.

True Graphic:

Select the 'Configure' button to set what will be displayed when the above equation (value 1 <operator> value 2) equates to true. A popup will appear, enabling either an image or colour to be set.

False Graphic:

Select the 'Configure' button to set what will be displayed when the above equation (value 1 <operator> value 2) equates to false. A popup will appear, enabling either an image or colour to be set.

Once all configuration details have been filled in, click the  (Save) button to update the widgets display.

1.1.5.8. Bar Widget

The bar widget displays a value in a graphical form.

General configuration allows for the entry of generic widget property configuration details.

Title:

The name of the widget (optional)

Background:

The background colour of the widget. The default is transparent.

Header and border visible in view mode:

Indicates whether or not to display the title and a border around the widget

Select a widget:

The 'Bar' widget option must be selected

Basic configuration allows for the entry of minimal bar widget configuration details.

Value:

Select the 'Configure' button to set. See [setting widget values](#) for more details on how to set the value.

Orientation:

Sets the widget to have either vertical or horizontal positioning

Outline:

Indicates whether to display the outline of the bar or not

Advanced configuration allows for the entry of additional bar widget configuration details. To view the advanced configuration options, click the 'Advanced Configuration' button. The advanced configuration options will appear on the far right-hand side of the page.

Bar Appearance**Auto Range:**

Allows for the customisation the widgets displayed value range. To enable customisation, un-check the default option and specify minimum and maximum values.

Light Colour:

Allows for the customisation of the bar's shadow effect colouring, specifically the light colour. Click on the 🎨 (Palette) to choose a colour.

Dark Colour:

Allows for the customisation of the bar's shadow effect colouring, specifically the dark colour. Click on the 🎨 (Palette) to choose a colour.

Background Colour:

Allows for the customisation of the background colour. Click on the 🎨 (Palette) to choose a colour.

Show Shadow:

Sets whether or not the bar will display additional shadow effects (horizontal mode only)

Extras**Show Markers:**

Sets whether or not to display the start and end values of the bar

Text:

Enter additional text to display alongside the bar. Enter {value} to display a text representation of the above point value.

Rotate Text:

Indicates whether or not the above text is displayed vertically or horizontally

Text Colour:

Allows for the customisation of the text colour. Click on the 🎨 (Palette) to choose a colour.

Auto Size:

Indicates whether or not the bar will automatically resize to fill the widgets window. To enable customisation, un-check the default option and specify width and height values.

Once all configuration details have been filled in, click the 💾 (Save) button to update the widgets display.

1.1.5.9. Digital Gauge Widget

The digital gauge widget displays a value in a digital looking gauge.

General configuration allows for the entry of generic widget property configuration details.

Title:

The name of the widget (optional)

Background:

The background colour of the widget. The default is transparent.

Header and border visible in view mode:

Indicates whether or not to display the title and a border around the widget

Select a widget:

The 'Digital Gauge' widget option must be selected

Basic configuration allows for the entry of minimal digital gauge widget configuration details.

Value:

Select the 'Configure' button to set. See [setting widget values](#) for more details on how to set the value.

Colour Theme:

The style of the displayed dial image

Gauge Length:

Sets the number of displayable digits in the above value

Units:

The type of unit the above value is represented in

Advanced configuration allows for the entry of additional digital gauge widget configuration details. To view the advanced configuration options, click the 'Advanced Configuration' button. The advanced configuration options will appear on the far right-hand side of the page.

Appearance

Alignment:

Sets the positioning of the above value inside the widget

Text Colour:

Allows for the customisation of the text colour. Click on the 🎨 (Palette) to choose a colour.

Value Format:

Sets how many decimal places the above value will be displayed to

Font Size:

Sets the size of the text displayed in the widget

Once all configuration details have been filled in, click the 💾 (Save) button to update the widgets display.

1.1.5.10. Weather Forecast Widget

The weather forecast widget displays a customisable weather forecast for any given location which has been enabled on the [Weather Forecast Configuration](#) page.

General configuration allows for the entry of generic widget property configuration details.

Title:

The name of the widget (optional)

Background:

The background colour of the widget. The default is transparent.

Header and border visible in view mode:

Indicates whether or not to display the title and a border around the widget

Select a widget:

The 'Weather Forecast' widget option must be selected

Basic configuration allows for the entry of minimal weather forecast widget configuration details.

Weather Widget Type:

The layout of the forecast data

Day:

The forecast data day

Forecast City:

Select from any location that has been enabled on the [Weather Forecast Configuration](#) page

Show Location:

Specifies whether or not to display the name of location on the widget

Advanced configuration allows for the entry of additional weather forecast widget configuration details. To view the advanced configuration options, click the 'Advanced Configuration' button. The advanced configuration options will appear on the far right-hand side of the page.

Customise Colours

Heading:

Allows for the customisation of the heading colour. Click on the 🎨 (Palette) to choose a colour.

Text:

Allows for the customisation of the text colour. Click on the 🎨 (Palette) to choose a colour.

Min Value:

Allows for the customisation of the minimum temperature colour. Click on the 🎨 (Palette) to choose a colour.

Max Value:

Allows for the customisation of maximum temperature colour. Click on the 🎨 (Palette) to choose a colour.

Appearance

Colour Tint:

Allows for the customisation of the widgets background. To enable customisation, un-check the default option.

Tint Colour:

If the default colour tint option is unchecked, this option will be available for customisation. Click on the 🎨 (Palette) to choose a background colour.

Tint Strength:

Sets the translucency of the widget's background colour. Strength ranges from 0.0 to 1.0. 1.0 is a solid background colour. 0.1 is a washed out background colour. 0 is transparent.

Size:

Sets the size of the forecast widget. There are two (2) options:

1. Fixed default size - this will display the forecast widget in its calculated best size
2. Auto size - this will resize depending on the widgets window size

Once all configuration details have been filled in, click the 💾 (Save) button to update the widgets display.

1.1.5.11. Weather Station Widget

The weather station data point widget allows for specific weather data points to be customised and displayed on a dashboard.

Note: These data points are only available when an Optergy Software approved weather station is connected, enabled and configured. See the [Weather Forecast Configuration](#) page for details.

General configuration allows for the entry of generic widget property configuration details.

Title:

The name of the widget (optional)

Background:

The background colour of the widget. The default is transparent.

Header and border visible in view mode:

Indicates whether or not to display the title and a border around the widget

Select a widget:

The 'Weather Station' widget option must be selected

Basic configuration allows for the entry of minimal weather station widget configuration details.

Weather Point:

Select the weather data point to display

Font Colour:

Allows for the customisation of the text colour. Click on the 🎨 (Palette) to choose a colour.

Font Size:

Sets the size of the value displayed in the widget

Once all configuration details have been filled in, click the 💾 (Save) button to update the widgets display.

1.1.5.12. Text Label Widget

The text label widget displays a free text string.

General configuration allows for the entry of generic widget property configuration details.

Title:

The name of the widget (optional)

Background:

The background colour of the widget. The default is transparent.

Header and border visible in view mode:

Indicates whether or not to display the title and a border around the widget

Select a widget:

The 'Text Label' widget option must be selected

Basic configuration allows for the entry of minimal text label widget configuration details.

Text:

The text string to be displayed in the widget

Font Colour:

Allows for the customisation of the text colour. Click on the 🎨 (Palette) to choose a colour.

Font Size:

Sets the size of the text displayed in the widget

Once all configuration details have been filled in, click the 💾 (Save) button to update the widgets display.

1.1.5.13. Button Widget

The button widget allows for the placement of easy navigation to either Optergy Software pages or external references.

General configuration allows for the entry of generic widget property configuration details.

Title:

The name of the widget (optional)

Background:

The background colour of the widget. The default is transparent.

Header and border visible in view mode:

Indicates whether or not to display the title and a border around the widget

Select a widget:

The 'Button' widget option must be selected

Basic configuration allows for the entry of minimal button widget configuration details.

Text:

The text string to be displayed on the widget

Button Style:

Allows for the customisation of the button's style, which includes the background colour and size

Link Location:

There are seven (7) link options:

1. Custom URL - Any valid URL
2. Display - Select and display any [BMS Displays](#) saved in Optergy Software
3. Saved Utility Report - Select and display any saved utility reports from in the [Utility Report Library](#)
4. Saved Building Performance Report - Select and display any saved building performance reports from in the [Building Performance Report Library](#)
5. Saved Trend Log - Select and display any [Trend Log Data](#) saved in Optergy Software
6. Meter Display - Select and display any [meter's configuration display](#) saved in Optergy Software
7. Bookmark - Select and display any user or group bookmark configured in Optergy Software
8. Dashboard - Select and display any [dashboard](#) saved in Optergy Software

Once all configuration details have been filled in, click the  (Save) button to update the widgets display.

1.1.5.14. Setting Widget Values

There are five (5) ways in which to set a widget value:

1. Reference - a live BACnet data point

Device:

The host device of the data point to display

Object Type:

The object type of the data point to display

Object Instance:

The object instance of the data point to display

Property Type:

The property of the data point to display

2. Meter Point - a meter's consumption and/or generation value
3. Custom Meter Point - a live custom meter point value
4. Value - a static, unchanging number

1.1.6. Remove Dashboards

Required Privilege: Manage Dashboards

To remove a dashboard device from the 'Dashboard List' page, select the dashboard of dashboards you wish to remove and click  (Remove). A popup will then appear asking to confirm the removal of the selected dashboard. If 'Remove' is clicked all the selected dashboard will then be permanently removed from Optergy Software.

1.2. Job Installation

This page facilitates the conversion of an Envision job over to Optergy Software.

Before a job can be installed, the Envision rep and job folder must be copied from the Envision Server to the Optergy Software Portal, Eg /ADVCONTR/{job}. The rep and job folder must be copied into the 'Jobs' folder on the Optergy Software windows file share or using Optergy Software's [Remote File Manager](#). The following files are required for a job installation:

Envision 2.0/2.01

- The displays folder
- The bitmaps folder
- userprofile.mdb

Envision 2.5/3.0

- The displays folder
- The bitmaps folder
- BACtalk.mdb

Installing A Job

Once the files have been copied:

1. Select to install from the 'Job to install' list. If the desired job does not appear in this list, then the files have been copied into the wrong place.
2. Select the actions to be performed

Process Displays

Converts all Envision display files in the displays folder. This should be ticked if any of the displays have been modified, created or removed. Note that in a job re-installation, all display files in the windows file share Displays\[REP]\[JOB] are deleted.

Process Single Displays

This option converts just a single Envision display file into the displays folder, no other display files on the file share will be removed or updated only this single display

Background Colour

Set the background colour of the display(s) being processed. Transparent means the current Optergy Software background will be displayed Eg The optergy default background or a custom background configured in [Portal Preferences](#)

Add read-only permission

When checked, this option creates read-only permission at a certain security level on prompted points. Eg When a prompted point has a security level of 8 specified in Envision, Optergy Software creates a read and write privilege for this point at level 8, to enable read-only of this point, this option must be checked and given a security level less than 8.

Enforce Envision menu items

In Optergy Software a display point's right-click menu items are normally generated automatically based on the point properties and the user privileges. If this option is ticked, the menu items ticked below will only appear in the right-click menu if they have been configured to appear in Envision. Eg If this option and the below 'Point Schedules' option is ticked, a point's right-click menu will only contain the 'Add Schedule' or 'Edit Schedule' option if it has been configured to appear in Envision.

Create Images

Converts the bitmaps in the bitmaps directory to either a jpeg or gif image in the WebImages\Jobs\[REP]\[JOB] windows file share. This should be ticked if a display file has been added or changed, and contains a bitmap that hasn't been converted before

Recreate existing images

Deletes all job images in the windows file share WebImages\Jobs\[REP]\[JOB] folder. This option is only available if 'Create Images' is ticked, and is useful if images have been updated or corrupted

Process Users

Processes the user permission file (userprofile.mdb or BACtalk.mdb), creating the necessary users, groups, and group memberships, and attempting to create a similar permission system to that in Envision. For job-reinstallations, any changes made in

Optergy Software (since job install) will be removed except passwords set from within Optergy Software.

Convert usernames to lowercase

In Envision, usernames are stored in uppercase characters, so by default all usernames and groups will be stored in Optergy Software in Uppercase. This option will convert all Envision usernames into lowercase for Optergy Software.

Preserve Optergy Software group memberships

Preserves any group memberships altered since the last job install. Eg. If an Optergy Software only user has been placed into a group created by a job install or an envision user has been placed in an Optergy Software only group, these memberships will remain. This should be selected if any group memberships involving Envision users or groups has been modified and you want these preserved

Note: If the job is being installed for the first time, all actions should be ticked; otherwise the job installation will be incomplete, and possibly broken.

3. Click  (Install) to begin the conversion process
4. A window will display the progress of the installation
5. Passwords are not imported, so the password must be set for each user before they can login (re-installations do not require the password to be set)

Note: It is possible to navigate away from the page and return at a later date to view its installation progress.

Note: If you are re-installing a job, changed Envision files need to be copied again. Also do not do the job installation logged in as a user which is part of the job.

1.3. Meter Displays

Required Privilege: View Meter Displays

The 'Meter Displays' page is a central place to view live readings and keep track of meters configured in Optergy Software. Each meter can have a display page automatically generated, showing its current working status.

On the left side of the screen, there are fields that allow for the sorting and filtering on meters. Meters can be sorted by utility type, location, communication driver and alphabetical order. The initial load up sorting preference for the portal can be specified in the [Web Server and Portal Preferences](#) page.

When a meter is selected from the available list, its current status is either displayed on the right side of the screen or if the 'popup' is selected the status display is opened in a new popup tab.

All meter displays include the following details:

- Basic meter details such as the name, description and communication driver
- Online status:  (online),  (offline) and  (disabled)
- Active consumption and/or active generation graphs (if the meter logs that parameter)
The time period for the displayed graph can be changed by clicking the appropriate button. Electricity meters have the extra option of switching between Consumption, Demand and

Greenhouse Gas (GHG) Emissions.

If a meter is a 'smart' electrical meter, then the display will probably contain multiple instantaneous parameters such as line voltage, current or power

Depending on the type and state of the meter, a reading might say NaN. This stands for 'Not A Number' and can indicate certain things (no load, something not set up correctly), depending on what the parameter is. If an EDML meter is displaying NAN for a cumulative parameter, this means that the meter has not had its TOU configured to log this parameter.

In some cases a reading might say Infinity. This indicates that in the meter type, a register has been specific to reading the CT, but this register is missing from the meter type mapping table.

Note: If a calculation meter (aggregate, portion, remainder etc) is offline, this means that at least one of its component meters that make up the calculation meter are offline. It will not return online until all component meters are online.

Scaling of Meter Values

A meter display can either be viewed with the meters raw values (as configured in the meter type) or scaled values. To alternate between the two views, click on  (Meter Menu) in the top left hand corner, then either click 'Display Raw Values' or 'Display Scaled Values'.

Add Commissioning Record

Required Privilege: Add Commissioning Actions

To add a new commissioning entry, click on  (Meter Menu) in the top left hand corner, then click 'Add Commissioning Action'. A popup will appear which will allow for entry of a new commissioning record. Fill in the following fields, and once finished click 'Add'. If the entry is successfully saved, a confirmation dialog will appear. Another record can then be added.

Note: Once an entry is made, it is permanent, and can not be removed.

Commissioning Action:

What actually happened to the meter.

E.g. CT check, voltage tap check, final commission performed, etc

If the appropriate action is not already in the list, a new action can be created on the fly at any stage.

Value:

If the selected commissioning action requires a status value then this field will appear (optional)

Comment:

A brief comment about the action

Name/Initials:

Either the full name or initials of the person/user who is recording the action

Once a meter has had 'Final Commission Performed' it is now classed as being commissioned in Optergy Software.

View and Edit Meter Configuration

Required Privilege: Configure Meters

To view and edit a meter configuration, click on  (Meter Menu) in the top left hand corner, then click 'Meter Configuration'. A new window will open with the current meters configuration.

Custom Display Parameters

There are some parameter that can be added to the meter display url to alter what is displayed on screen, each of these can have their value set to true or false:

showCumulativeGraphs

Whether or not to display the cumulative graphs (True by default)

performScaling

Whether to scale values or leave as raw values (True by default)

showBack

Whether or not to display a back button in the top left corner to navigate back to the previous page (False by default)

Eg. `http://{Portal Address}/meters/MeterDisplay.html?meter.id=1&showCumulativeGraphs=false&showBack=true&performScaling=false`

1.4. Weather Stations Displays

Required Privilege: Weather Displays

The 'Weather Station Displays' page is an automatically generated display, which displays the latest weather data gathered from the station if a weather station is correctly connected, configured and enabled.

All weather station displays include the following details:

- Basic temperature, humidity and air pressure readings
- Basic wind speed and direction readings
- Basic rainfall readings

If a weather station gathers hail data, then the display will also contain hail related data readings such as hail accumulated and intensity.

1.5. Live Displays

1.5.1. Display Access

Required Privilege: Configure Displays

The Display Access page helps manage which users and groups can access various display pages. You can manage access in two ways: by group/user or by display.

Note: When selecting or deselecting rows, multiple rows can be changed at once by holding the shift key. If a row is selected and the shift key is held when selecting the next row, all rows between the two will be selected; the same shift action can be done when deselecting a row.

Display Access by Group/User

This method provides a drop down list of groups and users and a list of displays currently in the database, with checkboxes beside each display showing current access. Select between groups and users by using the drop down box then check or uncheck the checkbox to give or remove display access for the chosen group. To keep any changes made, you must save them by selecting  (Save), you will be prompted before leaving if you forget.

Display Access by Display

This method provides a drop down list of all displays currently in the database, and a list of groups and users with checkboxes beside showing current access. Select between displays by using the drop down box, then check or uncheck the checkboxes to give or remove group/user access for the chosen display. To keep any changes made, you must save them by selecting  (Save), you will be prompted before leaving if you forget.

Note: Before selecting between any drop down list and moving between methods, if any changes were made you will be prompted to save first, you must choose between saving or discarding changes; if you choose to discard, all changes will be lost and will not appear later if you return.

1.5.2. Display Editor

Required Privilege: Display Editor

The display editor page allows live display files to be created, deleted and modified remotely.

View Display File

Click  (Open), from the drop down list select the display file to view and click 'Open'. The selected display will open on the main screen.

Create Display File

To create a new display file, click  (Add), and type the desired display file name into the popup box (do not type in the file extension). This will create a new display file with nothing in it.

Edit Display File

To edit a display file it first must be opened, see view instructions above. The display file will be loaded into the main text box on the screen, you can now make changes to the file. Click  (Save) to save changes.

If you make some changes to the display file that are unsaved, and decide you want to undo them all and start again, click  (Reload) to reload the display file from the server. Any changes will be lost.

Remove Display File

To remove a display file it first must be opened, see view instructions above. Once open click — (Remove), you will be asked to confirm removal before proceeding.

1.5.3. Display Manager

Required Privilege: Configure Displays

Display Manager allows displays to be added, removed and edited.

View Displays

All currently available displays on the system are shown in the main table. This shows each display name/filename, a brief description and how many users and groups currently have access to it.

Moving between pages

If there are a lot of displays they will be split over multiple pages, at the top of the list it will display how many pages of live displays there are. Ways to move between pages:

- Use ◀ and ▶ to move backward and forward one page at a time
- Use ⏪ and ⏩ to jump to the first and last page respectively.
- To go directly to page select the page number from the drop-down list

Filtering

The filter field at the top of the list allows filtering on the display name. To filter, enter (multiple text strings or numeric digits or a combination) into the filter box, any display that matches what was entered will appear in the list. Eg. To search for a live display with a certain name enter all of the name or any part of it into the filter. To reset the filter, simply remove all entered input in the filter box.

Filtering on Description

The display description can be filtered on by selecting the 'Also filter on Description' option. This is an additional option as filtering on description may take a considerably longer amount of time then not filtering of description.

Add Displays

Adding displays is an automatic process in which the system scans for display files that are not already on the Optergy Software Portal and adds them. This scan is started by clicking + (Scan).

When scanning you have the option to remove non-existent displays: This removes any displays from the database that are no longer on the windows file share. This is only recommended if there are display files that have been purposefully deleted from the file system.

Remove Displays

Any number of displays can be removed at once. This can be done by selecting the checkboxes or clicking the row of those displays to be deleted. Once all the displays to be deleted have been selected, click — (Remove). A confirmation message will appear to confirm the operation before proceeding.

Edit Display Access

To view and edit [Display access](#) click ⚙ (Display Access). This will take you to the display access page

which allows you to manage display access permissions.

1.6. Scrolling Display List

Required Privilege: View Scrolling Displays

Scrolling displays allow any Optergy Software pages and other web pages to be displayed as a slide show.

Add a display

Required Privilege: Administer Scrolling Displays

To add a scrolling display, click **+** (Add). The [Scrolling Display Administration](#) page will open prompting for details.

Edit a Scrolling Display

Required Privilege: Administer Scrolling Displays and have 'Edit' Access

To edit a scrolling display, click **✎** (Edit). The [Scrolling Display Administration](#) page will open prompting for details.

Remove a scrolling display.

Required Privilege: Must be the creator of the Scrolling Display

To remove a scrolling display, click **—** (Remove).

Start a Scrolling Display

To run/start a scrolling display in the current window, click **🖼️** (Start).

To run/start a scrolling display in a new window, click **🖼️🔖** (Start (popup)).

The scrolling display will then run in the [Scrolling Display Viewer](#).

1.6.1. Scrolling Display Administration

Required Privilege: Administer Scrolling Displays

There are a few configuration settings for a scrolling display:

Title

The title/name of the scrolling display

Description

A brief description about this scrolling display

Default timing

The default number of seconds each page in a scrolling display is shown for (this can be overridden on a page by page basis)

Shared

Indicates if this scrolling display can be seen by other users

Slides

To add a slide, click **+**.

To edit a slide, select the slide to be edited and click .

To delete a slide, select the slide to be deleted and click .

When adding or editing a slide, a popup will appear, and the following options are available:

Custom URL

Add in the full URL of the slide that you want to be displayed.

Display

Choose a display from the drop down menu

Meter Display

Choose a meter from the drop down menu

Dashboard

Choose a dashboard from a drop down menu

Timing

Choose to use the default timing in the Scrolling Display Administration Page by clicking the "Use Default Timing" box or set the time in seconds

To change the order of the slides, click on the slide and drag it into the desired order.

Click OK to add the slide.

Saving the Scrolling Display

To save the Scrolling Display click .

1.6.2. Scrolling Display Viewer

Required Privilege: View Scrolling Displays

Once a scrolling display has been started it will continue to loop through the displays to the browser window it closed. To enable full screen mode, press 'F12' on the keyboard.

Note: Automatic logout is disabled when a scrolling display is open.

To view scrolling display information or to perform actions on a running scrolling display, move the mouse to the middle at the top of the display, a hidden toolbar will appear. This toolbar does a number of things:

Slide number

The text to the left displays which slide is currently being displayed out of the total number of slides

Duration of Slide

The text to the right displays a countdown in seconds to the next slide change

Pausing Scrolling display

The scrolling display can be paused by clicking , and un-paused by clicking .

Skipping Slides

Use ◀ and ▶ to skip backwards and forwards between slides.

Disable Auto Hide Toolbar

By default the scrolling display toolbar will auto hide when the mouse is moved away. To pin the toolbar to remain there always click 🔴, click 🚫 to set it to auto hide again.

2. Report Management

2.1. Automatic Meter Reading

Required Privilege: View Utility Reports

The 'Automatic Meter Reading' page provides users with the ability to select individual meters and generate summary reports (in the form of a .csv or .pdf file) which contain detailed information about the selected meters. The report includes information such as a selected date (based on a time period selected by the user), the meter name, serial number, and the meter reading. These reports can be sent to users via email if desired.

Generating an Automatic Meter Reading Utility Summary

The AMR summary report generator is found in the 'Report Management' sub-menu. Click 'Automatic Meter Reading' to begin the process, then step through following steps:

1. Select from one to many meters to include in the summary. (will need to be selected to enable the side dock on the left hand side)
2. Select the time period that the summary report will include. When entering dates click the  to pick the dates.
3. Select the order in which the meters will be displayed in. The default will group the meters by their utility type.
4. Configure any custom unit scaling, this determines the unit that consumption/generation values will be displayed in. The default for each utility type is auto scaling.
5. To generate CSV version of the summary, click  (CSV) or to generate PDF version of the summary, click  (PDF)
6. The desired AMR report will now be generated

Emailing an Automatic Meter Reading Report

Open side dock (if closed) and click on the  (Email) to email a PDF version of the report. In the popup, click on the intended recipient(s) of the email. Multiple recipients can be selected. Click 'Email' to send the email.

Creating an Automatic Meter Reading Summary Report Email

There are two (2) available formats PDF and CSV.

1. Click  (Setup Auto Email)
2. A popup will appear, enter email configuration

Description

Brief description of report

Requested formats

Report formats that can be included in email

 PDF

 CSV

Recipients

Select users to receive the emailed report. Ensure that selected users have an email address

configured.

Email Customisations

Include custom email subject line

Allows for a custom email subject to be specified

Include custom email body text

Allows for a custom email body to be specified

3. Click 'Save'

Editing an Automatic Meter Reading Report Email

Option available in the Utility Report Email Management page.

Removing an Automatic Meter Reading Report Email

Option available in the Utility Report Email Management page.

2.2. Utility Report Email Management

Required Privilege: Manage Utility Reports

The 'Utility Report Management' page allows for the management of automatic utility report emailing. On load it will display all the currently configured auto reports.

Creating an Auto Utility Report Email

This is a report configured using the 'Utility Report Wizard'. There are three (3) available formats PDF, CSV and web (HTML).

1. Click **+** (Add)
2. Select the email report type 'Utility Report'
3. This will redirect to the Utility Report Wizard, which allows the report to be emailed to be specified. Follow the 'Generating a Utility Report' steps in [Utility Report Wizard](#)
4. Once utility report has been generated, click  (Setup Auto Email)
5. A popup will appear, enter email configuration

Description

Brief description of report

Requested formats

Report formats to be included in email

 PDF

 CSV

 Web (HTML)

Recipients

Select users to receive the emailed report. Ensure that selected users have an email address configured.

Email Customisations

Include custom email subject line

Allows for a custom email subject to be specified

[Include custom email body text](#)

Allows for a custom email body to be specified

6. Click 'Save'

Creating an Auto Utility Summary Report Email

This is a report configured using the 'Utility Summary Report' page. There are two (2) available formats PDF and CSV.

1. Click [+](#) (Add)
2. Select the email report type 'Utility Report Summary'
3. Click [✉](#) (Setup Auto Email)
4. A popup will appear, enter email configuration

Description

Brief description of report

Requested formats

Report formats that can be included in email

[PDF](#)

[CSV](#)

Recipients

Select users to receive the emailed report. Ensure that selected users have an email address configured.

Email Customisations

[Include custom email subject line](#)

Allows for a custom email subject to be specified

[Include custom email body text](#)

Allows for a custom email body to be specified

5. Click 'Save'

Creating an Auto Energy Logs(s) CSV Email

This report email type is a very simple to configure report for CSV format only. This option is suggested if you require to email csv reports that include a large number of energy logs/meters.

1. Click [+](#) (Add)
2. Select the email report type 'Energylog(s) CSV'
3. This will redirect to the Energy Log Management page, which list all available energy logs
4. Select the energy logs to be included in the email csv
5. Click [✉](#) (CSV Auto Email)
6. Configure CSV options

Time Period

The time period that the csv report is to cover

Data Output

Select if the data report is to be raw or collated

CSV Output

If only one energy log has been selected then this option is irrelevant. If multiple energy logs have been selected, are they all to appear in one csv or a csv per energy log

7. Click on 'Configure' to configure email option; a popup will appear, enter email configuration

Description

Brief description of report

View Report

Click  (View in New Window) button, to view the generated report as per the current email configuration.

Unit Scaling

Click  (Configure Unit Scaling) button, to customise the units each included energylog is reported in.

Energy Logs

Click  (Configure Energy Logs) button, to customise the energy logs which are included in the report.

Energy log Order

Click  (Configure Ordering) button, to customise the order in which the included energy logs are displayed. If the default ordering option is not checked, then the 'Order By Name', 'Order By Parameter' and 'Order By Utility Type' options must have their unique ordering preference specified from 1 to 3.

Recipients

Select users to receive the emailed report. Ensure that selected users have an email address configured.

Email Customisations

Include custom email subject line

Allows for a custom email subject to be specified

Include custom email body text

Allows for a custom email body to be specified

8. Click 'Save'

Editing an Auto Utility Report Email (or Utility Summary Report Email)

To edit an existing auto report email configuration:

1. Select auto email from list
2. Click  (Edit)
3. Make desired changes. See above for field definitions
4. Click 'Done'

Removing an Auto Utility Report Email (or Utility Summary Report Email)

To remove an auto report email configuration:

1. Select auto email from list
2. Click  (Remove)
3. A confirmation popup will appear, click 'Remove' to proceed

2.3. Utility Report Library

Required Privilege: View Utility Reports

The utility report library stores all the Optergy Software Standard reports that come with a portal as well as portal specific reports that have been generated and saved.

On the left side of the screen, there are fields that allow for switching between Optergy Software standard reports and saved portal reports. Each section will have its list of reports sorted by title.

Viewing Optergy Software Standard Reports

1. Switch the sort type to 'Optergy Software Standard Reports'
2. The report list below, will be refreshed with all the available standard reports
3. Select report
4. Information about the report and a sample will be displayed on screen
5. To view a standard report with portal specific energy logs, click the  (View In Wizard) button
6. Select Energylogs (meters) to be included in report
 1. Select Utility Type
 2. If Electricity select one of the following options: 'Activity Energy', 'Apparent' or 'Reactive'
 3. Select energy logs/meters **Note:** Multiple can be selected by either selecting and dragging, or holding Shift/Ctrl and clicking individual items in the list
 4. Click 'Done' once all desired are highlighted
 5. All selected energy logs are displayed in the 'Selected Energylogs' area
 6. Click "Next" to continue
7. Click 'Generate Report'
8. The desired utility report will now be generated, see [Viewing Utility Reports](#)

Viewing Portal Saved Reports

1. Switch the sort type to 'Saved Portal Reports'
2. The report list below, will be refreshed with all the available reports saved on the portal
3. Select report
4. Information about the report and a sample will be displayed on screen
5. To view a saved portal report within the [Utility Report Wizard](#), click the  (View In Wizard) button
6. The desired utility report will now be generated within the wizard page

Exporting to PDF

1. Switch the sort type to 'Saved Portal Reports'
2. The report list below, will be refreshed with all the available reports saved on the portal
3. Select the report to export
4. Information about the report and a sample will be displayed on screen
5. To export a saved portal report to PDF, click  (PDF). The desired utility report PDF will now be generated

Editing Portal Saved Reports

Note: Only saved portal reports can have their details updated

1. Switch the sort type to 'Saved Portal Reports'
2. Select the specific portal report to be updated
3. Information about the report and a sample will be displayed on screen
4. The report title and description can be updated by clicking  (Edit)
5. Make desired changes
6. Click 'Update' to save the entered changes

Duplicating Portal Saved Reports

1. Click the  (Duplicate) button
2. Select the library item to copy from the list of currently saved items
3. Enter a new title and description for the duplicated library item
4. Click 'Duplicate' to create a copy of the selected library item

Removing a Saved Portal Report

1. Switch the sort type to 'Saved Portal Reports'
2. Select the specific portal report to be removed
3. Information about the report and a sample will be displayed on screen
4. To remove, click  (Remove)
5. A confirmation popup will appear, click 'Remove' to proceed

Generating a custom report using the Utility Report Wizard

To open up a step by step wizard to create a custom report using the [utility report wizard](#), click  (Wizard).

2.4. Utility Report Wizard

Required Privilege: View Utility Reports

The Utility Report Wizard is a step by step process which allows for a very customised viewing of utility meter data.

Generating a Utility Report

The utility report wizard is found in the 'Report Management' sub-menu. Click 'Utility Report Wizard' to begin the generation process, then follow each step.

1. Select chart type by clicking on its related button/image
 - Bar Chart
 - Line Chart
 - Note:** This chart type will display collated values by default. The raw logged data can only be viewed for line consumption reports.
 - Scatter Chart
 - Area Chart
 - Pie Chart
 - Ring Chart
 - Tabular List
2. Select report type

Consumption/Generation

Shows utility usage/generation over a specified time period

Demand

Demand reporting is only available for electricity meters. Shows the rate of use over time

Greenhouse Gas (GHG) Emissions

Shows how much carbon has been emitted according to the utility usage

Note: Before selecting this report type, ensure a region is specified via the [System Time Configuration](#) page.

Degree Days

Shows the severity and duration of cold weather

Occupancy Analysis

Displays utility usage/generation during occupied and unoccupied times. For this report to work, a schedule will need to be selected that has the weekly schedule populated detailing the occupied and unoccupied times. 'On' times indicate occupied and anything outside of that is unoccupied. Any Calendar Special Events on the schedule will also be taken into consideration, they will have a higher priority than weekly events; 'On' times indicate Occupied and 'Off' times indicate Unoccupied. Schedules are able to be hosted on the Optergy Software portal if a schedule cannot be created on a global device.

Trendlog Comparison

Displays utility usage/generation against logged trend log data. For this report to work, at least one trend log must be selected.

Tariff Costs

Displays costs charged using a selected utility tariff. For this report to work, a tariff with valid charges on the same utilities as the selected energy logs must be selected.

3. Select Energy Logs (meters) to display

1. Select Utility Type
2. If Electricity select 'Activity Energy', 'Apparent' or 'Reactive'
3. Select energy logs/meters

Note: Multiple can be selected by either selecting and dragging, or holding Shift/Ctrl and clicking individual items in the list

Note: To filter the list of energy logs, simply type in part of a energylog name in the filter box above the list, and any matches will appear in the list below

4. Click 'Done' once all desired are highlighted
5. All selected energy logs are displayed in the 'Selected Energylogs' area
6. Click "Next" to continue

4. Configure Time Period

Time Period

The time period that the utility report will include. When entering dates click the  to pick the dates.

For the 'Last' period selection, there is an extra 'from' option. This option lets the user decide if the report will go backwards from the current point in time or from the end of the current period (calendar period). Eg If the current date is 20/06/2014 and the report is 'Last 2 Month'

a from option of 'Now' will produce a report from 20/04/2014 - 20/06/2014, a from option of 'End of Period' will produce a report from 01/05/2014 - 20/06/2014 (30/06/2014).

Interval

How the usage over the selected time period will be broken up/grouped by

Note: If the selections so far include the line chart option and the consumption report type option, then there will be an additional option to display the raw samples.

Note: The options for the intervals will be based on how big a report you are generating. For example, if you generate a report for more than a year then only the month and year interval option will be enabled. If you only generate a report for a day then only the hour and day option will be available. A week, then only week and day will be enabled, and so on.

Comparison

Compare previous period(s):

Tick this to include time period comparison usage. The number of previous periods to include can be chosen. This is only available when 'This' and 'Previous' time periods have been selected

Compare with previous years(s):

Tick this to include a comparison of the selected period with the same period previous years. Eg If 'This Month' is chosen and this option is ticked, the graph will display this month and the same month in the previous year. The number of previous years to include can be chosen. This is only available when 'This', 'Previous' and 'Last 1-12 Months' time periods have been selected

Commissioning

Tick this if only data from commissioning date should be shown. If the selected energylog/meter has not been marked as commissioned in Optergy Software then all data will be displayed.

5. Click 'Finish' to generate report
6. The desired utility report will now be generated, see [Viewing Utility Reports](#)

2.5. Viewing Utility Reports

Required Privilege: View Utility Reports

Utility Reports allow users to view utility meter data and customise the viewing experience. There are three formats available for utility reports: web (graphical), PDF and CSV.

Generating a Web Graph Utility Report

A web graph utility report displays the desired utility information as a graph on a page within Optergy Software. There are two ways to generate such a report:

- Through the Utility Report Wizard. See [Utility Report Wizard](#)
- Through the Utility Report Library. See [Utility Report Library](#)

With both of these ways, once the steps explained in each set of documentation are followed, they will redirect to Optergy Software's Utility Report Graph page. This page displays the desired utility graph, as well as provides the ability to customise the report, save the report for future use and export to PDF and CSV.

Change Utility Report Graph options

Once a utility report has been generated, there are a number of options available to allow the graph to be reconfigured and customised.

Available options:

Time

Allows for the graph time period to be altered. Use the drop down menus to select the time period.

Click  (Date Picker) to select dates needed.

Previous/Next

Allows for quick time period navigation.

Energy Log

Allows the energy logs/meters included in the graph to be altered and customised. To add an energylog click  (Add), select an energylog and click 'Energylog'.

Note: To filter the list of energy logs, simply type in part of an energylog name in the filter box above the list, and any matches will appear in the list below.

To remove an energylog, select it and click  (Remove). To customise the label or colour of an energylog, double click the energylog and fill in the options.

Hierarchy

Allows the energy logs/meters included in the graph to be altered, based on their parent/child hierarchy. If an aggregate calculation meter has been selected, a drill down of "1" will display the usage of all the associated (component) meters that make up the selected aggregate meter. 'Stack children next to parent(s)' option when ticked will display the parent meter to the left and its children stacked to the right.

Click On Chart For Hierarchy

Pie and Ring charts can be clicked (mouse left click) to view meter hierarchy.

Click unzoom  (Un-zoom) to return to the previous hierarchy level. For example meter A. has child meter B. and meter B. has child meter C.

If you have selected the energy log of meter A. in the report wizard to view it as a Pie chart.

You can click over the pie chart displayed to see the next level of hierarchy which in this case is meter B.

Upon click the system will show the data for child meter B. Next click will take you to meter C.

Chart

Allows the chart type to be altered

E.g. Bar graph, line graph, pie chart etc.

Dimension

Allows the chart's dimension to be altered

E.g. 2D or 3D.

Report

Allows the report type, 'Consumption/Generation', 'Demand', 'GHG Emissions', 'Degree Days' or 'Trendlog Comparison', to be altered.

Target

Allows comparison, budget or forecast lines to be graphed.

Range

Allows comparison, budget or forecast bands to be graphed.

Units

Allows user customisation of the units the energy logs are displayed in.

Legend

Allows for the graph legend to be hidden or its location to be specified.

Colours

Allows for the customisation of graph colours, such as headings, legend and axis'. Click on the box to choose a colour for the respective part of the chart.

Title

Allows the report and graph headings to be altered and customised. Tick the "Include main heading" to include a main heading (The same can be done for the sub heading). Click the "Use Default" button to use the default heading, click Set custom to specify a custom heading.

Text Style

Allows for the customisation of report and graph text size and styles.

Label

Allows for the customisation of graph label positions. Tick the "Show chart labels" to specify where the value label will be positioned in relation to the chart plot.

Chart Axes

Allows for the domain and range axes on the chart to be enabled or disabled. Tick the "Display domain axis" option to set the domain axis visible on the chart plot. Tick the "Display range axis" option to set the range axis visible on the chart plot. Tick 'Custom Range Max' option to specify the maximum usage displayed on the chart.

Zoom

Bar, Line, Area and Scatter charts, that do not have the 'Show Comparison' option ticked, allow for users to zoom in but clicking the bar, dot or area that represents the time period to be zoomed in on. Zooming can't not go any further than a day. Once zoomed in, un-zoom by clicking  (Un-zoom).

Exporting to PDF

Export the current utility report to PDF by opening side dock (closed by default) and clicking  (PDF). Select if page orientation should be landscape or portrait. Click 'Export'.

Exporting to CSV

Export the current utility report to CSV by opening side dock (closed by default) and clicking  (CSV). Select if you will like the data collated like seen on screen or the raw data samples. Click 'Export'.

Note: Raw samples will be disabled if you select the before and after time periods or if you select time periods greater than 1 year.

Saving a Utility Report

The currently displayed utility report can be saved and added to the utility report library so it can be easily retrieved in the future. Adding a report to the library will save all the meters included in the report, along with all customisations made.

1. Open side dock (if closed)
2. Click  (Add to Library)
3. In the popup enter the title and description (optional)
4. Select whether the Utility Report Library item can be modified by others
5. Click 'Add' to add the Utility Report to the Library

To retrieve report in the future see [Utility Report Library](#).

Emailing a Utility Report

Open side dock (if closed) and click on the  (Email) to email the report. In popup click on the intended recipient of the email. Multiple recipients can be selected. Click 'Email' to send the email.

Setting up Automatic Utility Report Email

Utility Report can be setup for auto emailing by clicking  (Setup Auto Email). See [Utility Report Email Management](#) for further details.

2.6. Utility Summary Report

Required Privilege: View Utility Reports

The utility summary report allows for customised viewing of a summary of a building meter performance.

Generating a Utility Summary

The utility summary report generator is found in the 'Report Management' sub-menu. Click 'Utility Summary Report' to begin the process, then step through following steps:

1. Enter a customised report title (optional)
2. Select the meters to include in the summary. Both consumption and generation will appear for any selected meters that log both.
3. Select the time period that the summary report will include. When entering dates click the  to pick the dates.

For the 'Last' period selection, there is an extra 'from' option. This option lets the user decide if the report will go backwards from the current point in time or from the end of the current period (calendar period). Eg If the current date is 20/06/2014 and the report is 'Last 2 Month' a from option of 'Now' will produce a report from 20/04/2014 - 20/06/2014, a from option of 'End of Period' will produce a report from 01/05/2014 - 20/06/2014 (30/06/2014).

4. Select the layout that the calculated meter results will be displayed in.

Summary Table

Displays all meter data in one table

Table Per Meter

Each meter has its own data table

Include Time Period Breakdown

Whether or not to include breakdown data over the selected time period or just the period total

Include Meter Readings

Whether or not to include the physical meter reading at the start and end of the selected

time period

Include Tariff Costings

Whether or not to apply the selected tariff's charges to the metered data during the selected time period

5. Select the order in which the meters will be displayed in. The default will group the meters by their utility type.
6. Configure any custom unit scaling, this determines the unit that consumption/generation values will be displayed in. The default for each utility type is auto scaling. Click 'Apply custom units to meter readings' to also apply any specified custom units to the meter readings (cumulative values); only available when 'Include meter Readings' is selected.
7. To generate CSV version of the summary, click  (CSV) or to generate PDF version of the summary, click  (PDF)
8. The desired performance summary report will now be generated

Emailing a Utility Summary Report

Open side dock (if closed) and click on the  (Email) to email a PDF version of the report. In the popup, click on the intended recipient(s) of the email. Multiple recipients can be selected. Click 'Email' to send the email.

Creating an Auto Utility Summary Report Email

There are two (2) available formats PDF and CSV.

1. Click  (Setup Auto Email)
2. A popup will appear, enter email configuration

Description

Brief description of report

Requested formats

Report formats that can be included in email

-  PDF
-  CSV

Recipients

Select users to receive the emailed report. Ensure that selected users have an email address configured.

Email Customisations

Include custom email subject line

Allows for a custom email subject to be specified

Include custom email body text

Allows for a custom email body to be specified

3. Click 'Save'

Editing an Auto Utility Summary Report Email

Option available in the Utility Report Email Management page.

Removing an Auto Utility Report Email

Option available in the Utility Report Email Management page.

3. Building Performance

3.1. Building Performance Reports Email Management

Required Privilege: Building Performance Reporting

The 'Building Performance Reports Email Management' page allows for the management of automatic performance report emailing. On load it will display all the currently configured auto reports.

Creating an Auto Building Performance Report Email

This is available for all reports configured and stored in the building performance library. Selected performance reports have up to 3 formats available; PDF, CSV and web (HTML).

1. Click **+** (Add)
2. A popup will appear, enter email configuration

Description

Brief description of report

Requested formats

Report formats to be included in email

-  PDF
-  CSV
-  Web (HTML)

Library Report:

Select the stored building performance library report from the list. Click  to load the building performance report library item in a new window.

Recipients

Select users or groups to receive the emailed report. Ensure that selected users have an email address configured.

Email Customisations

Include custom email subject line

Allows for a custom email subject to be specified

Include custom email body text

Allows for a custom email body to be specified

Include custom filename

Allows for a custom filename for the generated reports to be specified

3. Click 'Save'

Editing an Auto Building Performance Report Email

To edit an existing auto report email configuration:

1. Select an auto email from the list
2. Click  (Edit)
3. Make the desired changes. See above for field definitions

4. Click 'Done' to save changes

Removing an Auto Building Performance Report Email

To remove an auto report email configuration:

1. Select an auto email from the list
2. Click — (Remove)
3. A confirmation popup will appear, click 'Remove' to proceed

3.2. Building Performance Reports Library

Required Privilege: Building Performance Reporting

The building performance reports library stores all the portal specific performance reports that have been generated and saved.

On the left side of the screen, there is a list containing all the saved portal reports, sorted by title.

Viewing Saved Portal Reports

1. Select report to view, by clicking on it in the list on the left of the page
2. Information about the report and a sample will be displayed on screen
3. To view a saved portal report within the report's specific wizard, click  (View In Wizard)
4. The desired building performance report will now be generated within the wizard page

Editing Portal Saved Reports

Note: Users are only permitted to update library items which they themselves have created or library items which are marked as "Modifiable By All"

1. Select report to update, by clicking on it in the list on the left of the page
2. Information about the report and a sample will be displayed on screen
3. The report title and description can be updated by clicking  (Edit)
4. Make the desired changes
5. Click 'Update' to save the entered changes

Duplicating Portal Saved Reports

1. Click the  (Duplicate) button
2. Select the library item to copy from the list of currently saved items
3. Enter a new title and description for the duplicated library item
4. Click 'Duplicate' to create a copy of the selected library item

Removing a Saved Portal Report

1. Select report to remove, by clicking on it in the list on the left of the page
2. Information about the report and a sample will be displayed on screen
3. To remove, click — (Remove)
4. A confirmation popup will appear, click 'Remove' to proceed

Generate Custom Building Performance Report

To open up a step by step wizard to create a custom report, click  (Go To Wizard). A popup will appear which will direct to one of the following report wizards:

- The '[Progress Against Budget](#)' wizard
- The '[Space Report](#)' wizard
- The '[Space Comparison Report](#)' wizard
- The '[Performance Summary Report](#)'

3.3. Performance Summary Report

Required Privilege: Building Performance Reporting

The Performance Summary Report allows for customised viewing of a summary of building/space performance in relation to both usage and savings.

Generating a Performance Summary Report

The performance summary report generator is found in the 'Building Performance' sub-menu. Click 'Performance Summary Report' to begin the process, then step through the following steps:

1. Enter a customised report title (optional)
2. Select the spaces to include in the summary
3. Select the utility types to include in the summary
4. Select the time period report will cover
5. Select values to include in the summary

Savings

If ticked will include the calculated savings for each space
When including savings, select the method of calculation

Previous Period

Calculated by comparing the selected period against the previous period. Eg Comparing July this year against June this year

Same Period Previous Year

Calculated by comparing the selected period against the same period the previous year. Eg Comparing July this year against July last year
Also select the unit savings will be displayed in

Consumption

If ticked will include the total usage for the select time period for each space

Consumption Per Area

If ticked will include the total usage divided by the area for the select time period for each space. This data will only appear if the 'Area' has been configured in the space, see [Spaces](#).

Associated Cost

If ticked will include the cost associated with total usage for the select time period for each space, based on the tariff that has been configured in the space. This data will only appear if a 'Tariff' as been associated with the space or any parent space, see [Spaces](#).

Note: Any 'Peak Demand' charges included in the tariff will be excluded when calculating cost for this report, the rest of the charges will be included.

6. Select whether to include 'Comparison' values in the report

7. Select how the summary report will be grouped
8. To generate PDF version of the summary, click  (PDF)
9. The desired performance summary report will now be generated

3.4. Progress Against Budget

3.4.1. Progress Against Budget Wizard

Required Privilege: Building Performance Reporting

The 'Progress Against Budget' wizard is a step by step process which allows for customised viewing of projected forecast data against meter data.

Generating a Progress Against Budget Report

The progress against budget wizard is found in the 'Building Performance' sub-menu. Click 'Progress Against Budget' to begin the generation process, then step through the following steps:

1. Select utility type by clicking on its related button/image
2. Select a main energylog (meter) to display. Both consumption and generation are available for selection for meters that log both.
3. Select a forecast energylog (meter) to display and compare against the main energylog (meter)
4. Select a monthly based time period
5. Click 'Finish' to generate report
6. The desired progress against budget report will now be generated, see [Viewing Progress Against Budget Reports](#)

3.4.2. Viewing Progress Against Budget Reports

Required Privilege: Building Performance Reporting

The Progress against budget wizard allows users to view and compare logged utility meter data and forecast data projections, with customisable viewing options.

There are three (3) formats available:

- Web (graphical)
- PDF
- CSV

Generating a Progress Against Budget Report

A web graph progress against budget report displays the desired forecast comparison information as a graph on a page within Optergy Software. In order to generate such a report, follow the steps in the [Progress Against Budget Wizard](#). Once the wizard has been followed, the graph output will redirect to the Optergy Software's progress against budget graph page. This page displays the desired progress against budget graph, as well as provides the ability to customise the report, and export to PDF and CSV. Change Progress Against Budget Graph Options

Once a progress against budget report has been generated, there are a number of options available to

allow the graph to be reconfigured and customised.

Available options:

Time

Allows for the graph time period to be altered. Use the drop down menus to select the time period.

Energylog

Allows the energy logs (meters) included in the graph to be altered. To change the main energylog or comparison forecast energylog (meter), click  (Energylog). Select the main energylog and/or forecast energylog to view and click 'Update Energy Logs'.

Prediction

Enables or disables the ability for energy logs with missing data periods, to optionally have their data usage estimated. Select the calculation method that will be used to generate the missing data, and click 'Update'.

Note: Predicted accumulated data will appear as - - - - - (dashed version of the line)

Units

Allows user customisation of the units the energy logs are displayed in.

Colours

Allows for the customisation of graph colours, such as headings, legend and axis'. Click on the Box to choose a colour for the respective part of the chart.

Text Style

Allows for the customisation of report and graph text size and styles.

Title

Allows the report and graph headings to be altered and customised. Tick the 'Include main heading' to include a main heading (the same can be done for the sub heading). Click the 'Use Default' button to use the default heading, click 'Set Custom' to specify a custom heading.

Exporting to PDF

Export the current report to PDF by opening side dock (closed by default) and clicking  (PDF). Select if page orientation should be landscape or portrait. Click 'Export'.

Exporting to CSV

Export the current report to CSV by opening side dock (closed by default) and clicking  (CSV).

Saving a Progress Against Budget Report

The currently displayed budget report can be saved and added to the building performance reports library so it can be easily retrieved in the future. Adding a report to the library will save the energy logs included in the report, along with any and all customisations made.

1. Open side dock (if closed)
2. Click  (Add to Library)
3. In the popup enter the title and description (optional)
4. Select whether the space report library item can be modified by others
5. Click 'Add' to add the progress against budget report to the library

To retrieve report in the future see [Building Performance Reports Library](#).

Setting up Automatic Space Comparison Report Email

A space comparison report can be set up for auto emailing. See [Building Performance Reports Email Management](#) for further details.

3.5. Space Report

3.5.1. Space Report Wizard

Required Privilege: Building Performance Reporting

The 'Space Report Wizard' is a step by step process which allows for a very customised viewing of a spaces meter data and (possible) savings.

Generating a Space Report

The space report wizard is found in the 'Building Performance' sub-menu. Click 'Space Report Wizard' to begin the generation process, then follow each step.

1. Select chart type by clicking on its related button/image
2. Select space to generate the report on
3. Indicate whether or not to breakdown the selected space by meter or display as a space total
4. Select the utility type in which the above selected space's meters will be displayed
5. Indicate whether or not to display 'Savings'
 1. Check the 'Savings' box if this is to be included in the report
 2. Select the unit in which the calculated savings will be displayed as
 - Percentage (%)
 - Metering Unit (kWh, l, m³, etc)
 3. Select the time period the calculations are to span
 4. Select the calculation period the calculations are to be based on
 5. Click "Next" to continue
6. Configure Time Period

Time Period

The time period that the space report will include. When entering dates click the  to pick the dates.

For the 'Last' period selection, there is an extra 'from' option, this option lets the user decide if the report will go backwards from the current point in time or from the end of the current period. Eg If the current date is 20/06/2014 and the report is 'Last 2 Month' a from option of 'Now' will produce a report from 20/04/2014 - 20/06/2014, a from option of 'End of Period' will produce a report from 20/05/2014 - 20/06/2014.

Comparison

Compare previous period(s):

Tick this to include time period comparison usage. The number of previous periods to include can be chosen. This is only available when 'This' and 'Previous' time periods have been selected

Compare with previous year(s):

Tick this to include a comparison of the selected period with the same period previous years. Eg If 'This Month' is chosen and this option is ticked, the graph will display this month and the same month in the previous year. The number of previous years to include can be chosen. This is only available when 'This' and 'Previous' time periods have been selected

Commissioning

Tick this if only data from commissioning date should be shown. If the selected space's energylogs/meters have not been marked as commissioned in Optergy Software then all data will be displayed.

7. Click 'Finish' to generate report
8. The desired space report will now be generated, see [Viewing Space Reports](#).

3.5.2. Viewing Space Reports

Required Privilege: Building Performance Reporting

Space report wizard allows users to view utility meter data and (possibly) savings for a specific space and customise the viewing experience. There are two (2) formats available for space reports: web (graphical), and PDF.

Generating a Web Graph Space Report

A web graph space report displays the desired utility meter and (possible) savings information as a graph on a page within Optergy Software. There are two ways to generated such a report:

- Through the Space Report Wizard. See [Space Report Wizard](#)
- Through the Building Performance Reports Library. See [Building Performance Reports Library](#)

With both of these ways, once the steps explained in each set of documentation are followed, they will redirect to Optergy Software's Space Report Graph page. This page displays the desired report, as well as provides the ability to customise the report, save the report for future use and export to PDF.

Change Space Report Graph options

Once a space report has been generated, there are a number of options available to allow the graph to be reconfigured and customised.

Available options:

Time

Allows for the graph time period to be altered. Use the drop down menus to select the time period.

Click

(Date Picker) to select dates needed.

Previous/Next

Allows for quick time period navigation.

Chart

Allows the chart type to be altered

E.g. Bar graph, line graph, pie chart etc.

Space

Allows the space and the type of utility meters displayed for the space to be altered

Performance

Allows the ability to display or not to display savings and customise its calculations

Dimension

Allows the chart's dimension to be altered
E.g. 2D or 3D.

Units

Allows user customisation of the units the spaces are displayed in.

Legend

Allows for the graph legend to be hidden or its location to be specified.

Colours

Allows for the customisation of graph colours, such as headings, legend and axis'. Click on the box to choose a colour for the respective part of the chart.

Title

Allows the report and graph headings to be altered and customised. Tick the "Include main heading" to include a main heading (The same can be done for the sub heading). Click the "Use Default" button to use the default heading, click Set custom to specify a custom heading.

Text Style

Allows for the customisation of report and graph text size and styles.

Label

Allows for the customisation of graph label positions. Tick the "Show chart labels" to specify where the value label will be positioned in relation to the chart plot.

Chart Axes

Allows for the domain and range axes on the chart to be enabled or disabled. Tick the "Display domain axis" option to set the domain axis visible on the chart plot. Tick the "Display range axis" option to set the range axis visible on the chart plot. Tick 'Custom Range Max' option to specify the maximum usage displayed on the chart.

Zoom

Bar, Line, Area and Scatter charts, that do not have the 'Show Comparison' option ticked, allow for users to zoom in but clicking the bar, dot or area that represents the time period to be zoomed in on. Zooming can't not go any further than a day. Once zoomed in, un-zoom by clicking  (Un-zoom).

Exporting to PDF

Export the current space report to PDF by opening side dock (closed by default) and clicking  (PDF).

Saving a Space Report

The currently displayed space report can be saved and added to the building performance reports library so it can be easily retrieved in the future. Adding a report to the library will save the space included in the report, along with any and all customisations made.

1. Open side dock (if closed)
2. Click  (Add to Library)
3. In the popup enter the title and description (optional)

4. Select whether the space report library item can be modified by others
5. Click 'Add' to add the space report to the library

To retrieve report in the future see [Building Performance Reports Library](#).

Emailing a Space Report

Open side dock (if closed) and click on the  (Email) to email the report. In popup click on the intended recipient or multiple recipients to send the email to. Click 'Email' to send a PDF version of the report to the selected recipients.

Setting up Automatic Space Report Email

A space report can be set up for auto emailing. See [Building Performance Reports Email Management](#) for further details.

3.6. Space Comparison Report

3.6.1. Space Comparison Report Wizard

Required Privilege: Building Performance Reporting

The 'Space Comparison Report Wizard' is a step by step process which allows for a very customised comparison of space's meter data.

Generating a Space Comparison Report

The space comparison report wizard is found in the 'Building Performance' sub-menu. Click 'Space Comparison Report Wizard' to begin the generation process, then follow each step.

1. Select the report type by clicking on its related button/image

Comparison

Graphs multiple spaces usage over a specified time period

Ranking

Ranks the selected spaces against each other, ranking each space in order from best performing to worst performing.

There are multiple option in which to rank on:

By Usage

Ranks based on the total usage, for the select time period, for each space

By Usage Used Per Space Size (Usage Per Area)

Ranks based on the total usage divided by the area, for the select time period, for each space. This data will only appear if the 'Area' has been configured in the space, see [Spaces](#).

By Cost

Ranks based on the cost associated with total usage, for the selected time period, for each space, based on the tariff that has been configured in the space. This data will only appear if a 'Tariff' as been associated with the space or any parent space, see [Spaces](#).

Note: Any 'Peak Demand' charges included in the tariff will be excluded when calculating cost for this report, the rest of the charges will be included.

By Savings

Ranks based on the calculated savings for each space
when ranking on savings, select the method of calculation

Previous Period

Calculated by comparing the selected period against the previous period. Eg
Comparing July this year against June this year

Same Period Previous Year

Calculated by comparing the selected period against the same period the previous
year. Eg Comparing July this year against July last year

Also select the unit savings will be displayed in

2. Select chart type by clicking on its related button/image
3. Select the type of spaces to generate the report on
4. Select the utility type in which the above selected space's meters will be displayed
5. Configure Time Period

Time Period

The time period that the space report will include. When entering dates click the  to pick the dates.

For the 'Last' period selection, there is an extra 'from' option, this option lets the user decide if the report will go backwards from the current point in time or from the end of the current period. Eg If the current date is 20/06/2014 and the report is 'Last 2 Month' a from option of 'Now' will produce a report from 20/04/2014 - 20/06/2014, a from option of 'End of Period' will produce a report from 20/05/2014 - 20/06/2014.

Comparison

Compare previous period(s):

Tick this to include time period comparison usage. The number of previous periods to include can be chosen. This is only available when 'This' and 'Previous' time periods have been selected.

Compare with previous year(s):

Tick this to include a comparison of the selected period with the same period previous years. Eg If 'This Month' is chosen and this option is ticked, the graph will display this month and the same month in the previous year. The number of previous years to include can be chosen. This is only available when 'This' and 'Previous' time periods have been selected

Commissioning

Tick this if only data from commissioning date should be shown. If the selected space's energylogs/meters have not been marked as commissioned in Optergy Software then all data will be displayed.

6. Click 'Finish' to generate report
7. The desired comparison report will now be generated, see [Viewing Space Comparison Reports.](#)

3.6.2. Viewing Space Comparison Reports

Required Privilege: Building Performance Reporting

The space comparison report wizard allows users to compare utility meter data and (possibly) rank the results and customise the viewing experience. There are two (2) formats available for space reports: web (graphical), and PDF.

Generating a Web Graph Space Comparison Report

A web version of the space comparison report displays the desired utility meter data as a graph if the 'Comparison' option is selected, otherwise a ranking of the spaces will be displayed in a text format. There are two ways to generated such a reports:

- Through the Space Comparison Report Wizard. See [Space Comparison Report Wizard](#)
- Through the Building Performance Reports Library. See [Building Performance Reports Library](#)

With both of these ways, once the steps explained in each set of documentation are followed, they will redirect to Optergy Software's 'Space Comparison Report' wizard page. This page displays the desired report, as well as provides the ability to customise the report, save the report for future use and export to PDF.

Change Space Comparison Report Graph options

Once a space comparison report has been generated, there are a number of options available to allow the graph to be reconfigured and customised.

Available options:

Time 📅

Allows for the graph time period to be altered. Use the drop down menus to select the time period. Click 📅 (Date Picker) to select dates needed.

Previous/Next ⬅ ➡

Allows for quick time period navigation.

Report 📄

Allows the report type, 'Comparison' or 'Ranking', to be altered.

Chart 📊

Allows the chart type to be altered
E.g. Bar graph, line graph, pie chart etc.

Space 🏠

Allows the type of spaces and the type of utility meters displayed for the space to be altered

Ranking Layout ⬇

Allows the layout display to be toggled between an extended version and compacted version.

Note: Only available for 'Ranking' reports

Space Type ⓘ

Allows the space type text to be toggled between being shown or hidden.

Note: Only available for 'Ranking' reports

Item Width ⬅ ➡

Allows for the width of the ranking widget to be customised.

Note: Only available for 'Ranking' reports when set to compacted version.

Limit

Allows the number of results returned to be limited to a chosen number
E.g. display only the top 5 spaces

Dimension /

Allows the chart's dimension to be altered
E.g. 2D or 3D.

Units

Allows user customisation of the units the spaces are displayed in.

Legend

Allows for the graph legend to be hidden or its location to be specified.

Colours

Allows for the customisation of graph colours, such as headings, legend and axis'. Click on the box to choose a colour for the respective part of the chart.

Title

Allows the report and graph headings to be altered and customised. Tick the "Include main heading" to include a main heading (The same can be done for the sub heading). Click the "Use Default" button to use the default heading, click Set custom to specify a custom heading.

Text Style

Allows for the customisation of report and graph text size and styles.

Label

Allows for the customisation of graph label positions. Tick the "Show chart labels" to specify where the value label will be positioned in relation to the chart plot.

Chart Axes

Allows for the domain and range axes on the chart to be enabled or disabled. Tick the "Display domain axis" option to set the domain axis visible on the chart plot. Tick the "Display range axis" option to set the range axis visible on the chart plot. Tick 'Custom Range Max' option to specify the maximum usage displayed on the chart.

Zoom

Bar, Line, Area and Scatter charts, that do not have the 'Show Comparison' option ticked, allow for users to zoom in but clicking the bar, dot or area that represents the time period to be zoomed in on. Zooming can't not go any further than a day. Once zoomed in, un-zoom by clicking  (Un-zoom).

Exporting to PDF

Export the current space report to PDF by opening side dock (closed by default) and clicking  (PDF).

Saving a Space Comparison Report

The currently displayed space comparison report can be saved and added to the building performance reports library so it can be easily retrieved in the future. Adding a report to the library will save the space

included in the report, along with any and all customisations made.

1. Open side dock (if closed)
2. Click  (Add to Library)
3. In the popup enter the title and description (optional)
4. Select whether the space report library item can be modified by others
5. Click 'Add' to add the space report to the library

To retrieve report in the future see [Building Performance Reports Library](#).

Emailing a Space Comparison Report

Open side dock (if closed) and click on the  (Email) to email the report. In popup click on the intended recipient or multiple recipients to send the email to. Click 'Email' to send a PDF version of the report to the selected recipients.

Setting up Automatic Space Comparison Report Email

A space comparison report can be set up for auto emailing. See [Building Performance Reports Email Management](#) for further details.

4. Project Performance

4.1. Project Management

Required Privilege: Manage Project Configuration

The 'Project Management' page is a central place to create, view and keep track of all projects in Optergy Software.

Adding a Project

To add a project click **+** (Add) to bring up the wizard which provides a step-by-step process to add a project to Optergy Software. View [Adding a Project](#) documentation for field definitions.

Remove a Project

To remove a project click **—** (Remove).

Edit a Project

To edit a project, click on a project row in the 'List View' or ensure that a project is selected, then click **✎** (Edit). This will bring up the project wizard and allow you to edit individual details and settings.

4.2. Project Wizard

Required Privilege: Manage Project Configuration

Step 1 allows for the project's descriptive details to be entered. The title, cost and savings calculation method are the only required fields, all others can be left blank if desired. After step 1 details have been entered, the other steps can continue to be entered or the new project can be created now by clicking (Save). Information can still continue to be entered after saving.

Title

Title of the project. This is the title that will appear in the project management lists.

Description

A brief description of the project

Modifiable By Others

Indicates whether or not this project can be updated by anyone else besides the creator

Cost

An estimated cost of undertaking this project

Operational Period

The time period (months, years, etc) in which this project is open

Savings Calculation

Indicates the method in which any savings will be calculated by. For specific methods there are additional fields which need to be entered.

- Previous Period
- Same Period Previous Year
- Average Over Baseline Period -

Set the time period (months, years, etc) in which the average period will be taken. Both the start and end dates must be specified for this savings calculation method. To enter a date, click 🕒 to select any valid calendar date using the time picker.

Note: Make sure that the baseline period occurs before the projects operational period and does not overlap

Include Custom Statement Logo

Use this to specify a custom logo to appear at the top of the Project Statement instead of the Optergy Software logo

Billing Tariff

Indicates the charge rules which will be applicable to usage saving calculations

Demand Meter

If the 'Billing Tariff' includes 'Peak Demand' changes and therefore the peak demand saves it to be reported; a meter that is logging the total usage of all the meters in the project must be selected to get the correct combined peak demand. This meter may be a physical meter or a calculation meter.

Ignore Negative Savings

Only applicable if a 'Billing Tariff' is selected. Tick this to ignore any negative monetary savings when generating a [Project Statement](#)

Step 2 To associate spaces, click + (Add) and then select any and all spaces which are monitoring this project. Any type of space can be associated.

Note: To filter the list of spaces, simply type in part of a space name in the filter box above the list, and any matches will appear in the list below.

Step 3 To associate stakeholders, click + (Add) and then enter relevant details for the stakeholder.

Stakeholder

Select the type of stakeholder. This can be a user, tenant or facility manager stored in Optergy Software

Percentage of Stake

The percentage in which this user, tenant or facility has a vested interest in this project. The amount must be between 0 and 100%.

Deductible from Project Cost

Only applicable if a 'Billing Tariff' is selected. Tick this to deduct this stakeholders monetary savings from the 'Project Cost'.

Effective Period

The effective period of this stakeholder and their % stake. Use this option if for instance the stakeholders % stake changes yearly. The start and/or end date can be left blank if required, leave both blank if the stakeholder is effective infinitely.

Include Automated Emailing

Indicates whether or not this stakeholder will receive automated updated periodic saving statements regarding this project

Frequency

The time period (daily or monthly) in which the automated saving statements will be sent out

To save the settings and details click  (Save).

4.3. Project Performance Statement

Required Privilege: Project Performance Reporting

The 'Project Performance Statement' page found within the 'Project Performance' sub-menu, allows for generation of a statement which includes a brief snapshot of the energy usage savings, monetary status and stakeholder breakdown for any given project recorded in Optergy Software.

To generate a statement, complete the following steps:

1. Select project
2. Select the utility type
3. Select the time period that the project statement will include. When entering dates click the  to pick the dates.
4. To generate a statement, click on of the following formats:
 -  (PDF)
 -  (CSV)

5. Trend Logs

Trend Logs in Optergy Software represent a BACnet trend log object, which can log BACnet point data (most commonly analog or binary data).

The trend log page allows for trend log objects to be created, edited and removed and trend log data to be viewed.

Available Trend Log actions:

- [Viewing Trend Log Data](#)
- [Saved Trend Views](#)
- [Saved Trend Email Management](#)
- [Viewing Trend Log Objects](#)
- [Creating Trend Log Objects](#)
- [Editing Trend Log Objects](#)
- [Removing Trend Log Objects](#)
- [Removing Trend Log Data](#)
- [Trend Log CSV Upload](#)
- [Importing and Exporting Trend Log Objects](#)
- [Archive FTP/SFTP Settings](#)
- [Transfer FTP/SFTP Settings](#)
- [Archiving](#)
- [Poll State](#)

5.1. Viewing Trend Log Data

Required Privilege: View Trend Log Data Unrestricted

The 'Trend Logs' page, will load with a list of all the trend log objects that the current user has access to see.

Trendlog Access:

- Meter Trendlogs - Only those meter trendlogs which the user has meter access to will appear, see [Energy Data Access](#)
- BACnet Trend logs - If the user has view Trendlee Data Unrestricted privilege then all BACnet trend log will appear, otherwise if the user has view Trend log Data Restricted By Notification Class privilege then only those BACnet trend logs in which the user has been listed on the notification class as a recipient will appear, see [Notification Classes](#).

There are several ways to get to the trend log data graph page:

- To view the data of a single trendlog double click the trend log row
- To view multiple trend log data at once (up to 8)
 1. Select the desired trend logs to view and click 'View Data'. A popup will appear displaying all the trendlogs selected
 2. At the top of the list the number of chosen trend logs is displayed. If this number exceeds 8 then trendlogs will have to be removed to proceed. Click  on a trend log row to remove it
 3. Once 1 - 8 trendlog(s) are chosen, click  to view data in current browser window or  to view data in a new window.

- View a 'Saved Trend View', see [Saved Trend View](#)

All these options will direct to Optergy Software's trend log view page.

Change time period

There are multiple ways to change the time period

- Use ◀ and ▶ to move to the previous and next time period
- Click and drag over a section of the graph to zoom/focus on that section. Click 🔍 (Un-zoom) so zoom back out
- Click 📅 (Edit Time); a popup will appear that allows for a specific time period to be entered. An additional option to display times in 24 hour time is also available.

Change Graph options

Click 🖋️ (Edit View), a popup will appear which allows for overall graph options to be changed, as well as individual graph options.

Overall Graph Options

Title

Title of graph that appears at the top of the page

Show time period

This option determines if the graph time period will be displayed as a sub-heading eg 01/01/2013 12:00 AM - 07/01/2013 12:00 AM

Shared Y-Axis on each point

If ticked all trend log displayed on graph will share the same Y (left) axis, instead of having individual

Default Min

Optergy Software by default will decide the minimum Y (left) axis value for each trend. This option allows for a different minimum value to be specified, and is applied to all trends

Default Max

Optergy Software by default will decide the maximum Y (left) axis value for each trend. This option allows for a different maximum value to be specified, and is applied to all trends

Individual Trend Options

All of the trend logs currently included in the graph are listed in the 'Trends' area. Up to 8 trends can be graphed at once.

To add another trend log click +, in the popup specify the trendlog and any desired extra options.

Host Device

The host device that the trend log is stored on

Trendlog instance

The trend log instance on device

Label

By default the trend log description will be used, however a custom label can be specified

Y-Axis Minimum

Optergy Software by default will decide the minimum Y (left) axis value for this specific trend. This option allows for a different minimum value to be specified and will override the overall graph y-axis min

Y-Axis Maximum

Optergy Software by default will decide the maximum Y (left) axis value for this specific trend. This option allows for a different maximum value to be specified and will override the overall graph y-axis max

Colour

Allows a specific line colour for this trend to be set

Click 'Add Trend'

To edit a trend, select trend and click , once changes have been made click 'Update Trend'.

To remove a trend, select trend and click . If you remove a trend by mistake, click 'Cancel' at the bottom of the popup.

Display Options

Analysis Data

Use the  (Analysis) button under the graph, to toggle between showing the analysis values for each trendlog and hiding these values. These values are not available when zoomed in.

Min: Shows minimum value for selected time period.

Max: Shows maximum value for selected time period.

Avg: Shows average value(mean) for selected time period.

Deviation: Shows standard deviation(population) value for selected time period. A quantity expressed by how much the members of a group differ from the mean value for the group.

Variance: Shows variance(population) value for selected time period. The variance measures how far each number in the set is from the mean(average).

Mode: Shows mode values for selected time period. The most common value(s) across the selected set of values.

Breakup/Merge

Use the  (Breakup/Merge) button under the graph, to toggle between showing the data during the period broken up into hourly/daily/weekly profile lines or merged into one profile line.

Note: this option is only available for time periods equal to or greater than 1 week

Note: this option is only available when viewing a single trend log

Average

Use the  (Average) button under the graph, to enable data averaging (smoothing) within the chart.

e.g. for each and every hour, average all the samples over that period and only plot the calculated average

Note: data averaging is not available for binary trend logs

Domain Interval

Use the  (Interval) button under the graph, to customise the granularity of the data shown within the chart.

e.g. only plot the first sample found every hour/day/week/month for the selected time period

Targets

Use the  (Targets) button under the graph to configure graph target lines. Targets are only available for number range graphs; if multiple trends are plotted on the same graph, they must share the Y-axis for the target(s) to appear.

Save Trend View

So save all trend logs being graphed as a collections as well as graphing options (headings, colours etc) see [Saved Trend Views](#).

Export data

- To export to CSV, click  (CSV)
- To export to PDF, click  (PDF)

*Note: if you select 'View Data' and choose CSV you will have the option to split the timestamp column into two separate columns for date and time. This is presented as a checkbox on the 'Time Period' popup form. This is only available if you select 'View Data' and select 'View trends (CSV)'.

5.2. Saved Trend Views

Saved Trend Views provides the ability to save a collection of trend logs, so they can easily be viewed in the future.

View Saved Trend View

Required Privilege: View Trend Log Data Unrestricted

There are two pages that you can view all currently saved views, from the main 'Trend Logs' page and from the trend log data view page.

1. Click  from either of these pages, a popup will appear that lists all save trend log views
2. Select saved view
3. Clicking  to view data in the current browser window or  to view data in a new window.
4. The trend log viewing page will now be displayed, graphing the selected saved view.

Create Trend View

Required Privilege: Save Trend Log Views

To create a new trend view collection from the main 'Trend Log' page:

1. Select all trend logs to group together and be viewed at once
2. Click  (Save). **Note:** A saved collection must contain between 1-8 trendlogs, if this is not the case the  (Save) button will be disabled
3. Enter a collection/view title
4. Select 'Save as new Trend View'

5. Click 'Save'

To create a new trend view collection from trend log data view (graph) page:

1. Click  (Save View).
2. Enter a collection/view title
3. Select 'Save as new Trend View'
4. Click 'Save'

Creating a trend view in this way also saves other trend log options that are displayed on screen such as selected time period, y-axis, labels and colours.

Remove Saved Trend View

Required Privilege: Save Trend Log Views

There are two pages that allow the removal of saved views, from the main 'Trend Logs' page and trend log data view page.

1. Click  from either of these pages, a popup will appear that lists all saved trend views
2. Select saved view to remove
3. Click 
4. A confirmation popup will appear, click 'Remove' to proceed

Edit Saved Trend View

Required Privilege: Save Trend Log Views

To edit a saved trend view, first view the data (see above), this will direct you to the trend log data graph page. From this page make any desired changes. To save changes click  (Save View), to update existing view click 'Update', to save as new view select 'Save as new Trend View', enter title and click 'Update'.

5.3. Saved Trend Email Management

Required Privilege: Save Trend Log Views

The saved trend view email functionality provides the ability to manage automatic trend log report emailing.

Managing an Auto Trend Log Report Email

This can be managed via from the main 'Trend Logs' page. Has 3 available formats PDF, CSV and web (HTML).

1. Click the  (Saved Views) button, and a popup will appear that lists all saved trend log views
2. Select a saved trend view and click the  button
3. A popup will appear, enter email configuration

Description

Brief description of report

Requested formats

Report formats to be included in email

-  PDF
-  CSV
-  Web (HTML)

Recipients

Select users to receive the emailed report. Ensure that selected users have an email address configured.

Email Customisations

Include custom email subject line

Allows for a custom email subject to be specified

Include custom email body text

Allows for a custom email body to be specified

Include custom filename

Allows for a custom filename to be specified

4. Click 'Save'

Editing an Auto Trend Log Report Email

To edit an existing auto report email configuration:

1. Select the saved trend view from the list
2. Click the  button
3. A popup will appear, with the already saved auto email configuration entered
4. Make desired changes. See above for field definitions.
5. Click 'Done'

Removing an Auto Trend Log Report Email

To remove an auto report email configuration:

1. Select the saved trend view from the list
2. Click the  button
3. Click the 'Remove' button
4. A confirmation popup will appear, click 'Remove' to proceed.

5.4. Viewing Trend Log Objects

Required Privilege: View Trend Log Data Restricted By Notification Class or View Trend Log Data Unrestricted

The 'Trend Logs' page, will load with a list of all the trend log objects that the current user has access to see. To get more information about a trend log object, select the trend log then click  (View Config) or  (Edit).

Trendlog Access:

- Meter Trendlogs - Only those meter trendlogs which the user has meter access to will appear, see [Energy Data Access](#)
- BACnet Trend Logs - If the user has view Trend log Data Unrestricted privilege then all BACnet trend logs will appear, otherwise if the user has view Trend log Data Restricted By Notification

Class privilege then only those BACnet trend logs in which the user has been listed on the notification class as a recipient will appear, see [Notification Classes](#).

Moving Between Pages

If there are a lot of trend logs they will be separated over multiple pages. At the top of the list it will display how many pages of trend logs there are. Ways to move between pages:

- Use  and  to move backward and forward one page at a time
- Use  and  to jump to the first and last page respectively.
- To go directly to page select the page number from the drop-down list

Filtering

The filter field at the top of the list allows filtering on host device, instance and description. To filter, enter (multiple text strings or numeric digits or a combination) into the filter box, any trendlogs that match what was entered will appear in the list. Eg. To display trend logs only on device 2000, enter 2000 into the filter. To search for a trend log with a certain description enter all of the description or any part of it into the filter. To reset the filter, simply remove all entered input in the filter box.

5.5. Creating Trend Log Objects

Required Privilege: Manage Trend Log Objects

To create a new trend log object click  (Add) from the 'Trend Logs' page. A popup will appear that allows for trend log specifications to be entered.

General Details

Host Device

The field device that will hold the trend log object.

Instance

The instance number of the trend log. By default 'Auto Assign' is selected which will assign the next available instance number. The instance can be explicitly specified by selecting 'User Assigned' and entering a number

Description

A brief description of the trend log. The only special characters allowed are: - . : + , () { }

Logging

Enabled

If trend log logging is current enabled

Buffer Size

Determines the total number of samples that the host device can retain before samples are lost

Log Interval

The frequency, in seconds, with which the logged property is sampled. Always use the maximum interval that meets the trend log objective. The default is 5 minutes (300 seconds), the available minimum is 1 second (refer to manufacturer specification for the actual minimum value supported by your hardware)

Notification Threshold

The number of samples to be taken before a notification will be sent to all recipients specified in the recipient list in the notification class

Notification Class

The notification class object to be used with this trend log. The notification class recipient list must contain all devices that want to collect log data from this trend log

Time Period

The dates and times that the trend log sampling should begin and end.

Logged Property

The property whose value is to be logged.

Device

The host device of the logged property

Object Type

The object type of the point to be logged

Object Instance

The object instance of the point to be logged

Property

The property of the point to be logged

Array Index

The array index if the 'Priority Array' property is selected

Unit of Measure

The unit of the point to be logged

COV

Settings to set trend logs to COV. Please note that COV trend logs can only be created on devices that support COV.

Logging Type

The type of logging that the trend log will do

Polled

Trend Log will poll in a time period equal to the log interval

COV

Trend Log will record only COV changes, and resubscriptions at the resubscription interval

Resubscription Interval

The period in seconds that a COV subscription is held for. Resubscription may optionally happen at a shorter interval

COV Increment

The amount that the logged property has to change before a COV change is registered

Archiving**Archive Period**

How often this trendlog's data is to be archived

[Daily](#)

Every day

[Weekly](#)

Every Saturday

[Monthly](#)

1st of every month

[Quarterly](#)

1st of January, April, July, October

[Half-Yearly](#)

1st of January and July

[Yearly](#)

1st of January

[Save to FTP Server](#)

Whether archived data is to be saved to the specified FTP server

[Delete Data After](#)

How many months old the data must be before it is deleted. Optergy Software ensures that all data is archived before it is deleted

See [Archiving](#) for more details

Once all trendlog details have been filled in, click the 'Add Trend Log' button to create it. It will then appear in the main trend log list.

5.6. Editing Trend Log Objects

Required Privilege: Manage Trend Log Objects

Trend Logs can be edited at any time from the 'Trendlogs' page. It is important that Optergy Software has the most up-to-date information about the trend log before editing, if uncertain importing the trend logs first is a good idea (see [Importing and Exporting Trend Log Objects](#)).

To edit an existing trend log:

1. Either double click the desired trend log or select the trendlog and click  (Edit) from the Trend Log page.
2. A popup will appear with all the current information about the trend logs, use this popup to update any details, view [Creating Trend Log Objects](#) documentation for field definitions.
3. To save any changes made click 'Update Trend Log', Optergy Software will immediately save changes and attempt to send them to the field device.

5.7. Removing Trend Log Objects

Required Privilege: Manage Trend Log Objects

Trend Logs can be removed at any time from the 'Trend Logs' page.

To edit an existing trend log:

1. Click on the trend log to be removed, from the trend log list
2. Click  (Remove)
3. A confirmation popup will appear, select what the trend log object is to be removed from:
 - Optergy Software Only - Trend Log Object will be removed from Optergy Software but still remain of the field device
 - Optergy Software and device - Trendlog will be permanently removed from both Optergy Software and the field device
4. Once remove decision has been made click 'Remove' to proceed

Note: Removing a trend log object from Optergy Software will not remove any data that has been collected.

5.8. Removing Trend Log Data

Required Privilege: Manage Trend Log Objects

It is suggested that before removing any trend log data that a backup first be taken, as once removed it can only be restored by a backup.

1. Click on the trend logs to have there data removed, from the trend log list
2. Click  (Remove Data)
3. A confirmation popup will appear, select the range of data to be removed:
 - Delete all data - This is delete all data in the selected trend logs
 - Delete data range - This will delete all data between a specified range in the selected trend logs
4. Once the removal decision has been made click 'Remove' to proceed.

5.9. Importing and Exporting Trend Log Objects

Required Privilege: Manage Trend Log Objects

Importing Trend Log Objects

The importing of trendlog objects can do one of two things:

- Update Optergy Software's trend log object with the field devices current settings
- Add a trend log object to Optergy Software that it didn't previously know about

In general, importing trend logs is most useful when a trend log object has been modified outside Optergy Software, or has been created outside Optergy Software, and needs to be imported into Optergy Software.

To import trend log objects:

Note: Only objects that are currently allowing imports will have their Trend Logs imported.

1. Click  (Start Import)

2. Select import method:

Import all instances from all device

Optergy Software will import all the trendlog objects that exist on all devices that Optergy Software has in its device list

Re-import all currently imported instances from all devices

This will re-import all the trendlog objects that Optergy Software currently knows about (those that appear in the main trend log list)

Re-import all currently selected instances

This option will re-import all trendlogs currently selected in the table

Import specific instances from one host device

This will import trend log objects that exist on a particular host device.

Select the field device to import from, and either:

- Import all trendlog objects on device
- Import a specific instance
- Import a instance range

3. Once the import method has been select click 'Start Import'
4. Optergy Software will begin importing notification classes, the progress is visible at the top of the page
5. Once the import has finished results will be shown at the top of the page

Exporting Trend Log Objects

If changes have been made to a trend log object but could not be sent to the BACnet device at that time, it will appear red in the list signalling that it needs to be sent to the device at a later date.

To attempt to sync these unsynchronised objects:

1. Click  (Start Export)
2. A popup will then appear listing all currently unsynchronised trend log objects
3. Select all the objects to be exported to the device
4. Click the 'Start Export' button to begin the export process, the popup will then close and progress of the sync will appear at the top of the page
5. Once the export has finished results will be shown at the top of the page, those trend log objects successfully exported will no longer be red.

5.10. Archive FTP / SFTP Setting

Required Privilege: Edit Remote Archive Settings

Optergy Software provides the option for trendlog archives to be sent to a remote server using FTP or SFTP. To enable this feature, click on  (Archive Settings), from the 'Trend log' page. A popup will appear where all settings can be entered.

Save Trend Log Archives to Remote server

Check this option to allow remote settings to be entered

Protocol

The file transfer protocol to use

Server Address

Address of the remote Server

Server Port

The port the FTP/SFTP server runs on. Default is 21 for FTP and 22 for SFTP, if unsure leave default port

Username

Server login username

Authentication (SFTP Only)

For SFTP transfer which authentication method will be used to logon to server

Password

Server login password for username

Download Key (SFTP Only)

When KEY authentication is being used, an Optergy Software public key needs to be downloaded and added to the remote server's list of authorized_keys. If a public key already exists and a new key is generated, the Optergy Software public key on the remote server will need to be updated. **Note:** System Backup and Trend Log Archive use the same public key.

For a trend log archive to be sent to the specified server, the Trend Log object needs to have the 'Save to FTP Server' option ticked, see Archiving in [Creating Trend Log Objects](#).

Any users that have the 'Show Notifications' option configured in their user ([User Configuration](#)) and have the 'System Backup' category selected, will receive a system notification if the archive transfer fails.

Updating Archive Frequency

The 'Archive Settings' popup can also be used to update the archive frequency settings for multiple trend logs at a time, this is done by clicking the 'Update Frequency' button. Use this popup to set the frequency settings and to specify which trend logs to apply them to.

Archive Period

How often this trendlog's data is to be archived

Daily

Every day

Weekly

Every Saturday

Monthly

1st of every month

Quarterly

1st of January, April, July, October

Half-Yearly

1st of January and July

Yearly

1st of January

Save to Remote Server

Whether archived data is to be saved to the specified FTP server

Delete Data After

How many months old the data must be before it is deleted. Optergy Software ensures that all data is archived before it is deleted

Apply Settings To

Use this to specify which trend logs to apply the above settings to

Currently selected trend logs

This option will apply settings to all trendlogs currently selected in the table

Specific instances from one host device

This will apply settings to trendlog objects that exist on a particular host device.
Select the field device to apply to either:

- Apply all trendlog objects on device
- Apply to a specific instance
- Apply a instance range

See [Archiving](#) for more details.

5.11. Transfer FTP Settings

This feature transfers trend logs at a predefined interval to a remote server via FTP. It transfers data from the last transfer time up to the present. If it is the first time transferring trend logs, the data from the last month is sent.

Enable Trendlog Transfer

Check this option to allow remote settings to be entered

Use Archive S/FTP settings

Uses the connection settings set on the Trend Log Archive, see for more information [Archive FTP/SFTP Settings](#).

Protocol

The file transfer protocol to use

Server Address

Address of the remote Server

Server Port

The port the FTP/SFTP server runs on. Default is 21 for FTP and 22 for SFTP, if unsure leave default port

Username

Server login username

Authentication (SFTP Only)

For SFTP transfer which authentication method will be used to logon to server

Password

Server login password for username

Download Key (SFTP Only)

When KEY authentication is being used, an Optergy Software public key needs to be downloaded and added to the remote server's list of authorised keys. If a public key already exists and a new key is generated, the Optergy Software public key on the remote server will need to be updated. **Note:** System Backup and Trend Log Archive use the same public key.

Select Trend Logs

Opens up a dialog to select trend logs. Tick the checkbox to have that trend log sent via FTP

Send as zip file

Compresses the files in zip format before sending them via FTP.

Use Optergy 1 Format

Emulates the way Optergy 1 sends trend log data. File names are changed, as well as the formatting of each file (still uses the columns timestamp,data).

Transfer all trend logs

Tick this box to have all trend logs transferred via FTP

Transfer every

Select the frequency at which trend logs will be sent via FTP.

Note: choose a reasonable frequency depending on the internet connection and size of trend log, lest the transfer does not work.

Selecting Trend Logs for FTP transfer

Moving Between Pages

If there are a lot of Trend Logs, they will be split over multiple pages, at the top of the list it will display how many pages of Trend Logs there are. Ways to move between pages:

- Use ◀ and ▶ to move backward and forward one page at a time.
- Use ⏪ and ⏩ to jump to the first and last page respectively.
- To go directly to the page select the page number from the drop-down list.

Filtering

The filter field at the top of the list allows filtering on host device, instance and description. To filter, enter (multiple text strings or numeric digits or a combination) into the filter box, any trendlogs that match what was entered will appear in the list. Eg. To display trend logs only on device 2000, enter 2000 into the filter. To search for a trend log with a certain description enter all of the description or any part of it into the filter. To reset the filter, simply remove all entered input in the filter box.

Show enabled first

Ticking this option will put the Trend Logs that have been selected for transfer to the front of the list allowing them to be easily removed.

5.12. Archiving

Trend Log archiving is an automatic process in which trend log data is copied from the database into a csv file. This is done to improve performance, and to ensure that the database doesn't get full. It is also useful for long term storage purposes. All archived data can be found under Backups\Archive\ from the [Remote File Manager](#).

Each trendlog can have a different archive frequency setting. See Archiving in [Creating Trend Log Objects](#) or Updating Archive Frequency in [Archive FTP/SFTP Settings](#).

Available frequencies are:

Daily

Every day

Weekly

Every Saturday

Monthly

1st of every month

Quarterly

1st of January, April, July, October

Half-Yearly

1st of January and July

Yearly

1st of January

When archiving is performed; it will archive all data from the last archive date, up until yesterday. Archiving trend log data does not delete data from the database.

How often data is removed from the database depends on the 'Delete Data After' setting in each trend log object. See Archiving in [Creating Trend Log Objects](#) for more details. Optergy Software does not delete any trend log data until it has been archived.

Note: Regardless of the specified 'Delete Data After', if a trend log is used for After-Hours, Optergy Software will retain the last 24 months of data.

Optergy Software has the ability to send all archived data to an external server using FTP or SFTP, see [Archive FTP/SFTP Settings](#).

Setting Archive Frequency

Optergy Software provides two different ways for setting the archive frequency of trendlogs:

1. Updating a single trend log
Navigate to the 'Trend Logs' list page, edit a trend log object by selecting a trend log from the list and clicking  (Edit). Use the 'Archiving' section of the popup to specify the trend logs archive frequency. **Note:** To update the frequency for metering trendlogs the method below must be used.
2. Updating multiple trend logs

Navigate to the 'Trend Logs' list page, edit archive settings by clicking  (Archive Settings). Click the 'Update Frequency' button in the popup to update the archive frequency of multiple trend logs as a time, see [Archive FTP/SFTP Settings](#) for more details.

5.13. Trend Log CSV Upload

This feature allows the batch upload of Trend Log objects into Optergy Software by using a CSV file. Trend log instances will be automatically generated based on the order of the CSV

The file must comply with the following format:

Device Instance	Trend Log Description	Host Device	Log Interval (in seconds)	Object Type	Object Instance	Unit	Notification Threshold	Notification Class	Logging Type	Resubscription Interval (in seconds)	COV Increment

Example

:

71061	VAV-2-37A Temp Setpoint	7000	300	AV	90	°C	6	7000:0	Polled	300	1

Additional Information

Notification Class

Can be specified with host 'device:instance' such as 7000:0

Can be specified with just an instance, such as 0. This means that the notification class will reside on the same host as the trend log (7000 in the above example)

Object Type

Can be specified using AI, AO, AV, BI, BO, BV, MSI, MSO, MSV or the following (either the name or number can be used):

Name	Number
Analog Input	0
Analog Output	1
Analog Value	2
Binary Input	3
Binary Output	4
Binary Value	5
Calendar	6
Command	7
Device	8
Event Enrollment	9
File	10

Name	Number
Group	11
Loop	12
Multi-state Input	13
Multi-state Output	14
Notification Class	15
Program	16
Schedule	17
Averaging	18
Multi-state Value	19
Trend Log	20
Life Safety Point	21
Life Safety Zone	22
Accumulator	23
Pulse Converter	24
Event Log	25
Trend Log Multiple	27
Load Control	28
Structured View	29
Access Door	30

Unit

Either the name or number may be used.

Name	Number
Square Meters	0
Square Feet	1
Milliamperes	2
Amperes	3
Ohms	4
Volts	5
Kilovolts	6
Megavolts	7
Volt Amperes	8
Kilovolt Amperes	9
Megavolt Amperes	10
Volt Amperes Reactive	11
Kilovolt Amperes Reactive	12
Megavolt Amperes Reactive	13

Name	Number
Degrees Phase	14
Power Factor	15
Joules	16
Kilojoules	17
Watt Hours	18
Kilowatt Hours	19
Btus	20
Therms	21
Ton Hours	22
Joules Per Kilogram Dry Air	23
Btus Per Pound Dry Air	24
Cycles Per Hour	25
Cycles Per Minute	26
Hertz	27
Grams Of Water Per Kilogram Dry Air	28
Percent Relative Humidity	29
Millimetres	30
Meters	31
Inches	32
Feet	33
Watts Per Square Foot	34
Watts Per Square Meter	35
Lumens	36
Luxes	37
Foot Candles	38
Kilograms	39
Pounds Mass	40
Tons	41
Kilograms Per Second	42
Kilograms Per Minute	43
Kilograms Per Hour	44
Pounds Mass Per Minute	45
Pounds Mass Per Hour	46
Watts	47
Kilowatts	48
Megawatts	49
Btus Per Hour	50

Name	Number
Horsepower	51
Tons Refrigeration	52
Pascals	53
Kilopascals	54
Bars	55
Pounds Force Per Square Inch	56
Centimetres Of Water	57
Inches Of Water	58
Millimetres Of Mercury	59
Centimetres Of Mercury	60
Inches Of Mercury	61
Degrees Celsius	62
Degrees Kelvin	63
Degrees Fahrenheit	64
Degree Days Celsius	65
Degree Days Fahrenheit	66
Years	67
Months	68
Weeks	69
Days	70
Hours	71
Minutes	72
Seconds	73
Meters Per Second	74
Kilometres Per Hour	75
Feet Per Second	76
Feet Per Minute	77
Miles Per Hour	78
Cubic Feet	79
Cubic Meters	80
Imperial Gallons	81
Litres	82
Us Gallons	83
Cubic Feet Per Minute	84
Cubic Meters Per Second	85
Imperial Gallons Per Minute	86
Litres Per Second	87

Name	Number
Litres Per Minute	88
Us Gallons Per Minute	89
Degrees Angular	90
Degrees Celsius Per Hour	91
Degrees Celsius Per Minute	92
Degrees Fahrenheit Per Hour	93
Degrees Fahrenheit Per Minute	94
No Unit	95
Parts Per Million	96
Parts Per Billion	97
Percent	98
Percent Per Second	99
Per Minute	100
Per Second	101
Psi Per Degree Fahrenheit	102
Radians	103
Revolutions Per Minute	104
Currency 1	105
Currency 2	106
Currency 3	107
Currency 4	108
Currency 5	109
Currency 6	110
Currency 7	111
Currency 8	112
Currency 9	113
Currency 10	114
Square Inches	115
Square Centimetres	116
Btus Per Pound	117
Centimetres	118
Pounds Mass Per Second	119
Delta Degrees Fahrenheit	120
Delta Degrees Kelvin	121
Kilohms	122
Megohms	123
Millivolts	124

Name	Number
Kilojoules Per Kilogram	125
Megajoules	126
Joules Per Degree Kelvin	127
Joules Per Kilogram Degree Kelvin	128
Kilohertz	129
Megahertz	130
Per Hour	131
Milliwatts	132
Hectopascals	133
Millibars	134
Cubic Meters Per Hour	135
Litres Per Hour	136
Kilowatt Hours Per Square Meter	137
Kilowatt Hours Per Square Foot	138
Megajoules Per Square Meter	139
Megajoules Per Square Foot	140
Watts Per Square Meter Degree Kelvin	141
Cubic Feet Per Second	142
Percent Obscuration Per Foot	143
Percent Obscuration Per Meter	144
Milliohms	145
Megawatt Hours	146
Kilo Btus	147
Mega Btus	148
Kilojoules Per Kilogram Dry Air	149
Megajoules Per Kilogram Dry Air	150
Kilojoules Per Degree Kelvin	151
Megajoules Per Degree Kelvin	152
Newton	153
Grams Per Second	154
Grams Per Minute	155
Tons Per Hour	156
Kilo Btus Per Hour	157
Hundredths Seconds	158
Milliseconds	159
Newton Meters	160
Millimetres Per Second	161

Name	Number
Millimetres Per Minute	162
Meters Per Minute	163
Meters Per Hour	164
Cubic Meters Per Minute	165
Meters Per Second Per Second	166
Amperes Per Meter	167
Amperes Per Square Meter	168
Ampere Square Meters	169
Farads	170
Henrys	171
Ohm Meters	172
Siemens	173
Siemens Per Meter	174
Teslas	175
Volts Per Degree Kelvin	176
Volts Per Meter	177
Webers	178
Candelas	179
Candelas Per Square Meter	180
Degrees Kelvin Per Hour	181
Degrees Kelvin Per Minute	182
Joule Seconds	183
Radians Per Second	184
Square Meters Per Newton	185
Kilograms Per Cubic Meter	186
Newton Seconds	187
Newtons Per Meter	188
Watts Per Meter Per Degree Kelvin	189
VoltAmperes Reactive Hour	512
Kilovolt Amperes Reactive Hour	513
Megavolt Amperes Reactive Hour	514
Gigavolt Amperes Reactive Hour	515
Volt Amperes Hours	516
Kilovolt Amperes Hour	517
Megavolt Amperes Hour	518
Gigavolt Amperes Hour	519
Millilitres	197

Name	Number
Kilolitres	521
Megalitres	522
Gigalitres	523
Cubic Litres	524
Gigawatts	525
Gigawatt Hour	526
People	527
Milli Cubic Metres	528
Grams	529
Knots	530
Degrees	531
Millimetres Hour	532
Inches Hour	533
Hits Square Centimetres	534
Hits Square Inches	535
Hits	536
Hits Square Centimetre Hour	537
Hits Square Inch Hour	538
Hits Hour	539
Standard Atmosphere	540
Millimetres Hour	541
Gigajoules	542
Stars	543

Logging Type

Name	Value
Polled	Polled
COV	COV

Resubscription Interval

The suggested default for the resubscription interval is 300 seconds.

If the resubscription interval is too low it will spam your device and cause it to run slowly or crash. Please do not set the interval to 0 seconds.

COV Increment

If the Trend Log is acquiring COV data, this property specifies the increment to be used in determining that a change of value has occurred.

Default values for the COV Increment are:

- 1.00 is the default for most measurement units
- 0.5 for Degrees Celsius
- 10.00 for Pascal and Parts Per Million

If the COV increment is too low then it could spam your device and cause it to run slowly or crash.

Note

A trend log object cannot be reimported via CSV upload. If the same file is uploaded twice, it may corrupt data. If there is a need to reupload a file already uploaded, ensure that

- either the entries which have been successfully processed are removed from the CSV file
- OR the trend log objects for the entries which have been successfully processed are removed from the system and global controllers using 'Remove Trend Log' (from Optergy Software and remote device).

Polled trend logs do not use Resubscription Intervals or COV increments, therefore regardless of what you enter they will be set to 0. The same will occur when you set up a COV trend log with the Log Interval value.

5.14. Polling State of Trend Log Objects

Required Privilege: Manage Trend Log Objects

Select the Trend Log Objects for which you wish to get the exact state.

Click on Poll State:

1. If the selected trend logs do not exist on the device, it will be changed into red colour along with a warning message
2. These trend log objects will now be available for export to the specified device.

Note: Poll State does not work for Optergy hosted objects.

6. Building Tenancy

6.1. After Hours Requests

Required Privilege: Request After Hours

After hours requests allow a tenant to request building facilities outside of the normal scheduled runtime.

Making After Hours Requests

A standard user can only request after hours for areas they have been given access to.

1. Click 'After Hours Requests' from the menu to begin process
2. Two things can occur at this stage
 - If particular tenant/user has only been configured for one after hours area they will be directed straight to the after-hours request grid
 - If they have been configured for more than one area, all their after-hours areas will be listed. Select the area to make a request for and click  (Edit)
3. See [After Hours Request Grid](#) for further instructions

Managing After Hours

Required Privilege: Administer After Hours

Users with the administerAfterHours privilege are able to see all after hours areas, regardless of which tenant the area is associated with. The 'After-Hours Area' page will list all configured areas. To view or make after hours requests, select the after hours area and click  (Edit). See [After Hours Request Grid](#) for further instructions.

6.1.1. After Hours Request Grid

Required Privilege: Request After Hours

Warning: Internet Explorer 9 can occasionally incorrectly align grid cells. If this is a problem it is suggested to use another browser.

Navigating between Weeks

The grid loads with the current week, starting Monday. The date associated with each row is displayed on the left, the current date is in bold. Use  (Previous Week) and  (Next Week) to move backwards and forwards between weeks. Click  (This Week) to return to the current week.

Adding a Once of Request

A once of request, is an after hours request that occurs once at the selected time on the selected day

1. Navigate to required date
2. Click and drag over desired time
3. A little popup appeared. Click 'Add One-Off After-Hours'
4. Selected area will now appear in the 'Normal After Hours' colour

5. Click  (Save)

Adding a Recurring Request

A recurring request is an after hours request that will recur over multiple days for a specified period.

1. Navigate to required date, in which the first recurring request is to start
2. Click and drag over the desired timer
3. A little popup will appear. Click 'Add Recurring After Hours'
4. Select whether this request is to run if it falls on a public holiday
5. Selected area will now appear in the 'Recurring After Hours' colour
6. If desired, see Editing a Recurring request for more setting recurring options
7. Click  (Save)

Note: Only requests in the future are able to be added.

Editing a Recurring Request

1. Click on the after hours recurring request to edit
2. A popup will appear that allows a number of things to be updated

Skip dd/mm/yyyy?

Tick this to indicate the after hours request is to skip {date}, but otherwise run normally

Start

The date the recurring request is first to start. Cannot be edited if start date has already past

Stop

The date in which the recurring request is to stop (inclusive)

Repeat

Days of the week (between start and stop) that request is to run on

Run on Public Holidays

Select whether this recurring event is to run if it falls on a public holiday. When this field is updated, changes will not take effect on the grid/screen until  (Save) is clicked, the page will then refresh and changes should be reflected on screen. Note: To run after hours on a public holiday where a recurring request would normally run but 'Run on Public Holidays' is not ticked, a 'Once of Request' must be made.

3. Click 'Done'
4. Click  (Save)

Removing Requests

1. Click on the After Hours request to remove
2. Click on 'Remove One-Off After Hours' or 'Remove Recurring After Hours'
3. Requests area should now be removed
4. Click  (Save)

Note: Only requests in the future are able to be removed.

Undo

The undo functionality is only available when there are unsaved changes. To undo any unsaved changes, click  (Undo).

Note: When any changes are made to the grid,  (Save) must be clicked to save changes permanently.

Export Logged User Requests

To export logged user requests in PDF format, click  (Export User Requests). This will generate a PDF containing all the user requested after hours periods for this specific area.

6.1.2. After Hours Summary Report

Required Privilege: Generate After Hours Bills

The 'After Hours Summary Report' page found within the 'Building Tenancy' sub-menu, allows for generation of a basic summary of all after hours requests for each and every tenant.

1. Select tenant to generate summary report for, or check the 'Include all tenants' option
2. Enter the time period that the generated summary is to cover
3. To generate a summary report, click on of the following formats:
 -  (Generate)
 -  (Generate (popup))
 -  (PDF)
 -  (Excel)
 -  (CSV)
4. Indicate whether to include non-billable event requests in the report log.

6.2. Generating After Hours Bills

Required Privilege: Generate After Hours Bills

The 'Generate Utility Bills' page found within the 'Building Tenancy' sub-menu, is where the generation of after hours invoices takes place.

Generate After Hours Bill

1. Select tenant to generate bill for
Note: To view the selected tenants configuration, click  and the tenants details will load in a new window
2. Select the time period over which the generated bill is to cover.
3. Enter the payment due date that will appear on the bill.
4. Select 'Omit Due Date' if you do NOT wish to have the due date and the amount payable after the due date appear on the bill.
5. Select 'Omit Tax' if you do NOT wish to have the tax type/amount and amount payable before tax appears on the bill.
6. Click either  (PDF) to generate a PDF or  (CSV) to generate a CSV copy of the invoice for the selected tenant. If the invoice generation buttons are disabled this indicates that the tenant has not been linked with any after hours charges.

Note: After Hours Bill can be customised in some ways, view 'Configure After Hours Billing' in [Configuring After Hours Billing](#) documentation.

Download Previous Invoices

Any previous invoices that a tenant has will be displayed in the 'Previous Invoice' area. If a new invoice was recently generated it may not appear in the list, update the list by clicking .

To download a previous invoice:

- Select previous invoice from list
- Click either  (PDF) to download a PDF version or  (CSV) to download a CSV version.

Remove Previous Invoices

Any previous invoices that a tenant has will be displayed in the 'Previous Invoice' area. Any removed invoice will be permanently removed, furthermore the invoice number and the Seq. numbers within the invoice will also be lost.

To remove a previous invoice:

- Select previous invoice from list
- Click  a confirmation popup will appear to confirm removal before continuing.

6.3. Generating Utility Bills

Required Privilege: Generate Utility Tariff Bills

The 'Generate Utility Bills' page found within the 'Building Tenancy' sub-menu, is where the generation of electricity, gas, fluid energy, and water utility bills takes place.

Generate Utility Bill

1. Select tenant to generate bill for
Note: To view the selected tenants configuration, click  and the tenants details will load in a new window
2. Select the time period over which the generated bill is to cover.
3. Select 'Omit Due Date' if you do NOT wish to have the due date and the amount payable after the due date appear on the bill.
4. Enter the payment due date that will appear on the bill.
5. Select how the charges will be laid out in the bill. The type of layout will be pre-loaded with each tenant's default bill layout selection.
6. The available utility invoices for the selected tenant, have the related button enabled. If a utility invoice button is disabled this indicates that the tenant has not been linked with any billing meters of that utility type.
7. Click the utility invoice button to generate the related invoice.
8. A popup window will appear confirming the generation and give the option to select the invoice output format. There are two (2) options, PDF or CSV.

Note: Utility Bill can be customised in some ways, view 'Configure Utility Tariff Billing' in [Configuring Utility Billing](#) documentation.

6.4. Facility Managers

Facility Managers can be configured in Optergy Software so that Building Facility Managers will be email automatically generated Utility and After Hours bills for their tenants.

View Facility Manager

Required Privilege: View Building Roles

The Manage facility managers page on load will display all currently configured facility managers in Optergy Software. The displayed list can be sort of clicking the heading that you wish to sort by.

Add Facility Manager

Required Privilege: Manage Building Roles

To create a new facility manager click the 'Add' button, a popup window will then appear. Continue to enter all appropriate information; the first name, last name and company are the only required fields, all others can be left blank if desired. Click the 'Save' button to create and add the new facility manager to the main screen list.

First Name:

First name of facility manager

Last Name:

Last name of facility manager

Phone:

A fixed landline number in which the facility manager can be reached

Mobile:

A mobile number in which the facility manager can be reached

Fax:

Contact fax number

Email:

Contact email address

Role Held For:

The start and end dates of the issuer's hold on the position

Company Details:

Company:

Company name

ABN:

ABN details of the company. Must be a valid ABN and 11 digits long.

Address:

Company Street address

Suburb:

Company suburb

Postcode:

Company postcode

Country:

Country that the company is located in

Billing Details:

If a facility manager has a separate billing address to the company address then enter the billing details.

Address:

Billing Street address or PO Box

Suburb:

Billing suburb

Postcode:

Billing postcode

Country:

Billing Country

Edit Facility Manager

Required Privilege: Manage Building Roles

To edit an existing facility manager, either double clicking the desired row or select the row and click  (Edit). A popup will appear with all current configuration populated, any fields can then be changed. Click "Save" to apply changes.

Remove Facility Manager

Required Privilege: Manage Building Roles

To remove a facility manager, click on the desired facility manager and click  (Remove) a confirmation popup will appear to confirm remove action. The facility manager will then be permanently deleted.

6.5. Tariffs

Required Privilege: Manage Utility Tariffs

Tariffs are configured in Optergy Software so Utility Billing charges can be calculated. The 'Manage Tariff' page is a central place to create, view and keep track of all tariffs configured in Optergy Software.

Available Tariff actions:

- [Create Tariff](#)
- [Configure Flat Charges](#)
- [Configure Time of User Charges](#)
- [Configure Block Charges](#)
- [Configure Peak Demand Charges](#)
- [Configure Late Fees and Additional Charges](#)
- [Edit Tariff](#)
- [Duplicate Tariff](#)

- [Remove Tariff](#)

In order to produce a utility bill/invoice using a given tariff it must be assigned to a Tenant, view [Configuring Utility Billing](#) for instructions.

6.5.1. Add Tariff

Required Privilege: Manage Utility Tariffs

To create a new tariff click **+** (Add) from the 'Manage Tariff' page. This will direct to the 'Tariff Wizard' which provides a step-by-step interface to configure a new tariff.

Configuring general details

Step 1 allows for the tariff's descriptive details to be entered. Name is the only required field, all others can be left blank if desired. After step 1 details have been entered, the other steps can continue to be entered or the new tariff can be created now by clicking  (Save). Information can still continue to be entered after saving.

Name:

Name of the tariff

Description:

A brief description of the tariff

Company:

If the tariff is only for one particular company, that company's name can be entered

Configuring Flat Charges

Step 2 allows for the complete configuration of billing Flat Charges.

See [Configure Flat Charges](#)

Configuring Time of Use Charges

Step 3 allows for the complete configuration of billing Time of Use Charges.

See [Configure Time of User Charges](#)

Configuring Block Charges

Step 4 allows for the complete configuration of billing Block Charges.

See [Configure Block Charges](#)

Configuring Peak Demand Charges

Step 5 allows for the complete configuration of billing Peak Demand Charges.

See [Configure Peak Demand Charges](#)

Configuring Late Fees and Additional Charges

Step 6 allows for late fees and additional invoice fees to be configured.

See [Configure Late Fees and Additional Charges](#)

Ensure that to add or save a tariff to click  (Save), before navigating away from the page.

6.5.2. Configure Flat Charges

Required Privilege: Manage Utility Tariffs

A Flat charge is a set rate that will be charged for every unit of usage.

Step 2 (in Tenant Wizard) allows for the configuration of Flat Charges (view [Add Tariff](#) or [Edit Tariff](#) for instructions on how to get to this step).

Add Flat Charge

To create a new flat charge click **+** at the top of the 'Applied Charges' area. An add form will appear to the right, all flat charge details are to be entered here. All fields are required.

Description

A brief description of the flat charge

Charge Details

Rate details about how much to charge per 1 unit of usage.

Charge Rate

The cost amount to charge per 1 unit of usage. Must exclude any taxes.

Charge Unit

The charge unit

Application Period

The period in which this charge is applicable to the tariff.

Indefinitely

Charge is to be used indefinitely. If this is selected then there should only be one flat charge

Between

The start and stop dates that this charge is applicable for. Both dates are inclusive

Once all details have been entered, to add new charge click ' Save Charges', it will then appear in the 'Applied Charges' area.

View and Edit Flat Charge

1. All existing flat charges are listed in the 'Applied Charges' area, along with the description, charge rate and period of each charge.
2. To view more details or to edit a particular flat charge, select that charge and click , all charge details will appear to the right.
3. All fields are able to be updated from here
4. To save all changes made click the ' Save Charges' button

Note: If another flat charge in the list is clicked while the edit section is open; it will be closed, and any changes which have not been saved will be lost.

Remove Flat Charge

1. All existing flat charges are listed on the 'Applied Charges' area

2. Select the charge to be removed and click , this will remove charge

Example

A tenant is to be charged 5 cents for every kilowatt hour (kWh) of electricity they use in 2011 and 7 cents for every kWh used in 2012.

In order to generate Electricity bills using this specification, a tariff must be created that includes two flat charges:

Flat Charge #1

Description: Standard charge 2011
Charge Rate: \$0.05
Charge Unit: kilowatt hours (kWh)
Application Period: 01/01/2011 - 31/12/2011

Flat Charge #2

Description: Standard charge 2012
Charge Rate: \$0.07
Charge Unit: kilowatt hours (kWh)
Application Period: 01/01/2012 - 31/12/2012

This tariff must then be attached to the tenant, view [Configuring Utility Billing](#) for instructions.

Ensure to click  (Save) to save all changes made.

Sorting Charges

The charges can also be sorted. Sorting allows you to determine which order the charges will be listed in the invoice.

To sort the charges, click on the charge in the list and drag it into the desired position, then click  (Save) to save the changes.

6.5.3. Configure Time of Use Charges

Required Privilege: Manage Utility Tariffs

A Time of Use charge allows different charge rates (per every unit of usage) to be specified for different times of the day. Eg. A tenant can be charged a different rate for usage between 1am and 11am then between 12pm and 5pm.

Step 3 (in Tenant Wizard) allows for the configuration of Time of Use Charges (view [Add Tariff](#) or [Edit Tariff](#) for instructions on how to get to this step).

Add Time of Use Charge

To create a new Time of Use charge click  at the top of the 'Applied Changes' area. An add form will appear to the right, all Time of Use charge details are to be entered here. All fields are required.

Description

A brief description of the charge

Application Time Time

The period of day that the charge rate is applicable for (to be used).

Days

The days of the week that the charge rate is applicable for (to be used).

Charge Details

Rate details about how much to charge per 1 unit of usage (for the given 'Application Time')

Charge Rate

The cost amount to charge per 1 unit of usage. Must exclude any taxes.

Charge Unit

The charge unit

Application Period

The period in which this charge is applicable to the tariff.

Indefinitely

Charge is to be used indefinitely. If this is selected then there should only be one time of use charge for the given 'Application Time'

Between

The start and stop dates that this charge is applicable for. Both dates are inclusive

Once all details have been entered, to add new charge click ' Save Charges', it will then appear in the 'Applied Charges' area.

View and Edit Time of Use Charge

1. All existing Time of Use charges are listed in the 'Applied Charges' area, along with the description, charge rate and period of each charge.
2. To view more details or to edit a particular Time of Use charge, select that charge and click , all charge details will appear to the right.
3. All fields are able to be updated from here
4. To save all changes made click the ' Save Charges' button

Note: If another Time of Use charge in the list is clicked while the edit section is open; it will be closed, and any changes which have not been saved will be lost.

Remove Time of Use Charge

1. All existing Time of Use charges are listed on the 'Applied Charges' area
2. Select the charge to be removed and click , this will remove the charge

Example

Tenant charges for every kilowatt hour (kWh) of electricity they use:

- 5 cents per kWh used between 9am and 11am every day in 2011
- 7 cents per kWh used between 1pm and 5pm every day in 2011 and 2012
- 6 cents per kWh used between 8am and 1am everyday in 2012

In order to generate Electricity bills using this specification, a tariff must be created that includes three Time of Use charges:

Time of Use Charge #1

Description: 9am-11am charge 2011
Application Time: 09:00 - 11:00
Charge Rate: \$0.05
Charge Unit: kilowatt hours (kWh)
Application Period: 01/01/2011 - 31/12/2011

Time of Use Charge #2

Description: 1pm-5pm charge 2011-2012
Application Time: 13:00 - 17:00
Charge Rate: \$0.07
Charge Unit: kilowatt hours (kWh)
Application Period: 01/01/2011 - 31/12/2012

Time of Use Charge #3

Description: 8am-11am charge 2012
Application Time: 08:00 - 11:00
Charge Rate: \$0.06
Charge Unit: kilowatt hours (kWh)
Application Period: 01/01/2012 - 31/12/2012

This tariff must then be attached to the tenant, view [Configuring Utility Billing](#) for instructions. Ensure to click  (Save) to save all changes made.

Sorting Charges

The charges can also be sorted. Sorting allows you to determine which order the charges will be listed in the invoice.

To sort the charges, click on the charge in the list and drag it into the desired position, then click  (Save) to save the changes.

6.5.4. Configure Block Charges

Required Privilege: Manage Utility Tariffs

Block charges allow for different charge rates (per every unit of usage) to be specified for different usage ranges. Eg A tenant can be charged a difference rate for the first 1000 units used then for units used after 1000.

Step 4 (in Tenant Wizard) allows for the configuration of Block Charges (View [Add Tariff](#) or [Edit Tariff](#) for instructions on how to get to this step).

Add Block Charge

To create a new Block charge click  at the top of the 'Applied Changes' area. An add form will appear to the right, all Block charge details are to be entered here. All fields are required.

Description

A brief description of the charge

Application Block

The unit usage range that the charge rate is applicable for (to be used), for a given period (Bill or Day). The From and To unit type must be the same. Eg. To specify that this Block charge be used for usage between 100 to 200, then set To: 100 and From:200.

Charge Details

Rate details about how much to charge per 1 unit of usage (for the given 'Application Block')

Charge Rate

The cost amount to charge per 1 unit of usage. Must exclude any taxes.

Charge Unit

The charge unit

Application Period

The period in which this charge is applicable to the tariff.

Indefinitely

Charge is to be used indefinitely. If this is selected then there should only be one Block charge for the given 'Application Block'

Between

The start and stop dates that this charge is applicable for. Both dates are inclusive

Once all details have been entered, to add new charge click ' Save Charges', it will then appear in the 'Applied Charges' area.

View and Edit Block Charge

1. All existing Block charges are listed on the 'Applied Charges' area, along with the description, charge rate and period of each charge.
2. To view more details or to edit a particular Block charge, select that charge and click , all charge details will appear to the right.
3. All fields are able to be updated from here
4. To save all changes made click the ' Save Charges' button

Note: If another Block charge in the list is clicked while the edit section is open; it will be closed, and any changes which have not been saved will be lost.

Remove Block Charge

1. All existing Block charges are listed on the 'Applied Charges' area
2. Select the charge to be removed and click , this will remove charge

Example

Tenant charges for every litre (l) of water they use:

- 7 cents per litre used for the first 100 litres, per day, in 2011
- 6 cents per litre used between 100 litres and 200 litres, per day, in 2011 and 2012
- 5 cents per litre used over 200 litres, per day, in 2011 and 2012
- 8 cents per litre used for the first 100 litres, per bill, in 2012

In order to generate water bills using this specification, a tariff must be created that includes four Block charges:

Block Charge #1

Description: Charge for first 100 litres, 2011
Application Block: To: 0 litres - From: 100 litres, Block Period: Per Day
Charge Rate: \$0.07
Charge Unit: litres (l)
Application Period: 01/01/2011 - 31/12/2011

Block Charge #2

Description: Charge for 100 litres - 200 litres, 2011 and 2012
Application Block: To: 100 litres - From: 200 litres, Block Period: Per Day
Charge Rate: \$0.06
Charge Unit: litres (l)
Application Period: 01/01/2011 - 31/12/2012

Block Charge #3

Description: Charge for above 200 litres, 2011 and 2012
Application Block: To: 200 litres - From: leave field blank, Block Period: Per Day
Charge Rate: \$0.05
Charge Unit: litres (l)
Application Period: 01/01/2011 - 31/12/2012

Block Charge #4

Description: Charge for first 100 litres, 2012
Application Block: To: 0 litres - From: 100 litres, Block Period: Per Bill
Charge Rate: \$0.08
Charge Unit: litres (l)
Application Period: 01/01/2012 - 31/12/2012

This tariff must then be attached to the tenant, view [Configuring Utility Billing](#) for instructions. Ensure to click  (Save) to save all changes made.

Sorting Charges

The charges can also be sorted. Sorting allows you to determine which order the charges will be listed in the invoice.

To sort the charges, click on the charge in the list and drag it into the desired position, then click  (Save) to save the changes.

6.5.5. Configure Peak Demand Charges

Applicable Only For Electricity

Required Privilege: Manage Utility Tariffs

Peak Demand charges allow tenants to be charged based on the peak demand between certain times of the day, for given days of week. Peak Demand is the largest sample (usage in a 15 minute or 30 minute period) of electricity within a given period. Peak Demand charges are only applicable for electricity

billing.

Step 5 (in Tenant Wizard) allows for the configuration of Peak Charges (view [Add Tariff](#) or [Edit Tariff](#) for instructions on how to get to this step).

Add Peak Demand Charge

To create a new Peak Demand charge click **+** at the top of the 'Applied Changes' area. An add form will appear to the right, all peak demand charge details are to be entered here. All fields are required.

Description

A brief description of the charge

Application Time

Days

The days of the week that the charge rate is applicable for (to be used).

Time(s)

The period(s) during the specified days that the charge rate is applicable for (to be used). Multiple time periods can be added by clicking the **+** next to the time period. If multiple time periods are configured, the bill will charge for the highest peak demand out of all the specified periods

Charge Details

Rate details about how much to charge per 1 unit of usage (for the given 'Application Time')

Charge Rate

The cost amount to charge per 1 unit of usage. Must exclude any taxes.

Charge Unit

The charge unit

Charge Largest Sample

Choose between 15 or 30 minutes

If your meter is logging data every 15 minutes then you may choose between 15 or 30. The peak demand would then be calculated accordingly.

For example: You chose 15 minutes. System looks for the highest peak (real data for example) in energy log through the invoice range.

Say it finds a peak(highest data real) of 12kWh at 15/01/2016 08:15. Then peak demand will be calculated as $12\text{kWh} * 4$ (there are 4 samples in 1 hour) = 48kW

If you choose 30 minutes - Now the system will first add up all 15 minutes samples to get only 2 samples for every hour. (15th minute added to 30th and 45th added to 60th)

It then looks for the highest peak. Say it finds a peak of 20kWh at 15/01/2016 08:30. Peak demand now = $20\text{kWh} * 2$ (there are 2 sample in 1 hour) = 40kW

If your meter is logging data every 30 minutes then choosing a 15 minutes sample will not make any difference. The system will calculate demand based on actual logged samples only.

Application Period

The period in which this charge is applicable to the tariff.

Indefinitely

Charge is to be used indefinitely. If this is selected then there should only be one peak demand charge for the given 'Application Time'

Between

The start and stop dates that this charge is applicable for. Both dates are inclusive

Once all details have been entered, to add new charge click ' Save Charges', it will then appear in the 'Applied Charges' area.

View and Edit Peak Demand Charge

1. All existing Peak Demand charges are listed in the 'Applied Charges' area, along with the description, charge rate and period of each charge.
2. To view more details or to edit a particular Peak Demand charge, select that charge and click , all charge details will appear to the right.
3. All fields are able to be updated from here
4. To save all changes made click the ' Save Charges' button

Note: If another Peak Demand charge in the list is clicked while the edit section is open; it will be closed, and any changes which have not been saved will be lost.

Remove Peak Demand Charge

1. All existing Peak Demand charges are listed on the 'Applied Charges' area
2. Select the charge to be removed and click , this will remove charge

Example

Tenant charges for peak demand of electricity:

- 5 cents per watt for peak demand between 9am and 11am, Mon-Fri, 2011
- 7 cents per watt for peak demand between 1pm and 5pm, Mon-Fri, 2011 and 2012
- 6 cents per watt for peak demand between 8am and 1am, Mon-Fri, 2012

In order to generate Electricity bills using this specification, a tariff must be created that includes three Peak Demand charges:

Peak Demand Charge #1

Description: 9am-11am peak charge 2011
Application Time: 09:00 - 11:00
Application Days: Mon, Tues, Wed, Thurs and Friday
Charge Rate: \$0.05
Charge Unit: watts (w)
Application Period: 01/01/2011 - 31/12/2011

Peak Demand Charge #2

Description: 1pm-5pm peak charge 2011-2012
Application Time: 13:00 - 17:00
Application Days: Mon, Tues, Wed, Thurs and Friday
Charge Rate: \$0.07
Charge Unit: watts (w)
Application Period: 01/01/2011 - 31/12/2012

Peak Demand Charge #3

Description: 8am-11am peak charge 2012
Application Time: 08:00 - 11:00
Application Days: Mon, Tues, Wed, Thurs and Friday
Charge Rate: \$0.06
Charge Unit: watts (w)
Application Period: 01/01/2012 - 31/12/2012

This tariff must then be attached to the tenant, view [Configuring Utility Billing](#) for instructions.

Ensure to click  (Save) to save all changes made.

Sorting Charges

The charges can also be sorted. Sorting allows you to determine which order the charges will be listed in the invoice.

To sort the charges, click on the charge in the list and drag it into the desired position, then click  (Save) to save the changes.

6.5.6. Configure Late Fees and Additional Charges

Required Privilege: Manage Utility Tariffs

Tariffs can be configured to include late fees and additional invoice fees.

Step 6 (in Tenant Wizard) allows for the configuration of such charges (view [Add Tariff](#) or [Edit Tariff](#) for instructions on how to get to this step).

Configuring Late Fees

For late fees to be applied to utility bills then the fee cost needs to be specified.

Apply late fees

Tick this box to enable late fees

Flat Fee

Select this option to set a flat (fixed) late fee. Allows for a flat fee to be specified

Percentage of the invoice total

Select this option for the late fee to be a percentage of the total bill. Allows for % to be specified

Additional Invoice Fees

These options allow for extra fees to appear on generated bills/invoices.

Add Additional Invoice Fee

To create a new additional fee click  at the top of the 'Fees' area. An add form popup will appear, and all fee details are to be entered here. All fields are required.

Name of Fee

A brief description of the type of charge this additional fee covers

Fee Rate

Rate details about how much to charge 'per day' or 'per bill'

Once all details have been entered, to add a new fee click the 'Save' button and the fee will then appear in the additional fee list.

View and Edit Additional Invoice Fee

1. All existing additional fees are listed by name in the 'Fees' area
2. To view more details or to edit a particular fee, select that fee and click , all fee details will appear to the right.
3. All fields are able to be updated from here
4. To save all changes made click the ' Save' button

Remove Additional Invoice Fee

1. All existing additional fees are listed by name in the 'Fees' area
2. Select the fee to be removed and click , this will remove fee

Ensure to click  (Save) to save all changes made.

6.5.7. Edit Tariff

Required Privilege: Manage Utility Tariffs

To edit an existing tariff either double click the desired tariff or select the tariff and click  (Edit) from the Manage Tenant page. This will direct to the 'Tariff Wizard', this page will populate with the current tariff configuration.

Editing Flat Charges

Step 2 allows the editing of Flat chargers.

See [Configure Flat Charges](#)

Edit Time of Use Charges

Step 3 allows the editing of Time of Use charges.

See [Configure Time of User Charges](#)

Editing Block Charges

Step 4 allows for editing of Block charges.

See [Configure Block Charges](#)

Editing Peak Demand Charges

Step 5 allows for editing of Peak Demand Charges.

See [Configure Peak Demand Charges](#)

Editing Late Fees and Additional Charges

Step 6 allows for editing of last fees and additional invoice fees.

See [Configure Late Fees and Additional Charges](#)

Once all desired changes have been made click  (Save), to save all changes. Click  (Up) to return to the Tariff list.

6.5.8. Duplicate Tariff

Required Privilege: Manage Utility Tariffs

To duplicate an existing tariff, navigate to the 'Tariff Management' list page, select the tariff to duplicate and click  (Duplicate). A popup duplicate form will then appear, which will allow for the creation of a new tariff based on the currently selected tariff. Fill in the following fields, and once finished click 'Duplicate'. If the duplication is successful, a new entry will appear in the tariff list.

New Tariff Name:

A brief, unique name indicating what kind of charges the tariff will contain

New Tariff Description:

A brief description of the tariff (optional)

6.5.9. Remove Tariff

Required Privilege: Manage Utility Tariffs

To remove a tariff, from the 'Manage Tariff' page, select the tariff to be removed, and click  (Remove), a confirmation popup will appear to confirm the remove action. The tariff will then be permanently deleted.

6.6. Tenants

Tenants are configured in Optergy Software so that Utility and After Hours bills can be generated for Building Tenants. The 'Manage Tenants' page is a central place to view and keep track of all tenants configured in Optergy Software.

Available Tenant actions:

- [Create Tenant](#)
- [Configuring Utility Billing](#)
- [Configuring After Hours Billing](#)
- [Edit Tenant](#)

- [Remove Tenant](#)

6.6.1. Add Tenant

Required Privilege: Manage Building Roles

To create a new tenant click  (Add) from the Manage Tenant page. This will direct to the 'Tenant Wizard' which provides a step-by-step interface to configure a new tenant.

Configuring General Details

Step 1 allows for the entry of the tenant's personal and contact information. In this section first name, last name and company are the only required fields, all others can be left blank if desired. After step 1 details have been entered, the other steps can continue to be entered or the new tenant can be created now by clicking  (Save). Information can still continue to be entered after saving.

First Name:

First name of tenant

Last Name:

Last name of tenant

Phone:

A fixed landline number in which the tenant can be reached

Mobile:

A mobile number in which the tenant can be reached

Fax:

Contact fax number

Email:

Contact email address

Associated Groups & User:

Group/User:

This field links a tenant with an Optergy Software User and/or group and is only required if a tenant has an Optergy Software user account. If a tenant has been configured to use 'Pre-Booked' After hours, to enable this tenant to be able to make after hours requests they must be associated with a user.

Facility Manager:

Specify the tenant's manager. To add a new facility manager click  (Add)

Lease Details:

Period:

The tenant's lease period. Click  (Calendar) to select the date

Description:

*(Optional) Enter a brief description of the lease

Automatic Reminder Emails:

(Optional) Select tenant/users/groups/facility manager to receive warning emails when

lease expiry is approaching

Company Details:

Company:

Tenant's company name

ABN:

ABN details of the company. Must be a valid ABN and 11 digits long.

Address:

Company Street address

Suburb:

Company suburb

State:

Company state

Postcode:

Company postcode

Country:

Country that the company is located in

Billing Details:

If the tenant has a separate billing address to the company address then enter billing details.

Address:

Billing Street address or PO Box

Suburb:

Billing suburb

State:

Billing state

Postcode:

Billing postcode

Country:

Billing Country

Configuring Utility Billing

Step 2, 3 and 4 allows for the complete configuration of tenant Utility Billing.
See [Configure Utility Billing](#)

Configuring After Hours Billing

Step 5 and 6 allows for the complete configuration of tenant After Hours billing.
See [Configure After Hours Billing](#).

6.6.2. Configure Utility Billing

Required Privilege: Manage Building Roles

To enable the generation of tenant utility bills, a tenant needs to have the appropriate information configured.

Using the 'Tenant Wizard' (view [Add Tenant](#) or [Edit Tenant](#) for instructions to get to wizard) there are two steps in this process:

Space configuration

Before being able to configure Utility Billing for a tenant, the appropriate spaces need to be configured first. Using [Manage Spaces](#) configure the required space(s), link meters that the tenant is required to be billed for and configure the appropriate Tariff, see [Tariffs](#) for more tariff information.

Associate Utility Space

Step 2 (in Tenant Wizard) allows for spaces to be linked with a tenant. The spaces linked to a tenant should have the appropriate meters monitoring them; the tenant will be billed for each meter monitoring the selected spaces that also have the related tariff charges.

To link a new space:

1. The 'Available Spaces' area is populated with all the spaces currently configured in the system
2. Find new space to be linked, then click on it and drag to the 'Associated Spaces' area. It should now appear in this area.
3. The  icon allows you to view the current space configuration

To remove an associated space:

1. All the currently associated space appear in the 'Associated Spaces' area
2. Find the space to be removed, then click on it and drag to the 'Available Spaces' area. It should now no longer appear in the Associated Spaces' area

Configure Utility Tariff Billing

Step 3 (in Tenant Wizard) does not need to be configured to enable utility billing, it simply provides extra formatting options and configuration for auto billing.

Bill Format:

Saves utility bill format preferences

Include custom bill layout:

Provides the ability to customise the charge layout of the bill

Include custom logo:

Provides the ability to attach a custom logo to generated bills

Specify custom text header:

Provides the ability to specify a custom text header to appear on generated bill

Exclude tax from bills:

Provides the ability to specify whether or not the generated bill is to include tax

Include 'How To Pay' methods:

Provides the ability to include and customise the type of payment method which would

appear on the bottom of a generated utility invoice. Up to four (4) payment methods can be selected:

- Online Payment
- Mail
- BPAY
- POST Billpay

Auto Billing Configuration:

Enables the automatic generation and emailing of tenant's utility bills.

Enable Auto billing

Tick this to enable auto billing for this tenant

Timing of bill generation

Specify how often bills are automatically generated

Due date for payment

Set the due date that will appear on bill

Facility Manager

This indicates whether the configured facility manager will receive the automated bill

Include custom tenant email

This allows a second tenant email address to be specified

6.6.3. Configure After Hours Billing

Required Privilege: Manage Building Roles

To enable the generation of tenant after hours bills, a tenant needs to have the appropriate information configured.

Using the 'Tenant Wizard' (view [Add Tenant](#) or [Edit Tenant](#) for instructions to get to wizard) there are two steps in this process:

Configure After Hours

Step 4 (in Tenant Wizard) allows after hours areas and charges to be specified.

1. Select calculation method.

No After Hours Billing

Select this when after hours billing is not applicable for tenant

On Demand (via hardware such as push buttons)

This method indicates that after hours activity is being activated on demand. Tenants will be charged for all activity that is not covered by the weekly schedule; equipment activity is determined by looking at the 'Active' activity on the specific charge 'Trend Log'

Pre-Booked (via Optergy UI)

This method indicates that after hours activity is being requested through Optergy Software's 'After-Hours Requests' page. Tenants will only be charged for the requests made from this page, when 'Active' activity has also been logged on the specific charge 'Trend Log'

Both On Demand and Pre-Booked

For this method billing will be as per the 'On Demand (via hardware such as push buttons)' method, but tenants will have the option to also request after hours through Optergy

Software's 'After-Hours Requests' page

2. Determine if Pre-Booked restrictions are to be put in place. For Pre-Booked calculation methods, this tenant can be restricted to how many days in the future they can request after-hours; effectively preventing requests too far in the future being made. Additionally when a pre-booked restriction is in place, the tenant is unable to request recurring after-hours.
3. Configure all the Tenants after hours charge areas.

Add Charge

1. Click , a popup form will appear
2. View below for field definitions
3. Enter all charge details. If the required trend logs and schedules are not in the Optergy Software system yet, then they must be put in before continuing
4. Click 'Add'
5. The new charge will now appear in 'Applied Charges' area

Edit Charge

6. Select the charge from the 'Applied Charges' area
7. Click , a popup form will appear
8. View below for field definitions
9. Update desired fields
10. Click 'Update'

Delete Charge

11. Select the charge from the 'Applied Charges' area
12. Click 

Zone Details

Description

A brief description of the charge area

Trendlog

A binary trend log monitoring the activity (status) of an area. This trendlog is crucial for billing, tenants will only be charged for 'Active' activity on this trend log

Optimum Start

Specify if optimum start has been configured to operate in area, if so which Optimum Start configuration

Floor

Charge area floor (optional)

Suite

Charge area suite (optional)

A/C Zone

Charge area A/C zone (optional)

Standard Schedule

For On-Demand: The schedule that indicated the normal hours of operation/weekly

schedule (hours that should be excluded from being charged).

For Pre-Booking: The schedule that controls the normal operational hours (weekly schedule); calendars that indicate public holidays need to be attached to this schedule

After Hours Schedule

Special events will be added to this schedule by the [After Hours Request](#) page. If the same control points are to be used for the weekly and after hours events leave the 'Same as Standard Schedule' ticked. If however, it is required that after hours be controlled separately then the control points in the standard schedule, use this field to specify another schedule to control after hours.

For On-Demand: This schedule is not required, leave 'Same as Standard Schedule' ticked.

Application Details

Minimum Override Duration

The minimum time (hours:minutes) that a tenant must accrue before the tenant is billed. E.g. Setting the field to 00:15 will prevent tenants from being billed for events with a duration less than 15 minutes.

Maximum Override Duration

The maximum time (hours:minutes) in which the tenant can be billed for an override event.

Minimum Charge Duration

The least amount of time (hours:minutes) the tenant can be billed for. E.g. Setting the field to 00:30:00 means that the tenant is billed for no less than 30 minutes for any valid override event.

Charge Duration Round Up

Use this to specify if charge durations are to be rounded up to the nearest selected period. Eg. If set to 30 minutes, all durations will be rounded up to the nearest 30 minutes; a duration of 1 hour and 16 minutes will be rounded to 1 hour and 30 minutes.

Charge Details

Charge Rate (\$/hr)

The amount per hour that the tenant is charged for after hours activity. Amount needs to exclude any tax.

Surcharge

A fixed cost added to the tenant's bill, which is not dependent on the tenants after hours activity

Configure After Hours Billing

Step 5 (in Tenant Wizard) does not need to be configured to enable after hours billing, it simply provides extra formatting options and configuration for auto billing.

Bill Format:

Saves after hours bill format preferences

Include custom logo:

Provides the ability to attach a custom logo to generated bills

Specify custom text header:

Provides the ability to specify a custom text header to appear on generated bill

Include 'How To Pay' methods:

Provides the ability to include and customise the type of payment method which would appear on the bottom of a generated utility invoice. Up to four (4) payment methods can be selected:

- Online Payment
- Mail
- BPAY
- POST Billpay

Auto Billing Configuration:

Enables the automatic generation and emailing of tenant's after hours bills.

Enable Auto billing

Tick this to enable auto billing for this tenant

Timing of bill generation

Specify how often bills are automatically generated

Due date for payment

Set the due date that will appear on the bill

Facility Manager

This indicates whether the configured facility manager will receive the automated bill

Include custom tenant email

This allows a second tenant email address to be specified.

6.6.4. Edit Tenant

Required Privilege: Manage Building Roles

To edit an existing tenant either double click the desired tenant or select the tenant and click  (Edit) from the Manage Tenant page. This will direct to the 'Tenant Wizard', this page will populate with the current tenant configuration.

Editing general details

Step 1 contains the tenant's personal and contact information. All of these fields can be updated, view [Add Tenant](#) documentation for field definitions.

Editing Utility Billing

Step 2, 3 and 4 allow the editing of tenant Utility Billing.
See [Configure Utility Billing](#)

Editing After Hours Billing

Step 5 and 6 allow the editing of tenant After Hours billing.

See [Configure After Hours Billing](#)

Once all desired changes have been made click  (Save), to save all changes. Click  (Up) to return to the Tenant list.

6.6.5. Remove Tenant

Required Privilege: Manage Building Roles

To remove a tenant; from the 'Manage Tenant' page select the tenant and click  (Remove), a confirmation popup will appear to confirm remove action. The tenant will then be permanently deleted.

7. Activity and Monitoring

7.1. Alarms

Required Privilege: View Alarms Current and History Restricted By Notification Class or View Alarms Current and History BACnet Alarms Unrestricted

The Alarms page displays BACnet device alarms and metering alarms; specifically alarms that are currently in a state of alarm, and alarms that require acknowledgment.

Last Notification

The date and time the last time the alarm was raised

State

Current state of the alarm or device. Metering alarms are stateless so this field will always be an 'Event'. BACnet alarms are either 'Alarm' or 'Normal' and indicated the current alarm state of the BACnet device

Source

If the alarm source was a BACnet device, it would say 'BACNET'. If the alarm source was a meter, it would say 'METERING'.

Event Type

The alarm event type. Metering alarms will always say 'Meter Alarm'. BACnet alarms will have the event that occurred caused the device to go into alarm state

Most Recent Message

The most recent alarm notification message

Acknowledge

Whether all alarm notifications have been acknowledged

Links

Links to alarm reference pages. This may be internal optergy pages or an external web page. See 'View Alarm Links' below for more info

Use the 'Show State' option at the top of the list to filter alarms based on their current state:

< All >

Displays all alarms regardless of their state

Alarms

Displays BACnet alarms that are currently in alarm (offnormal) state

Normal

Displays BACnet alarms that are currently in normal state

Fault

Displays BACnet alarms that are currently in fault state

Event

Displays meter alarms only

When using this page url, an inStates parameter along with a listed state above can be added to load the page with a given state already selected. Eg. /alarmNotifications/?inStates=Alarm

Alarm Alerts

Users are alerted of new Metering, Counting and BACnet alarms at the top right of the Optergy Software Banner . New meter alarms will accumulate a number to the left, BACnet devices currently in alarm are displayed as a number to the right Eg 2 4. To get more information about these alarms, click on this section of the banner, an alarms banner will then appear. This banner has multiple functionalities:

- Some of the most recent Meter alarms are listed with their time and description. Link to the related display by clicking . Remove alarm from this banner and the top event alarm count by clicking 
- Remove all meter alarms from the banner and clear event alarm count by clicking 'Dismiss All'
- Link to the 'Alarms' page to view all alarms and their history by clicking 'Go to Alarm List'
- Hide the alarm banner by clicking  again

Note: Users will only see meter alarms for meters that they have access to, see [Energy Data Access](#).

Note: Users will only see BACnet alarms for those alarms that are associated with a notification class, where the user has been listed as a recipients, see 'Add User Recipients' in [Notification Classes](#).

See [Receiving Meter Alarms](#) and [Receiving and Emailing BACnet Alarms](#) for more specific information.

Acknowledging Alarms

To acknowledge an individual alarm, click the 'Acknowledge' button on the row of the alarm.

To Acknowledge all of the alarms, click  (Ack All).

View Alarm History

If the same alarm occurs multiple times eg. BACnet device has gone into fault and out of fault multiple times, only the most recent alarm notification will be displayed in the alarms list. To view all previous alarm notifications, either double click the alarm row, or select the alarm and click  (View). This will be directed to the 'Alarm History' page that lists every date and time the same alarm has occurred.

If it is believed the current state of a BACnet alarm is incorrect, from this page click  (Poll State) to retrieve the current state of the alarm from the hosting device.

View Alarm Links

The last column in the alarm list, displays any available reference links for each alarm.

Metering Alarms

Displays links  are available for each metering alarms, this link will open the related meter display page, which displays all the current readings of the meter.

BACnet Alarm

BACnet Alarms may have a display link and/or a page link or neither. These links are specified in the BACnet Alarm configuration.

Displays links  should link to a live display where the device's property which caused the alarm can be seen.

Page links  can link to any web page (internal or external) that is relevant to the alarm.

Moving Between Pages

If there are a lot of alarms they will be separated over multiple pages, at the top of the list it will display how many pages of alarms there are. To move between pages:

- Use  and  to move backward and forward one page at a time
- Use  and  to jump to the first and last page respectively.
- To go directly to page select the page number from the drop-down list

Filtering

The filter field at the top of the list allows filtering on the most recent message column . To filter, enter (multiple text strings or numeric digits or a combination) into the filter box, any alarm that matches what was entered will appear in the list. Eg. To display all alarms on a meter named 'Main Electricity', enter 'main' or ' electricity' or both into the filter. To reset the filter, simply remove all entered input in the filter box.

7.2. Alarm Reporting

Required Privilege: View Alarms Current and History Restricted By Notification Class or View Alarms Current and History BACnet Alarms Unrestricted

Alarm reporting provides alarm history in a non-interactive format that is more friendly for printing. Alarm reports can be customised based on user specified criteria.

Report Options

Report Title

Type in the title of the report

Message Text

The Text that the report will filter, only alarms with the selected text will be presented in the report

Acknowledgement State

Use the dropdown to choose between Acknowledged, Unacknowledged and Not Required

Alarm State

Use the dropdown to choose between In Alarm and Resolved

BACnet Alarms (Monitored Object):

Select this is only include BACnet alarms in the report

Device

Use the dropdown menu to select a specific device

Object Type

Use the Drop down menu to select a specific type

Object Instance

Use the drop down menu to choose between Any, Multiple or One. If Multiple is selected choose the Object Instances by either typing in the number or clicking the arrow buttons

Meter Alarms:

Select this is only include meter alarms in the report

Meter

Use the dropdown menu to select a specific Meter

Meter Alarm Type

Use the dropdown menu to select a specific alarm type

Meter Alarm Parameter Type

Use the dropdown menu to select a specific parameter alarm type. Only available when 'Parameter' has been selected as 'Meter Alarm Type'

Generating Report

Generate the report by selecting the options in the Alarm Report Options and then clicking  (HTML) this will load up the page in the browser with the report generated. Clicking  (PDF) will generate a PDF report which can be downloaded.

If there are a lot of Alarms in the report, they will be split over multiple pages, at the top of the list it will display how many pages of Alarms there are. Ways to move between pages:

- Use  and  to move backward and forward one page at a time.
- Use  and  to jump to the first and last page respectively.
- To go directly to the page select the page number from the drop-down list.

Using Presets

A Report Preset can be selected by clicking  (Preset). This will automatically select the settings according to the preset selected. Click "Display" to apply the preset.

7.3. Maintenance Request

Optergy Software's Maintenance Request feature allows for problems and faults to be recorded and maintained within the Optergy Software Portal.

There are 3 phases in the life cycle for each reported maintenance request: drafted, published and closed.

Drafting the Maintenance Request

Required Privilege: Add Issue Reports or Manage Any Issue Report

The drafting stage is the first phase of a maintenance request. In this phase, the maintenance request report is still in the process of being created and has not yet been published as an actual maintenance request. This allows the user to gather data from a range of sources (if applicable) over a period of time. The maintenance request can be deleted if desired before it gets published. Once a maintenance request is published, it can no longer be edited or deleted. See [Drafting Maintenance Request Report](#)

Publishing the Maintenance Request

Required Privilege: Add Issue Reports or Manage Any Issue Report

The maintenance request reaches the second phase once it has been published. The maintenance request report is only published when the drafter has decided to submit the maintenance request and make it available to others. When a maintenance request is published, it can only have follow ups added, or be closed. To add a follow up, select the maintenance request and click  (View). See [Publishing Maintenance Request Report](#).

Closing the Maintenance Request

Required Privilege: Add Issue Reports or Manage Any Issue Report

Closing is the final phase of the maintenance request. The maintenance request is closed once someone has determined that the issue has been resolved. Once a maintenance request has been marked as resolved, it can no longer be followed up on. See [Closing Maintenance Request Report](#).

To close a Maintenance Request, click  (Close). In the popup click 'Close' to confirm and close the maintenance request.

Viewing Reports by Status

Required Privilege: Add Issue Reports or Manage Any Issue Report

Click "Draft Maintenance Request Reports", "Published Maintenance Request Reports", "Closed Maintenance Request Reports" to sort the reports according to their respective statuses.

7.3.1. Drafting Maintenance Request Reports

Required Privilege: Add Issue Reports or Manage Any Issue Report

The maintenance request is considered to be in draft mode when a maintenance request is still in the process of being created and has not yet been submitted as an actual maintenance request. These reports are not visible to anyone except the drafter.

All current issue reports in their drafting stage are listed under the 'Draft Maintenance Request Report' tab on the 'Issue Maintenance Request List' page within the 'Activity & Monitoring' sub-menu.

Creating a maintenance request

1. Click  (Add), this will direct to another page that will allow for maintenance request details to be entered
2. Enter maintenance request details

Title (Required)

Enter the title of the maintenance request

Description (Required)

The description of the maintenance request.

Recommendations

Any recommendations for resolving the maintenance request.

Cost Impact

The possible cost impact of the maintenance request

Priority

The priority of the maintenance request.

3. If applicable, add any reference pages or files, such as an Optergy Software page where the fault was seen

Add Reference URL

Click , enter title (description) of reference and url, click 'Save this Reference'

Add Reference File

Click , enter title (description) of reference and upload file, click 'Save this Reference'

Edit Reference

Click , make changes, click 'Save this Reference'

Remove Reference

Click , click 'Remove' to proceed

View Reference

Once a reference has been added, either click  to view a reference link in new window or click  to download an attached reference file

4. Click  (Save) to save maintenance request report
5. If desired the Maintenance Request report can be published now by clicking , see [Publishing Maintenance Request Reports](#)

Editing a Drafted Maintenance Request

All current maintenance request reports in draft stage are listed under the 'Draft Maintenance Request Report' tab. To edit an existing draft maintenance request either double click maintenance request, or select the maintenance request and click  (Edit). All fields can be updated from this screen. To save changes, click  (Save).

7.3.2. Publishing Maintenance Request Reports

Required Privilege: Add Issue Reports or Manage Any Issue Report

Drafted maintenance request reports are published when the drafter has decided to formally submit the issue and make it available to others.

Published a Draft Maintenance Request

Current draft maintenance requests are listed under the 'Draft Maintenance Request Reports' tab.

1. Select draft maintenance request to publish
2. Click  (Publish)
3. Select users and groups who will have access and be able to follow up on this published maintenance request
4. Click 'Publish'

5. Maintenance request will now be moved from the 'Draft Maintenance Request Reports' list to the 'Published Maintenance Request Reports'

View a Published Maintenance Request

All currently published maintenance request reports are listed under the 'Published Maintenance Request Reports'. To get more details about the maintenance request and to see all follow-ups, select the maintenance request and click  (View).

Add a Follow Up to a Published Maintenance Request

Once a maintenance request has been published, further information, notes, remarks and actions taken can be added to the maintenance request. This is known as a follow up.

To add a follow up select a published maintenance request:

1. Select the published maintenance request to add to and click  (View)
2. Click  (Follow up). The follow up popup will appear
3. Enter your follow up information
4. If desired, an Optergy Software page or external web page reference can be included. If so tick 'Include a reference URL' and enter reference details
5. If desired, a reference file can be attached. If so tick 'Include a reference file' and enter reference details
6. Click "Add this follow-up" to add the follow-up.

Click  to return to the full list of maintenance requests.

7.3.3. Closing Maintenance Request Reports

Required Privilege: Add Issue Reports or Manage Any Issue Report

A published maintenance request report can be closed once it has been decided that the issue has been resolved or no more actions need to be taken. Once a maintenance request has been closed, all of its details can still be viewed, but no more follow ups can be made to it.

All published maintenance request reports are listed under the 'Published Maintenance Request Reports' tab. To close a published maintenance request, select it and click  (Close). A confirmation popup will appear, click 'Close' to proceed. The maintenance request will now be moved from the 'Published Maintenance Request Reports' list to the 'Closed Maintenance Request Reports' list.

7.4. Log Viewer

The log viewer page allows for the log files in the Windows file shares (BACnet, Compiler, Email, Problems, Web Server) to be downloaded remotely, without having to be on the same network as the Optergy Portal.

Launching a viewer

To view a live display of a log file entry and view updates as they happen, double click on a log file entry, a popup window will appear displaying a live view of the log. More than one log can be viewed

simultaneously. You may also open views by selecting the log in the list and clicking 

Downloading a log

To download a log, select the log from the list and then click 

7.5. Page URL

To get the URL for any Optergy Software page, click on the  (Get page URL) button in the top right hand corner of the Optergy Software Banner.

The URL provided will load the page with the Optergy Software banner at the top, to force the page to load without the Optergy Software banner remove `?go=` from the URL.

If the URL is going to be used within the same portal, such as in a live display remove `http://{IP}` from the start of the URL Eg Resulting URL `/?go=/meters/ViewMeters.html` or `/meters/ViewMeters.html`.

Additional URL Parameters

hideup

The  (Up) will not be displayed in the dock

closedock

The dock will load closed

hidedock

The dock will not appear at all

transparentBackground

Page will load with a transparent background

Examples:

`/dashboard/DashboardList.html?hideup&closedock`

`/dashboard/DashboardList.html?hidedock`

7.6. Point Change Activity Report

Report Title

Type in the name of the report.

Show Change Details

Tick box to show change details

Time Period

Select the time period which will be used to generate the report. Click the radio buttons to choose the method in which the time period will be defined. This and Last have a drop down menu which will allow the period to be set in terms of days, months and years. Report options Before, After and Between can be filtered by selecting the calendar button to choose the day at which the report would begin. for example, Before 15th June.

Search Filters

These are the currently active search filters which have been applied by the Add Filter Button to filter the Type of user activity

Generate Report

Click  (Generate) to create the report in the browser

Click  (Add Filter) to filter out the specific user activity to be presented in the report. For example, a user overrides a light in the Optergy Software BMS.

- Activity can be filtered by user names, Multiple users can be added by holding Ctrl to select them.
- The Result Dropdown menu allows the user activity to be filtered according to success results or failure results or both.
- Click "Add This Filter" to add the filter.
- Click on a filter in the filter list and then

Click  (Remove Filter) to remove it from the list

Click  (Generate pop-up) to create the Report in a separate window

Click  (PDF) to have the report generated in a PDF format for download

7.7. System Message Notifications

Required User Permission: Show Notifications

System Message Notifications alert users of important things that have occurred in Optergy Software Portal Eg. System backup completed, System Update installed, Licence changed, etc.

The complete history of system message notifications can be found on the 'System Notifications' page under the 'Activity & Monitoring' sub-menu.

Which system notifications a particular user receives depends on the notification categories they have been configured to see, see [User Administration](#).

Maintenance Request Report

Notified whenever a maintenance request report is published or edited in which the user has been tagged

System

Notified whenever important system settings are changed or on portal shutdown and reboot

UPS

Notified whenever problems are detected with the UPS, such as the USB being disconnected

Hardware

Notified when disk space gets low

Software Updates

Notified whenever a system update is performed

Backup Problem

Notified when problems arise performing system backups

Backup Successful

Notified on successful system backups

Licence

Notified whenever a licence is installed

System Message Notification Alerts

Users are alerted of new system notifications at the top right of the Optergy Software Banner . New notifications that no-one has dismissed, will accumulate to the right. E.g. If there are 4 new system notifications, it will look like this:  4. To get more information about any of the notifications, click on the notification banner icon. The notification banner will then appear. The banner has several purposes:

- Up to three of the most recent system notifications are listed. A notification can be removed from the banner by clicking . If there are more than 3 notifications, the next one will be displayed. Keep clicking the  icon until there are no more notifications.
- To remove all notifications from the banner with one click, and view all system notifications, click 'View more..'
- Hide notification banner banner by clicking  again

7.8. Trend Log Event History

Required Privilege: View Trend Log Data Unrestricted

The 'Trend Log Event History' page displays a list of all the BACnet trend log notifications sent to Optergy Software.

Moving Between Pages

If there are a lot of trendlog events they will be split over multiple pages, at the top of the list it will display how many pages of events there are. Ways to move between pages:

- Use  and  to move backward and forward one page at a time
- Use  and  to jump to the first and last page respectively.
- To go directly to page select the page number from the drop-down list

Filtering

The filter fields at the top of the list allows filtering on the host device, and instance. To filter by host device, enter the device instance into the 'Filter by Host Device' box. All trend log trend log events that match what was entered will appear in the list. To filter by trend log instance, enter the trend log instance into the 'Filter by instance' box. Either filter can be specified regardless of whether or not the other filter is specified. To reset the filter, simply remove all entered input in the filter boxes.

Remove All

To remove all the recorded trend log event history entries from Optergy Software, simply click  (Remove All). A popup will then appear asking to confirm the removal of all the trend log events. If 'Remove' is clicked all the entries will then be permanently removed from Optergy Software.

Note: Trend Log events older than 3 months are automatically cleared.

7.9. User Activity Report

Required Privilege: View User Actions

User Activity Report generates a report detailing all the User activities within Optergy Software. It can be filtered according to date and different user activities.

Report Options

Report Title

Type in the name of the report.

Show Change Details

Tick box to show change details in the report, 2 columns will be added into the report showing the Old Value and the New Value.

Time Period

Select the time period which will be used to generate the report. Click the radio buttons to choose the method in which the time period will be defined. This and Last have a drop down menu which will allow the period to be set in terms of days, months and years. Report options Before, After and Between can be filtered by selecting the calendar button to choose the day at which the report would begin. for example, Before 15th June.

Search Filters

These are the currently active search filters which have been applied by the Add Filter Button to filter the Type of user activity

Generate Report

To generate a report click  (Generate)

To filter out the specific user activity to be presented in the report, click  (Add Filter). The Activity can be filtered by user names. Multiple users can be added by holding Ctrl to select them. The result drop down menu allows the user activity to be filtered according to success results or failure results or both. Click "Add This Filter" to add the filter. Click on a filter in the filter list and then click  (Remove Filter) to remove it from the list.

Generate the Report in a separate window click  (Generate pop-up)

To download the report in PDF format click  (PDF)

8. Meter Management

8.1. Custom Meter Points

Required Privilege: Manage Custom Meter Points

Custom Meter Points allow you to view cumulative data for a meter within a specific time frame. For example, you can create a Custom Meter Point to view the electricity consumption for the previous month or the previous year. Time periods can be customised on the Add Custom Meter Point Page to measure data from specific times on a meter to allow flexible viewing of meter data. The Custom Meter Point's data is then stored in a BACnet AI (Analog Input) which can be read on the BACnet Client page.

The 'Custom Meter Points' page allows for CustomMeter Points objects to be viewed, created, edited and removed.

Custom Meter Points are updated every 15 minutes. If you save or edit a Custom Meter Point, that Custom Meter Point will be updated immediately along with all the Custom Meter Points that share the same meter. For example, when you save a Custom Meter Point reading "Electricity Meter", all other Custom Meter Points reading "Electricity Meter" will be updated along with it.

Note: If there are a large number of Custom Meter Points, it may take a while for all the points to update.

Viewing Custom Meter Points

The Custom Meter Points page displays a list of the Custom Meter Points, in particular the AI instance which is used to identify the BACnet point should you want to read the point's property. Important information such as the meter name, unit and parameter that the Custom Meter Point is reading is also displayed.

Moving Between Pages

If there are a lot of Custom Meter Points, they will be split over multiple pages, at the top of the list it will display how many pages of Custom Meter Points there are. Ways to move between pages:

- Use ◀ and ▶ to move backward and forward one page at a time.
- Use ⏪ and ⏩ to jump to the first and last page respectively.
- To go directly to the page select the page number from the drop-down list.

Filtering

The filter field at the top of the list allows filtering on meter name, and description. To filter, enter (multiple text strings or numeric digits or a combination) into the filter box, any Custom Meter Point that matches what was entered will appear in the list. E.g. To display all Custom Meter Points with the meter name "Electricity", enter "Electricity" or any part of it into the filter. To reset the filter, simply remove all entered input in the filter box.

Adding Custom Meter Points

To create a Custom Meter Point, click + (Add), this will take you to the [Add Custom Meter Point Page](#).

Editing Custom Meter Points

To edit a Custom Meter Point, select the Custom Meter Point by clicking the checkbox and click  (Edit). Alternatively, double click the Custom Meter Point to edit the Custom Meter Point.

Note: The edit button will be disabled if you select more than one Custom Meter Point.

Removing Custom Meter Points

To remove Custom Meter Points, select the Custom Meter Points you wish to remove and then click  (Remove) to remove them.

Reading a Custom Meter Point's value

The current value of the custom meter point is visible in the Present Value column of the Custom Meter Point table.

8.1.1. Configure Custom Meter Points

Required Privilege: Manage Custom Meter Points

This page allows you to create or edit custom meter points and specify the times that the custom meter points will be measuring.

Saving Custom Meter Points

To save a new custom meter point or save the changes made to an existing meter point, click  (Save).

Meter and Parameter Selection

Filter

Type in part of a meter name to filter it in the Meter drop down list, useful if you need to narrow down the list to find a specific meter.

Meter

To select the meter, click the drop down list and select the meter that the custom meter point will be using.

Parameter

To select the parameter that will be measured by the custom meter point, click the drop down list and select the parameter.

Unit

To select the unit that the meter's parameter will be measured in, click the drop down list and select the unit.

Time Period Selection

These options will allow you to show data from a custom meter point for a specified period of time. These options must be selected in order to save a custom meter point.

This

Measures a time period for starting from the beginning of this day, week, month, or year until

the present time.

Example: if "This Month" today is 22nd April it will measure data from the 1st till the 22nd; when the month changes to May, it will measure from the beginning from the beginning of May.

Before

Measures the time period preceding the set date. For example, all usage before 22nd April 2013.

After

Measures the time period following the set date. For example, all usage after 22nd April 2013.

Between

Measures the time period between a set period. For example all usage between 13th April 2013 to 22nd April 2013. If you wish to retrieve data for a meter on a particular day.

Example: 1st January, set the start date as 1st January and the end date to 2nd January.

Note: Ensure that the "From" date is before the "To" date.

Previous Week Day

Shows data for the Custom Meter Point on the day 7 days ago. For example, if today is a Monday, it will show the data for Monday last week.

Previous Year's

This option allows you to view the data for the previous year's month or day. For example, if today is 22 April 2013 and "Month" is selected, it will show the data for April 2012, if "Day" is selected the data for 22 April 2012 will be displayed.

If "Up to Today Equivalent" is checked, the data will be limited to the same date as this year, but in the last year. e.g. If today is 22 April 2013 and Month is selected, the data from 1 April to 22 April 2013 will be shown.

Previous To Today Equivalent

This option creates a Custom Meter Point which measures up to a certain point relative to a Time scale. For example, if the year option is selected and today is 11/11/2013 and the "Previous to today equivalent" option is selected, the point will measure last year's data up until 11th of November that year, 11/11/2012. There are also options to apply this measurement to day, week and month. This option is useful in comparing the data from last year up to the same day that this year has elapsed.

Note: When selecting the option there is an example which will show what period the will be covered.

Last Specific Month

Measures the time period for a set month. For example, if the last specific month was set to April, it will show all the data recorded during the last April that occurred.

Time Before Last Specific Month

Measures the time period for the time before the set month. For example, if the time before the last specific month was set to June, it will show all the data recorded during not the last recorded June, but the June that occurred the 12 months previous to then.

Description

To save a description of the Custom Meter Point for future reference and to aid searching, type in a description here. the description will be saved when clicking  (Save).

Only retrieve data that occurs after the commissioning date

Ticking this option will set the custom meter point to only retrieve data that occurs after the commissioning date, data before will not be taken into account when performing the calculations. If there is no commissioning date for the meter, all energy logs within the specified time period will be taken into account.

8.2. Energy Data Access

Required Privilege: Configure Meters

The energy data access page, found within the 'Meter Management' sub-menu, is responsible for enabling and disabling display or access to energylog data collected in Optergy Software.

Working with energylog data access can be done in two ways, by group/user and by energylog (meter).

Group / User:

When editing by group or user, you can see for the selected group or user, a table displaying all the meters configured in Optergy Software, and which ones can be accessed by that particular group or user (access is denoted by a tick in the checkbox). To give or remove access to a meter for the selected group/user, simply tick or untick the checkbox next to the desired energylog. To apply all changes click  (Save). If you wish to undo any unsaved changes click  (Reset Fields).

Note: When editing by group/user, you can tick or untick all options using the checkbox in the heading row.

Energylog (Meter):

When editing by energylog, you can see for the selected energylog, two tables. The first table shows all the groups which currently have access to that energylog, and the second table shows all the users that have access to that energylog. To give or remove access to the selected energylog, simply tick or untick the checkbox next to the desired group or user. To apply all changes click  (Save). If you wish to undo any unsaved changes click  (Reset Fields).

Note: When editing by Energylog (meter), you can tick or untick all group options using the checkbox in the heading row of the group table or you can tick or untick all user options using the checkbox in the heading row of the user table.

8.3. Energy Log Data Entry

Required Privilege: Energy Log Data Entry

The energy data entry page, found within the 'Meter Management' sub-menu, is responsible for allowing users to import data into pre-existing meters in Optergy Software.

Add:

The type of energylog data that will be imported. There are three (3) options:

1. Historical Data
2. Forecast Data
3. Manual Meter Data

This will subsequently restrict the meters that appear in the meter options box.

Meter:

Select the meter to import the energy data into

Parameter:

The type of meter reading parameter

Data Source:

The method in which to import the data by. There are three (3) methods to select from:

1. Upload CSV File
2. Manual Input
3. Roll Over From Meter

Input Data - Upload CSV File

This method imports data by uploading a CSV file containing correctly formatted data. Each line in the file must contain a date and value separated by a comma.

E.g. Sample entry lines:

- 2010/1/03 1:30, 100
- 03-01-2010 2:30, 99.25
- 01\03\2010 03:30, 0.23

Unit of Data Entry:

The unit of the data to be imported

Date Format:

Select the format that the dates in the CSV will adhere to

Ignore Invalid Entries:

Select whether or not to ignore all entries in the CSV which do not match the specified entry line format

CSV File:

Select the file which contains the import data. The data value should contain an energy usage sample for the given time period.

Available time format examples:

- 24-hour time
 - 00:00:00
 - 00:00
 - 18:30:00
- 12-hour time
 - 12:00:00 AM
 - 12:00:00 am
 - 12:00 AM
 - 5:30:00 pm

The AM/am or PM/pm must be present.

Input Data - Manual Input

This method imports data by the user filling out the provided data fields.

Unit of Data Entry:

The unit of the data to be imported

Input:

Indicates what time period each entered data value will cover.

Weekly Usage

Enter the total usage for weekly periods

Monthly Usage

Enter the total usage for monthly periods

Custom Period Usage

Enter the total usage for custom time periods

Meter Readings

Only available for 'Manual Meter Data' entry. Enter the cumulative reading value at specified times; usage will then be calculated

Start Date:

The time period that the entered data will start from. To change the start date, click  (Calendar). Once a change has been made to the starting date, it will be directly reflected in the data entry table below.

Data:

This is the data entry table. This will be configured according to the selections made above. Enter the data values for each individual time period length.

Valid entries for energy usage are as follows:

Type	Examples	Result
Positive Numeric Value	100.13 575	100.13 575
Negative Numeric Value	-874 -0.12	-874 -0.12
Zero	0	0
Empty/White Space Filled Input		The date is completely skipped and no data is added for that time
Non-Numeric Value	Fred 5 hundred \$*@	Error is thrown and no data is added

Input Data - Roll Over From Meter

This method imports data into any given meter, by using the recorded data from another meter in

Optergy Software and (possibly) performing calculations on that meters data.

Meter to roll over from:

The meter to base the roll over calculations on

Meter roll over start Month:

The start month in which the data will be taken from the roll over meter. To change the start month, click  (Calendar).

Number of months to roll over:

Indicates the number of months from the roll of start month, that data will be used. The maximum number of months to roll over at any one time is 12 months.

Manual Entry Start Month:

The start month in which the rolled over data will be inserted into the new meter. To change the insert start month, click  (Calendar).

Perform Calculations:

This option enables simple calculations, such as multiplication, addition, subtraction and addition, to be performed on the data being rolled over.

Note: If this option is enabled, the data will be calculated and stored on a monthly basis.

To finish the import process, click  (Add Data), to import the desired data.

8.4. Energy Log Management

Required Privilege: Energy Log Management or View Meters

The energylog management page, found within the 'Meter Management' sub-menu, will load with a list all the current energy logs recorded in Optergy Software. Each energylog entry shows the name of the energylog, parameter the energylog is logging, the meter it is linked to, and that meters description. If an energylog is no longer linked to a meter it will be indicated by a **(Removed)** status indicator in the meter column.

Moving Between Pages

If there are a lot of energy logs they will be split over multiple pages, at the top of the list it will display how many pages of energy logs there are. Ways to move between pages:

- Use  and  to move backward and forward one page at a time
- Use  and  to jump to the first and last page respectively.
- To go directly to page select the page number from the drop-down list

Filtering

The filter field at the top of the list allows filtering on the host device, energylog instance, meter name and description. To filter, enter (multiple text strings or numeric digits or a combination) into the filter box, and any energy logs that match what was entered will appear in the list. Eg. To search for an energylog with a certain name enter all of the name or any part of it into the filter. To reset the filter, simply remove all entered input in the filter box.

Remove Energylog

Required Privilege: Energy Log Management

To completely remove a specific energylog or group of energy logs from the portal, click  (Remove Energylog). If an energylog is in a position to be removed from the portal a confirmation popup will appear.

Note: Only energy logs that no longer have meters are able to be removed.

Remove All Data

Required Privilege: Energy Log Management

To remove all the logged data for a specific energylog or group of energy logs, click  (Remove Data). Select the 'Remove all data' option, and click 'Remove'. A confirmation popup will appear indicating the number of energy logs which will have their data permanently removed. This is useful if you have finished configuring a meter or meter type and want to clear anything that has been previously logged whilst setup was taking place.

Remove Data Before

Required Privilege: Energy Log Management

To remove all the logged data for a specific energylog or group of energy logs before a specific dates, click  (Remove Data). A popup will appear, select the 'Remove data before' option and enter the before date and time. All data that is on and prior to the specified date/time will be deleted. A confirmation popup will appear indicating the number of energy logs which will have their data permanently removed before the specified date/time (inclusive).

Remove Data Range

Required Privilege: Energy Log Management

To remove all the logged data for a specific or group of energy logs between two specific date, click  (Remove Data). A popup will appear, select 'Remove data range' option and enter the to date and time and from date and time. All data that is on and between these specified date/times will be deleted. A confirmation popup will appear indicating the number of energy logs which will have their data permanently removed between the specified date/times (inclusive).

When a data range is removed, entries will be replaced with evenly redistributed data so no actual gaps will be present in the energylog. To remove just a single entry, set the start and end date/times to the same thing.

Possible reasons that could cause removal to fail:

- Meter is currently not logging - Only meters are are currently logging can have data ranges removed
- Missing before and after data - A logged entry must exist before the range specified and an entry after the range specified. Eg If the dates specified for removal are 10/02/2013 05:30 to 10/02/2013 05:45, then logged entries must exist for 10/02/2013 05:15 and 10/02/2013 06:00
- Entries don't exist - The energylog may not actually contain logged entries for the date range specified

View Data as CSV

Required Privilege: View Utility Reports

To download a copy of all the data logged for a specific energylog or group of energy logs in CSV format; Select the desired energy logs and click  (CSV). Select csv settings as desired.

Time Period

The time period that the csv report is to cover

Data Output

Select if the data report is to be raw or collated

CSV Output

If only one energylog has been selected then this option is irrelevant. If multiple energy logs have been selected, are they all to appear in one csv or a csv per energylog

Exclude Consumption/Generation indicator in energylog label

Tick this to exclude (Consumption) and (Generation) from appearing in energylog labels

Configure Auto CSV E-mailing

Required Privilege: View Utility Reports

Energylog csv's can be configured to be automatically emailed.

1. Select the desired energy logs, the number selected will appear in ()
2. Click  (CSV Auto Email)
3. Configure CSV options

Time Period

The time period that the csv report is to cover

Data Output

Select if the data report is to be raw or collated

Custom file name

Specify a custom csv filename for the email report attachment

Exclude Consumption/Generation indicator in energylog label

Tick to exclude (Consumption) and (Generation) from appearing in energylog labels

4. Click on 'Configure' to configure email option; a popup will appear, enter email configuration

Description

Brief description of report

Recipients

Select users to receive the emailed report. Ensure that selected users have an email address configured.

Email Customisations

Include custom email subject line

Allows for a custom email subject to be specified

Include custom email body text

Allows for a custom email body to be specified

5. Select 'Preview' so see the csv output before saving
6. Click 'Save'

View [Utility Report Email Management](#) for the list of currently configured utility reporting auto emails and the ability to edit saved items.

Scan for Data Anomalies

Optergy Software has in-built functionality to scan for data anomalies logged in the energy logs; such as temporary spikes and drops in data that are occasionally caused by malfunctioning metering hardware. This scan can be run on all energy logs or just those selected from the table.

To begin scan:

1. Click  (Data Anomaly Scan)
2. Select energy logs
3. Select scan time period
4. Click 'Begin Scan'
5. Scan will commence, Optergy Software will be directed to the scan page that will display the current progress of the scan and later the results, during the scan this page can be left and returned to later.

View Scan Results:

If the scan page was never left results will automatically display on screen once finished, otherwise from the 'Energylog Management' page click , then click 'View Previous Scan'. Once results are displayed on screen click  and  to view a data report over the anomaly period. Anomalies can be removed by selecting them and clicking , a confirmation popup will appear before continuing with the removal. When a data anomaly is removed, data over that period will be re-distributed evenly.

8.5. Meter Alarms

8.5.1. Meter Alarm List

Required Privilege: Configure Accessible Meter Alarms

This page contains a list of all the meters and whether they have any alarms set on them. Only the meters that the currently logged in user has access to will appear.

For a description of alarm types see [Configure Meter Alarms](#)

Editing Meter Alarms

To edit meters click on the meter and then click  (Edit) or double click the meter. Note  (Edit) will only be enabled if one alarm is checked (selected).

See [Configure Meter Alarms](#) for more details regarding specific alarm types.

Adding Alarms to Meters

To add alarms to meters and bring up the Add Meter Alarms page, click **+** (Add)

Removing Alarms from Meters

To remove all alarms from the selected meters, select the meters to have the alarms removed and click the remove button.

Filtering Alarms

To filter alarms by name and description, type in part of the name or description in the filter field.

To filter alarms by whether or not they have alarms or not, select the appropriate option from the show drop down menu:

- "Show Meters with Alarms" show meters that have alarms attached to them.
- "Show Meters without Alarms" will show only the meters without alarms.
- "Show All meters" will show all meters.

8.5.2. Add Meter Alarms

Required Privilege: Configure Accessible Meter Alarms

This page allows multiple alarms to be added to multiple meters at once.

Adding Alarms to Meters

1. Click the meters on the list to the left to select the appropriate meters to apply the alarms.
2. If desired, click the "Edit Non-Parameter Alarms" to edit the non-parameter alarms.
3. To add parameter alarms, click the add button and follow the dialog to add an alarm.
4. Save the alarms by clicking  (Save) on the dock and click "Continue" to save the alarms

Filtering Alarms

Use the filter field to filter meters based on their name and description.

Use the utility type drop down menu to filter the meters according to their utility type.

More About Alarms

See [Configure Meter Alarms](#) for more details regarding specific alarm types and using the alarm menus.

8.5.3. Meter Alarm Notification Settings

Required Privilege: Configure Accessible Meter Alarms or Configure Meters

This page allows users to set the Meter Alarm Email Settings. These settings determine which users or groups will receive emails when a meter alarm occurs. Meter Alarms are grouped into 5 types, Configuration Changed(Config), Offline, Online, Consumption, and Instantaneous.

Note: These settings control whether an email is sent out when an alarm occurs, they do not control how the alarms are raised or which condition causes an alarm to occur. To set alarms on meters, see [Configure Meter Alarms](#).

Viewing settings by Group/User

To set the types of alarm emails that a group or user will receive:

1. Click the option marked 'Group/User' (This button is only available when you have the energylogManagement privilege)
2. Selected from the drop down menu the user or group, you wish to edit the settings for
3. Click the checkboxes to set which meters on which type of alarms will need to be sent to users. Currently email is supported. **Note:** Only the meters that the current group/user has [Meter Access](#) will appear in the table
4. Click  (Save) to save the settings

Viewing settings by Meter

Required Privilege: Energy Log Management

To view the settings by meter:

1. Click the option marked 'Meter'" button at Edit Meter Alarm Email Settings by:'
2. Select from the drop down menu meter settings to be viewed/edited
3. Click the checkboxes for which users are to receive notification alarms for the selected meter. Currently email is supported. **Note:** Only the groups/users with [Meter Access](#) to the current meter will appear in the table
4. Click  (Save) to save the settings

Moving between pages

If there are a lot of Meter Alarm Email Settings they will be split over multiple pages, at the top of the list it will display how many pages of Meter Alarm Email Settings there are. Ways to move between pages:

- Use  and  to move backward and forward one page at a time.
- Use  and  to jump to the first and last page respectively.
- To go directly to the page select the page number from the drop-down list.

Filtering

The filter field at the top of the list allows filtering on meter name, and description. To filter, enter (multiple text strings or numeric digits or a combination) into the filter box, any Meter Alarm Email Settings that matches what was entered will appear in the list. Eg. To display all Meter Alarm Email Settings with the meter name "Electricity", enter "Electricity" or any part of it into the filter. To reset the filter, simply remove all entered input in the filter box.

Undo Changes

To undo changes click  (Undo). This will revert the changes to when it was last saved.

Settings

Config

Sends a notification when a configuration change happens to the meter

Online

Sends an notification when a meter goes online

Offline

Sends an notification when a meter goes offline

Consumption

Sends an notification when a consumption parameter alarm occurs

Instantaneous

Sends an notification when a instantaneous parameter alarm occurs

Also for banner

Enforce the same restrictions to the users banner as well, opposed to the banner receiving all meter alarms

Note: If this is not check for a given user and meter then the given user will receive all meter alarms types for the given meter in their banner.

8.5.4. Receiving Meter Alarms

Optergy Software users can be notified of new metering alarms in two ways, they can appear and be displayed in the Optergy Software banner or users can receive alarm emails. See below for specific instructions on each method.

Optergy Software Banner Notification

Both metering and BACnet alarms can be displayed to the right of the Optergy Software banner. Different users can be configured to receive different meter alarms.

To select which users receive specific meter alarms in the banner:

1. Ensure that the required users have the 'Show Optergy Software Banner' option select in [User](#) administration
2. Users must have meter access to the meters they are to receive alarms for, this access can be configured using the specific [Meter Configuration](#) page page or the [Meter Access](#) page
3. Ensure all the required alarm conditions have been specific for each meter; this can be configured using the specific [Meter Configuration](#) page or the [Meter Alarms](#) page
4. At this stage, all meter alarms that are raised that the user has access to will appear in the Optergy Software banner
5. Which alarm types appear in the banner can be restricted further (Eg A specific users is not to be notified when online alarms occur but are for offline alarms), by selecting the 'Also for Banner' option on the [Meter Alarm Email Settings](#) page

Email Notification

Metering alarms can be configured to be emailed to specific users; different users can be configured to receive different meter alarms.

To select which users receive specific meter alarms by email:

1. Ensure that the required users have their email addresses specified
2. Users must have meter/energy data access to the meters they are to receive alarms for; this access can be configured using the specific [Meter Configuration](#) page page or the [Meter Access](#) page
3. Ensure all the required alarm conditions have been specific for each meter; this can be configured using the specific [Meter Configuration](#) page or the [Meter Alarms](#) page
4. Users must now have configured which meter alarm types that are to receive via email, this is

configured using the [Meter Alarm Email Settings](#) page.

8.5.5. Test Meter Alarms

Required Privilege: Configure Meters

The 'Meter List' page, found within the 'Meter Management' sub-menu, will load with a list with all the meters that are currently stored in Optergy Software. To test a meter's alarm recipient configuration,

select the meter to test with and click (Test Alarm Email). A confirmation popup will then appear to confirm the generation test action. To send a test alarm email for the selected meter, click the 'Send' button. Otherwise click 'Cancel'.

8.6. Meters

Meters are configured in Optergy Software so that utility reports and bills can be generated for any utility type (electricity, water, gas, fluid energy, diesel, or waste). The 'Meter List' page is a central place to view and keep track of all meters configured in Optergy Software.

Available meter actions:

- [View Meters](#)
- [Add Meters](#)
- [Edit Meters](#)
- [Configure Meter Alarms](#)
- [Test Meter Alarms](#)
- [Configure Meter Access](#)
- [Remove Meters](#)
- [Commissioning History](#)
- [Meter Relation Information](#)

8.6.1. View Meters

Required Privilege: View Meters

The 'Meter List' page, found within the 'Meter Management' sub-menu, will load with a list with all the meters that are currently stored in Optergy Software.

Moving Between Pages

If there are a lot of meters they will be split over multiple pages, at the top of the list it will display how many pages of meters there are. Ways to move between pages:

- Use  and  to move backward and forward one page at a time
- Use  and  to jump to the first and last page respectively.
- To go directly to page select the page number from the drop-down list

Filtering

The filter field at the top of the list allows filtering on meter name, description and base instance. To filter, enter (multiple text strings or numeric digits or a combination) into the filter box, any meters that matches what was entered will appear in the list. Eg. To search for a meter with a certain description enter all of

the description or any part of it into the filter. To reset the filter, simply remove all entered input in the filter box.

Meter Summary

This page allows for two different summary options, Basic Summary and Full Summary, in which full summary provides extra information. To view the different summaries toggle between  (Full Summary) and  (Basic Summary).

8.6.2. Add Meters

Required Privilege: Configure Meters

Many different types of meters can be created and monitored by Optergy Software, including

- Physical (which can be autonomously read)
- Manual input meters (data is manually entered)
- Calculation (data is automatically calculated from other meters)

To add a new meter, click  (Add) from the 'Meter List' page. A popup will appear which will direct to either the '[Add Physical Meter](#)', '[Add Manual/Forecast Meter](#)', or '[Add Calculation meter](#)' wizard.

8.6.2.1. Add Physical Meters

Required Privilege: Configure Meters

To add a new physical meter, click  (Add Meter) from the 'Meter List' page. A popup will appear with the option to create different types of meters. Click the 'Physical Meter' option and this will direct to the 'Add Physical Meter' page.

Adding General Details

Step 1 and 2 contains the meters's general information and communication driver configuration.

Step 1 - Meter Information

Enabled:

Indicates whether the meter is enabled for logging

Meter Name:

A unique name of the meter; the only special characters allowed are: - . : + , () { }

Description:

A brief description of the meter (optional); the only special characters allowed are: - . : + , () { }

Serial Number:

The identification number given to the meter (optional except for any meters using the EDM1 Atlas Series Driver)

Site:

The name of the site which is monitored by this meter (optional)

Building:

The name of the building which is monitored by this meter (optional)

Level:

The building level which is monitored by this meter (optional)

Room:

The building room which is monitored by this meter (optional)

Utility Type:

The type of energy or resource this meter is logging

Parent Meter:

If this meter is a sub-meter, and the parent meter is known, then this should be set to the meter of which this meter is a sub-meter of

Notes:

Notes for reference (optional)

Step 2 - Communication Driver

Select a Driver:

The driver selects the communications protocol driver used to read the meter. The driver options are:

BACnet/IP Driver

Read a meter via the BACnet protocol

Device Instance:

The device instance of the BACnet device that contains the BACnet point(s) for the meter

Max Value:

The highest possible value the meter can read before it will reset (cumulative parameters only)

Rollover Data:

When the maximum value of a meter is reached and resets to zero (0), enable this option to have data continue to accumulate (i.e. if max value is 9999, next value is 10,000, not 0). By default (not ticked), the displayed cumulative value will always display what the meter reads

Meter Type:

Existing Meter Type: The type of meter that specifies the data logging capabilities that this meter has. See [Meter Type Configuration](#) for more details.

Define/Edit Object Configuration If only a single point is to be read for this meter, the point can be specified directly here.

Parameter:

The name of what is being read from the meter for the given register

Object Type:

The BACnet object type of the point to be logged

Object Instance:

The object instance of the point to be logged

Unit:

Specifies the engineering unit that the data for this parameter will be logged in

Scale:

What the reading should be multiplied by to get the value into what is specified in the unit column

Trendlog Interval:

The number of minutes that this parameter's trend log data will be logged at

Note: If Object Type is set to Accumulator, Unit and Scale are not available as they are read directly from the BACnet point

BACnet/IP (Pulse) Driver

Read a pulse meter via the BACnet protocol

Device Instance:

The device instance of the BACnet device that contains the BACnet point(s) for the meter

Object Type:

The object type of the BACnet object to read

Object Instance:

The instance number of the BACnet object to read

Amount per Pulse:

The amount or quantity each pulse represents. E.g. For a meter that ticks at 10 litres per pulse, set this to 10. For a meter that ticks at 0.1 litres per pulse, set this to 100, and unit to Millilitres.

Unit:

The type of unit the meter is counting

Trendlog Interval:

Indicates how often the trendlog associated with this meter is logged. The default is 5 minutes.

Max Value:

The highest possible value the meter can read before it will reset (cumulative parameters only)

Rollover Data:

When the maximum value of a meter is reached and resets to zero (0), enable this option to have data continue to accumulate (i.e. if max value is 9999, next value is 10,000, not 0). By default (not ticked), the displayed cumulative value will always display what the meter reads

Cumulative Offset:

A number added to the cumulative reading for a meter (default: 0). The cumulative

offset can be a negative number, but if the meter is ever reset then the cumulative reading will be negative

Consumption / Generation:

Indicates if the meter considers utility readings to be consumed (e.g. electricity use for lighting) or generated (electricity generated from solar panels)

Calculate Flow Rate:

This option is only available for Water pulse meters. Tick this option for Optergy Software to automatically calculate flow rate based on the usage record. This flow rate value is available from the meter display and is also trend log

Flow Rate Unit:

The unit in which flow rate is to be recorded

Modbus IP Driver

Read a meter via the Modbus protocol

Connection:

IP Devices: A valid IP Modbus device already registered with Optergy [Modbus Device](#)

Serial Devices: A valid serial Modbus device already registered with Optergy [Modbus Device](#)

Unit Number:

The unit address of the modbus device or gateway

Meter Type:

The type of meter that specifies the data logging capabilities that this meter has

Max Value:

The highest possible value the meter can read before it will reset (cumulative parameters only)

Rollover Data:

When the maximum value of a meter is reached and resets to zero (0), enable this option to have data continue to accumulate (i.e. if max value is 9999, next value is 10,000, not 0). By default (not ticked), the displayed cumulative value will always display what the meter reads

Scale Factor Voltage/Current/Power/Energy:

A number which allows for meter specific customisations to a meter type which enables additional scaling of all the logged voltage/current/power/energy parameters. The available options are:

As Per Meter Type:

No meter specific scale factor. Uses the scale specified in the meter type (the default setting)

Value:

Scales the values using a fixed value

Register (Int16):

Scales the values using a value read from the specified 'Register (Int16)' in the meter

Register (10^{Int16}):

Scales the values by multiplying values by 10^{(reading from value from 'Register (10^{Int16})')}

CT Ratio Primary/Secondary:

The Primary/Secondary number of turns on the current transformer (CT) to which the meter is connected. In order for this option to take effect, both the primary and secondary ratios must be specified. i.e. Both must be changed from the default 'As Per Meter Type'.

CT Ratio:

The actual CT ratio of the meter (where CT ratio = Primary turns / secondary turns). This option takes precedence over CT Ratio Primary/Secondary settings.

Modbus IP (Pulse) Driver

Read a pulse meter via the Modbus protocol

Connection:

IP Devices: A valid IP Modbus device already registered with Optergy [Modbus Device](#)

Serial Devices: A valid serial Modbus device already registered with Optergy [Modbus Device](#)

Unit Number:

The unit address of the modbus device

Register:

The register number for the meter

Format:

The format that the modbus register returns its value

Endian:

The ordering of the registers

Byte Swapped:

Indicates whether or not the bytes are reversed. E.g. High order to low order or vice versa

Modbus Function:

The modbus function code. Only needs to be specified if need to override the auto behaviour.

Unit:

The unit of the readings specified in the amount per pulse

Trendlog Interval:

Indicates how often the trendlog associated with this meter is logged. The default is 5 minutes.

Amount per Pulse:

The amount or quantity each pulse represents. E.g. For a meter that ticks at 10 litres per pulse, set this to 10. For a meter that ticks at 0.1 litres per pulse, set this to 100, and unit to Millilitres.

Max Value:

The highest possible value the meter can read before it will reset (cumulative parameters only)

Rollover Data:

When the maximum value of a meter is reached and resets to zero (0), enable this option to have data continue to accumulate (i.e. if max value is 9999, next value is 10,000, not 0). By default (not ticked), the displayed cumulative value will always display what the meter reads

Cumulative Offset:

A number added to the cumulative reading for a meter (default: 0). The cumulative offset can be a negative number, but if the meter is ever reset then the cumulative reading will be negative

Consumption / Generation:

Indicates if the meter log import or export data values

Calculate Flow Rate:

This option is only available for Water pulse meters. Tick this option for Optergy Software to automatically calculate flow rate based on the usage record. This flow rate value is available from the meter display and is also trend log

Flow Rate Unit:

The unit in which flow rate is to be recorded

IME Nemo 96HD (with IF96012 module) Driver

Meter is a IME Nemo 96HD (with IF96012 module) and is read via the Modbus protocol

Connection:

IP Devices: A valid IP Modbus device already registered with Optergy [Modbus Device](#)

Serial Devices: A valid serial Modbus device already registered with Optergy [Modbus Device](#)

Unit Number:

The unit address of the modbus device or gateway

Energy Direction:

If set to 'Both', then on the meter display both the consumption and generation graphs will be present, otherwise only the graph with the selected direction will appear

Connect / Initialised:

Before Optergy Software will begin logging data, meter first needs to be initialised. This is done by using this button to successfully connect to the meter using the above configuration

Real-Time logging interval:

This is how often the real-time (trendlog) data is logged. Note: if '2 Seconds

(temporary)' is selected, it will only last for 10 minutes, before being reset to 5 minutes.

Energy logging interval:

This is how often the energy (energylog) data is logged

Clear Real-Time Data:

This removes all the real-time data from the meters memory

Clear Energy Data:

This removes all the energy data from the meters memory

EDMI Atlas Series Driver

Meter is a EDM I Atlas Series and is read via network serial (IP to serial) devices

IP Address:

The IPv4 address of the meter (or network serial device)

Username:

The username to connect to the meter with

Password:

The password to connect to the meter with

Connect / Initialise:

Before Optergy Software will begin logging data, meter first needs to be initialised. This is done by using this button to successfully connect to the meter using the above configuration

Meter Configuration Details:

Displays the current settings in the meter. Includes the model, software version, current date/time, CT ratio and VT ratio. The current date and time is updatable.

Data Source:

Indicates where the data will be sourced from, the EDM I meter or pulse input

Energy Direction:

If the above selected data source is set to 'EDM I Meter', then this option will be available to specify which sort of usage will be logged by the meter

Pulse Input:

If the above selected data source is set to 'Pulse Input', then this option will be available to select the input number

Unit:

If the above selected data source is set to 'Pulse Input', then this option will be available to specify what unit the logged usage will be in

Utility Supply:

If the above selected data source is set to 'Pulse Input', then this option will be available to indicate if the meter considers utility readings to be consumed (e.g. electricity use for lighting) or generated (electricity generated from solar panels)

Sync Time:

Whether or not the time in the meter should be synchronised with Optergy Software. By default (ticked)

Clear Energy Data:

This removes all the energy data from the meters memory

Note: In order to work correctly, the real, apparent, reactive data must be configured in the same survey

EDMI Genius Series Driver

Meter is a EDM I Genius Series and is read via network serial (IP to serial) devices

IP Address:

The IPv4 address of the meter (or network serial device)

Username:

The username to connect to the meter with

Password:

The password to connect to the meter with

Connect / Initialise:

Before Optergy Software will begin logging data, meter first needs to be initialised. This is done by using this button to successfully connect to the meter using the above configuration

Meter Configuration Details:

Displays the current settings in the meter. Includes the model, software version, current date/time, CT ratio and VT ratio. The current date and time is updatable.

Data Source:

Indicates where the data will be sourced from, the EDM I meter or pulse input. The 'EDM I meter' option is only available to electricity meters.

Energy Direction:

If the above selected data source is set to 'EDM I Meter', then this option will be available to specify which sort of usage will be logged by

Pulse Input:

If the above selected data source is set to 'Pulse Input', then this option will be available to select the input number

Unit:

If the above selected data source is set to 'Pulse Input', then this option will be available to specify what unit the logged usage will be in

Utility Supply:

If the above selected data source is set to 'Pulse Input', then this option will be available to indicate if the meter considers utility readings to be consumed (e.g. electricity use for lighting) or generated (electricity generated from solar panels)

Clear Energy Data:

This removes all the energy data from the meters memory

Note: In order to work correctly, the real, apparent, reactive data must be configured in the same survey

Novus DigiRail-4C Driver

Read a Novus Digirail 4c meter via the Modbus protocol

Connection:

IP Devices: A valid IP Modbus device already registered with Optergy [Modbus Device](#)

Serial Devices: A valid serial Modbus device already registered with Optergy [Modbus Device](#)

Unit Number:

The unit address of the modbus device

Input number:

The input number of the meter to read

Unit:

The unit of the readings specified in the amount per pulse

Trendlog Interval:

Indicates how often the trendlog associated with this meter is logged. The default is 5 minutes.

Amount per Pulse:

The amount or quantity each pulse represents. E.g. For a meter that ticks at 10 litres per pulse, set this to 10. For a meter that ticks at 0.1 litres per pulse, set this to 100, and unit to Millilitres.

Connect / Initialised:

Before Optergy Software will begin logging data, meter first needs to be initialised. This is done by using this button to successfully connect to the meter using the above configuration

Calculate Flow Rate:

This option is only available for Water pulse meters. Tick this option for Optergy Software to automatically calculate flow rate based on the usage record. This flow rate value is available from the meter display and is also trend log

Flow Rate Unit:

The unit in which flow rate is to be recorded

Initialise Pulse Count:

Use this to set an initial count/reading on the meter. During the process Optergy Software will prompt to cycle power on the meter, this must be done for the count to be a successful set.

Adding Alarms

The Set Alarms tab allows for the configuration of meter alarms.
See [Configure Meter Alarms](#) for more information.

Adding Meter Access

The Meter Access tab allows for the configuration of access to the meter and its data.
See [Configure Meter Access](#) for more information.

Adding Display Customisation

The Display Customisation tab allows for additional customisation of the meter's display page.
See [Meter Display Customisation](#) for more information.

Advanced Settings

Read Meter Based On Status Point

Before attempting to read the meter, Optergy Software will read the BACnet point specified here. If the BACnet point is online, and is set to Active, then Optergy Software will attempt to read the meter. If the point is offline, or the value is Inactive, then the meter will not be read.

Device Instance:

The device instance of the status point to be read

Object Type:

The object type of the status point to be read

Object Instance:

The object instance of the status point to be read

If the meter is not being read, the meter status point (BI) associated with that meter will have the following settings:

- Present Value: Active (Meter is considered Online)
- Reliability: No Sensor
- Out Of Service: True

8.6.2.2. Add Calculation Meters

Required Privilege: Configure Meters

To add a new calculation meter, click **+** (Add Meter) from the 'Meter List' page. A popup will appear with the option to create different types of meters. Click the 'Manual Meter' option and this will go to the 'Add Calculation Meter' page.

Adding General Details

Step 1 and 2 contains the meters general configuration and communication driver configuration.

Step 1 - Meter Information

Meter Name:

A unique name of the meter; the only special characters allowed are: - . : + , () { }

Description:

A brief description of the meter (optional); the only special characters allowed are: - . : + , () { }

Location:

The location that is monitored by this meter (optional)

Utility Type:

The utility type of the calculation meter

Calculate Average Demand

Tick this option to enable Optergy Software automatically calculating the average power of all component meters, this value will appear on the meter display

Notes:

Notes for reference (optional)

Step 2 - Communication Driver

Select a Calculation Type:

There are 4 different types of calculation meters:

1. Aggregate - sum of all selected meters
2. Custom - a user defined calculation
3. Portion - a percentage of a given meter
4. Remainder - the remainder of a parent meter less all its child meters

Aggregate

An aggregate calculation meter is the sum of all the selected meters

Parent:

If this meter is a sub-meter, and the parent meter is known set it here

Available Meters:

List of meters that are available to be included as associated meters

Associated Meters Value:

List of meters that are to be used in the aggregate meter calculation. Meters need to be clicked and dragged from the Available list into the Associated list.

Custom

A completely customisable calculation meter

Custom calculation meters required the calculation expression/equation to be defined.

To specify a particular component, click on the on-screen component and a popup will appear.

Meter:

Select a meter to add to the equation

Value:

An exact value can be specified to add to the equation

Operator:

An expression operator to add to the equation

Component ordering can be changed by selecting an on-screen component and dragging it to a new location. New components can be added by clicking .

Portion

A portion calculation meter is simply a specified percentage of a given base meter

Base Meter:

The meter which is used as the source for this portion meter

Percentage:

The percentage of the portion base meter which makes up this meter

Remainder

A remainder calculation meter is the remainder of a parent meter minus its child meters

Parent Meter:

The parent meter of this meter, all sibling meters will be minus from this

Available Meters:

List of meters that are available to be included as siblings

Sibling Meters:

A list of all meters that share the same specified above parent meter. Meters need to be clicked and dragged from the Available list into the sibling list.

Commissioning and Calculation meters

A calculation meter may be configured, but cannot become enabled until all component meters have had 'Final Commissioning Performed'. See [Commissioning History](#) for details for performing commissioning actions on a meter. Once all component meters of a calculation meter have been commissioned and are running, a non-commissioned meter cannot be added to it.

On screen meter items will appear in 4 colours:

Black text means a meter is enabled but un-commissioned

Red text means a meter is disabled and un-commissioned

Green text means a meter is enabled and commissioned

Orange text means a meter is commissioned but disabled

Ideally, before creating a calculation meter, all component meters in a calculation meter should be in green text. If not, the meter will not perform any calculations until they are.

Note: A calculation meter will automatically be commissioned once all of its component meters have been commissioned, there is no need to manually commission a calculation meter.

Adding Alarms

The Set Alarms tab allows for the configuration of meter alarms.
See [Configure Meter Alarms](#) for more information.

Adding Meter Access

Step 3 allows the addition of access to the meter and its data.

See [Configure Meter Access](#)

8.6.2.3. Add Manual Meters

Required Privilege: Configure Meters

To add a new manual meter, click **+** (Add Meter) from the 'Meter List' page. A popup will appear with the option to create different types of meters. Click the 'Manual Meter' option and this will go to the 'Add Manual Input Meter' page.

Adding General Details

Step 1 and 2 contains the meters general configuration and communication driver configuration.

Step 1 - Meter Information

Meter Name:

A unique name of the meter; the only special characters allowed are: - . : + , () { }

Description:

A brief description of the meter (optional); the only special characters allowed are: - . : + , () { }

Location:

The location that is monitored by this meter (optional)

Notes:

Notes for reference (optional)

Step 2 - Communication Driver

Select a Driver:

The driver selects the communications protocol driver used to read the meter. There are 2 different communication drivers to select from:

1. Manual Driver
2. Forecast Driver

Manual Driver

A manual meter with the manual driver selected enables a meter to have its data manually added via user input.

Utility Type:

The type of energy or resource this meter is logging

Parent Meter:

If this meter is a sub-meter, and the parent meter is known, then this should be set to the meter of which this meter is a sub-meter of

Consumption / Generation:

Indicates if the meter log import or export data values

Forecast Driver

A manual meter with the forecast driver selected enables a meter to have its forecast data manually added via user input.

Base Meter:

The meter in which this manual meter is based on

Adding Meter Access

Step 3 allows the addition of access to the meter and its data.

See [Configure Meter Access](#)

8.6.3. Configure Meter Alarms

Required Privilege: Configure Meters

The configuration of alarms for a meter, enables portal notifications and emails (if configured) to alert users to events associated with a given meter.

Step 3 (in Physical Meter Wizard) allows for the configuration of meter alarms (View [Add Physical Meters](#) or [Edit Physical Meters](#) for instructions on how to get to this step).

There are 4 main meter alarm categories:

1. Configuration changed
2. Meter online
3. Meter offline
4. Specific parameters

Configuration Changed

If this option is selected then an alarm will be raised whenever any of the basic details or alarm parameters for a meter have been changed.

Meter Online

If selected, then an alarm will be raised whenever a meter appears online either for the very first time or if it has come back online after being offline status, for the days of the week specified

Meter Offline

If selected, then an alarm will be raised whenever a meter goes offline (due to a number of failed read attempts), for the days of the week specified.

Specific Parameters

This option can raise alarms based on a reading for a parameter from the meter.

Add Parameter

To add a new user defined parameter, click **+** and a popup window will appear.

Number to add:

This specifies the number of distinct meter parameter alarm entries to add to the list

Alarm event type:

The type of event to raise an alarm on. The options here depend on what parameters are supported by the meter/meter type.

Instantaneous maximum and minimum values

An alarm is generated when a reading goes above the maximum or below the minimum

Instantaneous minimum value

An alarm is generated when a reading goes below the minimum

Instantaneous maximum value

An alarm is generated when a reading goes above the maximum

Consumption over interval

An alarm is generated when a given amount of usage is exceeded over a given number of minutes

Consumption over time

An alarm is generated when a given amount of usage is exceeded between a start and stop time

Once all details have been entered, click 'Continue', and the parameter event types will then appear in the parameter table for configuration.

Remove Parameter

To remove a user defined parameter, ensure the parameter(s) to be removed is selected, and click . A popup will then appear asking to confirm the removal of the selected alarm parameter or parameters. If 'Remove' is clicked, all the selected parameters will then be permanently removed from Optergy Software.

Specifying a Delay

Specifying a delay can be useful for preventing 'false positive' alarms from being generated by the system, by waiting for a certain amount of time before triggering an alarm. With the exception of Configuration Changed alarms, all alarms can have a minimum delay specified. By default, alarms don't have any delay period.

When a delay is specified for a given alarm, and that alarm meets its trigger condition, it will not go into alarm, but go into a holding state. The alarm will stay in this holding state until either the next read (or any subsequent read before the delay is exceeded) takes the meter out of alarm state (in which case no alarm is ever raised), or the first subsequent read after the delay period has elapsed (starting from the time the alarm went into a holding state), in which case an alarm is raised.

Note: The actual delay is determined by how often the meter is polled, and not purely on the delay. If a delay of 5 seconds is specified, and it takes 10 seconds for the system to get around to polling that meter again, then the actual delay will be 10 seconds, not 5. If the system takes 4 seconds to poll a meter, and a delay of 30 seconds is specified, the alarm will be raised after 8 polls ($30/4=7.5$ seconds, 8 seconds rounded up to the nearest second).

Parameter Collections

If the same set of parameter alarms needs to be applied to a number of meters, they can be saved as a parameter collection. Once a parameter collection has been saved, it can be loaded and applied to other meters very easily.

Save Parameter Collection

To save the currently selected parameters as a collection, click  and a popup window will appear.

Name:

Name of the collection

Description:

A brief description of the collection

Load Parameter Collection

If there are already saved quick load collections, then the quick load button will be enabled. To load a saved favourite collection, click  and select the collection to load.

Once all desired meter alarm changes have been made click  (Save), to save all changes.

Receiving Meter Alarms

See [Receiving Meter Alarms](#) for information.

8.6.4. Configure Meter Access

Required Privilege: Configure Meters

The meter access responsible for enabling and disabling access to the live meter display, and access to utility data collected for that meter. By default, no one is given access to a meter.

Step 3 or 4 (depending on the type of meter) (in Meter Wizard) allows for the configuration of meter access (View [Add Meters](#) or [Edit Meters](#) for instructions on how to get to this step).

There are two ways to grant access: via group and via user. There are two tables which list all users and groups in Optergy Software. To give or remove access to this meter, simply tick or untick the checkbox next to the desired group or user. To apply all changes click  (Save).

Note: A quick way to tick or untick all group options is to use the checkbox located in the heading row of the group table.

Note: A quick way to tick or untick all user options is to use the checkbox located in the heading row of the user table.

8.6.5. Meter Display Customisation

Required Privilege: Configure Meters

The display customisation allows for a specific meters live display page to have its configuration (e.g. colouring, default units, etc) enhanced.

Step 4 or 5 (depending on the type of meter) (in Meter Wizard) allows for the configuration of additional display settings. (View [Add Meters](#) or [Edit Meters](#) for instructions on how to get to this step).

To set up display customisations, click the 'Customise Optergy Software Meter Display' option. The following options will now be available to configure. Once all changes have been made, click  (Save).

Note: Not all options will be suitable for every meter.

Show Consumption graph

Use this option to display the Consumption graph in Meter Display. It will be enabled by

default

Show Generation graph

Use this option to display the Generation graph in Meter Display. It will be enabled by default

Once a graph type has been selected, the following options can then be available to configure for these graphs:

Set Targets for Consumption Graph

Use this option to allow comparisons, budget or forecast bands to be graphed in Consumption graphs

Set Targets for Generation Graph

Use this option to allow comparisons, budget or forecast bands to be graphed in Generation graphs

Consumption graph data colour:s

Use the colour picker to select the bar colour of the graphed consumption data

GHG graph data colour:s

Use the colour picker to select the bar colour of the graphed GHG data

Demand graph data colour:s

Use the colour picker to select the line colour of the graphed demand data

Display data using saved MJ conversion:

Select whether or not to apply the latest saved MJ conversion factor. See [MJ Conversion Factors](#) for more details

Configuring Targets

Click  to configure the targets for consumption and generation graphs respectively:

1. In the Configure Targets pop up, click  (Add Target)
2. In the popup enter the type of graph, value, unit, colour and line style for the target
3. Select 'Include value on line display' to display the set value for the target in the graph
4. Click Add to add the targets to the list of configured targets

Note: Targets will be saved on clicking  (Save).

8.6.6. Edit Meters

Required Privilege: Configure Meters

Any meter which exists in Optergy Software can be edited at any point in time.

To edit any existing meter, either double click the desired meter or select the meter and click  (Edit) from the 'Meter List' page. This will load the '[Edit Physical Meter](#)' or '[Edit Calculation Meter](#)' '[Edit Manual Meter](#)' wizard (depending on the type of meter selected) and will load selected meters configuration.

8.6.6.1. Edit Physical Meters

Required Privilege: Configure Meters

To edit an existing physical meter, either double click the desired meter or select the meter and click  (Edit) from the 'Meter List' page. This will load the 'Edit Physical Meter' page with the currently selected meters configuration.

Editing General Details

Step 1 and 2 contains the meters's general information and communication driver configuration. All of these fields can be updated, view [Add Physical Meters](#) documentation for field definitions.

Editing Alarms

The Set Alarms tab allows for the configuration of meter alarms.
See [Configure Meter Alarms](#) for more information.

Editing Meter Access

The Meter Access tab allows for the configuration of access to the meter and its data.
See [Configure Meter Access](#) for more information.

Once all desired changes have been made click  (Save), to save all changes.

8.6.6.2. Edit Calculation Meters

Required Privilege: Configure Meters

To edit an existing calculation meter, either double click the desired meter or select the meter and click  (Edit) from the 'Meter List' page. This will direct to the 'Edit Calculation Meter' page with the wizard pre-populated with the current selected meters configuration.

Editing General Details

Step 1 and 2 contains the meters's general information and the calculation specifications. All of these fields can be updated, see [Add Calculation Meters](#) documentation for field definitions.

When a calculation meter component changes, there are five options on how the data is affected:

- Leave past data - All currently left data will be left as is, only future data will have the changes made taken into consideration
- Rebuild past data from commissioning date for this meter only - All past data is removed, and rebuilt from the date of the latest commission date of all its component meters
- Rebuild all past data for this meter only - All past data for the current meter being edited will be removed and rebuilt using the newly saved configuration
- Rebuild past data from commissioning date for this meter and the listed calculation meters - If this option is available, then the listed meters below use this meter in their calculations, this option will remove all past data for this meter and all the listed meters, and rebuild them from the date of the latest commission date of all its component meters
- Rebuild all past data for this meter and the listed calculation meters - If this option is available, then the listed meters below use this meter in their calculations, this option will remove all past data for this meter and all the listed meters and rebuild them all using the newly saved configuration.

Editing Alarms

The Set Alarms tab allows for the configuration of meter alarms.
See [Configure Meter Alarms](#) for more information.

Editing Meter Access

Step 3 allows the editing of access to the meter and its data.
See [Configure Meter Access](#)

Once all desired changes have been made click  (Save), to save all changes.

8.6.6.3. Edit Manual Meters

Required Privilege: Configure Meters

To edit an existing manual meter, either double click the desired meter or select the meter and click  (Edit) from the 'Meter List' page. This will direct to the 'Edit Manual Meter' page with the wizard pre-populated with the current selected meters configuration.

Editing General Details

Step 1 and 2 contains the meters's general information and communication driver configuration. All of these fields can be updated, view [Add Manual Meters](#) documentation for field definitions.

Editing Meter Access

Step 3 allows the editing of access to the meter and its data.
See [Configure Meter Access](#)

Once all desired changes have been made click  (Save), to save all changes.

8.6.7. Remove Meters

Required Privilege: Configure Meters

To remove a meter from the 'Meter List' page select the meter or meters you wish to remove and click  (Remove). A confirmation popup will then appear before proceeding, click 'Remove' to permanently remove all select meters from Optergy Software.

8.6.8. Commissioning History

Required Privilege: Configure Meters, View Commissioning History

The 'Commissioning History' page is a central place to view and keep track of all significant milestones, status checks or testing results for any given meter which is configured in Optergy Software. To view commissioning history, click  (View Commission Info) from the Meter List page.

Add Commissioning Record

Required Privilege: Add Commissioning Actions

To add a new commissioning entry, click  (Add). A popup add form will appear which will allow for

entry of a new commissioning record. Fill in the following fields, and once finished click 'Add'. If the entry is successfully saved, a new entry will appear in the commissioning history list for the given meter.

Note: Once an entry is made, it is permanent, and can not be removed from the history list.

Commissioning Action:

What actually happened to the meter.

E.g. CT check, voltage tap check, final commission performed, etc

If the appropriate action is not already in the list, a new action can be created on the fly at any stage. See [Create Commissioning Action](#) (below) for more details.

Value:

If the selected commissioning action requires a status value then this field will appear (optional)

Comment:

A brief comment about the action

Name/Initials:

Either the full name or initials of the person/user who is recording the action

Once a meter has had 'Final Commission Performed' it is now classed as being commissioned in Optergy Software.

Create Commissioning Action

To create a new action, click the **+** located to the right of the commissioning action input field. A popup add form will appear which allows for entry of a new type of action. Fill in the following fields, and once finished click 'Add'. If the action is successfully saved, the action will appear in the commissioning action options list.

Commissioning Action Name:

A brief name indicating what the action is to entail

Requires Value:

Indicates whether this action needs to include a value in order to be successfully verified.

8.6.9. Meter Relation Information

Required Privilege: Configure Meters

The 'Meter List' page, found within the 'Meter Management' sub-menu, will load with a list with all the meters that are currently stored in Optergy Software. To obtain a meter relationship summary, click  (Meter Relation Info). This is intended to identify all the possible relationships between a selected meter and all other meters stored in Optergy Software. Some possible relationships that could be identified for a selected meter are:

- If the meter is parent meter
- If the meter top level meter
- If the meter has child (sub) meters
- If the meter is itself a child (sub) meter of another meter

- If the meter has no relation to any other meter

8.6.10. Meter Hierarchy

Required Privilege: View Meters

The meter hierarchy page, found within the 'Meter Management' sub-menu, will load a graphical tree list displaying the parent/child relationships of all the meters currently in Optergy Software.

Tree Navigation

To completely expand the tree and show all meters, click  (Expand All).

To completely collapse the tree and only show the top level meters, click  (Collapse All).

View Meter Displays

From the meter hierarchy page it is possible to display the meter display of a meter when clicked on. This feature can be enabled by clicking on  (Show Meter Displays). Once enabled when a meter within the tree is clicked its related display will be seen to the right. This feature can be disabled again by clicking  (Hide Meter Displays). **Note:** Forecast and Manual meters do not have a status or cumulative reading.

Display Utility Preferences

To only display meters of a certain utility type, click  (Display). Select the utility type and click 'Refresh'. Only the meters that are configured as this selected utility type will now appear in the tree.

Meter Search

To find a specific meter's location within the portal's meter hierarchy, click  (Search). Once the meter is located, the tree will be expanded and the tree's focus will be directed to the highlighted meter's position. To clear the last meter's search results click  (Reset).

Context Menu (Right Click Menu)

To display the context menu (right click menu), simply right click on a meter and a list of options will appear. Possible options include:

- Meter Breakdown Report (only available for parent meters)
- Meter Configuration
- Commission Meter

8.7. Meter Displays

Required Privilege: View Meter Displays

The 'Meter Displays' page is a central place to view live readings and keep track of meters configured in Optergy Software. Each meter can have a display page automatically generated, showing its current working status.

On the left side of the screen, there are fields that allow for the sorting and filtering on meters. Meters can be sorted by utility type, location, communication driver and alphabetical order. The initial load up sorting preference for the portal can be specified in the [Web Server and Portal Preferences](#) page.

When a meter is selected from the available list, its current status is either displayed on the right side of the screen or if the 'popup' is selected the status display is opened in a new popup tab.

All meter displays include the following details:

- Basic meter details such as the name, description and communication driver
- Online status:  (online),  (offline) and  (disabled)
- Active consumption and/or active generation graphs (if the meter logs that parameter)
The time period for the displayed graph can be changed by clicking the appropriate button. Electricity meters have the extra option of switching between Consumption, Demand and Greenhouse Gas (GHG) Emissions.

If a meter is a 'smart' electrical meter, then the display will probably contain multiple instantaneous parameters such as line voltage, current or power

Depending on the type and state of the meter, a reading might say NaN. This stands for 'Not A Number' and can indicate certain things (no load, something not set up correctly), depending on what the parameter is. If an EDM1 meter is displaying NAN for a cumulative parameter, this means that the meter has not had its TOU configured to log this parameter.

In some cases a reading might say Infinity. This indicates that in the meter type, a register has been specific to reading the CT, but this register is missing from the meter type mapping table.

Note: If a calculation meter (aggregate, portion, remainder etc) is offline, this means that at least one of its component meters that make up the calculation meter are offline. It will not return online until all component meters are online.

Scaling of Meter Values

A meter display can either be viewed with the meters raw values (as configured in the meter type) or scaled values. To alternate between the two views, click on  (Meter Menu) in the top left hand corner, then either click 'Display Raw Values' or 'Display Scaled Values'.

Add Commissioning Record

Required Privilege: Add Commissioning Actions

To add a new commissioning entry, click on  (Meter Menu) in the top left hand corner, then click 'Add Commissioning Action'. A popup will appear which will allow for entry of a new commissioning record. Fill in the following fields, and once finished click 'Add'. If the entry is successfully saved, a confirmation dialog will appear. Another record can then be added.

Note: Once an entry is made, it is permanent, and can not be removed.

Commissioning Action:

What actually happened to the meter.

E.g. CT check, voltage tap check, final commission performed, etc

If the appropriate action is not already in the list, a new action can be created on the fly at any stage.

Value:

If the selected commissioning action requires a status value then this field will appear (optional)

Comment:

A brief comment about the action

Name/Initials:

Either the full name or initials of the person/user who is recording the action

Once a meter has had 'Final Commission Performed' it is now classed as being commissioned in Optergy Software.

View and Edit Meter Configuration

Required Privilege: Configure Meters

To view and edit a meter configuration, click on  (Meter Menu) in the top left hand corner, then click 'Meter Configuration'. A new window will open with the current meters configuration.

Custom Display Parameters

There are some parameter that can be added to the meter display url to alter what is displayed on screen, each of these can have their value set to true or false:

showCumulativeGraphs

Whether or not to display the cumulative graphs (True by default)

performScaling

Whether to scale values or leave as raw values (True by default)

showBack

Whether or not to display a back button in the top left corner to navigate back to the previous page (False by default)

Eg. `http://{PortalAddress}/meters/MeterDisplay.html?meter.id=1&showCumulativeGraphs=false&showBack=true&performScaling=false`

8.8. Meter Status

Required Privilege: View Meters

The meter status page, found within the 'Meter Management' sub-menu, displays the current status of all the meters the currently logged in user has [Meter Access](#) to view.

Note: Manual inputs meters (manual and forecast) will not appear on the meter status list.

The possible meter statuses are:

Online

Meter is currently online and successfully being read

Offline

Meter is currently offline and unable to be connected to and read

Disabled

Meter is currently disabled, the meter configuration will need to be update to enable meter

Error

The internal BACnet point created by Optergy Software to track status has been removed. To create again, select meter, go to  (Edit Meter) and click  (Save)

Not Read

For some reason the meter reading was unable to be found or that status for that meter was not requested

Note: If a calculation meter (aggregate, portion, remainder etc) is offline, this means that at least one of its component meters that make up the calculation meter are offline. It will not return online until all component meters are online.

8.9. Meter Types

There are 2 main streams of meter types, based on differing protocols: BACnet and Modbus. A BACnet meter type consists of a capability table (which describes what the capabilities of that meter are). A Modbus meter type consists of two things: a capability table, and a mapping table (which describes to Optergy Software how to read the meter).

Optergy Software has been tested against several types of meters, and provides meter types for those meters out of the box. Meter types which are bundled in Optergy Software are also known as 'built-in' meter types.

The 'Meter Types' page is a central place for configuring and managing all meter types in Optergy Software.

Available meter type actions:

- [Add BACnet Meter Types](#)
- [Add Modbus Meter Types](#)
- [Edit Meter Types](#)
- [Duplicate Meter Types](#)
- [Importing and Exporting Meter Types](#)
- [Remove Meter Types](#)

8.9.1. Add BACnet Meter Type

Required Privilege: Configure Meter Types

To add a new BACnet meter type, click  (Add) from the 'Meter Type List' page. This will direct to the 'Add Meter Type' page.

Add Basic Configuration

Name:

A brief, unique name indicating what kind of meter the type will represent

Utility Type:

The type of energy or resource this meter type will log

Protocol:

Must be set to 'BACnet' for the BACnet options to appear

Add Parameters Configuration

To add a new parameter entry, click **+** located on the right-hand side of the parameter table's toolbar. A popup will appear that allows for a parameter to be entered and configured. See below for field definitions. Once finished filling in the fields, click the 'Add Parameters' button. A new parameter entry or entries box will appear at the bottom of the parameters table.

Number of Parameters to Add:

The number of parameter entries to add to the table, pre-filled with the following fields

Pre-populate Fields:

Parameter:

The name of what is being read from the meter for the given register

Object Type:

The object type of the point to be logged

Object Instance:

The object instance of the point to be logged

Unit:

Specifies the engineering unit that the data for this parameter will be logged in

Scale:

What the reading should be multiplied by to get the value into what is specified in the unit column.

Trendlog Interval:

The number of minutes that this parameter's trend log data will be logged at

To remove an existing parameter(s), select the parameter(s) to remove and click **-** located on the right-hand side of the parameter table's toolbar. A confirmation popup will appear to confirm the removal action. Click 'Remove' to remove the selected parameter or parameters from the table.

In order to verify that a particular parameter's entry information is correct and logs the expected values, a quick test can be run. To perform a test, click the 'Test' button located on the right-hand side of the parameter table's toolbar. A popup will appear that allows for a host device instance to be entered. Once this has been entered click 'Test'. The results of the test will be displayed in the far right column of the parameter table.

If after the initial test is performed, existing parameter fields have been altered or additional parameters added, a re-test can be performed. To perform a re-test, simply click the 'Re-test' button located on the right-hand side of the parameter table's toolbar. The results of the retest will be displayed in the far right column of the parameter.

Once all the fields have been entered, a new BACnet meter type can be created by clicking **+** (Add). Once saved, the new meter type will appear in the meter type list.

8.9.2. Add Modbus Meter Type

Required Privilege: Configure Meter Types

To add a new Modbus meter type, click **+** (Add) from the 'Meter Type List' page. This will direct to the 'Add Meter Type' page.

Add Basic Configuration

Name:

A brief, unique name indicating what kind of meter the type will represent

Utility Type:

The type of energy or resource this meter type will log

Protocol:

Must be set to 'Modbus' for the Modbus options to appear

Modbus Function:

The modbus function code. Only needs to be specified if the auto behaviour needs to be overridden.

Add Scale Factor and CT Configuration

To view or configure these settings, click the 'View and Configure' button. A popup will appear that allows for configuration values to be entered. See below for field definitions. Once the configuration is complete, click the 'Done' button to close the popup and the settings will be saved. These specified scale factors and CT ratio will only be applied to the parameters that have the 'Apply SF' and 'Apply CT' options checked respectively.

Scale Factor Voltage/Current/Power/Energy:

A number which allows for meter specific customisations to a meter type which enables additional scaling of all the logged voltage/current/power/energy parameters. The available options are:

Not Applicable:

No scale factor applies (default setting).

Value:

Scales the values using a fixed value

Register (Int16):

Scales the values using a value read from the specified 'Register (Int16)' in the meter

Register (10^{Int16}):

Scales the values by multiplying values by 10^{(reading from value from 'Register (10^{Int16})')}

CT Ratio Primary/Secondary:

The Primary/Secondary number of turns on the current transformer (CT) to which the meter is connected. In order for this option to take effect, both the primary and secondary ratios must be specified. i.e. Both must be changed from the default 'As Per Meter Type'.

CT Ratio:

The actual CT ratio of the meter (where CT ratio = Primary turns / secondary turns). This option takes precedence over CT Ratio Primary/Secondary settings.

Add Mapping Configuration

To add a new mapping entry or remove existing entries, click the 'View and Edit Mapping Table' button'. A popup will appear that allows for configuration entries to be entered and updated. See below for field definitions. To add a new entry, click **+** (Add), which is located on the right-hand side of the mapping table toolbar. To remove an existing entry, first select and highlight the entry from the mapping table and click **-** (Remove), which is located on the right-hand side of the mapping table toolbar. Once the configuration is complete, click the 'Ok' button to close the popup and the settings will be saved and the parameters table will be correspondingly updated.

Modbus Address:

The starting address of the first register in this block to be read

of Registers to Read:

The number of registers to be read (starting from the start register)

Mapping:

What the register should be mapped to in Optergy Software (starting from the start register). This should normally be set to the same value as the Modbus Address. It is only necessary to specify a different number if the registers which contain the data are not sequential, and need to be remapped so that registers are sequential.

Add Parameter Configuration

To add a new parameter entry, click **+** located on the right-hand side of the parameter table's toolbar. A popup will appear that allows for a parameter to be entered and configured. See below for field definitions. Once finished filling in the fields, click the 'Add Parameters' button. A new parameter entry or entries box will appear at the bottom of the parameters table.

Number of Parameters to Add:

The number of parameter entries to add to the table, pre-filled with the following fields

Category Filter:

By selecting a category option, this will pre-fill the fields below with appropriate selections based on the category parameter.

Pre-populate Fields:

Parameter:

The name of what is being read from the meter for the given register

Mapped Address:

If desired the Modbus address can be mapped to an easier (smaller) address. By default, the mapped address should be the same as the Modbus address.

Unit:

Specifies the engineering unit that the data for this parameter will be logged in

Format:

The format that the modbus register returns its value. Possible value formats are:

Int16 Unsigned

Register contains a 16 bit unsigned number. Contents of one (1) register

Int16 Signed

Register contains a 16 bit signed number. Contents of one (1) register

Int32 Unsigned

Register contains a 32 bit unsigned number. Contents of two (2) mapped sequential registers

Int32 Signed

Register contains a 32 bit signed number. Contents of two (2) mapped sequential registers

Int32 M10K Unsigned

Register contains a Modulo-10000 32 bit unsigned number. Contents of two (2) mapped sequential registers

Int32 M10K Signed

Register contains a Modulo-10000 32 bit signed number. Contents of two (2) mapped sequential registers

Int32 M1K Unsigned

Register contains a Modulo-1000 32 bit unsigned number. Contents of two (2) mapped sequential registers

Int32 M1K Signed

Register contains a Modulo-1000 32 bit signed number. Contents of two (2) mapped sequential registers

Int64 Unsigned

Register contains a 64 bit unsigned number. Contents of two (4) mapped sequential registers

Int64 Signed

Register contains a 64 bit unsigned number. Contents of two (4) mapped sequential registers

Int64 M10K Unsigned

Register contains a Modulo-10000 64 bit unsigned number. Contents of two (4) mapped sequential registers

Int64 M10K Signed

Register contains a Modulo-10000 64 bit signed number. Contents of two (4) mapped sequential registers

Float32

Register contains an IEEE 754 32 bit floating point number. Contents of two (2) mapped sequential registers

Float64

Register contains an IEEE 754 64 bit floating point number. Contents of two (4) mapped sequential registers

Endian:

Endian indicates the ordering of the registers. By default 'Big' is selected.

Swap Bytes:

Indicates whether or not the bytes are reversed. E.g. High order to low order or vice versa

Scale:

What the reading should be multiplied by to get the value into what is specified in the unit column. Note: Some meters have different scale factors depending on CT ratios; this may mean you will need to set up multiple meter types (but virtually identical except for the scale factor) to handle the different CT ratios.

Trendlog Interval:

The number of minutes that this parameter's trend log data will be logged at

Apply CT Ratio:

Indicates whether or not to apply the CT ratio configured above to this parameter. See 'Add Scale Factor and CT Configuration' above

Apply Scale Factor:

Indicates whether or not to apply the appropriate scaling configured above to this parameter. See 'Add Scale Factor and CT Configuration' above

To remove an existing parameter, select the parameter(s) to remove. Once finished, click  located on the right-hand side of the parameter table's toolbar. A confirmation popup will appear to confirm the removal action. Click 'Remove' to remove the selected parameter(s) from the table.

In order to verify that a particular parameter's entry information is correct and logs the expected values, a quick test can be run. To perform a test, click the 'Test' button located on the right-hand side of the parameter table's toolbar. A popup will appear which has the following options:

Connection

IP Devices: The IPv4 address of the Modbus device or Modbus gateway. Part of this is prefilled already, depending on the netmask of the Optergy Software portal. The IP address can be typed in directly, or can be selected from the drop-down box to select a saved [Modbus Device](#)

Serial Devices: A valid serial device already registered with Optergy [Modbus Device](#)

Unit Number

The unit number of the Modbus device (This is the same as the unit number in the meter configuration)

Once these have been entered click 'Test'. The results of the test will be displayed in the far right column of the parameter table.

If after the initial test is performed, existing parameter fields have been altered or additional parameters added, a re-test can be performed. To perform a re-test, click the 'Re-test' button located on the right-hand side of the parameter table's toolbar. The results of the retest will be displayed in the far right

column of the parameter.

Once all the fields have been entered, a new Modbus meter type can be created by clicking **+** (Add). Once saved, the new meter type will appear in the meter type list.

8.9.3. Edit Meter Types

Required Privilege: Configure Meter Types

To edit an existing meter type, either double click the desired meter type or select the meter type and click  (Edit) from the 'Meter Types' list page. Both of these actions will bring up the edit popup pre-populated with the current selected meter type's configuration.

Note: Built in Optergy Software meter types can not be edited, only viewed. It is possible, however, to duplicate a meter type, and edit the duplicated meter type.

Depending on the protocol, see [Add BACnet Meter Type](#) or [Add Modbus Meter Type](#) for documentation on field definitions.

Once all desired changes have been made, click  (Save), to save all changes.

8.9.4. Duplicate Meter Type

Required Privilege: Configure Meter Types

To duplicate a meter type from the 'Meter Types' list page, select a type to duplicate and click  (Duplicate). A popup duplicate form will then appear, which will allow for the creation of a new meter type based on the currently selected meter type. Fill in the following fields, and once finished click 'Duplicate'. If the duplication is successful, a new entry will appear in the meter type list.

New Meter Type Name:

A brief, unique name indicating what kind of meter the type will represent.

8.9.5. Importing and Exporting Meter Types

Importing Calendars Classes

The ability to import a meter type is most useful when there is a non built-in meter type that has been created on one Optergy Software portal, and it would be advantageous to use it on another Optergy Software portal.

To import a meter type:

1. Click  (Import)
2. Select a valid Optergy Software meter type export file with the .opt extension
3. Once the file has been selected, click 'Upload'
4. Once the import has finished results will be shown on the screen

Exporting Calendars Classes

To download a portable version of a meter type from the 'Meter Types' list page, select the type to download and click  (Export). A popup will then appear asking to confirm the download of the selected meter type. If 'Download' is clicked, the selected type will then be made available in Optergy Software file

format. The file can be then imported (uploaded) onto any Optergy Software portal.

Note: All built in Optergy Software meter types can not be exported.

8.9.6. Remove Meter Type

Required Privilege: Configure Meter Types

To remove a meter type from the 'Meter Types' list page, select the type or types you wish to remove and click — (Remove). A popup will then appear asking to confirm the removal of the selected meter type or types. If 'Remove' is clicked all the selected types will then be permanently removed from Optergy Software.

Note: If the meter type to be removed is being used (e.g. by a meter), the meter type cannot be removed. The meter must first stop using the meter type.

Note: All built in Optergy Software meter types can not be removed.

8.10. Gas MJ Conversion Factors

Required Privilege: View Meters

To convert gas usage recorded in m³ into megajoules (MJ), a heating value and pressure factor is required. The 'Gas MJ Conversion Factors' page allows users to view, add, edit and remove these conversion factors which are associated with a meter or meters.

View Conversion Factors

All currently available conversion factors recorded in the system are shown in the main table. This shows each gas meters name, and brief description and if already linked to a conversion factor, its conversion values.

Moving Between Pages

If there are a lot of displays they will be split over multiple pages, at the top of the list it will display how many pages of live displays there are. Ways to move between pages:

- Use ◀ and ▶ to move backward and forward one page at a time
- Use ⏪ and ⏩ to jump to the first and last page respectively.
- To go directly to page select the page number from the drop-down list

Filtering

The filter field at the top of the list allows filtering on the meter name. To filter, enter (multiple text strings or numeric digits or a combination) into the filter box, and any meters that matches what was entered will appear in the list. Eg. To search for a meter with a certain name enter all of the name or any part of it into the filter. To reset the filter, clear all entered input in the filter box.

Managing Conversion Factors

To add a new conversion factor, click + (Add) from the 'MJ Conversion Factors' list page. To edit any existing meter's associated conversion factor, either double click the desired meter or select the meter and click ✎ (Edit) from the 'MJ Conversion Factors' list page. This will load the [Manage MJ Conversion](#)

[Factors](#)' page with the selected meters configuration.

Remove Conversion Factors

Any number of conversion factors can be removed at once. This can be done by selecting the checkboxes or by clicking the row of those factors to be deleted. Once all the conversion factors to be deleted has been selected, click — (Remove). A confirmation message will appear to confirm the operation before proceeding.

8.10.1. Manage MJ Conversion Factors

Required Privilege: Configure Meters

The management of conversion factors for a meter, enables the conversion of the recorded gas usage (m³) into MJ when appropriate.

Step 1 allows for a meter or a group of meters to be selected and thus associated with the to be entered conversion values.

Step 2 allows for a configuration of a heating value. There are two (2) ways in which to configure the pressure factor:

1. **Reference** - a live BACnet data point
Device:
The host device of the data point to display
Object Type:
The object type of the data point to display
Object Instance:
The object instance of the data point to display
Property Type:
The property of the data point to display

2. **Value** - a static, unchanging number

Step 3 allows for a configuration of a pressure factor. There are two (2) ways in which to configure the pressure factor:

1. **Reference** - a live BACnet data point
Device:
The host device of the data point to display
Object Type:
The object type of the data point to display
Object Instance:
The object instance of the data point to display
Property Type:
The property of the data point to display

2. **Value** - a static, unchanging number

Step 4 allows for configuration of an application period for the factor. To enter a date click . If both dates are left blank, then the factor will be active indefinitely.

Once all desired meters have been selected and all conversion values have been entered click  (Save), to save all changes.

9. Building Management

9.1. Analog Values

Analog Values in Optergy Software represent a BACnet Analog Value object.

The 'Analog Values' page allows for analog value objects to be viewed, created, edited and removed, and is accessed from the 'Building Management' sub-menu.

Available Analog Values actions:

- [Viewing Analog Values](#)
- [Creating Analog Values](#)
- [Editing Analog Values](#)
- [Removing Analog Values](#)

9.1.1. Viewing Analog Values

Required Privilege: Manage Analog Values

The 'Analog Values' page, found within the 'Building Management' sub-menu, will load with a list of all the analog value objects that are currently stored in Optergy Software. To get more information about an analog value, double click the analog value row, or select the analog value then click  (Edit).

Moving Between Pages

If there are a lot of analog values they will be split over multiple pages, at the top of the list it will display how many pages of analog values there are. Ways to move between pages:

- Use  and  to move backward and forward one page at a time
- Use  and  to jump to the first and last page respectively.
- To go directly to page select the page number from the drop-down list

Filtering

The filter field at the top of the list allows filtering on the host device, instance, description, object name, units and relinquish default. To filter, enter (multiple text strings or numeric digits or a combination) into the filter box, any analog values that matches what was entered will appear in the list. Eg. To display all analog values on device 2000, enter 2000 into the filter. To search for an analog value with a certain description enter all of the description or any part of it into the filter. To reset the filter, simply remove all entered input in the filter box.

9.1.2. Creating Analog Values

Required Privilege: Manage Analog Values

To create a new analog value click  (Add) from the 'Analog Values' page. A popup will appear that allows for analog value details to be entered.

Details
Host Device

Defaults to the local device id that will hold the analog value object. This field is defaulted by the system and cannot be modified by the user.

Instance

The unique instance number of the analog value for the local device.

Object Name

This field is defaulted by the system and cannot be modified by the user. Is created by the system, follows the format 'Analog Value (instance)' Eg: If instance is 8, the object name becomes 'Analog Value 8'.

Description

A brief description of the Analog Value object.

Units

The engineering unit for this analog value object.

Relinquish Default

A real number value representing.

Once all analog value details have been filled in, click the 'Add Settings' button to create. It will then appear in the main analog value list.

9.1.3. Editing Analog Values

Required Privilege: Manage Analog Values

Analog Values can be edited at any time from the 'Analog Values' page.

To edit an existing analog value:

1. Either double click the desired analog value, or select the analog value and click  (Edit)
2. A popup will appear with all the current information about the analog value, use this popup to update any details and analog value entries, view [Creating Analog Values](#) documentation for field definitions and how to edit entries.
3. To save any changes made click 'Edit Settings', Optergy Software will immediately save changes

9.1.4. Removing Analog Values

Required Privilege: Manage Analog Values

To remove an Analog Value:

1. Click on the analog value(s) to be removed from the analog value list
2. Click  (Remove)
3. A confirmation popup will appear.
4. Click 'Remove' to proceed.

9.2. BACnet Alarms

BACnet alarms in Optergy Software represent a BACnet alarm object, which monitors data points connected to the system, watching for specified conditions. Once an alarm's criteria has been met, its associated notification class will set about notifying the system either through banner notifications or

emails.

The 'BACnet Alarms' page allows for BACnet alarm objects to be viewed, created, edited and removed, and is accessed from the 'Building Management' sub-menu.

Available BACnet alarm actions:

- [Viewing BACnet Alarms](#)
- [Creating BACnet Alarms](#)
- [Editing BACnet Alarms](#)
- [Removing BACnet Alarms](#)
- [Importing and Exporting BACnet Alarms](#)
- [Emailing BACnet Alarms](#)
- [Poll State](#)

9.2.1. Viewing BACnet Alarms

Required Privilege: View Alarm Triggers

The 'BACnet Alarms' page, found within the 'Building Management' sub-menu, will load with a list of all the BACnet alarm objects that are currently stored in Optergy Software. To get more information about an alarm object, either double click the alarm object row, or select the alarm and click  (View).

Page Navigation

If there are a lot of BACnet alarms they will be separated over multiple pages. At the top of the list it will display how many pages of alarms there are. Possible ways to move between pages, are as follows:

- Use  and  to move backward and forward one page at a time
- Use  and  to jump to the first and last pages respectively
- To go directly to page select the page number from the drop-down list

Filtering

The filter field at the top of the list allows filtering on host device, instance and description. To filter, enter anything (multiple text strings or numeric digits or a combination) into the filter box. Any alarm that matches what was entered will appear in the list.

Eg. To display all alarms on device 2000, enter 2000 into the filter. To search for an alarm with a certain description enter all of the description or any part of it into the filter.

To reset the filter, simply remove all entered input in the filter box.

Test Recipient Configuration

To test an alarm's recipient configuration, click  (Test Alarm Email). A confirmation popup will then appear to confirm the generation test action. To send a test alarm email or emails, click the 'Send' button. Otherwise click 'Cancel'.

9.2.2. Creating BACnet Alarms

Required Privilege: View Alarm Triggers

To create a new BACnet alarm click **+** (Add) from the 'BACnet Alarms' page. A popup will appear that allows for BACnet alarm details to be entered.

General Details

Host Device:

The field device that will hold the alarm object.

Instance:

The instance number of the alarm. By default 'Auto Assign' is selected which will assign the next available instance number. The instance can be explicitly specified by selecting 'User Assigned' and entering a number.

Description:

A brief description of the alarm

Reference Display:

A display page which is saved in Optergy Software which is to be included in any notifications generated by the alarm (optional)

Reference URL:

Any internal or external URL which is to be included in any notifications generated by the alarm (optional)

Notification Class:

The notification class which contains a list of recipients to be notified when this alarm occurs. If an appropriate alarm handler does not yet exist, one can be created by clicking on **+**.

Prefix Description:

Provides options to prefix Alarm Description with one of the two options below:

- With Site Name - When ticked, prefixes the Alarm Description with the Site Name. When unticked, remove the Site Name prefix from Alarm Description.
- With Notification Class Description - When ticked, prefixes the Alarm Description with Notification Class Description. When unticked, removes the Notification Class Description prefix from the Alarm Description.

Note: Prefixes can be added or removed from all Alarms in one go via the Web Server and Portal Preferences section. (See [Web Server and Portal Preferences](#) for more information).

Enabled Events:

Conditions a data point undergoes in-order to send of alarm messages:

- To alarm (off-normal)
- To fault
- To normal

"To Alarm" Message:

A text string which contains an alarm message for when an off-normal alarm occurs

"To Fault" Message:

A text string which contains an alarm message for when an to-fault alarm occurs

"To Normal Message:

A text string which contains an alarm message for when an to-normal alarm occurs

Monitored Property

The monitored property is the BACnet point which this alarm was based on. The monitored event type uses the monitored property for its logic in determining if this BACnet alarm is in alarm or not.

Host Device:

The host device of the monitored property

Object Type:

The object type of the point to be monitored

Object Instance:

The object instance of the point to be monitored

Property Type:

The property of the point to be monitored

Array Index:

The array index if the 'Priority Array' property is selected

Monitored Event Type

There are four (4) types of BACnet alarms. The type of alarm to use depends on whether the monitored properties object type (see above) is analog or binary.

1. Change of state (Binary and discrete events)
2. Command failure (Binary and discrete events)
3. floating limit (Analog events)
4. out of range (Analog events)

Change Of State

This alarm type occurs when a binary point changes state.

E.g. Goes from active (ON) to inactive (OFF)

Time Delay:

The time in which an alarm condition must exist before an alarm occurs

Comparison Values:

Select the change of state that will raise an alarm

Command Failure

This alarm type occurs when two binary point values do not match.

Time Delay:

The time in which an alarm condition must exist before an alarm occurs

Feedback Property

Host Device:

The host device of the comparison property

Object Type:

The object type of the point to be compared to

Object Instance:

The object instance of the point to be compared to

Property Type:

The property of the point to be compared to

Floating Limit

This alarm type occurs when an analog value varies from a setpoint by a certain value.

Time Delay:

The time in which an alarm condition must exist before an alarm occurs

Upper Limit Offset:

The value to add to the setpoint reference property to determine if the monitored property is out of the desired range. If the monitored point value goes above this limit, a high limit alarm occurs. If a delay is set, the alarm does not occur until the delay time has passed and only then if the alarm condition still exists.

Upper Limit Offset Text:

A text string which contains an alarm message for when an upper limit offset alarm occurs

Lower Limit Offset:

The value to subtract to the setpoint reference property to determine if the monitored property is out of the desired range. If the monitored point value goes below this limit, a low limit alarm occurs. If a delay is set, the alarm does not occur until the delay time has passed and only then if the alarm condition still exists.

Lower Limit Offset Text:

A text string which contains an alarm message for when an lower limit offset alarm occurs

Dead Band:

A value which establishes a range in which no change occurs. The dead band is added to the low limit equation and subtracted from the high limit equation to determine when the alarm returns to normal.

Set-Point Property

Select the setpoint reference property to be compared to the monitored analog property. If the monitored property varies above or below this setpoint reference by the value specified for the upper and lower, an alarm occurs.

Host Device:

The host device of the setpoint reference property

Object Type:

The object type of the setpoint reference point

Object Instance:

The object instance of the setpoint reference point

Property Type:

The property of the setpoint reference point

Array Index:

The array index if the 'Priority Array' property is selected

Out Of Range

This alarm type occurs when an analog value is above or below fixed high and low limits.

Time Delay:

The time in which an alarm condition must exist before an alarm occurs

Upper Limit:

The value to compare the monitored point to, such that if the point value goes above this limit, a high limit alarm occurs. If a delay is set, the alarm does not occur until the delay time has passed and only then if the alarm condition still exists.

Upper Limit Text:

A text string which contains an alarm message for when an upper limit alarm occurs

Lower Limit:

The value to compare the monitored point to, such that if the point value goes below this limit, a low limit alarm occurs. If a delay is set, the alarm does not occur until the delay time has passed and only then if the alarm condition still exists.

Lower Limit Text:

A text string which contains an alarm message for when an lower limit alarm occurs

Dead Band:

A value which establishes a range in which no change occurs. The dead band is added to the low limit equation and subtracted from the high limit equation to determine when the alarm returns to normal.

9.2.3. Editing BACnet Alarms

Required Privilege: Manage Alarm Triggers

BACnet alarms can be edited at any time from the 'BACnet Alarms' page. It is important that Optergy Software has the most up-to-date information about the BACnet alarm object before editing, if uncertain, importing the BACnet alarm first is a good idea (see [Importing and Exporting BACnet Alarms](#)).

To edit an existing BACnet alarm:

1. Either double click the desired BACnet alarm, or select the BACnet alarm and click  (Edit)
2. A popup will appear with all the current information about the BACnet alarm, use this popup to update any details and BACnet alarm entries. See [Creating BACnet Alarms](#) documentation for field definitions.
3. To save any changes, click 'Update BACnet Alarm'. Optergy Software will immediately save the changes and attempt to send them to the field device.

9.2.4. Removing BACnet Alarms

Required Privilege: Manage Alarm Triggers

To remove a BACnet alarm from the 'BACnet Alarms' page:

1. Select the BACnet alarm(s) you wish to remove
2. Click  (Remove)
3. A confirmation popup will then appear. Select where the BACnet alarm object(s) are to be removed from. There are two (2) options:
 - **Optergy Software Only** - BACnet alarm will be removed from Optergy Software but still remain in the field device. The BACnet alarm can be re-imported at a later date.
 - **Optergy Software and Remote Device** - BACnet alarm will be permanently removed from both Optergy Software and the field device (this cannot be undone).
4. Once a removal decision has been made, click 'Remove' to proceed.

9.2.5. Importing and Exporting BACnet Alarms

Required Privilege: Manage Alarm Triggers

Importing BACnet Alarm Classes

The importing of a BACnet alarm can do one of two things:

- Update Optergy Software's BACnet alarm with the field device's current settings
- Add a BACnet alarm to Optergy Software that it didn't previously know about

In general, importing a BACnet alarm is most useful when a BACnet alarm has been created or modified outside Optergy Software and needs to be imported into Optergy Software.

To import BACnet alarms:

Note: Only objects that are currently allowing imports will have their Alarms imported.

1. Click  (Start Import)
2. Select import method:

Import all instances from all devices

Optergy Software will import all the BACnet alarms that exist on all devices in the devices list

Re-import all currently imported instances from all devices

This will re-import all the BACnet alarms that Optergy Software currently knows about (those that appear in the main BACnet alarms list)

Re-import all currently selected instances

Back on the main BACnet alarms screen, multiple BACnet alarms are able to be selected, this option will re-import all of these selected BACnet alarms

Import specific instances from one host device

This will import BACnet alarms that exist on a particular host device.

Select the field device to import from, and either:

- Import all BACnet alarms on device
- Import a specific instance
- Import an instance range

3. Once the import method has been selected, click 'Start Import'
4. Optergy Software will begin importing BACnet alarms; the progress is visible at the top of the page
5. Once the import has finished results will be shown at the top of the page

Exporting BACnet Alarms

If changes have been made to a BACnet alarm, but could not be sent to the BACnet device at that time, it will appear red in the list, indicating that changes need to be sent to the device at a later date.

To attempt to sync these unsynchronized BACnet alarms:

1. Click  (Start Export)
2. A popup will then appear listing all currently unsynchronised BACnet alarms
3. Select all the BACnet alarms to be exported to the device
4. Click the 'Start Export' button to begin the export process, the popup will then close and progress of the sync will appear at the top of the page
5. Once the export has finished results will be shown at the top of the page, those BACnet alarms successfully exported will no longer be red.

9.2.6. Receiving and Emailing BACnet Alarms

Users can be notified of new BACnet Alarms in two ways, via the Optergy Software Banner and/or via email.

To select which Optergy Software users are to be notified/emailed:

1. Ensure that the required users have their email addresses specified if they are to be emailed
 2. Edit the required BACnet Alarm by either double clicking on it or selecting it and clicking  (Edit)
 3. Users to be emailed must be selected on the notification class that this alarm uses, click  next to the Notification Class select box; this will open the current Notification Class configuration
 4. Select the users and/or user groups that are to be notified and/or emailed from the 'Users/Groups' list
 5. Ticking the 'Banner' box will ensure the user is notified via the banner, ticking the 'Email' box will ensure the user is notified via email, once the desired have been selected click 'Update Notification Class'.
- Note:** Updating this notification class will affect all BACnet Alarms that that currently using it
6. Specified appropriate "To Alarm" Message, "To Fault" Message and "To Normal" Message. These messages are what will appear in the subject and body of the alarm email. If an alarm occurs and the appropriate message has not specified then Optergy Software will attempt to create an appropriate message using the alarm description and the alarm state
Eg. Gas Alarm to alarm (Off-normal)
 7. Once finished click 'Update BACnet Alarm'

9.2.7. Polling State of BACnet Alarms

Required Privilege: Manage Alarm Triggers

Select the BACnet Alarms for which you wish to get the exact state.

Click on Poll State:

1. If the selected BACnet Alarms do not exist on the device, it will be highlighted in red along with a

warning message

2. These BACnet Alarms will now be available to export to the specified device.

Note: Poll State does not work for Optergy hosted objects.

9.2.8. Alarm Escalations

Alarm escalation objects in Optergy Software represent a series of notification steps that will be processed when a BACnet alarm has occurred but has yet to be acknowledged. When an escalation object's criteria has been met, the associated recipients will be notified through emails.

The 'Alarm Escalations' page allows for escalation objects to be viewed, created, edited and removed, and is accessed from the 'Building Management' sub-menu.

Available alarm escalation actions:

- [Viewing Alarm Escalations](#)
- [Creating Alarm Escalations](#)
- [Editing Alarm Escalations](#)
- [Removing Alarm Escalations](#)

9.2.8.1. Viewing Alarm Escalations

Required Privilege: View Alarms Current And History BACnet Alarms Unrestricted, Manage Alarm Triggers

The 'Alarm Escalation' page, found within the 'Building Management' sub-menu, will load with a list of all the escalation objects that are currently stored in Optergy Software. To get more information about an escalation object, either double click the escalation object row, or select the escalation and click  (View).

Page Navigation

If there are a lot of alarm escalation objects they will be separated over multiple pages. At the top of the list it will display how many pages of escalation objects there are. Possible ways to move between pages, are as follows:

- Use  and  to move backward and forward one page at a time
- Use  and  to jump to the first and last pages respectively
- To go directly to page select the page number from the drop-down list

Filtering

The filter field at the top of the list allows filtering on name and description. To filter, enter anything (multiple text strings or numeric digits or a combination) into the filter box. Any alarm escalation that matches what was entered will appear in the list.

To reset the filter, simply remove all entered input in the filter box.

9.2.8.2. Creating Alarm Escalations

Required Privilege: View Alarms Current And History BACnet Alarms Unrestricted, Manage Alarm Triggers

To create a new alarm escalation click  (Add) from the 'Alarm Escalations' page. This will direct to the 'Manage Alarm Escalation' page which provides a step-by-step interface to configure a new escalation.

The name field is the only required field, all others can be left blank if desired. After the required details have been entered, other information fields can continue to be entered or the new alarm escalation can be created now by clicking (Save). Information can still continue to be entered after saving.

Name

The name of the escalation. This is the title that will appear in the alarm escalation management lists.

Description

A brief description of the escalation

Escalation Level

The level (order) in which the escalation will occur for an unacknowledged alarm

Time Before Activation

The number of minutes that must expire after any previous escalations or initial alarm event before the escalation will be processed

Escalation Recipients

Associate any users, groups, tenants and/or facility managers that will be notified of the alarm's escalation. To associate a new recipient, click **+** (Add) and then enter all the relevant recipient details.

Recipient

Select the recipient to associate

Contact Times

In warranted, a schedule can be selected which indicates the allowed dates and times in which a recipient can receive an escalation notification

Communication Method

Select the methods of communication the recipient will receive their alarm escalation notification. At least one (1) method out of email must be chosen.

To modify an existing recipient, click **✎** (Edit) and to remove an existing recipient, click **—** (Remove).

9.2.8.3. Editing Alarm Escalations

Required Privilege: View Alarms Current And History BACnet Alarms Unrestricted, Manage Alarm Triggers

Alarm escalations can be edited at any time from the 'Alarm Escalation' page. To edit an existing escalation:

1. Either double click the desired alarm escalation, or select the escalation object and click **✎** (Edit)
2. This will direct to the 'Manage Alarm Escalation' page which will appear with all the current information about the object pre-loaded. See [Creating Alarm Escalations](#) documentation for field definitions.
3. Once all desired changes have been made click **💾** (Save), to save all changes. Click **⬆** (Up) to return to the alarm escalation list.

9.2.8.4. Associating Alarm Escalations

Required Privilege: View Alarms Current And History BACnet Alarms Unrestricted, Manage Alarm Triggers

The functionality to associate alarm escalation(s) to a notification class, is located on the 'Alarm Escalations' page found within the 'Building Management' sub-menu. To update notification class associations, complete the following steps:

1. From the 'Alarm Escalations' page, click  (Attach) and a popup window will appear
2. Select the notification class to update. Any pre-existing associations will appear highlighted in the list.
3. Check or uncheck any and/or all the alarm escalations that are wished to be associated with the above selected notification class
4. Once finished, click 'Save' to proceed with the request to update the notification class, otherwise click 'Cancel'

9.2.8.5. Removing Alarm Escalations

Required Privilege: View Alarms Current And History BACnet Alarms Unrestricted, Manage Alarm Triggers

To remove an alarm escalation from the 'Alarm Escalations' page:

1. Select the alarm escalation or escalations to be removed
2. Click  (Remove)
3. A confirmation popup will then appear
4. Click 'Remove' to proceed with the removal, otherwise click 'Cancel'

9.3. BBMD

Required Privilege: Manage BBMD Networks

The BBMD page allows users to set and enable Optergy devices to act as BACnet/IP Broadcast Management Devices (BBMD). This allows BACnet communication between two or more subnets. Note that ONE device per subnet should be a BBMD for this feature to work.

Adding a BBMD

To set an Optergy Device as a BBMD click  (add) from the toolbar on the left. A popup will appear allowing BBMD details to be entered.

Name:

The name of the BBMD and consequently the subnetwork

IP Address:

The internal address of the device that will act as a BBMD

Port:

The port number that the BBMD will be listening for external messages from. 47808 is the default for BBMD.

9.4. Binary Values

Binary Values in Optergy Software represent a BACnet Binary Value object.

The 'Binary Values' page allows for binary value objects to be viewed, created, edited and removed, and is accessed from the 'Building Management' sub-menu.

Available Binary Values actions:

- [Viewing Binary Values](#)
- [Creating Binary Values](#)
- [Editing Binary Values](#)
- [Removing Binary Values](#)

9.4.1. Viewing Binary Values

Required Privilege: Manage Binary Values

The 'Binary Values' page, found within the 'Building Management' sub-menu, will load with a list of all the binary value objects that are currently stored in Optergy Software. To get more information about a binary value, double click the binary value row, or select the binary value then click  (Edit).

Moving Between Pages

If there are a lot of binary values they will be split over multiple pages, at the top of the list it will display how many pages of binary values there are. Ways to move between pages:

- Use  and  to move backward and forward one page at a time
- Use  and  to jump to the first and last page respectively.
- To go directly to page select the page number from the drop-down list

Filtering

The filter field at the top of the list allows filtering on the host device, instance, description, object name and units. To filter, enter (multiple text strings or numeric digits or a combination) into the filter box, any binary values that matches what was entered will appear in the list. Eg. To display all binary values on device 2000, enter 2000 into the filter. To search for a binary value with a certain description enter all of the description or any part of it into the filter. To reset the filter, simply remove all entered input in the filter box.

9.4.2. Creating Binary Values

Required Privilege: Manage Binary Values

To create a new binary value click  (Add) from the 'Binary Values' page. A popup will appear that allows for binary value details to be entered.

Details

Host Device

Defaults to the local device id that will hold the analog value object. This field is defaulted by the system and cannot be modified by the user.

Instance

The unique instance number of the binary value for the local device.

Object Name

This field is defaulted by the system and cannot be modified by the user. Is created by the system, follows the format 'Binary Value (instance)' Eg: If instance is 8, the object

name becomes 'Binary Value 8'.

Description

A brief description of the Binary Value object.

Inactive Text

User typed description for inactive text.

Active Text

User typed description for active text.

Relinquish Default

A user selectable list with the values Active and Inactive.

Once all binary value details have been filled in, click the 'Add Settings' button to create. It will then appear in the main binary value list.

9.4.3. Editing Binary Values

Required Privilege: Manage Binary Values

Binary Values can be edited at any time from the 'Binary Values' page.

To edit an existing binary value:

1. Either double click the desired binary value, or select the binary value and click  (Edit)
2. A popup will appear with all the current information about the binary value, use this popup to update any details and binary value entries, view [Creating Binary Values](#) documentation for field definitions and how to edit entries.
3. To save any changes made click 'Edit Settings', Optergy Software will immediately save changes

9.4.4. Removing Binary Values

Required Privilege: Manage Binary Values

To remove an Binary Value:

1. Click on the binary value(s) to be removed from the binary value list
2. Click  (Remove)
3. A confirmation popup will appear.
4. Click 'Remove' to proceed.

9.5. Calendars

Calendars in Optergy Software represent a BACnet calendar object, which can store a range of dates. These calendars can then be used by BACnet schedules as a source of special events. Calendars make it easy to create a generic list of calendar dates that multiple schedules can reference, eg A calendar to list all public holidays. Attaching a calendar to schedules, enables dates to be edited in one place instead of editing each schedule individually.

The 'Calendars' page allows for calendar objects to be viewed, created, edited and removed, and is accessed from the 'Building Management' sub-menu.

Available Calendars actions:

- [Viewing Calendars](#)
- [Creating Calendars](#)
- [Editing Calendars](#)
- [Removing Calendars](#)
- [Importing and Exporting Calendars](#)
- [Poll State](#)

View 'Editing Special Events' in [Editing Schedules](#) on instructions on how to attach a calendar to a schedule.

9.5.1. Viewing Calendars

Required Privilege: View Calendars

The 'Calendar' page, found within the 'Building Management' sub-menu, will load with a list of all the calendar objects that are currently stored in Optergy Software. To get more information about a calendar, double click the calendar row, or select the calendar then click  (View) or  (Edit).

Moving Between Pages

If there are a lot of calendars they will be split over multiple pages, at the top of the list it will display how many pages of calendars there are. Ways to move between pages:

- Use  and  to move backward and forward one page at a time
- Use  and  to jump to the first and last page respectively.
- To go directly to page select the page number from the drop-down list

Filtering

The filter field at the top of the list allows filtering on host device, instance and description. To filter, enter (multiple text strings or numeric digits or a combination) into the filter box, any calendars that match what was entered will appear in the list. Eg. To display all calendars on device 2000, enter 2000 into the filter. To search for a calendar with a certain description enter all of the description or any part of it into the filter. To reset the filter, simply remove all entered input in the filter box.

9.5.2. Creating Calendars

Required Privilege: Manage Calendars

To create a new calendar click  (Add) from the 'Calendars' page. A popup will appear that allows for calendar details to be entered.

General Details

Host Device

The field device that will hold the notification class object.

Note: The Optergy Software portal can host Calendars, but only for the purpose of being attached to an Optergy Software hosted schedule and being used elsewhere in Optergy Software Eg. 'Occupancy Analysis' utility report. Calendars hosted on the Optergy Software portal can not actually be used to control BACnet devices

Instance

The instance number of the calendar. By default 'Auto Assign' is selected which will assign the next available instance number. The instance can be explicitly specified by selecting 'User Assigned' and entering a number

Description

A brief description of the calendar, this is what will appear when assigning a calendar to a schedule

Configuring Calendar Entries

Calendar entries are the list of dates, date ranges or special dates that a calendar object includes.

Add Entry

1. Click  at the top of the 'Calendar Entries' area
2. Enter a brief description of the entry eg Christmas day
3. Enter the date(s) that this calendar entry is to include, this can be done in three ways:
 - o Enter a specific date
 - o Enter a date range
 - o Enter a special date - This allows for particular day, week and/or month to be selected

A brief explanation of the date(s) entered are shown at the bottom

4. Click 'Add Calendar Entry'

Edit Entry

1. Click the entry in the 'Calendar Entries' area and click  (View/Edit)
2. A popup with the entries current settings will appear
3. Make changes
4. Click 'Update Calendar'

Remove Entry

1. Click the entry in the 'Calendar Entries' area and click  (Delete)
2. A confirmation popup will appear, click 'Remove' to proceed

Once all calendar details have been filled in, click the 'Add Calendar' button to create. It will then appear in the main calendar class list.

9.5.3. Editing Calendars

Required Privilege: Manage Calendars

Calendars can be edited at any time from the 'Calendars' page. It is important that Optergy Software has the most up-to-date information about the calendar object before editing, if uncertain importing the calendar first is a good idea (see [Importing and Exporting Calendars](#)).

To edit an existing calendar:

1. Either double click the desired calendar, or select the calendar and click  (Edit)
2. A popup will appear with all the current information about the calendar, use this popup to update any details and calendar entries, view [Creating Calendars](#) documentation for field definitions and how to edit entries.
3. To save any changes made click 'Update Calendar', Optergy Software will immediately save

changes and attempt to send them to the field device

9.5.4. Removing Calendars

Required Privilege: Manage Calendars

To remove a Calendar:

1. Click on the calendar(s) to be removed from the calendar list
2. Click  (Remove)
3. A confirmation popup will appear, select what the calendar object is to be removed from. There are two (2) options:
 - **Optergy Software Only** - Calendar will be removed from Optergy Software but still remain in the field device. The calendar can be re-imported at a later date.
 - **Optergy Software and device** - Calendar will be permanently removed from both Optergy Software and the field device (this cannot be undone).
4. Once a removal decision has been made, click 'Remove' to proceed.

9.5.5. Importing and Exporting Calendars

Required Privilege: Manage Calendars

Importing Calendars Classes

The importing of a calendar can do one of two things:

- Update Optergy Software's calendar with the field devices current settings
- Add a calendar to Optergy Software that it didn't previously know about

In general, importing a calendar is most useful when a calendar has been modified outside Optergy Software, or a calendar has been created outside Optergy Software, and needs to be imported into Optergy Software.

To import Calendars:

Note: Only objects that are currently allowing imports will have their Calendars imported.

1. Click  (Start Import)
2. Select import method:

Import all instances from all device

Optergy Software will import all the calendars that exist on all devices in the devices list

Re-import all currently imported instances from all devices

This will re-import all the calendars that Optergy Software currently knows about (those that appear in the main calendars list)

Re-import all currently selected instances

Back on the main calendars screen, multiple calendars are able to be selected, this option will re-import all of these selected calendars

Import specific instances from one host device

This will import calendars that exist on a particular host device.

Select the field device to import from, and either:

- Import all calendars on device
- Import a specific instance
- Import a instance range

3. Once the import method has been selected, click 'Start Import'
4. Optergy Software will begin importing calendars, the progress is visible at the top of the page
5. Once the import has finished results will be shown at the top of the page

Exporting Calendars

If changes have been made to a calendar but could not be sent to the BACnet device at that time, it will appear red in the list, indicating that changes need to be sent to the device at a later date.

To attempt to sync these unsynchronized calendars:

1. Click  (Start Export)
2. A popup will then appear listing all currently unsynchronized calendars
3. Select all the calendars to be exported to the device
4. Click the 'Start Export' button to begin the export process, the popup will then close and progress of the sync will appear at the top of the page
5. Once the export has finished, results will be shown at the top of the page, those calendars successfully exported will no longer be red.

9.5.6. Polling State of Calendars

Required Privilege: Manage Calendars

Select the Calendars for which you wish to get the exact state.

Click on Poll State:

1. If the selected Calendars do not exist on the device, it will be changed into red colour along with a warning message
2. These Calendars will now be available for export to the specified device.

Note: Poll State does not work for Optergy hosted objects.

9.6. Demand Limiting

Demand limiting is the process of monitoring the average demand of a time period and determining whether or not this demand is reaching the demand threshold. Should the demand approach the threshold, the system should automatically adjust equipment by either turning them off or changing the amount of energy they consume. Once the demand falls away from the threshold, the system should reactivate and readjust equipment to normal usage levels.

The Demand Limiters page is a central place for configuring and managing all demand limiters in Optergy Software. Available demand limiter actions:

- [Configuring a Demand Limiter](#)

Using Demand Limiting Data

The demand limiting data is stored in BACnet points where each demand limiter has its own BACnet base instance. Data is stored in a series of points starting from the Base Instance. For example, the current demand average is stored at the base instance + 9. If the base instance is 3200 the current demand average would be 3209. Different data can be stored in different properties, but for the most

part the present value is used.

Item	Object Type	Object Instance	Property
State	Multi-state Input	Present Value	Base Instance
Description	Binary Input	Description	Base Instance
Enabled/Disabled	Binary Input	Present Value	Base Instance
On/Off	Binary Input	Reliability	Base Instance
Current Shed Level	Analog Input	Present Value	Base Instance
Number of Binary Loads Shed	Analog Input	Present Value	Base Instance + 1
Total Number of Binary Loads	Analog Input	Present Value	Base Instance + 2
Number of Custom Binary Loads Shed	Analog Input	Present Value	Base Instance + 3
Total Number of Custom Binary Loads	Analog Input	Present Value	Base Instance + 4
Number of Analog Loads Shed	Analog Input	Present Value	Base Instance + 5
Total Number of Analog Loads	Analog Input	Present Value	Base Instance + 6
Current Demand	Analog Input	Present Value	Base Instance + 7
Demand Window	Analog Input	Present Value	Base Instance + 8
Current Demand Average	Analog Input	Present Value	Base Instance + 9
Control Ramp	Analog Input	Present Value	Base Instance + 10
Start Shedding	Analog Input	Present Value	Base Instance + 11
Finish Shedding	Analog Input	Present Value	Base Instance + 12
Start Restoring	Analog Input	Present Value	Base Instance + 13
Finish Restoring	Analog Input	Present Value	Base Instance + 14

Note: When reading Reliability: NO_SENSOR = Startup, NO_FAULT_DETECTED = Online & COMMUNICATION_FAILURE = Offline.

9.6.1. Demand Limiting Displays

Required Privilege: Manage Demand Limiting

The 'Demand Limiting Displays' page is a central place to view live readings and keep track of demand limiters configured in Optergy Software. Each demand limiter can have a display page automatically generated, showing its current working status. On the left side of the screen, there is a field available to filter the demand limiters. When a demand limiter is selected from the available list, its current status is either displayed on the right side of the screen or if the 'Open in new window' is selected, the status display is opened in a new tab/ All demand limiter displays include the following details:

1. The demand limiter's description
2. Online status:  (online),  (offline) and  (disabled)
3. The current state of the demand limiter
4. Number of loads shed
5. Total number of loads
6. The start and finish values for load shedding and restoring
7. The current shed level
8. The current demand
9. The current average demand

10. The duration that the average is calculated over
11. The control ramp
12. Detailed information about each load - this contains information about the current status/present value

The bands on the current demand average roughly represent when a demand limiter will be in effect.

1. The green represents that the demand limiter is well under the desired threshold and could be restoring loads
2. The start of the yellow is when the demand limiter begins to shed
3. The end of the yellow is when all the binary loads have been shed
4. The red represents that the demand limiter isn't able to shed enough loads to keep the demand under the desired threshold

View and Edit Demand Limiter Configuration

To view and edit a demand limiter configuration, click on  (Demand Limiter Menu) in the top left hand corner, then click 'Demand Limiter Configuration'. A new window will open with all the current demand limiters, which can then be configured.

Viewing Trend Log Data

Currently only the shed level and average demand are being trendlogged. To view these, click on  (Demand Limiter Menu) in the top left hand corner, then click the desired trend log. A new window will open with the requested trend log.

9.6.2. Configuring Demand Limiters

Required Privilege: Manage Demand Limiting

Adding a Demand Limiter

1. To create a new demand limiter entry click  (Add) from the 'Demand Limiters' list page. This will bring up an pop-up box which will enable the user to configure and create a new demand limiter
2. Once all required fields have been filled, click 'Add Demand Limiter'

Editing a Demand Limiter

1. Select an existing demand limiter from the 'Demand Limiters' list and click  (Edit)
2. The fields will be populated with the current settings and are free to edit
3. Once all fields are filled, click 'Edit Demand Limiter'

Removing a Demand Limiter

1. Select an existing demand limiter from the 'Demand Limiters' list and click  (Remove)
2. Click 'Remove'

Enabling a Demand Limiter

1. Select an existing demand limiter from the 'Demand Limiters' list that is currently disabled
2. Click  (Enable)

Disabling a Demand Limiter

1. Select an existing demand limiter from the 'Demand Limiters' list that is currently enabled
2. Click  (Disable)

Viewing a Demand Limiter's Display

1. Select an existing demand limiter from the 'Demand Limiters' list
2. Click  (Display)

Configuration

This section allows for the entry of a demand limiter's configuration details. In this configuration section, all fields except the Control Input are required.

Description:

A unique and brief description for this demand limiter

Meter:

The meter that will provide the demand readings. Only meters that contain the Power or Active Energy parameter will be available

Parameter:

The meter parameter to use. It is advised to use the Power parameter where possible as it is more accurate.

Binary Loads:

The section that contains all binary loads and their shed levels.
See [Configuring Binary Loads](#) documentation for field definitions

Custom Binary Loads:

The section that contains all custom binary loads.
See [Configuring Custom Binary Loads](#) documentation for field definitions

Analog Loads:

The section that contains all analog loads.
See [Configuring Analog Loads](#) documentation for field definitions

Interval:

This interval determines how large the running average window is. For example, an interval of 15 tells the demand limiter to use the average demand of the last 15 minutes to determine how to manage the loads

Enable Faster Response:

Shortens the interval to a third of the stated value. Useful when strict control is temporarily required

Max Ramp Adjustment On Enable:

The ramp value is what determines when loads are shed and restored. When this demand limiter is enabled, this value will limit how fast the ramp can increase or decrease. For example, in a situation where the current equipment produces a ramp value of 50%, half of the loads will instantly be turned off. This can be problematic at times and so the user can set

this value to 5% so that it will take 10 minutes before the ramp value truly reaches 50% and slowly disable equipment along the way.

Control Input:

When assigned, this will change when the demand limiter sheds and restores based on the current value specified by the point. When the control point's value is 'On', a different set of shed and restore values will be used.

Start Shedding:

The value in kW where the demand limiter will begin to shed binary loads

All Loads Shed:

The value in kW where the demand limiter will have shed all binary loads

Start Restoring:

The value in kW where the demand limiter will begin to restore binary loads

All Loads Restored:

The value in kW where the demand limiter will have restored all binary loads

9.6.3. Configuring Binary Loads

Required Privilege: Manage Demand Limiting

A binary load typically refers to equipment that can be turned ON or OFF. This load can be commanded using BACnet or Modbus.

The state of the load is based on a ramp value that is relative to the current average demand and the shedding/restoring values provided to the demand limiter.

When shedding, the ramp value will be at 0% when the average demand is equal to the 'start shedding' value and be at 100% when it is equal to the 'all loads shed' value.

When restoring, the ramp value will be at 100% when the average demand is equal to the 'start restoring' value and be at 0% when it is equal to the 'all loads restored' value.

Adding a Binary Load

1. Select the shed level that the binary load will reside in.
2. Click **+** and configure.

Editing a Binary Load

1. Select the binary load to be edited.
2. Click **✎** and configure. Alternatively, double click the binary load.

Note: In order to change the shed level, the binary load will need to be removed and recreated.

Removing a Binary Load

1. Select the binary load to be removed.
2. Click **—** and confirm.

This section allows for the entry of a binary load's configuration details.

Shared Properties

Shed Levels:

Shed levels represent a visual way of when a binary load will be shed or restored. As a rule of thumb, loads in the lower shed levels will be shed earlier and restored later. For example, shed level 1 contains the range 0-20% (ramp value), so when the ramp value is equal to 10%, half of shed level 1 will have been disabled. When the ramp value is greater than 20%, all of shed level 1 will have been disabled and half of shed level 2 will be disabled.

First Off / First On:

This is configured on a per shed basis. When disabled, loads in that shed level are restored in reverse order, meaning the last thing to be shed will be the first to be restored. Enabling this option means that the first load to be shed will also be restored first.

Description:

A unique and brief description for this binary load

Protocol

The protocol that this load will use. Currently BACnet and Modbus are supported

Shed Command:

The value that will be assigned when this load is shed

Restore Command:

The value that will be assigned when this load is restored. This is also the value that will be written if priority array is not supported and the demand limiter module wants to write null

Command Priority:

The priority level from 1-16 to set the index of the priority array at which the demand limiter writes to

Anti-cycle Limits:

The user is able to specify the minimum amount of time a load must remain shed or restored in order to spare mechanical parts from unnecessary wear and tear due to equipment cycling.

Minimum Shed Duration:

The minimum amount of time that has to pass after a shed before this load can be restored

Minimum Restore Duration:

The minimum amount of time that has to pass after a restore before this load can be shed

BACnet Properties

Device:

The device that the binary load resides in

Object type:

The object type that will be used for this load. Currently this is limited to Binary Value and Binary Output

Instance:

The object instance for this load

Property:

The property that will be read for this load. Currently this is limited to Present Value and Priority Array

Array Index:

If the property requires a priority array index, it must be specified here. If it is not required it will be greyed out.

Modbus Properties

Function Code

This field is only present when the selected protocol is Modbus. The following codes are supported; Write Single Coil, Write Single Register and Write Multiple Registers

Unit Number

The unit number of the Modbus device

Register

The register that will be written to during shedding and loading

Note: Refer to the meter's documentation as 0 may refer to an offset

Modbus Device

If the desired Modbus device is registered within Optergy Software it will be available here

Address

A field where an IP address may be manually entered

9.6.4. Configuring Custom Binary Loads

Required Privilege: Manage Demand Limiting

A custom binary load typically refers to equipment that can be turned ON or OFF. The state of the equipment is based on the current average demand level (in kW).

The user is able to specify the exact shed and restore levels, unlike a regular binary load.

This load can be commanded using BACnet or Modbus.

Adding a Custom Binary Load

1. Click **+** and configure.

Editing a Custom Binary Load

1. Select the custom binary load to be edited.
2. Click **✎** and configure. Alternatively, double click the custom binary load.

Removing a Custom Binary Load

1. Select the custom binary load to be removed.
2. Click **—** and confirm.

This section allows for the entry of a custom binary load's configuration details.

Shared Properties

Description:

A unique and brief description for this binary load

Protocol

The protocol that this load will use. Currently BACnet and Modbus are supported

Shed Level:

The demand level (in kW) at which this custom binary load will be shed

Shed Command:

The value that will be assigned when this load is shed

Restore Level:

The demand level (in kW) at which this custom binary load will be restored. This is also the value that will be written if priority array is not supported and the demand limiter module wants to write null

Restore Command:

The value that will be assigned when this load is restored

Command Priority:

The priority level from 1-16 to set the index of the priority array at which the demand limiter writes to

Anti-cycle Limits:

The user is able to specify the minimum amount of time a load must remain shed or restored in order to spare mechanical parts from unnecessary wear and tear due to equipment cycling.

Minimum Shed Duration:

The minimum amount of time that has to pass after a shed before this load can be restored

Minimum Restore Duration:

The minimum amount of time that has to pass after a restore before this load can be shed

BACnet Properties

Device:

The device that the custom binary load resides in

Object type:

The object type that will be used for this load. Currently this is limited to Binary Value and Binary Output

Instance:

The object instance for this load

Property:

The property that will be read for this load. Currently this is limited to Present Value and Priority Array

Array Index:

If the property requires a priority array index, it must be specified here. If it is not required it will be greyed out.

Modbus Properties

Function Code

This field is only present when the selected protocol is Modbus. The following codes are supported; Write Single Coil, Write Single Register and Write Multiple Registers

Unit Number

The unit number of the Modbus device

Register

The register that will be written to during shedding and loading

Note: Refer to the meter's documentation as 0 may refer to an offset

Modbus Device

If the desired Modbus device is registered within Optergy Software it will be available here

Address

A field where an IP address may be manually entered

9.6.5. Configuring Analog Loads

Required Privilege: Manage Demand Limiting

An analog load typically refers to equipment where values may be adjusted. Analog load shedding is often used for setpoint spreading.

The values given to the load are based on what the ramp value is.

When shedding, the ramp value will be at 0% when the average demand is equal to the 'start shedding' value and be at 100% when it is equal to the 'all loads shed' value.

When the ramp reaches the 'start shedding' value, the 'start shedding set property' value will be written to the analog load's property. As the ramp approaches the 'finish shedding' value, the value written will also approach the 'finish shedding set property' value.

For example, given the following values: the 'start shedding' is equal to 20%, the 'start shedding set property' is equal to 2, the 'finish shedding' is equal to 4 and the 'finish shedding set property' is equal to 4. When the ramp is equal to 20%, the value written will be 2, when it is equal to 30% the value written will be 3 and finally when the ramp is equal to 40% or above, the value written will be 4 and so forth.

Adding an Analog Load

1. Click  and configure.

Editing an Analog Load

1. Select the analog load to be edited.
2. Click  and configure. Alternatively, double click the analog load.

Removing an Analog Load

1. Select the analog load to be removed.
2. Click  and confirm.

This section allows for the entry of an analog load's configuration details.

Device:

The device that the analog load resides in

Object type:

The object type that will be used for this load. Currently this is limited to Analog Value and Analog Output

Instance:

The object instance for this load

Property:

The property that will be read for this load. Currently this is limited to Present Value and Priority Array

Array Index:

If the property requires a priority array index, it must be specified here. If it is not required it will be greyed out.

Description:

A unique and brief description for this analog load

Start Shedding At Ramp:

The ramp value at which this load will begin to shed

Start Shedding Set Property:

The value that will be written when the ramp is at the 'start shedding at ramp' value

Set Property To <NULL> When Ramp Is Less Than Shed Value:

When the ramp value falls below the 'start shedding at ramp' value, this determines if it should remain at the 'start shedding set property' value, or if it should be assigned to <NULL>

Finish Shedding At Ramp:

The ramp value at which this load will finish shedding

Finish Shedding Set Property:

The value that will be written when the ramp is at or above the 'finish shedding at ramp' value.

9.7. BACnet Devices

The device list defines all BACnet devices and servers on the network.

All devices currently known to Optergy Software are listed on this page.

Instance ID

This device number of the BACnet device or server

MAC Address

Each device on a given network must have a unique MAC address. If the device is an IP device then this column will display its IP address. If the device is a MSTP BACnet device then it will display its MSTP MAC address (network number)

Model

The model name assigned by the manufacturer

Description

The device description

Allow Imports

Whether or not objects from this device will be imported:

- BACnet Alarms
- Calendars
- Notification Classes
- Schedules
- Trend Logs

Adding Devices

Devices are added through a device scan. Click  (Device Scan) to proceed. See [Device Scan](#) for information on scanning in devices.

Poll Device

Device is polled through the poll option. Click  (Poll) to proceed. See [Poll](#) for information on polling a device.

Removing Devices

1. Select the device to remove
2. Click  (Remove)
3. Click 'Remove' to proceed

If a live display page has a device which is not in this list, then the point will permanently come up as !Device!.

Viewing Additional Device Information

1. Select the device of interest
2. Click  (View Info)

Alternatively, double clicking the device will also show the additional information.

Allow Imports

1. Select the devices that will now allow object imports
2. Click  (Allow Imports)
3. Click 'Allow' to proceed

Exclude Imports

1. Select the devices that will be excluded from object imports
2. Click  (Exclude Imports)
3. Click 'Exclude' to proceed

Offline device alarm

1. Select the devices that you wish to have BACnet alarms generated for. These alarms will poll the device and go into alarm if it becomes unresponsive. Alarms will be viewable on the BACnet alarm page, and a Binary Input created with the same instance as the alarm. The BI will have the present value of 0 while the device is reachable, and 1 when the device is offline.
2. Click  (Offline device alarm)
3. By default the enabled toggle will be ticked (if you wish to disable the alarm untick it)
4. Select a notification class that you want to be associated with your alarm
5. Click 'Save' to proceed

Disabling Services Supported on a Remote Device

1. Double select the device that you want to disable/enable a service for. Services available to be disabled are Read Property, Read Property Multiple, Write Property, Write Property Multiple, Create Object, and Remove Object.
2. Uncheck the necessary checkbox under the Services Supported.
3. Click Submit on the bottom right of the popup box.

Updating 864 Firmware

1. Select the P864 device or devices that you wish to conduct a firmware update on. This can be done by clicking anywhere on the device entries after scanning in devices.
2. Click on the 'Update 864 Firmware' button on the left hand side of the screen in the menu.
3. Select the correct firmware file and upload it. Please note that the proton only accepts the correct Firmware Update file that we provide you. Please leave that file as you receive it to ensure that the update works correctly. You can upload a file by either:
 1. Selecting the 'Choose File' button and choosing the update file.
 2. Once an update file has been uploaded, the 'Use Existing' button will reload the last uploaded update file.
4. You can now see which devices you have selected to update, along with their current version number and status. To continue, press 'Update'.
5. Wait for the update to complete. You can see the current status of the update on the screen. "Update Complete" signifies that the updates for a particular device have finished.

Note: Updating via IP devices can take a few minutes, whereas updating via MSTP can take up to 10 minutes per device.

9.7.1. BACnet Device Scan

Device Scans are used to add new devices to Optergy Software's device manager list.

When the page loads, it will show results from the last device scan. Devices that appear in this list may not be stored in Optergy Software's device list for use (listed in 'Devices' page), these such devices have 'Yes' in the **New** column. These devices can be added to the device list by selecting them and clicking .

(Save Devices).

Performing a Device Scan

1. To begin a device scan click  (Start Scan)
2. Select the device instance range to scan for:
 - All devices
 - Specific device instance
 - Specific device instance range
3. Click 'Start Scan'
4. Optergy Software will begin scanning for devices. A progress bar is visible at the top of the page
5. The scan will run as per the scan timeout settings. Alternatively, the scan can be stopped at any time by clicking  (Stop Scan)
6. All new devices that were found, that are not currently in Optergy Software's device list have 'Yes' in the **New** column
7. Save new devices by selecting them and clicking  (Save Devices). **Note:** If a checkbox for a device is disabled, then it is attempting to obtain additional information from the device, and cannot be saved until this has been completed.

Go back to the 'Device List' by clicking  (Up)

Note: It is possible to navigate away from the page and return at a later date to view the device scan progress.

9.7.2. Poll

Polling is used to add new devices which are on a different subnet (would normally require a BBMD to automatically scan in) to Optergy Software's device manager list.

Specify BACnet Device Settings

1. To begin a poll click  (Poll)
2. Select one of the two available configurations:
 - BACnet IP Device
 - BACnet MSTP/Remote
3. Device Instance: Enter an instance in the range 0 to 4194303.
4. IP Address: Enter a valid IP address for the device.
5. Port: Enter a port in the range 0 to 65535.
6. Remote Network (Option available ONLY for MSTP/Remote): Enter a remote network in the range 0 to 65535.
7. Mac Address (Option available ONLY for MSTP/Remote): Enter a Mac address in the range 0 to 255.
8. Click on the 'Poll Device' button to poll the device.

Note: On successful polls, clicking 'Close' button refreshes device list in the devices page.

9.7.3. Device Time Sync

Required Privilege: Manage BACnet Devices

Over time, a device's internal clock may drift out of sync with Optergy Software. To ensure that device

times are synchronised, time syncs are sent to the devices to set their time in sync with Optergy Software.

"Device Time Sync" allows you to set up a schedule to synchronise BACnet devices to a specific time at a specified interval. For example, devices can be configured to be synchronised every day to local time.

In addition to setting up scheduled time syncs, a manual one off time sync can be sent from this page.

There are 3 different ways of synchronising:

Global: This option will synchronise all devices based on the settings specified.

Devices: Selected devices will follow the synchronisation schedule set in this configuration.

Networks: Only devices on the selected network numbers will be synchronised on this network.

Synchronise Now

To synchronise all the devices based on the Time Sync Settings that have been saved, click  (Synchronise All).

Time Sync Types

On the Configure Global Sync and Configure Network Sync there is the option to specify what time it will Synchronise the devices to.

UTC

Synchronise the devices using UTC (Coordinated Universal Time).

Local Time

Synchronise the devices using the current Local Time.

Time Sync Frequencies

Hourly

Devices are synchronised hourly on the hour (i.e 2pm, 3pm etc).

Daily

Devices are synchronised on a daily basis (devices synchronise at midnight).

Global Sync Settings

To configure global Sync settings, click  (Configure Global Sync).

1. Select the frequency at which you would like all devices to be synchronised.
2. Select the time sync type you wish to send out by checking the boxes.
3. Click "Save" to save the changes.

Device Sync Settings

To configure device Sync settings, click  (Configure Device Sync).

1. Select the devices that you wish to have synchronised by checking the boxes.
2. Select the time sync type you wish to send out by checking the boxes.
3. Select the frequency at which you would like the devices to be synchronised.

4. Click "Save" to save the changes.

Filtering Devices

The filter field at the top of the device list can be used to show only device instance numbers that have the digits inside them, this is useful to help find a specific meter instance in a list with a large number of instances. To use the filter type in the Instance number or part of the instance number.

Note: If characters such as alphabets or other symbols besides digits are entered, the list will not show any results. Clear the list to reload all the devices.

Network Sync Settings

To configure network sync settings, click  (Configure Network Sync).

1. Select the networks that you wish to have synchronised by checking the boxes.
2. Select the frequency at which you would like the networks to be synchronised.
3. Select the time sync type you wish to send out by checking the boxes.
4. Click "Save" to save the changes.

9.8. Manage Spaces

Required Privilege: Manage Building Configuration

The 'Space Management' page is a central place to create, view and keep track of all spaces (buildings, levels, tenancies, meeting rooms, general rooms, etc) in Optergy Software.

Adding a Space

To add a space click  (Add) to bring up the wizard which provides a step-by-step process to add a space to Optergy Software. View [Adding a Space](#) documentation for field definitions.

Remove a Space

To remove a space click  (Remove)

Edit a Space

To edit a space, click on a space row in the 'List View' or ensure that a space is selected, then click  (Edit). This will bring up the space wizard and allow you to edit individual details and settings.

9.8.1. Space Wizard

Step 1 Enter in all the relevant information about the space.

Name

Name of the space. This is the name that will appear in the space management lists.

Type of Space

The area this area represents. I.e. is it a building, campus, level, tenancy, meeting rooms, etc

Description

A brief description of the space

Maximum Capacity

The maximum number of individuals this space can safely contain at any one time. To set the maximum capacity, use the arrow buttons or enter in the number

Area

Area of the associated space in square meters or square feet (to set units, select from drop down menu)

Parent Space

Select the parent of this space

Department

The department that the space belongs to use the drop down menu to select (if applicable)

Tariff

Assign the tariff that will be applied to the meters associated with this Space. Spaces are then assigned to the appropriate tenant, see [Configure Utility Billing](#) for further details. An applicable period can be specified with each tariff, the start and/or end dates can be left blank. The tariff that is displayed on screen in the Space Wizard, is the currently applicable tariff.

If the type of space permits then, an address can be included.

Address

The physical street address of where this space is located

Suburb

The physical suburb of where this space is located

State

The physical state of where this space is located

Postcode

The physical postcode of where this space is located

Country

The physical country of where this space is located

If the type of space permits then, and the hours of operation can be included.

Hours of Operation

Set the hours of operation for the space, set the start and end using a 24 hour time format click  to select the time using the time picker. When the time picker appears, click and drag the blue sliders to set the hours and the minutes.

If the type of space permits then, an occupancy schedule can be included.

Schedule

Select the schedule to base the occupancy times for this space on

Number of Computers

Enter the number of computers actively used in this space (only available if 'Include Number of Computers' is ticked in the 'Type of space' configuration)

Step 2 To associate meters, click **+** (Add) and then select any and all meters which are monitoring this space. Any type of utility meter can be associated.

Note: To filter the list of meters, simply type in part of a meter name in the filter box above the list, and any matches will appear in the list below.

To save the settings and details click  (Save).

To clear all the settings and details click  (Clear). A popup will appear; click "Reset" to clear.

9.8.2. Space Collections

Required Privilege: Manage Building Configuration

Space Collections allow users to create customised [Space](#) groups that can then be used in Building Performance Reporting.

View Space Collections

The 'Space Collections' page, found by clicking  (Go To Space Collections) from the [Space Management](#) page, will load with a list of all the space collections currently created in Optergy Software.

Moving Between Pages

If there are a lot of collections they will be separated over multiple pages. At the top of the list it will display how many pages of collections there are. Ways to move between pages:

- Use  and  to move backward and forward one page at a time
- Use  and  to jump to the first and last page respectively.
- To go directly to page select the page number from the drop-down list

Filtering

The filter field at the top of the list allows filtering on collection name and description. To filter, enter (multiple text strings or numeric digits or a combination) into the filter box, any collections that matches what was entered will appear in the list. Eg. To search for a collection with a certain description enter all of the description or any part of it into the filter. To reset the filter, simply remove all entered input in the filter box.

Adding a Space Collection

To add a new collection click **+** (Add) from the main 'Space Collections' page. The 'Add Space Collection' page will open that will allow a new collection to be specified.

Name

Space collection name

Description

Allows for further description/detail of the collection to be entered (optional)

Collections Components

The spaces and other space collections that this collection will contain

Edit a Space Collection

To edit a collection, select the desired collection from the main 'Space Collections' page and click  (Edit). The 'Update Space Collection' page will open with the collections current settings populated, fields can now be edited. Click  (Update) to apply changes.

Remove a Space Collection

To remove a collection, select the desired collection from the main 'Space Collections' page and click  (Remove). A confirmation popup will appear before removing the collection permanently.

9.9. Modbus Devices

Modbus is a protocol which is used to communicate with many different types of utility meters and field devices. Optergy Software (based on version) can support both Modbus IP and Modbus Serial. For versions that don't support serial devices, a Modbus gateway is required to communicate with Modbus RTU devices. Optergy software supports the creation of modbus gateway devices (included in the drop down list under IP and Serial when adding a new modbus device). If you wish to use an external gateway, some examples of such Modbus IP gateways are:

- Lantronix EDS1100-IAP
- Ethernet Direct BMM-101
- Moxa MGate Series Modbus gateways

The 'Modbus Devices' page is a central place for configuring and managing all Modbus devices in Optergy Software.

Available Modbus device actions:

- [Add Modbus Device](#)
- [Edit Modbus Devices](#)
- [Remove Modbus Devices](#)
- [Test Modbus Device Status](#)
- [View Connected Devices](#)
- [Enable or Disable Gateway Devices](#)

Note: When Modbus devices are offline, there can be communication delays that may cause all connected devices to timeout. If this occurs, manually disable any offline Modbus devices, Gateway points and or Virtual Devices to improve performance.

9.9.1. Add Modbus Device

Required Privilege: Manage Modbus Serial Devices

To create a new Modbus device click **+** (Add) from the 'Modbus Devices' list page. This will bring up a pop-up box which will enable the user to configure and create a new Modbus device.

Connection option allows either a Modbus Serial, a Modbus IP or a Modbus Gateway Connection Type to be selected. Depending on which of these two options are chosen, the options available in the pop up form are updated.

Basic configuration allows for the entry of minimal Modbus device configuration details. In this configuration mode, the IP address is the only required field for IP configurations and Port Location is the only required field for Serial configurations. For gateway devices the port location and tcp port are required, however, if the tcp port is left blank it will default to 0 rather than giving you an error message. All others can be left blank if desired. If only basic configuration is needed then, after the fields have been entered, a new Modbus device can be created now by clicking 'Create'. Once saved the new Modbus device will appear in the list.

Basic configuration for IP:

IP Address:

A valid IPv4 IP address

Device Name:

The name of the device (not required, but recommended for maintenance management)

Description:

A brief description of the device (not required, but recommended for maintenance management)

Basic configuration for Serial:

Port Location:

1) An external port location on the system has to be scanned using the 'Detect Ports' button.
2) The drop down list can be used to select one of the inbuilt serial ports (which will be made available automatically by the system). 3) Alternatively, a valid port location can be typed in.

Port Name:

The name of the device (not required, but recommended for maintenance management).

Description:

A brief description of the device (not required, but recommended for maintenance management).

Baud Rate:

Choose one of available baud rate options from the list.

Basic configuration for Gateway:

Serial Port Location:

1) The drop down list can be used to select one of the inbuilt serial ports (which will be made available automatically by the system). 3) Alternatively, a valid port location can be typed in.

TCP Port:

The port to connect to. The standard Modbus port is 502.

Port Name:

The name of the device (not required, but recommended for maintenance management).

Description:

A brief description of the device (not required, but recommended for maintenance management).

Baud Rate:

Choose one of available baud rate options from the list.

Advanced configuration allows for the entry of additional Modbus device configuration details. Once the advanced fields have been entered, a new Modbus device can be created now by clicking 'Create'. Once saved the new Modbus device will appear in the list.

Advanced configuration for IP:**Port:**

The port to connect to. The standard Modbus port is 502.

Timeout:

The amount of time to wait for a response from the modbus device before giving up. The default is 500 milliseconds.

The timeout needs to be tuned based on the system latency, and a higher value may need to be used for Gateway and Serial devices

Retries:

If a Modbus request fails for any reason (e.g. timeout), then retry the request many times before giving up. The default is 3 retries.

Delay Between Connections:

When a connection is made to a Modbus device, this is the delay in milliseconds before handling the next connection

Keep Alive:

Indicates whether or not to keep the socket connection alive once communication is finished. This can be set to true if no other devices read this Modbus device to improve performance. The default is set to false.

Advanced configuration for Serial:**Databits:**

A valid value for the databits. The default is 8.

Stopbits:

A valid value for the stopbits. The default is 1.

Parity:

Choose one of the options available from the drop down list ('None', 'Odd', 'Even', 'Mark', 'Space'). The default is 'None'.

Timeout:

The amount of time to wait for a response from the modbus device before giving up. The default is 500 milliseconds.

Retries:

If a Modbus request fails for any reason (e.g. timeout), then retry the request many times before giving up. The default is 3 retries.

Delay Between Connections:

When a connection is made to a Modbus device, this is the delay in milliseconds before handling the next connection

Keep Alive:

Indicates whether or not to keep the socket connection alive once communication is finished. This can be set to true if no other devices read this Modbus device to improve performance. The default is set to false.

Advanced configuration for Gateway:**Databits:**

A valid value for the databits. The default is 8.

Stopbits:

A valid value for the stopbits. The default is 1.

Parity:

Choose one of the options available from the drop down list ('None', 'Odd', 'Even', 'Mark', 'Space'). The default is 'None'.

Timeout:

The amount of time to wait for a response from the modbus device before giving up. The default is 500 milliseconds.

Retries:

If a Modbus request fails for any reason (e.g. timeout), then retry the request many times before giving up. The default is 3 retries.

Max Simultaneous TCP Connections:

The maximum amount of tcp connections the gateway can handle. The default is 3

Delay Between Connections:

When a connection is made to a Modbus device, this is the delay in milliseconds before handling the next connection

Connection Timeout:

The amount of time to wait for a connection before giving up. The default is 60 milliseconds.

9.9.2. Edit Modbus Device

Required Privilege: Manage Modbus Serial Devices

To edit an existing Modbus device, either double click the desired device or select the device and click  (Edit) from the 'Modbus Devices' list page. Both of these actions will bring up the edit popup pre-populated with the current selected device's configuration.

Editing Basic Configuration

Contains minimal Modbus device configuration details. All of these fields can be updated, view [Add Device](#) documentation for field definitions.

Editing Advanced Configuration

Contains additional Modbus device configuration details. All of these fields can be updated, view [Add Device](#) documentation for field definitions.

Once all desired changes have been made click  (Update), to save all changes.

9.9.3. Remove Modbus Device

Required Privilege: Manage Modbus Serial Devices

To remove a Modbus device from the 'Modbus Devices' list page, select the device or devices you wish to remove and click  (Remove). A popup will then appear asking you to confirm the removal of the selected Modbus device or devices. If 'Remove' is clicked all the selected devices will then be permanently removed from Optergy Software.

Note: If the Modbus device to be removed is being used (e.g. by a meter or modbus gateway point), the device cannot be removed. The meter or non-meter device must be removed first.

9.9.4. Test Modbus Device Status

Required Privilege: Manage Modbus Serial Devices

To test the online/offline status of all the saved Modbus devices in Optergy Software, click  (Connection Status). A waiting popup should appear whilst connectivity tests for each device are performed in the background. Once finished, the popup will load up, with a listing of each device and its corresponding connectivity status. For IP devices results are based on a ping of the IP address. For Serial devices the results are based on if the serial port location is in use or not.

9.9.5. Modbus Device Use

Required Privilege: Manage Modbus Serial Devices

This page displays all the entities that exist in Optergy Software that are currently using a selected Modbus Devices. Information about these entities are displayed on screen along with the status in some cases.

Below are the list of Optergy Software entities that can use a Modbus Device:

Meters

Physical meters configured in Optergy Software, see [Meters](#). Each meters current status should be displayed on screen, this gets updated every 30 seconds

Modbus Gateway Point

Configured modbus gateway points, see [Modbus Gateway Points](#). No status info is available for these.

9.9.6. Enable Disable Gateway Devices

Required Privilege: Manage Modbus Serial Devices

To enable or disable a gateway device simply click on the device you wish to alter and then click the  Enable Gateway Devices Icon to enable the gateway or click the  Disable Gateway Devices Icon to disable the gateway. A green 'Enabled' or a red 'Disabled' label will appear next to the gateway type indicating its status.

9.10. Network Serial Devices

Network Serial is a device used to communicate with many different types of utility meters and field devices. Some examples of such device are:

- Moxa gateways

The 'Network Serial Devices' page is a central place for configuring and managing all Network Serial devices in Optergy Software.

Available Network Serial device actions:

- [Add Network Serial Device](#)
- [Edit Network Serial Devices](#)
- [Remove Network Serial Devices](#)
- [Test Network Serial Device Status](#)

9.10.1. Add Network Serial Device

Required Privilege: Manage Modbus Serial Devices

To create a new Network Serial device click  (Add) from the 'Network Serial Devices' list page. This will bring up a pop-up box which will enable the user to configure and create a new Network Serial device.

Basic configuration allows for the entry of minimal Network Serial device configuration details. In this configuration mode the IP address is the only required field, all others can be left blank if desired. If only basic configuration is needed then, after the fields have been entered, a new Network Serial device can be created now by clicking 'Create'. Once saved the new Network Serial device will appear in the list.

IP Address:

A valid IPv4 IP address

Device Name:

The name of the device (not required, but recommended for maintenance management)

Description:

A brief description of the device (not required, but recommended for maintenance management)

Advanced configuration allows for the entry of additional Network Serial device configuration details. Once the advanced fields have been entered, a new Network Serial device can be created now by clicking 'Create'. Once saved the new Network Serial device will appear in the list.

Port:

The port to connect to. The standard Network Serial port is 4001.

Timeout:

The amount of time to wait for a response from the device before giving up. The default is 500 milliseconds.

Retries:

If a request fails for any reason (e.g. timeout), then retry the request this many times before giving up. The default is 3 retries.

Delay Between Connections:

When a connection is made to a Modbus device, this is the delay in milliseconds before handling the next connection

Keep Alive:

Indicates whether or not to keep the socket connection alive once communication is finished. This can be set to true if no other devices read this Network Serial device to improve performance. The default is set to false.

9.10.2. Edit Network Serial Device

Required Privilege: Manage Modbus Serial Devices

To edit an existing Network Serial device, either double click the desired device or select the device and click  (Edit) from the 'Network Serial Devices' list page. Both of these actions will bring up the edit popup pre-populated with the current selected device's configuration.

Editing Basic Configuration

Contains minimal Network Serial device configuration details. All of these fields can be updated, view [Add Device](#) documentation for field definitions.

Editing Advanced Configuration

Contains additional Network Serial device configuration details. All of these fields can be updated, view [Add Device](#) documentation for field definitions.

Once all desired changes have been made click  (Update), to save all changes.

9.10.3. Remove Network Serial Device

Required Privilege: Manage Modbus Serial Devices

To remove a Network Serial device from the 'Network Serial Devices' list page, select the device or devices you wish to remove and click  (Remove). A popup will then appear asking you to confirm the removal of the selected Network Serial device or devices. If 'Remove' is clicked all the selected devices will then be permanently removed from Optergy Software.

Note: If the Network Serial device to be removed is being used (e.g. by a meter), the device cannot be removed. The meter must be removed first.

9.10.4. Test Network Serial Device Status

Required Privilege: Manage Modbus Serial Devices

To test the online/offline status of all the saved Network Serial devices in Optergy Software, click  (Ping Status). A waiting popup should appear whilst connectivity tests for each device are performed in the background. Once finished, the popup will load up, with a listing of each device and its corresponding connectivity status.

9.11. Notification Classes

Notification Classes in Optergy Software represent a BACnet notification class object, which are used by alarms and trend logs to provide alarm event and trend log data notification to required recipients.

The notification classes page allows for notification classes to be created, edited and removed, and is accessed from the 'Building Management' sub-menu.

Available Notification Classes actions:

- [Viewing Notification Classes](#)
- [Creating Notification Classes](#)
- [Editing Notification Classes](#)
- [Removing Notification Classes](#)
- [Importing and Exporting Notification Classes](#)
- [Poll State](#)

9.11.1. Viewing Notification Classes

Required Privilege: View Notification Classes

The notification classes page, found within the 'Building Management' sub-menu, will load with a list of all the notification classes objects that are currently stored in Optergy Software. To get more information about the notification class, double click the notification class row, or select the notification class then click  (View) or  (Edit).

Moving Between Pages

If there are a lot of notification classes they will be separated over multiple pages, at the top of the list it will display how many pages of notification classes there are. Ways to move between pages:

- Use  and  to move backward and forward one page at a time

- Use  and  to jump to the first and last page respectively.
- To go directly to page select the page number from the drop-down list

Filtering

The filter field at the top of the list allows filtering on host device, instance and description. To filter, enter (multiple text strings or numeric digits or a combination) into the filter box, any notification classes that match what was entered will appear in the list. Eg. To display all notification classes on device 2000, enter 2000 into the filter. To search for a notification class with a certain description enter all of the description or any part of it into the filter. To reset the filter, simply remove all entered input in the filter box.

9.11.2. Creating Notification Classes

Required Privilege: Manage Notification Classes

To create a new notification class click  (Add) from the 'Notification Classes' page. A popup will appear that allows for notification class details to be entered.

General Details

Host Device

The field device that will hold the notification class object.

Instance

The instance number of the notification class. By default 'Auto Assign' is selected which will assign the next available instance number. The instance can be explicitly specified by selecting 'User Assigned' and entering a number

Description

A brief description of the notification class

Use for

Allows the notification class to be available everywhere, to Alarms only or to Trend Logs only.

Enable Audio Notifications

Selecting this option will open a new popup window for all active BACnet alarms and will also play the audio. **Note:** Audio notifications do not appear when an alarm goes back to the To-Normal state, only To-Alarm

Transitions

To Alarm (Off-normal)

The priority level for the to-off-normal event, and whether an acknowledgement is required from device recipients when an alarm enters this state

To Fault

The priority level for the fault event, and whether an acknowledgement is required from device recipients when an alarm enters this state

To Normal

The priority level for the to-normal event, and whether an acknowledgement is required from device recipients when an alarm enters this state

Add Device Recipients

Any device that appears in this list will be sent notifications when they occur. To add a device, click **+** in the Devices section. A popup will appear with the following fields:

Device Instance

The device that will receive this notification. If a device appears to be missing check the Device List

Valid Days

The days of the week for which the notification class will send notifications to the specified device

Time Period

A time period can be specified for which the notification class will send notifications to the specified device

Event Transitions

The events for which this recipient will receive notifications.

Note: If this notification class is intended to be used by a trend log object, the 'To-normal' transition must be ticked

Notifications

A 'confirmed' notification means the specified device is required to respond to sent notification, acknowledging that they received the notification; an 'unconfirmed' notification means the device is not required to respond.

Process Id (actions)

This field tells the recipient device what actions to take when a notification is received.

Optergy Software only required the '0 - Default Action' to be selected, other devices/systems may require different actions depending on the notification type (alarm/trend log)

Click 'Add Recipient'

To edit a device recipient click on the recipient and click 

To remove a device recipient click on the recipient and click 

Add User Recipients

User recipients are those users that will be notified of BACnet alarms that use this notification class, in the Optergy Software Banner and by email (if they have a valid email configured). To specify user recipients they must be an Optergy Software user. Select any user or user group to be notified upon notification. Ticking the 'Banner' box will ensure the user is notified via the banner, ticking the 'Email' box will ensure the user is notified via email, ticking both means the user will be notified via both the banner and email.

User recipients may also be used to restrict which BACnet trend logs can be seen by a user, using the *View Trend log Data Restricted By Notification Class* privilege, in this case it does not matter if it is 'Banner' or 'Email' ticked as long as the user or group is highlighted.

Note: List of user recipients shown here is applicable for the local device only. Multiple devices can be added in addition to the local device but user recipients will not get any notifications (Banner or Email) for those additional devices.

Once all notification details have been filled in, click the 'Add Notification Class' button to create the.

9.11.3. Editing Notification Classes

Required Privilege: Manage Notification Classes

Notification classes can be edited at any time from the 'Notification Classes' page. It is important that Optergy Software has the most up-to-date information about the classes object before editing, if uncertain importing the notification class first is a good idea (see [Importing and Exporting Notification Classes](#)).

To edit an existing notification class:

1. Either double click the desired class or select the notification classes and click  (Edit) from the Notification Classes page.
2. A popup will appear with all the current information about the notification classes, use this popup to update any notification details or recipients, view [Creating Notification Classes](#) documentation for field definitions and how to add recipients.
3. To save any changes made click 'Update Notification Class', Optergy Software will immediately save changes and attempt to send them to the field device.

9.11.4. Removing Notification Classes

Required Privilege: Manage Notification Classes

To remove a Notification Class:

1. Click on the notification class(es) to be removed from the notification list
2. Click  (Remove)
3. A confirmation popup will appear, select what the notification class object is to be removed from. There are two (2) options:
 - o **Optergy Software Only** - Notification class will be removed from Optergy Software but still remain of the field device. The calendar can be re-imported at a later date.
 - o **Optergy Software and device** - Notification class will be permanently removed from both Optergy Software and the field device (this cannot be undone).
4. Once remove decision has been made click 'Remove' to proceed

9.11.5. Importing and Exporting Notification Classes

Required Privilege: Manage Notification Classes

Importing Notification Classes

The importing of notification classes can do one of two things:

- Update Optergy Software's notification classes with the field devices current settings
- Add a notification classes to Optergy Software that it didn't previously know about

In general, importing notification classes is most useful when a notification class has been modified outside Optergy Software, or a notification class has been created outside Optergy Software, and needs to be imported into Optergy Software.

To import notification classes:

Note: Only objects that are currently allowing imports will have their Notification Classes imported.

1. Click  (Start Import)
2. Select import method:

Import all instances from all device

Optergy Software will import all the notification classes that exist on all devices in the devices list

Re-import all currently imported instances from all devices

This will re-import all the notification classes that Optergy Software currently knows about (those that appear in the main notification class list)

Re-import all currently selected instances

Back on the main notification classes screen, multiple notification classes are able to be selected, this option will re-import all of these selected notification classes

Import specific instances from one host device

This will import notification classes that exist on a particular host device.
Select the field device to import from, and either:

- o Import all notification classes on device
 - o Import a specific instance
 - o Import a instance range
3. Once the import method has been select click 'Start Import'
 4. Optergy Software will begin importing notification classes, the progress is visible at the top of the page
 5. Once the import has finished results will be shown at the top of the page

Exporting Notification Classes

If changes have been made to a notification class but could not be sent to the BACnet device at that time, it will appear red in the list, indicating that it needs to be sent to the device at a later date.

To attempt to sync these unsynchronized notification classes:

1. Click  (Start Export)
2. A popup will then appear listing all currently unsynchronized notification classes
3. Select all the notification classes to be exported to the device
4. Click the 'Start Export' button to begin the export process, the popup will then close and progress of the sync will appear at the top of the page
5. Once the export has finished results will be shown at the top of the page, those notification classes successfully exported will no longer be red.

9.11.6. Polling State of Notification Classes

Required Privilege: Manage Notification Classes

Select the Notification Classes for which you wish to get the exact state.

Click on Poll State:

1. If the selected Notification Classes do not exist on the device, it will be changed into red colour along with a warning message
2. These Notification Classes will now be available for export to the specified device.

Note: Poll State does not work for Optergy hosted objects.

9.12. Object List

An object list report contains information about any device known by Optergy Software.

It contains a list of objects on a device and can optionally include the description and the present value (if applicable).

A user may choose to filter out certain object types and also group results based on device and/or object type.

Viewing a Report

See [View Object List Report](#) for information on viewing object list reports.

Scanning an Object List

See [Scan Object List](#) for information on scanning devices for objects.

9.12.1. View Object List Report

Scan In Progress

If a scan is currently being done, various details about its progress will be displayed on screen

Details

The name of the report, as well as when it was started

Current Device

The device id of the current device being scanned

Progress

The current device being scanned out of the total number of devices

Progress Bar

Indicates that the device scan is still going

Stop Scan

Use this to stop the current scan, this will allow a new scan to be started

Available Object List Reports

Report Name

The name of the report as chosen by the user who scanned it

Device Summary

Contains a short description about the selected devices

Date Created

Shows the date that the report was started on (this date will differ from the actual completion time)

Viewing a Report

Select an object list report and click  (View) to proceed.

1. Select the devices to include
2. Enter a report name
3. Choose the object types to include
4. Optionally choose any additional properties to include
5. Optionally choose any groupings to include
6. Select the output format
7. The report will then be downloaded to the browser

Note:

- Not all devices and options will be available. Only the ones that were selected prior to the object list scan will be visible. If more devices and/or options are required, a new scan will need to be performed.
- The  (Select All) button above the device list will select all known devices, not just the ones that are displayed (in case devices are currently filtered)
- The 'All' button next to the object types will only select all non-grayed out options
- Devices marked with an asterisk are not known to Optergy Software.
- Currently, the portal's own device will only show Analog, Binary and Multistate Input/Output/Values.

Scanning an Object List

Note: Only one object list can be scanned at a time across Optergy Software

Click  (New Scan) to proceed. See [Scan Object List](#) for information on scanning in devices.

Removing an Object List

Select the devices to be removed and click  (Remove). A confirmation will be shown, click "Remove".

9.12.2. Scan Object List

Scanning an Object List

This page is used to begin a new object scan; it allows the selection of devices and object types to be included in the scan and the resulting report. Generally it is better to include more than needed, in order to avoid having to scan another object list.

1. Select the devices to scan
2. Enter a report name
3. Choose the object types to scan for
4. Choose any additional properties to scan for
5. Press  (Begin Scan) to begin
6. The object scan will commence and progress will be displayed on screen

Note:

- Only one object list can be scanned at a time across Optergy Software.
- The report name entered will be the default name for future reports, but can be renamed.
- It is possible to navigate away from the Object List page once the scan has begun
- Currently, the portal's own device will only show Analog, Binary and Multistate Input/Output/Values.

9.13. Optimum Start

Optimum start is an intelligent, self-tuning function that automatically calculates the ideal start time for heating or cooling operations in order to reach a target set point by the time zone occupancy is expected.

The 'Optimum Start' page is a central place for configuring and managing all optimum starts in Optergy Software.

Available optimum start actions:

- [Add Optimum Start](#)
- [Edit Optimum Start](#)
- [Remove Optimum Start](#)

Viewing Optimum Start Current Status

On the main Optimum Start list page, for each optimum start configured, the currently calculated advance time and the current status are visible. If the status is currently 'Occupied' then the calculated advance time will be the advance time last used before becoming occupied.

9.13.1. Add Optimum Start

Required Privilege: Manage Optimum Start

To create a new optimum start entry click  (Add) from the 'Optimum Start' list page. This will bring up an pop-up box which will enable the user to configure and create a new optimum start.

Basic Configuration

This section allows for the entry of minimal optimum start configuration details. In this configuration section, all fields are required.

Base (occupied) Schedule:

Select the schedule to base the optimum start calculations on

Description:

A unique and brief description of the optimum start

Write Priority:

The write priority that this schedule will write to the controlled properties at

Enabled:

Indicates whether this optimum start is enabled to run

Special Event Schedules

This section contains a collection of special events (holiday schedules) which override the normal operating weekly schedules, thus influencing the optimum start calculations. These schedules run on a lower priority than the base schedule but override the usual weekly operating times. This section is optional.

To add schedules to the special event collection, click on the 'Configure' button to view the configuration setup. All schedules that are located on the same host device as this optimum start will be displayed. To include one or multiple of these schedules as special event exceptions for the optimum start, simply click, hold and drag a schedule to the box under the 'Selected as Special Event Schedules' label. All schedules that are specified in this box will be included. To remove a schedule from the collection, simply click, hold and drag the schedule to the box under the 'Same Host Schedules' label.

Optimum Start References

Inside air temperature:

The point that indicates current inside area's air temperature

Outside air temperature:

The point that indicates current outside air temperature

Target heating setpoint:

The point that identifies the areas heating setpoint

Target cooling setpoint:

The point that identifies the areas cooling setpoint

Humidity:

The point that corresponds to the relative humidity commonly experienced in the area. If the humidity is specified, optimum start uses it in the advance time calculation. Increased humidity will increase the advance time. (optional)

Warmup command:

The property to use to initiate a warming operation

Cooldown command:

The property to use to initiate a cooling operation

Optimum Start Calculations

Re-calculation rate:

The number of minutes between optimum start calculation adjustments are made made on previous warmup and cooldown efforts

Maximum advance:

The maximum number of minutes before the next scheduled occupied time to begin an optimum start operation

Outside air limit:

Used only in warmup calculations. Set this to approximate the average space temperature of the zone when warm up begins. The greater the difference between this and the outside air temperature, the greater the advance time.

Building mass:

A value that corresponds to the interior building mass

Self-tuning factor:

Use this to control how aggressive optimum start adjustments are, based on previous warmup and cooldown efforts. Range is 0.0 to 1.0. 1.0 is most aggressive. 0.1 is least aggressive. 0 disables adjustment.

Warmup factor:

Optergy Software will adjust and fine tune the warmup factor over time. Its best left as the Optergy Software default of 1.

Cooldown factor:

Optergy Software will adjust and fine tune the cooldown factor over time. Its best left as the Optergy Software default of 1.

Unscheduled warmup factor:

Set a different warmup factor when the zone was scheduled to be unoccupied the previous day. This is independent of the primary warmup factor.

Unscheduled cooldown factor:

Set a different cooldown factor when the zone was scheduled to be unoccupied the previous day. This is independent of the primary cooldown factor.

Note: On creating a new Optimum Start, the system creates BACnet AI points and Trend Logs for the following:

- Warmup factor
- Cooldown factor
- Unscheduled warmup factor
- Unscheduled cooldown factor
- Advance time

9.13.2. Edit Optimum Start

Required Privilege: Manage Optimum Start

To edit an existing optimum start, either double click the desired entry or select the entry and click  (Edit) from the 'Optimum Start' list page. Both of these actions will bring up the edit popup pre-populated with the current selected entries configuration.

Editing Basic Configuration

Contains minimal optimum start configuration details. All of these fields, excluding the base (occupied) schedule can be updated. See [Add Optimum Start](#) documentation for field definitions.

Editing Special Event Schedules

Contains a collection of special events (holiday schedules) which override the normal operating weekly schedules, thus influencing optimum start calculations. All of these fields can be updated. See [Add Optimum Start](#) documentation for field definitions.

Editing Optimum Start References

Contains a collection of values and/or BACnet point references which control zone temperatures, setpoints and initiate commands. All of these fields can be updated. See [Add Optimum Start](#) documentation for field definitions.

Editing Optimum Start Calculations

Contains environmental aspects which go into the optimum calculations. All of these fields can be updated. See [Add Optimum Start](#) documentation for field definitions.

Once all desired changes have been made, click 'Save' to save all changes.

Reading Optimum Start References

To find out the current read values of the included reference points, click the 'Read References' button located at the bottom of the edit popup window. A summary window will appear containing the latest readings of the saved reference points. **Note:** The points read will only be points that are saved, so any changes must be saved before they will take effect when 'Reading References'.

9.13.3. Remove Optimum Start

Required Privilege: Manage Optimum Start

To remove a optimum start from the 'Optimum Start' list page, select the entry you wish to remove and click  (Remove). A popup will then appear asking you to confirm the removal of the selected entry or entries. If 'Remove' is clicked the selected optimum start will then be permanently removed from Optergy Software.

Note: In the pop up, ticking the option 'Delete all references to OS?' will permanently delete all BACnet AI points and Trend Logs created for the chosen Optimum Start.

9.14. Schedules

The most common use of BACnet schedules is to control the runtime of plant equipment. The 'Schedules' page found within the 'Building Management' sub-menu, can be used to view all schedules currently in Optergy Software as well as editing and creating schedules.

Available Schedule actions:

- [Viewing Schedules](#)
- [Creating Schedules](#)
- [Editing Schedules](#)
- [Removing Schedules](#)
- [Importing and Exporting Schedules](#)
- [Poll State](#)

View Points List

To view the points that are controlled by schedules click  (View Scheduled Points).

9.14.1. Viewing Schedules

Required Privilege: View Schedules

The schedule page, found within the 'Building Management' sub-menu, will load with a list of all the schedule objects that are currently stored in Optergy Software. To get more information about the schedule, double click the schedule row, or select the schedule then click  (View).

Moving Between Pages

If there are a lot of schedules they will be separated over multiple pages, at the top of the list it will display how many pages of schedules there are. Ways to move between pages:

- Use  and  to move backward and forward one page at a time
- Use  and  to jump to the first and last page respectively.
- To go directly to page select the page number from the drop-down list

Filtering

The filter field at the top of the list allows filtering on host device, instance and description. To filter, enter (multiple text strings or numeric digits or a combination) into the filter box, any schedule that matches what was entered will appear in the list. Eg. To display all schedules on device 2000, enter 2000 into the filter. To search for a schedule with a certain description enter all of the description or any part of it into the filter. To reset the filter, simply remove all entered input in the filter box.

9.14.2. Creating Schedules

Required Privilege: Manage Schedules

To create a new schedule click  (Add) from the 'Schedule' page. A popup will appear that allows for schedule details to be entered.

General Details

Host Device

The field device that will hold the schedule object.

Note: The Optergy Software portal can host schedules, but only for the purpose of those schedules being used elsewhere in Optergy Software Eg. 'Occupancy Analysis' utility report. Schedules hosted on the Optergy Software portal can not actually be used to control BACnet devices.

Instance

The instance number of the schedule. By default 'Auto Assign' is selected which will assign the next available instance number. The instance can be explicitly specified by selecting 'User Assigned' and entering a number

Description

A brief description of the schedule

Advanced Configuration

The advanced configuration lifts the restriction of using 'AUTO', 'ON' and 'OFF'. Any value can now be assigned.

Schedule Default

The default value for the schedule when no weekly schedule or special event is in effect

Write Priority

The write priority that this schedule will write to the controlled properties at

Date Range

If desired, enter a start/stop date for the schedule. Note that for locally hosted objects, a full date must be specified (the day, month and year), otherwise the effective period will essentially disable the schedule

Configure Weekly Schedule

The weekly schedule contains regular daily events within a weekly.

1. Click on the 'Weekly Schedule' button to the right
2. To add a new event
 - a. Click and drag over the desired times
 - b. Select if this highlighted period to be on, off or auto by clicking their respective buttons at the bottom. The highlighted area will then change colour to reflect the action chosen
 - c. Any action/event can be overridden by re-highlighting it and once again setting it to on, off or auto
3. Click 'Apply' to apply any changes made and return, 'Cancel' will return without saving any changes made

Advanced

1. If it is preferred to enter events manually or view event times as a list click on the 'Advanced' button
2. This screen will show the on, off and auto events for each day of the week
3. To add a new event:

- a. Click on the 'Add' button on a specific day
 - b. Enter the event time and select an action
 - c. Click 'Apply' to add event and return, to return without adding the event click 'Cancel'
4. To replicated the events of one day to other days:
 - a. Click 'Show Repeat Options'
 - b. Select the day to replicate, on the left
 - c. select the days to replicate to, on the right
 - d. Click 'Apply'

Configure Special Events (and Holidays)

1. Click on the 'Special Events' button to the right
2. This screen displays a list of all the current special events
3. To add a new event
 - a. Click of the 'Add' button
 - b. Select the event ranking. If there are multiple special events at the same time this ranking determines which event is to be run. **Note:** This event rank has nothing to do with the schedule priority
 - c. Choose how to define when the event takes place via the options available under Date Specification
 - d. Configure as appropriate, the date, date range, special time period or calendar, as per the date specification selection
Note: To specify special events using a calendar object, the desired calendar must exist on the same host device as the current schedule
 - e. Select what actions you want to occur for the date(s) specified, you can either select an action to occur all day or at specific times
 - f. To specify something other than an action all day
 - i. Select the 'Custom' Option
 - ii. Click **+**
 - iii. Set the time for the event and an action and click 'Apply' (or Cancel)
 - iv. To edit or delete the event from the special event, select the event time from the list.
 - g. Click 'OK' to add the special event, 'Cancel' to abort
4. To edit a special event, select it from the list, and click 
5. To delete a special event, select it from the list, and click 
6. Click 'Apply' to apply any changes and return, 'Cancel' will return without saving any changes made

Configure Controlled Properties

1. Click on the 'Controlled Properties' button to the right
2. This screen displays a list of all the current controlled properties
3. To add a new controlled property
 - a. Click **+**
 - b. Enter controlled property details

Host Device

Host device on the controlled property. If the point to be controlled exists on the same device as the schedule itself, tick the 'Same host as this schedule' checkbox, otherwise un-tick the checkbox and select the device instance for the point

Object Type

The object type to be controlled

Object Instance

The instance number of the given object type

Property Type

The property of the given object type

Array Index

The array index if the 'Priority Array' property is selected

c. Click 'Apply' to add the controlled property, 'Cancel' to abort

4. To edit a controlled property, select it from the list, and click 
5. To remove a controlled property, select it from the list, and click 
6. Click 'Apply' to apply any changes and return, 'Cancel' will return without saving any changes made

Once all schedule details have been filled in, click the 'Add Schedule' button to create the schedule. It will then appear in the main schedule list.

9.14.3. Editing Schedules

Required Privilege: Manage Schedules

Schedules can be edited at any time from the 'Schedules' page. It is important that Optergy Software has the most up-to-date information about the schedule object before editing, if uncertain importing the schedule first is a good idea.

To edit an existing schedule:

1. Either double click the desired schedule, or select the schedule and click  (Edit) from the Schedules page.
2. A popup will appear with all the current information about the schedule, use this popup to update any details (see [Creating Schedules](#) documentation for field definitions and how to edit special events, controlled properties and weekly schedule)
3. To save any changes made click 'Update Schedule', Optergy Software will immediately save changes and attempt to send them to the field device.

9.14.4. Removing Schedules

Required Privilege: Manage Schedules

To remove a schedule:

1. Click on the schedule(s) to be removed, from the schedule list

2. Click  (Remove)
3. A confirmation popup will appear, select what the schedule object is to be removed from. There are two (2) options:
 - o **Optergy Software Only** - Schedule will be removed from Optergy Software but still remain of the field device. The schedule can be re-imported at a later date.
 - o **Optergy Software and device** - Schedule will be permanently removed from both Optergy Software and the field device (this cannot be undone).
4. Once remove decision has been made click 'Remove' to proceed

9.14.5. Importing and Exporting Schedules

Required Privilege: Manage Schedules

Importing Schedules

The importing of schedules can do one of two things:

- Update Optergy Software's schedules with the field devices current settings
- Add a schedules to Optergy Software that it didn't previously know about

In general, importing schedules is most useful when a schedule has been modified outside Optergy Software, or has been created outside Optergy Software, and needs to be imported into Optergy Software.

To import schedules:

Note: Only objects that are currently allowing imports will have their Schedules imported.

1. Click  (Start Import)
2. Select import method:

Import all instances from all device

Optergy Software will import all the schedules that exist on all devices in the device list

Re-import all currently imported instances from all devices

This will re-import all the schedules that Optergy Software currently knows about (those that appear in the main schedule list)

Re-import all currently selected instances

Back on the main schedules screen, multiple schedules are able to be selected, this option will re-import all of these selected schedules

Import specific instances from one host device

This will import schedules that exist on a particular host device.
Select the field device to import from, and either:

- o Import all schedules on device
- o Import a specific instance
- o Import a instance range

3. Once the import method has been select click 'Start Import'
4. Optergy Software will begin importing schedules, the progress is visible at the top of the page

5. Once the import has finished results will be shown at the top of the page

Exporting Schedules

If changes have been made to a schedule but could not be sent to the BACnet device at that time, it will appear red in the list indicating that it needs to be sent to the device at a later date.

To attempt to sync these unsynchronized schedules:

1. Click  (Start Export)
2. A popup will then appear listing all currently unsynchronized schedules
3. Select all the schedules to be exported to the device
4. Click the 'Start Export' button to begin the export process, the popup will then close and progress of the sync will appear at the top of the page
5. Once the export has finished, results will be shown at the top of the page, those schedules successfully exported will no longer be red.

9.14.6. Polling State of Schedules

Required Privilege: Manage Schedules

Select the Schedules for which you wish to get the exact state.

Click on Poll State:

1. If the selected Schedules do not exist on the device, it will be changed into red colour along with a warning message
2. These Schedules will now be available for export to the specified device.

Note: Poll State does not work for Optergy hosted objects.

9.14.7. Scheduled Point List

Required Privilege: View Schedules

The 'Scheduled Point List' page shows all device's properties that are controlled by schedules that have been set in Optergy Software. It is useful for seeing which properties are being controlled by schedules and can aid in diagnosing problems due to properties being controlled by conflicting schedules.

For example if, Device Instance 3600, Object Instance 900 with its property Present Value is being set to "off" by a schedule, that schedule can be accessed by this page by viewing the scheduled point and selecting the controlling schedule.

Viewing and Editing Controlling Schedules

To view/edit the schedules that are controlling a point:

1. Select the row and double click on the point, or select the row and click  (View Scheduled Point).

2. Select the schedule from the list and click "Go to Schedule" or double click on the schedule.

Editing the Schedule

To edit the schedule, see [Creating Schedules](#) for more detailed information on editing the schedule.

Sorting by Column

To sort by column. Click the top of the column on "Device Instance" , "Object Type" , "Object Instance" and "Property" to sort according to that column.

Moving Between Pages

If there are a lot of Scheduled Points they will be split over multiple pages, at the top of the list it will display how many pages of Scheduled Points there are. Ways to move between pages:

- Use ◀ and ▶ to move backward and forward one page at a time.
- Use ⏪ and ⏩ to jump to the first and last page respectively.
- To go directly to the page select the page number from the drop-down list.

Filtering

The filter fields at the top of the list allows filtering on device instance, object type and object instance. To filter, enter numeric digits into the filter boxes or select an object type, any scheduled points that match what was entered will appear in the list. Eg. To display all scheduled points with device 2000, enter 2000 into the 'Device' filter. Both device and instance filters do a contains check not an exact check, for example if '30' is entered as the instance, then any points where the instance contains '30' will appear, 30, 300, 4030, etc. Also for both these boxes, once finished entering the desired digits into the box, click outside of the box (e.g. elsewhere on screen) for the filter to take effect. To reset the filters, simply remove all entered input in the filter boxes and select 'Any' as the object type.

View Schedules List

To go to the schedules list, click  (View Schedules List).

9.15. Virtual Devices

Required Privilege: Manage Virtual Devices

Virtual Devices is an Optergy invention allowing non-BACnet devices to be represented as BACnet devices

Toolbar

Virtual Network Settings:

Links to the [Virtual BACnet Configuration page](#) which allows configuring important virtual network information such as whether it is enabled or not.

Enable:

Enables Virtual Devices, allowing it to respond to BACnet requests

Disable:

Disables Virtual Devices, allowing it to respond to BACnet requests

Add:

[Adding Virtual Devices](#)

Edit:

[Editing Virtual Devices](#)

Remove:

[Removing Virtual Devices](#)

Manage Points

Can only be selected when a virtual device is ticked. Adds virtual points (e.g. analog inputs) to a virtual device.

Download Template

Can only be selected when a virtual device is ticked. Creates a template of an existing virtual device with associated virtual points, if any, for use in quick creation of new virtual devices.

Upload Template

Following from above, upload a template with preconfigured information of a virtual device. Templates are not specific to a Proton.

9.15.1. Adding Virtual Devices

Required Privilege: Manage Virtual Devices

To create a new Virtual Device click **+** (Add) on the toolbar of the 'Virtual Devices' page. A dialog box will then appear. Remember to configure (Virtual network Settings) before adding a Virtual Device

General Details

Name

The name of this virtual device.

Instance Number

The instance number of this Virtual Device. Has to be unique. By default it is assigned as the next available instance number, which is a concatenation of the virtual BACnet network number and the first available lowest number.

Description

A brief description of the Virtual Device.

Protocol

Specifies a non-BACnet protocol to be used. For now, only Modbus Serial and Modbus IP are available.

Remote Device

This specifies what non-BACnet device to be represented as a Virtual Device, based on the protocol chosen above.

Virtual Point Template

For quick creation, choose from a list of templates that represents a Virtual Device and its associated Virtual Points, if any, with details already filled out. This dropdown list starts out as empty. To add a template to this dropdown, select an already existing Virtual Device and click 'Download Template' then 'Upload Template'.

9.15.2. Editing Virtual Devices

Required Privilege: Manage Virtual Devices

Virtual Devices can be edited at any time. To edit an existing Virtual Device either double click the point from the list, or select the point you want to edit, and click  (Edit). Once you made the desired changes, click  (Save) to confirm your changes.

9.15.3. Removing Virtual Devices

Required Privilege: Manage Virtual Devices

To remove a Virtual Device, a row from the Virtual Devices page, and click  (Remove). A confirmation box will appear to confirm your request to remove the points from the system, then click remove.

9.16. Virtual Points

Required Privilege: Manage Virtual Devices

Virtual Points are an Optergy invention that allows non-BACnet points to be represented as BACnet points. These points must be associated with a Virtual Device.

The following types of points are supported:

- Analog Inputs, Values, and Outputs: useful for reading floating point and integer types.
- Binary Inputs, Values, and Outputs: useful for reading binary points.
- Multistate Inputs, Values, and Outputs: useful for reading inputs where a particular value has a particular meaning (e.g. 0=off, 1=starting up, 2=running). Note that all present-values will have an offset of +1 since the BACnet standard does not allow the value to be zero or less.

9.16.1. Adding Virtual Points

Required Privilege: Manage Virtual Devices

To create a new Virtual Point click 'Manage Points' from the 'Virtual Devices' page then  (Add) on the Virtual Points page.

Object Instance

A unique instance number for this Virtual Point.

Description

A description of the Virtual Point. The description is also visible in the description field of the BACnet point

Unit Number

The unit address of the non-BACnet (modbus) device

Read Function

Point Is Writeable

Write Function

The write function to be used when writing back to the Virtual Point

Indicates if this point is writeable or not

The type of read function to be used when reading the point

Register

The register to be read when reading the point

Format

The format of the point in the non-BACnet device

Byte Swapped

Indicates if the bytes should be swapped when interpreting the data

Trendlog Interval

How often (if at all) the Virtual Point should be logged

Minimum Polling Time

The minimum time to wait before polling the device again. This helps prevent load issues with devices that can't handle a lot of requests

BACnet Object Type

The type of BACnet point that should be created for this Modbus point

Analog Input Settings

Note: Applicable only when BACnet Object Type is set to Analog Input

Scale (Only for Analog Input)

A value which is multiplied against the non-BACnet reading to come to a final value

Unit (Only for Analog Input)

The engineering unit of this point

Binary Input Settings

Note: Applicable only when non-BACnet Object Type is set to Binary Input

Active Text

The active text of the Binary Input object

Inactive Text

The inactive text

Bit Packed

Some non-BACnet devices use a single register to store the state of 16 different things, rather than the state of one thing. This checkbox indicates if this is one of those types of points or not.

Bit Packed Index

If the Virtual Point is bit packed, specify the index in the register that should be read

Multi-State Input Settings

Note: Applicable only when BACnet Object Type is set to Multi-state Input

States

A list of states which map a particular numeric value to a text representation. The list must start at 0, and contain sequential numeric values of increasing value. If one is omitted, the system will automatically create a blank entry for you. Multiple entries with the same state are not allowed (they must be changed or removed before saving).

9.16.2. Editing Virtual Points

Required Privilege: Manage Virtual Devices

Virtual Points can be edited at any time. Select the point you want to edit, and click  (Edit). Once you have made the desired changes, click  (Save) to save your changes.

For a definition of the fields on the edit screen, refer to [Adding Virtual Points](#).

Note: Once a virtual point has been created, the BACnet object type cannot be changed

9.16.3. Removing Virtual Points

Required Privilege: Manage Virtual Devices

To remove a Virtual Point, select one (or more) rows from the Virtual Point page, and click  (Remove). A confirmation box will appear to confirm your request to remove the point from the system. Click Remove to permanently remove the point from the system.

10. Contact Management

Required Privilege: Manage Contacts

Contacts in Optergy Software allows for a quick, simple and easy way to manage clients, owners, and other relevant contacts pertinent to the system. The 'Contact Management' page is a central place to view and keep track of all contacts configured in Optergy Software.

View Contacts

All currently available contacts recorded in the system are shown in the main table. This shows each contact's full name, company and email.

Managing Contacts

To add a new contact, click **+** (Add) from the 'Contacts Management' page. To edit any existing contact, either double click the desired contact or select the contact and click **✎** (Edit) from the 'Contacts Management' page. This will load the '[Contact Wizard](#)' page with the selected contacts configuration and allow editing of individual details and settings.

Remove Contacts

Any number of contacts can be removed at once. This can be done by clicking the row of those contacts to be deleted. Once all the contacts to be deleted have been selected, click **—** (Remove). A confirmation message will then appear asking to confirm the removal of the selected contact or contacts before proceeding. If 'Remove' is clicked, all the selected contacts will then be permanently removed from Optergy Software.

10.1. Contact Wizard

Required Privilege: Manage Contacts

The 'Contact Wizard' allows for the entry of all a contact's general and communication channel information. The only required fields are the contact's first and last names, and company details, all other fields can be left blank if desired.

First Name: Required

The first name of the contact

Last Name: Required

The last name of the contact

Email Address Required:

An unique email address that contact can be contacted on. No duplicates allowed in Optergy Software.

Company:

The name of the company where the contact works or can be reached

Phone Number:

A fixed landline number in which the contact can be reached

Mobile Number:

A mobile number in which the contact can be reached

11. User Configuration

11.1. Departments

Departments allow organisational structure to be stored in the system. The 'Department List' page is a central place to view and keep track of all departments configured in Optergy Software.

View Departments

All currently available departments recorded in the system are shown in the main table. The main table shows each department's name, brief description and the number of users linked to the department.

Moving Between Pages

If there are a lot of departments, they will be split over multiple pages, at the top of the list it will display how many pages of departments there are. Ways to move between pages:

- Use ◀ and ▶ to move backward and forward one page at a time
- Use ⏪ and ⏩ to jump to the first and last page respectively.
- To go directly to page select the page number from the drop-down list

Filtering

The filter field at the top of the list allows filtering on the department name and description. To apply a filter, enter (multiple text strings or numeric digits or a combination) into the filter box, and any departments that match what was entered will appear in the list. Eg. To search for a department with a certain name enter all of the name or any part of it into the filter. To reset the filter, simply remove all entered input in the filter box.

Managing Departments

To add a new department, click + (Add) from the 'Departments List' page. To edit any existing department, either double click the desired department or select the department and click ✎ (Edit) from the 'Departments List' page. This will load the '[Department Administration](#)' page with the selected departments configuration.

Remove Departments

Any number of departments can be removed at once. This can be done by selecting the checkboxes or by clicking the row of those departments to be deleted. Once all the departments to be deleted have been selected, click — (Remove). A confirmation message will appear to confirm the operation before proceeding.

11.1.1. Add Departments

Required Privilege: Configure Departments

To create a new department click **+** (Add) from the 'Department List' page. This will direct to the 'Department Administration' wizard which provides a step-by-step interface to configure a new department.

Configuring General Details

Step 1 allows for the entry of the department's general information. In this section the department name is the only required field, all other fields can be left blank if desired. After step 1 details have been entered, the other steps can continue to be entered or the new department can be created now by clicking  (Save). Information can still continue to be entered after saving.

Department Name:

A unique name for the department

Description:

A brief description of the department or it's role

Configuring Department Administrators

Step 2 allows users to be designated as administrators for the department. In this section none, one or more users in Optergy Software can be checked or unchecked if desired. After step 2 details have been entered, the others can continue to be entered or the new department can be created now by clicking  (Save).

Alongside each listed user, there is an information link,  which enables viewing of a basic summary for each user and also provides access to the user administration page for that user.

11.1.2. Edit Departments

Required Privilege: Configure Departments

To edit an existing department, either double click the desired department or select the department and click  (Edit) from the 'Department List' page. Both of these actions will bring up the edit popup pre-populated with the current selected department's configuration.

Step 1 contains the department's general information. All of these fields can be updated, view [Add Departments](#) documentation for field definitions.

Step 2 contains the functionality to set/remove department administrators. All of these fields can be updated, view [Add Departments](#) documentation for field definitions.

Once all desired changes have been made, click  (Save), to save all changes.

11.1.3. Remove Departments

Required Privilege: Configure Departments

To remove a department or multiple departments at once from the 'Department List' page, select the departments you wish to remove and click  (Remove). A popup will then appear asking to confirm the removal of the selected department or departments. If 'Remove' is clicked, all the selected departments will then be permanently removed from Optergy Software.

11.2. Groups

Groups in Optergy Software allows for quick, simple and easy management of permissions for any number of users. Rather than set up permissions on a user by user basis, permissions can be applied to a group, and then users can be assigned to a group to inherit the permissions of that group. Permissions are cumulative; if a user is placed in multiple groups, then the permissions of all the groups are added together (i.e. if a user in two groups, and one of those groups has access to viewing trend logs but the other does not, then that user can view trend logs). The 'Group List' page is a central place to view and keep track of all groups configured in Optergy Software.

View Groups

All currently available groups recorded in the system are shown in the main table. This shows each group's name, brief description, security level and the number of users linked to the group.

Moving Between Pages

If there are a lot of groups they will be split over multiple pages, at the top of the list it will display how many pages of groups there are. Ways to move between pages:

- Use  and  to move backward and forward one page at a time
- Use  and  to jump to the first and last page respectively.
- To go directly to page select the page number from the drop-down list

Filtering

The filter field at the top of the list allows filtering on the group name and description. To apply a filter, enter (multiple text strings or numeric digits or a combination) into the filter box, and any groups that match what was entered will appear in the list. Eg. To search for a group with a certain name enter all of the name or any part of it into the filter. To reset the filter, clear all entered input in the filter box.

Managing Groups

To add a new group, click  (Add) from the 'Groups List' page. To edit any existing group, either double click the desired group or select the group and click  (Edit) from the 'Groups List' page. This will load the '[Group Administration](#)' page with the selected groups configuration.

Remove Groups

Any number of groups can be removed at once. This can be done by selecting the checkboxes or by clicking the row of those groups to be deleted. Once all the groups to be deleted have been selected, click  (Remove). A confirmation message will appear to confirm the operation before proceeding.

11.2.1. Add Groups

Required Privilege: Configure Groups

To create a new group click  (Add) from the 'Group List' page. This will direct to the 'Group Administration' wizard which provides a step-by-step interface to configure a new group.

Configuring General Details

Step 1 allows for the entry of the group's general information. In this section the group name and security level are the only required fields, all other fields can be left blank if desired. After step 1 details have been entered, the other steps can continue to be entered or the new group can be created now by clicking  (Save). Information can still continue to be entered after saving.

Group Name:

A unique name for the group

Description:

A brief comment about the group or it's purpose

Security Level:

Controls the access of points on displays

Configuring Group Members

Step 2 allows users to be assigned to the group. In this section none, one, or multiple users recorded in Optergy Software can be checked or unchecked if desired. After step 2 details have been entered, the others can continue to be entered or the new group can be created now by clicking  (Save).

Alongside each listed user, there is an information link,  which enables viewing of a basic summary for each user and also provides access to the user administration wizard pre-populated with the users details.

Configuring Bookmarks

Step 3 allows for the entry of a collection of bookmarks for a group. In this section none, one, or multiple bookmarks can be attached to the group if desired. After step 3 details have been entered, the others can continue to be entered or the new group can be created now by clicking  (Save).

To create a new bookmark click  in the bookmark toolbar. A popup window will then appear. Continue to enter all appropriate information; all fields are required. Click the 'Save this bookmark' button to create and add the new bookmark to the list.

Title:

A brief description of the bookmark

URL:

An active link

E.g. <http://www.google.com.au/>

To edit an existing bookmark, click  in the bookmark toolbar. A popup window will then appear. Continue to update any or all the information; all fields are required. Click the 'Save this bookmark' button to update the bookmark in the list.

To remove an existing bookmark, click  in the bookmark toolbar. A confirmation popup will appear to confirm the removal action. Click 'Remove' to remove the bookmark from the list.

Configuring System Privileges

Step 4 allows privileges to be assigned to the group. In this section none, one, or multiple Optergy Software system privileges can be checked to grant access or unchecked to disallow access to a particular page or section of functionality. After step 4 details have been entered, the others can continue to be entered or the new group can be created now by clicking  (Save).

11.2.2. Edit Groups

Required Privilege: Configure Groups

To edit an existing group, either double click the desired type or select the type and click  (Edit) from the 'Group List' page. Both of these actions direct to the 'Group Administration' page pre-populated with the currently selected group's configuration.

Step 1 contains the group's general information. All of these fields can be updated, view [Add Groups](#) documentation for field definitions.

Step 2 contains the functionality to apply group membership to users. All of these fields can be updated, view [Add Groups](#) documentation for field definitions.

Step 3 contains the group's bookmarks. All of these fields can be updated, view [Add Groups](#) documentation for field definitions.

Step 4 contains the group's system privileges. All of these fields can be updated, view [Add Groups](#) documentation for field definitions.

Once all desired changes have been made, click  (Save), to save all changes.

11.2.3. Remove Groups

Required Privilege: Configure Groups

To remove a group from the 'Group List' page, select the group or groups you wish to remove and click  (Remove). A popup will then appear asking to confirm the removal of the selected group or groups. If 'Remove' is clicked, all the selected groups will then be permanently removed from Optergy Software.

11.3. Users

The 'User List' page provides the ability to manage all users configured in Optergy Software.

View Users

All currently available users recorded in the system are shown in the main table. This shows each user's full name, Optergy Software username, department and a brief permission summary.

Information Icons

There are several icons which can appear in the table, which provide a few key details about the configuration of the given user:



Users can receive notifications.



Users can receive alarm notifications.



Users can change their password.



The number of bookmarks this user has.



The number of groups this user is in.

Moving Between Pages

If there are a lot of users they will be split over multiple pages, at the top of the list it will display how many pages of users there are. Ways to move between pages:

- Use  and  to move backward and forward one page at a time
- Use  and  to jump to the first and last page respectively.
- To go directly to page select the page number from the drop-down list

Filtering

The filter field at the top of the list allows filtering on the user name and description. To apply a filter, enter (multiple text strings or numeric digits or a combination) into the filter box, and any users that match what was entered will appear in the list. Eg. To search for a user with a certain name enter all of the name or any part of it into the filter. To reset the filter, simply remove all entered input in the filter box.

Managing Users

To add a new user, click  (Add) from the 'Users List' page. To edit any existing user, either double click the desired user or select the user and click  (Edit) from the 'Users List' page. This will load the '[User Administration](#)' page with the selected users configuration.

Remove Users

Any number of users can be removed at once. This can be done by selecting the checkboxes or by clicking the row of those users to be deleted. Once all the users to be deleted have been selected, click  (Remove). A confirmation message will appear to confirm the operation before proceeding.

11.3.1. Add Users

Required Privilege: Configure Users

To create a new user click **+** (Add) from the 'User List' page. This will direct to the 'User Administration' screen which provides a tabbed interface to configure a new user.

Profile and Permissions

Profile and Permissions allows for the entry of the user's general information. In this section the username and security level are the only required fields, all other fields can be left blank if desired. After profile and permissions details have been entered, the other tabs can continue to be entered or the new user can be created now by clicking **Save** (Save). Information can still be entered after saving.

Account Enabled:

If account is current active and can be used to log into Optergy Software

Username:

A unique username for the user (case sensitive)

Password:

User password used to log in

Password Expires:

Sets whether a password will expire. If checked a date must be added by clicking the  (Calendar) and selecting the date. The password must be changed after the date of expiry. To remove an expiry for a password, simply uncheck the checkbox.

First Name

First name of user

Last Name

Last name of user

Company Name

The name of the company this user works for

Address

An address for this user

Email Address

Email address or addresses that the user can be contacted on.

Note: If multiple email addresses are entered use a comma to separate them.

E.g: example@email.com, example2@email.com

Department

Department that user belongs to

SMS-Email:

An Email to SMS gateway email address. Notifications sent to this email address are formatted differently to ensure that it could be converted to a text message by the service provider

Note: This has been verified by testing on Whispir Email to SMS Gateway service.

Email Address

Email address that user can be contacted on

Department

Department that user belongs to

Phone Number:

A fixed landline number in which the user can be reached

Mobile Number:

A mobile number in which the user can be reached

Security Level:

Controls the access of points on displays

Account Expires:

Sets whether an account will expire. An expired account cannot be logged into by the user after the date of expiry. If checked, a date must be added by clicking the  (Calendar) and selecting the date. The password must be changed after that date. To remove an expiry for an account, simply uncheck the checkbox. Accounts will be valid to the last second of the expiry date. E.g if the Expiry date is 1st January, it will be valid till 1st January 11:59.59 PM **Note:** If you have set the date to be before the current date, the user's account will be disabled the next time they login.

Show Optergy Software Banner

Whether the top Optergy Software banner is displayed

Show Main Menu

Whether the main menu at the top left of the Optergy Software banner is accessible

Show Alarms, if available

Whether the alarm banner widget of the Optergy Software banner is displayed

In banner

What alarms will appear in the banner, particularly on login

Current alarms and alarms unseen by user

All current BACnet alarms, and any meter alarms that are unseen by the user

Current alarms and alarms unseen by anyone

All current BACnet alarms, and any meter alarms that are unseen by the anyone, meaning meter alarms that any user has already seen will not appear

Show Bookmarks, if available

Whether the bookmarks button on the Optergy Software banner is displayed

Show Notifications

Whether the system message notification widget of the Optergy Software Banner is displayed

Email Notifications

Whether any system message notifications should be automatically emailed to the user

Set Notification Categories

Set the system message notification categories that the user will be alerted to. See [System Notifications](#)

Auto-dismiss "success" messages

If this option is ticked 'success' popups will fade-out automatically after a short duration

Can configure personal bookmarks

User is able to add their own bookmarks on the [User Profile](#) page

Password changes allowed

User is able to change their password on the [User Profile](#) page

Force password change on next login

Next time user logs in they will be forced to change their password

Password Expires

Set the password to expire on a particular day or to expire after a set interval. To set the date, click the  (Calendar) and selecting the date. The password must be changed after the date of expiry.

To set by interval simply enter a whole number into the field or use the arrows to set the number of days before the password expires. since it was last changed. Passwords will be valid to the last second of the expiry date. E.g if the Expiry date is 1st January, it will be valid till 1st January 11:59.59 PM

To remove an expiry for a password, simply uncheck the checkbox. **Note:** If you have set the date to be before the current date, the user's password will have to be reset the next time they login.

Show User Profile

User has access to their [User Profile](#) page

Can Update User Profile

User can updated their personal information using the 'User Profile' page

Add To Site Directory

User can request to be added to the site directory

Auto Logout After Inactivity

Users will be automatically logged out of their browser session if they are inactive. The inactivity timer is specified in System Configuration > Web Server and Portal Configuration.

Preferences

The preferences tab allows for user specific preferences to be set, which take precedence over system settings.

Home Page

By default when a user logs in, the Optergy Software dialpad is displayed. Specifying a home page will load the specified page instead.

Note: If an Optergy Software url is being specified the 'hideup' parameter can be added to the url, so that the 'Up' button does not appear in the dock. If the url already contains an '&' add '& hide up' to the end, if the url does not contain an '&' add '?hideup' to the end of the url.

Home Display

This option allows a user specific home live display to be set. If specified a 'Home Display' option will be added to the main menu and the Optergy Software dialpad

Background

This option allows a user specific background to be set

Group Memberships

The group memberships tab allows users to be assigned to groups. In this section none, one, or multiple groups recorded in Optergy Software can be checked or unchecked if desired.

Alongside each listed group, there is an information link,  which enables viewing of a basic summary for each group.

Bookmarks

The bookmarks tab allows for the entry of a collection of bookmarks for a user. In this section none, one, or multiple bookmarks can be attached to the user if desired.

To create a new bookmark click **+** in the bookmark toolbar. A popup window will then appear. Continue to enter all appropriate information; all fields are required. Click the 'Save this bookmark' button to create and add the new bookmark to the list.

Title:

A brief description of the bookmark

URL:

An active link

E.g. <http://www.google.com.au/>

To edit an existing bookmark, click  in the bookmark toolbar. A popup window will then appear. Continue to update any or all the information; all fields are required. Click the 'Save this bookmark' button to update the bookmark in the list.

To remove an existing bookmark, click  in the bookmark toolbar. A confirmation popup will appear to confirm the removal action. Click 'Remove' to remove the bookmark from the list.

User Privileges

The user privileges tab allows privileges to be assigned to the user. In this section none, one, or multiple Optergy Software system privileges can be checked to grant access or unchecked to disallow access to a particular page or section of functionality.

Effective Privileges

The effective privileges tab shows all the privileges this user has, taking into consideration their own user privileges and any privileges from all the groups the user belongs to.

11.3.2. Edit Users

Required Privilege: Configure Users

To edit an existing user, either double click the desired user or select the user and click  (Edit) from the 'User List' page. Both of these actions will direct to the 'User Administrator' page pre-populated with the user's configuration.

Profile and Permissions contains the user's general information. All of these fields can be updated, view [Add Users](#) documentation for field definitions.

Preferences contain the user's specific preferences. All of these fields can be updated, view [Add Users](#) documentation for field definitions.

Group memberships contain the functionality to add users to groups. All of these fields can be updated, view [Add Users](#) documentation for field definitions.

Bookmarks contain the user's bookmarks. All of these fields can be updated, view [Add Users](#) documentation for field definitions.

User privileges contain the user's system privileges, all privileges are able to be updated.

Effective Privileges shows all the privileges this user has access to, taking into consideration their own user privileges and any groups they belong to.

Once all desired changes have been made, click  (Save), to save all changes.

11.3.3. Remove Users

Required Privilege: Configure Users

To remove a user from the 'User List' page, select the user(s) you wish to remove and click  (Remove). A popup will then appear asking to confirm the removal of the selected user(s). If 'Remove' is clicked, all the selected user(s) will then be permanently removed from Optergy Software.

11.4. User Profile

Required Privilege: Show User Profile

General

Enter details into fields and click save to change the User profile's details.

Bookmarks

Add

Click the  (add) to add a bookmark with a title and URL. Click Add to add the URL

Remove

Select a bookmark from the list by clicking on it. Click the  (Remove) to remove a bookmark with a title and URL. Click Remove to remove the Bookmark

Edit

Select a bookmark from the list by clicking on it. Click the  (Edit) to edit a bookmark with a title and URL. Click update to apply the changes

12. Tools

12.1. Display Templates

Required Privilege: Display Templates

The 'Display Templates' page found within the 'Tools' sub-menu, is the central place which allows users to directly bring up display templates related to BACnet devices and objects.

View Template

1. Enter search criteria. This can contain multiple text strings and/or numeric digits. (optional)
2. Select a template. If search criteria has been entered, the template list will have been filtered to only contain templates with a heading that matches the criteria. If no templates appear, no matches are found.
3. Fill in any parameter fields which are needed in order to make the selected template usable. Depending on the selected template additional parameters could include 'Device', 'Object Type' and 'Object Instance'. These must be filled in, in-order for the template to work.

Device:

The device that will hold the object

Object Type:

The type of object

Object Instance:

The instance number of the object

4. To view the template, click the 'View' button. The template will load in a new window.

12.2. Documentation and References

Required Privilege: Documentation And References

This page allows users to view and download any files in Optergy Software's Documentation directory.

Download a file

To download a file or files tick the checkbox on the left of the file's name, then click  (Download). If multiple files or one large file are being downloaded, then they will be zipped to minimise download size.

Uploading a file

Files can be uploaded into the Documentation directory by using the [Remote File Manager](#) or the Windows fileshare.

12.3. Modbus Client

Required Privilege: Modbus Client

The Optergy Software Modbus client allows for low level debugging of Modbus hardware. It is especially useful for testing whether or not Optergy Software can talk to a particular meter, and determining parameter registers.

Shared Parameters

Connection

IP Devices: The IPv4 address of the Modbus device or Modbus gateway. Part of this is prefilled already, depending on the netmask of the Optergy Software portal. The IP address can be typed in directly, or can be selected from the drop-down box to select a saved [Modbus Device](#)

Serial Devices: A valid serial device already registered with Optergy [Modbus Device](#)

Unit Number

The unit number of the Modbus device (This is the same as the unit number in the meter configuration)

Register

The Modbus register to read from the Modbus device. You will need to look up the datasheet for the Modbus device to determine what the register is for the parameter you wish to read, and which function you might need to use

Modbus Function

The Modbus function code. When reading, only needs to be specified if Auto does not automatically determine the correct function code

Reading Parameters

Number of registers to read

How many registers should be read, starting from the specified register above

Writing Parameters

Value to write

Available when using Write Coil or Write Register, with each option allowing different values

Number Format

Will allow the entry of hex or decimal numbers

Number of registers to write

How many registers should be written to, starting from the specified register above. Only available with Write Coils and Write Multiple Registers

Values to write

The values to write to each register. Clicking this button will open a pop up box that contains an entry for each register specified.

Once all read fields have been entered, click 'Execute' to perform the function on the specified device. Results will be displayed below.

Understanding Read Results

Register numbers are displayed on the far left, with its raw hex value to its right.
Read results for each register are displayed in a number of different value formats

16 bit

16 bit whole number (integer). Contents of one (1) register

32 bit

32 bit whole number (integer). Contents of two (2) sequential registers

64 bit

64 bit whole number (integer). Contents of four (4) sequential registers

32 bit (Float)

32 bit float point (real) number. Contents of two (2) sequential registers

64 bit (double)

64 bit double precision (real) number. Contents of four (4) sequential registers

By default all displayed readings are unsigned, big endian, unswapped values. The following formats can be changed dynamically:

Swapped

Byte swapped means that bytes are to be reversed. Tick 'Swapped' at the top of the reading to make all values byte swapped

Endian

Endian indicated the ordering of the registers. By default 'Big' is selected, use the 'Endian' drop-down box at the top of the reading to change the endian of all values

Signed

By default all values are unsigned, to make values signed, tick the 'Signed' box in the related register row. All value formats that include selected register will now be signed values

Every time a new Modbus read is performed, the previous readings will be collapsed and drop below. These values can still be seen by clicking  on the reading set heading, this will expand the readings so they can be viewed again.

To remove a reading, click  on the reading set heading.

12.4. BACnet Client

Required Privilege: BACnet Client

The BACNET Client page allows properties of a BACnet device to be read and written to. The results can optionally be exported to CSV or PDF files.

Reading/Writing a Property

To read/write a property:

1. Select the device from the drop down menu

2. Select the object type
3. Select the object instance by typing in the number or using the arrow button
4. Select the Property from the drop down menu
5. Click 'Execute' to read the property.
6. Or enter a write value and click 'Execute' to write to the property.

To write a null value to a property, enter 'NULL' or 'null'

Click 'Clear' to clear the list of read/write properties

Note: If the device you want to read does not appear in the drop down list, you must first scan it in first on the [Device manager](#).

Writing Multiple Properties

Multiple properties can be selected with the SHIFT and CTRL buttons

1. Click 'Configure' to set the write value and priority array index (if applicable) of selected properties.
2. Click 'Execute' to write to multiple properties.

Creating Object

Creates an Object Type based on the selected Device with auto assigned instance number and no property values

Exporting

To create a CSV file with the properties displayed on the page click  (Export as CSV).

To create a PDF file with the properties displayed on the page click  (Export as PDF).

12.5. Ping Utility

Required Privilege: View Operating System Configuration

Ping is a low level network diagnostic tool which is useful for checking if an IP address is currently reachable. Failures can indicate (but not limited to) the remote device being off, there are misconfigured network settings somewhere, cables are loose, there is an equipment failure, and network or routing faults.

IP Address Field

Type in IP address to ping the device on that IP to see if it is active and to view the ping statistics

Execute Ping

Click this button to ping the specified address. 6 ping requests will be sent.

12.6. Remote File Manager

Required Privilege: Remote File Manager Full Access or Remote File Manager View Only

The file manager is used to upload and download files to the Optergy Software Portal. It can also be used to create and delete folders for file organisation.

File Browsing

When the 'Browse' tab is selected the folder structure is displayed left of screen. A folder can be expanded to see folders within by clicking on the folder or clicking on the +. To view files within a folder, click on the folder. All files in that folder will be displayed on the right. From here the following actions can be performed.

Removing a File

Required Privilege: Remote File Manager Full Access

To remove a file, check the checkbox on the left of the file's name, then click  (Remove File). Multiple files can be removed by ticking the files to be removed.

Renaming a File

Required Privilege: Remote File Manager Full Access

To rename a file tick the checkbox on the left of the file's name, then click  (Edit file). Type in the new name in the pop-up window and then click 'Rename'.

Download a File

To download a file tick the checkbox on the left of the file's name, then click  (Download file). Multiple files can be downloaded by ticking the files to be downloaded. If several files are selected, then depending on the file size, it may take a few moments for the download to start.

Creating Folders

Required Privilege: Remote File Manager Full Access

To create a folder click  (Create folder). Enter the folder name into the box and click 'Ok' to create the new folder.

Removing Folders

Required Privilege: Remote File Manager Full Access

To Remove a folder, click  (Remove Folder). Click 'Remove' in the pop-up to remove the folder.

Rename Folders

Required Privilege: Remote File Manager Full Access

To Remove a folder click  (Rename Folder). Type in the new name and press the enter key.

Download Folder

To download a folder and its content, click on the folder to be downloaded and then click  (Download Folder). Folders with a large number of files or size may take a few moments before the download starts.

Uploading a File

Required Privilege: Remote File Manager Full Access

1. Click on the Upload tab
2. In the upload tab, select where the file will be uploaded to in Optergy Software, by selecting a location, and then the directory within that location
3. If applicable a zip file can be decompressed when, uploaded by ticking the 'Decompress Zip' box
4. Click "Browse" to select the local file on your computer to be uploaded. Click "Upload" to upload the file.
5. The file you selected to upload will appear in the progressing and completed uploads section. When it has finished uploading, the progress will change to completion.

13. Maintenance

13.1. Frozen Emails

Required Privilege: Edit Operating System Configuration

When an email is unable to be sent from Optergy Software for any reason (e.g. email server is offline), it becomes frozen. Frozen emails are stored in the system so that it can be sent at a later point in time. The 'Frozen Emails' page found within the 'Maintenance' sub-menu, displays all the currently unsent emails and provides the ability to try and re-send.

Page Navigation

If there are a lot of frozen emails, they will be separated over multiple pages. At the top of the list it will display how many pages there are. Possible ways to move between pages, are as follows:

- Use  and  to move backward and forward one page at a time
- Use  and  to jump to the first and last pages respectively
- To go directly to page select the page number from the drop-down list

Filtering

The filter field at the top of the list allows filtering on title. To filter, enter text you want to filter by (multiple text strings or numeric digits or a combination) into the filter box. Any email that matches what was entered will appear in the list.

E.g. To search for an email with a certain title enter all of the title or any part of it into the filter.

To reset the filter, clear all entered input in the filter box.

Sending Frozen Emails

To send a frozen email, select the desired email(s) to send and click  (Send). A popup will appear confirming if sending was successful.

Removing Frozen Emails

If a frozen email does not need to be re-sent it can be removed. To remove a frozen email, select the desired email(s) to be removed and click  (Remove). A confirmation popup will appear, click 'Remove' to continue. To remove all frozen emails at once, click  (Remove All). A confirmation popup will appear, click 'Remove' to continue.

13.2. Portal Status Report

Required Privilege: Edit Operating Configuration

The portal status report allows for portal status information to be emailed to particular users on a regular basis.

To enable, disable or update current report configuration settings, click  (Edit). A popup will appear that allows the following fields to be edited. Click 'Save' to apply changes.

Enable Status Reporting:

Indicates whether or not the portal status reporting is turned on or off

Frequency:

Indicates the interval in which the status report will be compiled and emailed

Recipients:

Select the users who will be automatically emailed the status report

Note: At least one recipient must be selected if portal status reporting is enabled

Included Status Info:

Select the pieces of information that are to be included in the status report. There are five (5) options:

1. Disk Space - details the storage capacity for each disk partition
2. High Level Activity List - provides a brief summary of the number of distinct user interactions
3. Frozen Emails - provides a list of frozen email jobs that have been unable to be sent
4. Raised BACnet Alarms - provides a list of all the BACnet alarms that have been raised during the specified time period
5. Raised Meter Alarms - provides a list of all the meter alarms that have been raised during the specified time period
6. Meter Status - provides a brief summary of each selected meter

Note: At least one option must be included if portal status reporting is enabled

13.3. System Backup

Required Privilege: System Maintenance

The 'System Backup' page, found within the 'Maintenance' sub-menu, provides an efficient way to backup various files, settings and databases in Optergy Software. Generated backup files can be used to restore Optergy Software to the state it was in when the backup was made.

There are three (3) types of backups available:

1. **Job** - contains all engineering files, portal configuration, metering configuration, etc. Entire database excluding logged data.
2. **Trend Logs** - contains logged trend log data
3. **Energy Logs** - contains logged meter energy data

When performing any of the backups, a filename (a default is provided) and description of the backup such as the reasons for creating the backup is required.

The following summary data is generated automatically:

1. Backup Type
2. Date Created
3. Created By

4. Software Version
5. Additional options depending on the backup type selected

Tip: Once a backup is complete the resulting backup file is placed in the Backup directory on the file share, it is recommended that a copy of the backup file is made and taken off-site.

Manual Backup Instructions:

STEP 1 - Select your backup type from the dropdown list:

You will have three options to select from. These include:

Job: This will essentially backup your entire portal configuration. It will backup the actual trend and energy log objects you see on your portal but NOT the data stored in them. You must do a trend log and/or energy log backup if you wish to backup that data.

Trend Log: This will backup all of the data associated with your trend logs. **Warning:** This backup should be accompanied by the same job backup.

Energy Log: This will backup all of the data associated with your energy logs. **Warning:** This backup should be accompanied by the same job backup.

NOTE: If you wish to do a complete system backup you must backup all three options (one at a time). You will then have three separate files (job, trend and energy) which you will use to restore your system.

STEP 2 - Enter a file name and description:

File Name: A default file name will be provided for you. If you like, you may rename the file by clicking in the file name text box and typing your own.

Description: Give a brief description of your file. You cannot leave the description blank. It is advised that you enter something meaningful.

STEP 3 - Select your backup options:

For a job backup there will be a number of job options for you to select. These options will determine what is included in the backup.

NOTE: The licence option should only be selected if you intend to restore this backup onto the same Optergy portal.

For trend and energy backups you will have the option to select all or select individual logs. To select multiple individual logs hold down the 'Ctrl' key and click the logs you wish to back up. You can also hold down the 'Shift' key and drag the mouse over the logs you wish to select.

For trend log backups you will also have the option to select a time period if you are backing up individual logs. For example, you can select specific time periods like 'This Month' (which will back up only the data for this month for your selected logs).

Warning: Portals with large amounts of data may take a long time to back up. Selecting less options and/or logs can reduce file size and back up time.

Job Backup Options

Database/Configuration:

Optergy Software database and configuration files such as BACnet, Web Server, UPS, Compiler configurations files etc.

Display files

All display files

Images:

All images in the web Images folder, and spectrum overlays in the Overlays folder

Documentation:

All files in the Documentation and HTML documentation folders.

Licence Files:

All current and previous licence files.

You may select any combination of options for the backup file.

Trend Log Backup Options

By default every trendlog will have its data backed up. Alternatively specific trend logs may be selected to backup. To select multiple trend logs from the list, simply hold the Ctrl key and click on the trend logs to be included in the backup. If the later option is selected, a maximum of 300 trend logs can be selected by the user for any one backup.

By default, only the current month's trend log data is backed up. Alternatively a different time period or all data may be selected.

Energylog Backup Options

By default every energylog will have its data backed up. Alternatively specific energy logs may be selected to backup. To select multiple energy logs from the list, simply hold the Ctrl key and click on the energy logs to be included in the backup. There is no option to select a time period for energy log data, all data up until when the backup was made will be backed up.

Sending Backups to a Remote Server

Auto and manual backups can be configured to be sent to a remote server, using either FTP or SFTP. To configure this:

1. Click  (Settings)
2. Configure remote settings as appropriate

Enable

Enable the ability for manual and/or auto backups to be send to a remote server

Protocol

The file transfer protocol to use

Server Address

Address of the remote Server

Server Port

The port the FTP/SFTP server runs on. Default is 21 for FTP and 22 for SFTP, if unsure leave at this port

Username

Server login username

Authentication (SFTP Only)

For SFTP transfer which authentication method will be used to logon to server

Password

Server login password for username

Download Key (SFTP Only)

When KEY authentication is being used, an Optergy Software public key needs to be downloaded and added to the remote server's list of authorized_keys. If a public key already exists and a new key is generated, the Optergy Software public key on the remote server will need to be updated. **Note:** System Backup and Trend Log Archive use the same public key.

3. Configure Auto Backup settings as appropriate

Auto Backup Frequency

How often auto Job and Energylog backups are created. Trend Log backups will always be created on a weekly basis because of their size.

Send Auto Job & Energylog backups to remote server

If this option is checked, auto Job and Energy Logs backups will be sent to the server

Send Auto Trend Log backups to remote server

If this option is checked, auto Trend Logs backups will also be sent to the remote server. **Warning:** Depending on the size of the trend log backup file, transfer may take a while and potential put a higher load on the Optergy Software portal during this time

Remove all but one backup file per month, off remote server after given months old

This option provides the option to minimise the number of auto backup files stored on the remote server. Checking this option will remove all but one auto backup file of each type (Job, Energylog and Trend Log) per month if the files are over a number of months old. All files within the selected months will remain untouched. The server user used by the Optergy Software system, must have write and/or delete permission for these files.

4. Click the 'Save' button
5. To test settings, create a manual backup and ensure the 'Send to Remote Server' option is checked

Any users that have the 'Show Notifications' option configured in their user ([User Configuration](#)) and have the 'System Backup' category selected, will receive a system notification if the backup transfer fails.

13.4. System Maintenance

Required Privilege: System Maintenance

The system maintenance page provides features for maintaining performance and operation.

Maintenance Actions

There are several maintenance operations which can be performed.

Database

Optimise Database:

This feature optimises the statistics in the database, and can help improve database performance. While optimisation is in progress, system performance may be degraded

Rebuild Database:

Resets the database to factory settings for the currently installed version, including trend log and energylog data. When performing this action the option is also provided to clear the user activity log.

System

Factory Reset

With the exception of the network settings, everything is deleted or reset to factory defaults (for the currently installed version). Specifically, it will:

- Clear all data in the database, including trend log and energylog data
- Delete all display files, user images, spectrum overlays, software updates, scrolling displays, log files, temporary files etc
- Reset all system configuration settings, except for network settings

Important:

Factory Reset will delete any pre-installed licence. It is advised that the user retrieves the system hardware key (can be found here: [System Configuration>Licencing](#)) and the licence from their company account where their licences are stored prior to performing a factory reset. Following a successful factory reset, the user will need to upload a licence for the precise system hardware key, and clear cache (CTL-SHIFT-DEL) or log out and back in.

Logs

Clear Optergy Software Logs

Removes all logs files produced by Optergy Software

13.5. System Restore

Required Privilege: System Maintenance

Warning: Do not restart the Optergy Software web interface while a system restore is in progress

System restore allows backup files created by the System Backup page to be restored onto an Optergy Software portal. Due to the complex architecture of Optergy Software, it is very important to understand all the considerations, procedures and implications of the restoration procedure. Failure to do so can result in a broken, unusable system.

Viewing Backup files

A list of backup files is displayed on the left hand side. When you click on one, it displays some summary information and description of the backup file to the right.

The summary information is automatically generated by Optergy Software when the backup is created, and includes:

- Backup type
- The date it was created
- Who created the backup file
- Which version of the Optergy Software software created the backup file
- The options selected (where applicable). For job backups, it shows which options were selected, for energylog and trend log backups, it shows which logs were selected

Version Compatibility Issues and Considerations

When doing restorations, the following must be considered and understood.

- When the backup file is a job backup, and the database option was not selected, the software version in the summary information and the current Optergy Software software version do not need to match. If the versions are different, the files may not be compatible with the currently installed version (e.g. display file format might be different), but it will not do any harm.
- When the backup file is a job backup that includes the database; then the software version in the summary information and the currently installed Optergy Software software version must match. If they do not match this backup cannot not be restored unless the system is reverted to an older update(see Software Updates).
- When the backup file is a data (energylog or trend log), it MAY be safe to restore the data if the summary information version and the currently installed software version are different. To verify whether or not they must match, check the release notes for each software update between the version the backup was made from, and the version that is currently installed. The release notes will make a note if trendlog or energylog data tables have been upgraded. If the release notes say that previous versions are incompatible, backup must not be restored.
- If restoring a backup file to a different Optergy Software Portal, contact Optergy Software support to ensure that the database versions match.
- If restoring a job backup make sure the Administrator password is known (or a username with full access to the user control panel) in the backup file, or reset the Administrator password immediately after the restoration is complete, otherwise you will be locked out of the Optergy Software Portal.

Restoring Backup File

1. Select the backup file to be restored
2. Details of the backup file will be displayed to the right. In the summary box, make sure Optergys current software version matches the software version of the backup, if not check above
3. To restore click  (Restore)
4. Restore progress will now be displayed on screen. Depending on the options selected in the backup, it may take a few seconds to a few hours for the restore to complete. If you navigate away from the page or close the browser, you can come back at any time to check the progress of the restoration.
5. If a job restore which includes a database restore was performed, check the message displayed on screen after completion in case portal needs to be rebooted

13.6. Software Update

Required Privilege: System Maintenance

The Software Update page allows the Optergy Software Portal software to be updated.

There are three areas in which updates can be applied:

- Optergy Software
- Web Server
- Java

Very rarely will Web Server or Java updates have to be applied. The current install version of each area is displayed next to the current version.

Uploading a Software Update

Before an update can be installed it first needs to be uploaded to the Optergy Software portal. There are three (3) ways of doing this:

1. Copy update file and md5 file into 'Updates' folder using windows file share
2. Use Optergy Software's remote file manager, upload the update and md5 file into the 'Updates' folder
3. Use Software Updates page to upload the update and md5 file by clicking  (Upload)

Once the update file and md5 file are on the Optergy Software portal, the update must be validated against the md5 file to ensure that it has not been corrupted.

If the software update verification check failed, this usually indicates that either file (update or verification) has been corrupted during transfer, try uploading again. If this problem persists, download the update from the support centre again.

Installing a Software Update

Once that software update has been uploaded and validated, the update installation process can begin.

1. All updates currently on the portal are listed under their related area heading
2. Select the update. Further details are displayed in 'Update Description' area
3. To install update click  (Install)
4. A confirmation popup will appear, click 'Install' to proceed
5. All users currently logged into the system will be directed to an update waiting screen, once the update has been installed, Optergy Software will attempt to return all users to where they were when the update started.
6. Once an update has been installed it can be removed from the portal by selecting it and clicking  (Remove)

Rolling Back and Wiping to a previous Software Update

Software updates which are older than the currently installed version can be installed by rolling back and wiping. WARNING THIS WILL WIPE ALL DATA!

1. Select the update you want to revert to. Further details are displayed in 'Update Description' area
2. To initiate a roll back and wipe click  (Rollback And Wipe)
3. A confirmation popup will appear, click 'Install' to proceed
4. All users currently logged into the system will be directed to an update waiting screen, once the rollback has been completed, Optergy Software will present the user with the first time setup wizard.

13.7. P864 Maintenance

Required Privilege: System Maintenance

P864 Maintenance is a centralised page that houses all P864 maintenance related functionality. System restore allows backup files created by the System Backup page to be restored onto an Optergy Software portal. Due to the complex architecture of Optergy Software, it is very important to understand all the considerations, procedures and implications of P864 maintenance procedures. Failure to do so can result in a broken, unusable system.

Available P864 Maintenance Actions:

- [P864 Firmware Updater](#)
- [P864 Backup](#)
- [P864 Restore](#)
- [P864 Restart](#)
- [P864 Batch Baud Rate Update](#)
- [P864 Batch IP Update](#)
- [P864 Batch BACnetMode Update](#)

Viewing Update files

A list of update files is displayed on the left hand side. Selecting an update file is required for the updater.

Uploading Update files

Update files can be uploaded by selecting the  Upload Files button from the toolbar. Upload the file as provided by Optergy. Tampered update files will not work properly when conducting the firmware updater.

Removing Update files

Select the update file you wish to remove and click on the  Remove the File button from the toolbar.

Device Table

The device table is located on the right hand side of the page. The device table shows all P864 devices currently scanned into your system, and filters out non-P864 devices.

The devices in the device table can be manipulated by adding or removing devices from the table on the **BACnet Devices** page. Add P864's into the device table by running a BACnet Scan and saving selected devices. Removing devices can be done by selecting devices and clicking the Remove button in the toolbar.

Logs

The log file can be found and viewed on the **Log Viewer** page by viewing P864Maintenance.log. The logging level can be changed on the **BACnet Configuration** page by changing the P864 Maintenance Log Level setting

FAQ

1. The update file won't upload

Please ensure that the update file is the exact file that Optergy has provided you. The update file should be the filename extension '.upd', and files with any other filename extension will be omitted from the table.

2. There are no devices in the Device Table

The Device Table on this page will only display P864 devices. Please check the device table on the BACnet Devices page and ensure P864 devices are scanned there. You can manipulate devices on this table on the BACnet Devices page.

13.7.1. P864 Firmware Update

Required Privilege: Configure Users

The Firmware Updater is used to update P864 and P864 peripheral's firmware. P864e Expansion is currently the only P864 peripheral supported by the firmware updater. Firmware Update files will be provided by Optergy.

How to Update Devices

1. Select a device or devices from the Device Table.
2. Select an update file.
3. Click on  Update 864 to start the update.
4. You will be redirected to the P864 Firmware Update page. Updates will automatically begin and you can view the progress from the status bar. 'Updated Successfully' signifies that the update is complete for a single device.
5. Once the update is complete,  Close Results will be enabled. Closing the results will permanently close the firmware update page and redirect you back to the P864 Maintenance page.

Estimated Time For Updates

Time taken to complete an update differs based on factors such as update types, connectivity types, network speeds, and traffic on a network/device.

IP devices generally take a few minutes to update, and can be updated concurrently. MSTP devices take significantly more time. A MSTP device running at 768000 baud rate can take anywhere from 10 to 20 minutes to complete, and only one device can run per network at any given time. The difference in time can be attributed to a difference in file transfer speeds. MSTP to MSTP router devices can take double the amount of time as the files need to be transferred across the network twice.

P864e only updates take roughly 30 seconds to complete.

Cancel Updates

Updates can be cancelled by using the  Cancel Update button or by clicking the  button next to an update entry. The Cancel Update button is used to cancel the whole update, where as  is used to cancel a single device's update. Some updates may take a few minutes to completely cancel, especially over MSTP devices. The status bar may not show Update Cancelled instantly as it may still be loading.

Page Navigation

Users can navigate away from the P864 Firmware Update page while an update is in progress. Navigating to the P864 Maintenance page will redirect back to the P864 Firmware Update page if an update is in progress.

FAQ

1. I keep being redirected to the P864 Firmware Updater page

You will continue to be redirected to the update page if an update is currently in progress. If you wish to stop the update and navigate away, you will need to cancel the updates and close the results to navigate away. If you're still having trouble, you can restart the webserver interface from the System Status page.

2. The update is stuck and the progress bar has not moved

Please read the section *Estimated Time For Updates* first. If the update has taken an abnormally long time, try to refresh the page. The P864_Maintenance.log file can also help identify if something went wrong, or whether it's still processing the data. If the problem persists, please contact Optergy support and provide as much information as you can.

13.7.2. P864 Backup

The *Backup* function, found on the *P864 Maintenance* page, provides an efficient way to backup a P864. Generated backup files are stored on the system and can be used to restore a P864 to the state of when the backup was made.

How to Backup Devices

1. Select a device or devices from the Device Table.
2. Click on  Backup 864 to begin the process.
3. Once all devices are 'READY', click *Backup*.

4. Wait for the status of the devices. *'Successfully Restarted'* denotes that the request to reboot the device has succeeded. *'Error'* will be received upon failure.

13.7.3. P864 Restore

The *Restore* function, found on the *P864 Maintenance* page, provides an efficient way to restore P864 backups to a P864 device. The P864 device will be restored to the same state as the device within the Backup file.

Note: Valid backups are required to use the restore function.

How to Restore Devices

1. Select a device or devices from the Device Table.
2. Click on  Restore 864 to begin the process.
3. By default, it will restore each device to the latest backup file for each device. Select the *'Send one update to all devices'* option to send a single P864 update to the selected devices. Additional settings can be selected to only restore certain aspects of a system.
4. Click *Restore*.
5. Wait for the device to finish and then *Close* the page.

13.7.4. P864 Restart

The *Restart* function, found on the *P864 Maintenance* page, provides an efficient way to reboot P864(s).

How to Restart Devices

1. Select a device or devices from the Device Table.
2. Click on  Restart 864 to begin the process.
3. Once all devices are *'Ready...'*, click *Restart*.
4. Wait for the status of the devices. *'Successfully Restarted'* denotes that the request to reboot the device has succeeded. *'Error'* will be received upon failure.

13.7.5. P864 Batch Baud Rate Update

The *Batch Baud Rate Updater* function, found on the *P864 Maintenance Page*, provides an efficient way to update the baud rate of multiple networks at once. This feature should only be used to update the baud rate of a whole MSTP network.

Performing a Batch Baud Rate Update

This feature automatically selects and validates all devices on a selected network, and performs the baud rate change for all valid devices. A network containing a router device, and 2 MSTP devices is a good example of this. If the router device is the only device selected, then the update will automatically find and process both of the MSTP devices.

Offline devices that have been previously saved into the device table will be handled accordingly. This feature scans the network to find any new or updated devices. Please ensure that the network does not have any offline devices that haven't been added into the Optergy system. Unhandled offline devices

coming back online after a baud rate change has been performed could potentially result in offline comms due to different baud rate settings

Note: Ensure that you accurately configure baud rate, as a result of incorrect configuration could lead to a network losing comms. Eg. Setting a router to 76,800 baud rate and network devices to 56,700 will result in a loss of comms.

Input details:

Router Baud Rate

The value at which to set all of the selected router devices baud rates to

Device Baud Rate

The value at which to set all of the selected devices devices baud rates to

How to Update Baud Rate

1. Ensure all the relevant devices are scanned into the Device Table on the BACnet Devices page.
2. Select a device or devices from the Device Table on the P864 Maintenance Page.
3. Click on  Batch Baud Rate Update to begin the process.
4. Select the baud rates you want to set each device to
5. Click *Update*.
6. Wait for the device to finish and then *Close* the page.

13.7.6. P864 Batch IP Update

The *Batch IP Updater* function, found on the *P864 Maintenance Page*, provides an efficient way to update the network configuration of P864 Devices.

Network Settings

Input details:

IP Address

Set the starting or absolute IP Address for devices, such as 192.168.1.10

Increment Value

The Increment Value indicates how IP Addresses will be calculated when updating the IP addresses of multiple devices. IP addresses will have their last digit incremented by x for each device selected. If only one device is selected, then please enter 1.

Example: Three devices are selected, with a starting IP address of 192.168.1.100. The increment value is 1. IP addresses for the three devices are as follows:

- Device 1: IP Address is 192.168.1.100
- Device 2: IP Address is 192.168.1.101
- Device 3: IP Address is 192.168.1.102

Subnet

This is a standard subnet value, such as 255.255.255.0.

Gateway

This is a standard gateway value, such as 192.168.1.1.

How to Update Network Settings

Note: Devices that become unreachable during the update process will have their network configuration settings reverted within 5 minutes.

1. Ensure all the relevant devices are scanned into the Device Table on the BACnet Devices page.
2. Select a device or devices from the Device Table on the P864 Maintenance Page.
3. Click on  Batch IP Update to begin the process.
4. Enter the network configuration settings
5. Click *Update*.
6. Wait for the device to finish and then *Close* the page.

How to Cancel an Update

Once an update begins, a *Cancel* button will become available. This button will allow users to cancel an update that is in progress. However, this process may take up to a minute or two to complete and update on the UI as Optergy needs to cancel the update safely.

13.7.7. P864 Batch BACnet Mode Update

The *Batch BACnet Mode Updater* function, found on the *P864 Maintenance Page*, provides an efficient way to update the BACnet Mode of one or more devices at once. This feature may be used in conjunction with the *Batch IP Update* or *Batch Baudrate Update* features to achieve optimal results.

Note: Please be advised that this feature does not work with router devices. This feature is also not supported for P864 devices that are running on firmware below v5.6.9d.

Input details:

BACnet Mode

The BACnet Mode can either be IP, MSTP, or Segregated. This will denote which configuration settings you are able to change within the form.

Baud Rate

Set the baud rate of selected devices here. Please note that COM Port 2 does not support 4800 baud rate.

Port Location

Select which COM Port you would like the device to use.

How to Update BACnet Mode Settings

Note: Devices that become unreachable during the update process will have their network configuration settings reverted within 5 minutes.

1. Ensure all the relevant devices are scanned into the Device Table on the BACnet Devices page.
2. Select a device or devices from the Device Table on the P864 Maintenance Page.
3. Click on  Batch BACnet Mode Update to begin the process.
4. Select the BACnet Mode, and enter any relevant network settings if applicable.

5. Click *Update*.
6. Wait for the device to finish and then *Close* the page.

How to Cancel an Update

Once an update begins, a *Cancel* button will become available. This button will allow users to cancel an update that is in progress. However, this process may take up to a minute or two to complete and update on the UI as Optergy needs to cancel the update safely.

13.8. System Status

To reboot Optergy Software, click  (Reboot).

To shutdown Optergy Software, click  (Shutdown).

System Information

The Software Version and the Hardware Specifications of this system

Disk Space

Lists the partitions and the size, space used, space available and percentage of the disk space used

Diagnostics

CPU

The CPU (central processing unit) shows the utilisation of this system. As the load on this system increases so will CPU utilisation.

Memory

Memory shows the amount of RAM that is currently being used.

Network RX

Network RX shows the amount of network data this system is receiving measured in Kilobytes Per Second.

Network TX

Network TX shows the amount of network data this system is transmitting measured in Kilobytes Per Second.

Locally Hosted BACnet Objects

the counts of schedules, trend logs, and alarms in the system.

Licensed Devices Count

The total device count = number of meters + (number of saved BACnet devices - number of Virtual Devices) + (number of Modbus Devices - number of first Meters associated to each Modbus Device) + number of unique Virtual Points with a unique unit number per Virtual Device

BACnet I/P Devices

Number of BACnet I/P Devices saved on this system

BACnet MS/TP Devices

Number of BACnet MS/TP Devices saved on this system

Modbus TCP

Number of Modbus TCP Devices saved on this system

Modbus RTU

Number of Modbus RTU Devices saved on this system

Meters

Number of meters counted to the licence device count; this does not reflect the actual number of total meters saved because the first meter associated to a physical device is not counted

Virtual

Total number of virtual points with a unique unit number

Alarm Counts

Number of Hosted Alarms

Hosted on Analog Input 2400

Number Active Acknowledged Alarms

Hosted on Analog Input 2401

Number Active Unacknowledged Alarms

Hosted Analog Input 2402

Number of Events Today

Hosted on Analog Input 2403

Number of Events Yesterday

Hosted on Analog Input 2404

14. System Configuration

14.1. Setup Wizard

The Optergy Software setup wizard allows for a quick, streamlined way to set the basic configuration of the portal. The wizard is only available to users during the initial configuration stage. Once completed the wizard will no longer be accessible.

There are five (5) steps in the setup wizard:

Step 1 - Localisation

Time Zone:

Select the country and state/territory/province combination which best represents the time zone where this portal is located

Region:

Select the region (optional)

Currency Preset:

Select the country preset which best represents the currency formatting conventions wished to be used in this portal

Step 2 - System Time Configuration

There are two (2) ways to set the time on the portal:

1. Set the time to be the same time as the local system time
2. Manually specify the date and time

Step 3 - Site Information

Site Name:

A brief name which refers to the location of the portal

Site Address:

The street address, suburb, state, postcode and country of the site

Maintenance Contact

Name:

The name of the maintenance contact

Phone Number:

The phone number in which maintenance can be contacted

Email Address:

The email address in which maintenance can be contacted

Step 4 - Configure UPS

Select the UPS that Optergy Software is connected to. Ensure that the USB cable is plugged so that Optergy Software is able to communicate with the UPS. Optergy Software has been tested

against several UPS models, which are listed. If your UPS is not listed, try the 'Generic USB UPS' option. **Note:** Without a connected and configured UPS, the portal will run with limited functionality.

Step 5 - Configure Password settings.

Select the settings for passwords such as the minimum length and the characters that are required.

Uppercase character required

at least one uppercase character will be required in the password. Example: "ABC".

Lowercase character required

Lowercase character required: at least one lowercase character will be required in the password. Example: "abc".

Numeric character required

at least one number character will be required in the password. Example "123".

Symbol character required

at least one symbol character will be required in the password. Example "!@#".

Step 6 - Create New Administrative User

This enables the creation of a new administrative user.

Username:

A unique username for the user (case sensitive)

Password:

User password used to log in (optional)

Confirm Password:

A confirmation of the user password

First Name:

First name of the user

Last Name:

Last name of the user

Email:

Email address that user can be contacted on

Once finished click the 'Done' button and the wizard will complete, and the user will be directed to the login page, where they can login using the newly created user from **Step 5 - Create New User**.

14.2. Optergy Software API Configuration

Required Privilege: Edit Optergy Configuration

The Optergy Software API allows external third party users and systems to transfer system configuration preferences between two systems and push logged energy data to external parties.

To enable, disable or update current Optergy Software API configuration settings, click  (Edit). A popup will appear that allows the following fields to be edited. Click 'Save' to apply changes.

Enable Optergy Software API:

Indicates whether or not the Optergy Software API is turned on or off

Read Password:

Allows a password needed for read requests to be entered

Write Password:

Allows a password needed for write requests to be entered

14.3. BACnet Configuration

Required Privilege: Edit Optergy Configuration

The BACnet configuration page allows for the setup of parameters needed for BACnet communication and logging. Caution should be taken when modifying parameters, as incorrect values can cause the BACnet Engine to not run properly.

Network Settings

Port:

Sets the port which the BACnet Engine uses (default: 47808).

Network Interface:

The network interface to be used. Default: eth0

Device Settings

Device Instance:

The device instance of the Optergy Software Portal.

Object Name:

The device name of the Optergy Software Portal

Model Name:

The Optergy Software model name

Description:

Portal description

Location:

Portal location

Device Scan Timeout:

Default timeout when scanning for devices

Accept Time Syncs:

Whether the portal will accept incoming time sync requests

Password:

Password required by remote BACnet devices/servers that want to send re-initialize device requests

IP Network Number:

The BACnet Network Number for the IP Network

IP Network numbering becomes important in devices that support routing since routers need to exchange messages from dissimilar networks such as MSTP to IP.

MSTP devices like the Alerton VLC controllers only need NET#:MAC to identify itself, if it shares a message from one controller to another and on the same network a simple transaction from one NET:MAC to another takes place. All MSTP network numbers need to be unique.

In more complex networks such as this configuration

Example 1)

Internet/WAN--Gateway--(Proton 1, UDP 47808)--IP network number 100-- Proton 2, UDP 47808

in this example both Protons must be on the same IP network

Example 2)

Subnet x--Gateway--(Proton 1, BBMD, UDP 47808)--IP network number 100-- Proton 2, UDP 47808

Subnet y--Gateway--(Proton 4, BBMD, UDP 47808)--IP network number 100-- Proton 2, UDP 47808

in this example both Protons can be on separate subnets

The only time you would set the IP network number to be different net numbers would be this case:

Example 3)

Subnet 1--Gateway--(Proton A, UDP 47808)--IP network number 100-- Proton 2, UDP 47808,

in this example the both Proton must be on the same IP network number

Subnet 1--Gateway--(Proton B, UDP 47808)--IP network number 200-- Proton 2, UDP 47808,

in this example the both Proton must be on the same IP network number

The example would be 2 buildings on the same network but must never be shared together and operate independently. Setting the network number to dissimilar should prevent messages from B-MS/TP from appearing in Proton A

BBMD (Currently Not Supported By Optergy):

BACnet Broadcast Management Device, are used to relay BACnet broadcast messages. Broadcast messages are not routable over the internet and when using 192.168.x.x or 10.x.x.x. To solve this problem, BACnet keeps a table called a BDT Broadcast Distribution table. When the BBMD hears a broadcast, the BBMD will repeat to each BBMD listed in the table. The rule is 1 BBMD per subnet, and only BBMD listed in the BDT table. All BBMD shall be identical.

Log Level Settings

BACnet Module Log Level:

The level at which the BACnet log file (main BACnet module) will record activity. There are seven (7) levels to choose from:

1. Critical / Severe Information
2. Warning Messages
3. General Info
4. Configuration
5. Basic Debug
6. Database Status
7. Everything Of Use

Optimum Start Log Level:

The level at which the Optimum Start log file will record activity. There are seven (7) levels to choose from:

1. Critical / Severe Information
2. Warning Messages
3. General Info
4. Configuration
5. Basic Debug
6. Database Status
7. Everything Of Use

Edit BACnet Configuration

To edit any BACnet settings click  (Edit). A popup will appear that allows fields to be edited. Click 'Save' to apply changes.

Note: If a popup appears that says 'Configuration updated, but error occurred reloading the BACnet module. Please restart the portal manually.' The portal will need to be restarted, do this by going to Maintenance > System Status > Reboot. This will reboot the entire portal forcing BACnet changes to take effect.

14.4. Custom Unit Names

Required Privilege: Edit Optergy Configuration

The Custom Unit Names page is used for editing the names and abbreviations of all the Optergy engineering units (eg. electricity units, water units, etc.) to your preference. Engineering units are used in many places throughout the Optergy system. Such as: Meter Displays, Utility Reports, Trend Logs and many other places.

Category

There are a number of categories to pick from. These include:

- Electricity
- Gas

- Water
- Fluid Energy
- Diesel

Each category will have its own engineering unit names and abbreviations that you can edit.

To edit a name or abbreviation click on the text field of the unit you wish to edit and delete or add to the existing text. Once you have finished click  (Save). Once you have saved the changes should take effect immediately.

If you have made changes and haven't saved and wish to revert back to the original names and/or abbreviations you can click  (Refresh).

If you have already saved changes and wish to revert back to the original names and/or abbreviations you can click  (Remove).

14.5. Email Configuration

Required Privilege: Edit Operating System Configuration

The email configuration page allows for the setup of parameters needed for emailing requests, reports and alarms.

General Settings

Contact email address:

This address will be used whenever a specific contact point is needed, e.g. spam, error output, etc. It will always be used as the From and Reply-To address in emails.

Return email address:

This will be used as the return address on all emails, the technical contact email address. It will always be used as the Return-Path and Sender address in emails.

Email signature:

This footer text will be attached to all emails.

Frozen emails auto delete period:

Indicates the number of days in which a frozen email is permitted to reside on the server before being removed.

Maximum email size:

Indicates the maximum attachment size any one email can have.

Attachments will be stored for:

Indicates the number of days in which an oversize email attachments are permitted to reside on the server before being removed.

SMTP Server Settings

SMTP server address:

The SMTP server that you will connect to in order to send out emails.

SMTP server port:

Only change this if you know your SMTP server is on a different port. Use port 465 or 587 for Gmail accounts using authenticated connections.

SMTP username:

Only enter a username if your SMTP server requires it.

SMTP password:

Only enter a password if your SMTP server requires it.

Gmail Security Setup

In the case where a Gmail account is used, Google may block your sign in attempts due to the 'Less secure apps' default setting. Please fix using the following steps:

1. Visit <https://myaccount.google.com/security#connectedapps>
2. Set "Allow less secure apps" to "ON"

Edit Email Configuration

To edit any email settings click  (Edit). A popup will appear that allows fields to be edited; click 'Save' to apply changes. To Confirm settings are correct send a test email by clicking the  (Test Email).

Frozen Emails

To view any frozen emails stuck in the system, click  (Frozen Emails).

14.6. Greenhouse Gas Emission Factors

Required Privilege: Edit Operating System Configuration

The 'Greenhouse Gas Emission Factors' page allows users to update and create custom region carbon dioxide conversion factors for electricity and gas emissions. These factors are then used to generate greenhouse gas emission reports.

Country Presets

There are a number of built in country presets available, as well as a generic custom region option. To view predefined region conversion factors for a country, simply select the country from the list and the regions associated with that region will appear to the left of the list. To customise predefined regions, simply select the country the region is located in and click  (Customise).

Create Custom Emission Factors

1. Click  (Customise), and an editing table will appear
2. Enter a user friendly text string for identify the region
3. Select electricity unit
4. Enter electricity conversion multiplier
5. Select gas unit
6. Enter gas conversion multiplier

7. Once happy with all details entered click  (Save)

Note: Most regions have a government website where update-to-date factors can be retrieved from. These may be automatically updated from time to time via a software update. To prevent reports from using automatically updated emission factors, create a custom emission factor, and copy/enter your emission factors into a new one.

14.7. Live Display (Compiler) Configuration

Required Privilege: Edit Optergy Configuration

The Live Display configuration page allows for live display appearance options and defaults to be configured.

Log Level:

The level at which the compiler log file will record activity.
There are seven (7) levels to choose from:

1. Critical / Severe Information
2. Warning Messages
3. General Info
4. Configuration
5. Basic Debug
6. Database Status
7. Everything Of Use

Main Page:

Live display buttons can be configured to have a `hyperlinkOnClick` value of `{MainPage}`, these elements once clicked will navigate to the chosen main page. Select the Main page from the drop down list (which contains all the displays in the system). 'Configured Home Display' will use the [User's](#) Home Display or [Portal's](#) Home Display (if User has no configured Home Display) as the Main Page.

AO Override Colour

The text colour that AO text points will appear when they are currently in an overridden state

BV Override Colour

The text colour that BV text points will appear when they are currently in an overridden state

BO Override Colour

The text colour that BO text points will appear when they are currently in an overridden state

Prompted Property Style

Points that have the ability to be overridden can be made to stand-out compared to points that cannot be overridden. There are three ways a prompted property point can stand out

- Box - Box around point
- Solid Underline - A solid line under point
- Dashed Underline - A dashed line under point

Prompted Property Colour

Sets the colour of the selected prompted property style

Center By Image

when 'Center By Image' is selected all live display pages will attempt to be centred according by their background image

Edit Live Display Configuration

To edit any Live Display settings click  (Edit). A popup will appear that allows fields to be edited. Click 'Save' to apply changes. Any currently open displays may need to be refreshed.

14.8. Licencing

Required Privilege: Manage Optergy Licences

The licence file page allows licence files to be installed and shows what functionality the current licence enables.

System Hardware Key

This is a unique key for Optergy Software Portal hardware and is checked against licence files on installation to ensure only a licence file for this Optergy Software Portal is being installed.

Installing a Licence File

1. Once you have obtained a licence file, click on  (upload).
2. Click the browse button on the Install Licence popup window.
3. Select the licence file from the file system, and click on the 'Update Licence' button.
4. Click OK to confirm the upload if prompted
5. If the licence file successfully uploads, it will be automatically installed and features of the new licence will be displayed.

Validating Licence Files

There may be times in which a licence file on the Optergy Software Portal is present, but has yet to be installed and checked against the Hardware Key. If this is the case a 'Validate' button will be present, this must be performed before the licence can come into effect.

View Currently Installed Licence

Once a licence has been installed, this licence and all of its inclusions are displayed on screen. If there are any trial features currently installed they will appear similar on screen but will also have a trial end date listed. Trials with more than a week to go are displayed in black, trials with less than 7 days to go will be displayed in **maroon** and those trials that have already ended will be displayed in **red**.

View and re-installing previous licence files

If there has been any previous licences installed on the Optergy Software Portal, a drop down box will be present in the page toolbar. This box allows you to select any previous licence files to view and re-install

if required. When re-installing a previous licence the currently installed licence will become a part of the previous licence list, and once again can be re-installed in the future.

14.9. Language Translation

The Language Translation page allows a user to edit text fields displayed by the Optergy software user interface. Optergy will detect what language the user's internet browser is in and display the text fields in that language. This tool will be used to perfect the translation of text displayed on the user interface. The tool can also be used to tailor text fields to the users liking

Apply File

When the user makes changes to any text fields and hits the save button a language file is created. This file will contain all of the changes the user makes before hitting the save button. When a user clicks on the  (Apply) the file will be applied to the current language file (which is used to display text on the UI) and update it to contain the changes. Changes will be applied automatically once the Apply button has been clicked. The user will be able to see the updated text on the UI after the language file has been applied without the need for a restart

Download Language File

Once you have created a language file, click on  (Download Language File). The language file will download and the user will then be able to use the language file on other Proton or Optergy Enterprise systems via the upload feature.

Upload Language File

There may be times when a user wishes to update a Proton or Optergy Enterprise system with language changes made on another Optergy device. To do this the user can click on  (Upload Language File). The user will then be able to select a language file from a location on their computer and upload it to the Proton or Optergy Enterprise system. Once the file has been uploaded the user can click  (Apply). The system will then be updated with the language changes contained within the language file.

Reset Language File

If the user is unhappy with any changes made to the system and finds it too time consuming to find and change text fields back to their original state the user can click on  (Reset Language). This will restore the system back to its original language state.

14.10. Region Formats

Required Privilege: Edit Operating System Configuration

Country Presets

There are a number of built in country presets available, as well as a generic custom format. To set the system local to one of the presets, select it and click  (Save). Each preset can be customised if necessary.

For each format, the following properties may be set:

Currency

Set the local currency

Grouping Separator

Set the grouping separator for digits

Decimal Separator

Set the character to represent the decimal point

Temperature Unit

Set the Temperature units

Use Tax

Check the box to set Tax rates

Tax Title

Enter text to set the Tax Title

Tax Rate

Enter the tax rate or use the arrow buttons to move the tax rates up and down

Time Format

Set the time format between 12 and 24 time format

Short Date Format

Use the drop down menu to set the short date format

Long Date Format

Use the drop down menu to set the long date format

To save any customizations, click  (Save).

14.11. Metering Configurations

Required Privilege: Edit Optergy Configuration

The metering configuration page contains portal default preferences for metering.

Log Level:

The level at which the metering log file will record activity.

There are seven (7) levels to choose from:

1. Critical / Severe Information
2. Warning Messages
3. General Info
4. Configuration
5. Basic Debug
6. Database Status
7. Everything Of Use

Energy Redistribution Method:

When a meter goes offline and does not contain utility data in memory (e.g. kWh), an algorithm is applied to fill in the missing data samples when the meter comes back online. There are two (2) methods available to redistribute data by:

1. Distribute Evenly - takes the total amount used since the last successful reading and divides it by the number of sample times that were missed. The resulting dataset will generate a flat line of usage
2. Distribute Profile - distributes the total amount of use since the last successful reading using a profile based on the most recent week with data. The resulting dataset will be proportional to the most recently logged weeks data

Edit Metering Configuration

To edit any metering settings click  (Edit). A popup will appear that allows fields to be edited; click save to apply changes. Any currently open pages may need to be refreshed.

14.12. Network Configuration

Required Privilege: Edit Operating System Configuration

The network configuration page allows for the setup of parameters needed for network communication between the Optergy Software portal and external devices.

IP Address:

The setting for the IP Address of the Optergy Software Portal

Netmask:

The netmask for the specified IP Address

Hostname:

The hostname of the Optergy Software portal

Gateway:

The IP address of the gateway device on the network

DNS Server:

The IP address of the DNS server (optional)

DNS Server (Secondary):

The IP address of the Secondary DNS server (optional)

Entering a valid netmask

Optergy software only allows for standard netmask addresses. For help in understanding and selecting a netmask and avoiding non-standard or invalid addresses click on the following link. [Subnet Masks Explained](#)

Edit Network Configuration

To edit any Network settings click  (Edit). A popup will appear that allows fields to be edited. Click save to apply changes.

14.13. Fileshare Settings

Required Privilege: View Operating System Configuration

The fileshare settings page allows for the file sharing on an Optergy Software system to be enabled, disabled and customised.

Enable Samba Filesharing:

Indicates whether or not file sharing is enabled

New Password:

The password used to access any folders available through file sharing

New Password (confirm):

A confirmation of the new password

Edit Fileshare Settings

To update the file sharing status or update the fileshare password, click  (Edit). A popup will appear, which allows file sharing to be enabled or disabled, and if enabled, a custom password to be set. Make any changes necessary and click save to apply.

14.14. Site Information

Required Privilege: View Optergy Configuration

The Site Information page contains site information about where the portal is located and maintenance contact information.

Site

Name

Site name

Address

Site address

Maintenance Contact

Name

The name of the maintenance contact

Phone Number

The phone number in which maintenance can be contacted

Email Address

The email address in which maintenance can be contacted

Edit Site Information

Required Privilege: Edit Optergy Configuration

To edit any Site information click  (Edit), a popup will appear that allows fields to be edited. Click 'Save' to apply changes.

14.15. System Time Configuration

Required Privilege: Edit Operating System Configuration

The System Time Configuration page shows the current time and locale settings of the Optergy Software portal, and allows for the system time, time zone and region to be changed.

Edit System Time

To edit the system time click  (Edit). A popup will appear that allows the time, time zone and region to be updated. There are three (3) methods in which the time can be set:

1. Set the time to be automatically retrieved from an NTP server, this will require internet, without internet the time will remain as it is until it successfully reaches an NTP server
2. Set the time to be the same time as the local system time
3. Manually specify the date and time

14.16. UPS Status

Required Privilege: View Optergy Configuration

A Uninterruptible Power Supply (UPS) ensures that in the event of a power outage, so that the Optergy Software portal temporarily stays online, and is shutdown correctly in the event of an extended power outage, to avoid any damage or data corruption from occurring to the system. If no UPS is currently installed the following message will be displayed on screen 'No status information was detected'.

Limitations With No UPS

When a UPS has not been installed, the following functionality is not available:

- Meter display pages
- All Utility Report pages
- Generate Bills
- Alarms
- Alarm Reporting
- Issue reports
- Point Override Activity
- Trendlog Event History
- Energylog Data Entry
- Energylog Management
- Optimum Start
- Room booking
- User Profile
- Display Templates
- Modbus Client
- BACnet Client

Installing a UPS

Optergy Software currently supports the following models:

- APC Back-UPS Pro 900
- CyberPower Value 600E-GP
- Eaton 5S Series
- Ellipse MAX 600
- Powerware 5110
- UPSilon 2000 software based USB UPS models
- Generic USB UPS (works with some USB UPS models)

Whilst Optergy Software can be connected to any brand of UPS, if it is not supported by the Optergy Software internal UPS driver, or if the USB cable is not connected, it will not shut down the Optergy Software Portal safely in the event of a power outage. For any of supported UPSs, follow the below steps to install them correctly:

1. Shutdown the Optergy Software Portal (if already running), and unplug it from the power socket
2. Connect UPS power cable from wall socket to UPS
3. Connect power cable from Optergy Software Portal to UPS
4. Connect USB cable from UPS to any of the USB ports on the back of the Optergy Software Portal. **Note:** This step is very important, if the USB is not connected then the portal will not be shutdown correctly.
5. Turn on UPS. The Optergy Software Portal should turn on automatically in a few seconds (after the UPS has finished its startup test sequence)
6. Log onto Optergy Software and go to System Configuration -> UPS Status
7. Read below for instruction on how to configure the UPS within Optergy Software

Configuring a UPS

Required Privilege: Edit Optergy Configuration

Optergy Software needs to know which model UPS it is connected to. To configure this:

1. Click  (Configure)
2. Select the model of the UPS
3. Click 'Save'

Viewing UPS Status and Logs

If a UPS is installed this page will display UPS Diagnosis information. If UPS readings appear then the UPS has been installed correctly.

To get more information, the UPS log files are able to be viewed in two ways:

- Download the log by clicking  (Download)
- View the log file live by clicking  (Launch). A popup window will appear which will be updated live as information gets logged to the file

14.17. Virtual BACnet Configuration

Required Privilege: Manage Virtual Devices

This page handles important configuration information for virtual devices, such as whether it is enabled, its network number, and its mac address.

Enabled

Allows for enabling and disabling the Virtual BACnet network. When disabled, all virtual devices and points will be disabled. Note that virtual devices and points can still be added, removed, or deleted even when the Virtual BACnet network is disabled.

Virtual Network Number

The number for the Virtual Network. Used to conform to the BACnet standard and also as the basis for the default virtual device instance numbers, VNET:MAC. This Virtual Network Number needs to be different from the BACnet Network Number.

14.18. Weather Data Sources

Required Privilege: Edit Optergy Configuration

The Weather Forecast Data Source list page serves as the page where Weather Data Sources are managed. All data sources that can be used are listed here.

Optergy Software can retrieve weather forecast data from the Internet (the portal must be connected to the Internet to do this). Data is retrieved by using website APIs (Application Programming Interfaces). Some APIs require an account to access their data. When an account is created, the website will provide a key which is required for Optergy Software to retrieve the forecast data.

This page is where the key is entered

Name

The name of the data source.

Enabled

When ticked, this enables the data source. Data Sources that are enabled will appear as options in the drop down menu on the Weather Forecast Location page.

Key

The API key for the website to use to access the data from the specified source. Some data sources do not require keys.

Description.

Description of the data source (optional).

Available Data Sources

Australian Bureau of Meteorology (BOM)

Government body which monitors weather in Australia, limited to Australia only. [BOM Website](#). No additional information is required to use this data source.

The WeatherStack API

Weather website which provides worldwide data. No additional information is required to use this data source.

Note: Maximum 3 different weather forecast location can be set up using this type of data source.

World Weather Online

Weather website which provides world wide data. To use this data source an account must first be setup (see [World Weather Online Website](#)); once setup a key will be provided, this key must be entered into Optergy Software.

To set up an account:

1. Go to [World Weather Online](#)
2. Sign up for an 'Free API' account by click 'Sign up now for free'
3. Enter appropriate details and click 'Register'
4. Once registered and signed in look for the 'Key' under 'Free API'
5. Copy and paste this key into Optergy Software

Note: In order to use forecast online sources, Optergy Software requires internet access or at the very least outbound access to the required source:

- BOM : <ftp://ftp2.bom.gov.au/anon/gen/fwo/>(external link) (port 21)
- The WeatherStack API: <https://api.weatherstack.com/>(external link) (port 80)
- World Weather Online: <http://api.worldweatheronline.com/free/v1/weather.ashx>(external link) (port 80)

Editing a Data source

1. Click on the row with the data source to be edited.
2. Click  (Edit). Alternatively, double-click the row with the data source to be edited.
3. Enter the data source's details in the field.
4. Click "Save" to save the changes.

14.19. Weather Forecast Locations

Required Privilege: Edit Optergy Configuration

Weather Forecast locations serve as a way to retrieve weather forecast data from the Internet. This page allows searching of the Internet for weather data using specific websites which can provide data for specific locations.

Adding a Weather Forecast Location.

1. Click  (Add) to open the dialogue menu.
2. Select the data source to use.
3. Select the country.
4. Type in the city to search for, and click 'Search'.
5. From the "Results" list choose the location to be used.

Note: A maximum of 15 Weather Forecast Locations can be saved.

Data Source

The data source that will be used to retrieve the forecast. Note some data sources may have geographical limitations (e.g. they can only provide data for one country). **Note:** Certain data sources may limit the country that can be selected. If the country is not supported, try choosing another data source. Also, only data sources that are enabled will appear in this list. To enable, go the [Weather Data Source](#) page to enable it.

Country

The country that the location is in.

Search

Search field for the city/town for the forecast.

Display Name

An optional display name for the location which can be used instead of the location name, for example, instead of Melbourne, Australia the weather forecast location can be named "Corporate HQ".

Results

Search results that will appear after a search, this will be a list of potential locations which closely match the search results.

Use Secondary Location

Optional. A flag indicating whether a secondary back-up location is to be used in the event that forecast data cannot be retrieved from this location.

Note: Secondary Locations cannot have the same data source as the primary location. For example a city using the Australian Bureau of Meteorology cannot use a secondary location that also uses the Australian Bureau of Meteorology.

Unit

The unit for which the weather forecast data will be saved into the point in. Choose between degrees Celsius and Fahrenheit.

Removing a Weather Forecast Location

To remove a weather forecast location, select the location in the table and click — (Remove).

Editing a Weather Forecast Location

To Edit a weather forecast location click the row to be edited and then click ✎ (Edit). Locations can also be edited by double clicking the row. See [adding a weather forecast location](#) to view details on the form. If you wish to use the same current location, ensure the option "Use Current Location" is ticked.

Editing Data Sources

To edit Data Sources, click ✎ (Edit Data Source) to go to the [Weather Data Source](#) page. This page allows editing of Data Source keys, description and allows them to be enabled and disabled.

Using Weather Data

Weather Data can be used in multiple ways, they can be read from Analog Inputs using BACnet and they can be used in widgets. See the [widgets page](#).

Using Weather Forecast Data

The weather forecast data is stored in BACnet points. Each forecast location has its own BACnet base instance. Data is stored in a series of points starting from the Base Instance. For example, the minimum temperature forecast for the second day is the base instance + 3. If the base instance is 3200 the minimum temperature for the second day would be 3203. Different data is stored in different properties. For instance, the weather forecast's text ("Sunny, with some clouds") would be stored in a description property of an AI object.

Item	Object Instance	Property
Day 0 Minimum Temperature	Base Instance	Present Value
Day 0 Wind Speed	Base Instance	Min Present Value
Day 0 Wind Direction	Base Instance	Profile Name
Day 0 Wind Degrees	Base Instance	Resolution
State	Base Instance	Description
Day 0 Maximum Temperature	Base Instance + 1	Present Value
Day 0 Forecast Text	Base Instance + 1	Description
Day 0 Humidity	Base Instance + 1	Min Present Value
Day 0 Rainfall	Base Instance + 1	Max Present Value
Day 0 Snow	Base Instance + 1	Resolution
Day 1 Minimum Temperature	Base Instance + 2	Present Value
Location Name	Base Instance + 2	Description
Day 1 Wind Speed	Base Instance + 2	Min Present Value
Day 1 Wind Direction	Base Instance + 2	Profile Name
Day 1 Wind Degrees	Base Instance + 2	Resolution
Day 1 Maximum Temperature	Base Instance + 3	Present Value
Day 1 Forecast Text	Base Instance + 3	Description
Day 1 Humidity	Base Instance + 3	Min Present Value
Day 1 Rainfall	Base Instance + 3	Max Present Value
Day 1 Snow	Base Instance + 3	Resolution
Day 2 Minimum Temperature	Base Instance + 4	Present Value
Forecast Date	Base Instance + 4	Description
Day 2 Wind Speed	Base Instance + 4	Min Present Value
Day 2 Wind Direction	Base Instance + 4	Profile Name

Day 2 Wind Degrees	Base Instance + 4	Resolution
Day 2 Maximum Temperature	Base Instance + 5	Present Value
Day 2 Forecast Text	Base Instance + 5	Description
Day 2 Humidity	Base Instance + 5	Min Present Value
Day 2 Rainfall	Base Instance + 5	Max Present Value
Day 2 Snow	Base Instance + 5	Resolution
Day 3 Minimum Temperature	Base Instance + 6	Present Value
Issue Date	Base Instance + 6	Description
Day 3 Wind Speed	Base Instance + 6	Min Present Value
Day 3 Wind Direction	Base Instance + 6	Profile Name
Day 3 Wind Degrees	Base Instance + 6	Resolution
Day 3 Maximum Temperature	Base Instance + 7	Present Value
Day 3 Forecast Text	Base Instance + 7	Description
Day 3 Humidity	Base Instance + 7	Min Present Value
Day 3 Rainfall	Base Instance + 7	Max Present Value
Day 3 Snow	Base Instance + 7	Resolution
Day 4 Minimum Temperature	Base Instance + 8	Present Value
Issue Time	Base Instance + 8	Description
Day 4 Wind Speed	Base Instance + 8	Min Present Value
Day 4 Wind Direction	Base Instance + 8	Profile Name
Day 4 Wind Degrees	Base Instance + 8	Resolution
Day 4 Maximum Temperature	Base Instance + 9	Present Value
Day 4 Forecast Text	Base Instance + 9	Description
Day 4 Humidity	Base Instance + 9	Min Present Value
Day 4 Rainfall	Base Instance + 9	Max Present Value
Day 4 Snow	Base Instance + 9	Resolution
Day 5 Minimum Temperature	Base Instance + 10	Present Value
Day 5 Wind Speed	Base Instance + 10	Min Present Value
Day 5 Wind Direction	Base Instance + 10	Profile Name
Day 5 Wind Degrees	Base Instance + 10	Resolution

Day 5 Maximum Temperature	Base Instance + 11	Present Value
Day 5 Forecast Text	Base Instance + 11	Description
Day 5 Humidity	Base Instance + 11	Min Present Value
Day 5 Rainfall	Base Instance + 11	Max Present Value
Day 5 Snow	Base Instance + 11	Resolution
Day 6 Minimum Temperature	Base Instance + 12	Present Value
Day 6 Wind Speed	Base Instance + 12	Min Present Value
Day 6 Wind Direction	Base Instance + 12	Profile Name
Day 6 Wind Degrees	Base Instance + 12	Resolution
Day 6 Maximum Temperature	Base Instance + 13	Present Value
Day 6 Forecast Text	Base Instance + 13	Description
Day 6 Humidity	Base Instance + 13	Min Present Value
Day 6 Rainfall	Base Instance + 13	Max Present Value
Day 6 Snow	Base Instance + 13	Resolution
Sunrise time	AI-2500	Present Value
Sunset time	AI-2501	Present Value
Sunrise minutes from midnight	AI-2502	Present Value
Sunset minutes from midnight	AI-2503	Present Value
True if the sun is up	BI-2500	Present Value

Moving Between Pages

If there are a lot of Weather Forecast Locations configured, they will be split over multiple pages. At the top of the list it will display how many pages of Weather Forecast Locations there are. Ways to move between pages:

- Use  and  to move backward and forward one page at a time.
- Use  and  to jump to the first and last page respectively.
- To go directly to the page select the page number from the drop-down list.

Weather Forecast Display Configuration

The 'Weather Forecast Display' page is available as an automatically generated display, a custom URL, a display or an Optergy Software dashboard which is devoted to displaying the latest weather forecast data.

Configuring Weather Forecast Display Page:

An alternative page can be configured to be displayed instead of the default page

- Auto: The default weather forecast display page for the selected saved forecast location.
- Custom URL: a custom URL to be entered
- Display: a live display which can be selected from a dropdown list [Display Management](#) on how to configure them.
- Dashboard: a user created dashboard which can be configured See [Dashboards](#) on how to configure them.

14.20. Weather Station Configuration

Required Privilege: View Optergy Configuration

The weather station configuration page allows for the setup of parameters needed for communication between Optergy Software and an Optergy Software approved weather station.

Currently Optergy Software has supports three (5) weather stations:

1. [Vaisala WXT520 Weather Station](#)
2. [Davis Vantage Pro2](#)
3. [The WeatherStack API](#)
4. [Davis Vantage Pro2 Old Weather Station](#)
5. [Australian Bureau of Meteorology](#)

See [Available Weather Station Data Points](#) for information on what type of data can be obtained by each weather station.

Configuration Options

Status

Weather Station Enabled:

Indicates the communication status between the Optergy Software and the weather station

Location of Weather Station:

A human readable text string indicating the position or geographical location of the weather station. This is used on any automatically generated weather station display pages.

Connection Settings

IP Address:

Sets the address of the weather station

Port:

Sets the port which the weather station communicates from (default: 4400)
(only applicable for the [Vaisala WXT520 Weather Station](#))

Device Address:

The device address (default: 0)
(only applicable for the [Vaisala WXT520 Weather Station](#))

Unit:

The modbus address (default: 2)
(only applicable for the [Davis Vantage Pro2](#))

City:

The city to read weather data from.
(only applicable for the [The WeatherStack API](#), and [Australian Bureau of Meteorology](#)).

Log Level Settings

Log Level:

The level at which the weather station log file will record activity.
There are seven (7) levels to choose from:

1. Critical / Severe Information
2. Warning Messages
3. General Info
4. Configuration
5. Basic Debug
6. Database Status
7. Everything Of Use

Display Units (only applicable for the [The WeatherStack API](#) and [Australian Bureau of Meteorology](#))

Metric Or U.S Customary Units options available:

All Metric or all U.S Customary Units options can be selected by ticking the 'Metric' or 'U.S Customary Units' check boxes.
Alternatively, user can individually select the units listed below (allowing a mix and match of Metric and U.S Customary units):

1. Temperature: Celsius / Fahrenheit
2. Wind Speed: Kilometres Per Hour / Miles Per Hour
3. Air Pressure: Millibars / Pounds Force Per Square Inch
4. Daily Accumulated Rainfall: Millimetres / Inches

Edit Weather Station Configuration

Required Privilege: Edit Optergy Configuration

To enable/disable or edit any weather station settings click  (Edit). A popup will appear that allows applicable fields to be edited. Click 'Save' to apply changes.

Upload Weather Station Data

Required Privilege: Edit Optergy Configuration

Click  (Upload Weather Station Data) to go to a page where the user can upload weather station data using a csv file.

Edit Weather Station Display Configuration

Required Privilege: Edit Optergy Configuration

To configure a weather station display page, click  (Edit Display Settings). A popup will appear that allows applicable fields to be edited. Click 'Save' to apply changes.

Weather Station display options:

Weather Station Display:

An alternative page can be configured to be displayed instead of the default page

- Auto: The default weather station display page.
- Custom URL: a custom URL to be entered
- Display: a live display which can be selected from a dropdown list [Display Management](#) on how to configure them.
- Dashboard: a user created dashboard which can be configured See [Dashboards](#) on how to configure them.

Enable Forecast on Weather Display:

Tick to enable the Weather forecast on the weather display

Forecast Location:

The weather forecast location that is configured to show forecasts. See [Weather Forecast Locations](#) on how to configure them.

Data Headings Font Colour:

The colour of the font for the data headings, for instance "Outside temperature"

Data Font Colour:

The colour of the font for the weather data, for instance "32°"

Custom Background File:

The name of the custom background of the weather station display

14.20.1. Available Weather Station Data Points

Depending on the weather station installed, the following data points are available:

Point	Instance	Vaisala WXT 520	Davis Vantage Pro2	The WeatherStack API	Australian Bureau of Meteorology
Temperature (Outside)	3000	✓	✓	✓	✓
Temperature (Inside)	3001		✓		
Humidity (Outside)	3002	✓	✓	✓	✓
Humidity (Inside)	3003		✓		
Barometric Pressure	3004	✓	✓	✓	✓
Wind Direction	3005	✓	✓	✓	✓
Wind Speed	3006	✓	✓	✓	✓
Total Accumulated Rainfall	3007	✓			
Daily Accumulated Rainfall	3008		✓	✓	✓
Monthly Accumulated Rainfall	3009		✓		
Yearly Accumulated Rainfall	3010		✓		

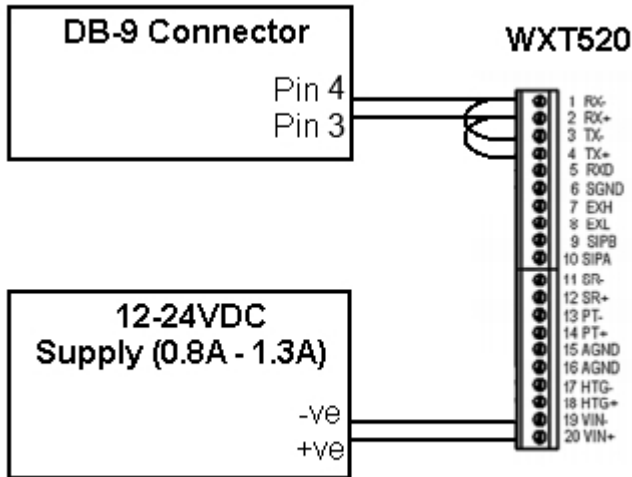
Point	Instance	Vaisala WXT 520	Davis Vantage Pro2	The WeatherStack API	Australian Bureau of Meteorology
Rainfall Duration	3011	✓			
Rainfall Intensity	3012	✓	✓		
Accumulated Hail	3013	✓			
Hail Duration	3014	✓			
Hail Intensity	3015	✓			
Rainfall Peak Intensity	3016	✓			
Hail Peak Intensity	3017	✓			
Weather Station Heating Temperature	3018	✓			
Weather Station Heating Voltage	3019	✓			
Weather Station Supply Voltage	3020	✓			
UV Index	3021		✓	✓	
Solar Radiation	3022		✓	✓	
Davis WS Comms Status	3023		✓		
Sunrise time (UTC time format)	3025			✓	
Sunset time (UTC time format)	3026			✓	
Sunrise time (in seconds from midnight)	3027			✓	
Sunset time (in seconds from midnight)	3028			✓	
Daytime BI	2500			✓	

14.20.2. Vaisala Weather Station

The Vaisala weather station, when connected, provides live local climate data to the BMS via a series of data points. Currently Optergy Software is only configured to communicate with the WXT520 model. The following screenshots describe how to best configure the WXT520 model for optimal communication with Optergy Software.

- [WXT520 Wiring Configuration](#)
- [Connection To Optergy Software](#)
- [WXT520 Device Settings](#)
- [WXT520 Message Settings](#)

WXT520 Wiring Configuration



Connection To Optergy Software

The WXT520 must be connected to Optergy Software via a Moxa device (either the 5130, 5150 or 5150A). The MOXA device is a protocol convertor that allows Optergy Software to talk to the VAISALA weather station by converting an RS485 communication protocol to a TCP/IP protocol. To configure the Moxa the following settings should be applied:

1. Basic Settings (Example taken from a **Moxa 5150A**)

⚙️ Basic Settings

Server Settings	
Server name	Server

Console Settings	
Web console	☒ Enable ☐ Disable
Telnet console	☒ Enable ☐ Disable
Reset button protect	☒ No ☐ Yes

2. Network Settings

(Example taken from a **Moxa 5150A**)

❖ Network Settings

Network Settings	
IP address	192.168.1.4
Netmask	255.255.255.0
Gateway	
IP configuration	Static
DNS server 1	
DNS server 2	

SNMP Settings	
SNMP	☒ Enable ☐ Disable
Community name	public
Contact	
Location	

IP Address Report	
Auto report to IP	
Auto report to UDP port	4002
Auto report period	10 seconds

3. Operating Settings Port 1 (Example taken from a Moxa 5150A)

⚙️ Operation Modes

Port 1	
Operation mode	TCP Server
TCP alive check time	7 (0 - 99 min)
Inactivity time	0 (0 - 65535 ms)
Max connection	2
Ignore jammed IP	☒ No ☐ Yes
Allow driver control	☒ No ☐ Yes
Local TCP port	4400
Command port	966

Data Packing	
Packing length	0 (0 - 1024)
Delimiter 1	00 (Hex) ☐ Enable
Delimiter 2	00 (Hex) ☐ Enable
Delimiter process	Do Nothing (Processed only when packing length is 0)
Force transmit	0 (0 - 65535 ms)

Submit

4. Serial Settings Port 1 (Example taken from a Moxa 5150A)

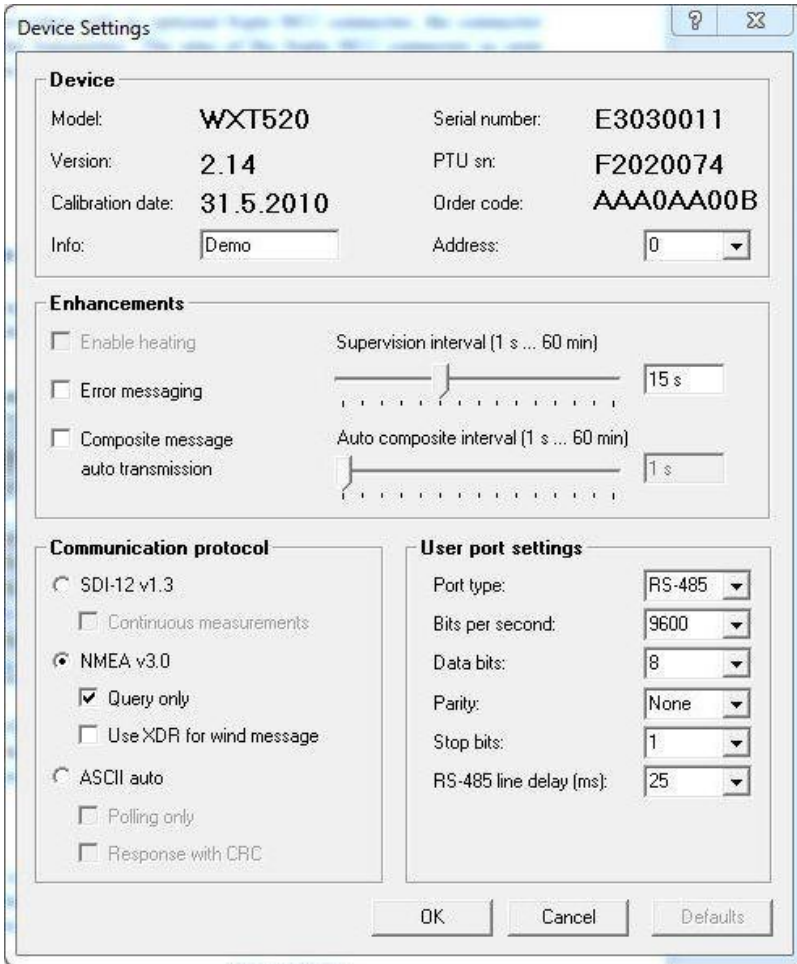
⚙️ Serial Settings

Port 1	
Port alias	

Serial Settings	
Baud rate	9600
Data bits	8
Stop bits	1
Parity	None
Flow control	None
FIFO	☐ Enable ☒ Disable
Interface	RS-485 2-wire

Submit

WXT520 Device Settings



Device Settings

Device

Model: **WXT520** Serial number: **E3030011**

Version: **2.14** PTU sn: **F2020074**

Calibration date: **31.5.2010** Order code: **AAA0AA00B**

Info: Address:

Enhancements

☐ Enable heating

☐ Error messaging

☐ Composite message auto transmission

Supervision interval (1 s ... 60 min)

Auto composite interval (1 s ... 60 min)

Communication protocol

☐ SDI-12 v1.3

☐ Continuous measurements

☒ NMEA v3.0

☒ Query only

☐ Use XDR for wind message

☐ ASCII auto

☐ Polling only

☐ Response with CRC

User port settings

Port type:

Bits per second:

Data bits:

Parity:

Stop bits:

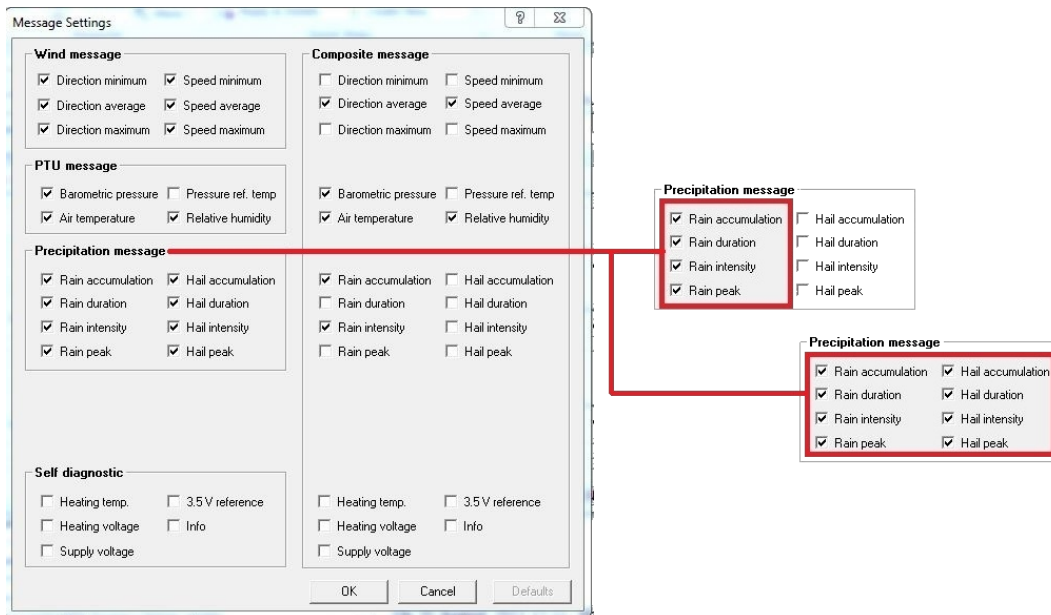
RS-485 line delay (ms):

OK Cancel Defaults

WXT520 Message Settings

Note: There are two (2) possible configurations for the precipitation message:

1. All rain and hail options are selected
2. Only rain options are selected

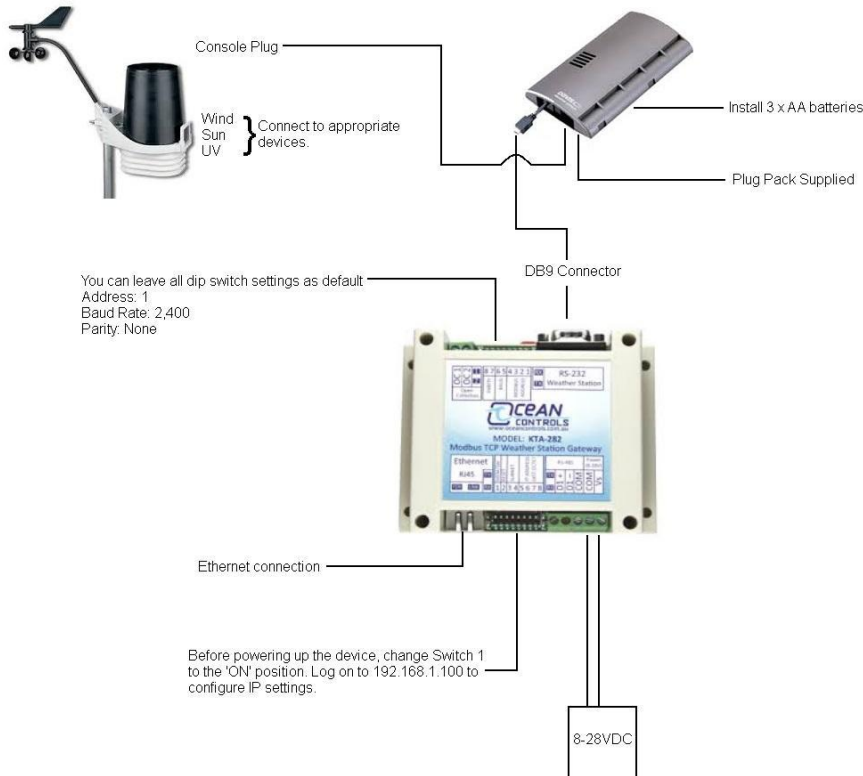


14.20.3. Davis Vantage Pro 2 Weather Station

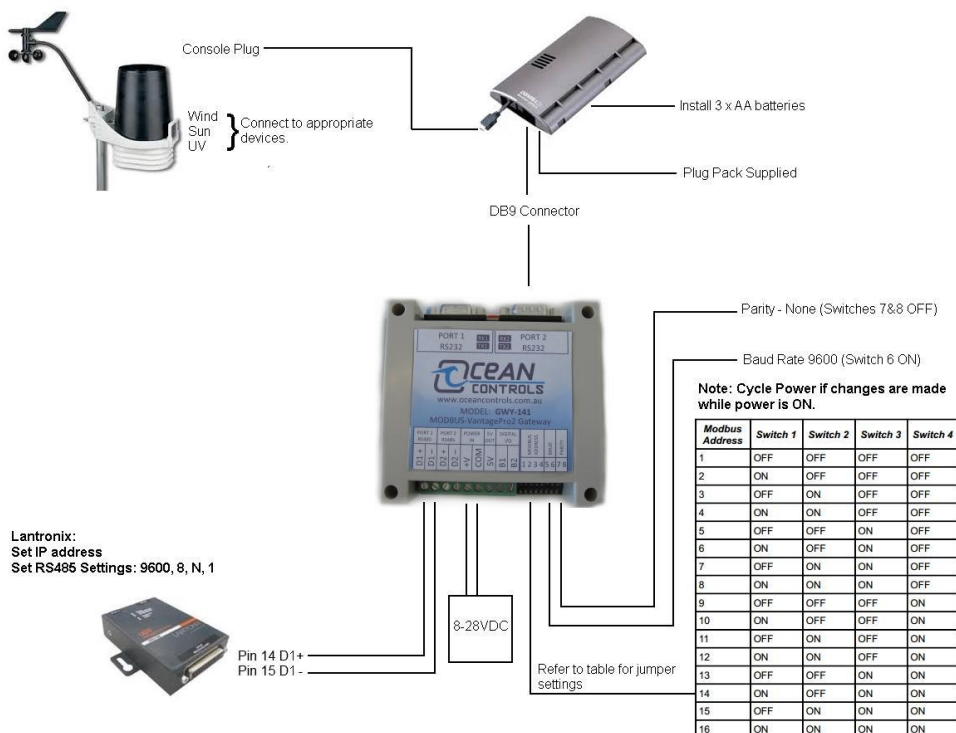
The Davis vantage pro2 weather station, when connected, provides live local climate data to the BMS via a series of data points. There are two (2) models which can be connected:

- KTA-2821
- GWY-141

Wiring Configuration For KTA-2821



Wiring Configuration For GWY-141



14.20.4. Australian Bureau of Meteorology Service

An alternative to a weather station is to use a website which can provide real-time weather data much like a weather station. Australian Bureau of Meteorology Service provides weather data that Optergy Software can download data from and log them to BACnet points.

Adding the Australian Bureau of Meteorology Weather Station

To Configure an Australian Bureau of Meteorology weather station go to [Weather Station Configuration](#)

1. Click  (edit)
2. On "Weather Station Enabled" click "Yes"
3. Under "Type of Weather Station" select Australian Bureau of Meteorology API.
4. Click search for location.
5. Type in the name of the city/town.
6. When the search completes, click on the location to use.
7. Click "Use".
8. Click "Save".

Note: The Australian Bureau of Meteorology is a government body which monitors weather in Australia, **limited to Australia only**

Note: In order to use the Australian Bureau of Meteorology online source, Optergy Software requires internet access or at the very least outbound and inbound port 21 access to <ftp://ftp2.bom.gov.au>

14.20.5. The WeatherStack API Service

The WeatherStack API is a free alternative to a physical weather station, and is used to provide real-time weather data. The WeatherStack API provides weather data that Optergy can use to populate the weather modules.

Adding The WeatherStack API as a Weather Station

To Configure The WeatherStack weather station go to [Weather Station Configuration](#)

1. Click  (edit)
2. On "Weather Station Enabled" click "Yes"
3. Under "Type of Weather Station" select The WeatherStack API.
4. Click search for location.
5. Select the country and type in the name of the city/town.
6. When the search completes, click on the location.
7. Click "Use".
8. Click "Save".

Note: In order to use The WeatherStack API online source, Optergy Software requires internet access or at the very least outbound port 80 access to <https://api.weatherstack.com/>

14.20.6. Weather Station Displays

Required Privilege: Weather Displays

The 'Weather Station Displays' page is an automatically generated display, which displays the latest weather data gathered from the station if a weather station is correctly connected, configured and enabled.

All weather station displays include the following details:

- Basic temperature, humidity and air pressure readings
- Basic wind speed and direction readings
- Basic rainfall readings

If a weather station gathers hail data, then the display will also contain hail related data readings such as hail accumulated and intensity.

14.20.7. Weather Station Data Upload

Required Privilege: Edit Optergy Configuration

The Weather Station Data upload page allows the user to upload weather station data in CSV format.

Weather Station Parameter

The weather station's parameter that the data will be loaded into, e.g. temperature, wind speed, humidity, etc. The unit that the parameter is measured in and the BACnet Object instance it will be stored in is indicated here.

Date Format

The format of the dates will be uploaded in e.g. "dd MM yyyy hh:mm" or "yyyy MM dd hh:mm".

Note: In the csv file there can be different separators between the month, day and year, eg. / - \ : .

Ignore Invalid Entries

If this box is ticked invalid entries will be ignored and not uploaded into the database.

CSV File

Click choose file to browse for the file to be uploaded.

Add Data

To add the data after selecting the options, click **+** (Add Data). The data will be stored in the Optergy Software device in the instance indicated by the parameter's dropdown menu option.

Note: When uploading data, if there is existing data within that parameter, the data will be overwritten for the period that the csv file's data covers. E.g. If the earliest entry is at 01-11-2013 00:00 and the latest is 01-11-2013 23:55 all entries in between will be removed and the data from the csv file will be uploaded in its place.

Example data format

The data must be uploaded in the format "dd MM yyyy hh:mm, value" or "yyyy MM dd hh:mm, value" or "MM dd yyyy hh:mm, value" For example for "dd MM yyyy hh:mm, value" the csv would look like this:

29/10/2013 00:00, 12.0

29/10/2013 00:05, 13.0

dd

The day of the month in digits, e.g 11 in 11th of November 2013.

MM

The month, e.g. 02 for February.

yyyy

The year, e.g. 2013.

hh

The hour in 24 hour time, e.g. 15 for 3pm.

mm

The minutes e.g 0-59.

14.21. Portal Preferences

Required Privilege: Edit Optergy Configuration

The Web Server and Portal Preferences page contains portal default/preference settings.

Web Server Log Level:

The level at which the compiler log file will record activity.

There are seven (7) levels to choose from:

1. Critical / Severe Information
2. Warning Messages
3. General Info
4. Configuration
5. Basic Debug
6. Database Status
7. Everything Of Use

Tomcat Port Number:

The port number that tomcat is accessed through. Default is 80 and all browsers know this, hence 80 does not need to be appended in the URL. After the tomcat port has changed, the new URL will be internalipaddress:newtomcatport. E.G. The new URL will be 192.168.7.72:99
The range of the port number is 1 to 65535. Please try to avoid commonly used ports like 22, 50, 465 etc. unless you are a system administrator

Auto Logout Expiry Time:

The timer that will automatically log the session out if the user is inactive.

Changing this field will take effect after the user logs out and applies to all users who have

auto logout enabled.

Auto logout can be enabled/disabled per user through User Configuration > User List.

Background:

There is a default Optergy Software background that is displayed on all Optergy Software pages. This setting allows you to override this background with a custom one that will be displayed Portal wide, unless that particular user has set their own background.

Setting the background has been separated into two parts:

Background Image:

Select an available image from the drop down list. Then select how you wish the image to be tiled on screen. If 'Tile in both directions' is not selected then it is recommended that a background colour be set, otherwise the area of the background not taken up by the image will appear white.

If 'None' is selected you are required to enter a background colour instead.

If 'Optergy Software Default' is selected the background will revert back to the Optergy Software Default.

Note: Images that can be selected as a background are images available in the Images/background folder on the file share. The [Remote File Manager](#) can be used to upload more images.

Background Colour:

Click on the box to view a colour palette and use the mouse to select a desired colour.

If a background image has been selected, then the background colour may not be seen depending on how the image has been tiled.

Home Page:

This is the page that will be loaded in the main context window after a user has logged in, it is Portal wide unless a particular user has their own home page specified.

There are several options when choosing a home page:

None	A home page is not set and the Optergy Software Dialpad (menu) will be displayed on login.
Custom URL	URL of an external or internal web page. For web pages that are within the Optergy Software Portal, a full path is not required or recommended, a relative or absolute path is enough. For external URLs a full path is required (including http://). External Example: - Full URL: http://www.optergy.com/page.html Internal Example: - Relative Path: page.html - Absolute Path: /page.html
Display Pages	This option is only displayed if there is at least one display page currently saved in the database. This Option presents you with a list of display pages to choose from.

Home Display

This allows a portal specific home live display to be set. If specified a 'Home Display' option will be added to the main menu and the Optergy Software dialpad. It is Portal wide unless a particular user has their own home display specified.

Home Display Label

This allows for portal specific customisation of the home display button text. If the above 'Home Display' option is specified, then this text will be displayed on the Optergy Software dial pad button.

Default Meter Display Sort:

This field specifies what sort method the 'Meter Display' page will use on load.

Default Meter Display Scale:

This field specifies what scale method the 'Meter Display' page will use on load, either load by default with scaled values or raw values.

Default Utility Report Library Sort:

This field specifies what sort method the 'Utility Report Library' page will use on load.

Default Report Units:

This field specifies the default units used when generating a Utility Report or the first time.

Utility Billing Summary Units:

This field allows users to specify specific units to be used for the 'Meter Summary' and 'Overall Picture' sections of a Utility Bill

Building Performance Savings Label:

This allows the default building performance 'Savings' word to be overridden to something more desired Eg Reduction, Improvement, etc. Anywhere the term 'Savings' normally appears in Building Performance will be substituted with the term specified here.

Server Address:

This field is required so that any hyperlinks that appear in emails from Optergy Software linking back to the Optergy Software portal work correctly. This field should be set to how the Optergy Software portal is reached through the web browser.

Eg.

- 1) If the Optergy Software portal does not have any remote access then this field should stay as the portal IP.
- 2) If there is remote access this should be set to the remote IP or the remote dynamic DNS address e.g. www.domainaddress.com

Enable Kiosk Mode:

When True, denotes that Kiosk Mode is installed on this machine. When False, denotes that Kiosk Mode has not been installed on this machine.

To install Kiosk Mode click  (Edit) and check the 'Enable Kiosk Mode' option and click the 'Save' button.

- 1) On successful installation of Kiosk mode the Optergy system will be rebooted.
- 2) Server must have internet access for this install.

Prefix All Alarm Descriptions with Site Name:

When changed to True, prefixes all Alarm Descriptions with the Site Name. When changed to False, removes Site Name prefixes from all Alarm Descriptions.

Prefix All Alarm Descriptions with Notification Class Description:

When changed to True, prefixes all Alarm Descriptions with the corresponding Notification Class Description associated with the Alarm. When changed to False, removes Notification Class prefixes from all Alarm Descriptions.

Password Settings

This field shows the password settings. These settings indicate how long the password must be and what type of characters must be inside a password for security purposes.

Editing Password Settings

To edit the settings for passwords, click  (Edit). To set the length of the password, enter the desired length into the "password length" field. To set the types of characters click the checkboxes to ensure they are checked.

- Uppercase character required: at least one uppercase character will be required in the password. Example: "ABC".
- Lowercase character required: at least one lowercase character will be required in the password. Example: "abc".
- Numeric character required: at least one number character will be required in the password. Example "123".
- Symbol character required: at least one symbol character will be required in the password. Example "!@#".

Edit Web Server Configuration

To edit any Web Server settings click  (Edit). A popup will appear that allows fields to be edited; click save to apply changes. Any currently open pages may need to be refreshed.

14.22. Programming Tool Configuration

The Programming Tool Configuration page allows users to edit the value that points retain in the event that they timeout. There are currently two choices:

Zero/Inactive:

When a point times out the value will default to zero or inactive.

Last Known Value:

When a point times out the value will default to the most recent value before the timeout occurred.

Edit Programming Tool Settings

To update the default timeout value, click  (Edit). A popup will appear, which displays a dropdown box with which the user can select their preferred default timeout value. Once the user has selected their desired value click save to apply.

14.23. SSL Configuration

Required Privilege: View Optergy Configuration

The SSL configuration page can be used to enable and disable SSL on Optergy.

What is SSL?

SSL is a protocol that uses encryption to ensure the secure transfer of data over the Internet. ([Source](#))

Configuring SSL on Optergy

SSL can be enabled or disabled, and upload certificates set to true or false.

WARNING:

- Only advanced users should set the upload certificate to true. **If you do not know what you are doing** you should set upload certificate to **false** and let Optergy generate a certificate for you.
- Invalid SSL configuration may result in your web portal becoming unresponsive!

If **Upload Certificate** is **false**, a self-signed certificate will be generated by Optergy, that will appear to be signed by "Optergy". This certificate will show an error in browsers, since the certificate is signed by the Optergy, and not verified by a third party certificate authority. In order for the browser to trust the certificate and not display a red "insecure" sign, the certificate must be added to the browser's trusted certificates.

(Instructions from Google Chrome on Microsoft Windows given below).

If **Upload Certificate** is **true**, a PKCS12 (.p12) keystore can be uploaded for use with Optergy. This .p12 keystore must contain at least a certificate with the corresponding private key. If signed by a third party certificate authority, it must also contain the certificate authority's certificate.

WARNING: Using a certificate signed by a third party will generally only work if you have a domain pointing to your Optergy. However, if you have your own certificate authority (such as on a company intranet), this will still work fine.

Obtaining an SSL Certificate

Obtaining an SSL certificate can be a complicated process. You will need to create your own key-pair and certificate signing request. [GoDaddy](#) provides some basic instructions on how to do this.

1. Create your own key-pair and certificate signing request. [GoDaddy](#) provides some basic instructions on how to do this.
2. Any certificate authority is applicable.
3. Import that certificate into a .p12 file before uploading to Optergy.
4. Import the certificate authority's root certificate into the .p12 file, if the certificate has been signed by them.
5. Import the private key used to generate the certificate signing request given to the certificate authority.

To do all this, OpenSSL is generally used. See the [OpenSSL documentation](#) for more information. As an example, if you have OpenSSL installed, you can run the following command to create a .p12 file:

```
openssl pkcs12 -export -in certificate.pem -in private_key.pem -in ca_root_certificate.pem -out  
proton.p12 -nodes
```

Make sure that the file names in the above command correspond to the file names of your certificates and keys.

Applying SSL Changes

1. Click **Apply** in the toolbar on the left to apply the SSL settings. These changes are not automatically applied unless you click the button.
2. If you have uploaded a .p12 keystore, you must enter the keystore's password after clicking apply.
3. Enabling SSL should take around 1 minute, and you will be taken to a waiting page while Optergy performs this action.

After enabling SSL, you will still be able to access the Optergy as usual. You will also be able to access it via https. To access the Optergy using SSL, navigate to <https://proton-ip-address> or <https://proton.companyname.com>, replacing proton-ip-address or proton.companyname.com where appropriate.

Adding a self-signed certificate to Google Chrome

If you are using Google Chrome on Windows, you can add the self-signed certificate generated by Optergy (if you set "Upload Certificate" to false) to the list of trusted certificates. This will remove the red warning messages from Chrome.

1. Download the certificate by clicking **Download Certificate** on the SSL configuration page
2. Open the web browser settings
3. Scroll down and click **Advanced**
4. Click on **Manage Certificates** (under Privacy and Security)
5. Click the **Trusted Root Certificates** tab
6. Click **Import**
7. Follow the prompts to select the certificate you downloaded
8. Once the wizard is finished, restart Chrome and access the Optergy using <https://ip.address> (replace ip.address with the IP address of your Optergy)

Advanced SSL Certificate Installation

1. Generate a Certificate Signing Request (CSR). A Certificate Signing Request (CSR) is one of the first steps towards getting your own SSL Certificate. A Certificate Signing Request (CSR) is an encoded file that provides you with a standardised way to send DigiCert your public key as well as some information that identifies your company and domain name. SSL uses public-key, or asymmetric, cryptography to encrypt transmitted data during an SSL session. The public key is used to encrypt and the corresponding private key is used to decrypt. Information about the key type and length is RSA 2048.
 1. Enter the *domain name* you are going to use with your building management system network. eg. bms.mycompany.com.au. Wildcard SSL certificates will need to use *.mycompany.com.au.

2. Enter your *organisational unit* which is the division of your organisation handling the certificate.
 3. Enter your *organisation* which is The legal name of your organisation. This should not be abbreviated and should include suffixes such as Inc, Corp, or LLC.<
 4. Enter your *State or Province*. The State or Province is where your organisation is located. This shouldn't be abbreviated.
 5. Enter your Two-letter country code. The two-letter ISO code for the country where your organisation is located Eg: AU, US, GB. Resource: [Two-letter Country Code Wiki](#)
2. Click the **Download CSR** button to download the generated Certificate Signing Request (CSR) and send it to your Certificate Authority (CA). When you are sending the Certificate Signing Request (CSR) you need to mention you are going to install the SSL certificate on a Tomcat web server (follow their instructions to receive your final certificate or certificate chain). Certificate Authority (CA) will take a few minutes to a couple of hours to generate SSL certificates.
 3. After sending the Certificate Signing Request (CSR) to Certificate Authority (CA) they will respond with three or more certificates. These are the Root certificate, Intermediate certificate (there might be one or more intermediate certificates) and SSL certificate.
 4. Upload these certificates into the portal. Once the certificates have been uploaded, Click **Install SSL Certificate**.

Backup and Restore

You can backup your SSL certificate using **Download Certificate** and **Import Certificate** buttons.

15. Programming Tool

15.1. Programming Tool Introduction

Required Privilege: Programming Tool

The creation of programmable logic for the control of BACnet devices is called a Programming Tool otherwise known as DDC (direct digital control). Programming Tool sequences are stored and carried out in Optergy. All this can be done within the Google Chrome Browser (Chrome is the only Supported Browser) and no other add-ons or downloads are required for this functionality.

The Programming Tool offers a number of predefined logic blocks that have specific functions, those blocks are executed based on fixed values or values coming from other BACnet points such as AV's and BV's either hosted locally in Optergy or other BACnet devices on the BACnet network.

Each block has a unique sequence number and that number determines the order in which the Programming is executed. Once the Programming passes through all the sequence numbers, it starts over and executes the Programming sequentially once again.

The speed at which the Programming takes to cycle through is dependent on a number of factors such as number of blocks, load of the overall system and speed of the network.

To view what speed the Programming is executing at, go to,
Activity and Monitoring -> Log Viewer
And select the Programming Tool log to view the speed.

Here is an example of Programming execution time from the log file:

Tue Mar 29 10:09:52 AEDT 2016 Sequence: 597.0ms, 5 Writes: 400ms, Total: 997.0ms

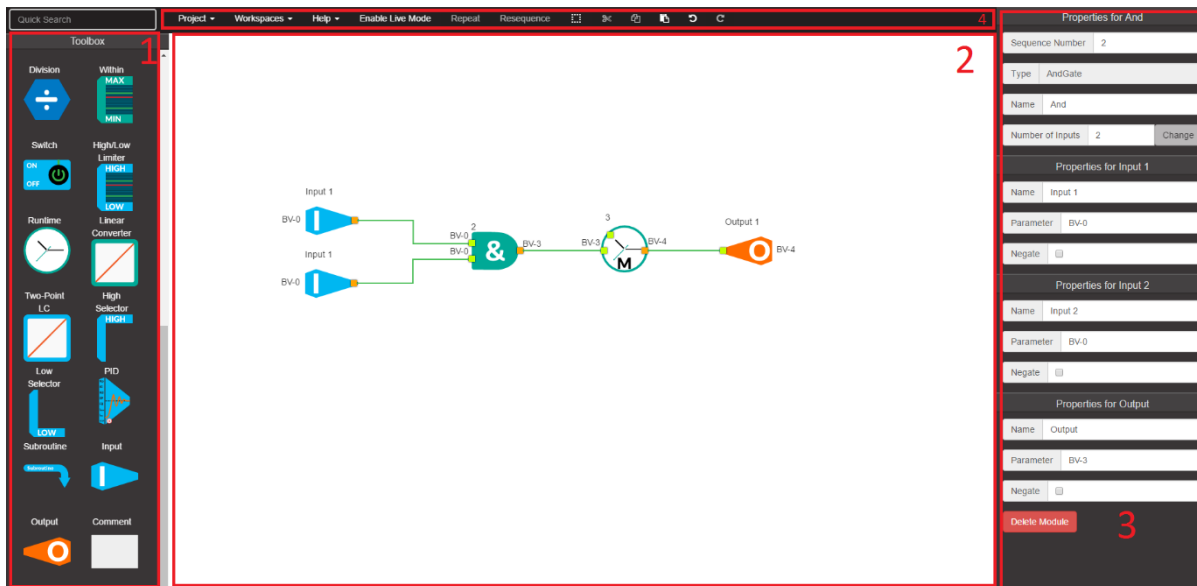
This shows the time it has taken to execute the sequence and the write time. These are added together to show the total execution time.

15.2. Programming Tool Environment

The Optergy Programming Tool Environment

There are four distinct environments in the Programming Tool web interface:

1. Toolbox (holds all the logic blocks)
2. The Workspace
3. Logic Block Properties (appears when you right click on a logic block)
4. Toolbar



Tool Box

The tool box holds all the logic blocks that can be dragged onto the workspace and used in the Programming Tool.

Workspace

The workspace is the canvas where the Programming Tool logical blocks are arranged and connected.

Logic Block Properties

The Logic Block Properties can be edited, this is where the BACnet Device and Object details can be entered along with fixed values or negating (reversing the property)

Toolbar

The Toolbar is the place where you can edit the project, workspaces enable live mode and provides tools for editing the workspace.

Projects and Workspaces

Optergy Programming Tool module uses the concept of Projects and Workspaces to create programming logic.

The easiest way to describe this would be to think of folders and files.

Think of the Project as a folder and think of workspaces as the files.

All the workspaces in a project make up the entire logic and are compiled together.

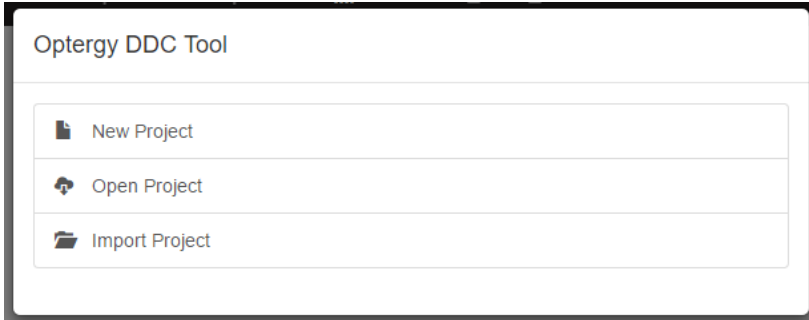
The reason we have the concept of workspaces is some Programming Tool projects can be very large and span multiple things,

For example, you can have all logic related to an AHU on one workspace, and all logic related to boilers on another workspace.

When combined they all form part of the same project.

Projects

When you enter the Programming Tool you will be prompted with 3 options;



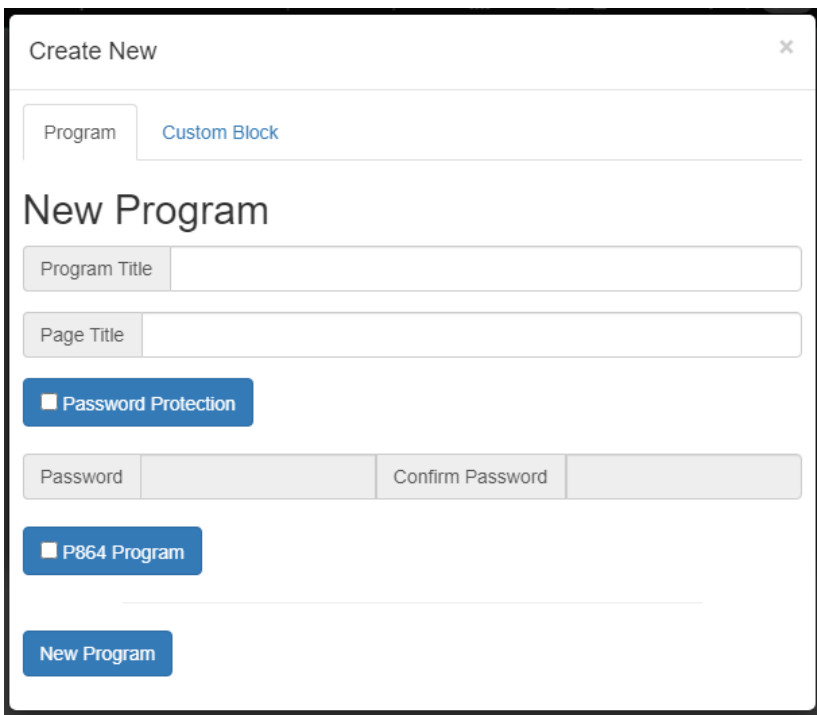
The screenshot shows the 'Optergy DDC Tool' interface. It features a title bar at the top. Below the title bar, there is a list of three options, each with a small icon to its left: 'New Project' (with a document icon), 'Open Project' (with a folder icon), and 'Import Project' (with a folder icon).

New Project

If you select New Program, you will be prompted to enter the name of the program and the first workspace. The P864 Program option should be selected only if you are creating a program meant for the Optergy P864 Field Controller.

There are some differences between the two program types:

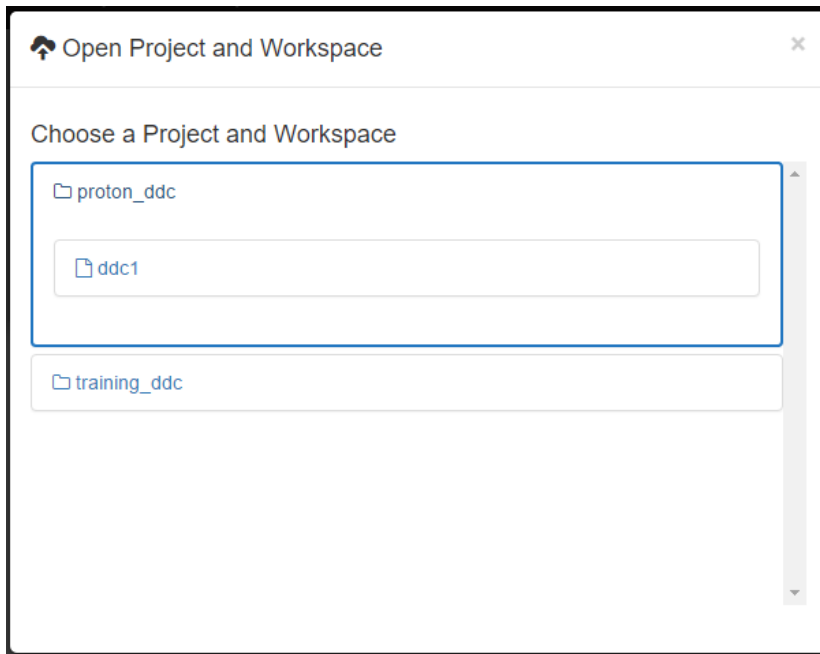
- 1) P864 programs will only allow a maximum of 50 subroutine callers.
- 2) The PWM block will only be available to P864 programs.



The screenshot shows a 'Create New' dialog box with a close button (X) in the top right corner. It has two tabs: 'Program' (selected) and 'Custom Block'. Under the 'Program' tab, the title is 'New Program'. There are two text input fields: 'Program Title' and 'Page Title'. Below these is a checkbox labeled 'Password Protection'. Under this checkbox are two text input fields: 'Password' and 'Confirm Password'. Below these is another checkbox labeled 'P864 Program'. At the bottom of the dialog is a blue button labeled 'New Program'.

Open Project

If you select an open project you will be prompted to select an existing project and the workspace you want to open within that project.



Import Project

If you have a project that you exported from another Optergy installation, you can then import that project.

If you select import you will get a browse window to navigate for the project you want to import.

(Projects are exported as zip files and should be imported as the same zip files)

Projects Menu

The Projects menu is where you will find additional menus related to the entire project.

New

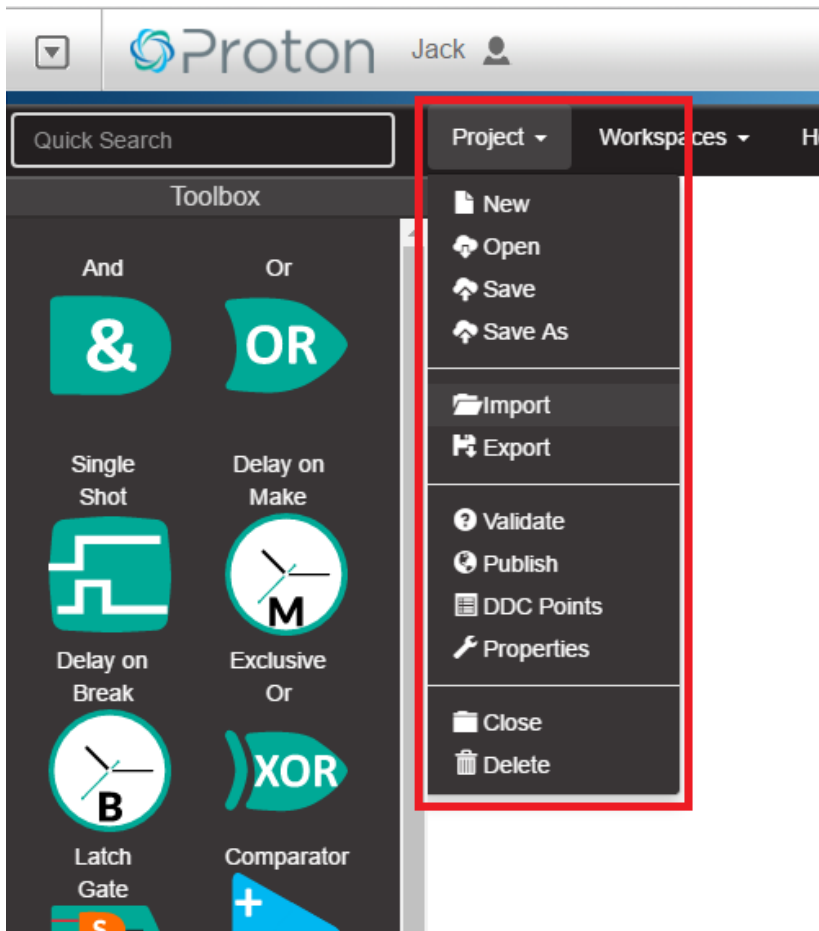
If you select a new project you will be prompted to enter the name of the project and the name of the first workspace.

Open

If you select open you will be prompted to select an existing project and the workspace you want to open.

Save

If you select save this will save the current workspace to the current project.



Save As

If you select save as this will allow you to save the current workspace with a.

Different name in the current project

Or

Another existing project with the same or different name.

The save as window also allows you to create a new project to save the workspace to with the same or a different name.

 Save As ×

Workspace Title

DDC1

Where do you want to save the current workspace?

 ddc

 proton_ddc

 training_ddc

Save

New Project

Import

If you have a project that you exported from another Optergy installation, you can then import that project.

If you select import you will get a browse window to navigate for the project to import.

(Projects are exported as zip files and should be imported as the same zip files)

Export

Selecting export will export the current project as a zip file to Chrome's default download directory. (This is usually the downloads directory for windows users)

Validate

Prior to publishing the programming logic you can validate it, this will check for errors while compiling and advise of any errors that will need to be fixed prior to publishing.

Compiling... ✖

✖

Starting compilation...

Getting the project's workspaces...

Getting workspaces for subroutines...

Validating workspaces...

Input parameter is empty in DelayOnMake module.

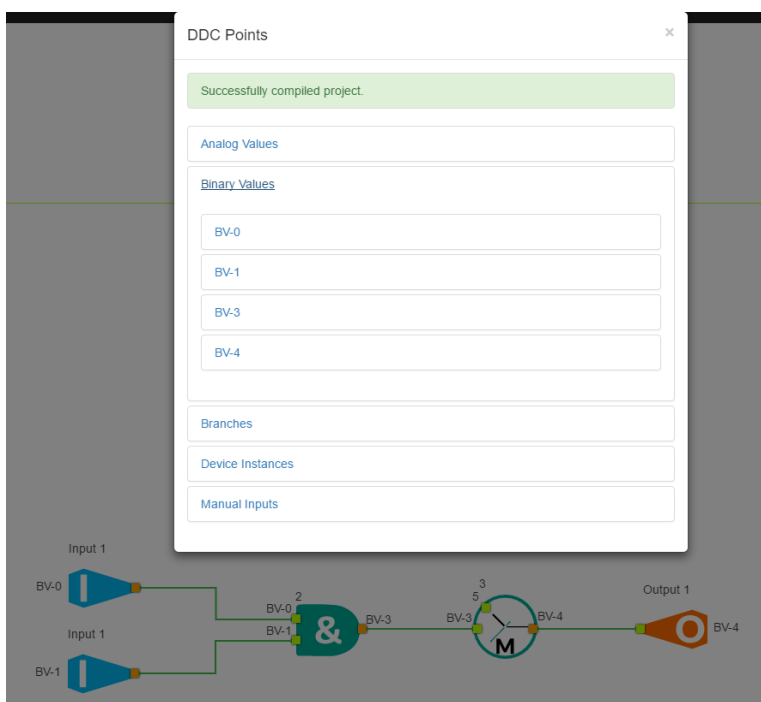
Project containing error: 'ddc'. Workspace containing error: 'ddc1'.

Publish

Publishing will actually compile the programming logic and then publish. If there are errors in the logic, the logic will not publish and list all the errors found. Once the logic is published successfully it will start executing the logic in Optergy.

Programming Logic Points

If there are no errors in the logic and the logic has been saved, you can select logic points to get a summary of the points used throughout all the workspaces.



Properties

Properties provides a quick summary and editing functions of the current project, current workspace Canvas Size, first and last sequence number and by what number you want to increment the sequence numbers.

Project Properties ×

Current Project

Title	DDC Demo	File Name	ddc_demo

Current Workspace

Title	DDC1	File Name	ddc1

Canvas Width	4000	Size	Custom ▼

Canvas Height	4000	Orientation	Portrait ▼

Increment Sequence Numbers By	10

Workspaces in the Current Project

- ddc1

Save Changes

Cancel

Current Project

Provides the details of the current project title and file name, you can also edit the project title here and the file name will automatically change as well.

Current Workspace

Provides the details of the current workspace Title and file name, you can also edit the workspace title here and the file name will automatically change as well.

Canvas Width and Height

The workspace canvas size you are currently working on can be modified in width and height.

The minimum size is 300 x 300 pixels. The default is 4000 x 4000 pixels.

The maximum is 10,000 x 10,000 pixels

Size

You can set the size of the canvas to standard page sizes. The Canvas Width and Height will automatically adjust

Orientation

If you set the size to a standard page size then you can also select the orientation as either portrait or landscape

Increment Sequence Number By

You can define the amount sequence numbers increase by every time you add a function block.

The maximum number of sequence numbers that can be used are 1,999,999,999.

Workspaces in the Current Project

Provides a summary list of the workspaces within the current project.

Save Changes

If you make any changes in the project properties window, ensure you select save changes for the changes to take effect.

Close

To close the current Workspace on the current tab you are in select close.

Note: this does not close the browser tab, the tab will remain open and you will need to close it manually.

If you only have one tab open then both the workspace and the project will be closed.

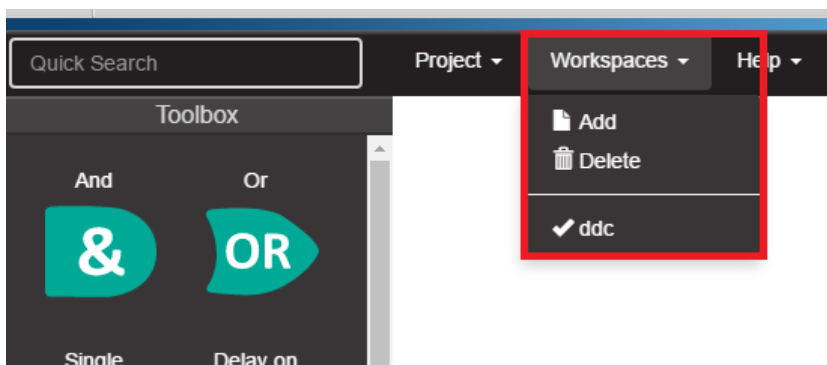
Delete

Select delete to delete an entire project and all its workplaces. You will get a warning message prior to deleting a program to confirm the deletion

15.3. Workspaces Menu and Canvas

Workspace Menu

The workspace menu is where you will find additional menus related to workspaces.



Add

Select add to add a workspace to the current project.
This will open a new browser tab and ask you for a Workspace title for the new workspace.

New Workspace for Proton DDC



What do you want to call this workspace?

Title

New Workspace

Delete

Select delete to delete the current workspace.
You will get a warning message prior to deleting a workspace to confirm the deletion.



**Are you sure you want to
delete the current workspace
'ddc2' from the project 'ddc'?
This action is irreversible.**

Cancel

Delete Workspace

Project Workspaces

Note: If you are deleting a workspace and the workspace is the only workspace in the project, then the project will also be deleted, as there must be a minimum of one workspace for a project to exist.

If you have multiple workspaces in your project you will have all the workspaces listed under the workspace menu.

The workspace with the tick next to it will be the current workspace you are working on in the current tab you are in.

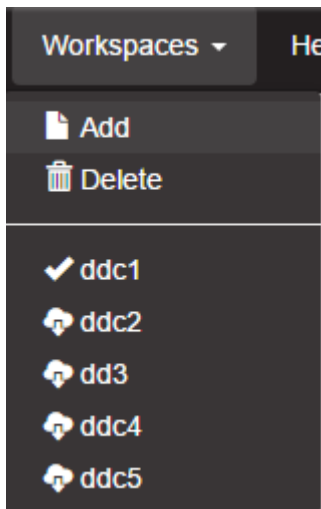
When selecting one of the other workspaces this will open in another tab.

Note: Please note that as we are working in a browser window and referencing a URL, you may actually have the same workspace open in different tabs or it may be opened by different people.

Try to avoid opening the same workspace in different tabs.

Also avoid multiple people working on the same workspaces.

Last save wins.



Workspace (Canvas)

The workspace canvas is the place you can add logic blocks to from the toolbox in order to create the program.

Adding Logic Blocks to the Canvas

To add a logic block, hover over the block you want to add, the pointer will change to a hand, you can then left click and hold on the block and drag it to the canvas.

Moving Around the Workspace Canvas

To move workspace canvas, left click and hold on a free area on the canvas and you can move the canvas around.

Logic Block Selection

There are two methods for selecting logic blocks.

(Selected blocks will have a blue outline around the block to visually show that it has been selected.)

CTRL and Click - if you hold the CTRL key on the keyboard while left clicking on the block you will select it, if the block is already selected the same action will deselect the block.

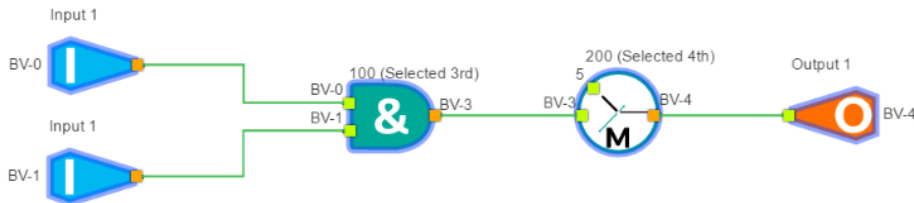
The other method is using the marquee tool on the toolbar.

 Select the marquee tool on the toolbar, using the marquee tool you can select multiple blocks on the canvas at the same time. A rectangular box will appear showing the blocks that have been selected within that area.

Once selected you can use the CTRL and Click to deselect any blocks not required to be selected.

Vice versa you can select some blocks using CTRL and Click and then use the Marquee Tool.

Note: As making selections you will notice next to each block the order in which the blocks were selected. The reason for this will become evident when re-sequencing the block sequence numbers. See Resequencing.



Deleting Logic Blocks and Connection Lines

To Delete Logic Blocks and Connection Lines, hold SHIFT and left click on the block or line you want to delete.

Moving Blocks on Workspace Canvas

To move logic blocks around the workspace canvas, left click and hold on the logic block and you can move the logic block to a different part of the workspace canvas.

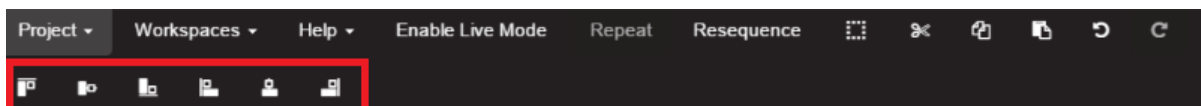
Moving Multiple Blocks on Workspace Canvas

To move multiple logic blocks around the workspace canvas, select multiple blocks as described in the logic block selection, left click and hold on any of the selected logic blocks and you can move multiple logic blocks to a different part of the workspace canvas.

Aligning Blocks on the Workspace Canvas

There are a number of alignment tools for aligning the logic blocks.

Once one or more blocks are selected the alignment toolbar will appear just below the main toolbar.



 Aligns the blocks to the block that is the topmost of all selected.

 Aligns the blocks to the block that is the bottom most of all selected.

 Aligns the blocks to the block that is the rightmost of all selected.

 Aligns the blocks to the block that is the leftmost of all selected.

 Aligns the blocks horizontally in the middle of all the selected blocks.

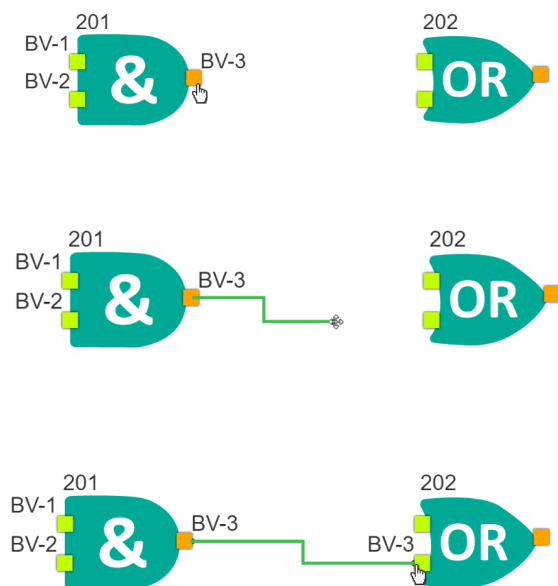
 Aligns the blocks vertically in the middle of all the selected blocks.

Connection Lines between Logic Blocks

Logic blocks can be connected together using connection lines. Connection lines assist when reading the program and show the relationship between logic blocks, as well as making it easy to follow.

To join, two blocks connect an output of a block (outputs are in orange) to input of another block (inputs are green)

To ensure you are on the orange output of a block the cursor will change to a hand. When the cursor is a hand you can click and drag the connection line to the input of another logic block



Note: Once logic blocks are connected, moving the logic block will also move the connection line.

Also making a connection with the output defined, will propagate the defined output to the input. As shown in the example above, BV-3 was automatically propagated to the input.

Repeat Logic Blocks

You can select a logic block if you want to repeat the blocks multiple times.

Select the block you want to repeat and click on **Repeat** in the toolbar.

A repeat settings window will pop up where you can enter how you want the repeat to execute.

Repeat Settings

Repeat Modules

How many times do you want the block to repeat?

Direction of Repeat

Use the drop down box to choose if you want to repeat horizontally or vertically.

Repeat Parameter's Increment Value

You can select how the parameter values of the block are to increment by.

For example if you want the sequence number to increment by 10 then each block will increment by 10 from the original block selected,

So if you repeat 2 times and the original block was 10, then the first repeated block will be 20, then the second 30.

This behaviour is the same for all the other repeat parameters.

Repeat Settings ×

Repeat Module 2 Times Horizontally ▾

Repeat Parameters	Increment By
☒ Sequence Number	10
☒ Branch Numbers	1
☒ Device Instances	1
☒ Object Instances	1
☒ Array Indices	1
☒ Substitution Numbers	10
☒ Manual Input	1

Repeat Module

Resequencing Logic Blocks

You can resequence logic blocks based on the order you select them or using the marquee tool (see logic block selection) or the existing sequence order.

After you make your selections select **Resequence** and this will open up the Resequence Settings window.

Resequence Settings ×

Resequence Starting From In Increments Of

New Sequence Numbers Should Be Ordered By Existing Sequence Number ▾

Resequence Modules

Resequence Starting From

This is the number the first block or existing first block sequence number will be.

In Increments of

This is the number of sequences between each block.

Note: it is best practice to leave a gap of sequences between each block. This way if you are making edits and need to add a few blocks then you do not need to resequence all the blocks and you can manually assign the block sequence numbers.

New Sequence numbers should be ordered by

The new sequence numbers can be ordered by the existing sequence number or the order of selection.

Resequence Settings ×

Resequence Starting From	1	In Increments Of	1
New Sequence Numbers Should Be Ordered By		Existing Sequence Number ▾ Existing Sequence Number Selection Order	

Resequence Modules

Cut, Copy and Paste

You can cut, copy and paste blocks individually or multiple blocks and connection lines.

This can be done by using the toolbar buttons. 

You can also use keyboard shortcuts

Copy = CTRL + C

Cut = CTRL + X

Paste = CTRL + V

Note: you can copy between workspaces, in the same browser session.

Undo Redo

You can undo and redo actions on the workspace canvas.

This can be done by using the toolbar buttons. 

You can also use keyboard shortcuts

Undo = CTRL + Z

Redo = CTRL + Y

Live Mode

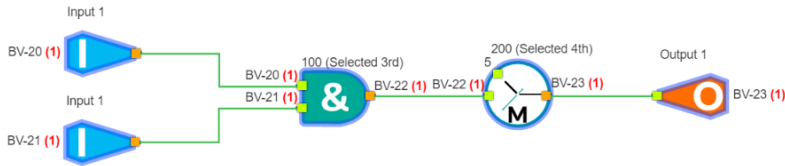
When a program is compiled and running it can be viewed in workspace canvas in real time.

To view the program in real time select **Enable Live Mode** from the toolbar.

Then either select a block or a number of blocks in the visible workspace canvas.

The selected block/s will then display the live value next to the inputs and outputs.

To stop viewing the live selected blocks click anywhere in an unused part of the workspace canvas.



Note that you are still in live view mode at this point so selecting blocks again using the marquee tool or individually will display the live values.

To exit live view mode select **Disable Live Mode** from the toolbar.

Logic Block Properties

To view and edit the logic block properties you must right click on the block.

Once you right click on the block, this will open up the properties to the right of the workspace canvas.

Block Properties

Sequence number

The sequence number of the block.

This can be edited.

Type

The block type.

This cannot be edited.

Name

The name of the block.

This can be edited, but is not visible on the workspace canvas.

Number of Inputs

The number of inputs can be set for the following blocks:

AND

OR

ADDITION

HIGH SELECTOR

LOW SELECTOR

The selection can be made between 2 and 16 inputs. The block size will automatically change on the workspace canvas.

Properties for And

Sequence Number

201

Type

AndGate

Name

And

Number of Inputs

2

Change

Properties for Input 1

Name

Input 1

Parameter

BV-1

Negate

☐

Properties for Input 2

Name

Input 2

Parameter

BV-2

Negate

☐

Properties for Output

Name

Output

Parameter

BV-3

Negate

☐

Delete Module

Properties for Inputs and Outputs

Name

The name of the Input

This can be edited, but is not visible on the Workspace canvas.

Parameter

The parameter the block will reference to execute a function.

If a non-compliant parameter has been entered the Parameter will be shaded red to indicate an incorrect parameter entry. For binary blocks this can be a

- BR (Branch Point)
- BV (Binary Value)
- BO (Binary Output)
- BI (Binary Input)
- MV (Multi-State Value)
- MO (Multi-State Output)
- MI (Multi-State Input)
- 1 (True) or 0 (False)

For analog blocks this can be a

- BR (Branch Point)
- AV (Analog Value)
- AO (Analog Output)
- AI (Analog Input)
- MV (Multi-State Value)
- MO (Multi-State Output)
- MI (Multi-State Input)
- or a number.

To reference a point on the Programming Block input or output the following syntax need to be used:

'point type'-'point instance'

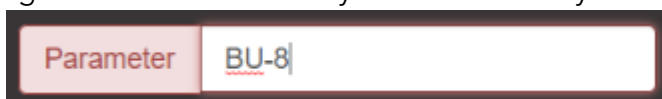
eg.: BV-0 is referring to Binary Value 0, AI-50 is referring to Analog Input 50.

By default, Programming Tool writes at Priority Array 9 if the point has a Priority Array, or Present Value otherwise.

To write at another priority, the following syntax should be used:

'point type'-'point instance'-'priority array'

eg.: BV-0-8 refers to Binary Value 0 at Priority 8.



Note: BR (Branch Points) are software points that are only used in the Program.

Please note that live values of BR points will not be visible in Live Mode.

There are 1000 Branch points available that can be used in the program, BR-0 to BR-999.

The same branch points can be used multiple times in the same program.

Negate

Ticking the Negate check box will reverse the action of the incoming parameter.

For binary blocks, True (1) inputs will be read as False (0) and False (0) inputs will be read as True (1).

For analog blocks, it will invert values between 0 and 100, but not limited to 0 and 100 for example;

-50 = 150

0 = 100

50 = 50

100 = 0

125 = -25

Note: Values that are negated will appear with a solid dot above the input or output for binary values and a solid triangle above the input or output for Analog Values.



Delete

The block can be deleted from the properties, if you choose this you will get a warning message to confirm deletion.



**Are you sure you want to
delete this module?**

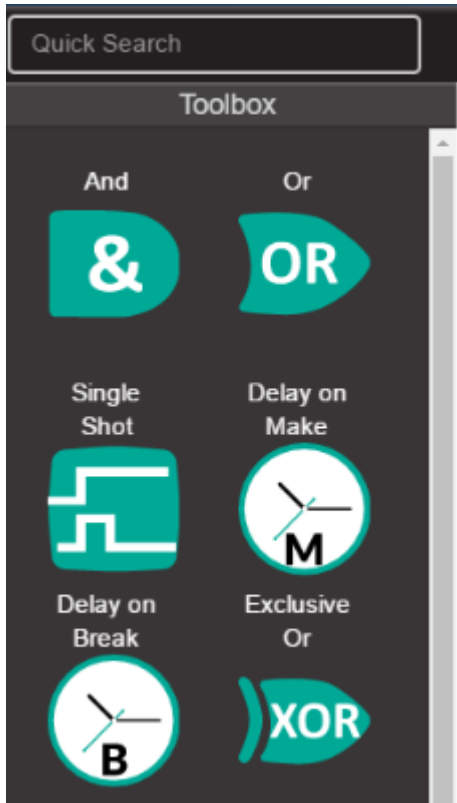
Cancel

Delete Module

15.4. Logic Blocks

Toolbox

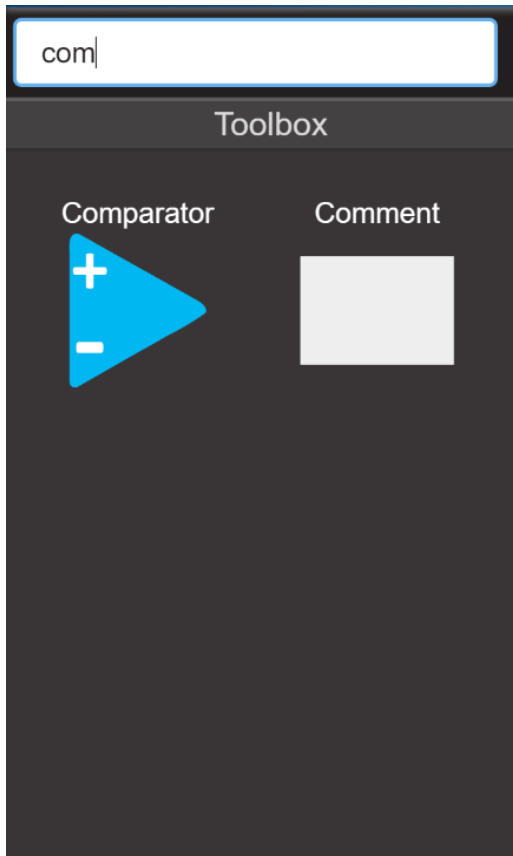
The toolbar holds all the Logic Blocks that can be used to create the program using the Programming Tool.



Quick Search.

The Quick Search allows you to find a logic block quickly.

For example if you are looking for a comment box, then you can start typing in the word and this will reduce the number of blocks in the tool box to only those blocks whose description matches the search query.



Logic Blocks Available To Use:

- [Addition](#)
- [And Gate](#)
- [Comment](#)
- [Comparator Hysteresis](#)
- [Delay On Break](#)
- [Delay On Make](#)
- [Division](#)
- [Exclusive OR Gate](#)
- [Gated Transfer](#)
- [High / Low Limiter](#)
- [High Selector](#)
- [Increment / Decrement](#)
- [Input](#)
- [Latch Gate](#)
- [Linear Converter](#)
- [Low Selector](#)
- [Multiplication](#)
- [Or Gate](#)
- [Output](#)

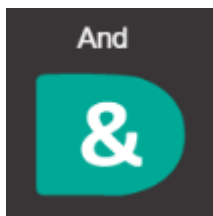
- [PID Controller](#)
- [Runtime](#)
- [Single Shot](#)
- [Subtraction](#)
- [Switch](#)
- [Transfer Data](#)
- [Two Input Linear Converter](#)
- [Within](#)
- [Power Of](#)
- [Pulse Width Modulation](#)
- [Anti-Short Cycle](#)
- [Enthalpy](#)
- [Floating Motor Controller](#)
- [Restrictor](#)
- [Change Of State Detector](#)
- [Velocity To FPM Converter](#)

15.4.1. Addition



Description: Add up to 16 input values.

15.4.2. AND Gate



Description: The AND function of two or more binary-type inputs, sets the binary-type output

The output will be set to True (1) only if all inputs are True (1). If any input is False (0), the output is False (0).

Input 1	Input 2 to 16	Output
False (0)	False (0)	False (0)
True (1)	False (0)	False (0)

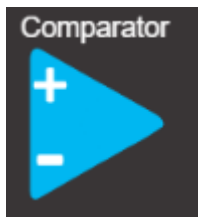
False (0)	True (1)	False (0)
True (1)	True (1)	True (1)

15.4.3. Comment



Description: A box that allows you to type text into it describing the program or making general comments.

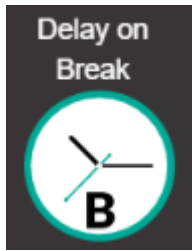
15.4.4. Comparator / Hysteresis



Description: Compare two analog inputs and produce a binary output as a result of the comparison. The output will be ON when the plus input is greater than or equal to the minus input plus the trigger dead band (TDB). The output will go False (0) when the plus input is less than or equal to the minus input minus the restore dead band (RDB).

Condition	Output
Plus Input GREATER THAN (Minus Input + TDB)	True (1)
Plus Input LESS THAN (Minus Input - RDB)	False (0)
(Minus Input - RDB) LESS THAN Plus Input LESS THAN (Minus Input + TDB)	No Change

15.4.5. Delay on Break



Description: A binary transition from True (1) to False (0) after the delay period (in seconds) has elapsed

15.4.6. Delay on Make



Description: A binary transition from False (0) to True (1) after the delay period (in seconds) has elapsed

15.4.7. Division



Description: Divide one value by another.

15.4.8. Exclusive OR Gate

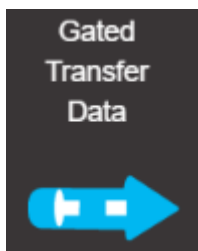


Description: The Exclusive OR function of two binary-type inputs, sets the binary-type output.

The output will be set to True (1) if either input is True (1) and the other input False (0). If all inputs are False (0) or all inputs are True (1), the output is False (0).

Input 1	Input 2	Output
False (0)	False (0)	False (0)
True (1)	False (0)	True (1)
False (0)	True (1)	True (1)
True (1)	True (1)	False (0)

15.4.9. Gated Transfer



Description: Write the input value to the output value only when the Gate input is True (1). This function will not write to the output if the Gate input is False (1).

15.4.10. High / Low Limiter



Description: Restrict an analog value to a range defined by two limits. It has three analog inputs and one analog output.

The output will equal the analog input as long as it is within the range defined by the high limit and low limit.

If the analog input exceeds the high limit, the output will be set to the value of the high limit. If the analog input is less than the low limit, the output will be set to the low limit.

If the high limit value is less than the low limit value, the high limit has priority (that is, the output will be set to the high limit, regardless of the analog input value).

15.4.11. High Selector



Description: Select the highest values from up to sixteen inputs. The output will equal the value of the highest input. All inputs must be assigned.

15.4.12. Increment / Decrement



Description: Increase the Output value by the Up value or decrease it by a Down value only if a True (1) value is passed to the Up Input or Down Input, respectively, for each cycle of the program.

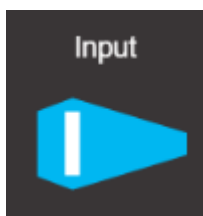
For each cycle of the program, the value of the Up input value is added to Output whenever the Up Input is True (1).

Similarly, the value of the Down input is subtracted from the Output whenever the Down Input is True (1).

The Output value is limited to the range defined by the Upper Limit and Lower Limit inputs.

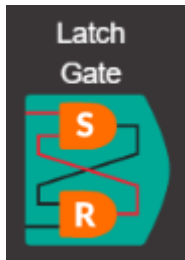
Note that this function only adds to the Output or subtracts from the Output it when either the Up Input or Down Input is True (1).

15.4.13. Input



Description: A tag that labels an input parameter.

15.4.14. Latch Gate



Description: Two binary inputs, Set (S) and Reset (R), are used to switch the binary output between True (1) and False (0) respectively.

A minimum of 1 program cycle is required on the set (S) input is required to be True (1) and the Reset (R) input is False (0) to set the output to True (1).

The output will stay True (1) once it is set, even if the set (S) input transitions False (0). If the reset (R) input is set to True (1) the output will be set to False (0).

The Reset (R) input has priority over the Set (S) input, so the output will be False (0) if both inputs are True (1).

Set (S)	Reset (R)	Output
False (0)	False (0)	Retains Previous Output
True (1)	False (0)	True (1)
False (0)	True (1)	False (0)
True (1)	True (1)	False (0)

15.4.15. Linear Converter



Description: Perform a linear conversion on the input and produce an output using zero and range values as follows. $\text{Output} = \text{Zero} + \text{Input} \times \text{Slope}$

15.4.16. Low Selector



Description: Select the lowest values from up to sixteen inputs. The output will equal the value of the lowest input. All inputs must be assigned.

15.4.17. Multiplication



Description: Multiply one value by another.

15.4.18. OR Gate



Description: The OR function of two or more binary-type inputs, sets the binary-type output. The output will be set to True (1) if any inputs are True (1). If all inputs are False (0), the output is False (0).

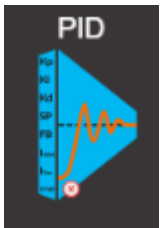
Input 1	Input 2 to 16	Output
False (0)	False (0)	False (0)
True (1)	False (0)	True (1)
False (0)	True (1)	True (1)
True (1)	True (1)	True (1)

15.4.19. Output



Description: A tag that labels an output parameter.

15.4.20. PID Controller



Description: The PID provides a proportional integral and derivative (PID) control. The output is gradually iterated in an attempt to get the feedback input (FB) to match the setpoint (SP).

The output of the PID controller is the sum of the following components: proportional (P), integral (I), derivative (D), and a constant of 50.

The output of the PID Block is limited between 0 and 100.

$$\text{Output} = 50 + P + I + D$$

The primary inputs are the setpoint (SP) and feedback input (FB).

The other inputs are used as tuning inputs, and they are normally set to fixed values as needed to achieve responsive and stable control.

Error

This difference is called the error (E), and it is an intermediate variable representing how far away from setpoint (SP) the feedback input (FB) is.

$$E = \text{FB} - \text{SP}$$

Proportional Constant (Kp)

The proportional component (P) responds immediately and is proportional to the value of the error.

The (Kp) input will directly affect the proportional output. The proportional component is equal to the error times the proportional constant.

$$P = E \times K_p$$

Integral Constant (Ki)

The integral component (I) is calculated as a running total over time. It generates incremental adjustments over time in order to have the feedback input match the setpoint.

The initial output of the integral component is set to the value of integral start up (STUP). From then on,

the integral component is a running total, with an integral adjustment value added every second. The integral adjustment value is the error times the integral constant (Ki) divided by 60. The integral constant is divided by 60 since it represents the change per minute, and the calculation is performed every second.

$$I = I_{\text{previous}} + (E \times K_i / 60)$$

The rate of change of the integral component is limited by the maximum integral change (Imax), which is the maximum amount the integral component is permitted to change per minute.

The maximum permitted integral adjustment (which is added once per second) is then Imax/60.

Finally, the value of the integral component is limited by the integral limit (Ilimit). I is not permitted to be greater than Ilimit or less than -Ilimit. || LESS THAN OR EQUAL TO Ilimit

Derivative Constant (Kd)

The derivative component (D) is used mainly in integrating processes for faster response but may be prone to overshoot.

$$D = K_d * (E - E_{\text{prev}}), \text{ where } E_{\text{prev}} \text{ represents the value of } E \text{ from the previous logic cycle.}$$

For PI control without the D component, Kd may be left as 0.

Integral start up (STUP)

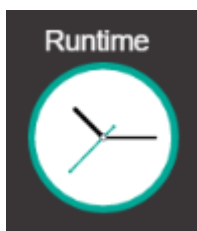
This constant is used to initialise the value of the integral component upon startup. The integral component is also set to this value whenever Ki is set to 0.

Reset

Reset In order to reset the output at start up, a True (1) value can be written to the Reset input, this will reset the output to the start up (STUP) value.

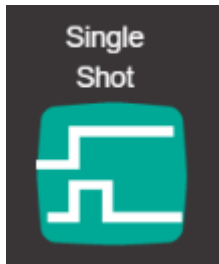
The Reset input must transition back to False (0) before it can be triggered again.

15.4.21. Runtime



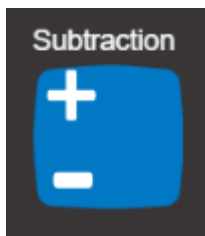
Description: Outputs a cumulative analog run time (in hours) for the period the binary input is True (1).

15.4.22. Single Shot



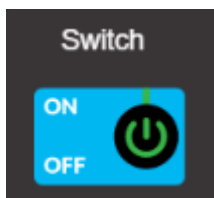
Description: When the input is True (1) the output will be true for one program cycle and then revert to False (0). The input must become False (0) in order to repeat the action once it becomes True (1)

15.4.23. Subtraction



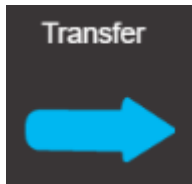
Description: Subtract one input value from another.

15.4.24. Switch



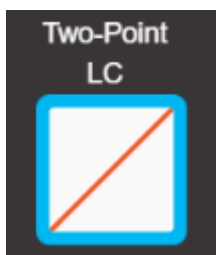
Description: Select an output value from two input values, depending on the value of a binary input. It has two analog inputs, one binary input and an analog output. The output equals the ON analog input if the binary control input is True (1), and the output equals the OFF analog input if the binary control input is False (0).

15.4.25. Transfer Data



Description: Copy a value from one property to another. This is used to transfer analog or binary data from one property to another without changing the data content.

15.4.26. Two Input Linear Converter



Description: Perform a linear conversion on the input to produce an output. Two points (IN1, OUT1) and (IN2, OUT2) are used to define the line relating input to output.

A straight-line relationship (of the form $y = a + bx$) determines the output as a function of the input. By inputting two points on this line, the line is then defined. When input = IN1, output = OUT1, and when input = IN2, output = OUT2.

Example

If you wanted to use this function to convert F° to C°, you could use the following values for IN1, OUT1, IN2 and OUT2:

IN1=32
OUT1=0
IN2=212
OUT2=100

15.4.27. Within



Description: Turn the output from False (0) to True (1) whenever the Input Value is within the range defined by the Limit 1 and Limit 2 values.

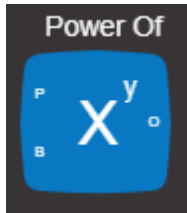
This has three analog inputs and one binary output.

The output is True (1) whenever the Input Value is greater than or equal to the lower limit value and the

Input Value is less than or equal to the higher limit value.
Otherwise, the output is False (0).

Note that the output is True (1) if the Input Value is equal to either of the limits.

15.4.28. Power



Description: Outputs the value of the base input to the power of the power input.

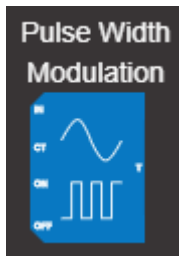
There are 2 inputs, the power and the base.

The power: This is the power that the base is to be raised by

The base: This is the base that will be raised

There is 1 output, which is the calculated output. This is the calculated output of all the inputs.

15.4.29. Pulse Width Modulation



Description: Converts an analog signal as a percentage into a digital signal, based on the cycle time.

There are 4 inputs, the input signal, the cycle time, the minimum ON time and the minimum OFF time.

The input signal: This value (between 0-100) represents the percentage of the cycle time that the signal is ON.

The cycle time: This represents the period of the digital output, in milliseconds.

The minimum ON time: This represents the minimum time that the signal must be ON. If this value is larger than the calculated ON time, it will override the calculated value.

The minimum OFF time: This represents the minimum time that the signal must be OFF. If this value is larger than the calculated OFF time, it will override the calculated value.

There is 1 output, which is the converted digital output. This binary output pulses ON for a calculated amount of time, and OFF for a calculated amount of time.

15.4.30. Anti Short Cycle



Description: Filters out signals that change states too quickly.

There are 3 inputs: the input signal, minimum ON, and minimum OFF.

The input signal: This is the signal that is checked, to ensure that it does not change states too quickly.

The minimum ON: This value represents the minimum amount of time that the signal should be ON for.

The minimum OFF: This value represents the minimum amount of time that the signal should be OFF for.

There is 1 output. This output is the signal, after the input signal was held to the minimum ON and OFF times.

15.4.31. Enthalpy Calculator



Description: Calculates the enthalpy of the system, depending on various inputs, as well as the mode of the block.

There are 2 modes, Basic mode and Advance mode.

Basic Mode

The basic mode will calculate the enthalpy using 2 inputs.

There are 2 inputs, the temperature and the relative humidity.

The temperature: The temperature of the area. The units can be chosen to be in celsius or fahrenheit.

The relative humidity: This represents the relative humidity, as a percentage.

There is 1 output, which is the calculated enthalpy.

Advanced Mode

There are 3 inputs, the temperature, the altitude, and the relative humidity.

The temperature: The temperature of the area. The units can be chosen to be in celsius or fahrenheit.

The altitude: This represents the altitude, in meters.

The relative humidity: This represents the relative humidity, as a percentage.

There are 7 outputs, the enthalpy, the humidity ratio, the atmospheric pressure, the wet bulb temperature, the dew point, the partial pressure at dew point, and the partial pressure at saturation.

The enthalpy: This is the calculated enthalpy.

The atmospheric pressure: This is the calculated atmospheric pressure.

The wet bulb temperature: This is the calculated wet bulb temperature.

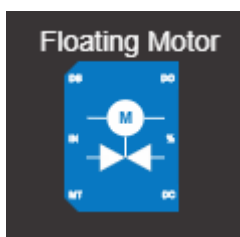
The dew point: This is the calculated dew point.

The partial pressure at dew point: This is the partial pressure at dew point.

The partial pressure at saturation: This is the partial pressure at saturation.

The main differences between the basic block and the advanced block are the different numbers of inputs and outputs, and the basic block is assumed to be at altitude of 0.

15.4.32. Floating Motor Controller



Description: Calculates an output percentage, an open state and a close state based on a deadband, a desired position and a fully open time.

There are 3 inputs: the deadband, the desired position, and the time to fully open.

The deadband: This is the deadband within which the open position shall be considered to be finished. It is taken as a percentage.

The desired input: This is the desired position, as a percentage.

The drive time: This is the time taken to drive the desired position from 0% to 100%. This is read in seconds (s)

There are 3 outputs: the current open position, the opening status, and the closing status.

The current open position: This is the position that is currently being outputted. It is written as a percentage.

The opening status: This is the opening status, it is true if the output is increasing, and false otherwise.

The closing status: This is the closing status, it is true if the output is decreasing, and false otherwise.

Please note: When the floating motor controller desired input is 0% or 100%, it will over-drive the point by 50%.

15.4.33. Restrictor



Description: Restrict the rate of change of an analog value.

There are 4 inputs: the input, the reset, the maximum up and the maximum down.

The input: This is the signal to be slowed down.

The reset: This signal controls whether the output is reset.

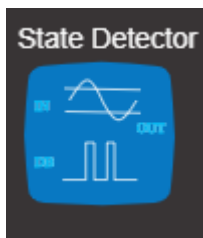
The maximum up: This is the maximum amount per second that the output signal will increase by until it reaches the input value.

The maximum down: This is the maximum amount per second that the output signal will decrease by until it reaches the input value.

The output will be immediately set to zero when the reset input is FALSE (0).

There is 1 output: the output signal. This represents the output of the block, as it increases or decreases towards the input value.

15.4.34. Change of State Detector



Description: Detects a change of state.

This block detects if the input value changes from the internal value by more than the deadband. If so, then the output will pulse momentarily.

There are 2 inputs: the input value, and the deadband.

The input value represents the value desired to be checked. This value will be stored as an internal value when the output pulses ON.

The deadband represents the value that the internal variable has to change by in order to generate the output pulse.

There is 1 output which is the binary output.

The output represents the status of the internal variable in relation to the input value. If the input value is more than the deadband value away from the internal variable, the output will output a short pulse. The value of the internal variable will then be replaced by the value of the input value.

15.4.35. Velocity Pressure to FPM Converter



Description: Performs an operation to convert an input that represents velocity pressure into an output that represents velocity.

There are 3 inputs: the input signal, the k factor, and the zero.

The input signal: This is the signal to be converted.

The k factor: This represents the multiplier.

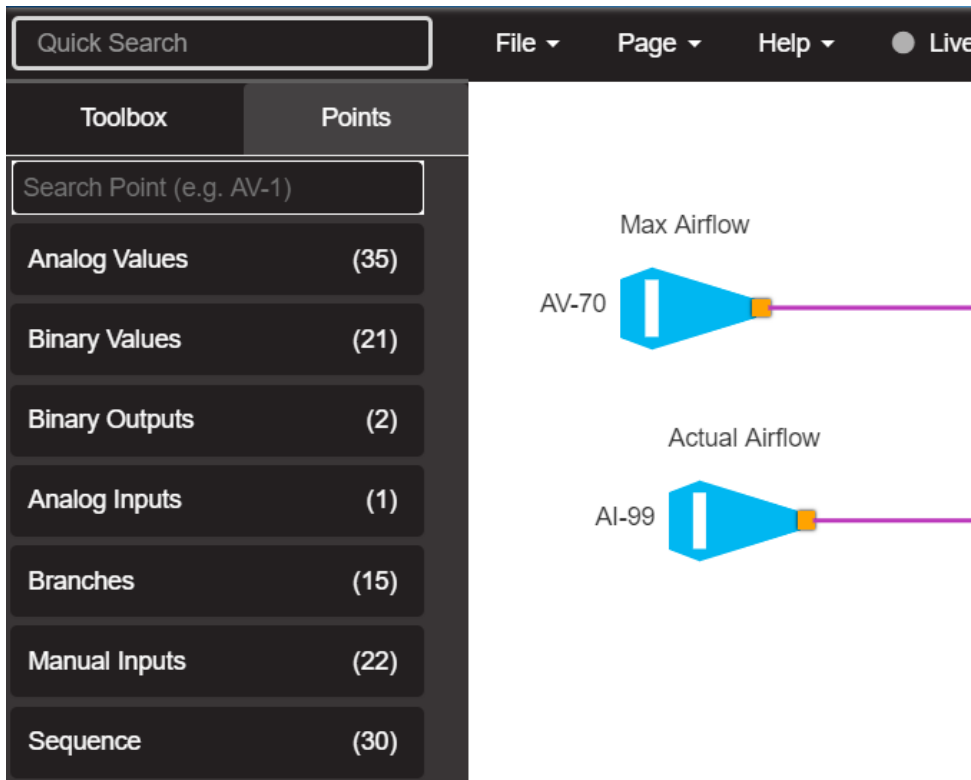
The zero: This represents an error correction value.

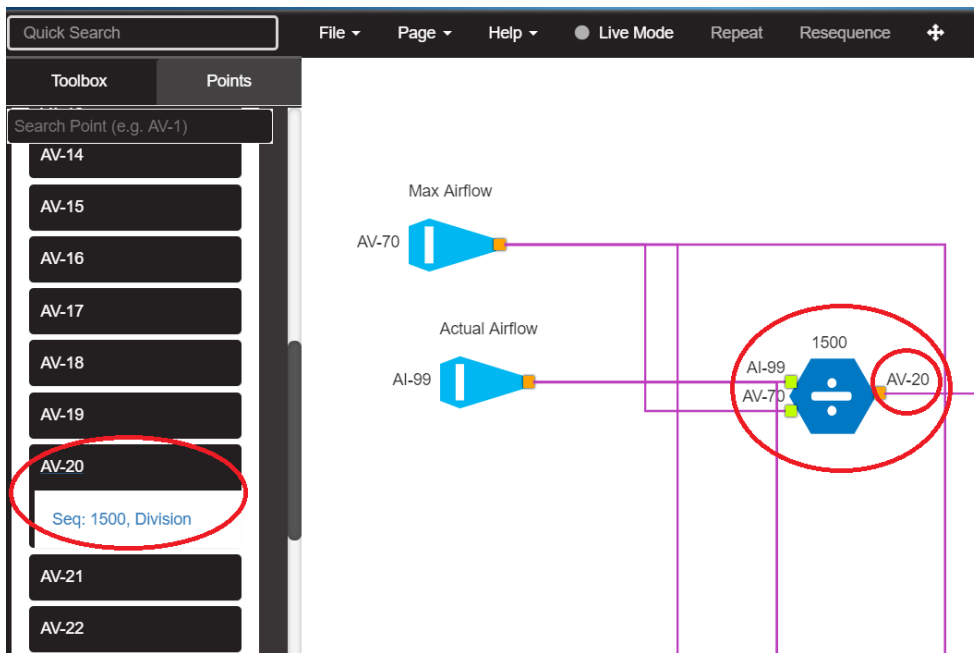
There is 1 output, which is the velocity. This is the calculated output of all the inputs.

15.5. Points

Points Tab

The Points Tab holds all the points that are entered as parameters on any of Logical Blocks.

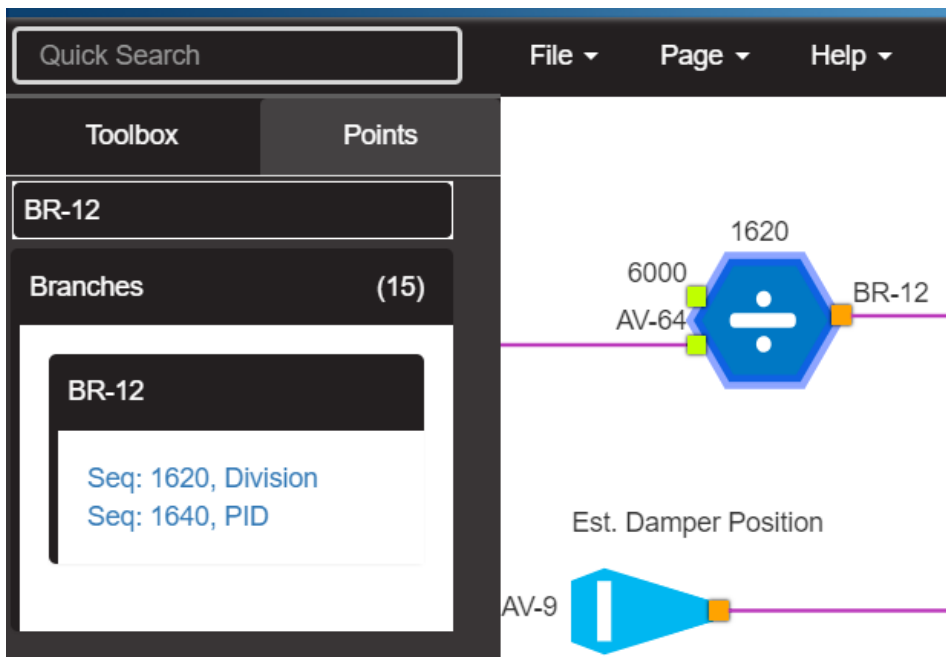




Search Point.

The Search Point allows you to find a point quickly.

For example if you are looking for Branch point, then you can start typing in the word in this format for example BR-1/br-1 and this will reduce the numbers of blocks in the point tab to only those blocks whose description matches the search query.



Points Type Available To Use:

- Analog Inputs (AI)
- Analog Outputs (AO)
- Analog Values (AV)
- Binary Inputs (BI)
- Binary Outputs (BO)
- Binary Values (BV)
- Multistate Input (MSI)
- Multistate Output (MSO)
- Multistate Value (MSV)
- Branches (BR)
- Device Instance (DE)
- Manual Inputs (MAN)
- Sequences (SEQ)

15.6. NULL Values Interpretations

Null Value Interpretations		
Block	Input	Null Effect
Addition	Any Input	Null is interpreted as zero value
Division	Any Input	Null is interpreted as zero value
Multiplication	Any Input	Null is interpreted as zero value
Subtraction	Any Input	Null is interpreted as zero value
And Gate	Any Input	Null is interpreted as false (0)
Exclusive Or	Any Input	Null is interpreted as false (0)
Or Gate	Any Input	Null is interpreted as false (0)
Comparator	Plus Input	Null is interpreted as zero value
	Minus Input	Null is interpreted as zero value
	Trigger	Null is interpreted as zero value
	Reset	Null is interpreted as zero value
Delay On Break	Input	Null is interpreted as false (0)
	Delay	Null is interpreted as zero value
	Show Timer	Null is interpreted as zero value
Delay On Make	Input	Null is interpreted as false (0)
	Delay	Null is interpreted as zero value
	Show Timer	Null is interpreted as zero value
Gated Transfer	Gate	Null is interpreted as false (0)
	Input	Null is passed through
High Low Limiter	Input	Null is interpreted as zero value
	High	Null is interpreted as zero value
	Low	Null is interpreted as zero value
Low Selector	Any Input	Null is interpreted as zero value
High Selector	Any Input	Null is interpreted as zero value
Increment / Decrement	Upper Limit	Null is interpreted as zero value
	Plus Input Amount	Null is interpreted as zero value
	Plus Input	Null is interpreted as false (0)
	Minus Input Amount	Null is interpreted as false (0)
	Minus Input	Null is interpreted as zero value
	Lower Limit	Null is interpreted as zero value
Latch Gate	Set	Null is interpreted as false (0)
	Reset	Null is interpreted as false (0)

Linear Converter	Input	Null is interpreted as zero value
	Slope	Null is interpreted as zero value
	Zero	Null is interpreted as zero value
PID	Kp	Null is interpreted as zero value
	Ki	Null is interpreted as zero value
	Kd	Null is interpreted as zero value
	SP	Null is interpreted as zero value
	FB	Null is interpreted as zero value
	iMAX	Null is interpreted as zero value
	iLIM	Null is interpreted as zero value
	STUP	Null is interpreted as zero value
	Reset	Null is interpreted as false (0)
Runtime	Input	Null is interpreted as false (0)
Single Shot	Input	Null is interpreted as false (0)
Switch	Control	Null is interpreted as false (0)
	On	Null is passed through
	Off	Null is passed through
Null Value Interpretations		
Block	Input	Null Effect
Transfer Data	Input	Null is passed through
Two Point Linear Converter	Input	Null is interpreted as zero value
	Out 1	Null is interpreted as zero value
	Out 2	Null is interpreted as zero value
	In 1	Null is interpreted as zero value
	In 2	Null is interpreted as zero value
Within	High Limit	Null is interpreted as zero value
	Input	Null is interpreted as zero value
	Low Limit	Null is interpreted as zero value

15.7. Subroutines

Subroutines are used to run the same program across multiple device instances.

This saves the need for having to repeat the same program over and over.

This is achieved by using a function block called a subroutine caller which then references a workspace with the program you would like to repeat.

Subroutine Caller



The Subroutine Caller function appears like any other function. It has a sequence number that is referenced for the order in which the program will be read.

Properties for Subroutine	
Sequence Number	1
Type	Subroutine
Name	Subroutine
Project Name	Sub-Rtn-1
Workspace Name	SR-1
SUBST0	3001001:BV-1
SUBST1	3001001:BV-2
SUBST2	3001001:BV-3
SUBST3	3001001:BV-4
SUBST4	3001001:BV-5
SUBST5	3001001:AV-1
SUBST6	3001001:AV-2
SUBST7	3001001:AV-3
SUBST8	3001001:AV-4
SUBST9	3001001:AV-5

When the program reaches the Subroutine caller it will then cycle through the program workspace it is referencing. It will cycle through the subroutine workspaces program sequence and then return to the program and continue cycling through the rest of the program sequence.

If the next sequence number is another subroutine caller function block, then it will again cycle through the subroutine workspaces program sequence and then return to the program to continue again.

Subroutine Caller Function Block Properties

The Subroutines Program needs to be placed in a separate Project than the Subroutine callers. When referencing the 'Project Name' in the Subroutine Caller the Subroutines Program project name should be referenced.

Sequence Number

The subroutine function references a sequence number and will be cycled through the program like any other function block.

This number must be unique to the program.

Type

This is the function block type.

This cannot be modified.

Name

The name of the subroutine function block can be set.

This can be modified. The default name is Subroutine.

This value is not visible in the workspace canvas.

Project Name

This is the Project name of the Workspace you want to reference.

This must be set.

Workspace Name

This is the Workspace that holds the program that you want the subroutine function block to reference.

This must be set.

Substitution Values

Each subroutine function block can have 32 Substitution values. SUBST0 to SUBST31.

Substitution Values are values you want to reference in your Subroutine program.

Example

Your subroutine program will reference airflow in multiple devices to perform a calculation.

To do this for all the device numbers that will be read in the subroutine, a substitution value can be used. So for all the subroutine callers that will reference the subroutine program, they will all reference SUBST0 for the air flow, this entered as device number:object, e.g. 3001001:AI-10.

In the subroutine program this will be referenced as SU-0.

Unused substation values can be left blank.

Subroutine Program

Subroutine program is created in the same way as a normal program project and workspace and also follows the same rules.

Points in the host Optergy or other BACnet devices and objects can be referenced, as can be done with normal programs.

The only notable difference is the substation values will also be referenced to take references from devices. The substation values are entered into function blocks just like any other objects.

The subroutine caller block can reference 32 substitution values SUBST0 to SUBST31.
Which will be read in the subroutine program as SU-0 to SU-31 respectively.

16. Display Tool

16.1. Display Tool Introduction

Required Privilege: Configure Displays

The creation of Displays for the visualisation of the system devices and points state is called Display Tool. Displays are created and stored in Optergy. All this can be done within the Google Chrome Browser (Chrome is the only Supported Browser) and no other add-ons or downloads are required for this functionality.

The Display Tool offers a number of predefined tools that have specific functions in order to create various displays for your BMS.

Each tool has a unique function and shows a preview with the configured live value.

16.2. Display Tool Environment

The Optergy Display Tool Environment

There are four distinct environments in the Display Tool web interface:

1. Toolbox
2. The Display
3. Tools Properties (appears when you right click on a tool)
4. Toolbar





Tool Box

The tool box holds all the tools that can be dragged onto the display and used in the Display Tool.

Display

The display is the canvas where the tools are arranged and set up.

Tools Properties

The Tools Properties can be edited, this is where the BACnet Device and Object details can be entered or Images and Texts could be set up, along with tools specified properties (detailed with each tool).

Toolbar

The Toolbar is the place where you can edit the project, displays enable live mode and provides tools for editing the display.

Projects and Displays

Optergy Display Tool module uses the concept of Projects and Displays to create Display Projects.

The easiest way to describe this would be to think of folders and files.

Think of the Project as a folder and think of displays as the files. However multiple Projects could exist simultaneously in Optergy and Displays could be used from different Projects.

For example you can have 2 different Projects saved in your portal and you can use Project1 Displays for User1 and use Project2 Displays for User2.

Projects

When you enter the Display Tool you will be prompted with 2 options;

Optergy Display Tool

 New Project
 Open Project

New Project

If you select a new project you will be prompted to enter the title of the project and the title of the first display.

NOTE: The Project and Display names cannot contain spaces and special characters: ? \ * ' / " < > |

 New Project ×

Project Title

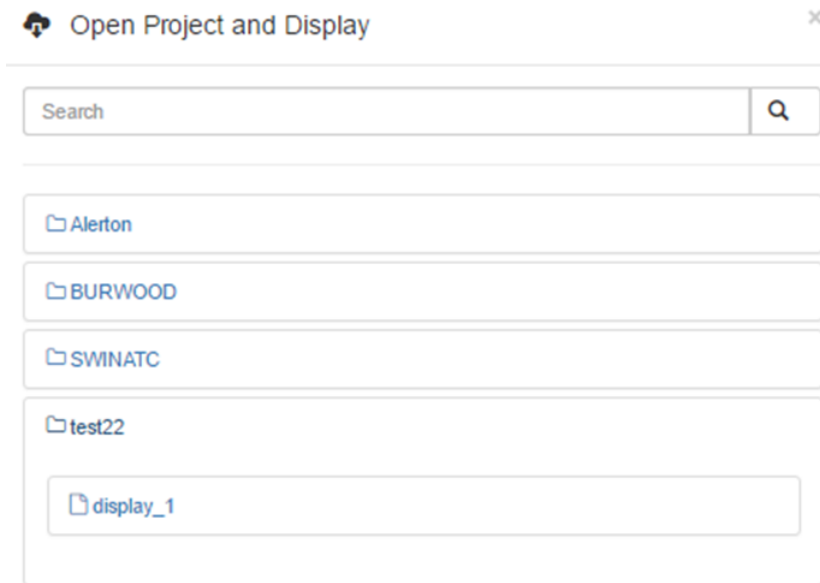
Display Title

Display 1

Create

Open Project

If you select an open project you will be prompted to select an existing project and the display you want to open within that project.

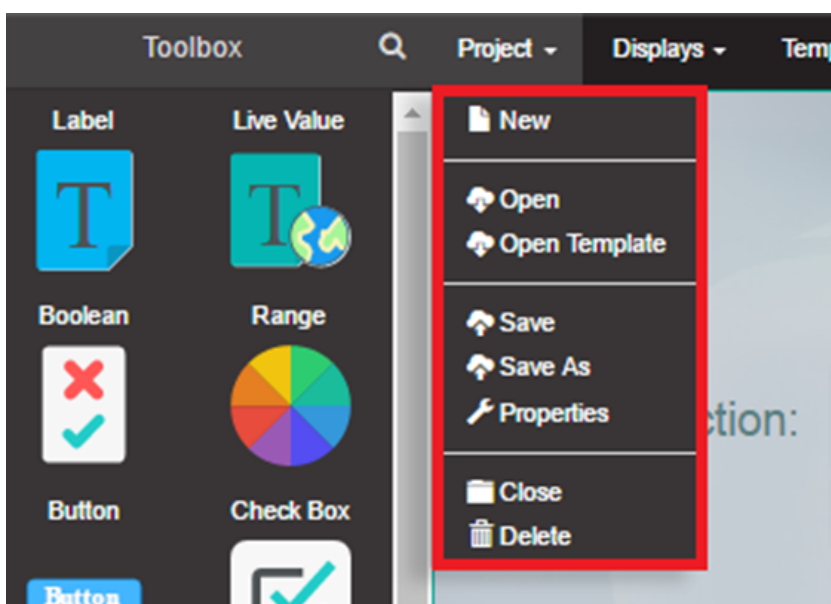


16.3. Workspace

16.3.1. Projects

Projects Menu

The Projects menu is where you will find additional menus related to the entire project.



New

If you select a new project you will be prompted to enter the name of the project and the name of the

first display.

Open

If you select open you will be prompted to select an existing project and the display you want to open.

Open Template

If you select an open template you will be prompted to select an existing project and the template display you want to open.

Save

If you select save this will save the current display to the current project.

Save As

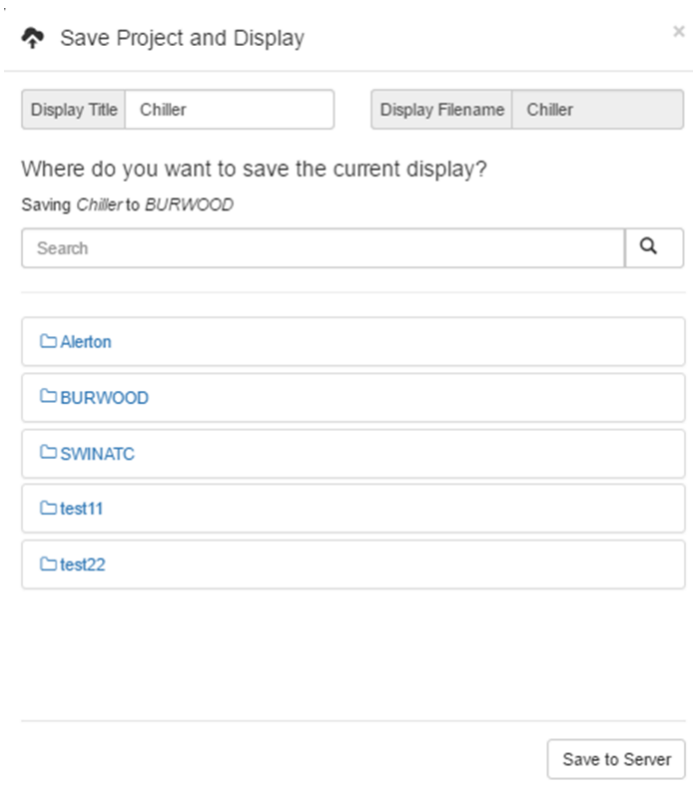
If you select save as this will allow you to save the current display with

a. Different name in the current project

Or

b. Another existing project with the same or different name.

The save as window also allows you to create a new project to save the display to with the same or a different name.



Save Project and Display

Display Title Chiller Display Filename Chiller

Where do you want to save the current display?

Saving Chiller to BURWOOD

Search

Alerton

BURWOOD

SWINATC

test11

test22

Save to Server

Properties

If you select properties this will pop up a window with the current project properties

Close

To close the current Display on the current tab you are in select close.

Note: this does not close the browser tab, the tab will remain open and you will need to close it manually.

If you only have one tab open then both the display and the project will be closed.

Delete

Select delete to delete an entire project and all its displays.

You will get a warning message prior to deleting a project to confirm the deletion.



Are you sure?

Are you sure you want to delete the entire current project "BURWOOD" including all of the displays belonging to the project? This action is irreversible.

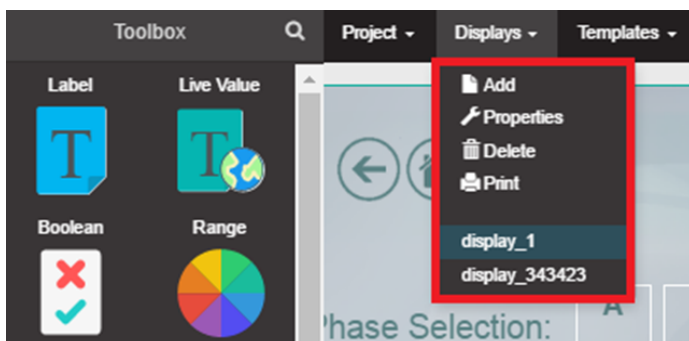
Cancel

Delete Project

16.3.2. Displays

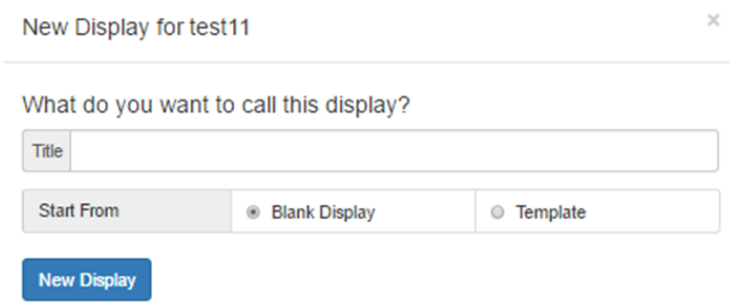
Display Menu

The Display Menu is where you will find additional menus related to displays.



Add

Select Add to add a display to the current project.
This will open a new browser tab and ask you for a Display title for the new display.



New Display for test11

What do you want to call this display?

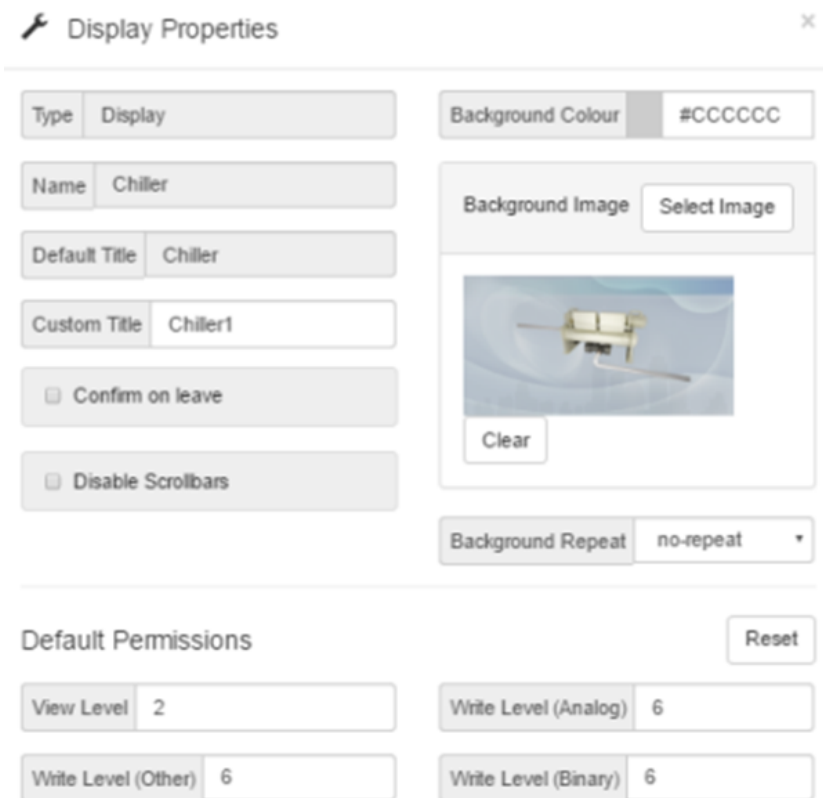
Title

Start From ☒ Blank Display ☐ Template

New Display

Properties

Select Properties to bring up the current display properties, including Name, Title, Background Image, Permissions, Leave and Scroll options.



Display Properties

Type

Name

Default Title

Custom Title

☐ Confirm on leave

☐ Disable Scrollbars

Background Colour

Background Image



Background Repeat

Default Permissions

View Level

Write Level (Analog)

Write Level (Other)

Write Level (Binary)

Delete

Select delete to delete the current display.
You will get a warning message prior to deleting a display to confirm the deletion.



Are you sure?

Are you sure you want to delete the current display "display_1" from the project "test11"? This action is irreversible.

Cancel

Delete display

Note: If you are deleting a display and the display is the only display in the project, then the project will also be deleted, as there must be a minimum of one display for a project to exist.

Print

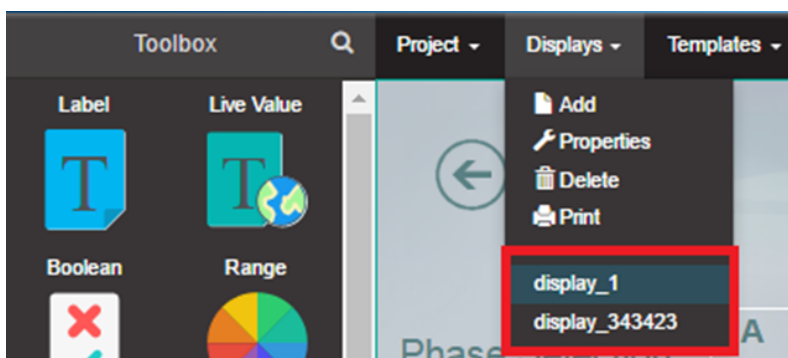
Select Print to print the current display.

You will be presented with the print preview and settings page by your browser.

Project Displays

If you have multiple displays in your project you will have all the displays listed under the display menu.

When selecting one of the other displays this will open in another tab.

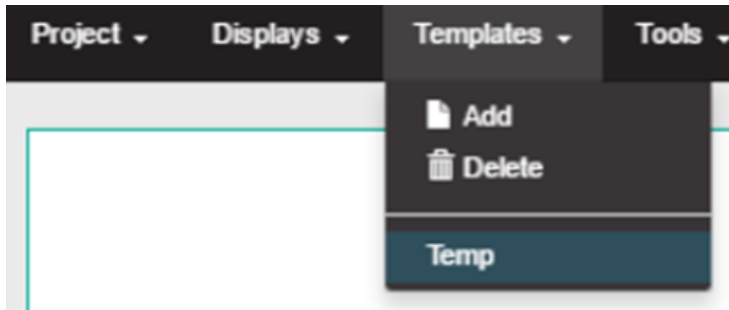


Note: Please note that as we are working in a browser window and referencing a URL, you may actually have the same display open in different tabs or it may be opened by different people. Try to avoid opening the same display in different tabs. Also avoid multiple people working on the same displays. Last save wins.

16.3.3. Templates

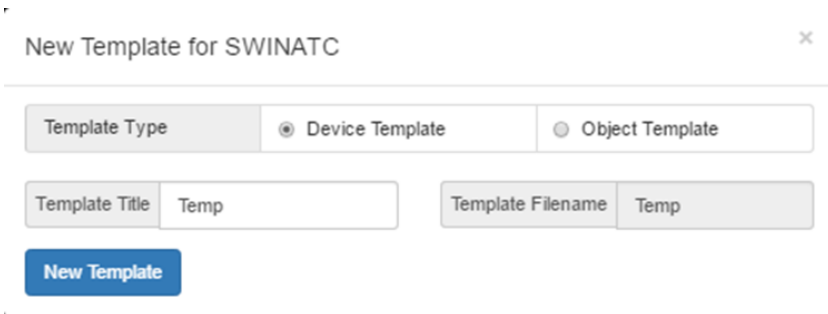
Templates Menu

The Templates Menu is where you will find additional menus related to Object and Device templates.



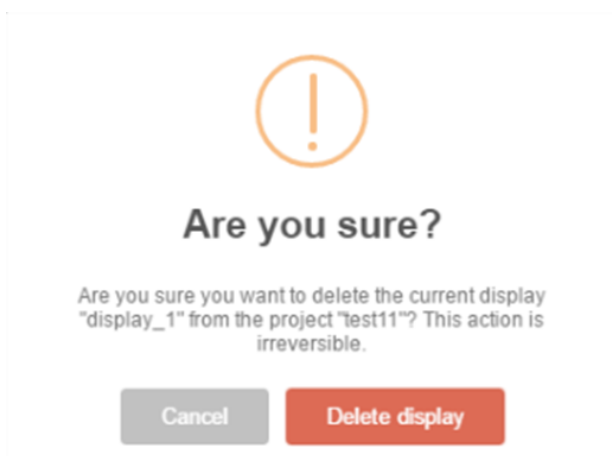
Add

Select Add to add a Device or Object template to the current project.



Delete

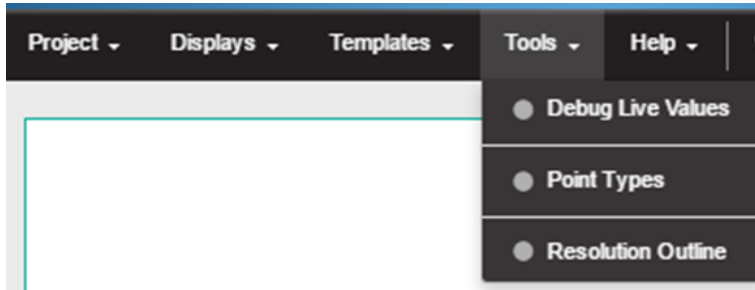
Select delete to delete the current Display Template.
You will get a warning message prior to deleting a display to confirm the deletion.



16.3.4. Tools

Tools Menu

The Tools Menu is where you will find additional menus related to useful tools.

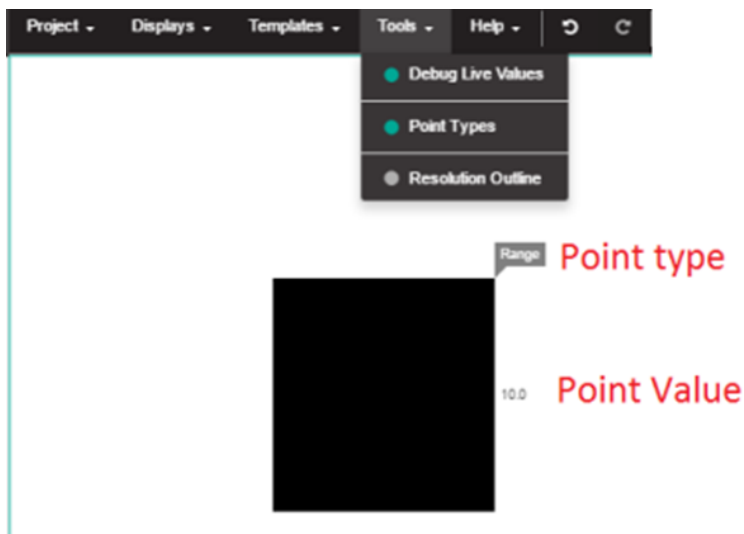


Debug live values

Selecting on Debug live values will show the configured points live values when editing the Displays.

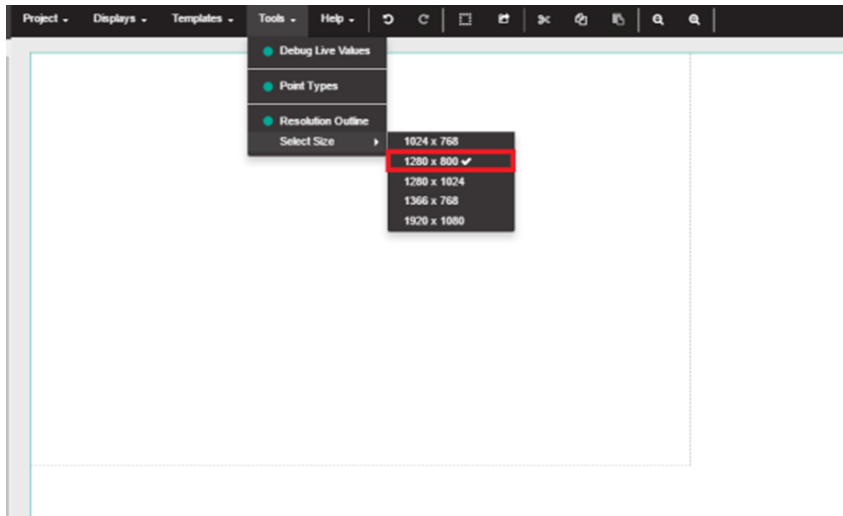
Point Types

Selecting on Point Types will show the Tools type live when editing the Displays.



Resolution outline

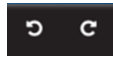
To help create Displays to a given screen resolution, if you select Resolution Outline an exact screen resolution would be outlined with dashed lines in the Displays edit mode.



Undo Redo

You can undo and redo actions on the display canvas.

This can be done by using the toolbar buttons.



You can also use keyboard shortcuts

Undo = CTRL + Z

Redo = CTRL + Y

Cut, Copy and Paste

You can cut, copy and paste Tools individually or multiple blocks and connection lines.

This can be done by using the toolbar buttons.



You can also use keyboard shortcuts

Copy = CTRL + C

Cut = CTRL + X

Paste = CTRL + V

Note: you can copy between displays, in the same browser session.

Display (Canvas)

The display canvas is the actual preview of your Display where you can add the Tools from the Tool Box.

Adding Tools to the Canvas

To add a tool, hover over the block you want to add, the pointer will change to a hand, you can then left click and hold on the block and drag it to the canvas.

Moving Around the Display Canvas

To move the canvas, left click and hold on a free area on the canvas and you can move the canvas around.

Tools Selection on the Canvas

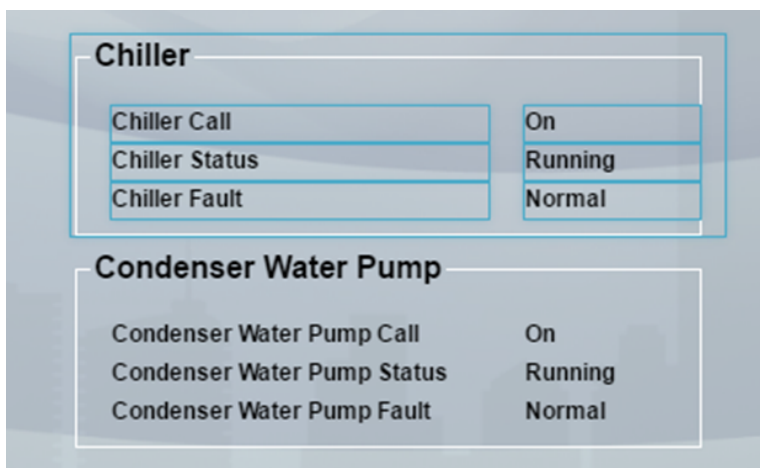
There are two methods for selecting tools.

- CTRL and Click - if you hold the CTRL key on the keyboard while left clicking on the block you will select it, if the block is already selected the same action will deselect the block.
- Using the marquee tool on the toolbar.  Select the marquee tool on the toolbar, using the marquee tool you can select multiple blocks on the canvas at the same time. A rectangular box will appear showing the blocks that have been selected within that area.

Selected blocks will have a blue outline around the block to visually show that it has been selected.

You can select some blocks using CTRL and Click and then use the Marquee Tool.

Once selected you can use the CTRL and Click to deselect any blocks not required to be selected.



Deleting Tools

To Delete tools, hold SHIFT and left click on the block or line you want to delete.

Moving Tools on Display Canvas

To move tools around the display canvas, left click and hold on the tool and you can move the tool to a different part of the display canvas.

Moving Multiple Tools on Display Canvas

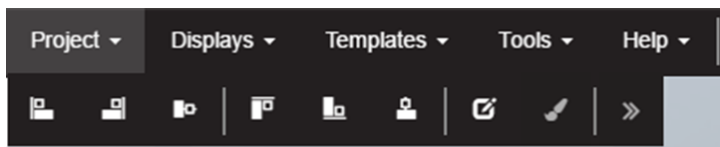
To move multiple tools around the display canvas, select multiple blocks as described in the Tools

selection, left click and hold on any of the selected tools and you can move multiple tools to a different part of the display canvas.

Aligning Blocks on the Display Canvas

There are a number of alignment tools for aligning the tools.

Once one or more blocks are selected the alignment toolbar will appear just below the main toolbar.



Aligns the blocks to the block that is the topmost of all selected.



Aligns the blocks to the block that is the bottom most of all selected.



Aligns the blocks horizontally in the middle of all the selected blocks.



Aligns the blocks to the block that is the rightmost of all selected.



Aligns the blocks to the block that is the leftmost of all selected.



Aligns the blocks vertically in the middle of all the selected blocks.



Edit common settings for the selected Tools



Format Painter: copies the selected Tool properties to another Tool

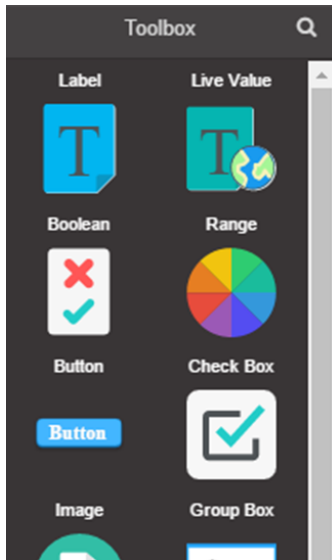


Repeat Tool: repeats the selected Tool multiple times

16.4. Toolbox

Toolbox

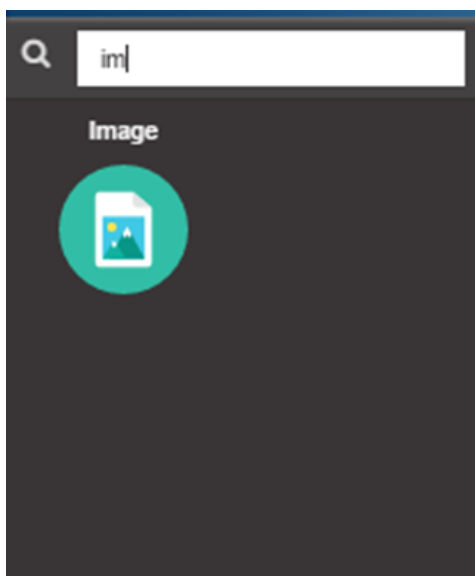
The toolbar holds all the Tools that can be used to create the Displays functions



Quick Search.

The Quick Search allows you to find a Tool quickly.

For example if you are looking for the Image box, then you can start typing in the word and this will reduce the numbers of blocks in the tool box to only those blocks whose description matches the search query.



BACnet Property

Selecting BACnet Property will allow you to configured the BACnet point for the Tool

BACnet Property
Edit

Present Value -1

BACnet Property
×

BACnet Property

Device

Object

Binary Output ▼

Instance

Property

Present Value ▼

Array Index

Display Property

Display Property will show you the Tool

- Position on the Display
- Size and
- The configured Layer

Display Properties

X

Y

Width

Height

Layer

Permissions Property

With changing the permissions levels Read and Write permissions could be set up for different user permission levels

Permissions

Type	Level	Group	Read	Write	
Level	2		✓	✗	✗
Level	6		✗	✓	✗
Level	0	0			Add

On-Click Action Property

On-click Actions could be add for the Tool in order to open up other Displays

On-Click Action

☒ None

☐ Main Display Page

☐ Back

☐

☐ Custom

☐ Override

Misc. Properties

Border Width
Colour

Update Speed

Custom Title

☐ Display On Hover

☐ Right Click Menu

☒ Alarms

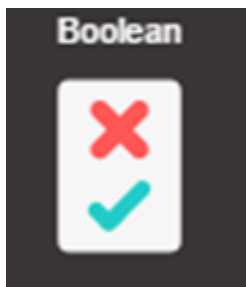
☒ Schedules

☒ Trendlogs

Tool Blocks Available To Use:

- [Boolean](#)
- [Button](#)
- [Check box](#)
- [Date](#)
- [DDC](#)
- [Dial](#)
- [Gauge](#)
- [Group Box](#)
- [HTML](#)
- [Image](#)
- [Label](#)
- [Live Trends](#)
- [Live Value](#)
- [Range](#)
- [Select box](#)
- [Spectrum Overlay](#)

16.4.1. Boolean



Displays a Binary Object live state with an Image or with a colour code

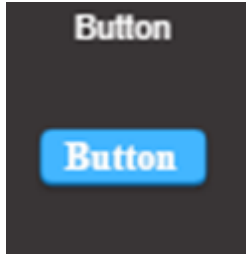
Additional Properties:

- Active/Inactive state configuration ? Images could be uploaded here to use it for the Point state or colour code could be used

Active State		☒ Colour ☐ Image
Color		#000000

Inactive State		☒ Colour ☐ Image
Colour		#000000
		☐ Transparent

16.4.2. Button



Creates a button on the screen, On-click actions could be add to it

16.4.3. Check Box



Displays a Binary point state and the point value could be changed with ticking/unticking the box

16.4.4. Date



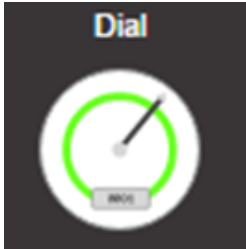
Display the system date and time in different formats

16.4.5. DDC



Embed a live DDC workspace on the Displays. The DDC workspace could be selected from the existing Projects on the server.

16.4.6. Dial



Displays the live value in a Dial with the exact numeric value as well

Additional Properties:

- Dial appearance configuration - theme, text, scale factor, range

Theme	Default ▼		
Face Text		Scale Factor	1
Face Unit	▼		
Face Range	Min:	Max:	(leave blank for auto)

- Additional bands configuration on the Dial face

Dial Bands ×

No band elements

From Value	0	To Value	0
Colour	#000000		

Add Dial Band

16.4.7. Gauge



Displays a BACnet point live value in a Gauge format

Additional Properties:

- Gauge appearance configurations - theme, font, align, length, scale, decimal places

Theme	Default ▼
Font Name	▼
Text Align	Right ▼
Gauge Length	6
Scale	1
Decimal Places	1

16.4.8. Group Box



Allows you to group different tools on the Displays

16.4.9. HTML

Displays an internal or external URL

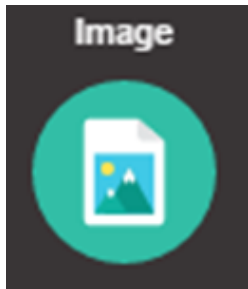
Additional Properties:

- Add the URL address
- Able/Disable the scrolling function inside the HTML tool
- Show or not show a preview on the URL

HTML Specific Properties

URL	
Scroll	No ▼
Preview	No ▼

16.4.10. Image



Displays an Image or a custom URL

Additional Properties:

- Image select from the server or upload
- Configuration of the custom URL

A configuration form for the Image widget. It has a title 'Image' and a 'Select Image' button. Below, there is a 'URL' label and a text input field, followed by a 'Load' button.

16.4.11. Label



Displays a custom static text block (eg.: for descriptions or comments on the Displays)

16.4.12. Live Trends



Displays a live trend log on a BACnet point

Additional Properties:

- BACnet Point configuration

Trend Log Configuration

Add New Point

Device	Object	Instance	Property	Array Index	Legend	Display Units
No Points						

16.4.13. Live Value



Displays a live BACnet point value, as how its set up in the Properties

Additional Properties:

- Override spinner - adds a spinner next to the live value, which could be used to change the point value

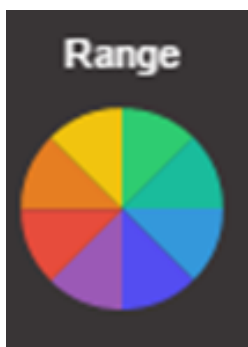
☐ Override Spinner

Increment Value

1

☐ Override Button

16.4.14. Range



Displays different Images/Colour codes/Texts based on the BACnet point actual value

Additional Properties:

- Range element configuration - Linking Images/Colour codes/Texts for the BACnet point different value ranges

Range Elements
×

From	To	Value Type	Value		
0	10	Colour		×	✎
11	20	Colour		×	✎

Low
High

☒ Image
☐ Text
☐ Colour

Image Select Image

Add Range

16.4.15. Select Box



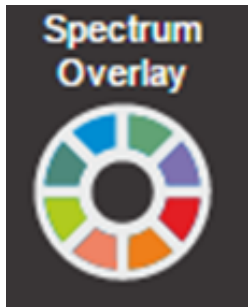
Displays and lists the meters recorded in the system

Additional Properties:

- Pick Meter Types and affected points

Type
Sort

16.4.16. Spectrum Overlay



Spectrum overlay displays could be created with this tool. Eg.: a floor different zone temperatures on the floor layout

Additional Properties:

- The zones layout images could be uploaded to the server or can be created on the display and saved.

Image

Draw Spectrum Overlay

Select Image

☐ Transparency

0

- The Spectrum properties could be configured

☒ Full Spectrum

Deadband

Delta

☒ Midpoint

☐ Setpoint

Setpoint Device

Setpoint Object

Setpoint Instance

☐ Step Spectrum

Edit Step Elements

- Depending on the zones schedule the Spectrum overlay could be active only if the zone time schedule is on

☐ Occupied

Occupied Device

Occupied Instance

Occupied Object

▼

☐ Occupied Point Transparency

0